THE GENUS DIAPORTHE NITSCHKE
AND ITS SEGREGATES

BY
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THE description of new species and genera is no longer the chief
purpose of systematic mycology. In many groups, particularly
in the Ascomycetes, the numerous incomplete or inadequate and
scattered descriptions of species and genera have accumulated as an
undigested mass of material, which makes the description of new
species and genera in these groups extremely hazardous. Confusion
in the taxonomy and the literature also renders insecure ecological
or distributional deductions from these data.

It is extremely important, therefore, in order to advance our
knowledge of the taxonomy, phylogeny, and biology of these groups
and to put it on a firm basis, that there should be a careful compara­
tive study of the collections and data already amassed, so that they
may be reorganized into a workable and related whole.

Fortunately, there is a growing tendency for such comparative
studies as against the fragmentary, unrelated observations which
create an involved literature. The following account of the genus
Diaporthe is intended to organize our present knowledge, which may
serve as a basis for further work and study. Wherever possible a
large series of collections of each species was studied in order to draw
conclusions in regard to specific variations, relationships, and validity.
All conclusions, however, were based on material actually seen and
examined. Unfortunately it was impossible to obtain material from
the herbaria of Saccardo and Spegazzini and, since many of their
species cannot be definitely placed, only the original descriptions of
these and other species not seen are quoted.

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individuals during the preparation of this monograph. I wish to
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L. E. W.
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THE GENUS DIAPORTHE NITSCHKE
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ABBREVIATIONS OF NAMES OF HERBARIA FREQUENTLY CITED AND EXPLANATIONS OF REFERENCES

BERKELEY HERB. Herbarium of M. J. Berkeley, deposited in the Kew Herbarium.

COOKE HERB. Herbarium of M. C. Cooke, deposited in the Kew Herbarium.

CURTIS HERB. Herbarium of M. A. Curtis, deposited in the Farlow Herbarium of Harvard University. The numbers, e.g. 439.12(3), are those of the Farlow Herbarium and indicate the folder, sheet, and packet, respectively.

ELLIS HERB. Herbarium of J. B. Ellis, deposited in the Cryptogamic Herbarium of the New York Botanical Garden, but specimens were distributed in the herbarium of W. G. Farlow and elsewhere.

EV. HERB. Herbarium of B. M. Everhart, deposited in the Farlow Herbarium of Harvard University. The numbers, e.g. 176.57, are those of the Farlow Herbarium and indicate the volume and page.

FARLOW HERB. Personal herbarium of W. G. Farlow, deposited in the Farlow Herbarium of Harvard University.

FRIES HERB. Herbarium of Elias M. Fries, deposited in the Botaniska Institutionen of the University of Upsala.

HÖHN. HERB. Herbarium of F. von Höhnel, deposited in the Farlow Herbarium of Harvard University. In citations such as A 4022(6947) the number before the parenthesis is that of Von Höhnel's Herbarium; the number within the parenthesis is that of the Farlow Herbarium sheet.

KEW HERB. Herbarium of the Royal Botanic Gardens, Kew.

NIT. HERB. Herbarium of Th. Nitschke, deposited in the Botanisches Institut, Münster. The numbers given are those on Nitschke's sheets.

N. Y. G. HERB. Cryptogamic Herbarium of the New York Botanical Garden.

N. Y. M. HERB. Botanical Herbarium of the New York State Museum.

PAT. HERB. Herbarium of N. Patouillard, deposited in the Farlow Herbarium of Harvard University.

SCHWEINITZ HERB. Herbarium of L. D. de Schweinitz. The Schweinitz material seen by the writer included only that contained in the herbarium of M. A. Curtis.

WEH. HERB. Herbarium of L. E. Wehmeyer.
I. INTRODUCTION

TREATMENT OF THE GENUS DIAPORTHE

The genus Diaporthe, as described by Nitschke in 1867, included a group of the stromatic forms of the Sphaeriales with ellipsoid to fusiform spores, quite variable stromata, often with blackened zones in the substratum and with inclosed unilocular pycnidia which contain two types of conidia (spermatia and stylospores). It is interesting that Nitschke pointed out that by means of more highly powered objectives he had been able to detect in the small spores septa which had been overlooked by Tulasne and other earlier workers. Accordingly, he described the spores of the genus as usually three-, sometimes many-, or rarely one-septate. He mentions the four globules present in many of these spores, and undoubtedly mistook for septa the narrow band of protoplasm between these globules, for the spores of all his species of Diaporthe are one-septate.

The conception given above, though not so clear cut as it might be made, outlines a very compact group of species which is here retained for the genus Diaporthe. Up to the present time over six hundred and fifty species of this genus have been described. Nitschke's conception has been broadened by many later authors to include a heterogeneous group which does not conform to his original idea of the genus. Some one hundred of these described species become doubtful or are excluded. Of the remainder many fall into synonymy. If this conception of the genus Diaporthe, as including forms with blackened zones within the substratum and a Phomopsis-like conidial stage, is retained, it embraces the bulk of these species. The rest of this genus may be segregated into four well-defined genera, as follows: Apioporthe Höhn., to include the species with unequally two-celled spores; Diaporthopsis Fabre, those with one-celled spores; Diaporthella Petrak, a few species with typical, strongly developed stromata; and Cryptodiaporthe Petrak, the remaining species, which are a rather heterogeneous group of all the species without any blackened zones in the substratum, and which, so far, have yielded various conidial stages differing from the Phomopsis type of the true Diaporthes.

Such a genus, with over six hundred and fifty described species
and a comparatively narrow range of morphological diversity, naturally presents numerous overlapping variations with intergrading forms representing all types of stromata from the effuse to the definitely oriented and isolate conditions, a fact which was recognized by Nitschke himself.

The greatest difficulty in the taxonomic arrangement of the genus is the determination of the real value of the host as a means of separating species or as a factor influencing the variation of many of the morphological characters which, as in the case of the stromatic configuration, often result from a composite of fungous and host tissue. The general practice in the past has been to describe as a new species every occurrence on a new host genus, regardless of the similarity of the morphological characters. To any one who has collected species of this genus in the field it is obvious that many of them appear to be definitely limited to certain host genera or even to species. In fact, this is so striking that many species of substratum can be determined by the fungus occurring on them. On the other hand, it is equally true that certain species, as *D. Arctii* or *D. eres*, are ubiquitous and seem to occur on a large number of host genera. In such cases the appearance on certain hosts is often characteristic within a certain range of variation. When a larger range of hosts is considered, however, these host characters show such widely overlapping variations that it is often impossible to separate the host forms on definite morphological grounds. Many such distinctive appearances are also due to characters of the host itself rather than to the fungus. Whether these differences are caused by the part played by the host in altering the structure of the fungus or by the existence of fungous varieties and species limited to given hosts is largely a matter which must be decided by careful comparative cultural studies in each individual case. The writer (*Papers Mich. Acad., 11: 309–328*) has shown, for instance, that *D. acerina* and *D. dubia* have certain minor differences in both the perfect and imperfect stages of the fungus which are definitely associated with the occurrence of these species, in nature, on particular species of Acer as host. Many more such instances will undoubtedly arise as careful cultural studies are made.

Numerous species, including those limited in their host range in

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1 The term "host" is used here to refer to the species or genus of plant substratum upon which the fungus is growing, without any definite implication that the fungus is parasitic in nature. It indicates the specific, rather than the chemical or physical, differentiation of the substratum.
INTRODUCTION

nature, can, however, be grown on various host twigs in culture. This indicates limiting factors under natural conditions different from those in cultural work. There is little doubt in the writer's mind that some species, at least, are weak parasites in their earlier stages of development; that is, infection probably takes place on living or weakened branches or stems. The imperfect stage of many of these species is often found on living tissues or recently killed branches. The perithecial stage frequently seems to appear after the twig or branch has been killed and, therefore, occurs on dead twigs. There is very little experimental evidence to prove such a parasitism. The imperfect or Phomopsis stages of several species of Diaporthe are known, however, to be the cause of serious diseases of several plants: for instance, \textit{D. Citri} (\textit{Phomopsis Citri}), a form of \textit{D. medusaea}, causes melanose of citrus fruits; \textit{D. Phasolorum}, a pod blight of Lima beans; \textit{D. Sojae}, a blight on \textit{Soja max}; and \textit{D. batatatit}, a dry rot of sweet potatoes. In these species the perithecial stage is rarely found or is known only from culture.

On account of the lack of experimental data for the majority of species a conservative attitude is taken in the following treatment toward the question of host limitation. Species are separated on purely morphological grounds. Under each morphological species which appears on a number of hosts a description of the occurrence and a synonymy of each of the host forms are given, so that if definite information on the validity of these forms as species or varieties is later forthcoming, they may easily be segregated as such. When data at hand seem sufficient an attempt has been made to give valid host variations their proper rank. A recognition of all host forms as species would merely add to the multiplicity and confusion already too evident.

No attempt has been made to present a critical survey of the conidial, or imperfect, stages of the species of the various genera. Our knowledge of cultural connections is comparatively scanty, and the literature is scattered. The authenticity of observed connections, although probably correct in many cases, cannot be depended upon for such a study. The confusing similarity of many of the conidial forms and the wide range of variation in the stromatic characters of such form genera as Phomopsis also make such a study a difficult, separate problem. Although many species are widely variable and not easy to distinguish in their pycnidial condition and although some may have very similar pycnidial stages, yet there are in a number of others definite and important diagnostic differences in these stages.
THE GENUS DIAPORTHE

which are correlated with specific or even varietal differences in the perithecial stages. As has already been pointed out, such correlations may aid in the separation of varieties more or less limited as to host range within some of the larger species complexes. For these reasons all cultural and observational connections which have come to the writer’s notice have been listed under the respective species.

MORPHOLOGY AND DEVELOPMENT

The vegetative mycelium of the forms of Diaporthe may develop within the bark, but in some species it occurs within the wood also. After a certain period of growth or incubation this vegetative mycelium proliferates rapidly at certain points on the surface of the bark or substratum, giving rise to masses of intertwined hyphae or ectostromata, which are conic to pulvinate in form and which rupture the overlying periderm or other tissues by purely mechanical pressure or by disintegration of the overlying layers, or by both means. These ectostromata may either remain sterile or produce pycnidial locules in their interior. In most species the pycnidial locules occur in the first ectostromata and the perithecia are erumpent either through later-formed sterile or old decayed ectostromata. In other species, as in D. Pruni, the pycnidial locules may be found in the ectostromata of the perithecial stromata.

Meanwhile there is a proliferation of vegetative hyphae within certain areas of the bark or wood which results in the formation of the entostromata. In some species these areas are definitely defined and differentiated, and in many are outlined by a marginal zone of blackened fungous hyphae and host tissue. In others the entostromatic areas are less well defined, and the blackened zones are faint, incomplete, or almost lacking. Within these areas the perithecial primordia arise and develop into the perithecia. The position and grouping of these primordia and the configuration and development of the blackened zones and entostromatic areas determine the characters of the stroma of any given species.

The conidial stages of the true genus Diaporthe, in the sense of Nitschke, are mostly of the type of the form genus Phomopsis, with a few approaching Fusicoccum, Plenodomus, and neighboring form genera. There has been much discussion concerning the differential characters of such form genera as Phomopsis, Fusicoccum, Plenodomus, Disculina, and Septomyxa, but the differential characters used are largely arbitrary ones which do not take into consideration the type of development and variation found in these forms.
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The pycnidial stromata in the genus Diaporthe are not entirely ectostromatic in all species. On many specimens there is a development of entostromatic mycelium within the upper bark layers, which becomes a part of the pycnidial stroma. These stromatic pycnidia arise as a mass of interwoven, hyaline, vegetative hyphae which become compacted to form a stromatic mass. The size and shape of these stromata, although varying about different means in different species, are often widely variable in one and the same species, depending upon conditions of growth, character of the substratum, and the like. These stromatic masses of mycelium are at first meristematic throughout; that is, they are capable of growth and proliferation at any point. The factors affecting the slowing up or checking of this meristematic property of the various portions of this tissue and the effects of this process are important in the determination of the final morphology of the fruit body. The first effect of this lessening of the original acceleration of growth is the browning and thickening of the walls of the peripheral hyphae, which lose most of their protoplasm and fuse more or less to form a superficial pseudoparenchymatic crust or wall. This superficial blackening is probably caused by some sort of oxidation process which takes place in the poorly nourished peripheral hyphae. It is more rapid where the tissue is exposed to the air and advances centripetally as the stroma ages. It therefore appears first at exposed points, for example, where the stroma ruptures the periderm. In Phomopsis, in which the basal layers are often immersed in the bark, the ventral portions of the stroma are more protected and a number of them remain unblackened, resulting in the so-called incomplete wall characteristic of this form genus.

The factors governing the initiation of the conidial layers, although so far unknown, are the second set which determine the morphology of any given fruit body. The conidial locules are usually initiated by a plane of fission within an area of highly meristematic cells, richly filled with protoplasm, as described elsewhere (Myc., 19: 165). In Phomopsis this line of fission occurs within the stroma either at the center or toward the basal portion, or more or less parallel to the periphery, producing entirely inclosed locules. There may be initiated one or more such fission planes, giving one or more locules, which usually fuse before maturity. The exposed protoplasts bordering on this plane of fission grow out as conidiophores and abstrict the conidia. As conidial formation progresses the protoplasm of the fertile cells is used up, the cell walls are dissolved, and succeeding layers of cells, which are still in an active growing state, produce
more conidia. In this way the locules enlarge until the hymenial layers encroach upon the peripheral stromatic tissues, which are no longer physiologically able to produce conidia.

From these considerations it may be seen that the balance between the factors governing the continued production of meristematic conidial tissue and those controlling the blackening and deterioration of the peripheral tissues determine such morphological characters as the size and shape of the conidial cavity, amount of stromatic or "wall" tissue, and the size, shape, and blackening of the peripheral tissues of the stroma. If conidial formation is initiated while the stroma is in a young growing state, the cavity will be relatively large and the stromatic wall tissue slight. If conidial formation is delayed, the cavity will be smaller and the stromatic wall tissue thicker and more heavily blackened. Under some conditions, as those described for *D. tessella* (*Papers Mich. Acad. 8: 224*), in which conidial formation is delayed until after the cells of the stroma are more or less fused and isolated physiologically, the type of conidial formation may be altered and the conidia formed in a haphazard fashion throughout the stroma, in many cases endogenously, by the protoplast rounding up within the cell, as described by Von Höhnel for certain of the Sphaeropsideales.

Two types of conidia are produced in these locules. Usually the first formed are the stylospores of Nitschke or beta spores of Diedicke. These have been variously interpreted by different writers as functionless spermatia, conidiophores, or true conidia. They are mostly long-cylindric or filiform, straight or more commonly curved or hamate, one-celled, hyaline, have a relatively large nucleus, and are very difficult to germinate. The second type, the spermatia of Nitschke or alpha spores of Diedicke, are fusoid to elliptic, hyaline, one-celled, and germinate readily. The beta spores are produced as direct outgrowths of the hymenial cells. The alpha spores are generally borne on short or elongate conidiophores. Sometimes intermediate forms between these two types are found; they are more abundant in some species than in others. Some species, so far as is known, produce only one type of spore, which is usually the alpha type.

In the genus Apioporthe the stroma of the pycnidium is variously developed. The pycnidial locules arise by the simultaneous development of conidia from cells over a large area within the primordial stroma, without forming any definite hymenium. In *A. phomaaspera* this spore formation may take place by the breaking up of irregular masses of hyphae within the bark tissues (*Papers Mich. Acad. 8: 219*).
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Only one type of conidium occurs. This is fusoid or variable in shape, one-celled, and hyaline.

The genus Cryptodiaporthe contains a heterogeneous grouping, and the conidial stages are likewise of a variety of types. In *C. densissima* var. *spicata* the pycnidia are similar to those found in Apioporthe, whereas in *C. Aubertii* var. *Comptoniae* pycnidia containing two-celled, appendaged, hyaline conidia are formed.

Conidial stages of the genera Diaporthella and Diaporthopsis have not been obtained for study.

The entostromata or embedded stromatic portions, formed within the bark, are also the result of a rapid proliferation of vegetative stromatic hyphae within certain areas. Here again the factors that cause and regulate the formations of these areas are largely unknown. In some species this entostromatic development is very scant and scarcely perceptible, but in others it is prominent and forms well-defined and easily recognized differentiated areas. In others this tissue takes the form of a rich development of fungous mycelium, usually just about the perithecia. This is generally the case in the genus Cryptodiaporthe. In still other species, more commonly in Diaporthe, there is a slight development of fungous mycelium over more or less extended areas. The host tissue in these species is compacted and usually lighter in color than the surrounding tissues. In the genus Diaporthe the outer margins of this entostroma, both host and fungous tissue, become more or less blackened, much as in the exposed surfaces of many superficial stromata or sclerotia. On herbaceous stems, in which the entostromatic hyphae may penetrate through the surface layers, the blackened zone or rind is often visible on the surface of the substratum. Where there is a resistant periderm the zone is formed just beneath this tissue on the bark surface, or in other cases it may penetrate into the bark cortex. In fact, it must be considered an embedded stroma. The vegetative hyphae outside this region show a definite disintegrating or digestive action on the host tissues; they are, in other words, the nutritive hyphae. Inside the entostromatic areas, however, this digestive action is held in abeyance, and there is formed a more or less compacted stromatic mass consisting of host and fungous tissue, protected on the outer margins by the formation of the blackened rind of fungous and host tissue. This massing of the mycelium and the blackening of the outer layers, as in sclerotial or stroma formation, may be followed very clearly in agar cultures, where the same development occurs, but where the fungous hyphae may be more clearly distinguished.
The perithecial initials are formed within these entostromatic areas, which act as a nurse and protective tissue for their development. Here, again, this function of nutrition and protection of the perithecial fruit bodies is homologous to that of many other forms of stroma. The perithecial initials are first visible as minute spherical knots of intertwined hyphae. Definite coils of deeply staining hyphae, the “Woronin hyphae,” have been observed in Cryptodiaporthe galericulata and C. salicina. In C. salicina the primordial knots arise as definite, large, deeply staining, spirally coiled hyphae, which may be considered archicarps, although their nuclear behavior could not be followed.

Many primordia may be formed, but not all of them always mature. In agar culture many perithecia are initiated, in certain species, but only a few ever reach maturity and form ascospores. No evidence for heterothallism in the genus has been observed by the writer. On the other hand, perithecial fruit bodies with mature spores have been obtained from single-spore cultures. Miss Cayley (Journ. Genetics, 13: 353) advances evidence for heterothallism in Diaporthe perniciosa Marchall, but this evidence does not seem sufficient to the writer.

In some species the perithecia arise in no definite arrangement, but are scattered throughout the entostromatic areas. In others the perithecial primordia may be definitely oriented in groups, usually beneath an ectostroma which ruptures the overlying periderm and through which the perithecial necks are erumpent.

The perithecium has a definite wall and a more or less elongated neck. The length of the neck may vary within the same species, depending upon the moisture conditions, and this criterion should be used cautiously in separating species. Broad bandlike paraphyses are formed within the perithecium, but are soon evanescent, apparently acting as a nutritive tissue for the developing asci. The asci are usually clavate and sessile, and have a refractive ring of protoplasm in the thickened apical wall. This structure apparently does not function in the rupture of the ascus, however, since the basal portion of the ascus is evanescent and easily soluble in water, and soon releases the asci as an irregular mass in the interior of the perithecium. When immersed in water the spores escape as a result of the dissolution of the lower portion of the ascus.

The spores are usually biseriate in the ascus, but are uniseriate in certain groups of broad-spored species. They are fusoid-ellipsoid to oblong-ellipsoid, straight, or, in some species, inequilateral or definitely
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curved. They do not vary widely in size; most species have spores within the range of $8-20 \times 2-8 \mu$, and only a few exceed it. In some species there are definite appendages on the spores; in others these appendages are less obvious or are evanescent, apparently being a portion of the periplasm, which adheres to the spores and disappears with age. These evanescent appendages may indicate the origin of the more permanent type, for it is true that they occur in species simpler than those with definite appendages. Each cell of the spore contains one, two, or more globules of oil or reserve food material, which often become quite large and definite and which from time to time have been mistaken for cells. The spores germinate readily when mature, in most species within twenty-four hours, and apparently retain their viability up to a year or more.

In view of the developmental facts given above, it may be well to define the usage of certain morphological terms in the following consideration of the genus.

An “ectostroma” is a stromatic development of hyphae on the surface of the substratum, or on the surface of the bark-tissues just beneath the periderm or epidermis. It may give rise to a pycnidial locule within its interior, or remain sterile and merely function mechanically to rupture the overlying tissues.

An “entostroma” is a stromatic development within the substratum or the bark or woody tissues of the host. The perithecia are usually developed within this tissue.

A species is considered “stromatic” if it possesses either or both of the tissues mentioned.

An entostroma is termed “effuse” if it contains a number of scattered perithecia or more than one cluster of perithecia. It is termed “evenly effuse” if the dorsal zone or blackening does not penetrate into the bark tissues, or is absent. It is termed “pustulate-effuse” if the dorsal zone or blackening does penetrate into the bark tissue.

An entostroma is termed “isolate” if it contains only one definitely oriented group of perithecia. It is considered “differentiated” if it is macroscopically distinguishable in color or other character from the surrounding bark or woody tissue.

The species of the genera Diaporthe and Cryptodiaporthe may be regarded as having developed from such simple sphaeraceous genera as Gnomonia. Apioporthe, similarly, may be derived from Apiognomonia and Diaporthopsis from Gnomoniella as more or less saprophytic, stem-inhabiting lines of development. Diaporthella is
a genus with well-developed stromata which may be considered a
specialized line of development, arising, in all likelihood, from stro-
matic types of the genus Cryptodiaporthe.

In the genus Diaporthe the simpler forms have scattered or loosely
grouped perithecia which are not definitely oriented beneath the
ectostromata, but which may penetrate directly through the overlying
periderm or epidermis. These species have very little entostromatic
development and the blackened marginal zones are sometimes almost
entirely lacking. The most primitive types, perhaps, are found on
herbaceous stems as some of the simpler forms of D. Arctii. The
ectostromata occur in these species and often produce pycnidial
cavities, but these ectostromata are usually formed before the peri-
thechia and in no definite relation to them. In some of these species,
however, we find the formation of blackened zones which, in her-
baceous types, may occur dorsally as blackened areas upon the
surface and ventrally within the wood or pith. In D. pardalota the
development of these marginal zones is still greater, and in many
specimens they appear upon the surface as sharp marginal lines or
ridges. In D. cumorpha the development of the entostroma is even
more pronounced. Other species of this herbaceous group are dif-
ferentiated by their smaller spores or by their tendency to have
elongated ostioles, as in D. Phaseolorum and D. Chailletii.

On woody stems there is a tendency, even in the simpler forms
such as D. eres, for a more constant development of ectostromata and
for the perithecial necks to use the ruptures so formed as a means of
exit to the surface. It is probably this situation which brought about
the grouping of the perithecia and their orientation beneath the
ectostroma. Because of the protecting periderm there is also likely
to be less development of the dorsal blackened zone. Otherwise the
structure in such species as D. eres is very similar to that in the
D. Arctii group. The large number of host forms in both these species
have very similar spores measuring 10–15 × 2.5–4 μ. Throughout
the group we have species which become differentiated by such
characters as the narrow (D. Genistae), curved (D. dakotensis), or
appendaged (D. decedens) spores, limited area of the stromata (D. sta-
phylinina), or other characters. The general phylogenetic tendencies,
however, are the clustering of the perithecia beneath the ruptures
produced by the ectostromata, the dipping of the dorsal blackened
zones into the bark tissue, the delimiting of the perithecial groups,
and the elongation and increase in diameter of the spores. D. socia-
bilis indicates the first step in this development. Such species as
D. Peckii and D. megalospora show the elongation and curvature of the ascospores without much advance in the grouping of the perithecia or pustulate development of the dorsal zone; D. Ampelopsidis, the clustering of the perithecia and increase in spore length and diameter without the pustulate development of the dorsal zone. All combinations and degrees of these various lines of development may be found in different species. D. celastrina, D. acerina, D. oncostoma, and D. pennsylvanica illustrate successive steps in the pustulate development of the dorsal zone and the increase in length of the ascospores in a complex group, with many intergrading forms. D. tuberculosa, D. binoculata, and D. columbiensis illustrate a similar development, with an increase in spore diameter and a tendency toward the uniseriate arrangement of the spores in the ascus. Still another group of species, including D. strumella, D. fibrosa, D. Pruni, and D. Ilicis, show a tendency toward the formation of a well-developed, persistent ectostroma, along with an increase in the diameter of the spores.

The genus Cryptodiaporthe is a heterogeneous grouping, but gives a succession of forms from simple ones like C. salicella or C. densissima var. spicata, in which the perithecia are very loosely grouped and have very little stromatic development, to species, such as C. aculeans, which have a compact, definitely oriented stroma. One group of species in this genus shows a tendency toward the formation of definite conic ectostromata, for example, C. Aesculi, C. galericulata, and C. hranicensis. A second group has an increasing development of entostromatic mycelium in the bark about the perithecia (not strongly differentiated or outlined, however), resulting in rather large aggregates of perithecia with widely erumpent cortical disks. C. Aubertii, C. hystrix, and C. pyrrhocystis illustrate stages in this series.

Diaporthella contains only a few species which have strongly developed entostromata and broad erumpent disks and which might be considered the culmination of the development of the last series mentioned under Cryptodiaporthe.

Apioporthe, although it has only a few species, indicates a development from simple species such as A. apiospora and A. phomospora to species such as A. vepris, in which the perithecia tend to fuse with an entostromatic development to form a compact stroma, or to species such as A. utahensis or A. anomala, with a more loose entostromatic interperithecial stroma.

The genus Diaporthopsis includes a variety of species so closely
related to certain herbaceous types of the genus Diaporthe that they might be regarded as developed from them by the loss of the septum in the spore.

**DISTRIBUTION**

The genus Diaporthe is undoubtedly world-wide in its distribution. It has been reported frequently from Europe and North and South America, where intensive collecting in this group of fungi has been carried on. Occasional reports from various parts of the rest of the world, such as Japan, Indo-China, the Philippines, Java, Ceylon, Northern Africa, Kamchatka, Alaska, Greenland, and arctic Russia, have been made. The scarcity of collections off the beaten track of mycologists is very probably due to the fact that this type of fungus is not ordinarily picked up by the general collector.

The distribution of the species within the genus follows to a certain extent, although not entirely, the distribution of its host species. Unfortunately, Spegazzini's South American material has not been seen, so that no conclusions may be drawn in regard to distribution on that continent. In Europe and America, however, there are certain species which are common to both continents on the same genus of host plants. Such are *D. decedens* on Corylus, *D. tessella* on Salix, and *D. strumella* on Ribes. On the other hand, *D. eres*, which occurs on a large range of host plants, appears to be much more common in Europe; it is rather scattered, and on comparatively few hosts in America. The closely related species *D. spiculosa* and *D. medusae*, however, are equally abundant on these continents. In many cases the distribution of the species is limited by the range of the host to which it is restricted, as *D. binoculata* on Magnolia or *D. caryigena* on Carya in America, or *D. impulsa*, which is found only in those portions of North America where species of the section Sorbus of genus Pyrus occur. The fungus may, however, be limited to an area much more restricted than the range of its host. *D. prunicola* and *D. Pruni*, for instance, are limited to eastern North America and *D. syngenesia* on Rhamnus is limited to Europe. Other species have been carried from one continent to another with the host, as *D. oncostoma* on Robinia Pseudo-Acacia. There appear to be some closely related but distinct species on the same host genus on the two continents. Examples are *D. Evonymi* on Evonymus atropurpureus in America and *D. Laschii* on Evonymus europaeus in Europe; or *D. Carpini* on Carpinus in Europe and *D. Bakeri* on the same host in America. In the case of *D. leiphaemia* on Quercus in Europe,
which has a distinct variety *Raveneliana* (*D. Raveneliana* De Thüm, & Rehm) in America, this is particularly noticeable.

The collections from other parts of the world are too scattered to enable one to give many data on distribution.

There are also some interesting points regarding the distribution on hosts, for example, the limitation of *D. Peckii* to the poisonous species of *Rhus* (*R. toxicodendron* and *R. vernix*) and the occurrence of *C. aculeans* on the non-poisonous species of the same genus. *D. Pruni* on Prunus and *D. impulsa* on Sorbus illustrate closely related fungous species on hosts equally closely related. The group of similar but distinct species (*D. dubia, D. acerina, D. pustulata,* and *D. varians*) limited to various species of *Acer* in both Europe and America is particularly interesting.

Inasmuch as the classification, synonymy, and description of species of the genera here considered are in an unsettled and scarcely dependable state, all citations of hosts, distribution, and exsiccati in the following discussion are based upon material actually examined by the writer. The exsiccati cited, unless otherwise indicated, are those deposited in the Farlow Herbarium of Harvard University.

Exsiccati are cited under the species name appearing on the packet. The abbreviation "excl." indicates that the exsiccati which follow are excluded from the species under discussion, but not necessarily from the species name on the packet. Types, where seen, are indicated under the citations of exsiccati.

**KEY TO THE GENERA**

A. Spores 1-celled.............................. **DIAPORTHOPSIS**
A. Spores 2-celled............................
   B. Spores unequally 2-celled.............. **APIOPORTHE**
   B. Spores equally 2-celled
   C. Blackened zones present in the substratum..... **DIAPORTHE**
   C. Blackened zones not present in the substratum
   D. Disk strongly developed, widely erumpent, Diatrype-like.............................. **DIAPORTHELLA**
   D. Disk not as above.......................... **CRYPTODIAPORTHE**
II. DIAPORTHE Nit. Emend.

Perithecia formed within the substratum, erumpent to the exterior through an ectostroma or directly through the overlying tissues by means of a more or less elongated perithecial neck, scattered singly, irregularly clustered, or in definitely oriented groups, formed within an area of entostromatic development which shows a marginal blackening of the tissues, at least at some points. Asci clavate to clavate-cylindric, with a refractive ring in the thickened apical wall, sessile, soon freed from their attachment by dissolution of the basal portion and coming to lie free within the perithecium. Paraphyses broad, bandlike, present at first, but disappearing with maturity. Spores fusoid-ellipsoid to cylindric, straight, inequilateral or curved, two-celled, hyaline, sometimes appendaged, and biseriate to uniseriate in the ascus.

Two species, *D. leiphaemia* and *D. decedens*, are somewhat non-typical in showing no definitely blackened marginal zones. Such zones have been found in cultures of *D. decedens*, however, and *D. leiphaemia* manifests other characters which place it with this generic group rather than with any other.

The genus is here divided into two sections: the Effusae, in which the dorsal blackened zones do not penetrate into the bark tissues; and the Pustulatae, in which the dorsal zones do dip into the bark between the perithecial clusters.

As in any such separation of a natural group, there occur certain transitional forms. Some Effusae, as *D. sociabilis*, show a slight penetration of the dorsal zone. Again, certain Pustulatae may not show any such penetration, or may lack a dorsal zone where the perithecial clusters are crowded or confluent. A fairly representative collection of such species is needed for a sure determination of its character. In some pustulate species, as *D. acerina*, isolated perithecial groups may form an isolate type of stroma. This is not the case with effuse species, for here even limited entostromatic areas exhibit scattered perithecia. For this reason, and for the reason that species which constantly form isolate stromata are few, the isolate species are included in the Pustulatae.

When the variation of a species commonly overlaps two of these groupings, it is included in both sections of the key.
In the following key an attempt has been made to separate the species without reference to the host inhabited. Since in some groups there are many overlapping forms and since the host is often a great aid in identification, the host is given in parenthesis after each species.

**KEY TO THE SPECIES OF DIAPORTHE**

I. Perithecia scattered or clustered but, where clustered, with more than one group within an entostromatic area. Dorsal zone present or absent but, when present, *dipping not at all, or very slightly*, into the bark tissues. Ventral zone present or absent ........................................... Effusae

II. Entostromata pustulate-effuse; dorsal zone at least sometimes present, and then dipping into the bark between the perithecial groups, or, in some cases, with each perithecial cluster in a separate stromatic area. Ventral zones present or absent ........................................... Pustulatae

I. **EFFUSAE**

A. On herbaceous stems; perithecia separately erumpent or sometimes as groups of ostioles, not forming pustulate ruptures of the periderm as a result of entostromatic formations, surface of substratum often visibly blackened on the exterior

B. Spores 4–6.5 μ in diameter ......................... 8. D. LUPINI (Lupinus).

B. Spores 2–4 μ in diameter

C. Entostromata sharply margined by a blackened line or ridge, visible on the surface

D. Entostromata small, strongly developed, becoming pseudoparenchymatic, raised above the substratum, and heavily blackened ............. 7. D. EUMORPHA (Astragalus, Daucus, Vinca).

D. Entostromata not so strongly developed, various in size, shape, and surface blackening ......................... 6. D. PARDALOTA

C. Entostromata not sharply margined as above

D. Spores 8–15 (17) μ in length (up to 17 or 18 μ in D. Arctii var. Achilleae)

E. Spores 8–12 × 2–3.5 μ; ostioles often long-filiform, hairlike


F. Perithecia 320–480 μ in diameter

3. D. CHAILLETTII (Atropa)

E. Spores 10–17 × 2.5–4 μ; ostioles short, conic or spinelike

F. Ostioles separately erumpent

G. Perithecia small (120–200 μ in diameter); spores strongly curved and usually appendaged

5. D. DAKOTENSIS (Polygonum)

G. Perithecia 250–480 μ in diameter; spores not strongly curved nor appendaged .................. 1. D. ARCTII
THE GENUS DIAPORTHE

F. Perithecia more or less crowded; ostioles erumpent in loose clusters or masses
G. Perithecia and ostioles crowded or grouped and erumpent in loose clusters. No ventral zone, dorsal zone lacking, spores up to 18 μ in length

1. D. ARCTII var. ACHILLEAE (Achillea)

G. Perithecia in seriate clusters; ostioles erumpent in loose longitudinal clusters; usually no ventral zone, sparse dorsal blackening

2. D. LINEARIS (Solidago, Aster)

D. Spores 15–20 μ in length, more or less curved

9. D. SEMINSULPTA

A. On woody stems; perithecia scattered singly or in clusters, usually forming ectostromata which burst through the periderm, forming minute pustules, dorsal blackening usually concealed by the periderm

B. Spores 1.5–3 μ in diameter
C. Perithecia tending to be clustered in somewhat pustulately swollen areas

D. Surface of bark papillate-blackened; ostioles erumpent in a disklike fascicle ................. 24. D. PRUNICOLA (Prunus)

D. Dorsal zone not papillate, usually on wood surface; ostioles elongate, erumpent in loose clusters or singly

13. D. PULLA (Hedera)

C. Perithecia scattered singly; ostioles separately erumpent

D. Perithecia 160–280 μ in diameter; spores 2–3 μ in diameter, ectostromata limited in area ...... 15. D. SOCIATA (Benzoin)

D. Perithecia 320–480 μ in diameter; spores 1.5–2 μ in diameter

14. D. GENISTAE (Genista)

B. Spores with a diameter of 2.5 μ or more (some mature spores always showing a diameter of 3 μ or more)
C. Entostroma usually definitely limited in area (1–15 mm.)

D. Perithecia clustered in groups .......... 37. D. CARVIGENA (Carya)

D. Perithecia scattered singly
E. Spores 2.5–4 μ in diameter .......... 16. D. PERJUNCTA (Ulmus)

E. Spores 4–5 μ in diameter ...... 17. D. STAPHYLINA (Staphylea)

C. Entostromata not limited as above

D. Spores 9–15 μ in length (mostly 10–14 μ, never over 15), over 4 μ in diameter only in D. KOELREUTERIAE and D. HEDERAE
E. Spores 4–5 μ in diameter

F. Dorsal zone tenuous, irregularly pustulate

29. D. KOELREUTERIAE (Koelreuteria)

F. Dorsal zone as a heavy blackening of the surface

70. D. HEDERAE (Hedera)

E. Spores not over 4 μ in diameter (the following species are widely variable and difficult to separate)

F. Perithecia scattered irregularly or loosely grouped; ostioles erumpent separately or in small groups, entostroma effuse
DIAPORTHE

G. Ostioles short, conic to cylindrical, scattered

10. D. BRES

G. Ostioles often elongate, filiform, or sinuous, erumpent singly or in large irregular clusters

11. D. MEDUSAЕ

F. Perithecia usually grouped in definite clusters; ostioles erumpent collectively

G. Entostromata often limited in size (0.5-5 cm.); ventral zone definitely present (dorsal zone usually pustulate except where perithecial clusters are crowded)

28. D. BECKHAUSII (Viburnum, Betula, Elaeagnus, Menispermum, Cydonia, Halesia)

G. Entostromata not limited in size; ventral zone absent; perithecia definitely clustered; ostioles erumpent as compact disks

H. Spores fusoid, constricted, 2.5-4 μ in diameter

12. D. SFICULOSA (Sambucus, Rhus, Juglans, Sorbus, Symphoricarpos)

H. Spores cylindric, not constricted, 2-3 μ in diameter

26. D. BAKERI (Carpinus)

D. Spores 12-18 μ in length (immature and smaller spores may be within the range of the last group, but there are always some mature spores over 15 μ in length

E. Perithecia definitely clustered within pustulate swellings of the entostroma and erumpent as compact disks of ostioles (dorsal zone on surface, however)

F. Disks 0.1-0.5 mm. in diameter

25. D. AMPELOPSIDIS (Psedera)

F. Disks 0.5-1 mm. in diameter

23. D. ORTHII (Ulmus)

E. Perithecia irregularly scattered or loosely clustered

F. Spores often curved

22. D. OPULII (Viburnum)

F. Spores straight

G. Spores 3-4.5 μ in diameter

H. Ventral zone present in the wood

19. D. SAROTHAMNI (Sarothamnus, Solanum, Baccharis)

H. Ventral zone absent or, at most, only lateral

18. D. SOCIABILIS (Morus, Sambucus)

G. Spores 4-6.5 μ in diameter

H. Ventral zone present in the wood

21. D. EVONYMI (Evonymus)

H. Ventral zone absent

I. Perithecia 240-400 μ in diameter, irregularly scattered

20. D. VIBURNI (Viburnum, Spiraea)

I. Perithecia 480-720 μ in diameter, tending to be clustered in small groups

27. D. DECEDENS (Corylus)
THE GENUS DIAPORTHE

II. PUSTULATAE

Entostromata pustulate-effuse; ventral zones either present or absent, dorsal zones at least sometimes present and then dipping into the tissues of the bark or wood between perithecial clusters or, in some cases, each perithecial cluster isolated within a separate stroma. (In some intermediate species the dorsal zone is irregularly pustulate or may dip into the bark only occasionally and be absent from most of the surface; such species are represented in both keys.)

A. Ectostromata strongly developed as a conic or pulvinate grayish disk through which the perithecial necks are erumpent
   B. Spores not over 3.5 μ in diameter (D. impulsa and D. leiphaemia of the next group have spores 2.5-5.5 μ)
      C. Entostromata dark-colored; dorsal zone distinct
         57. D. SYNGENESIA (Rhamnus)
      C. Entostromata not dark-colored; dorsal zone faint
         D. Stromata pustulate-effuse; spores inequilateral
            58. D. STRUMELLA (Ribes, Ptelea)
      D. Stromata isolate, limited in area (2-3 mm.); spores straight
         46. D. VALSIIFORMIS (Alnus)
   B. Spores more than 3.5 μ in diameter (2.5-5.5 μ in D. impulsa and D. leiphaemia)
      C. Ventral zone definitely present within the bark or wood
         D. Entostromata isolate
            65. D. TALEOLA (Quercus)
      D. Entostromata pustulate-effuse
         E. Spores 15-20 × 4-5.5 μ, with evanescent appendages
            59. D. PRUNI (Prunus, Betula)
         E. Spores 13-18 × 2.5-5.5 μ, not appendaged
            60. D. IMPULSA (Sorbus)
      C. Ventral zones not present in the wood (a single American specimen of D. detrusa has shown such a zone)
         D. Entostromatic areas dark-colored; spores 11-14 (16) × 6-8 μ
            61. D. FIBROSA (Rhamnus)
      D. Entostromatic areas light-colored
         E. Stromata isolate; dorsal blackening, if any, on surface only
            63. D. LEIPHAEMIA (Quercus)
         E. Stromata pustulate-effuse; dorsal zones dipping deeply into the bark
            F. Spores 15-17 × 5-7 μ; asci 60-80 × 9-12 μ
               62. D. DETRUSA (Berberis, Mahonia)
            F. Spores 12-16 (19) × 6.5-9 μ; asci 90-120 × 10-20 μ
               54. D. ILCIS (Ilex)

A. Ectostromata poorly developed (ostioles often erumpent in dense, disklike clusters, but through the blackened surface of the bark and not through a well-developed ectostroma)
   B. Spores not more than 5.5 μ in diameter
      C. Spores oblong, ends rounded
         56. D. CARPINI (Carpinus)
      C. Spores fusoid-ellipsoid, ends tapered
D. Entostromata limited in area or isolate (1-20 mm.)
E. Perithecia scattered singly... 17. D. staphylina (Staphylea)
E. Perithecia definitely clustered
F. Spores 2.5-3.5 μ in diameter... 46. D. valseiformis (Alnus)
F. Spores 3-5 μ in diameter, or more
G. On Carya .................. 37. D. caryigena (Carya)
G. On Acer
H. Nearly always isolate, often with a marginal line or ridge appearing on the surface (European) ... 45. D. purulata (A. Pseudoplatanus)
H. Only occasionally isolate, generally pustulate-effuse; no marginal line or ridge on surface (American) ... 33. D. acerina (A. spicatum)

D. Entostromata not limited in area
E. Spores 2-2.5 μ in diameter .......... 13. D. pulla (Hedera)
E. Spores over 2.5 μ in diameter
F. Spores appendaged
G. Periderm adherent; disk not widely erumpent
49. D. laschi (Evonymus)
G. Periderm not adherent; disk widely erumpent as a broad blackened pustule.... 50. D. oxyspora (Ilex)
F. Spores not appendaged (The following group contains a large number of similar and overlapping species which are difficult to key out. Species not found under one spore length or heading, or intermediate between two headings, should be keyed under both for certainty.)
G. Spores 10-15 μ in length
H. Spores not over 4 μ in diameter
I. Perithecia loosely grouped with irregularly pustulate dorsal zones
J. Ventral zones present ... 28. D. beckhausii
J. Ventral zones absent .... 12. D. spiculosa
I. Perithecia definitely clustered in distinct pustulate areas
J. Dorsal zone narrow, fine; pustulate areas small (0.5-1 mm. in diameter)
36. D. fagi (Fagus)
J. Dorsal zone coarse, distinct; pustulate areas broader, not on Fagus
K. Asci 40-45 × 5-6 μ, on Aralia
31. D. araliaceae (Aralia)
K. Asci 47-60 × 7-10 μ, on Celastrus
32. D. celastrina (Celastrus)
H. Spores 4-5 (5.5) μ in diameter
I. Dorsal zone fine, irregularly pustulate, asci 47-54 × 7-9 μ
29. D. koelreuteriae (Koelreuteria)
THE GENUS DIAPORTHE

I. Dorsal zone coarse, definitely pustulate; asci 60-73 x 7-10 μ .... 33. D. ACERINA (Acer)

G. Spores 13-25 μ in length

H. Spores more or less curved or inequilateral

I. Spores 13.5-19 x 4-6.5 μ

47. D. VARIANS (Acer)

I. Spores 16-23 x 2.5-5 μ

J. Ventral zones definitely present in the wood ................ 41. D. MELANOCARPA (Pyrus, Cornus, Amelanchier)

J. Ventral zones not present in the wood or present only at the lateral margins of the entostroma

K. Dorsal zone dipping irregularly into the bark, perithecia irregularly clustered .. 40. D. HICKORIAE (Carya)

K. More definitely pustulate, perithecia more definitely clustered, on Rosaceae ............ 38. D. PENNSYLVANICA (Prunus, Aronia)

H. Spores straight

I. Ostiolar disks large, elongate, 1.5-6 x 1-2 mm.) .. 39. D. CARAGANAE (Caragana)

I. Ostiolar disks smaller, not elongate (0.5-1.5 mm. in diameter)

J. Dorsal zone fine, narrow; pustulate areas small (0.5-1 mm. in diameter), on Fagus

36. D. FAGI var. LONGISPOR A (Fagus)

J. Dorsal zone coarse, distinct; pustulate areas broader, not on Fagus

K. On Amorpha

35. D. AMORPHAE (Amorpha)

K. On Robinia

34. D. ONCOSTOM A (Robinia)

K. On Cornus ... 43. D. SUBLUTEA (Cornus)

K. On other hosts

L. Spores 2.5-4 μ in diameter

30. D. PADI (Prunus, Rhamnus, Aesculus, Quercus, Sorbus)

L. Spores 4.5-5.5 μ in diameter

42. D. CRATAEGI (Crataegus)

G. Spores over 25 μ in length

66. D. PECKII (Rhus toxicodendron, Rhus vernix)

B. Spores reaching a diameter greater than 5.5 μ (3.5-7 μ in D. dubia and D. megalospora)

C. Spores appendaged

D. Spores 17-25 μ in length ............ 65. D. TALEOLA (Quercus)

D. Spores 35-55 μ in length ............ 64. D. TESSELLA (Salix)
DIAPORTHE

C. Spores not appendaged
D. Spores inequilateral or curved
   E. Spores 13–19 \( \mu \) in length ............... 47. D. VARIANS (Acer)
   E. Spores 24–39 \( \mu \) in length ............... 69. D. TILIACEA (Tilia)
D. Spores straight
   E. Spores not over 13 \( \mu \) in length .... 52. D. ALIENA (Crataegus)
   E. Some spores, at least, over 13 \( \mu \) in length
   F. Spores not over 20 \( \mu \) in length
      G. Ventral zone present as a broad, brownish, discolored band ............... 48. D. INAEQUALIS (Cytisus, Amorpha, Genista)
      G. Ventral zone, when present, a sharp definite blackened zone
      H. Spores not over 7.5 \( \mu \) in diameter
         I. Ventral zone definite and complete beneath, on Amelanchier
            51. D. TUBERCULOSA (Amelanchier)
         I. Ventral zone (except in isolate stromata) usually incomplete beneath, on Acer
            44. D. DUBIA (Acer saccharum)
      H. Some spores, at least, over 7.5 \( \mu \) in diameter
         (6.5–9 \( \mu \))
         I. Ventral zone lacking or faint beneath
            54. D. ILCIS (Ilex verticellata)
         I. Ventral zone definite beneath
            J. Stromata usually isolate with only one group of perithecia
               53. D. BINOCULATA (Magnolia)
            J. Stromata pustulate-effuse, several groups of perithecia in each stromatic area
               55. D. COLUMBIENSIS
F. Spores over 20 \( \mu \) in length
   G. Spores not over 6 \( \mu \) in diameter (3.5–6 \( \mu \))
      67. D. MEGALOSPORA (Sambucus)
   G. Spores over 6 \( \mu \) in diameter (6–9 \( \mu \))
   H. Stromata pustulate-effuse
      I. Spores 20–27 \( \times \) 6.5–8 \( \mu \), straight
         68. D. TETRAPTERA (Halesia)
      I. Spores 24–39 \( \times \) 6–9.5 \( \mu \), often curved
         69. D. TILIACEA (Tilia)
   H. Stromata isolate ........ 65. D. TALEOLA (Quercus)
1. DIAPORTHE ARCTII (LASCH) NIT.

Pyr. Germ. 268. 1867.

(Plate I, Figs. 1-5)

Entostromata normally widely effuse and indefinitely outlined. Appearing on the surface as slightly, irregularly, or heavily blackened, widely effuse or confluent areas, or merely as numerous conic or spine-like ostioles erumpent singly or in loose groups. Dorsal blackened zones usually developed on the bark surface, but often masked by the overlying epidermis. Ostioles conic, cylindric, or spikelike, erumpent singly or in small loose groups. Ventral zone present or absent, usually present at least at the margins of the fruiting areas. Perithecia spheric or somewhat flattened, 280–480 × 160–320 μ, in some specimens sparsely and singly scattered, in others crowded or tending to be clustered in small groups, usually buried in the wood, but where the bark is well developed found in that tissue also. Sometimes forming small pustulate areas on the surface. Asci clavate, with a refractive ring in the apex, (40)47–60 × 7–10 μ. Spores biseriate, fusoid-ellipsoid, straight or more or less inequilateral or curved, two-celled (often tardily septate), hyaline, constricted at the septum when mature, (11)12–15(17) × 2.5–4 μ.

This species, which corresponds to D. eres Nit. on woody stems and which is probably the primitive type from which the D. eres group is derived, is found on a large number of herbaceous hosts. The entire range of variation on these several hosts is quite wide, and in certain cases the occurrence on a given host is more or less characteristic, but in general, especially when a large amount of material is examined, the ranges of variation on the respective hosts overlap to such an extent that it is impossible to separate any clear-cut species on purely morphological grounds. Such characters as length of ostiole, position and size of perithecia, blackening of the surface of the substratum, presence or absence of a ventral zone, and slight variations in size or shape of the ascospores may apply very well when only one or a few specimens are concerned, but as larger and larger series of specimens from various hosts are examined these differences disappear in a maze of transitional forms.

On the other hand, the occurrence on certain hosts, although lying within the specific range of variation, may be more or less characteristic. When they seem to be valid varieties, they have been indicated. As our knowledge of these host variations becomes
PLATE I

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(Spores X 3000; 1 mm. = 1 μ)

D. linearis (Nees) Nit. 8. Stroma 9. Ascospores
D. Phaseolorum (Cke & Ell.) Sacc. 10. Stroma 11. Ascospores
more nearly complete and more accurate, other varieties or even valid species may be segregated. For this reason the appearance and also the synonymy of the species are given below for each host of which material has been examined or upon which a described species has been based. The line of demarcation between this and certain other closely related species, as *D. erez* Nit. and *D. linearis* (Nees) Nit., must, as a result of the situation just described, remain purely arbitrary.

Nitschke recognized both the similarity and the diversity of these forms on different hosts and attempted to separate several species. His *D. Arctii* (Lasch) Nit., which is the typical form on Arctium, was characterized by the inequilateral non-constricted spores. As a matter of fact, both straight and inequilateral spores are found in this form on Arctium as well as in the one on Achillea, which is Nitschke’s *D. orthoceras* and which is supposed to be distinguished by its straight constricted spores. Nitschke’s *D. immersa* is an immature stage of *D. Arctii*. *D. inquilina* (Wallr.) is a form on Umbelliferae, and its identity (see under Umbelliferae) is somewhat doubtful. The description of *D. Tulasnei* Nit. suggests *D. pardalota* (Mont.) Fck., but material in Nitschke’s Herbarium is typical of *D. Arctii* (see form on Urtica).

**Forma Typicus**

*Sphaeria Arctii* Lasch., Herb. Myc. 1046. 1846.
*Sphaeria immersa* Fck., Fung. Rhen. 1795. 1866.
*Diaporthe immersa* (Fck.) Nit., Pyr. Germ. 274. 1867.

Surface of substratum heavily blackened over wide areas. Ostioles numerous, spinelike with conic apices, separately erumpent. Ventral zone definitely present in the wood. Perithecia singly scattered in the wood. Spores straight or inequilateral, 11-15 × 2.5-3.5 μ.

**Hosts:** *Arctium spp.*

**Distribution:** England; France; Germany; Hungary; Poland; Ontario; Illinois; Michigan (probably most of the United States and Canada).

**Exsiccati:** *(Sphaeria Arctii)* Rab., Herb. Viv. Myc. 1046 (type).
*(Sphaeria immersa)* Fck., Fung. Rhen. 1795 (type).
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Collections: (Diaporthe immersa) Nit. Herb. 23, labeled "Sph. Arctii and stylospores No. 13 on Bardanae"; Sph. rostellata Fr.
(Diaporthe Arctii) Nit. Herb. 22, labeled "Sph. Arctii n. sp. Lasch" (type); labeled "Sph. rostellata on Lappa"; Wiltinghüge, April, 1867; Fuisting; Steinenberge, March, 1867; Weh. Herb., Wehmeyer 144, 144b, 142.

Conidial connections
Given by Saccardo as conidial stage of D. Arctii. Alpha conidia 7 x 3-3.5 μ; "basidia" 25 x 1.5 μ. Cultural connections by Wehmeyer (Papers Mich. Acad., 6: 590). Alpha conidia fusoid, 8-10 x 2-2.5 μ; beta conidia filiform-hamate, 18-25 x 1 μ.
Phoma immersa Sacc., Syll. 3: 132. 1884.
Given by Saccardo as the conidial stage of D. immersa. Conidia described by Nitschke (Pyr. Germ. 270) as follows: spermatia fusiform, 6-7 x 2-2.5 μ; stylospores filiform, curved, 34 x 1 μ.

Var. Achilleae (Auers.), comb. nov. (Plate I, Figs. 6-7).
Sphaeria orthoceras Fr., Elench. Fung. 2: 97. 1828.
Diaporthe orthoceras (Fr.) Nit., Pyr. Germ. 270. 1867.

Dorsal zone usually present as a blackening of the bark surface, but largely obscured by the overlying epidermis and appearing only as a slight discoloration of the surface. Ventral zone entirely lacking. Perithecia usually crowded or occasionally clustered, usually just beneath the surface and often forming small pustulate swellings on the surface. Spores 11-15(17) x 2.5-4 μ, straight or inequilateral.

Hosts: Achillea Millefolium; A. tanacetifolia.
Distribution: France; Germany; Poland.
(Diaporthe linearis) Roum., Fung. Gall. 5232.

This variety on Achillea represents an extreme form of D. Arctii, with more or less seriatly crowded perithecia and scant dorsal and ventral blackenings, which grades off into D. linearis.
Sphaeria orthoceras Fr. is considered by Nitschke a doubtful
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synonym of this form on Achillea, which he described from Auerswald's Sph. Achilleae. Hence the name Achilleae Auers. is retained.

Conidial connections


Conidia described by Nitsche (Pyr. Germ. 270) as follows: "spermatia" fusiform, 8-10 × 2.5 μ; "stylospores" filiform-hamate, 26 × 1 μ. Saccardo gives the alpha conidia as 9-10 × 2.5-3.5 μ.

Besides the preceding rather distinct host varieties the following intermediate host forms, with various combinations of characters, may be indicated:

On Acanthus

Sphaeria picea Dur. & Mont., non Pers., Fl. Algiers, 484. 1850.

Surface heavily blackened over wide areas. Ostioles short-cylindric, singly erumpent. Ventral zone definite within the wood. Perithecia 320-360 × 200-280 μ, scattered singly. Spores 12-14 × 2.5-3.5 μ, straight or inequilateral.

Host: Acanthus mollis.
Distribution: Algiers.
Exsiccati: (Diaporthe picea) Maire, Myc. Bor.-Afr. 216.

The Sphaeria picea of Persoon, on Atropa, is probably Diaporthe Chailletii. Saccardo cites Montagne's Sph. picea as the basis of his D. picea (Pers.) Sacc. Sph. picea Dur. & Mont. is given as occurring also on Magydaris tomentosa, Ferula, and Foeniculum. The form on these umbelliferous hosts may be the same as that usually occurring on hosts of that family, but no material has been seen.

On Actinomeris

Surface irregularly blackened. Ventral zone definite in wood. Perithecia scattered singly, as on Arctium.

Host: Actinomeris squarrosa.
Distribution: Indiana.
Exsiccati: (Diaporthe orthoceras) Fink & Fuson, Asc. Ind. 365.

On Ambrosia

Surface of bark blackened, but more or less masked by the periderm. Ventral zone present within the wood. Perithecia often crowded. Spores 12-15(17) × 2.5-3.5 μ.
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Host: *Ambrosia trifida*.
Distribution: Louisiana.
Exsiccati: *(Diaporthe Arctii)* Ell. and Ev., N. A. F. 1793.

On Anthemis

Surface of bark blackened, but usually masked by the epidermis. No ventral zone. Perithecia singly erumpent. Spores 13-15 × 2.5-4 μ, occasionally inequilateral.

Host: *Anthemis tinctoria*.
Distribution: Germany.

On Apocynum

*Diaporthe Asclepiadis* Ell. & Ev. f. *Apocyni* Dear., in *N. Y. M. Herb.*

Perithecia 230 μ in diameter, grouped in small clusters of 2-5, but separately erumpent and showing on the surface as minute blackened spots 0.5 mm. in diameter. There is no other dorsal blackening, and no ventral zone occurs. Asci 37-45 × 6.5 μ. Spores 10-13 × 2.5 μ.

Host: *Apocynum androsaemifolium*.
Distribution: New York.

Apparently this form has never been published. The structure is very simple, and the form might be considered a Gnomonia if it were not for the blackening above the perithecia.

On Artemisia

*Diaporthe grammodes* (De Not.) Sacc., *Syll.* 1: 650. 1882.

Dorsal blackening continuous or irregular on the bark surface, but usually masked by the periderm. Ventral zone present or absent. Perithecia scattered singly or sometimes loosely grouped. Spores 12-14 (16) × 2.5-4 μ.

Hosts: *Artemisia Absinthii*; *A. vulgaris*.
Distribution: Belgium; France; Germany; Italy; Moravia; New Jersey.

(Diaporthe Arctii) Syd., Myc. March. 3636; Rehm, Asc. 1184.

(Diaporthe grammodes) Roum., Fung. Gall. 2571.

Both exsiccati of D. grammodes (Herb. Myc. 1940 and Fung. Gall. 2571) have only old decayed perithecia that contain no spores, but De Notaris’ figures show typical immature spores of D. ews. The dorsal blackening in these two specimens occurs rather locally above the perithecia.

Type material of D. Ludwigiana has not been seen, but in the original description Rehm’s Asc. 1184 of D. Arctii var. Artemisiae is given as this same species. D. Ludwigiana, it is stated, differs from D. Arctii in the slightly developed entostroma and in the absence of any ventral zone. As has already been pointed out, there is a wide variation in the presence and absence of this ventral zone not only in host forms but often in one and the same collection, so that until many more definite data are at hand it is a hopeless task to try to separate these minor variations or to determine which are valid differences.

On Asclepias


Surface of bark heavily blackened, but blackening often more or less concealed by the overlying epidermis. Blackened areas limited in extent (1–20 mm.), irregular in shape, confluent, or more widely effuse. Ostioles usually short, occasionally somewhat elongated. Ventral zone present just within the wood. Asci 50–55 × 9–10 μ. Spores 9–13 × 3–4 μ.

Host: Asclepias tuberosa.

Distribution: New Jersey.


This form is characterized by the more spotlike character of the surface blackening and the short broad spores, although the copy of N. A. F. 1195 in the Farlow Herbarium shows an evenly effuse blackening over wide areas.

Conidial connections


Suggested by Bubak as the conidial stage of D. Asclepiadis. Alpha conidia
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spindle-shaped, 9-13 × 2.5-3.5 µ. Beta conidia cylindric, curved, 20 × 1.5-2 µ.

On Baptisia


Surface of bark more or less blackened. Erumpent as barely visible short, conic ostioles, 160–200 × 120 µ. Ventral zone definite within wood. Perithecia small, 240–320 × 160–240 µ, widely scattered, singly erumpent. Spores 10.5–12 × 2.5–3 µ, slightly constricted, straight.

Host: Baptisia tinctoria.
Distribution: New Jersey.
Collections: Farlow Herb., ex Ellis Herb., Nov. 6, 1881; Riksmuseet, Stockholm, Rehm Herb., 3650, Newfield, New Jersey (authentic).

Rehm gives the asci of this species as often four-spored. The type material collected by Ellis shows only decayed perithecia, and no asci were seen. In the rather small perithecia and spores this form approaches D. Genistae Rehm.

On Brassica


Surface heavily blackened, somewhat raised above the surrounding areas. Ostioles short, stout-conic, singly erumpent. Ventral zone definite. Perithecia scattered singly or crowded. Spores 11–13 × 2.5–3.5 µ.

Host: Brassica sp.
Distribution: England.
Collections: Kew Herb. (Berkley Herb.), April 17, 1875 (type).

On Cannabis

Surface blackening more or less broken up into smaller areas. Ventral zone present. Perithecia singly scattered. Spores 10–12 × 2.5–3 µ.

Host: Cannabis sativa.
Distribution: Italy.
Exsiccati: (Diaporthe Tulasnei) Sacc., Myc. Ital. 91.
On Carduus


Host: Carduus acanthoides.

Distribution: Moravia.


On Centaurea

Surface of bark variously blackened, often more or less masked by epidermis. Ventral zones present or absent. Perithecia often thickly but singly scattered, sometimes causing slight pustulate swellings. Spores 12–16 × 2.5–4 μ, sometimes slightly inequilateral.

Host: Centaurea Jacea.

Distribution: Germany.

Exsiccati: (Diaporthe orthoceras) Rehm, Asc. 1185; Syd., Myc. March. 3735.

On Chenopodium

Sphaeria euspina Cke. & Ell., Grev. 5 : 93. 1877.
Diaporthe euspina (Cke. & Ell.) Sacc, Syll. i: 659. 1882.

Surface more or less blackened and roughened by the numerous separately erumpent, spinelike ostioles. Ventral zone present or absent. Perithecia scattered or crowded, 320 × 240 μ. Spores 12–15 × 2.5–4 μ.

Hosts: Chenopodium album; Ch. ambrosioides.

Distribution: New Jersey; New York.

Collections: (Sphaeria euspina) Farlow Herb., ex Ellis Herb., Chenopodium album, Newfield, New Jersey (type?), and Chenopodium, Jan. 12, 1878: excl. Farlow Herb., ex Ellis Herb., Mulgedium, April, 1878, and potato vines, Aug. 1878.


On Chrysanthemum

Diaporthe eburensis Sacc., Mich. 2 : 60. 1880.

Surface blackened over wide areas. Ostioles short-conic, singly erumpent. No ventral zone seen, but given in description as present. Perithecia thickly scattered. Spores described as 15–16 × 4 μ.
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Host: Chrysanthemum vulgare.
Distribution: France.
Exsiccati: (Diaporthe eburensis) Roum., Fung. Gall. 5428.

The copy of Fung. Gall. 5428 in the Farlow Herbarium shows only a Phoma-like imperfect stage with allantoid conidia 4 x 1 μ. The copy of the same exsiccati in the New York Botanical Garden, however, shows typical stromata of D. Arctii, as given in the description.

On Cichorium

Surface somewhat blackened. No ventral zone. Perithecia scattered. No ascospores seen.

Host: Cichorium Intybus.
Distribution: Switzerland.
Exsiccati: (Diaporthe orthoceras) Rehm, Asc. 523.
Conidial connections
Conidia seen on Rehm, Asc. 523, were as follows: alpha conidia fusoid, 7-8 x 2-2.5 μ; beta conidia filiform-hamate, 23-25 x 1 μ.

On Cirsium

Surface of bark heavily blackened, but often masked by overlying epidermis. Ventral zone in wood or along pith. Perithecia scattered singly. Spores 12-14 x 2.5-3.5 μ, sometimes slightly inequilateral.

Host: Cirsium eriophorum.
Distribution: Germany.
Exsiccati: (Diaporthe Arctii) Kze., Fung. Sel. 133.

On Delphinium

Surface becoming heavily and evenly blackened over wide areas of the entire stem. Ostioles thickly scattered, short, stout, spinelike. Ventral zone usually present, within the wood. Spores 13-15 x 3-4 μ, short-ellipsoid at first, becoming fusoid, somewhat curved.

Host: Delphinium Ajacis.
Distribution: North Carolina.

On Desmodium

Sphaeria desmodiana Cke. & Ell., Grev. 6: 93. 1878.
Diaporthe Desmodii (Pk.) Sacc., Syll. 1: 691. 1882.
Diaporthe desmodiana (Cke. & Ell.) Sacc., Syll. 1: 692. 1882.

On surface as scattered, singly erumpent, conic, or somewhat seriately clustered and elongated ostioles. Perithecia 230-440 x 160-200 μ, scattered singly or seriately grouped in the bark or woody tissue. Surface of bark sometimes blackened above the perithecia; at other times no blackening present. No ventral zone. Asci clavate, 23–40 x 5.5–7 μ. Spores 8–12 x 2.5–3 μ.

Hosts: Desmodium spp.
Distribution: New Jersey; New York.
Collections: (Sphaeria desmodiana) Farlow Herb., ex Ellis Herb., Desmodium, Newfield, New Jersey (type?).
(Diaporthe Desmodii) N. Y. M. Herb., Garrison's, June, Peck (type).

This form is similar to that on Achillea, but has smaller spores. It is also transitional to D. linearis.

On Dorycnium

Dorsal blackening scarcely visible on surface. Ostioles separately erumpent through minute conic swellings caused by the perithecia. No ventral zone present. Perithecia 320–400 x 160–200 μ, scattered singly. Asci 47–54 x 6–7 μ. Spores 11–12 x 2.5–3.5 μ.

Host: Dorycnium suffruticosum.
Distribution: Moravia.
Exsiccati: (Diaporthe dorycnea) Petr., Fl. Boh. et Mor. 1585.

Petrak's specimen, from which the description is taken, is not the D. Dorycnii of Fabre, which is given as having spores 15–27 x 4–6 μ.

On Erigeron

Surface of bark irregularly blackened, but usually masked by the epidermis. Ostioles conic to somewhat elongate-cylindric, erumpent singly or in loose clusters, sometimes somewhat seriate. No ventral zone. Perithecia 240–320 x 160 μ, crowded or loosely grouped. Asci 35–40 x 9–11 μ. Spores 11–15 x 2.5–4 μ, often inequilateral.

Hosts: Erigeron annuus; E. canadensis.
Distribution: Germany; New Jersey.
Exsiccati: (Diaporthe orthoceras) Syd., Myc. March. 3578.
(Diaporthe incrustans) Ell. and Ev., N. A. F. 1194.
Collections: (Diaporthe aorista) Ev. Herb. 176.57.
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This form on Erigeron is also very similar to var. Achilleae, and approaches D. linearis.

On Eupatorium

Irregular blackened areas on surface. Ostioles separately erumpent, spinelike, conic. Perithecia scattered singly in bark or wood. Ventral zone present or absent. Spores 10–12 × 2.5–3.5 μ.

Host: Eupatorium cannabinum.
Distribution: Italy; Moravia.
Exsiccati: (Diaporthe orthoceras) Sacc, Myc. Ven. 667.
(Diaporthe trinucleata) Petr., Fl. Boh. et Mor. 43.

On Galactites

Surface of bark blackened, color visible on surface only where epidermis is removed. Ventral zone along pith. Ostioles stout-cylindric, separately erumpent. Perithecia scattered. Spores straight, 11–12 × 2.5–3.5 μ.

Host: Galactites tomentosa.
Distribution: Algiers.

On Galium


Surface irregularly blackened or appearing merely as blackened spots caused by the apices of the ostioles. Ostioles short-cylindric. Perithecia 320–480 × 160–300 μ, scattered singly or in loose groups and causing slightly prominent papillate swellings on the surface. Surface of the bark blackened about the perithecia and extending for a slight distance beyond. Ventral zones rarely present. Spores usually 11–15 × 2.5–4 μ, but often reaching a length of 18 μ.

Hosts: Galium Mollugo; G. Schultesii.
Distribution: Luxemburg; Moravia.

The description is taken from the type of Gnomonia molluginis Feltg., which both Rehm and Von Höhnel consider the same as
D. mazzantioides. This form on Galium resembles var. Achilleae in the grouped perithecia and longer spores, the forms on Ononis and Tragapogonis in the papillate-prominent perithecia, and the form on Tragapogonis in the occasional presence of the ventral zone.

On Helianthus

Dorsal blackening present or absent. Entostromatic areas usually limited. Ventral zone present. Perithecia scattered singly. Spores straight or inequilateral, 11–15 (16) × 2.5–4 μ.

Hosts: Helianthus annuus; H. giganteus.

Distribution: Italy; Ontario.


On Heliopsis

Surface of bark blackened; irregular blackenings appearing on surfaces of stems. Ventral zones present or absent. Ostioles short, barely erumpent. Perithecia scattered. Spores 13–16 (18) × 2.5–3.5 μ.

Host: Heliopsis sp.

Distribution: Illinois.


On Helleborus


What is apparently type material (Roum., Fung. Gall, 3235) of D. Therryana on Helleborus foetidus, in the Farlow Herbarium, shows only sterile blackened carbonaceous stromata which do not belong to a Diaporthe, but to judge from the original description quoted above, this species is apparently a form of D. Arctii, possibly near D. Chailletii.

Conidial connections


Given by Traverso as the conidial stage of D. Therryana, with conidia ovoid-oblong, 8–10 × 3–4 μ, and “basidia” uncinate, 20–24 × 1–1.5 μ.

On Labiatae

Sphaeria inquilina Desm., non Wallr., Pl. cr. Fr. 1, 2066. 1850.

Sphaeria (Diaporthe) Labiatae Cke., Grev. 5: 63. 1876.
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Surface usually blackened over wide areas. Ostioles separately erumpent, numerous, short-cylindric, or merely papillate. Ventral zone usually present along pith. Perithecia scattered singly. Spores usually long and narrow, non-constricted, tardily septate, 12–15 × 2.5–3.5 μ.

Hosts: Melampyrum nemorosum; Prunella vulgaris.

Distribution: France; Italy; Moravia; New Jersey.

Exsiccati: (Sphaeria inquilina) Desm., Pl. cr. Fr. I, 2066 (type); II, 1766.


Collections: (Diaporthe Labiatae) Kew Herb. (Cooke Herb.) Dinmore (type).

The spores of this form on Labiatae are very tardily septate and are usually found in the one-celled condition. They are four-guttulate, however, and are occasionally found septate. In this respect this form is very similar to the form on Umbelliferae and to Diaporthopsis Angelicae.

Conidial connections


Given by Saccardo (Syll. 3: 130) as the conidial stage of Diaporthe Desmazierii, with alpha conidia fusoid, 10–12 × 3.5–4 μ, and “sterigmata” hamate, 20–24 × 1 μ. Grove (Journ. Bot. 68: 272) describes his Phomopsis Desmazieri var. Phlomidis, differing in the lack of a surface blackening, as the conidiial stage of D. Desmazieri.

On Lactuca

Surface blackening present or absent. Ventral zone absent or faint. Ostioles short-papillate or conic, spinelike. Perithecia rather thickly scattered. Spores straight or inequilateral, 11–14 × 2.5–4 μ, usually rather strongly constricted.

Hosts: Lactuca canadensis; L. scariola.

Distribution: Germany; New Jersey; New York.

Exsiccati: (Diaporthe orthoceras) Syd., Myc. March. 2240.

(Didymella rubescens) Ell. and Ev., Fung. Col. 627.

On Linaria


On surface as irregularly lobed, heavily blackened areas with a sharp margin, but no differentiated marginal zone or ridge. Areas rather limited in size, but often confluent for long distances (5–25 mm.). Ventral zone definite in wood. Perithecia small, flattened, singly scattered in the wood. Spores 11–13 × 2.5–3.5 μ.

Host: *Linaria tinginata*.

Distribution: Algiers.

Collections: Pat. Herb., May 1, 1912, M. Pitard 129 (type).

The form on this host resembles *Diaporthe pardalota* very closely and might be considered a form of that species, under which it is also listed.

On Medicago


Surface rather heavily blackened. Ostioles small, conic, erumpent singly, but often somewhat grouped. Perithecia irregularly scattered or loosely grouped. Ventral zones present in wood. Spores 9–12 × 2.5–3 μ.

Host: *Medicago sativa*.

Distribution: Italy.


On Melilotus


Dorsal zone present or absent. Ventral zone present. Perithecia scattered or in small groups. Ostioles usually erumpent in clusters. Spores 9–10.5 × 2.5 μ.

Host: *Melilotus officinalis*.

Distribution: Italy.


This species appears to be a form of *D. Arctii* approaching the structure of *D. eres*. Saccardo (*Syll. 22: 379*) cites the spores of his
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forma Meliloti as 12–15 × 3.5–4 μ, but the specimen seen in the Farlow Herbarium shows spores as given above. These may be immature spores.

Conidial connections


Grove supposes this to be the pycnidial stage of D. Meliloti. The alpha conidia are obovate-ellipsoid, 7 × 3 μ.

On Mulgedium

Sphaeria subexserta Cke. & Ell., Grev. 7 : 42. 1878.

Didymella subexserta (Cke. & Ell.) Sacc., Syll. 1 : 558. 1882.


Surface of substratum more or less irregularly blackened. Ostioles short-conic, erumpent singly or adjacent, crowded. No ventral zone present. Perithecia irregularly crowded or grouped in the wood. Spores 11–13 × 3.5–4 μ, strongly constricted, ends rounded.

Host: Mulgedium sp.

Distribution: New Jersey.

Exsiccati: (Sphaeria subexserta) Ell. and Ev., N. A. F. 189 (type).

Collections: (Sphaeria subexserta) Farlow Herb., ex Ellis Herb., Mulgedium, April, 1878.

On Ononis


Surface blackening irregularly present or absent. No ventral zone. Ostioles short-conic, occasionally elongate and appressed. Perithecia scattered singly or irregularly crowded, causing small papillate swellings on the surface. Spores 9–13 × 2.5–3.5 μ, non-constricted.

Hosts: Ononis repens; O. spinosa.

Distribution: Moravia; Switzerland.

Exsiccati: (Diaporthe Winteri) Kze., Fung. Sel. 356 (type); Rab., Fung. Eur. 3754; Petr., Fl. Boh. et Mor. 1123.

In the papillate-prominent perithecia this form resembles those on Galium and Tragopogonis. The copy of Kze., Fung. Sel. 356, in the Farlow Herbarium shows only a few of the Diaporthe perithecia, those of a Leptosphaeria being most in evidence, but the same col-
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lection in Rab., *Fung. Eur. 3754*, provides good material. Most of the spores of this species which I saw were immature.

On *Phleum*


Surface slightly blackened. Ostioles conic or somewhat elongated, erumpent singly or in clusters. Ventral zone indefinite, in pith. Perithecia singly scattered.

Host: *Phleum pratense*.

Distribution: New Jersey.


A form of *D. Arctii* on the swollen base of the rootstalk.

On *Phoenix*

*Diaporthe Phoenicis* Pat., Cat. rais. d. pl. cell. Tunisie 105. 1897.

Surface more or less blackened or discolored over wide areas. Ostioles numerous, conic, spinelike, separately erumpent. Dorsal zone evenly effuse just beneath epidermis. No ventral zone, entire petiole entostromatic. Perithecia scattered to crowded. Spores straight or slightly inequilateral, 11-14 × 2.5-4 μ.

Host: *Phoenix dactylifera*.

Distribution: Tunis.


On *Phytolacca*

*Sphaeria spiculosa* var. *Phytolacca* Cke. & Ell., Grev. 6: 15. 1877.
*Diaporthe aculeata* (Schw.) Sacc., Syll. 1: 659. 1882.

Surface more or less blackened over wide areas, often more or less concealed by the epidermis. Ventral zone present or incomplete. Ostioles spinelike or elongate-filiform, 160-320 × 70-80 μ. Perithecia scattered singly or crowded, usually somewhat smaller than on *Arctium*. Spores 10-15 × 2.5-3.5 μ.

Host: *Phytolacca decandra*.

Distribution: Illinois; New Jersey; New York; Pennsylvania; South Carolina; Virginia.

THE GENUS DIAPORTHE


(Diaporthe aculeata) N. Y. M. Herb., Trenton Falls, Peck; Wynantskill, Peck; Sandlake, Peck; Newfoundland, Rev. J. Towler; Weh. Herb., Wehmeier 101.

Conidial connections
Phoma Phytolaccae Berk. & Curt., Grev. 2: 82. 1873.
Phlyctaena septorioides (Berk. & Curt.) Sacc, Syll. 3: 594. 1884.
Septoria phlyctaenoides Berk. & Curt., with curved-hiliform conidia 25 μ in length, probably represents the beta conidia of the imperfect stage of Diaporthe aculeata. Von Höhnel says that this species also has fusoid conidia. Grove considers it the young stage of Phoma Phytolaccae Berk. & Curt. with fusoid conidia 10-12.5 μ in length, which are probably the alpha conidia of D. aculeata.
Ellis gives Phoma apocrypta Ell. & Ev. (Journ. Myc., 8: 62. 1902) as a probable conidial stage of D. aculeata. Since this Phoma is given as having-co

On Plantago


Surface not blackened at first, later becoming blackened over wide areas. Ostioles short-cylindric or slightly elongated, scattered singly. No ventral zones present. Perithecia scattered in the pith. Spores 12-15 × 2.5-3.5 μ.

Host: Plantago lanceolata.

Distribution: France; Germany.

Exsiccati: {Sphaeria adunca) Desm., Pl. cr. Fr. I, 2071 (type), and II, 1771.


Conidial connections
Hysterium Plantaginis Kirch., Lotos, 1856: 246.
Rhabdospora pachyderma Bub. & Kab., Hed. 43: 420. 1904.

Saccardo (Syll. 3: 136) cites Phoma subordinaria as the conidial stage of Dia-
Diaporthe 39

pothe aduna. The synonymy given above is taken from Von Höhnel. (Ber. deut. bot. Gesell. 38: 108). Alpha conidia given as oblong, 7-10 × 2-2.5 μ; beta conidia, 15-25 × 1-1.75 μ.

On Polygonum

Diaporthe polygoni Ell. & Ev., in Ev. Herb. 7:53.

On surface as minute papillate swellings with a central, barely erumpent, conic ostiole. Slight irregular blackenings on the bark surface. Ventral zone definite in wood or along pith. Perithecia 320-400 μ, scattered singly. Spores slightly constricted, 9.5-11 × 2.5-3.5 μ.

Host: Polygonum sp.
Distribution: Louisiana.

D. Polygoni Rehm, which is here considered a Gnomonia, may be an immature condition of this form. The papillate-prominent perithecia are similar to those of the forms on Tragopogonis, Ononis, etc.

On Pyrethrum (Chrysanthemum)


Host: Pyrethrum roseum (Chrysanthemum calcineum).
Distribution: Germany.

On Rumex

Diaporthe discors Sacc., Mich. 2: 60. 1880.

Dorsal blackening of bark surface showing through epidermis as irregular blackened areas. Ventral zone present, incomplete or faint, usually just within the wood. Perithecia scattered singly. Spores often somewhat inequilateral, 12-14 × 2.5-3.5 μ.

Host: Rumex acetosella.
Distribution: England; New Jersey.
(Diaporthe discrepans) Ell. and Ev., N. A. F. 1656 (type).
Collections: Farlow Herb., ex Ellis Herb., Newfield, May 27, 1883.
THE GENUS DIAPORTHE

A description of *D. Rumicis* has never been published. Saccardo gives Plowright’s specimen as the same as his *D. discors*, with spores 17–18 × 4–4.5 μ, but Plowright’s *D. Rumicis* shows spores 12–14 × 2.5–3.5 μ. Saccardo gives his *D. maculosa* as differing in the small spotlike stromata and smaller spores, but it is undoubtedly also of the *D. Arctii* type.

Conidial connections

*Phoma Durandiana* Sacc. & Roum., Rev. myc. 6: 29. 1884.

*Phoma Rumicis* Auers., in sched.


Cited by Saccardo as the imperfect stage of *Diaporthe maculosa*. Conidia fusoid, 7–9 × 2–3 μ.

On Scrophularia


Surface blackening present or absent, obscured by the overlying epidermis. Ventral zone definite beneath. Entostromatic areas tending to be limited in extent. Perithecia scattered singly, 320–400 × 120–160 μ. Spores 11–13 × 2.5–4 μ. Only one specimen seen.

Host: *Scrophularia* sp.

Distribution: California.

Collections: *(Diaporthe immutabilis)* Kew Herb. (Cooke Herb. 2463), Harkness (type).

On Serratula

Surface of bark heavily blackened, but often obscured by the epidermis. Ventral zones present only at the margins. Perithecia often crowded.

Host: *Serratula tinctoria*.

Distribution: Germany.


On Tamus


*Diaporthe Tami* Speg., in De Thü., Myc. Univ. 1657. 1879.

On surface as limited blackened spots (0.5–5 mm.), or as confluent to widely extended blackened areas. Ventral zones definite.

Host: *Tamus communis*.

Distribution: Portugal.

DIAPORTHE

Saccardo (Syll., 1: 661) gives D. Tami as a synonym of his D. scandens. The copy of Myc. Univ. 1657 in the Farlow Herbarium shows stromata of the D. Arctii type, but only a few perithecia and no spores. Saccardo gives D. scandens as having elongate ostioles (0.5 mm.) and asci 40–50 x 6–6.5 μ, but cites no spore measurements.

Conidial connections


Traverso gives Phoma tamicola as the probable pycnidial stage of Diaporthe scandens. He describes the conidia as fusiform and 9–10 x 3 μ. Grove (Kew Bull. Misc. Inf. 1917: 66) regards the Phlyctaena vagabunda on Tamus as the young stage of Phoma tamicola and gives the beta spores as filiform, curved, and 20–25 x 1 μ.

On Tanacetum

Surface of bark more or less blackened, but usually masked by the epidermis. Ostioles short-conic. Ventral zones present or absent. Perithecia thickly scattered or grouped, often causing confluent pustulate swellings. Spores 10–13 x 2.5–3.5 μ.

Hosts: Tanacetum corymbosum; T. vulgare.

Distribution: Germany.

Exsiccati: (Diaporthe Arctii) Rehm, Asc. 668; Krieg., Fung. Sax. 236; Rab., Fung. Eur. 2116 (pycnidia only), 2869.

(Diaporthe orthoceras) Syd., Myc. March. 3738.

On Tragopogonis

Surface blackening irregular, strongest about the papillate swellings caused by the perithecia. Ventral zones present or absent. Perithecia singly scattered, causing minute swellings on the surface. Spores 12.5–13.5 x 2.5–3.5 μ.

Host: Tragopogonis major.

Distribution: Germany.

Exsiccati: (Diaporthe orthoceras) Kze., Fung. Sel. 152.

The form on this host also shows the same kind of papillate swellings, caused by the perithecia, that are found on Tanacetum, Ononis, Galium, etc.

On Umbelliferae

Sphaeria inquilina Wallr., Elench. Fung. 2: 100. 1828.
THE GENUS DIAPORTHE

Diaporthe inquilina (Wallr.) Nit., Pyr. Germ. 272. 1867.
Diaporthe Faberi Kze., in Fung. Sel. 266 (sine diagnosis); Sacc., Syll. 1: 649. 1882.
Diaporthe umbellatarum (Schw.) Ell. & Ev., North Am. Pyr. 739. 1892.

Surface usually heavily blackened or encrusted, or more or less masked by the epidermis. Blackened spots limited in area (2–20 mm.) or widely effuse, smaller spots often margined by a raised ridge, such ridges often running irregularly in the larger areas. Perithecia 280–480 μ in diameter, singly scattered. Ventral zones present or absent, distinct when present. Spores tardily septate, 9–15 × 2.5–3.5 μ.

Hosts: Conium aquifolium; Heraclium Sphondylum; Laserpitium latifolium; Pastinaca sativa; P. sylvestris.

Distribution: England; France; Germany; New York.

(Diaporthe inquilina) Syd., Myc. March. 3134.
(Diaporthe Faberi) Kze., Fung. Sel. 266 (type); Rab., Fung. Eur. 3155; Roum., Fung. Gall. 3749.
(Diaporthe Articii) Shear, New York Fung. 341.

Collections: (Sphaeria umbellatarum) Curtis Herb. 446.7 (Schweinitz Herb. 322); Bethlehem, umbellifers (authentic).
(Diaporthe inquilina) Nit. Herb. 25, Wienberg, March, 1867 (type).

The spores of this form on Umbelliferae are very tardily septate and are usually found in the one-celled condition. As a result, this form is easily confused with Diaporthopsis Angelicae, which occurs on the same hosts. It can be distinguished, however. The spores are more narrowly fusoid than those of D. Angelicae (9–15 × 3–4 μ) and are four-guttulate instead of three-guttulate, as in D. Angelicae. The surface is also more heavily blackened, and the perithecia are larger and situated nearer the surface. The occasional marginal ridge suggests Diaporthe pardalota.

The Schweinitz collection of Sphaeria umbellatarum in the Curtis Herbarium shows no good spores. Ellis gives the spores as 10–12 × 3 μ, septate, and constricted, whereas the Schweinitz material presents a stroma resembling that of D. Angelicae.

On Urtica

Diaporthe Tulasnei Nit., Pyr. Germ. 274. 1867.

Surface heavily blackened over wide areas. Ostioles short, spine-like. Ventral zone definite in wood. Perithecia scattered singly. Spores often somewhat inequilateral, 11–13 × 2.5–3 μ.
DIAPORTHE

Host: *Urtica dioica.*

Distribution: Germany.


*Diaporthe Tulasnei* was described by Nitschke from a number of hosts. Since his first collection was apparently on *Urtica*, the species is discussed here. All the collections labeled “Rhytisma Urticae Fr.” in Nitschke’s Herbarium are pycnidial stages with long-ellipsoid or fusoid conidia, 20–27 × 4–5 μ, as given in *Pyr. Germ.*, p. 275.

Conidial connections


Nitschke describes the “spermatia” of *D. Tulasnei* as fusoid, 7 × 2–2.5 μ.
Saccardo cites his *Phoma Tulasnei* on Melilotis as the imperfect stage of *D. Tulasnei*. He gives the conidia as ovoid-oblong, 7–8 × 2–2.5 μ, and the “basidia” as curved, 15–18 × 1.5 μ. Grove regards *Phoma nitidula* on Scrophularia as belonging to *D. Tulasnei* and describes the conidia as 7–8 × 2 μ (10–11 × 2–2.5 μ, according to Saccardo).

On Verbascum

Irregular, widely effuse, blackened areas on bark surface, often obscured by epidermis. Ventral zones definite in wood or along pith. Perithecia scattered singly. Spores sometimes inequilateral, 10–13 × 2.5–3.5 μ.

Host: *Verbascum sp.*

Distribution: Germany.

Collections: *Diaporthe Tulasnei* Nit. Herb. 27, March, 1868.

2. DIAPORTHE LINEARIS (NEES) NIT.

*Pyr. Germ.* 277. 1867

(Plate I, Figs. 8–9)

*Sphaeria linearis* Nees, Syst. Myc. 2: 429. 1823.
*Diaporthe exercitalis* (Pk.) Sacc., Syll. 1: 693. 1882.

Appearing characteristically on the surface as longitudinally se­riate clusters of separately erumpent, more or less elongate, cylin­dric ostioles. Blackening of the bark surface usually limited to the areas immediately above the perithecia, generally masked by the epidermis. Ventral zones usually entirely absent, rarely present. Perithecia spherical, 200–480 x 160–320 μ, scattered singly or in loose, longitudinally arranged groups, often causing slight papillate swellings, immersed in bark or wood. Asci clavate, 40–54 x 6.5–8 μ. Spores biseriate, hyaline, two-celled, fusoid-ellipsoid, often inequi­lateral, finally constricted at the septum, 10–14 (16) x 2.5–4 μ (one­celled, ellipsoid, inequilateral when immature); often mucronate when young, mucronate tips sometimes remaining as faint append­ages.

Hosts: Aster lateriflorus; Solidago Virgaurea; Solidago sp.

Distribution: Austria; France; Germany; Luxemburg; Michigan; New Jersey; New York.

(Diaporthe mucronulata) Ell. and Ev., N. A. F. 1196 (authentic).
(Diaporthe aorista) Ell. and Ev., N. A. F. 3432 (authentic); Ell. and Ev., Fung. Col. 1043 (authentic).

(Diaporthe exercitalis) N. Y. M. Herb., Hunter, New York, Peck (type); Catskill Mts., Peck.

This species differs from D. Arctii chiefly in the seriately arranged perithecia and ostioles, the limited dorsal blackening, and the lack of a ventral zone. Such forms of D. Arctii as those on Erigeron and Eupatorium and var. Achilleae grade off into this species. On larger stems the perithecia of D. linearis may be more scattered, the bark surface more generally blackened, and a ventral zone sometimes
present. *Diaporthopsis trinucleata* on *Eupatorium* may also be confused with the immature stage of this species. *D. mucronulata* is this species with short, broad and faintly mucronately appendaged spores.

Conidial connections

- Phomopsis linearis (Sacc.) Trav., Fl. Ital. Crypt. 2:228. 1906.

Given by Traverso as the conidial stage of *D. linearis*. Saccardo describes the conidia as fusoid, 10–12 × 2 μ, and "basidia" as filiform, 20 × 1.5 μ.

3. **DIAPORTHE CHAILLETII** Nit.

- Pyr. Germ. 276. 1867.

*Sphaeria picea* Pers., Icon. et Desc. 40. 1798.
*Sphaeria spiculosa* β *Belladonnae* Fr., Elench. Fung. 2:75. 1828.

Forming widely effuse, irregularly blackened areas on the bark or wood surface, which are often exposed by the falling away of the periderm or bark. Ventral zone definitely present in the wood. *Perithecia* 320–480 × 160–320 μ, singly scattered and separately erumpent as fine-cylindric or somewhat elongated ostioles. *Asci* clavate, 40–50 × 6–7 μ. Spores biseriate, fusoid-ellipsoid, two-celled, hyaline, straight, constricted at the septum, 11–12 × 2–2.5(3) μ.

**Host:** *Atropa belladonna*.

**Distribution:** England; Germany; Switzerland.


**Collections:** *(Diaporthe Chailletii)* Nit. Herb. 28, labeled "*Sph. spiculosa belladonnae* Fr.,” Chaillet (type).

This species on *Atropa* differs from *D. Arctii* in the somewhat shorter and narrower spores, and in the often elongate ostioles. Persoon's *Sph. picea* on *Atropa belladonna* is probably this species, although all the exsiccati of this species seen by the writer have been either poor sterile material or not of the genus Diaporthe at all.
4. DIAPORTHE PHASEOLORUM (Cke. & Ell.) SACC.


(Plate I, Figs. 10-11)

Sphaeria Phaseolorum Cke. & Ell., Grev. 6: 93. 1878.

Surface more or less blackened over wide areas. Ostioles short-conic to elongate-filiform, sinuous, 120-400 x 50-80 μ, erumpent separately. Dorsal zone along bark surface; ventral zone usually absent, occasionally present laterally or along the pith. Perithecia small, 160-350 x 110-200 μ, scattered or crowded. Asci clavate, 28-46 x 5.5-8 μ. Spores biseriate, broad-fusoid, two-celled, hyaline, constricted at the septum, 8-12 x 2-3.5 μ.

Hosts: Phaseolus lunatus; Phaseolus sp.

Distribution: New Jersey (reported from many points along Atlantic seaboard, according to Harter).

Exsiccati: (Sphaeria Phaseolorum) Ell. and Ev., N. A. F. 188 (authentic).

(Diaporthe Phaseolorum) Ell., Fung. Col. 1044.

This species, which in the imperfect stage causes a pod blight of Lima beans, is similar to D. Arctii, but has smaller spores, asci, and perithecia, and more filiform ostioles.

D. Sojae and D. batatatis, which are here given as varieties of D. Phaseolorum, have been described from culture only, and their true morphology must remain somewhat in doubt, but they show no fundamental difference from this species. These facts will be more fully considered under these varieties.

Conidial connections


Grove considers Phoma Phaseoli the conidial stage of this species. The cultural connection has been made by Harter (Journ. Agric. Res. 11: 473). A typical Phomopsis fruit body was formed. The conidia were found to vary somewhat in size on different media, but the variations fell within definite limits. The alpha conidia were oblong to fusoid, one-celled, hyaline, and 5.1-8.5(10) x 1.7-4 μ. The beta conidia were long-cylindric, straight or curved, one-celled, hyaline, and 11-31(54) x 1.3-2.4 μ. The beta spores could not be germinated; they were formed after the alpha spores, apparently when there was a lack of food material.

On Solanum

Surface blackened over more or less effused areas. Ostioles fine-filiform, 80 μ in diameter, 300-500 μ long, often sinuous, singly erum-

Host: Solanum tuberosum.

Collections: (Sphaeria euspina) Farlow Herb., ex Ellis Herb., Aug., 1878.

It is interesting to note that Harter (Journ. Agric. Res. 11:478) states that the organism causing fruit rot, leaf spot, and stem blight of eggplant, originally called Phoma Solani on stems and Phyllosticta hortorum on leaves, belongs to the form genus Phomopsis and is very similar to Phoma batatae.

On Zea


Diaporthe incongrua Ell. & Ev., North Am. Pyr. 453. 1892.


Host: Zea Mays.

Distribution: Louisiana.

Collections: (Diaporthe incongrua) N. Y. G. Herb., Ellis Coll. 494, Louisiana, June, 1886, A. B. Langlois (type).

(Diaporthe Kellermanniana) N. Y. G. Herb., Ellis Coll., Newfield, New Jersey, Dec., 1890(?)

The form on Zea differs in the somewhat broader spores.

Var. Sojae (Lehman), comb. nov.


Perithecia spherical or mutually compressed laterally, immersed in black stromata, 145–348 × 116–318 μ; beak very long, slender, tapering, 1.5 mm. × 40–60 μ, black; wall definite, outer layer black, inner layer hyaline; asci sessile, elongate, clavate, thin-walled, eight-spored, 37.2–50.2 × 7.2–12.2 (44.9 × 8.3) μ, apex thickened and pierced by a narrow pore; ascospores hyaline, elongate-ellipsoid, one-septate, 9.6–12.4 × 2.4–4.2 (11.4 × 3.5) μ, slightly or not at all
constricted at the septum, possessing 2–4 guttulae. Perithecia found only in culture.

Host: *Soja max.*
Distribution: Indiana; North Carolina.

The data are taken from Lehman's original description. He describes the perithecia as being formed in clusters of 3–15 within a stroma with a definite marginal blackened zone. These structures probably represent abnormally formed effuse stromata.

Lehman considers this a species separate from *D. Phaseolorum* for the following reasons: first, the less well developed stroma and smaller size of the pycnidia (158–475 μ in *D. Phaseolorum* and 82–225 × 82–375 μ in *D. Sojae*); second, the smaller pycnidiospores (averaging 7.5 × 3.23 μ in *D. Phaseolorum* and 6.27–7.15 × 2.2–2.31 μ in *D. Sojae*); third, the less frequent production of beta spores in *D. Sojae*, the production of pycnidia in the dark in *D. Sojae* and not in *D. Phaseolorum*, and the formation of perithecia in culture and not on stems of *D. Sojae* and vice versa in *D. Phaseolorum*. In view of the great variation in stromatic development and size of pycnidia and range of size of conidia the first two differences are not very great; the third group of factors are physiological ones. At best *D. Sojae* appears to be merely a variety of *D. Phaseolorum*.

Conidial connections

Pycnidia of the *Phomopsis* type connected in culture by Lehman. Pycnidia lenticular, subglobose, subepidermal, simple or sometimes chambered, 82–225 × 82–375 μ, beak short. Alpha conidia oblong to fusiform, one-celled, hyaline, 6.27–7.15 × 2.18–2.31 μ. Beta conidia seldom present, slender, curved, or hooked.

**Var. batatatis** (Harter & Field), comb. nov.

_Diaporthe batatatis_ Harter & Field, Phytopath. 2: 121. 1912.


Host: *Ipomoea batatas*.
This variety also is known only from culture. Material kindly supplied by Dr. Harter shows a blackened zone on the surface of the agar and also a ventral zone within the agar. The perithecia are clustered as reported for *D. Sojae*. The ascospores seen were 8–9.5 × 2–3 μ. In this variety, as in the one above, perithecia were formed in cultures of certain strains only.

Conidial connections

<table>
<thead>
<tr>
<th>Taxon</th>
<th>Reference</th>
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<td>Phomopsis batatae (Ell. &amp; Halst.) Harter &amp; Field, Phytopath, 2: 121. 1912.</td>
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Cultural connection by Harter and Field. Pycnidia irregularly chambered, erumpent, 60–130 × 60–110 μ. Alpha conidia oblong-fusoid, 6–8 × 3–5 μ. Beta conidia filiform-hamate, 16–30 μ long. Club-shaped bodies, cylindric, swollen at one end, straight or irregularly curved, 6–15 μ long also found (probably intermediate forms between alpha and beta conidia).

These two varieties are very similar morphologically and are probably the same as *D. Phaseolorum*, but until material on stems of the different hosts can be compared they are here placed as varieties.

5. **DIAPORTHE DAKOTENSIS**, sp. nov.

Barely visible on the surface as numerous short-conic, separately erumpent ostioles. Perithecia often causing minute pustulate swellings on the surface. Surface of bark more or less blackened, but masked by the epidermis. Ventral zones sometimes present in the bark, but irregular and faint. Perithecia small, 120–200 × 120–160 μ, scattered singly or in crowded clusters, separately erumpent. Asci clavate, with a refractive ring in the apex, 60–70 × 8–10 μ. Spores biserial, fusoid-ellipsoid, two-celled, hyaline, inequilateral or curved, constricted at the septum, four-guttulate, 13–16 × 2.5–4 μ, and usually with a faint, hyaline, bristle-like appendage at each end.

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Configuratione stromatis *Diaporthe Arctii* similis (in *Achillea*), sed differt peritheciis minoribus (cum iis *D. Phaseolorum* congruentibus) et sporis maioribus valde curvatis appendiculatis.
THE GENUS DIAPORTHE

Host: Polygonum emersum.
Distribution: South Dakota.

This species is similar to *D. Arctii*, but differs in the small perithecia and the large, strongly curved, and appendiculate spores. It has the stromatic configuration of the form of *D. Arctii* on Achillea, but the small perithecia of *D. Phaseolorum*.

6. **DIAPORTHE PARDALOTA** (Mont.) Fck.


*(Plate II, Figs. 1-2)*

Appearing on the surface as sharply outlined entostromatic areas with a marginal blackened line or ridge where the ventral zone abuts upon the surface. Entostromatic areas limited in extent (1-7 mm.), confluent, or more widely effuse, margin even or, more usually, irregularly lobed. Surface of substratum blackened heavily, only slightly or not at all. Perithecia spherical or somewhat flattened, 160-480 × 120-300 μ, scattered singly or occasionally in small groups of 2-3. Ostioles short-cylindric to conic, slightly erumpent (elongated in var. *Gladioli*). Ventral zone definite in wood. Asci clavate, 40-55 × 6-8 μ. Spores biseriate, fusoid-ellipsoid, two-celled, hyaline, slightly constricted at the septum, straight or sometimes inquilateral, or somewhat curved, 9-15 × 2.5-4 μ.

This species differs from *D. Arctii* only in the sharply margined entostromata visible on the surface of the substratum. It occurs on leaves, twigs, and herbaceous stems, and in the twig forms grades off into *D. eres*. In the forms with smaller and more sharply outlined stromata it approaches the species next discussed, *D. eumorpha*.

As in *D. Arctii*, this species shows a number of overlapping host forms, many of which have been described as separate species. These are indicated and discussed below, in accordance with the arrangement of forms under *D. Arctii*.

On Ailanthus

On surface of petioles as elongate-ellipsoid blackened areas, 1.5-7 × 1-2 mm., bounded by a marginal blackened ridge. Ventral zone definite in wood. Perithecia scattered singly, causing minute papillate swellings on the surface. Spores 9-12 × 2.5-4 μ.
PLATE II

DIAPORTHE

(Spores X 1000; 1 mm. = 1 μ)

D. pardalota (Mont.) Fck. 1. Stroma 2. Ascospores
D. eumorpha (Dur. & Mont.) Maire. 3. Stroma 4. Ascospores
D. Lupini Hack. 5. Stroma 6. Ascospores
D. semiinsculpta Sacc. 7. Stroma 8. Ascospores
D. pulla Nit. 9. Stroma 10. Ascospores
Host: *Ailanthus glandulosa*.
Distribution: France.

*Diaporthe petiolorum* Sacc. & Speg. is described on petioles of Catalpa. *Fung. Gall.* 2572 on Catalpa shows only sterile stromata of what seems to be *D. Arctii*, whereas *Fung. Eur.* 2951 on Ailanthus shows definite *D. pardalota* stromata. This may be the *D. compressa* of Saccardo described on Ailanthus petioles, but Saccardo’s figures of this species (*Fung. Ital.* 1267) do not appear to be *D. pardalota*. The true identity of these species can be determined only by examination of authentic material.

On *Ambmum*


Host: *Amomum sp*.
Distribution: Java.

The description is taken from the material collected by Von Hohnel in Java, which is immature and shows non-constricted, one-celled spores. The original description gives the asci as 30–35 × 6 μ and the spores as 10–12 × 4–5 μ.

On *Cirsium*


Surface heavily blackened or encrusted, entostromatic areas often limited in size (1–3 × 0.5–1 mm.) or more widely effuse. Margin sharply defined, but not with a differentiated line. Ventral zone definite. Perithecia scattered singly. Ostioles short-cylindric. Spores 12–14 × 2.5–3.5 μ.

Hosts: *Cirsium arvense*; *C. palustre*.
THE GENUS DIAPORTHE

Collections: (Diaporthe pholeodes) Nit. Herb., Garten des Jägerhäschen, April, 1867, and Wienberg, Feb., 1867.

This form on Cirsium resembles those on Epilobium and Euphorbia and is intermediate between D. Arctii and D. pardinota. The stromata are not so sharply margined as those of the typical D. pardalota, but they are heavily blackened and usually limited in area. Montagne gives his Sph. pholeodes as on Bardana, but with limitedstromata (three lines in length).

On Cornus

Diaporthe crassicolis Nit., Pyr. Germ. 258. 1867.
Diaporthe intermedia Nit., in Herb. (inedit.).

Entostromata somewhat limited in area or widely effuse. Margin usually irregularly lobed and sinuous. In most cases, especially when the dorsal blackening is just beneath the epidermis, the stromata are outlined by a sharp blackened zone or ridge, but when a periderm is developed this marginal zone is more or less obscured or absent. Surface of bark heavily blackened over entire area or in a spotlike manner. Ventral zone definite in wood, or only lateral. Perithecia 240–400 × 160–240 μ, scattered singly or loosely grouped. Spores 11–14 × 2.5–4 μ.

Hosts: Cornus alba; C. sanguinea; C. stolonifera.

Distribution: England; Germany; Poland; North Dakota.


(Diaporthe intermedia) Nit. Herb. 66, labeled "Valsaria spiculosa Auers.," Auerswald.
(Diaporthe Brenckleana) J. F. Brenckle Herb., North Dakota Fung., 1186 (type).

Specimens of this form on larger stems grade off into forms which are characteristic of D. erez, but there are usually evidences of the
sharply defined marginal zone, and a definite ventral zone. The copy of *Fung. Rhen.* 2343 in the Farlow Herbarium, for instance, shows typical *D. pardalota* stromata, whereas material of the same collection in Nitschke’s Herbarium is typical of *D. eres*. *D. cornicola* from America, on the other hand, shows no marginal zone on the surface and usually lacks a ventral zone and is placed under *D. eres*. Only a more comprehensive comparative and cultural study of these transitional forms can determine whether we are dealing with two separate species or growth forms of one species.

The forms of *D. pardalota* on woody stems tend to have larger spores and somewhat larger, more clustered perithecia.  

Conidial connections


Fuckel cites the conidia as oblong-cylindric, curved, and 8 × 3 μ. Saccardo describes them as 8–10 × 2–3 μ, and the “basidia” as uncinate and 25 × 1 μ.

On Delphinium

*Diaporthe Napelli* (Ces.) Nit., in Nit. Herb.

Material under these names and on Delphinium and *Aconitum Napellus* in Nitschke’s Herbarium shows numerous elliptic to irregular blackened areas on the surface. There is a dorsal blackening, and the margins are sharply outlined. A definite ventral zone occurs. No spores were seen. There are also strongly developed raised stromata, which may possibly be of a Mazzantia.

Collections: (*Diaporthe Napelli*) Nit. Herb.; Delphinium, Erdmanns, April, 1864; labeled “*Aconitum Napellus*, Erdmanns, July, 1866.”

On Dipsacus

A collection on *Dipsacus sylvestris* in Nitschke’s Herbarium under *Diaporthe striaeformis* (Tugwegs, April, 1870) shows typical *D. pardalota* stromata, small, elliptic to fusoid, and with a sharp marginal zone. All other material seen on Dipsacus as *D. striaeformis* has been *Mazzantia rhytismoides* De Not. See below.

On Epilobium

*Dothidea striaeformis* Fck., non Fr., in *Fung. Rhen.* 1012. 1864.
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Forming fusoid to elongate blackened patches on the surface of the substratum. Stromata abruptly but not prominently margined, limited in area (1-3 mm.) or confluent and extending for some distance. Surface of bark heavily blackened. Ventral zone definite just within the wood. Perithecia scattered singly, erumpent as very short ostioles. Spores 11-12 × 2.5-3.5 μ.

Hosts: Epilobium angustifolium; E. hirsutum.

Distribution: Austria; England; Germany.

Exsiccati: (Sphaeria striaeformis) excl. Fr., Scler. Suec. 195 (authentic); Desm., Pl. cr. Fr. I, 1760; II, 1410.

(Dothidea striaeformis) Fck., Fung. Rhen. 1012 (type).


Collections: Nit. Herb. Handorf, April, 1867; and Tugwegs, April, 1870: excl. Nit. Herb.; Herb. Heuflerianum; labeled "Leptosphaeria striaeformis Auevs."

This form on Epilobium has a somewhat less sharp marginal zone and stands in an intermediate position between D. Arctii and D. paradalota. The copy of Fries’ Sphaeria striaeformis (Scler. Suec: 195) in the Farlow Herbarium has two-celled brown spores and is not a Diaporthe. Saccardo gives Plowr., Sphaer. Brit. III, 42, as D. Epilobii Cke., but the copy in the Farlow Herbarium, although showing no spores, appears to be the D. Epilobii of Fuckel (Didymella tosta).

On Euphorbia

Diaporthe Euphorbiae Cke., Grév. 3: 67. 1874.

On surface as small (1-10[15] × 1-3 mm.) fusoid or elliptic, blackened patches, or as more widely effuse areas. Ventral zone definite in wood. Perithecia scattered singly. Margin of stromata sharp but not prominent. Spores 9-12 × 2.5-3.5 μ.

Hosts: Euphorbia amygdaloides; E. sylvestica.

Distribution: England; France; Italy.


This form is very similar to the one on Epilobium, with a margin somewhat less sharply defined than those of some forms of D. paradalota.
Conidial connections

Given by Saccardo as the conidial stage of *D. Euphorbiae*. Conidia ovoid-oblong, $7 \times 3-3.5 \mu$.

On *Euphorbia*


Entostromatic areas irregularly lobed, sharply outlined by a marginal blackened zone, extending entirely through the leaf, both surfaces of which may be blackened. Perithecia scattered singly, causing small blackened swellings on the surface. Spores $9.5-12 \times 2.5-3 \mu$.

Host: *Euphorbia japonicus* (leaves).
Distribution: Italy.

On *Gladiolus*


Blackened areas on surface either limited in extent (2-7 mm.), or confluent to rather widely effuse, always sharply margined by a ridge-like bounding line. Ostioles fine, hairlike, often elongate, but easily broken off, and hence not often found. Perithecia $160-400 \times 100-240 \mu$, widely and singly scattered. Spores $9-12 \times 2-3 \mu$.

Host: *Gladiolus sp.*
Distribution: Louisiana.

This form might be considered a separate variety on account of the elongate-filiform type of ostiole.

On *Ilex*

*Diaporthe ilicini* Cke., Grev. 18: 74. 1890.

Entostromatic areas sharply but irregularly outlined, rather extensive, surface of bark heavily blackened only about the ostioles, which appear as discolored spots on the surface. Ventral zone within
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the wood. Perithecia 400-440 x 240-280 μ, scattered singly or in small groups of 2-3. Spores 12-15 x 2.5-4 μ.

Host: Ilex aquifolium.
Distribution: Belgium; England.

As in the case of the form on Prunus, the stromata on Ilex may at times be limited in area, with a distinct marginal zone or, on larger twigs, may be more widely effuse, with a less sharply defined margin. Fung. Gall. 1562 of D. crustosa, in the Farlow Herbarium, is a mere remnant of bark and does not show either the marginal or ventral zones. It may be the same as the D. ilicina of Cooke’s Fung. Brit. II, 490, but is placed provisionally under D. eres, which it resembles more closely.

On Lactuca


On surface as numerous blackened areas which are usually definitely limited in size (1-3 mm. in diameter) and somewhat raised above the substratum, but are sometimes more effuse (1-2 cm.). Margin usually, but not always, definitely limited. Ventral zone definite, within the wood. Perithecia small, immature, scattered singly. No spores seen, but given by Ellis as 7-8 x 3.5 μ. Asci cited as 35-40 x 6 μ.

Host: Lactuca canadensis.
Distribution: New Jersey.
Collections: (Diaporthe placoides) N. Y. G. Herb., Ellis Coll., Newfield, New Jersey, Jan., 1891 (type).

This form approaches D. eumorpha in the small distinct stromata and is very close to the form of that species on Vinca in that it is given with rather smaller spores. The type material is immature, however, and there are sometimes larger, more indefinite areas.

On Linaria

Diaporthe picea (Dur. & Mont.) Sacc., f. Linariae Pat., in Herb. 1912.

Surface heavily blackened in somewhat limited to confluent or widely effuse, irregularly shaped areas with a sharp margin, but no marginal ridge or zone. Stromata 5-25 mm. in length. Ventral zone
definite in wood. Perithecia 240–320 x 120–200 μ, thickly scattered in the bark. Spores straight or slightly curved, 11–13 x 2.5–3.5 μ.

Host: Linaria tinginata.

Distribution: Tangiers.

Collections: (Diaporthe picea f. Linariae) Pat. Herb., Tanger, May 1, 1912, M. Pitard 129 (type).

Similar to the forms on Epilobium and Euphorbia, but with more widely effuse stromatic areas. This form is also similar to D. eres, under which species it is also considered.

On Mahonia


Entostromata sharply but irregularly outlined, various in size, surface of leaf not blackened, marginal zone extending entirely through the leaf. Perithecia 160–360 x 120–160 μ, scattered singly. Spores 9.5–11 x 2.5–3 μ.

Host: Mahonia aquifolium (leaves).

Distribution: France.

Exsiccati: (Diaporthe hypospolina) Roum., Fung. Gall. 6325 (authentic).

The description of D. hypospolina gives the spores as 12–14 x 3 μ, but none so large were seen on the material listed above.

On Polygonatum


Entostromatic areas elongated, elliptic to oblong, limited in area (2–5 [15] mm.). Surface blackened or not blackened, margin even, sharply defined by a blackened zone. Perithecia 320–480 x 120–160 μ, scattered singly. Ventral zone definite. Spores 9.5–12 x 2.5–3.5 μ.

Host: Polygonatum (Convallaria) multiflora.

Distribution: England; Germany.


The typical form with small, sharply outlined stromata.

Conidial connections

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Grove regards Phoma Convallariae as the Phomopsis stage of D. pardalota and Ph. polygonatea as the same species. He gives the conidia as fusoid-ellipsoid, 8-9 X 1.5-2.5 μ, and as sometimes appearing one-septate (owing to guttulae?). Saccardo describes the conidia of Ph. polygonatea as oblong, 9-10 X 3 μ.

On Prunus


Diaporthe ceuthosporoides (Berk.) Sacc., Syll. 1: 646. 1882.

Entostromata variable in extent, sharp but irregular in outline. Surface of leaves more or less blackened. Ventral zone present within the leaf, or entire thickness of leaf entostromatic, and then both surfaces of leaf more or less blackened. Perithecia scattered singly. Spores 10-13 X 2.5-4 μ.

Host: Prunus Laurocerasus.

Distribution: France.

Exsiccati: (Sphaeria ceuthosporoides) Desm., Pl. cr. Fr. I, 1763; II, 1413: excl. West. & Wall., Herb. cr. Belg. 1116, 1211 a and b (pycnidia?).


Collections: (Sphaeria ceuthosporoides) Curtis Herb. 460:17-3 (Lenormand Herb.); 458:28.3 (Desmazières Herb.).

On Rubus <>


Entostromata somewhat limited in area (1-7 mm.), but irregular in outline. Surface of bark heavily blackened. Stromata sharply outlined on surface. Ventral zone in bark or just within wood. Perithecia 320-400 X 160-240 μ, scattered singly. Spores 11-12 X 2.5-3.5 μ.

Host: Rubus fruticosus.

Distribution: Germany.

Collections: (Diaporthe insignis) Höhn. Herb. A 3967 (6913), Teisenberg.

Conidial connections


Fuckel cites the "spermatia" of D. insignis as oblong, 8-10 X 4 μ.

On Sassafras

Entostromatic areas rather widely effuse, very irregularly lobed, sharply margined by a blackened zone. Surface of bark usually heavily blackened, but often more or less obscured by the overlying periderm. Ventral zone deep in wood or apparently absent. Perithecia 320-400 × 240-320 μ, scattered singly, erumpent through small pustulate ruptures of the periderm. Spores 11-12 × 2.5-3.5 μ.

Host: *Sassafras variifolium*.
Distribution: New York.

On *Syringa*


On surface as small, fusoid-elliptic to rather widely effuse, irregularly shaped areas which may or may not be blackened on the surface, sharply outlined by a marginal line. Ventral zone definite or incomplete. Perithecia scattered, separately erumpent. No spores seen.

Host: *Syringa vulgaris*.
Distribution: Germany.

On *Yucca*


On surface as small, rounded to elongate, more or less blackened patches, 0.5-7 × 0.5-3 mm., outlined by a sharp marginal zone and containing one or more ruptures of the periderm, through which the ostioles are erumpent. These areas are often confluent to form more widely effuse areas. Ventral zone definite beneath. Interior of stroma often more or less blackened. Perithecia scattered singly.

Host: *Yucca gloriosa*.
Distribution: Italy.

These exsiccati show only immature specimens without spores. The spores are given in the original description as 12-15 × 3-4 μ. This form approaches very closely *D. eumorpha*, differing only in the somewhat less developed stromata and the occasional widely effuse stromatic patches.
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Conidial connections

Phoma Yuccae Cke., Grev. 7: 32. 1878.
Phomopsis gloriosa (Sacc.) Trav., Fl. Ital. Crypt. 2: 221. 1906.

Saccardo describes the conidia of *Phoma gloriosa* as oblong-ellipsoid, $8 \times 3 \mu$, and the "basidia" as $15 \times 2 \mu$. Traverso cites this as the Phomopsis stage of *D. gloriosa*. Grove considers *Phoma Yuccae* the same species and gives the conidia as fusoid-ellipsoid, acute, biguttulate, and $7.5-9 \times 2-3 \mu$. He mentions curved sporophores $15 \times 2 \mu$.

7. DIAPORTHE EUMORPHA (Dur. & Mont.) MAIRE

(Plate II, Figs. 3-4)

Appearing upon the surface as numerous circular, elliptic or irregularly shaped, blackened, often somewhat raised areas, $0.5-5 \times 0.5-1.5 \text{ mm.}$, through the surface of which the ostioles are barely and separately erumpent. Margin of stromata even, sharp, often differentiated or ridgelike, as in *D. pardalota*. Surface of stem heavily blackened, entostromata well developed, ventral zone definite. Perithecia $200-320 \times 120-240 \mu$, scattered singly, separately erumpent. Asci clavate, $40-47 \times 6-8 \mu$. Spores biseriate, fusoid-ellipsoid, straight or slightly inequilateral, one-celled at first, becoming two-celled, hyaline, finally constricted at the septum, four-guttulate, $9-15 \times 2.5-4 \mu$.

This species differs from *D. pardalota* in the well-developed stromata, which are limited in size, strongly blackened on the surface, and have an even margin, which is not always as sharply differentiated as in some forms of that species.

The type of *D. rhoina* Feltg. appears to be similar to the form of this species found upon Vinca, but this material is so fragmentary, the host determination (Rhus) is so obviously incorrect, and the descriptions so different that this species has been considered doubtful.

The following host forms of *D. eumorpha* have been noted.

On Astragalus


Stromatic patches circular, elliptic, or somewhat elongate, $0.5-5 \times 0.5-1.5 \text{ mm.}$, surface heavily blackened, margin'sometimes differentiated or ridgelike. Stromata well developed, often becoming a
pseudoparenchymatic mass, in which the remains of the host cells are embedded. Ventral zone in the bark 320–400 µ within the substratum. Perithecia 200–240 × 120–160 µ, scattered singly. Ascii 40–47 × 7–8 µ. Spores 11–15 × 3–4 µ.

Host: Astragalus lusitanicus (Phaca baetica).
Distribution: Algiers.
Collections: (Diaporthe lirellaeformis) Pat. Herb., Alma, Algeria, March, 1897 (type).

Distinguished by the strongly developed entostromata and the ventral zone just within the bark. Small ectostromata are often developed on the surface of the stromata.

On Daucus

Sphaeria picea var. eumorpha Dur. & Mont., Fl. Algiers, 1: 484. 1850.
Diaporthe daucina Pat., in Herb. (inedit.).

On surface as oval to elliptic, longitudinally elongated, heavily blackened stromata, 1–4 × 0.5–1 mm., with a sharply defined margin. Ventral zone within wood. Perithecia scattered singly, barely erumpent. Spores 10–14 × 2.5–3.5 µ.

Host: Daucus maxima.
Distribution: Algiers.
Collections: (Diaporthe daucina) Pat. Herb., Philippeville, Algiers (type).

Entostromata well developed, but not so strongly as on Astragalus. Ventral zone well within wood.

On Vinca

Sphaeria (Diaporthe) Vincae Cke., Grev. 5: 63. 1876.
Diaporthe Vincae (Cke.) Sacc., Syll. 1: 656. 1882.

On surface as small heavily blackened areas, 0.2–0.5 mm. in diameter, margin sharp and even, but not differentiated. Ventral zone definite in wood. Perithecia scattered singly, only a few in each stromatic area. Spores often inequilateral, 9–12 × 2.5–3 µ.

Host: Vinca sp.
Distribution: England.
The smaller stromata and spores of this form might, if constant, be sufficient to separate it as a variety or even as a species, but all the material seen has been immature and the spores have been mostly one-celled. It seems rather to be a form of *D. eumorpha* with small stromata. The original spore measurements of Cooke (20–22 µ) are undoubtedly incorrect.

8. **DIAPORTHE LUPINI** HARK.

*Bull. Cal. Acad. i: 44. 1884.*

(Plate II, Figs. 5-6)

Surface of substratum slightly and irregularly blackened over rather wide areas. Ostioles numerous, short, stout, cylindric-conic, 320 × 160–200 µ. Stromata evenly effuse. Heavy dorsal blackening present just beneath the epidermis. Ventral zone deep in wood, often rather faint. Perithecia 400–550 × 200–380 µ, singly scattered, and separately erumpent. Asci broad-clavate, 50–55 × 10 µ. Spores overlapping, biseriate, broad fusoid-ellipsoid, straight, two-celled, hyaline, often tapered toward one end and then somewhat unequally two-celled (separating at the septum, according to Harkness), constricted at the septum, at first two globules, then one in each cell, 12–16(18) × 5–6.5 µ.

*Host: Lupinus arboresus.*

*Distribution: California.*

*Exsiccati:* (*Diaporthe Lupini*) Ell. and Ev., N. A. F. 1655; Rab., Fung. Eur. 3858 (both authentic).

This species has the broad spores of *D. inaequalis*, also on legumes, but has an effuse instead of a pustulate stroma.

9. **DIAPORTHE SEMIINSCULPTA** SACC.

*Syll. 1: 657. 1882.*

(Plate II, Figs. 7-8)

*Sphaeria semiimmersa* Berk. & Curt., Grev. 4: 146. 1876.

Appearing upon the surface as numerous minute dots, which are the separately erumpent, short-cylindric ostioles. There is an evenly effuse dorsal blackening of the bark surface which is not, however, visible on the surface of the stem. Perithecia 320–480 × 200–320 µ, thickly but singly scattered, mostly within the wood. Asci clavate,
DIAPORTHE

47–50 × 7–8 μ. Spores biseriate, long-fusoid, usually strongly curved or sometimes straight, two-celled, hyaline, constricted at the septum, 15–20 × 2.5–4 μ.

Host: Herbaceous stems.

Distribution: Connecticut.

Collections: (Sphaeria semiimmersa) Curtis Herb. 438, 12.6, C. Wright 5628 (111), Connecticut (type).

No ventral zone was seen on the pieces of stem in this collection, but such a zone is probably present deeper in the wood. The large curved spores relate this species to D. Peckii and D. megalospora on Rhus and Sambucus.

10. DIAPORTHE ERES Nitr.

Pyr. Germ. 245. 1867.

(Plate III, Figs. 1–4)

Appearing upon the surface as small pustulate ruptures or angular perforations of the periderm, often exposing the blackened surface of the bark or ectostromata. Ostioles short-cylindric to somewhat elongated, erumpent singly or in small loose clusters, or occasionally in crowded masses. On twigs which are decorticated or the periderm exfoliated, as widely effuse, blackened areas with numerous erumpent ostioles. Entostromata mostly evenly effuse, usually over wide areas. Surface of bark usually blackened, dorsal blackening sometimes local, chiefly about the erumpent ostioles, sometimes entirely lacking, rarely dipping slightly into the bark. Ventral zones always present at the extreme margins of the fruiting areas, usually more or less complete beneath, sometimes irregular or incomplete, or entirely absent. Numerous small conic or pulvinate ectostromata are formed on the surface of the bark, causing the ruptures of the periderm. Pycnidial locules are formed within some of these, whereas others remain sterile and become blackened. Perithecia spherical or flattened, 240–800 × 160–500 μ, scattered singly, irregularly crowded, or more or less definitely grouped, separately or collectively erumpent, not definitely oriented beneath the ectostromata, but often erumpent through them, buried in either the bark or the wood. Asci clavate, with a refractive ring in the apex, 40–60 × 5–8 μ. Spores biseriate, hyaline, long-narrow-fusoid or often inequilateral, one-celled when young and immature, becoming broader, two-celled, fusoid, constricted at the septum, 9.5–15 × 2.5–4 μ at maturity.
Diaporthe eres is given by Nitschke as the type of the genus, and this species name is retained here for the large species complex of related host forms which it represents. Like D. Arctii, this species occurs on a large number of host substrata and is extremely variable. It may be considered the primitive form from which the other species on woody stems have been derived. On many host substrata the forms of this group have a more or less characteristic appearance, or occupy one or another of the portions of the ranges of variation of different characters. These ranges of variation are widely overlapping, however, and on many hosts the extreme range may be detected. A careful and intensive study of both stages of these related forms will undoubtedly reveal many minor varieties which are limited to certain hosts, but there exists at present such a maze of transitional forms that it is extremely difficult to determine any specific lines of separation on a morphological basis. The occurrence on each host is therefore considered separately.

Diaporthe medusaea differs in the elongate ostioles and the often clustered perithecia. These characters may be merely growth variations, but in many cases they seem to be correlated with certain host substrata, whereas on others, as Ulmus and Platanus, both this species and D. eres seem to occur.

Diaporthe Beckhausii and D. spiculosa indicate the beginning of the clustering of the perithecia and the formation of a pustulate entostroma, and are therefore intermediate between D. eres and the pustulate species. In D. Beckhausii a difference in the beta conidia has been detected in culture.

The occurrence of this species has been noted on the following hosts:

On Acer

Diaporthe protracta Nit., Pyr. Germ. 255. 1867.

Quite variable. On surface as numerous angular ruptures of the periderm exposing the blackened bark surface, or as small groups of pustulate, erumpent ostioles. Bark surface heavily blackened over entire area or locally about ostioles or scarcely at all. Ventral zone definite in wood or only lateral. Ostioles erumpent singly or in small clusters, usually short-cylindric, rarely elongate, appressed or sinuous, as in D. medusaea. Perithecia irregularly and thickly scattered or loosely grouped in wood or bark. Spores 10-15 x 2.5-4 μ.
PLATE III

DIAPORTHE

(Spores X 1000; 1 mm. = 1 µ)

D. spiculosa (Alb. & Schw.) Nit. 5. Stroma 6. Ascospores
D. medusae Nit. 7. Stroma 8. Ascospores
D. sociata (Cke. & Ell.) Sacc. 9. Stroma 10. Ascospores
**DIAPORTHE**

**Hosts:** *Acer campestris; A. Pseudoplatanus.*

**Distribution:** Belgium; England; Germany; Poland.

**Exsiccati:** *(Sphaeria blepharodes)* Cke., Fung. Brit. II, 244.


**Collections:** *(Diaporthe fallaciosa)* Nit. Herb. 8, Cappenberg, Aug., 1866 (type); Schlossgarten, April, 1867: excl. Höhn. Herb. A 3952 (6904), Wiener Wald, June, 1902.

*(Diaporthe protracta)* Nit. Herb. 9, labeled “Sph. spiculosa P. var.,” Leipzig, Auerswald (type); Cappenberg, Aug., 1866.

*(Diaporthe Aceris)* Farlow Herb., ex Ellis Herb., G. F. Meschutt.

Immature material on Acer may be confused with *Cryptodiaporthe Lehiseyi,* which differs in the entire lack of any blackened zones and the very small ostioles. Nitschke’s specimen (April, 1867) of *D. fallaciosa* shows elongate, sinuous ostioles as they occur in *D. medusaea.*

**On Aesculus**


On surface as pustulate or angular ruptures of the periderm. Dorsal zone present or absent, or merely about the ostioles, which are erumpent singly or in small groups. Ventral zone usually present. Perithecia irregularly scattered or somewhat grouped in bark or wood.

**Host:** *Aesculus Hippocastanum.*

**Distribution:** Germany; Moravia; Poland.

**Exsiccati:** *(Diaporthe coneglanensis)* Krieger, Fung. Sax. 2465, 2466; Petr., Fung. Pol. 632.

*(Diaporthe transiens)* Petr., Fl. Boh. et Mor. 980.


*(Diaporthe coneglanensis)* Höhn. Herb. A 4051 (6981), Krieger 93, 94.

Von Höhnel *(Ann. Myc. 16: 117)* has already pointed out that the species named above are all growth forms of one species.
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Conidial connections

Cited by Traverso as the conidial stage of D. coneglanensis. Conidia given by Saccardo as oblong-fusoid, 7–8 × 3 µ.

On Ailanthus

Host: Ailanthus glandulosa.
Distribution: Germany.
Collections: (Diaporthe glandulosa) Riksmuseet, Stockholm, Rehm Herb., Krieger, April, 1881 (type). Issued in Fl. Sax. 112, as Diaporthe (Euporthe) fuscidula Rehm.

On Alnus

Sphaeria verrucella Fr., pro parte in Herb.
Diaporthe alnea Fck., in Nit., Pyr. Germ. 312. 1867.
Dorsal blackening irregular, often only about ostioles. Ventral zone present or often only at margins of fruiting areas. Perithecia irregularly scattered. Spores 11–15 × 2.5–4 µ.
Hosts: Alnus glutinosa; A. incana.
Distribution: Austria; Germany; Sweden.
(Diaporthe sordida) Krieger, Fung. Sax. 2476.
(Diaporthe alnea) Nit. Herb. 56, Fückel; Erdmanns, April, 1866 (pycnidia).
(Diaporthe sordida) Höhn. Herb. A 3954 (6906), April, 1911, Krieger.

The type of Sphaeria verrucella Fr. from Weinman is Fenestella minor. A second collection labeled “in Alno incana rara” is the type of D. verrucella (Fr.) Star.
Conidial connections
Conidia of Diaporthe alnea given by Nitschke as 7 × 3 μ. Conidia on Nitschke's material are 7–9 × 1.5–2 μ.

On Amorpha
Dorsal blackening along bark surface, particularly about the ostioles. Ventral zone definite in wood. Perithecia irregularly scattered, but usually collectively erumpent as small groups of cylindrical ostioles. Spores 11–13 × 2.5–3.5 μ.
Host: Amorpha fruticosa.
Distribution: Germany.

Diaporthe Amorphae Ell. & Ev. differs from this form only in the pustulate character of the dorsal zone and the somewhat shorter and broader spores.

On Ampelopsis

Dorsal blackening on bark surface present or interrupted. Ventral zone deep in wood or along pith. Perithecia scattered singly or in loose groups, separately or collectively erumpent. Spores 11–14 × 2.5–4 μ.
Host: Ampelopsis quinquefolia.
Distribution: Luxemburg; Silesia.
Exsiccati: (Diaporthe incompta) Petr., Fl. Boh. et Mor. 607.

On Aristolochia
Both dorsal and ventral zones present. Entostromatic areas somewhat limited. Perithecia collectively erumpent. Spores 11–12 × 2.5–3.5 μ. Only one scant specimen seen.
Host: Aristolochia sipho.
Distribution: France.
Exsiccati: (Diaporthe Tulasnei) Roum., Fung. Gall. 5843.

On Betula
Surface of bark heavily blackened or only slightly so. Ventral zone definite in wood, or only lateral where entire twig is entostromatic. Perithecia thickly and irregularly scattered, or often crowded in large clusters, forming pustulate swollen areas on the surface; and the ostioles then collectively erumpent and often elongate-sinuous and appressed, as in *D. medusaea*. Spores 11–13 × 2.5–3.5 μ.

Host: *Betula alba*.

Distribution: Germany.


*Diaporthe exasperans f. santonensis* Pass. (*Rev. myc.* 8: 1886), with 2–3 perithecia in a stroma, is doubtfully this species. Some of Nitschke’s material on *Betula* has the appearance of *D. medusaea*, but this is apparently only a growth form on this host, since it occurs intermixed with the typical form.

On *Brassica*

*Diaporthe incrustans* Nit., Pyr. Germ. 267. 1867.

Surface of bark heavily blackened. Ventral zone definitely present. Perithecia scattered singly or occasionally in crowded clusters, in the bark or wood. Spores 10–12 × 2.5–3.5 μ, somewhat inequilateral when immature.

Host: *Brassica* sp.

Distribution: Germany.


Collections: (*Diaporthe incrustans*) Nit. Herb. 21, Wienberg, Jan., 1867 (type); Jägerhäuschen, Feb., 1867, April, 1867; Höhn. Herb. A 3937 (6896), Wienberg, 1870, Nitschke.

This is a form of *D. eres* on herbaceous stems showing the production of ectostromata and the characteristic rupturing of the periderm and structure of this species.

Conidial connections


Nitschke describes the “spermatia” as 5–7 × 2–2.5 μ. The type material shows alpha conidia which are fusoid and 6.5–8 (9.5) × 2–2.5 μ.

On *Buxus*


Surface of bark irregularly blackened, chiefly about the erumpent ostioles. Ventral zone present. Perithecia scattered singly or in small groups, often collectively erumpent. Spores 11–13 × 2–3 μ.

Host: Buxus sempervirens.

Distribution: Austria; Germany; Luxemburg.

Exsiccati: (Diaporthe retecta) Fck., Fung. Rhen. 1902; Krieg., Fung. Sax. 82.

Collections: (Diaporthe retecta) Nit. Herb. 49, Fuchel (XII), 1867 (type); Höhn. Herb. A 3985 (6924), Luxemburg, July, 1901, Feltgen (type of Didymella cladophila var. buxicola Feltg.).

Conidial connections

The Cytispora and Phoma listed above are cited by Nitschke as the conidial stage of D. retecta. The conidia of C. Buxi are described by Desmazières as ovoid-oblong and 4–7 μ. Traverso gives the conidia of his Phomopsis as 7–8 × 3–3.5 μ.

On Carpinus

Diaporthe sordida Nit., Pyr. Germ. 252. 1867.
Diaporthe minuta Nit., Pyr. Germ. 309. 1867.

Surface of bark heavily blackened on larger twigs, dorsal zone sometimes running slightly beneath the surface, as in the form on Tilia. Dorsal zone usually absent on smaller twigs. Ventral zone heavy, deep in wood. Perithecia scattered singly or irregularly crowded. Spores 11–14 × 2.5–4 μ.

Host: Carpinus Betulus.

Distribution: Germany; Moravia; Poland.


Collections: (Diaporthe sordida) Nit. Herb. 6, Maykotten, Feb., 1867 (type); Cappenberg, June, 1865 (pycnidia).

D. minuta is a form, on small twigs, with flattened perithecia in the scant bark, and very little dorsal blackening and corresponds to D. tumulata and D. pusilla on Corylus.

Conidial connections
Phoma sordida Sacc., Syll. 3: 99. 1884.
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Nitschke gives the "spermatia" of D. sordida as 8-10 × 2-2.5 μ and the "stylospores" as filiform-hamate and 27-30 × 1 μ. Nitschke's material (Cappenberg, 1865) shows beta conidia 20-27 × 1 μ. He gives the "spermatia" of D. minuta as subcylindric and 6 × 2 μ.

On Castanea

Diaporthe castaneti Nit., Pyr. Germ. 320. 1867.

Very little blackening of the bark surface except about ostioles. Ventral zone definite within the wood. Perithecia small and more or less grouped in the bark beneath the ectostromata, or large and scattered singly within the wood. Spores 11-14 × 2.5-3.5 μ.

Host: Castanea vesca.
Distribution: Corsica; Germany; Italy.
Collections: (Diaporthe castaneti) Nit. Herb. 64, Cappenberg, Aug., 1864 (type).
(Diaporthe minuta) Höhn. Herb. A 3980 (6919), Corsica, April, 1905.

On Catalpa


Forming pustulate ruptures on the surface, exposing the blackened ectostromata. No blackening of bark surface except about erumpent ostioles. Ventral zone definite. Perithecia scattered singly or in small groups. Spores 11-12 × 2.5-3.5 μ.

Host: Catalpa sp.
Distribution: Ontario.

On Cerasus: see under Prunus

On Conifers

Sphaeria strobilicola Lib., in Herb.
Valsa occulta Fck., in Fung. Rhen. 622. 1863.
Diaporthe occulta (Fck.) Nit., Pyr. Germ. 266. 1867.
Diaporthe pitya Sacc., Fung. Ven., Ser. 4. 7. 1875.
Diaporthe pinophylla Plowt. & Ph., Grev. 4: 124. 1876.
On surface as minute pustules or pustulate ruptures, through which the ostioles are erumpent separately or in small clusters. Ostioles fine-filiform, often somewhat elongate or sinuous. Dorsal blackening irregular or present only about the erumpent ostioles. Ventral zone definite in bark. Entostromata often limited in area. Perithecia irregularly scattered or loosely grouped. Spores 9–12 × 2.5–4 μ.

Hosts: Abies pectinata; Picea Abies; Pinus Laricio; P. sylvestris; Pseudotsuga Douglasii.

Distribution: Austria; Belgium; England; France; Holland; Hungary; Italy; Luxemburg; Moravia; Wales.


(Falsa occulta) Fck., Fung. Rhen. 622 (type).


(Diaporthe conorum) Roum., Fung. Gall. 1563.


Collections: (Diaporthe conorum) Höhn. Herb. A 4051 (6982), ex Herb. cr. de la Côte-d’Or, Fautrey 992, 1896.

(Diaporthe occulta) Höhn. Herb. A 3938 (6897), Luxemburg, July, 1901, Feligen (type of D. conigena Feltg.).


(Diaporthe pinicola) Magyar Nemzeti Muzeum, ex Herbario Frid. Hazslinskyi (type).

The ostioles of this form on conifers are fine-filiform and are often elongate and sinuous, and might easily be considered under Diaporthe medusaeae. Diaporthe conorum, D. occulta, and D. conigena occur on cone scales; D. pinophylla occurs on the needles; D. pitya, on the twigs of conifers. D. thujana has not been seen, but the description seems to be that of D. eres. Petrak says it differs from D. pitya in the clustered perithecia and heavy perithecial membrane, which are both variable characters in these species. D. pinicola also shows clustered perithecia. Only conidia (12–14 × 1.5–2 μ) were seen in this species.
Conidial connections

A number of conidial connections are reported for these species on conifers. Wilson and Hahn have made a special study of the parasitic forms of Phomopsis and related genera on conifers and have done much to clear up their identity. The following species have been reported:

Phoma occulta Sacc., Syll. 3:150. 1884.
Phomopsis occulta (Sacc.) Trav., Fl. Ital. Crypt. 2:221. 1906.

Nuckel (Nachtr. 3:23) gives the spermatia of Diaporthe occulta as 7 x 3 µ. Grove describes the conidia of Phoma occulta as 9-11 x 2-2.5 µ. Von Höhnel (Sitz. 119:648) cites Sporonema strobilina, with spindle-shaped conidia, 1-2-celled and 12 x 1.5-2 µ, as the imperfect stage of D. occulta. This appears to be a mere guess (see also Hahn, Trans. Brit. Myc. Soc. 15:47-52).

Phomopsis conorum (Sacc.) Höhn. var. naviculispora Trav.

Phomopsis pitya (Sacc.) Lind, pro parte, non Phoma pitya Sacc.

The synonymy as listed here is taken from Hahn (op. cit., 15:282), who gives a detailed account of this species, but reports no perithecial connection. It was regarded by Saccardo as the conidial stage of Diaporthe conorum. Hahn gives the alpha conidia as spindle-shaped, rarely ellipsoid, and 6.5-13 x 2.5-4 µ, and the beta conidia as curved, hamate, and 10-32 x 1 µ (see also Hahn, op. cit. 15:57-61).

Sclerophoma pitya (Sacc.) Died., Ann. Myc. 9:281. 1911: non S. pitya (De Thiim.) Höhn.


The synonymy is taken from Wilson and Hahn (op. cit., 13:261), who give a detailed account of the identity of this species, but report no cultural connection. Saccardo gave the conidia as 9-11 x 2.5-3.5 µ and considered it the conidial stage of his Diaporthe pitya. Wilson and Hahn listed the conidia as 6-12 x 2.5-4 µ. No beta conidia were found. The conidia were formed by a budding from the wall cells of the pycnidium.


Hahn (Phytopath. 10:249-253) also reports a Phomopsis juniperovora Hahn as a parasite occurring on Juniper, Cupressus, and Pseudotsuga, but not on Pinus and Picea. Wilson and Hahn give Ph. abietina (Hart.) Wilson & Hahn as a distinct species occurring on conifers. No connections have been made with these last two species.

Hahn (in litt.) states that Phomopsis Thujae Died., which Petrak gives as the imperfect stage of his D. thujana, is only a form of the imperfect stage of D. occulta.
From this confusion there probably will arise a number of varieties distinguished by minor characters in both the perfect and imperfect stages, which will be more or less correlated with the host upon which they occur. Recently, Hahn (op. cit. 15: 52-93) has differentiated eight species of Phomopsis on coniferous hosts, only one of which, *Ph. occulta*, has been connected with its perithecial stage, in this case, *D. conorum*.

On Cornus


On surface as minute pustules. Dorsal blackening present or absent. No ventral zone. Spores 12-14 x 3-4 μ. Hosts: *Cornus paniculata*; *C. stolonifera*.

Distribution: Ontario; Iowa.


This American species seems to be typical *D. eres*. Many of the European collections show a marginal zone on the surface, as in *D. pardinota*. See discussion under “*D. pardinota on Cornus*,” p. 52.

On Coronilla


On surface as perforations of the periderm, exposing the heavily blackened bark surface. Ventral zone irregular, within the wood. Perithecia scattered singly, 600-640 x 400-480 μ. Spores 11.5-14 x 3-4 μ. Host: *Coronilla emerus*.

Distribution: Moravia.

Exsiccati: (*Diaporthe Coronillae*) Petr., Fl. Boh. et Mor. 1112.

Conidial connections

*Phoma Coronillae* West., Herb. Belg. 966. 1854.


Saccardo regards *Sphaeria Coronillae* Desm. as the conidial stage of his *D. Coronillae*, but Desm., *Pl. cr. Fr*. 1279, of this Sphaeria shows only dothideaceous stromata, which Von Höhnel (*Sitz. Akad. Wiss. Wien*, 118 : 401) states belongs to *Dothichiza Coronillae* (Desm.) Höhnel. The alpha conidia of *Phomopsis Coronillae* are given by Westendorp as 7-8 x 3 μ and by Bubak as 9-11 x 2-2.5 μ; the beta conidia are given by Westendorp as 20 x 1.5 μ, by Bubak as 20-26 x 1.5 μ, and by Grove as 15-16 x 1 μ.
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On Corylus

Sphaeria tumulata Cke. & Ell., Grev. 5: 49. 1876.
Diaporthe tumulata (Cke. & Ell.) Sacc., Syll. 1: 634. 1882.

On surface as numerous angular to pustulate ruptures of the periderm, exposing the blackened bark surface or ectostromata. Dorsal zones present or absent except about the erumpent ostioles. Ostioles barely erumpent or sometimes elongated, erumpent singly or in small clusters. Perithecia loosely grouped or irregularly scattered. Spores 10–13 × 2.5–3.5 μ.

Hosts: Corylus americana; C. avellana; C. Lambertianna.
Distribution: Austria; Bohemia; Germany; Moravia; Poland; New Jersey.
(Diaporthe tumulata) Petr., Fl. Boh. et Mor. 20.
(Diaporthe decedens) Krieg., Fung. Sax. 2468.

(Diaporthe tumulata) N. Y. M. Herb., Newfield, New Jersey, Ellis 2366.
(Diaporthe decedens) Höhn. Herb. A 4046 (6968), Königstein, Krieger.

Diaporthe revellens f. immersa Sacc. (Allg. Myc. Tauschver.) and D. pusilla are D. revellens on small twigs, with the perithecia usually scattered and immersed in the wood.

Conidial connections
Phoma revellens (Sacc., Syll. 3: 99. 1884.
Nitschke gives the "spermatia" of D. revellens as oblong, straight and 6–7 × 3 μ.

On Crataegus


Forming numerous angular to pustulate ruptures of the periderm. Ostioles erumpent, usually in small clusters, sometimes slightly elongated. Dorsal zone slight except about erumpent ostioles. Ven-
tral zone present or absent. Perithecia thickly scattered, usually collectively erumpent. Spores 10–13 × 2.5–3.5 μ.

Host: *Crataegus Oxyacantha*.

Distribution: Germany; Moravia; Ontario.


Collections: *(Diaporthe semiimmersa)* Nit. Herb. 7, Cappenberg, Sept., 1866 (type).

On Cydonia: *see under Prunus*

On Daphne

Diaporthe Delogneana Sacc. & Roum., Rev. myc. 3 (11) : 43. 1881.


Authentic material (Fung. Gall., 1561) of *D. Delogneana*, in the Farlow Herbarium, is a mere remnant which shows nothing. The original description cites a ventral black line, perithecia as gregarious, asci 45–55 × 8 μ, and spores 12–14 × 3–3.5 μ with appendages. Petrak (*Ann. Myc. 17 : 98*) gives a detailed description of this species. He states that there are no appendages on the spores and that it is the same as *D. helicis* on *Hedera helix*, which is a form of *D. eres*. Feltgen (*Vorst. Pilz. Lux., Nachtr. 3 : 144*) gives his *D. Mezerei* as the same as *D. Delogneana*. Both these species are doubtful.

Host: *Daphne Mezereum*.

Distribution: France.


On Deutzia


On Dirca


On surface as pustulate ruptures. Ostioles erumpent singly or in circular or irregular clusters, often conic-elongate. Dorsal zone along
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bark surface; often dipping slightly into bark. Ventral zone deep in wood, sometimes absent. Perithecia 320–600 x 240–320 μ, scattered or loosely grouped. Ascii 55 x 7–8 μ. Spores 12 x 3 μ (immature). Similar to the form on Tilia; shows transition to D. spiculosa.

Host: *Dirca palustris.*

Distribution: Ontario.


On Evonymus

*Sphaeria rostellata* Lasch, in Nit. Herb.


Host: *Evonymus europaeus.*

Distribution: Austria; England; Germany.


*D. eres* on Evonymus has been confused with *D. Laschii* Nit., which differs in its appendiculate spores. Nitschke gives *Sph. rostellata* as a synonym of *D. Laschii*, but the specimen in his herbarium is *D. eres* (see *D. Laschii*, p. 158).

On Ficus


On surface as numerous pustulate ruptures exposing the blackened ectostromata. Dorsal blackening absent or present chiefly about the erumpent ostioles, sometimes irregularly pustulate. Ventral zones irregularly present. Perithecia irregularly scattered or grouped, usually collectively erumpent. Spores 10–12 x 2.5–3 μ (immature in material seen). Spores given by Saccardo as 12–15 x 3–4 μ.

Host: *Ficus Carica.*

Distribution: Italy; New Jersey.


Collections: *(Diaporthe cinerascens)* Farlow Herb., ex Ellis Herb., Newfield, New Jersey, April, 1876.
Conidial connections


Phoma cinerascens is given by Saccardo as the conidial stage of D. cinerascens.
He describes the conidia as fusoid, 6–8 × 2–2.5 μ. Grove (Kew Bull. Misc. Inf. 1917: 55) cites Libertella ulcerata as a synonym.

On Fraxinus

Diaporthe scobina Nit., Pyr. Germ. 293. 1867.
Diaporthe Fraxini Fck., in Fung. Rhen. 2258. 1869.
Diaporthe samaricola Ph. & Plowr., Grev. 3: 126. 1875.
Diaporthe ciliaris (Curr.) Sacc., Syll. 1: 676. 1882.
Diaporthe priva Sacc. & Roum., Rev. myc. 6: 27. 1884.
Diaporthe scobinoides Schulz & Sacc., Rev. myc. 6: 69. 1884.

Quite variable. On surface as numerous angular pustules. Periderm often exfoliated, especially on smaller twigs, exposing the heavily blackened bark surface. Surface of bark heavily blackened or entirely free from blackening. On small twigs the entostromatic areas are sometimes bounded on the surface by a marginal line, as in D. pardalota. Ventral zones usually present, often deep in wood. Perithecia 240–640 × 160–480 μ, irregularly scattered, mostly singly, in either bark or wood. Spores 10–14 (15) × 2.5–4 μ.

Host: Fraxinus americana; F. excelsa; F. excelsior; F. Ornus.
Distribution: Austria; Belgium; England; France; Germany; Moravia; Poland; Switzerland.
(Diaporthe Fraxini) Fck., Fung. Rhen. 2258 (type).
(Diaporthe priva) Roum., Fung. Gall. 3234 (authentic).
Collections: (Sphaeria controversa) Curtis Herb. 460.5.6 pro parte: excl. Curtis Herb. 460.5.7, 8.
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(Diaporthe controversa) Nit. Herb., April, 1865, and Sept., 1868, Erdmanns.
(Sphaeria ciliaris) Kew Herb. (Currey Herb.), Dec., 1881 (type).
(Diaporthe scobina) Nit. Herb. 38 (type); Höhn Herb. A 3999 (6931), Tabloniza, Herzegovina, 1903.
(Diaporthe obscurans) Höhn. Herb. A 4051 (7003), ex Herb. cr. de la Côte-d'Or, April, 1896 (?).

The specimen of D. obscurans in Von Hohnel's herbarium is a mere fragment and shows very little. *Fung. Ital.* 1274 gives figures of *D. obscurans* which appear to be *D. eres*. Saccardo states that *D. obscurans* is not comparable to *D. scobina* and *D. controversa*, which have broad spores (12×4.5-5 μ). If this be true, *D. obscurans* may be the same as *D. congener* Ell. & Ev. No specimens of *D. scobinoides* have been seen, but the original description seems to be that of *D. controversa*. The type of *Sphaeria ciliaris* shows the accompanying Helminthosporium given by Currey as the conidial stage, but it has no connection with the Diaporthe.

Conidial connections

Given by Saccardo as the conidial stage of *D. controversa*, with conidia fusoid, 7-8×2-3.5 μ, and "basidia" curved, 12×1 μ.

Given as the conidial stage of *D. scobina* by Cooke, who describes the conidia as fusoid to clavate, 10-12×3-3.5 μ. Von Höhnel cites the alpha conidia of his Myxolibertella as bacillar to fusoid and 8-12×1.5 μ, and the beta conidia as filiform, curved, and 20-25×1 μ.

*Sphaeria pterophila* Nit., *in litt. ad Fck.*
Given by Diedicke as the conidial stage of *Diaporthe samaricola*, with fusoid conidia 7-8×2.5 μ. Grove (*Kew. Bull. Misc. Inf.* 1917:61) states that *Phoma samararum* Desm. is not a synonym of *Ph. pterophila* as given by Fuckel.

On Fuchsia

*Diaporthe Fuchsiae* Petr., *in Fl. Boh. et Mor.* 1484. 1921.

Scarcely visible on surface as barely erumpent ostioles. Fine dorsal zone along bark surface. Ventral zone deep in wood. Perithecia scattered singly or adjacent. Pycnidia seen in upper bark layers. Spores 11-13×2.5-3.5 μ.
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Host: *Fuchsia sp.*
Distribution: Moravia.

Conidial connections

A Phomopsis with irregular, flattened, pycnidial locules formed in the upper bark layers beneath the dorsal blackening accompanies this Diaporthe on the type material. The alpha conidia in these locules are fusoid and measure 6.5-9.5 × 2 μ. The beta conidia are filiform-hamate and 13-25 × 1 μ.

On *Genista*

Diaporthe genistincola Rehm in litt., in *Syd., Myc. March.* 3731. 1892.

Material of this exsiccatus in the Farlow Herbarium shows only immature stromata, with a somewhat pustulate dorsal zone, immature perithecia, and pycnidial cavities containing ellipsoid conidia 6-7 × 2-2.5 μ. The same exsiccatus in the New York Botanical Garden shows a definite ventral zone, stromata of the *D. eres* type, and ascospores 13 × 3-4 μ.

Host: *Genista tinctoria.*
Distribution: Germany.

On *Geranium*


On surface as numerous pustulate ruptures. Ostioles scarcely erumpent. Dorsal blackening irregular, along bark surface. Ventral zone in wood. Perithecia 320-480 × 240 μ, scattered singly or irregularly crowded. Spores 12-14 × 2.5-4 μ.

Host: *Geranium sp.*
Distribution: California.
Collections: (*Diaporthe Geranii*) Cal. Acad. Sci. 7144, Harkness Coll. 2429, April, 1881 (type).

*D. Geranii* differs from *D. elephantina* in the lack of the elongate appressed ostioles of the latter species.

On *Gleditzia*


On surface as circular perforations exposing blackened areas of the bark surface. Dorsal blackenings limited chiefly to these ecto-
stromatic areas. Ventral zones mostly absent or only lateral. Perithecia small, scattered in the wood.

Host: *Gleditsia triacanthos*.
Distribution: Italy.

*Myc. Ven. 1400* of this species is a mixture of an immature *D. eres*, a Leptosphaeria, and a Cryptovalsa.

On Hamamelis

On surface as numerous minute, pustulate ruptures containing 1–4 short-cylindric ostioles. A fine dorsal zone runs along the bark surface and is sometimes slightly and irregularly pustulate. Perithecia scattered or irregularly grouped, often collectively erumpent. Ventral zone usually absent, or along wood surface. Spores 10–13 × 3–4 μ.

Host: *Hamamelis virginiana*.
Distribution: Michigan.
Collections: *(Diaporthe eres) Weh. Herb., Wehmeyer 305 a, Ann Arbor, Michigan, June, 1925. Twigs of this collection placed in a damp chamber produced elongate, sinuous ostioles, illustrating the doubtful value of this character. This form on Hamamelis is very similar to the American form on *Ulmus* (*D. Woolworthi*), which lacks the ventral zone.

On Hedera

*Diaporthe Nitschkei Kze., in Fung. Sel. 124. 1875.*
*Diaporthe helicis Niessl, Notiz. Pyr. 50. 1876.*

On surface as perforations of the periderm, through which one or a few short ostioles are barely erumpent. Surface of bark more or less blackened. Ventral zone definite in wood. Perithecia scattered singly or in small groups. Spores 11–14 × 2.5–4 μ.

Host: *Hedera helix*.
Distribution: Germany.

This form is very similar to *D. pulla*, which differs from *D. medusaea* only in the narrower (12–14 × 2–2.7 μ) spores. These specimens, however, show spores up to 4 μ in diameter, so that *D. eres* also apparently occurs on this host.
On Hibiscus


Diaporthe ophiites Sacc.

Diaporthe tenella (Schw.) Star., Stud. Svamp. 28 (Bih. t. K. Svenska Vet.-

On surface as numerous blackened ectostromata exposed by the perforation of the periderm. Ostioles scarcely erumpent, in small clusters. Surface of bark blackened about the ectostromata or irregularly elsewhere, occasionally dipping slightly into the bark. Perithecia small, 200-280 x 160-200 μ, irregularly scattered. Ventral zone usually definite in the wood. Spores 9-14 x 2.5-4(4.5) μ.

Hosts: *Hibiscus rosesus*; *H. syriacus*.

Distribution: Italy; New Jersey; South Carolina.


Collections: (Sphaeria tenella) Curtis Herb. 454.18.8 (Schweinitz Herb. 513) (authentic): excl. Curtis Herb. 454.18.4 (Schweinitz Herb. 1491).

When fully mature, the spores of this species tend to be broader (4.5 μ) than the typical spores of *D. eres*. Saccardo gives *Sphaeria Ketmiae* Ces. as a synonym of his *D. ophiites* and Traverso makes this *Diaporthe Ketmiae*, but the type of *Sph. Ketmiae* is not a Diaporthe (see under “excluded species,” p. 256).

Conidial connections


Saccardo gives the conidia of this imperfect stage as fusoid and 10 x 2 μ.

On Hydrangea


Host: *Hydrangea arborescens*.

Distribution: West Virginia.


This form has more scattered perithecia and rather broader spores than the typical *D. eres*. 
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On Ilex


On surface as the small, exposed, blackened, ectostromatic disks, which are the only dorsal blackening. Perithecia scattered singly or in small groups. Spores 11-12.5 × 2.5-3.5 μ.

Host: Ilex aquifolia.
Distribution: Belgium.
Exsiccati: (Diaporthe crustosa) Roum., Fung. Gall. 1562 (authentic).

The original description gives the spores as 15-17 × 3-3.25 μ, but the rather fragmentary type material seen was immature, with spores 11-12.5 × 2.5-3.5 μ, and was apparently D. eres.

Conidial connections
Conidia given as ovoid-acuminate, 7-9 × 2.5 μ.

On Kerria


On surface as minute, papillate pustules, with separately erumpent, barely visible ostioles. Dorsal blackening chiefly about the erumpent ostioles. Perithecia scattered in bark. Ventral zone deep in wood. Spores 12-13 × 2.5-3.5 μ.

Host: Kerria japonica.
Distribution: Germany.
Exsiccati: excl. (Diaporthe japonica) Roum., Fung. Gall., 5842 (pycnidia only).
Collections: (Diaporthe japonica) Höhn. Herb. A 4051 (7015), Krieger, April, 1917.
Conidial connections
Saccardo describes the alpha conidia as fusoid and 10 × 2 μ, and the “basidia” as uncinate and 25 × 1 μ. Traverso gives the alpha conidia as 6-10 × 2-3 μ and the “basidia” as 20-25 × 1 μ.

On Ligustrum

(Syd., Myc. March. 2828): non D. ligustrina Ell. & Ev.

On surface as minute, pustulate ruptures through which the short ostioles are erumpent singly or in small loose clusters. Surface of bark irregularly blackened, chiefly about the erumpent ostioles. Ventral zone present deep in wood or along pith. Perithecia scattered singly or loosely grouped. Spores 9-14 x 2.5-3.5 μ.

Host: Ligustrum vulgare.
Distribution: Germany; Moravia.
Exsiccati: (Diaporthe hrachyceras) Rehm, Asc. 1513; Petr., Fl. Boh. et Mor. 16: excl. Petr., Fl. Boh. et Mor. 679; Rehm, Asc. 2070 (in Höhn. Herb.).
(Diaporthe Ligustri) Petr., Fl. Boh. et Mor. 1114.
(Diaporthe Ligustri-vulgaris) Petr., Fl. Boh. et Mor. 1115; Petr., Fl. Mor., Mahr-Weisskirchen, 1914 (authentic).
Collections: (Diaporthe hrachyceras) N. Y. G. Herb., Ellis Coll., Zurich, Switzerland, Nov., 1880.

Allescher describes his D. Ligustri as having clustered, elongate, curved ostioles and a ventral zone. Petrak says his D. Ligustri-vulgaris differs in the absence of the ventral zone and the short ostioles, but his exsiccati (Fl. Boh. et Mor. 1114, 1115) of these two species show no such differences and both have a ventral zone along the margin of the pith. Saccardo (Ann. Myc. 6: 564) gives Diaporthe ligustrina Ell. & Ev. on Ligustrum ibota, but this species was originally described on Andromeda (Lyonia) ligustrina and is probably D. fikes on that host.

Conidial connections
Given by Saccardo as the conidial stage of his collection of D. ligustrina Ell. & Ev. on Ligustrum ibota. Alpha conidia fusoid, 11 X 2.5-3 μ.
This species name is preceded by Ph. ligustrina De Thüm. (Contr. Fung. Liter., 314) and by Ph. ligustrina Sacc. (Mich. 1: 523).

On Liriodendron
Erumpent as numerous pustulate clusters of somewhat elongated ostioles. Entostromata strongly differentiated. Dorsal blackening chiefly about the ostioles, sometimes dipping slightly into the bark. Perithecia thickly scattered, usually collectively erumpent. Spores 10-12 x 3-4 μ, rather short and broad.
Host: Liriodendron Tulipifera.
Distribution: Maryland.
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Collections: *(Diaporthe Magnoliae)* Farlow Herb., ex C. L. Shear Herb., 821, Takoma Park, Maryland, Dec., 1899 (f. *Liriodendri*).

On *Lonicera*

*Diaporthe cryptica* Nit., Pyr. Germ. 265. 1867.

On surface as barely erumpent ostioles or as small, circular, blackened, ectostromatic disks. Surface of bark irregularly blackened. Ventral zones present or absent. Perithecia rather large, 400–800 μ in diameter, scattered singly but often collectively erumpent, usually immersed in the wood. Spores 11–14 × 2.5–3.5 μ.

Hosts: *Lonicera Pericylemenum; L. sempervirens; L. tatarica; L. Xylosteum*.

Distribution: France; Germany; Moravia; Poland; Delaware; New Jersey.


*(Diaporthe didymelloides)* Room., Fung. Gall. 6114.

Collections: *(Diaporthe cryptica)* Nit. Herb. 19, Erdmanns, July, 1866 (type); Cappenberg, Aug., 1866; N. Y. G. Herb., Ellis Coll. 2218, ex A. Commons Herb., Wilmington, Delaware, Sept., 1893; 28, Newfield, New Jersey, 1877; Newfield, Feb., 1890.

Conidial connections


Nitschke describes the “spermatia” of *D. cryptica* as fusiform, obtuse and 7–8 × 2 μ, and the “stylospores” as filiform, variously curved and 33 × 1 μ. The type material shows alpha conidia 6–8 × 2–2.5 μ and beta conidia 16–30 × 1 μ.

On *Lycium*

*Diaporthe importata* Nit., Pyr. Germ. 315. 1867.

On surface as small ectostromata or irregular clusters of ostioles erumpent through pustulate ruptures of the periderm. Dorsal blackening present or absent. Ventral zone present or absent. Perithecia irregularly scattered, often collectively erumpent. Spores 11–14 × 2.5–4 μ.

Host: *Lycium barbarum*.

Distribution: England; Germany.


Collections: *(Diaporthe importata)* Nit. Herb. 59, Beckhaus, Feb., 1869 (type).

Nitschke's type of this species is an immature specimen with well-developed ectostromata, somewhat clustered perithecia, and very little development of the ventral zone.
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Conidial connections


Given by Saccardo as the conidial stage of *D. importata*, with alpha conidia fusoid-cylindric, 7-8 X 2.5-3 μ, and "basidia" as fasciculate, acicular, 18-20 X 2 μ.

On *Lyonia*


On surface as numerous minute, blackened disks, which are apparently pycnidial ectostromata. Neither dorsal nor ventral zones present. Slight blackening of bark above the perithecia. Spores 10 X 4 μ (Ellis).

**Host:** *Andromeda (Lyonia) ligustrina*.

**Distribution:** New Jersey.

**Collections:** (*Diaporthe ligustrina*) N. Y. G. Herb., Ellis Coll., Newfield, New Jersey, April 20, 1896 (type).

The type cited above provided only old decayed perithecia and no ascospores. Ellis states that the perithecia are seriatly arranged, with distinctly erumpent ostioles, and that the spores are 10 X 4 μ and the asci 50-60 X 8-10 μ. This appears to be rather old material of a form of *D. eres*.

Conidial connections

Alpha conidia were found in pycnidia on the type material. These were fusoid and measured 9-11 X 2.5-3.5 μ.

On *Magnolia*


On surface as numerous pustulate ruptures. Dorsal zone along bark surface, sometimes dipping slightly into the bark. Ventral zone present or absent, often faint. Perithecia scattered singly or in small loose groups, often collectively erumpent. Spores 10-13 X 2.5-4 μ.

**Host:** *Magnolia glauca*.

**Distribution:** Alabama; Maryland; New Jersey.

**Collections:** (*Diaporthe Magnoliae*) Farlow Herb., ex. Ellis Herb., Newfield, New Jersey, 1889 (authentic); Tuscaloosa, Alabama, Dec., 1900, G. W. C. 749; C. L. Shear Herb., Takoma Park, Maryland, Jan., 1900.

On *Malus*: *see under Prunus*
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On Myrica

Diaporthe valida Nit., Pyr. Germ. 262. 1867.

On surface as pustulate ruptures through which the conic to somewhat elongated ostioles are erumpent singly or in small clusters. Dorsal blackening irregular along bark surface. Ventral zone thin, deep in wood. Perithecia irregularly scattered or crowded, often collectively erumpent. Spores 9.5–12 × 3–4 μ.

Host: Myrica cerifera.

Distribution: Germany.


Collections: (Diaporthe valida) Nit. Herb. 16, Feb., 1867 (type).

All the exsiccati of D. valida seen have been D. Wibbei, but Nitschke’s type is D. eres on Myrica.

On Philadelphus


On surface as rather large pustules, 0.5–1 mm. in diameter, through which there is erumpent an irregular group of fused ostioles. Dorsal blackening chiefly about the erumpent ostioles. Ventral zone definite in wood. Perithecia tending to be grouped in a strongly differentiated entrostroma. Spores 12–14 × 2.5–3.5 μ.

Host: Philadelphus coronarius.

Distribution: Germany.

Exsiccati: (Diaporthe Landeghemiae) Syd., Myc. March. 33b (7).

Collections: (Diaporthe Landeghemiae) Nit. Herb. 62, Münster, Jan., 1869 (pyc- nidia); July, 1869 (type).

Conidial connections

Phoma Landeghemiae Sacc., Syll. 3:71. 1884.


Nitschke gives the “spermatia” of D. Landeghemiae as fusoid to cylindric and 8 × 2.5 μ. Material in his herbarium shows ectostromatic pycnidia with flattened locules containing alpha conidia 8–10 × 2–2.5 μ. Kickx (Fl. crypt. des Flandres, 1:343) gives Hendersonia Philadelphi as the imperfect stage of D. Landeghemiae, but this is undoubtedly incorrect.

On Phillyrea

Diaporthe Phillyreae Cke., Grev. 7:81. 1879.
On surface as numerous pustulate ruptures exposing the blackened bark surface. Dorsal blackening only above the perithecia. Ventral zone deep in wood. Perithecia 320–400 × 240 μ, scattered singly, often erumpent in small groups. Spores rather small, straight or inequilateral, strongly constricted, 11–12 (13) × 2–2.5 μ.

Host: Phillyrea sp.
Distribution: England.
Collections: (Diaporthe Phillyreae) Kew Herb. (Cooke Herb.) (type).

On Physocarpus


On surface as numerous short, conic ostioles, erumpent singly or in crowded clusters. Usually no dorsal zone, sometimes a blackening above the perithecia. Perithecia thickly scattered, usually crowded in loose clusters but separately erumpent. No ventral zone. Spores 12–15 × 2.5–4 μ.

Host: Physocarpus (Opulaster) opulifolius.
Distribution: New York.
Collections: (Diaporthe Neilliae) N. Y. M. Herb., West Albany, on Opulaster, Peck (type).

This is a rather distinct form with no ventral zone, scarcely any dorsal blackening, and crowded perithecia. It is similar to D. linearis and is another linking form between the herbaceous and wood-inhabiting forms. A collection of D. Neilliae in the New York Museum, on Spiraea, collected by H. D. House, has larger spores and is D. Viburni Dear. & Bisby var. spiraeicola Wehm. on that host.

On Platanus

Diaporthe scabra Nit., Pyr. Germ. 310. 1867.

On surface as small, rather strongly pustulate disks. Bark surface blackened only about the erumpent ostioles. Ventral zone definite in wood. Entostromatic areas often limited (1–10 cm.). Perithecia scattered singly or in small groups. Ostioles barely erumpent. Spores 11–13 × 2.5–4 μ.

Host: Platanus orientalis.
Distribution: Germany.
Exsiccati: (Diaporthe scabra) Roum., Fung. Gall. 5939 (pycnidia only).
Collections: (Diaporthe scabra) Nit. Herb. 54, Erdmanns, April, 1865 (type); Cappenberg, May, 1867.
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Diaporthe medusina (Fr.) Sacc., as given out by Ellis (N. A. F. 2819) on Platanus has elongate, sinuous ostioles; it is discussed under D. medusaea.

Conidial connections

Cited by Saccardo as the conidial stage of D. scabra, with fusoid alpha conidia 7-8 × 2-2.5 μ and filiform, curved "basidia" twice as long.

On Populus and Salix

Diaporthe forabilis Nit., Pyr. Germ. 259. 1867.

Variable. On surface as numerous pustulate ruptures through which the ostioles are erumpent singly or in small clusters. Ostioles sometimes slightly elongated. Surface of bark heavily or irregularly blackened. Ventral zone definite in wood. Entostromatic areas sometimes limited in extent. Perithecia scattered singly or irregularly crowded, often collectively erumpent. Spores 11-15(16) × 2.5-4 μ.

Hosts: Populus nigra; P. tremula; Salix alba; S. fragilis.

Distribution: Austria; Bosnia; England; France; Germany; Luxemburg; Moravia.

Exsiccati: (Valsa convergens) Fck., Fung. Rhen. 1565 (authentic).
(Diaporthe forabilis) Petr., Fl. Boh. et Mor. 1124; Krieg., Fung. Sax. 967.
(Diaporthe verecunda) Krieg., Fung. Sax. 2478 (f. euporthoides).

Collections: (Diaporthe forabilis) Nit. Herb. 13, Schlossgarten, May, 1866 (type); Cappenberg, Aug., 1866; Salix, Brem (f), Höhn. Herb. A 3946 (5900), Salix, Jaife, Bosnia, 1903.
(Diaporthe verecunda) Höhn. Herb. A 4051 (7019) (two packets).
(Diaporthe Briardiana) Höhn. Herb. A 4051 (6997), Luxemburg, Oct., 1902, Feltgen (type of D. simplicior Feltg.).
The spores on Populus and Salix are often somewhat longer than those ordinarily found in *D. eres*. *Diaporthe Briardiana* Sacc. is given by Von Hönnel (*Ann. Myc.*, 16: 122) as the same as *D. verecunda* and *D. extranea*. *Fung. Gall.*, 6823 of *D. Briardiana* is *Cryptodiaporthe salicella* (Fr.), but the original description seems to be that of *D. eres*. Only examination of type material, which has not been seen, can determine its identity. *Diaporthe Humboldtiana* Speg. and *D. catamarensis* Speg. on Salix are probably also *D. eres*, but no material has been seen.

Conidial connections


The "spermatia" of *D. putator* are given by Nitschke as fusiform and 7 × 3 μ. They are cited by Saccardo as 7-10 × 2.5 μ.

On *Prunus*, *Cerasus*, *Sorbus*, *Pyrus*, *Malus*, *Cydonia*, etc.


*Diaporthe ambiguа* Nit., *Pyr. Germ.* 311. 1867.

*Diaporthe oligocarpa* Nit., *Pyr. Germ.* 308. 1867.

*Diaporthe radula* Nit., *Pyr. Germ.* 313. 1867.

*Diaporthe Rehniae* Nit., *Pyr. Germ.* 301. 1867.


*Diaporthe difficilior* Kze. in *litt. in Sacc.*, *Syll.* 1: 620. 1882.


*Cryptospora ciliata* (Schw.) Ell. & Ev., *North Am. Pyr.* 537. 1892.


On surface as circular to fusoid pustulate ruptures of the periderm, which are often laterally elongated, and through which the ostioles are erumpent singly or in small clusters. Ostioles often stout, gnarled, or slightly elongated. Surface of the bark irregularly blackened, chiefly about the erumpent ostioles. Perithecia scattered irregularly or crowded in bark or wood. Spores 11-14 × 2.5-4 μ.
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Hosts: Cydonia vulgaris; Malus sp.; Prunus avium; P. laurocerasus; P. Mahaleh; P. Padus; P. spinosa; Pyrus sp.; Sorbus Aucuparia.

Distribution: Austria; Germany; Italy; Luxembourg; Moravia; Switzerland; New England; South Carolina.


The forms on these host genera are all very similar. D. Cerasi is reported on Cerasus, D. sorbicola and D. Rehmi on Sorbus, D. amhigua on Pyrus, Sphaeria Murrayi on Malus, D. Feltgeni f. Cydoniae on Cydonia, and the remaining species on Prunus. The Sphaeria ciliata of Persoon is probably not a Diaporthe, but the Sph. ciliata of Schweinitz, which is the basis of Valsa ciliata and Cryptospora ciliata, is D. eres. The type of Valsa sorbicola Nit. (Fung. Rhen., 1729) shows pustulate-effuse stromata and is a form of D. spiculosa. D. sorbicola (Nit.) Bref. is probably D. impulsula as given by Von Höhnel. Von Höhnel gives Valsa sorbicola as the same as a number of the forms of D. eres listed above, and the material in his herbarium is D. eres, but different from Fuckel's material. According to Von Höhnel (Sitz. Akad. Wiss. Wien, 115: 1253), the type of D. disputata f. Ulmi is on Crataegus or Pyrus and is D. oligocarpa Nit.
Conidial connections

   Alpha conidia described by Saccardo as fusoid, 8 × 3 μ; "basidia" as filiform, 18 × 1 μ.
   Regarded by Grove as a possible conidial stage of D. viridii. Conidia fusoid, 8-9 × 2-2.5 μ.

On Pyrus: see under Prunus

On Quercus


On surface as numerous, sometimes pustulate, ruptures of the periderm exposing the blackened bark surface, which is irregularly blackened, particularly about the erumpent ostioles. Ventral zone definite in wood. Perithecia irregularly scattered or loosely grouped, sometimes collectively erumpent. Spores 9-14 × 2.5-3.5 μ.

Hosts: Quercus pedunculata; Q. robur.
Distribution: Austria; France; Germany; Italy; Moravia; Poland.
Collections: (Diaporthe insularis) Nit. Herb. 40, Wolbeck, April, 1865 (type); Angelmotte, Oct., 1865.
   (Diaporthe Quercus) Höhn. Herb. A 4002 (6933).

On Rhamnus

Valsaria spiculosa Auers., in Nit. Herb. 1866.

On surface as angular, blackened, pustulate ruptures, through which the short ostioles are erumpent, usually in small clusters. Surface of bark usually heavily blackened. Ventral zone definite in wood. Perithecia scattered or loosely grouped. Spores 10-13 × 2.5-3.5 μ.
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Hosts: Rhamnus cathartica; R. Frangula.

Distribution: Austria; Germany; Italy; Moravia; Poland.


Collections: (Diaporthe nigricolor) Nit. Herb. 14, Erdmanns, Jan., 1865 (type); Wolbeck, Feb., 1867; Leipzig, March, 1866, Auerswald, labeled "Valsaria spiculosa Auers."

Diaporthe syngenesis differs from this form on Rhamnus in the pustulate character of the stroma, the lack of any ventral zone, and the well-developed ectostroma.

On Rhododendron


No dorsal zone. Ventral zone in wood. Perithecia scattered singly. Spores 11-12 × 2.5-3.5 μ.

Host: Rhododendron sp.

Distribution: Luxemburg.

Collections: (Diaporthe Rhododendri) Höhn. Herb. A 4051 (7012), Luxemburg, June, 1901, Feltgen (type).

The type of this species is a mere fragment of poorly developed D. eres.

On Rhus


On surface as numerous pustulate, blackened ruptures. Surface of bark blackened evenly or only about the barely erumpent ostioles. Ventral zone complete or sometimes merely lateral. Perithecia usually small (240-400 × 100-320 μ), irregularly scattered. Spores 10-13.5 × 2.5-4 μ.

Host: Rhus Cotinus; R. typhina.

Distribution: England; Germany; Luxemburg; Moravia.

Exsiccati: (Diaporthe Rhois) Petr., Fl. Boh. et Mor. 611.

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Collections: (Diaporthe Rhois) Nit. Herb. 60, Schlossgarten, May, 1865 (type).
(Diaporthe rhoina) Höhn. Herb. A 4051 (7013), Luxemburg, June, 1900, Feltgen (type of Gnomonia rhoina Feltg.); Tullnerbach, June, 1916 (?).

Conidial connections
Phomopsis Rhois (Sacc.) Trav., Fl. Ital. Crypt. 2 : 258. 1906.
Alpha conidia described by Saccardo as oblong-cylindric, 10 × 2–2.5 μ, “basidia” filiform-hamate, 25 × 1 μ.

On Ribes
Diaporthe pungens Nit., Pyr. Germ. 296. 1867.
Diaporthe concrescens (Schw.) Cke., Grev. 13 : 38. 1884.
Diaporthe strumella var. pungens Karst., Myc. Fenn. 2 : 113. 1884.

On surface as pustulate erumpent clusters of cylindric ostioles, which are sometimes elongated. Dorsal zone irregularly present. Ventral zone entire or often only laterally present. Perithecia tending to be clustered or thickly scattered, collectively erumpent. Spores 11–15 × 2.5–3.5 μ.

Hosts: Ribes aurea; R. Grossularia.
Distribution: Germany; Moravia; South Carolina.
Collections: (Sphaeria concrescens) Curtis Herb. 438.3.3; ex Schweinitz Herb. (authentic).
(Diaporthe pungens) Nit. Herb. 42, Nienberge, Feb., 1866 (type); Wienberg, Feb., 1866.

The clustered, collectively erumpent perithecia and faint dorsal zones, which occasionally dip slightly into the bark, place this as an intermediate form between D. eres and D. spiculosa. It differs from D. strumella in the lack of definite ectostromatic disks and in the less definitely clustered perithecia.

Conidial connections
Phoma ribesia Sacc., Syll. 3 : 88. 1884.
Alpha conidia described by Saccardo as oblong-fusoid, 10 × 3.5 μ.

On Rosa
Diaporthe oligocarpoides Rehm, Hed. 26:90. 1887.

On surface as numerous papillate swellings or circular ruptures of the periderm. Surface of bark irregularly blackened. Ventral zone definite in wood. Perithecia usually scattered singly and singly erumpent. Spores 11-14 × 2.5-4 μ.

Host: Rosa canina.
Distribution: Belgium; England; Germany; Moravia; Georgia.
Collections: (Sphaeria incarcerata) Kew Herb. (Berkeley Herb.), on rose stems (type).
(Diaporthe incarcerata) Nit. Herb. 43, March, 1868 (type); April, 1868. Weh. Herb. 452, Thomasville, Georgia, 1928, O. C. Boyd.

Conidial connections
Nitschke describes the "spermatia" of D. incarcerata as subcylindric and 7 × 2 μ, and the "stylospores" as filiform, curved, and 24-30 × 1 μ.

On Rubus
Ceratostoma rostratum Rab., in Fung. Eur. 256. 1860.

On surface as small, pustulate ruptures, with the ostioles erumpent singly or in small clusters. Surface of bark evenly or irregularly blackened. Ventral zone deep in wood or along pith. Perithecia scattered singly or irregularly grouped. Spores 10-13 × 2.5-3.5 μ.

Host: Rubus idaeus.
Distribution: Germany.
Exsiccati: (Ceratostoma rostratum) Rab., Fung. Eur. 256 (type).
Collections: (Diaporthe Coemansii) Nit. Herb. 11, labeled "Ceratostoma rostratum (Tode), Rab.," Gandavum, Coemans (type); Wienberg, Feb., 1866.

On Salix: see under Populus

On Sorbaria and Spiraea
Diaporthe Fuckelii Kze., in Fung. Sel. 139. 1875.
Erumpent as short, or often somewhat elongate, ostioles, singly or in loose clusters. Blackening of bark surface irregular, or present as a definite zone, which often dips slightly and irregularly into the bark. Perithecia rather large, 320–720 × 240–480 µ, irregularly scattered. Ventral zone definite in wood. Spores 10.5–14 × 2.5–4 µ.

Hosts: Sorbaria sorbifolia; Spiraea Aruncus; Sp. hypericifolia; Sp. opulifolia; Sp. ulmifolia.

Distribution: Germany.


Collections: (Diaporthe Sorbariae) Nit. Herb. 15, April, 1867 (type); Hohn. Herb. A 3943 (6898), Königstein, Krieger. (Diaporthe Coemansii) Hohn. Herb. A 3948 (6901), Königstein, April, 1913, Krieger (f. Spiraeae).

The form on this host often has the elongate ostioles of D. medusae.

Conidial connections

Phoma Sorbariae Sacc., Syll. 3: 75. 1884.
Phoma Spiraeae Desm., Observ. crypt. 13. 1830.
Nitschke describes the "spermatia" of D. Sorbariae as fusiform and 6.5–9 × 2.5 µ, and with "sterigmata" 17–20 µ in length. Von Höhnel (Ber. deut. bot. Gesell. 35: 255) cites Ph. Spiraeae and Ph. opulifolia as the same as Ph. Sorbariae.

On Staphylea

Ostioles collectively erumpent in longitudinal disks, often seriatelly erumpent, short. No dorsal blackening except at the lateral margins. Ventral zone definite or vague. Entostromata strongly differentiated. Perithecia crowded, more or less seriatelly arranged. Spores 12–14 × 2.5–3.5 µ.

Host: Staphylea colchica.

Distribution: Russia.


On Symphoricarpos

Valsa Ryckholtii (West.) Kickx, Fl. crypt. des Flandres, 1: 323. 1867.
Diaporthe Ryckholtii (West.) Nit., Pyr. Germ. 319. 1867.
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Ellis Herb. Myc. 189.12, Sept., 1913 (2987); N. Y. M. Herb., Dearnless, Can. Fung., Oct., 1903; Weh. Herb., Wehmeyer 194, Ann Arbor, Michigan, April, 1923; Wehmeyer 104a, June, 1924.

This form on Tilia, with its tendency to have clustered perithecia erumpent as an ostiolar disk and with the somewhat pustulate character of the dorsal zone, very closely approaches Diaporthe spiculosa.

Conidial connections
Nitschke describes the “spermatia” of D. velata as fusoid and 7-9 × 2 µ,
and the “stylospores” as filiform-hamate and 24-27 × 1 µ. Saccardo lists a forma minor of his Phoma velata with alpha conidia 7-7.5 × 1.75-2 µ, and “basidia” 10-14 × 1 µ.

On Ulex

On surface as pustulate, blackened ruptures, through which the sometimes elongated ostioles are erumpent singly or in small groups.
Dorsal zone along bark surface. Ventral zone in wood. Perithecia irregularly scattered. Spores 11-14 × 2.5-4 µ.

Host: Ulex europaeus.
Distribution: England; France; Germany.
(Diaporthe ligulata) Roum., Fung. Gall. 4649.
Collections: (Diaporthe ligulata) Nit. Herb. 36, Hause Geist, Dec., 1868 (type).
(Diaporthe nucleata) Nit. Herb. Hause Geist, April, 1870 (pycnidia only).

On Ulmus
Sphaeria discutiens Berk., in Smith, Eng. Fl. 5 : 245.
Diaporthe eres Nit., Pyr. Germ. 245. 1867.
Valsa Woolworthi Pk., Rep. New York State Mus. 28 : 73. 1876.
Diaporthe discutiens (Berk.) Sacc., Syll. 1 : 677. 1882.
Diaporthe Woolworthi (Pk.) Sacc., Syll. 1 : 615. 1882.

On surface as numerous minute pustules or pustulate ruptures, through which the ostioles are erumpent singly or in small groups.
Surface of bark more or less regularly blackened. Ventral zone
present or absent. Perithecia irregularly scattered or loosely grouped. Spores 9.5-14 × 2.5-4 μ.

Hosts: Ulmus americana; U. campestris.

Distribution: Austria; Belgium; Bosnia; England; Germany; Italy; Moravia; Ontario; Michigan.


(Diaporthe Malbranchei) Petr., Fl. Boh. et Mor. 1586; Rehm, Asc. 779, 779 b.

(Diaporthe discutiens) Syd., Myc. March. 1565.

(Diaporthe Woolworthi) Ell. and Ev., Fung. Col. 319; Ell. and Ev., N. A. F. 2821.

Collections: (Sphaeria discutiens) Kew Herb., near Edinburgh, Greville (type).

(Diaporthe eres) Nit. Herb. i, June, 1865 (type); Nov., 1865; Weh. Herb., Wehmeyer 305, Ann Arbor, Michigan, 1925; Wehmeyer 305 b, Quincy, Illinois, 1925.


(Diaporthe Woolworthi) N. Y. M. Herb., Greenbush, Sept., 1874, Peck (type); Farlow Herb., ex Ellis Herb. 1774.


Material of D. eres on Ulmus from Europe usually shows a definite ventral zone, whereas that from America is generally without such a zone. The species described by Ellis on Ulmus as D. crinigera has elongate, sinuous ostioles and clustered perithecia and is placed under D. medusaea. Whether this is merely a growth form or a definite variety can be determined only by further cultural study.

Conidial connections


Given by Saccardo as the conidial stage of D. eres. Von Höhnel cites Phoma ulmicola Rich. as a synonym of Ph. eres. Nitschke describes the "spermatia" of D. eres as ellipsoid and 6-7 × 3 μ, and the "stylospores" as filiform, curved, and 33 × 1 μ.


Cited by Saccardo as the conidial stage of D. Malbranchei. Alpha conidia ovoid-oblong. 14-15 × 5 μ.

Cultures of D. eres from Ulmus made by the writer gave a Phomopsis conidial stage with fusoid alpha conidia 6-9 × 2-2.5 μ and filiform-hamate beta conidia 15-18 × 1 μ.
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On Veronica


Host: Veronica sp.
Distribution: Moravia.

Type material of D. Veronicae in the Farlow Herbarium shows only abnormal, immature stromata with pycnidia.

Conidial connections
Alpha conidia given by Henning as fusoid, 7–8 × 2–2.5 μ. The material in Allg. Myc. Tauschver. in the Farlow Herbarium shows beta conidia which are filiform-hamate and measure 13–27 × 1 μ.

No host given

Diaporthe Badhami (Curr.) Sacc, Syll. 1: 635. 1882.
Diaporthe quadrinucleata (Curr.) Sacc, Syll. 1: 689. 1882.

The types of both Sphaeria quadrinucleata and Diatrype Badhami, although no hosts are given, are typical of Diaporthe eres. No sceraceous appendages were seen on the spores of Diatrype Badhami as given by Currey.

Distribution: England.
Collections: (Sphaeria quadrinucleata) Kew Herb. (Currey Herb.), Weybridge, Sept., 1856 (type); Eltham, Jan., 1855; Plowright, 1873 (D. pardalota?); Dec., 1872, on ash.
11. DIAPORTHE MEDUSAEA Nutr.

Appearing on the surface as elongate-cylindric or sinuous-filiform ostioles, often appressed against or beneath the periderm, erumpent singly or loosely aggregated in large clusters, which are not united in a definite disk. Bark surface in some forms heavily blackened, in others not blackened. Perithecia 200–500 μ in diameter, irregularly scattered or tending to be in groups or crowded clusters, often forming somewhat pustulate swellings. Asci clavate, with a refractive ring in the apex, 40–47 × 6–9 μ. Spores biseriate, hyaline, two-celled, fusoid-ellipsoid, 10–15 × 2.5–3.5 μ.

Under this species are grouped a number of host forms which differ from *D. eres* in the tendency of the ostioles to become long-filiform and sinuous and to be grouped in many cases in loose clusters. This elongation of the ostioles is accompanied, on some hosts, by other minor characters, as the heavy blackening of the bark surface or crowding of the perithecia, which give these host forms a characteristic morphology. On other hosts the elongation of the ostioles is extremely variable, so that it becomes doubtful whether the forms placed under this species are more than growth forms of *D. eres*. Comparative cultural study of these forms would probably yield much of interest concerning these relationships.

The specific name *D. medusaea* is later than *Sphaeria rudis* Fr. (1828) and *D. faginea* Curr. (1858). Nitschke states that his *D. rudis* (Fr.) Nutr. differs from *D. medusaea* in the shorter ostioles and that *D. rudis* is usually found in the conidial stage. Only conidial material of *D. rudis* has been seen; although it appears to be the immature condition of *D. medusaea*, in the absence of type material this name is discarded. Inasmuch as the name *D. faginea* gives the wrong impression of this collective species on many hosts and *D. medusaea* is much more appropriate, Nitschke's specific name is retained.

The following host forms have been noted:

On Acacia


Erumpent as irregular clusters of filiform, hairlike, sinuous ostioles. Surface of bark blackened. Irregular ventral zones within
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wood. Perithecia tending to be grouped or in crowded clusters. Spores 10–13 × 2.5–3.5 μ.

Host: *Acacia* sp.

Distribution: California.


On Ailanthus


Erumpent as small or large dense clusters of ostioles, which are at first short-cylindric, becoming long-filiform or sinuous. Dorsal zone present as a heavy blackening, sometimes slightly and irregularly pustulate. Perithecia scattered or often in loose dense clusters. Ventral zone definite. Spores 9–15 × 2.5–4 μ.

Host: *Ailanthus glandulosa*.

Distribution: Delaware; New Jersey (reported from Italy).

Collections: (*Diaporthe Ailanthi*) N. Y. G. Herb., Ellis Coll., ex A. Commons Herb., Wilmington, Delaware, April, 1891; Newfield, New Jersey, July, 1894.

Var. *Viburni* Dear. & House (*Rep. New York State Mus. 69: 30, 1916) of this species is *Diaporthe Beckhausii* Nit. Var. *megacerasphora* Fairm. (*Proc. Roch. Acad. Sci. 4: 220, 1906) is described as having a yellow stroma, long-filiform, flexuous, contorted, tuberculate or roughened ostioles, perithecia with white nuclei, asci 45 × 11–12 μ, and oblong-fusoid, slightly constricted spores, 10–13 × 3 μ. The yellow stroma makes doubtful the identification of this variety as a form of *D. Ailanthi*.

Conidial connections

Phoma Ailanthi Sacc., Syll. 3: 95, 1884.


Saccardo cites this conidial stage of his *Diaporthe Ailanthi* as having alpha conidia ovoid-fusoid and 7 × 2.5 μ, and "basidia" filiform-arcuate and 25 × 0.5 μ.

On Citrus


On surface as pustulate ruptures with fine, short to elongate, sinuous ostioles erumpent singly or in small groups. Sometimes
appearing on surface as interrupted blackened patches. Surface of bark blackened. Entostromatic areas sometimes limited. Ventral zone definite in wood. Perithecia scattered singly or in small groups. Spores 10–13 × 2.5–4 μ.

Hosts: *Citrus limonia*; *C. nobilis*; *C. spp.*

Distribution: Philippine Islands; California; Florida.


Conidial connections


*Phomopsis californica* Fawcett, Phytopath. 12: 424. 1922.

The alpha conidia are ovoid to elongate and range from 5–9 to 2.5–4.3 μ. The beta conidia are described as slender, hooked, and 20–30 × 0.3–1.6 μ.

*Ph. Citri* was connected culturally by Wolf with his *D. Citri*. Later *(Phytopath. 19: 1138. 1929)* Fawcett announced the discovery of a perfect stage of his *Ph. californica*. In a recent note in *Phytopathology* (22: 928) Fawcett states that his studies of the two perfect stages of these species and of numerous cultural studies of the conidial stages indicate that the species are identical, which is also the conclusion reached by the writer from examination of material supplied by Wolf and Fawcett. Wolf’s material shows the elongate ostioles of *D. medusaea* and is apparently the same as Rehm’s *D. citrincola*. Fawcett’s material does not show any erumpent ostioles, but this is apparently on account of the dry atmospheric conditions, since this material was collected on the bark of larger limbs and trunks. In their conidial stage both these species cause melanose and stem-end rot of Citrus fruits.

**On Cytisus**

*Sphaeria rudis* Fr., Elench. Fung. 2: 98. 1828.


*Diaporthe medusaea* Nit., Pyr. Germ. 251. 1867.

*Diaporthe rudis* (Fr.) Nit., Pyr. Germ. 282. 1867.

Forming pustulate ruptures of the periderm. Ostioles erumpent singly or in loose divergent clusters, usually long-filiform, sinuous, appressed or running beneath the periderm. Surface of bark heavily blackened. Pycnidial stromata prominent. Irregular ventral zones within the wood. Perithecia usually in small groups. Spores 10–13.5 × 2.5–4 μ.

Host: *Cytisus Laburnum*.

Distribution: Austria; Bosnia; France; Germany; Moravia.
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Exsiccati: (Rabenhorstia rudis) Roum., Fung. Gall. 1330 (pycnidia only); Kab. et Bub., Fung. Imp. 858 (pycnidia).

Collections: (Sphaeria rudis) Curtis Herb. 454.6.1, Lenormand (immature); 454.6.3 (6003), Pennsylvania, Michener 2713; ex Pat. Herb., Montauban, Roumeguerre; ex Fries Herb., Upsala, annotated vel Dothidea?
(Diaporthe rudis) Nit. Herb. 31, Reichartshausen, Puckel; Münster, Oct., 1864 (pycnidia); Schlossgarten, Nov., 1865; Wienberg, Nov., 1866; Feb., 1867; April, 1868 (No. XIV).
(Diaporthe medusaea) Nit. Herb. 5, Cappenberg, Aug., 1866 (type).
(Rabenhorstia rudis) Bot. Inst. Upsala, Fries Herb. (pycnidia?).

Nitschke states that D. rudis differs from D. medusaea in the lack of the elongated ostioles and that D. rudis is usually found in the conidial stage. All specimens seen of D. rudis, Sphaeria rudis, and their synonyms have been either immature or in the pycnidial stage. There is little doubt that D. rudis is merely the immature condition of D. medusaea.

Conidial connections
Filaspora rudis Preuss, in sched.
Rhabdospora Preussii Sacc., Syll. 3: 580. 1884.
Phoma compressa Karst. & Hariot. 1890.

Nitschke describes the “spermatia” of D. rudis as fusoid and 6-7 × 2 μ, and the “stylospores” as filiform-hamate and 21-30 × 1.5 μ. Saccardo considers this conidial stage to be Phoma rudis. The remaining synonymy given above is taken from Von Höhnel (Ber. deut. bot. Gesell. 35: 254), who regards Sphaeria rudis Fr. as the conidial stage. The pycnidia of the form on this host consist of pulvinate to cylindric, blackened, well-developed stromata formed on the heavily blackened bark surface.

On Eucalyptus

On surface as pustulate clusters of long-cylindric, sinuous, black, shining ostioles in clusters about 1 mm. in diameter. Dorsal blackening along bark surface. Ventral zone definite in wood. Perithecia
usually in dense clusters, causing a pustulate swelling of the bark. Spores often somewhat inequilateral, 12–13 × 2.5–3.5 μ.

Host: *Eucalyptus globulus.*

Distribution: California.


The original description gives this species as occurring on leaves, but the type is on stems. It is very similar to *D. gorgonoidea* on *Acacia.*

On *Fagus*


*Diaporthe macrostoma* Nit., Pyr. Germ. 284. 1867.


On surface as pustulate clusters of fine-filiform, sinuous osti-oles. Surface of bark irregularly blackened. Ventral zone present or absent. Perithecia usually in large crowded clusters, or sometimes scattered. Spores often somewhat inequilateral, 11–14 × 2.5–3.5 μ.

Host: *Fagus silvatica.*

Distribution: Austria; England; Germany; Moravia.

Exsiccati: (*Diaporthe macrostoma*) Fck., Fung. Rhen. 2340; Petr., Fl. Boh. et Mor. 27, 27 b.


(*Diaporthe macrostoma*) Nit. Herb. 32, Münster, May, 1866 (type); Höhn. Herb. A 4007 (6935), Salzberg bei Feisbaum, Sept., 1909.

Under the name *Diaporthe faginea* (Curr.) Sacc., the writer (*Papers Mich. Acad.,* 6: 389) published the life-history of a species which does not belong here. A later examination of Currey’s type has shown that this material is *D. medusaeae,* and although no ostioles were seen on this specimen it is undoubtedly the same as *D. macrostoma.* The species cultured by the writer is a new species, *D. Fagi,* described in the present paper.

Conidial connections


Nitschke gives the “spermatia” of *D. macrostoma* as fusoid and 8–9 × 3 μ, and the “stylospores” as filiform-hamate and 32–36 × 1 μ.

On *Geranium*

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On surface as numerous minute, blackened pustules, 0.1–0.2 mm. in diameter. Ostioles elongate-conic to sinuous-filiform, appressed to the surface, erumpent singly or in small groups. Dorsal blackening along bark surface. Ventral zone deep in wood. Perithecia scattered singly or in small groups. Spores 11–12 × 2.5–3 μ.

Host: Geranium zonale.

Distribution: California.


The type material is somewhat immature. There are pycnidia present containing fusoid conidia, 5.5–6.5 × 1.5–2 μ. D. elephantina differs from D. Gerani in the elongate, appressed ostioles.

On Hypericum


On surface as small, papillate swellings caused by the perithecia. Ostioles elongate-filiform, sinuous, erumpent singly or in small groups. Surface of bark irregularly blackened. Ventral zone just within the wood. Perithecia scattered singly or in small groups.

Host: Hypericum hircinum.

Distribution: Luxemburg.

Collections: (Gnomonia hircina) Hohn. Herb. A 3915 (6870), Luxemburg, July, 1901, Feltgen (type of D. hircina).

Feltgen's type is merely a small scrap with decayed perithecia. No spores were seen. Von Höhnel says he found in only one perithecium spores 12–13 × 2.5–3 μ, with short, hyaline appendages. He placed the species in Gnomonia, but there are definite dorsal and ventral zones. Feltgen gave the spores as 10–18 × 2.5–3.5 μ.

On Juglans

Aglaospora juglandina Fck., in Fung. Rhen. 2156.
Diaporthe juglandina (Fck.) Nit., Pyr. Germ. 281. 1867.
Diaporthe tenuirostris Nit., Pyr. Germ. 293. 1867.

On surface as small, pustulate ruptures, or when well developed as long-filiform, sinuous ostioles, erumpent singly or in clusters. Surface of bark blackened. Ventral zone in wood. Perithecia irregularly scattered, crowded, or in large clusters. Spores 10–14 × 2.5–4 μ.
DIAPORTHE

Host: Juglans regia.

Distribution: Albania; Germany.

Exsiccati: (Aglaospora juglandina) Fck., Fung. Rhen. 2156 (type).


(Diaporthe tenuirostris) Nic. Herb. 39, Fuckel, labeled "Valsa ciliata."

Conidial connections


Nitschke describes the "spermatia" of D. juglandina as fusoid and 7–9 × 2 μ.

Saccardo gives the "basidia" as 25 × 1–1.5 μ. The type material shows beta conidia 16–20 × 1 μ. The pycnidia are often strongly pulvinate or cylindric, as in the form on Cytisus.

On Ostrya

Diaporthe sphaeropus Ell. & Ev., ined. in Ev. Herb.

Diaporthe claviceps Ell. & Ev., North Am. Pyr. 738. 1892.


Ostioles erumpent singly or often in pustulate clusters, long-filiform, sinnous, divergent. Surface of bark blackened. Ventral zone in wood. Perithecia irregularly scattered or in crowded clusters, causing pustulate swellings. Spores 11–14 × 2.5–3.5 μ.

Host: Ostrya virginiana.

Distribution: Ontario.


(Diaporthe ostryigena) Weh. Herb., Dearness (type coll.).

Rehm is apparently confused in his description of Diaporthe ostryigena Ell. & Dear. He quotes N. A. F. 3430, which is D. ostryigena Ell. & Ev. and a synonym of Melanconis hyperopia, and at the same time says that the type is from London, Canada, June, 1904. The latter date and locality pertain to Fung. Col. 2019, distributed as Rehm, Asc. 1989.
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On Phacelia

Diaporthe Phaceliae Cke. & Hark., Grev. 9: 86. 1881.

On surface as numerous elongate-conic to cylindric ostioles, which are usually bent or appressed against the bark surface. Sharp dorsal zone along the bark surface. Entostromata strongly differentiated. Ventral zone deep in wood. Perithecia scattered singly, in small groups, or crowded, mostly singly erumpent. Spores 12–15 × 2.5–3 μ.

Host: Phacelia Douglasii (?).

Distribution: California.

Collections: (Diaporthe Phaceliae) Cal. Acad. Sci. 7186; Harkness Coll. 1347, San Francisco, California, April, 1880 (type).

This host form is somewhat intermediate between the typical D. eres and D. medusaea, the ostioles being for the most part singly scattered and only slightly elongated. Miss Eastwood of the California Academy of Science points out that the supposed host (Phacelia Douglasii) of D. Phaceliae is herbaceous, whereas the type material is on woody stems.

On Platanus

Diaporthe medusina (Fr.) Sacc, sensu Ellis in N. A. F. 2819. 1892.

On surface as pustulate clusters of ostioles, which are short-cylindric at first, becoming elongate-sinuous and clavate at the apex. Heavy dorsal blackening on bark surface. Ventral zone within the bark. Perithecia irregularly scattered or in crowded clusters. Spores 10–13 × 2.5–3.5 μ.

Host: Platanus occidentalis.

Distribution: Ontario.

Exsiccati: (Diaporthe medusina) Ell and Ev., N. A. F. 2819.

Collections: (Diaporthe claviceps) Pat. Herb., ex Ellis Herb., Canada, Dec., 1891.

The type of Sphaeria medusina Fr. (Bot. Inst. Upsala, E. Gallia, Mougeot) shows numerous minute clusters of sterile threads of compacted blackened hyphae radiating from central ectostromatic disks. These are not ostioles, but either a parasitic fungus or an abnormal development. The surface of the bark is heavily blackened. There are no spores present.
On Pyrus


On surface as small pulvinate or knotlike carbonaceous disks, consisting of the fused bases of the broken ostioles, which are long-filiform, sinuous, shiny black, and usually bent laterally. They are erumpent singly or more usually in small clusters. Bark surface slightly and irregularly blackened. Ventral zone deep in wood. Perithecia scattered or in small groups. Spores 11-14 × 2.5-3.5 μ.

Host: *Pyrus Malus.*

Distribution: Germany.


On Syringa


On surface as pustulate ruptures through which loose clusters of ostioles are erumpent. Ostioles long-filiform, threadlike, sinuous, appressed against the substratum and easily broken off. Dorsal zone irregularly present on bark surface. Ventral zone in wood. Perithecia scattered singly or in small groups. Spores 11-14 × 2.5-4 μ.

Host: *Syringa vulgaris.*

Distribution: Maine.

Collections: (*Diaporthe nodosa*) Farlow Herb., Kittery Point, Maine, Feb., 1911, R. Thaxter.

All the European specimens seen on Syringa have been typical *D. ceras.* Fuckel gives *D. nodosa* as having elongate ostioles with a swollen base. No authentic material of this species has been seen, but Dr. Thaxter’s collections show long-filiform ostioles of the *D. medusae* type.

Conidial connections

- *Phoma syringina* Sacc., Syll. 3: 82. 1884.
  - Fuckel (*Symb. Myc., Nachtr. 1: 520*) gives the “spermatia” of *Diaporthe nodosa* as oblong-lanceolate and 8 × 3 μ.

On Ulmus


Ostioles short at first, becoming elongate-sinuous, erumpent singly or in large pustulate clusters or longitudinal series. Surface of bark
irregularly blackened. Ventral zones only at the margins of the differentiated entostromatic areas. Perithecia irregularly scattered or in crowded clusters. Spores 11–13 × 2.5–3.5 μ.

Host: *Ulmus* sp.

Distribution: Ontario.

Exsiccati: *(Diaporthes crinigerda)* Ell. and Ev., N. A. F. 2533 (type).


The host of the type was originally given as *Quercus*, but it appears to be *Ulmus*. This may be only a growth form of the typical *D. eres* on *Ulmus*, but it shows the clustered elongate ostioles of *D. medusaea*. This type of clustered elongate ostioles was obtained in culture from ascospores of *D. eres* (*D. Woolworthi*) on *Ulmus*.

On *Vitis*


Surface of bark usually heavily blackened. Ostioles short-cylindric to elongate-sinuous and appressed, erumpent singly, in small clusters, or in longitudinal series. Perithecia scattered, crowded or in longitudinal clusters. Ventral zone in wood. Spores 10–13 × 2.5–3.5 μ.

Host: *Vitis vinifera*.

Distribution: Germany; Maine.


Collections: *(Diaporthes viticola)* Nit. Herb. 18, Wienberg, Feb., 1866 (type); Farlow Herb., Kittery Point, Maine, April, 1907, R. Thaxter.

12. *DIAPORTHE SPICULOSA* (ALB. & SCHW.) NIT.

Pyr. Germ. 256. 1867.

(Plate III, Figs. 5–6)

On surface as compact, circular, pustulate disks of cylindric ostioles which are occasionally elongate-sinuous. Stromata widely effuse. Dorsal blackening none or present as an evenly effuse blackening of the bark surface or as a slightly pustulate dorsal zone. Ventral zone usually absent or faint, rarely definitely present. Perithecia 200–500 μ in diameter, thickly scattered or, more usually, clustered in small groups, often in slightly pustulate areas beneath small ectostromata, collectively erumpent. Asci: clavate, with a
refractive ring in the apex, 40-47 x 6-9 μ. Spores biseriate, fusoid-ellipsoid, two-celled, hyaline, 12-15 x 2.5-4 μ.

This species differs from *D. eres* in the more definitely clustered perithecia, the more definite ostiolar disks, and the sometimes slightly pustulate dorsal zone. It shows the first step in the transition to the pustulate-effuse species of the genus.

This species also includes several host forms which are enumerated below:

On Sambucus

*Diaporthe leucostroma* Nit. (non Niesl), in Fung. Rhen. 1899. 1867.

On Sambucus

On surface as small circular pustulate disks containing a small cluster of cylindric ostioles, which are sometimes elongate-sinuous. Dorsal blackening absent or present and then sometimes dipping slightly into the bark. Perithecia thickly scattered, usually tending to be clustered and collectively erumpent. Ventral zone usually absent, rarely present in wood. Spores 10-14 x 2.5-4 μ.

Hosts: *Sambucus nigra*; *S. racemosa*.

Distribution: Austria; Bosnia; England; France; Germany; Italy; Luxemburg; Poland; Switzerland.

Exsiccati: *(Sphaeria spiculosa)* Fck., Fung. Rhen. 957 (pro parte).
*(Diaporthe leucostroma)* Fck., Fung. Rhen. 989 (?).

Collections: *(Diaporthe spiculosa)* Nit. Herb. 10, packet labeled "*Sphaeria spiculosa* Fr." and packet labeled "*Sph. tortuosa* Fck." (types); Hohn. Herb. A 3949 (6902), Sonntagsberg, April, 1904; Freibertswald, May, 1916 (?).
*(Diaporthe circumscripta)* Höhn. Herb. A 3977 (6917), Luxemburg, May, 1898,
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Sphaeria spiculosa of both Fries and Persoon is a mixture of species and includes a number of the forms of D. eres on various hosts. Nitschke based his Diaporthe spiculosa on Sphaeria spiculosa Albertini & Schweinitz, which he claims is a single species. This form on Sambucus is apparently found only in Europe. The Diaporthe Callicarpae (D. sociabilis var. Sambuci) of Peck from the Pacific Coast is very similar, but differs in the larger spores and asci and the large blackened ectostromata.

Conidial connections

- Phoma sambucella Sacc., Syll. 3:71. 1884.
- Phomopsis sambucella (Sacc.) Trav., Fl. Ital. Crypt. 2:244. 1906.

Phomopsis sambucella is given as the conidial stage of D. spiculosa. The conidia are described as oblong-ovoid and 8 X 3-4 μ. Ph. sambucina is given by Traverso as the conidial stage of D. circumscripta. The conidia are described as oblong-fusoid and 8-10 X 3 μ.

On Juglans

- Valsa bicincta Cke. & Pk., Rep. New York State Mus. 29:64. 1878.
- Diaporthe lixivia (Fr.) Sacc., Syll. 1:621. 1882.
- Diaporthe bicincta (Cke. & Pk.) Sacc., Syll. 1:622. 1882.
- Diaporthe eusticha Ell. & Ev., North Am. Pyr. 424. 1892.

Ostioles slightly erumpent in small disklike clusters. Dorsal zone often faint or absent; when present, slightly pustulate. Perithecia usually definitely clustered. No ventral zone present. Spores 10-15 X 2.5-4 μ.

Hosts: Juglans cinerea; J. nigra; J. sp. (Europe).

Distribution: Sweden; Ontario; Iowa; Michigan; New York.

Exsiccati: (Diaporthe bicincta) Ell. and Ev., N. A. F. 2817; Ell. and Ev., Fung. Col. 1422.

- (Diaporthe bicincta) N. Y. M. Herb., Greenbush, May, 1872, Peck (type);
  Oneida Co., June, 1914, H. D. House; Albany, New York, April, 1923,
- (Diaporthe eusticha) N. Y. G. Herb., Ellis Coll. 2863, Dearness (type).

Fries' type from Sweden is the only European specimen of this variety on Juglans which has been seen. The Valsa lixivia of Quélet
is probably some other fungus. The type of *D. eusticha* is this same fungus, and the host shows the black-chambered pith of *Juglans nigra*.

On Sorbus


On surface as definite circular disks consisting of clusters of short-cylindric ostioles. Dorsal zone present and tending to dip slightly into the bark. Perithecia tending to be in definite clusters and collectively erumpent. Ventral zones incomplete, present only at the lateral margins. Spores 11-14 x 2.5-3.5 μ.

Host: *Sorbus Aucuparia*.
Distribution: Switzerland.

*Valsa sorbicola* has been variously interpreted. The *Diaporthe sorbicola* (Nit.) Bref. is, according to the descriptions and the exsiccati, the same as *Diaporthe impulsa* (Cke. & Pk.) Sacc., whereas material of *Diaporthe sorbicola* (Nit.) Höhn. in Von Höhnel’s herbarium is typical *D. eres*. Fuckel’s material of *V. sorbicola*, however, shows the clustered perithecia, definite disks, and slightly pustulate dorsal zone of *D. spiculosa*.

On Rhus

*Diatrype rhuina* Cke. & Ell., Grev. 7: 8. 1878.
*Calospora rhuina* (Cke. & Ell.) Sacc., Syll. 2: 234. 1883.
*Diaporthe rhuina* (Cke. & Ell.) Ell. & Ev., North Am. Pyr. 424. 1892: non *D. rhuina* Feltg.; non *D. rhuina* (Feltg.) Rehm.
*Diaporthe confusa* Ell. & Ev., in Fung. Col. 1428.

On surface as numerous minute, pustulate ruptures or perforations of the periderm. Sharp dorsal blackening on bark surface, which is more or less evenly effuse when the perithecia are thickly crowded or strongly pustulate when the perithecia are more widely scattered or clustered. Sometimes almost isolate stromata are formed with a single cluster of perithecia. Ventral zone absent or present only at lateral margins, never complete. Spores 12-14 x 2.5-4 μ.

Hosts: *Rhus toxicodendron*; *R. typhina*; *R. vernix*.
Distribution: Illinois; Massachusetts; New Jersey; New York.
Excl. *(Calospora rhuina)* Ellis, Fung. Col. 1511.
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(Cryptospora aculeans) Shear, New York Fung. 175.


The form on Rhus is distinctive in the sharp dorsal zone, which is often strongly pustulate, and in the barely erumpent ostioles. It approaches forms like D. oncostoma and D. acerina. The original description of Diatrype rhoina gives the spores as 1-5-septate and $40 \times 4 \mu$, but examination of Cooke's material shows these measurements to be incorrect.

Conidial connections

Single-ascospore cultures of Diaporthe rhoina have produced a conidial stage of the Phomopsis type (Myc. 19: 171). The alpha type of conidium only was found in both agar and twig cultures. These conidia were long-fusoid and measured 13-15 $\times$ 1.5-2.5 $\mu$. Phomopsis pycnidia were found on the material collected at Middlebury, Massachusetts, which contained alpha conidia 14-17 $\times$ 2-2.5 $\mu$ and beta conidia which were filiform-hamate and 18-22 $\times$ 1 $\mu$.

On Symphoricarpos


Appearing on the surface as slightly swollen pustules, through which there are erumpent rather dense disklike clusters of 3-20, stout, somewhat elongate, often crooked ostioles measuring 320-600 $\times$ 160 $\mu$. The surface of the bark is intermittently blackened between the perithecial clusters and not about the ostioles. There is no ventral zone. The perithecia, 240-320 $\times$ 160-240 $\mu$, are definitely grouped in the upper bark and are collectively erumpent. Asci clavate-oblong, 47-60 $\times$ 6-9 $\mu$. Spores biseriate, fusoid-ellipsoid to oblong-fusoid, straight, two-celled, hyaline, constricted at the septum, 11-13 (14) $\times$ 3-4 (4.5) $\mu$.

Host: Symphoricarpos occidentalis.

Distribution: Kansas.

Collections: (Diaporthe stereostoma) Ev. Herb. 3.173, Kansas, Bartholomew 1482 (type).

This form differs from the European D. eres on Symphoricarpos in the definitely grouped perithecia, disklike clusters of ostioles, and somewhat broader spores. It is similar to D. sociabilis var. Sambuci, but has somewhat shorter spores.
13. DIAPORTHE PULLA Nrr.

Pyr. Germ. 249. 1867.

(Plate II, Figs. 9-10)

Sphaeria spiculosa Fr., et Auct. (pro parte).

On the surface as scattered or loosely clustered, cylindric to sinuous-filiform, shiny black ostioles, emergent through small breaks in the periderm, or where the periderm is sloughed off through the blackened bark surface. Entostromata irregularly pustulate-effuse, strongly differentiated. Dorsal zone irregularly pustulate, but bark tissues above entostromatic areas decaying away so that the blackened zone appears on the surface. Ventral zone deep in wood or along pith, easily overlooked. Perithecia 400-600 μ in diameter, irregularly scattered or loosely clustered. Asci clavate, 35-45 × 5-6.5 μ. Spores biseriate, narrow fusoid-ellipsoid, two-celled, hyaline, 9-13 × 2-2.5 μ.

Host: Hedera helix.

Distribution: Belgium; England; France; Germany; Italy; Algeria.

Exsiccati: (Sphaeria spiculosa) Desm., Pl. cr. Fr. I, 1753; II, 1403; Roum., Fung. Gall. 893.


The Sphaeria spiculosa of Persoon and Fries is a mixed species and has been reported on a number of hosts by various authors. The specimens on Hedera are usually D. pulla. This species is similar to D. medusaea, but differs in the constantly narrower spores and the more pustulate entostromata. The specimens of Fck., Fung. Rhen. 957 of Sph. spiculosa on Hedera are D. pulla. D. eres also occurs on this host.

Conidial connections

Phomoposis pulla (Sacc.) Trav., Fl. Ital. Crypt. 2: 244. 1906.

Fuckel gives Ph. Hederae as the pycnidial stage of D. pulla. He describes the "spermatia" as oblong-lanceolate and 6 × 3 μ. Saccardo gives Ph. Hederae Fck., non Desm., as a synonym of his Phoma pulla. He describes the conidia as 8 × 2 μ.
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14. DIAPORTHE GENISTAE REHM.
Ann. Myc. 11:152. 1913

Diaporthe Genistae Ade, Hed. 64: 299. 1923.

Appearing on the surface as numerous minute, conic pustules through which the short-conic, spinelike ostioles are separately erumpent or as widely blackened areas of the periderm, bark, or wood. Dorsal blackening sometimes absent when immature, but usually present as a heavy blackening of the surface of the bark or wood at maturity. Ventral zone usually absent, but dorsal zone sometimes dipping to wood surface at margin of fruiting areas and continuing along wood surface. Perithecia 320-480 x 240-320 μ, irregularly scattered or crowded, but singly erumpent. Asci clavate, 40-47 x 4-7 μ. Spores biseriate, long-narrow-fusoid, straight or slightly curved, one-celled at first becoming one-septate, four-guttulate, not constricted, 10-14 x 1.5-2 μ.

Host: Genista tinctoria.
Distribution: Moravia.

The spores of all the exsiccati of this species seen, including the type material, were non-septate and appeared to be immature. It is therefore possible that this species is merely D. eres in an immature condition, but the spores are so constantly of a shape and size which are narrower, more curved, and less constricted than those of D. eres that it seems to be a separate species. Rehm gives the spores as septate and scarcely constricted; Ade gives them as 2-4-celled (guttulate?) and not constricted. The description of D. Genistae Ade is identical with that of D. Genistae Rehm, as is pointed out by Petrak (Ann. Myc. 25:260).

15. DIAPORTHE SOCIATA (CKE. & ELL.) SACC.
Syll. 1:614. 1882.
(Plate III, Figs. 9-10)

Valsa sociata Cke. & Ell., Grev. 6: 11. 1877.

Appearing on the surface as numerous minute, often confluent, pustulate papillae, through which the cylindric to conic ostioles are barely erumpent. Entostromata evenly effuse, somewhat different-
tiated in color, widely extended or often very limited (0.5-3 mm.). Dorsal blackening usually only about the erumpent ostioles, but sometimes more extended. Ventral zone a definite fine line, present in bark, occasionally in the wood or entirely absent. Perithecia small, 160-280 x 160-200 \( \mu \), irregularly or thickly scattered, separately erumpent. Asci clavate, with a refractive ring in the apex, 38-45 x 6-8 \( \mu \). Spores biseriate, fusoid-ellipsoid, two-celled, hyaline, constricted at the septum, 8-12 x 2-3 \( \mu \).

Host: *Benzoïn aestivale.*

Distribution: Maryland; Massachusetts; New York.

Collections: (Diaporthe sociata) Ell., Herb. Myc. 182.11 (1525), Lyndonville, Maryland, Oct., 1900; N. Y. M. Herb., Catskill Mts., Peck; Farlow Herb., Stony Brook, Massachusetts, Oct., 1893, Burt; ex Ellis Herb. (Sphaeria on Benzoïn odoriferum).

This species is similar to *D. eres*, but is smaller throughout. It stands in the same relation to *D. eres* that *D. Phaseolorum* does to *D. Arctii*. It differs from *D. Phaseolorum* in the absence of elongated ostioles and the presence of a ventral zone; from *D. Genistae*, in the straighter, broader spores, smaller perithecia, and often restricted entostromatic areas.

16. **DIAPORTHE PERJUNCTA** Niessl

Hed. 17: 44. 1878.

Diaporthe conjuncta Niessl, non Fck., Hed. 15: 153. 1876.

On surface as small clusters of papillate pustules often surrounded by an outlining marginal ridge. Ostioles singly erumpent through the small pustules. Entostroma very limited in area, 0.5-5 (15) mm. in diameter, strongly differentiated. No dorsal zone present. Ventral zone well developed, usually within the bark, but sometimes penetrating into the wood, often forming a small ridge, where it meets the periderm laterally and where it is then apparent on the surface. Perithecia 380-420 x 320-400 \( \mu \), normally only a few (1-10) in each stromatic area, singly scattered and singly erumpent. Spores biseriate, fusoid-ellipsoid, two-celled, hyaline, sometimes inequilateral, constricted at the septum, 11-15 x 2.5-4 \( \mu \).

Host: *Ulmus campestris.*

Distribution: Germany.
17. **DIAPORTHE STAPHYLINA** Ellis & Ev.

*North Am. Pyr. 737. 1892.*

(Plate IV, Figs. 1-2)

 Barely visible on the surface as minute pustulate clusters of scarcely erumpent ostioles. Stromata very limited in area (1-6 mm.), isolate to slightly effuse, or rarely, where confluent, pustulate-effuse, strongly differentiated. Dorsal blackening usually absent. Ventral zone definite, complete, usually within the bark, sometimes extending slightly into the wood. Perithecia 200-450 μ in diameter, 2-12 in each stromatic area, singly scattered but collectively erumpent. Asci clavate, with a refractive ring in the apex, 60-85 × 8-10 μ. Spores biseriate, fusoid-ellipsoid, straight, two-celled, hyaline, constricted at the septum at maturity, 2-4-guttulate, 13.5-16(18) × 4-5 μ.

*Host:* *Staphylea trifolia.*

*Distribution:* Michigan.


The description is taken from collected material which agrees with Ellis' description and type material. This species differs from *D. perjuncta* in the larger spores and from *D. Evonymi* in the limited entostromatic areas.
PLATE IV

DIAPORTHE

(Spores X 1000; 1 mm. = 1 μ)

D. niphyline Ell. & Ev. 1. Stroma 2. Ascospores
D. Sarothamnii (Anets.) Nit. 3. Stroma 4. Ascospores
D. Piburni Dear. & Bisby var. spiraeicola, var. nov. 5. Stroma 6. Ascospores 7. Alpha conidia
8. Beta conidia
D. Opuli sp. nov. 9. Stroma 10. Ascospores
D. Quilli Nit. 11. Stroma 12. Ascospores
18. **DIAPORTHE SOCIABILIS** Nitr.

*Pyr.* Germ. 257. 1867.

Appearing on the surface as numerous pustulate ruptures of the periderm, 0.2–0.5 mm. in diameter, through which one or a few short-cylindric ostioles are erumpent. Entostromata widely effuse, strongly differentiated. Dorsal zone present, often interrupted, running along bark surface or irregularly pustulate, dipping slightly into the bark. Small ectostromata scattered over bark surface and exposed as angular blackened disks. Ventral zone present only at the margins of the fruiting areas. Perithecia thickly scattered or loosely grouped, 320–720 \times 240–400 \mu m. Asci clavate, 54–67 \times 6–7 \mu m.

Spores biseriate, long-fusoid-ellipsoid, two-celled, hyaline, constricted at the septum, 13–16 \times 3–4(5) \mu m.

**Host:** *Morus rubra.*

**Distribution:** Germany.

**Collections:** *(Diaporthe sociabilis)* Nitr. Herb. 17, Cappenberg, Aug., 1866 (type).

This species differs from *D. eres* in the somewhat longer spores. It is a transitional form between the *D. eres* group and the following group of evenly effuse species with somewhat larger spores. All these forms are very similar and are difficult to separate, since the specific variations overlap. *D. orientalis* Sacc. & Speg. and *D. Mori* Berl. may be this same species, but no material of these species has been seen.

**Conidial connections**


*Aposphaeria Mori* (Mont.) Sacc., Syll. 3:174. 1884.


These species are given by Von Hühn as the conidial stage of *D. sociabilis.* He describes the conidia as long-spindle-shaped and 8–9.5 \times 2 \mu m. Saccardo gives the conidia of his *Aposphaeria* as oblong-fusiform and 5–6 \mu m.

**Var. Sambuci** (Ell. & Ev.), comb. nov.


*Diaporthe Callicarpae* Pk., Rep. New York State Mus. 64:53. 1911.

On surface as small papillate ruptures of the periderm caused by the formation of numerons small blackened ectostromata, which are often more or less seriatly arranged and through which the ostioles are barely erumpent. Surface of the bark usually more or less
THE GENUS DIAPORTHE

blackened, but dorsal blackening not pustulate. No ventral zone present. Perithecia 400-720 × 300-400 μ, irregularly scattered or definitely grouped, and usually collectively erumpent. Asci clavate, with a refractive ring in the apex, 60-80 × 8-9 μ. Spores biseriate, fusoid-ellipsoid, two-celled, hyaline, 14-17.5 × 2.8-4(4.5) μ; young spores may show short hyaline, evanescent appendages and a slight gelatinous envelope.

Hosts: Sambucus callicarpa; S. canadensis.

Distribution: Michigan; Washington.


(Diaporthe Callicarpace) N. Y. M. Herb. 4146, Rolling Bay, Washington, Aug., 1909, Bartholomew (type).

This variety differs from the form on Morus in the more constant dorsal blackening, which does not dip into the bark, and in the absence of the ventral zones, even at the margins of the fruiting areas. Von Höhnel (Ann. Myc. 16: 118) considers D. Sambuci a form of D. spiculosa. The types of both D. Sambuci and D. Callicarpace are very similar to D. spiculosa, but appear to be an American form of this European species, having longer spores and asci. D. Callicarpace is in many respects similar to the American form (D. stereostoma Ell. & Ev.) of D. spiculosa on Symphoricarpos, which has somewhat shorter spores and which is placed under D. spiculosa.

19. DIAPORTHE SAROTHAMNI (Auers.) Nit.

Pyr. Germ. 303. 1867.

(Plate IV, Figs. 3-4)

Valsaria Sarothamni Auers. in litt., in Nit. Herb.

On surface as numerous minute, pustulate, erumpent, blackish, elliptic to circular disks, through which 1-3 small ostioles are barely erumpent. Entostromata evenly effuse, strongly differentiated, often somewhat limited in extent (1-5 cm.). Dorsal blackening mostly absent, when present often dipping slightly into the bark. Ventral zone present within the wood, sometimes incomplete beneath. Perithecia flattened-spherical, 320-720 × 240-350 μ, irregularly scat-
tered or loosely grouped in bark or wood. Asci clavate, 45–58 × 7–14 μ. Spores biseriate, fusoid-ellipsoid, two-celled, hyaline, constricted at the septum, 13–16(17) × 3–4(4.5) μ.

Host: Cytisus scoparius.

Distribution: England; Germany.


(Diaporthe inaequalis) Syd., Myc. March. 2058 (pro parte).

Collections: (Diaporthe Sarothamni) Nit. Herb. 48, Schwerin, Auerswald, labeled "Falsaria Sarothamni" (type); Hone-thale, May, 1863, labeled "F. tetragona Dub."

The synonymy is given by Nitschke. This species is very similar in outward appearance to D. inaequalis, but differs in the smaller spores and sharp, black ventral zone. It differs from D. sociabilis in the presence of a ventral zone and from D. Viburni and D. Evonymi in the narrower spores.

Conidial connections

Phoma Sarothamni Sacc., Syll. 3: 68. 1884.

Nitschke describes the "spermatia" of his D. Sarothamni as fusiform to sub-cylindric and 8–10(12) × 2 μ, and the "stylospores" as filiform, curved and 30–33 × 1 μ. Grove (Kew Bull. Misc. Inf. 1917: 64) gives Phoma Spartii as the conidial stage of this species.

Var. Dulcamarae (Nit.), comb. nov.

Diaporthe Dulcamarae Nit., Pyr. Germ. 250. 1867.

On surface as numerous short-cylindric ostioles, erumpent singly or in loose groups of 2–3. Entostromata widely effuse. Surface of bark or wood usually heavily blackened. Ventral zone deep in wood or often along the margin of the pith. Perithecia 400–560 × 300–400 μ, scattered singly, usually embedded in the wood, and often causing slight pustulate swellings. Asci clavate, with a refractive ring in the apex, 52–60 × 8–9 μ. Spores biseriate, fusoid-ellipsoid, two-celled, hyaline, 13–15(17) × 2.5–4(5) μ.

Host: Solanum Dulcamara.

Distribution: England; Germany; Italy.

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Collections: (Diaporthe Dulcamarae) Nit. Herb. 4 (3 packets) (type).

This variety may be considered a variety of *D. Sarothamni* on stems with a less well developed bark tissue. The ostioles are usually separately erumpent and not through an ectostromatic disk, as in *D. Sarothamni*. The dorsal blackening is much heavier, and the perithecia show less tendency to be grouped.

Conidial connections


Saccardo gives the conidia as fusoid, 8–10 × 2 μ, and the “basidia” as filiform-hamate and 25 × 1.5 μ. The pycnidia on *Myc. March*. 3730 contain rod-shaped, hyaline conidia 5.5–7.5 × 1.5 μ. This species seems to be the *Sclerophoma solanica* of Von Höhnel (*Hed.* 59: 242), the conidia of which are cited as cylindric and 5–7 × 2–3 μ.

Var. Baccharidis (Cke.), comb. nov.

Sphaeria Baccharidis Cke., Grev. 7: 53. 1878.
Diaporthe Baccharidis (Cke.) Sacc., Syll. 1: 692. 1882.

Appearing on the surface as numerous minute, blackened papillae, with barely erumpent short-cylindric ostioles. Dorsal blackening irregularly present or absent. Ventral zone definite within the wood. Perithecia 320–360 × 160–240 μ, irregularly and singly scattered, mostly separately erumpent. Spores biseriate, long-fusoid-ellipsoid, two-celled, hyaline, constricted at the septum, 15–18 × 3–4 μ.

Host: *Baccharis* sp.

Distribution: Georgia.

Exsiccati: (Sphaeria Baccharidis) Rav., Fung. Am. 370 (type).

This variety has slightly more elongated spores. The ostioles are separately erumpent, as in var. *Dulcamarae*, but are less strongly exerted, whereas the dorsal blackening is absent or irregular, as in *D. Sarothamni*.
DIAPORTHE

20. DIAPORTHE VIBURNI DEAR. & BISBY
Fung. Manitoba, 76, 1929.

Valsa viburnicola Ell., in Herb. 1882.

Appearing on the surface as numerous crowded, papillate pustules, 0.1–0.2 mm. in diameter, through which the short ostioles are barely erumpent, singly or in small groups. Dorsal blackening entirely absent or present merely as a blackening above the perithecia, or as short patches of a dorsal zone dipping into the bark. No ventral zone present. Perithecia 240–320 μ in diameter, thickly but irregularly scattered, erumpent singly or in small groups. Asci clavate, with a refractive ring in the apex, 55–67 x 8–12 μ. Spores biseriate, fusoid-ellipsoid to oblong-ellipsoid, two-celled, hyaline, slightly constricted at the septum at maturity, (13)14–18 x 4–6 μ.

Hosts: Viburnum Lentago; V. Opulus.

Distribution: Manitoba; Iowa; New Jersey.

Collections: (Valsa viburnicola) N. Y. G. Herb., Ellis Coll. 3725, Newfield, New Jersey, July, 1882.

(Diaporthe Beckhausii) N. Y. G. Herb., Ellis Coll., ex Holway Herb., Decorah, Iowa, May, 1892; Ellis Coll. 419.


This species differs from D. Sarothamni in the broader spores and lack of any ventral zone, and from D. Evonymi in the lack of the ventral zone. D. Opuli has narrower, often curved, spores.

Var. spiraeicola, var. nov.1 (Plate IV, Figs. 5–8).

On surface as numerous minute pustules or ruptures of the periderm caused by the formation of pycnidial ectostromata, which are usually predominantly present. Ostioles short-conic, rarely erum-

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Affinitas varietatis paululum dubia. A D. Viburni differt peritheciis grandioribus, saepe in ligno praestantibus; a D. Evonymi absentia vel infrequentatione zonae ventralis.
pent separately or in loose groups. Perithecia spherical, 320–480 μ in diameter, loosely scattered or crowded in the bark or more often in the wood. Neither dorsal nor ventral zones present (see below), but often with a slight blackening above the individual perithecia. Asci clavate, with a refractive ring in the apex, 58–65 × 7–10 μ. Spores biseriate, broad fusoid-ellipsoid, 14–17.5 × 4–5.5 μ.

Host: *Spiraea tomentosa.*

Distribution: Massachusetts.


The position of this variety is somewhat doubtful. It differs from *D. Viburni* in the somewhat larger perithecia, which are often placed in the wood, and from *D. Evonymi* in the absence of any ventral zone, which has never been seen in nature. On twig cultures, however, definite ventral zones were produced. Further cultural comparisons of these forms on Viburnum, Spiraea, and Evonymus are needed.

Conidial connections

Single-ascospore cultures of this form on Spiraea have produced a Phomopsis type of conidial stage (Papers Mich. Acad. 11: 320). The alpha conidia were fusoid-ellipsoid, one-celled, hyaline, and 8–12 (16) × 2–3 (5) μ. The beta conidia were long-fusoid, hamate, one-celled, hyaline, and 15–33 × 1 μ. These conidia were constant in size and shape on twigs of Corylus, Viburnum, and Spiraea.

21. **DIAPORTHE EVONYMI** Dear.


Appearing on the surface as numerous minute, black, papillate dots consisting of 1–3 black, cylindric, barely erumpent ostioles. Entostromata effuse, strongly differentiated, bleached. Dorsal zone occasionally present, dipping into the bark for a short distance, but never along the bark surface. Ventral zone narrow, deep in the wood. Perithecia 320–480 × 240–400 μ, scattered singly. Asci clavate, 67–75 × 11–15 μ. Spores biseriate, fusoid to oblong-ellipsoid, two-celled, hyaline, slightly constricted at the septum, 13–17 × 4–6.5 μ.

Host: *Evonymus atropurpureus.*

Distribution: Ontario.

This species differs from *D. sociabilis* and *D. Sarothamni* in the greater diameter of the spores and from *D. Viburni* var. *spiraeicola* in the presence of a definite ventral zone.

22. **DIAPORTHE OPULI, sp. nov.**

(Plate IV, Figs. 9-10)

Appearing on the surface as numerous minute, circular, blackened disks, 0.2-0.4 mm. in diameter, containing 2-6 minute hemispheric to cylindrical ostioles. Entostromata pustulate, or sometimes evenly effuse, light in color. Dorsal zone absent from the bark surface, present only where it dips into the bark to the wood, where it is continuous between the pustules. No ventral zone. Perithecia 240-320 × 240-320 μ, irregularly scattered or, usually, clustered in the pustulate areas, collectively erumpent. Asci clavate, 47-55 × 6-8 μ. Spores biseriate, fusoid-cylindric, two-celled, hyaline, straight or, generally, curved, not at all or very slightly constricted at the septum, 13-17 × 2-3 (3.5) μ.

**Hosts:** *Viburnum cassinoides; V. dentatum; V. Opulus.*

**Distribution:** Manitoba; New York; North Dakota.

**Collections:** *(Diaporthe Beckhausii)* J. F. Brenckle Herb., North Dakota Fung. 1402, Swamp, Venlo, June, 1921 (type).


This species differs from *Diaporthe Beckhausii* in the lack of any ventral zone and the longer, narrower, non-constricted, and curved spores; from *D. Padi* in the narrower curved spores; and from *D. melanocarpa* in the shorter and narrower spores.

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**Distribution:** Manitoba; New York; North Dakota.

23. **DIAPORTHE OTTHII** Nrr.


(Plate IV, Figs. 11-12)


**Diaporthe Rehmiana** Starb., Bidr. Sver. Ascom. 5. 1890.

Appearing on the surface as conic pustulate stromata, 0.5-1 mm. in diameter, with a central circular disk of black cylindric ostioles. Only a slight conic ectostroma is formed, but the bark surface is usually strongly blackened at the point of emergence of the ostioles. Entostromata widely effuse, strongly differentiated. Dorsal zone only occasionally present along bark surface, when present usually dipping slightly into the bark. Ventral zone definitely present well within the wood. Perithecia rather large, 400-720 \( \times \) 400-480 \( \mu \), rather definitely clustered, often in pustulate areas, collectively erumpent. Asci clavate, 70-80 \( \times \) 10-15 \( \mu \). Spores biseriate, fusoid-ellipsoid, two-celled, hyaline, four-guttulate, often strongly constricted at the septum, (15) 16-25 \( \times \) 4-8 \( \mu \).

**Host:** *Ulmus campestris*.

**Distribution:** Germany; Sweden; Switzerland.

**Exsiccati:** *{Diaporthe Rehmiana} Krieg., Fung. Sax. 2474.*

*{Diaporthe eres} Petr., Fl. Boh. et Mor. 604.*

**Collections:** (**Valsa controversa**) Nit. Herb. 60, labeled "Subgenus Sclerostroma," Bern, Otth (type).


One of the irregularly pustulate species with large ascospores, which are quite variable in size.

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24. **DIAPORTHE PRUNICOLA** (Pk.), **COMB. NOV.**

(Plate V, Figs. 1-2)


**Diaporthe cylindrospora** Pk., Rep. New York State Mus. 38: 104. 1885.

Appearing on the surface as circular or laterally elongate, pustulate ruptures of the periderm, through which are erumpent the compact disks composed of fascicles of stout-cylindric, punctate ostioles. The surface of the bark is characteristically blackened and covered...
PLATE V

DIAPORTHE

(Spores × 1000; 1 mm. = 1 μ)

D. prunicola (Pk.), comb. nov. 1. Stroma 2. Ascospores
D. Bakeri, sp. nov. 7. Stroma 8. Ascospores
with numerous small, black, carbonaceous papillae. The entostromata are evenly effuse, with the dorsal blackening on the bark surface, but the clustered perithecia cause pustulate swellings of the entostromata. There is a ventral zone within the wood. Perithecia 400-720 × 320-600 μ, in definite clusters within pustulate swollen areas of the entostroma. Asci clavate, 40-55 × 6-8 μ. Spores biseriate to triseriate, oblong-cylindric, with rounded ends, hyaline and one-celled at first, becoming two-celled at full maturity, straight or slightly curved, very slightly if at all constricted, four-guttulate, 11-13 × 1.5-2.5 μ.

Hosts: Prunus pennsylvanica; P. serotina.

Distribution: Ontario; New York.

Exsiccati: (Cryptospora pennsylvanica) Ell. and Ev., N. A. F. 3031.

Collections: (Diaporthe cylindrospora) N. Y. M. Herb., Aiden Lair, June, 1884, Peck (type); West Albany, Peck.

This species is characterized by the narrow-cylindric spores and the papillate blackening of the bark surface.

Peck's descriptions of Valsa prunicola and Diaporthe cylindrospora are practically identical: the spores of the first are given as 12.5-15 × 4 μ; those of the second as 12.5-16 × 3-4 μ. The type of V. prunicola has not been seen, but the type of D. cylindrospora shows spores 11-13 × 2-2.5 μ. Both sets of Peck's spore measurements are probably too large, since spores of this species are characteristically narrow.

25. DIAPORTHE AMPELOPSIDIS (ELL.) ELL. & EV.

North Am. Pyr. 434. 1892.

(Plate V, Figs. 3-6)


Cryptospor ella Ampelopsidis (Ell.) Sacc., Syll. 2, Add. xxxv. 1883.

Appearing on the surface as scarcely visible, minute, blackened disks, 0.1-0.5 mm. in diameter, composed of a small group of crowded hemispheric ostioles, or sometimes merely as circular perforations of the periderm. There is a sharp, fine, evenly effuse, blackened dorsal zone on the bark surface. Ventral zone greenish black, deep within the wood or along margin of the pith. Perithecia spherical to irregular in shape, 400-560 × 320-480 μ, definitely collected in groups beneath stromatic erumpent disks, and usually causing pustulate
swellings of the bark surface. Asci broad-clavate, with a refractive ring in the apex, 67–80 × 14–16 μ. Spores biseriate, broad fusoid-ellipsoid, two-celled, hyaline, strongly constricted at the septum, with one or more large globules in each cell, 15–17 × 5–7 μ when young, becoming 16–19 × 6–8 μ at full maturity.

Host: *Psedera quinquefolia*.

Distribution: Massachusetts; New Jersey.


This species might appear superficially to belong with the pustulate-effuse species on account of the clustered perithecia and pustulate bark surface, but the dorsal zone does not dip into the bark tissue. Ellis’ first collection of *Falsa Ampelopsidis* (3382) is not a Diaporthe, but a Cryptospora with ellipsoid, one-celled spores 10–12 × 4 μ, yet his description is that of the Diaporthe cited above, as is *N. A. F.* 881, which is given as the type.

Conidial connections

Small flattened pycnidial cavities are often found in the upper areas of the perithecial stromata above the clusters of perithecia. Alpha conidia from these cavities measured 11–16 × 2.5–4 μ and were fusoid-ellipsoid, one-celled, and hyaline. Beta conidia from such cavities measured 15–19 × 1–1.5 μ and were long-cylindric, somewhat curved or hamate, one-celled, and hyaline. Single-ascospore cultures on oatmeal agar and twigs of *Psedera* have given similar conidia *(Papers Mich. Acad.* 9:480).

26. **DIAPORTHE BAKERI, sp. nov.**

(Plate V, Figs. 7-8)

Ostioles short-cylindric, appearing on the surface as numerous dense, irregular clusters, which are often longitudinally confluent and erumpent through irregular pustulate ruptures of the periderm. Entostromata irregularly pustulate-effuse, differentiated, lighter
in color. Dorsal zone present, along bark surface when pustulate areas are confluent or crowded, but dipping into the bark or to the wood where these areas are more widely spaced. No ventral zone present. Perithecia spherical, 400-480 μ in diameter, usually grouped in large loose clusters in the pustulate entostromatic areas, which may be more or less confluent and then appear effuse. Asci clavate, 40-46 × 5-8 μ. Spores biseriate, cylindric to oblong-fusoid, rounded at the ends, two-celled, hyaline, not constricted at the septum, 9-13 (15) × 2-3 μ.

Host: Carpinus caroliniana.
Distribution: New York; Wisconsin.

This species is intermediate between Diaporthe spiculosa and the D. Carpini of Europe, of which it may be considered the American representative. It is similar in structure to D. spiculosa, but has a more pustulate entostroma and the spores are narrower, more cylindric, and not constricted at the septum. The spores have the shape of those of D. Carpini, but are smaller, and the stroma is less strongly pustulate-effuse and the ostioles less definitely grouped into disks than in that species.

27. DIAPORTHE DECEDENS (Fr.) Fck.
(Plate V, Figs. 9-12)
Sphaeria decedens Fr., in Kze., Myc. Heft. 2: 49. 1823.
THE GENUS DIAPORTHE


When young, appearing on the surface as numerous small, circular, pustulate, ectostromatic disks, 0.2–0.4 mm. in diameter. As the perithecia mature these disks decay and fall away, leaving circular perforations about which the papillate ostioles become separately erumpent through the surrounding periderm, forming scattered groups about a central disk. These ostioles may also be scattered singly, as minute pustules, over the surface of the twig. There is no blackened zone in either the wood or bark. Perithecia spherical or flattened, 480–720 × 320–480 μ, in loose clusters or scattered singly, but always separately erumpent. Asci clavate, with a refractive ring in the apex and 65–85 × 10–15 μ. Spores fusoid-ellipsoid, two-celled, hyaline, constricted at the septum, acute at the ends, and variable in size. When young the spores are 13–18 × 3.5–4.5 μ, but when fully mature they are 14–22 × 4–6 μ. Faint hyaline appendages are sometimes present on these spores, especially when immature, but these are not a constant character.

Hosts: Corylus americana; C. avellana; C. rostrata.

Distribution: Austria; France; Germany; Italy; Poland; Russia; Switzerland; Nova Scotia; Ontario; Iowa; Michigan; New York.

(Wuestneia tessera) Fck., Fung. Rhen. 1863.

(Diaporthe decedens) N. Y. M. Herb., Elizabethtown, Peck; Weh. Herb., Wehmeyer 150, Grand Rapids, Michigan, April, 1922; Wehmeyer 150 a, Francisco, Michigan, May, 1924; Wehmeyer 150 b, Ann Arbor, Michigan, May, 1925; Wehmeyer 308, Ann Arbor, Michigan, May, 1925; Wehmeyer 308 a, Wolfville, Nova Scotia, June, 1926; excl. Höhn. Herb., A 4046 (6968).
(Diaporthe tessera) Höhn. Herb., A 4932 (6956), Luckanyo, Banat, Lojka; N. Y. M. Herb., Keene, Peck.
This species is similar to *Cryptodiaporthe pyrrhocystis* (see p. 208) and, as usually found in nature, lacks any blackened zones and would fall in the genus *Cryptodiaporthe*. In cultures, however, it has produced blackened marginal zones and a Phomopsis conidial stage, and is for this reason placed in the genus *Diaporthe*.

The original description of *Sphaeria tessella* Fr. seems to be that of *C. pyrrhocystis*, with which it is placed in synonymy.

Further collections of this species prove it to be a variable, somewhat intermediate, and puzzling one. Material in the herbarium of E. W. Mason, Ashtead, England, shows a form which is quite distinct and apparently the same as the type material of *D. conjuncta* (Nees) Fck. (see under "Doubtful Species," p. 237). This form has very definite and strongly pustulate stromata, with the perithecia definitely clustered beneath a well-developed, conic, yellowish to grayish ectostroma, through which the short-cylindric ostioles are collectively erumpent as a definite disk. In this condition the species has the structure of a typical Melanconis, but all intermediate conditions were found between this form and the typical one. Material collected in Nova Scotia on *Corylus rostrata*, on the other hand, shows definite blackened zones in the substratum. The imperfect stage is also of the Diaporthe type.

**Conidial connections**

Conidial stromata of the Phomopsis type were produced in cultures of this species carried by the writer (*Mycologia, 19: 174*). The alpha conidia were fusoid-ellipsoid to elongate-fusoid, straight, one-celled, hyaline, and 11-15 × 2-2.5 μ. The beta conidia were narrow-cylindric, hyaline, one-celled, somewhat curved or allantoid, and 8-13 (15) × 1-1.5 (2) μ. In twig cultures only the allantoid beta type of conidia were produced.

28. **DIAPORTHE BECKHAUSII** Nrr.

*Pyr. Germ. 295. 1867.*

On surface as small pustulate ruptures with one or a few barely erumpent cylindric ostioles, or, on some hosts, as small, definite, circular to fusoid, often laterally elongated disks of short-cylindric ostioles. Dorsal zone often absent when the perithecia are thickly crowded, but usually present and then irregularly pustulate, dipping irregularly into the bark with a tendency to run along the surface of the wood. Ventral zone definitely present within the wood. Entostromatic areas often limited (0.5-5 cm.) in extent. Perithecia 250-720 × 250-500 μ, scattered singly, irregularly crowded, or loosely grouped, usually collectively erumpent. Ascii clavate, 40-48
THE GENUS DIAPORTHE

× 5–7 μ. Spores biseriate, fusoid-ellipsoid, straight, constricted at the septum, 10–13 × 2.5–3.5 μ.

Under this species are included several host forms characterized by their irregularly pustulate-effuse entostromata, which are often limited in area. They differ from *D. spiculosa* in the presence of a definite ventral zone, a more conspicuous dorsal zone, the less distinctly clustered perithecia, and, in most cases, less definite ostiolar disks. They represent the next step in the organization of the pustulate-effuse entostroma. Cultures of *D. Beckhausii* from Viburnum have shown in the beta conidia a variation different from that characteristic of *D. eres*. On the other hand, the type of *Diaporthe cydoniicola* Petr. shows beta conidia of the type usually associated with *D. eres*. More careful cultural studies may bring out other differences correlated with these host substrata which are not now apparent.

On Viburnum


*Diaporthe anceps* (Sacc.) Petr., in Fl. Boh. et Mor. 1111. 1913.


Pustules small, not prominent. Entostromata usually limited in area, but sometimes widely effuse. Dorsal zone often dipping to wood surface. Perithecia 250–500 μ in diameter, irregularly scattered to loosely grouped.

Hosts: *Viburnum Lantana; V. Opulus*.

Distribution: Austria; Belgium; France; Italy; Moravia; Wales; Massachusetts.


(*Diaporthe anceps*) Petr., Fl. Boh. et Mor. 1111.

(*Diaporthe brachyceras* f. *Viburni*) Petr., Fl. Boh. et Mor. 679; Rehm, Asc. 2070 (Hohn. Herb.).


Fuckel gives the *Sphaeria circumspecta* of Kunze as a synonym of his *Diaporthe circumspecta*, but, as pointed out by Nitschke, this is incorrect, for Schmidt and Kunze's *Deutsche Schizomme* 155 of *Sph. circumspecta* is *Aglaospora profusa* on Robinia.
Conidial connections

Phoma Beckhausii Cke.; Grev. t.1:91. 1885.
Nitschke cites the stylospores of D. Beckhausii as filiform, curved and 10-12 x 1 μ. Von Höhnel (Sitz. Akad. Wiss. Wien, 115:681) gives Ph. tinea Sacc., with conidia oblong-fusoid and 8 x 2 μ, as the conidial stage of D. Beckhausii.

A Phomopsis type of conidial stage has been produced in the writer’s (Papers Mich. Acad. 11:318) single-ascospore cultures of D. Beckhausii from Viburnum. The alpha conidia are fusoid-ellipsoid, one-celled, hyaline, two-guttulate, and 8.5-12 x 2-3 μ. The beta conidia are narrow fusoid-cylindric, crescent-shaped, one-celled, hyaline, and 8-13 x 1-1.5 μ. Both types of conidia were constant in size and shape on twigs of Viburnum, Corylus, Spiraea, and Acer and on oat agar.

On Betula

On surface as compact-circular to fusoid, often laterally elongated disks of cylindric ostioles. Dorsal zone absent or pustulate, dipping to the wood surface. Perithecia tending to be in small clusters, collectively erumpent. Ventral zone in wood. Spores 12-14 x 2-3 μ.

Hosts: Betula alba; B. lenta.
Distribution: Finland; Ontario.
Exsiccati: (Diaporthe transversalis) Karst., Fung. Fenn. 873 (type); Barth., Fung. Col. 2119.

On Cydonia

Ostioles erumpent singly or in large loose clusters. Dorsal zone strongly but irregularly pustulate. Ventral zone definite in wood. Entostromatic areas tending to be limited in extent. Perithecia large, 440-1100 μ in diameter, scattered singly or crowded in large more or less pustulate clusters and collectively erumpent. Spores 11-13 x 2.5-3.5 μ.

Hosts: Cydonia japonica.
Distribution: Moravia.
Exsiccati: (Diaporthe cydoniicola) Petr., Fl. Boh. et Mor. 1116 (authentic); Petr., Fl. Mor., Mahr-Weisskirchen, 1914.
Conidial connections

The copy of Petrak's *Fl. Boh. et Mor.* 1116 in the Farlow Herbarium yielded alpha conidia which were fusoid-ellipsoid and 8 × 2 μ and beta conidia which were filiform-hamate and 20–22 × 1 μ. These beta conidia are different from those obtained in culture from the form of *D. Beckhausii* on Viburnum.

On *Elaeagnus*


On surface as circular to laterally elongate-fusoid, blackened disks, 0.5–1 × 0.1–0.3 μ, containing a small cluster of cylindric ostioles. Dorsal zone irregularly pustulate, penetrating into the wood. Ventral zone usually present, occasionally absent. Perithecia irregularly scattered, but with convergent necks and collectively erumpent. Spores 10–12 × 3–4 μ.

Host: *Elaeagnus angustifolia*.

Distribution: Germany.

Exsiccati: (*Diaporthe Elaeagni*) Syd., Myc. March. 4641 (in Rehm Herb., non in Farlow Herb.).


On *Halesia*


On surface as definite, small, conic pustules, 0.2–0.5 mm. in diameter, containing a small cluster of cylindric ostioles. Dorsal blackening present or occasionally absent, tending to dip to the wood and continue there between the pustulate entostromatic areas. Blackening often heavier above the perithecial clusters. Perithecia irregularly scattered but usually collectively erumpent. Spores 13–15 × 3–4 μ.

Host: *Halesia*.

Distribution: West Virginia.


Conidial connections


Given as associated with both *D. Halesiae* and *D. tetrapiera* and connected with one or the other of these two species. Conidia oblong-fusoid, 5–7 × 1–1.5 μ.

On *Menispermum*

*Diaporthe Menispermi* Dear. & House (non Speg.), Bull. New York State Mus. 233–34: 34. 1921.
Diaporthe menispermoides Dear. & House, Bull. New York State Mus. 266: 80. 1925.

On surface as minute blackened pustulate disks through which 1–3 ostioles are erumpent. Dorsal zone irregularly pustulate. Ventral zone definite in wood. Entostromatic areas limited in extent. Perithecia tending to be clustered in small groups. Spores 10–14 × 2.5–3.5 μ.

Host: *Menispermum canadense*.
Distribution: New York.

29. DIAPORTHE KOELREUTERIAE (DUR.) SACC.

Mich. 2: 60. 1880.

Sphaeria Koelreuteriae Dur., in Fung. Gall. 287. 1873.

Appearing on the surface as small, angular, blackened disks, consisting of the blackened bark surface exposed by the periderm. Ostioles scarcely erumpent. Disks 0.3–0.5 mm. in diameter. There is a very fine dorsal zone which is slightly and irregularly pustulate. Ventral zone within the wood. Perithecia 400–480 × 320–400 μ, scattered singly or, usually, clustered beneath the blackened entostromatic disks, where the dorsal zone reaches the bark surface. Asci clavate, with a refractive ring in the apex, 47–54 × 7–9 μ. Spores biseriate, two-celled, hyaline, broad-fusoid, constricted at the septum, 11–12 (13) × (3.5) 4–5 μ.

Host: *Koelreuteria paniculata*.
Distribution: France.

In *Michelia*, 2: 60, Saccardo gives *Fung. Gall.* 287 as an immature specimen of a new species, *D. Koelreuteriae*, associated with *Phoma Koelreuteriae* and *Diplodia Koelreuteriae*. He describes the two conidial forms, but says nothing of his new species. The description is taken from the copy of *Fung. Gall.* 287 in the Farlow Herbarium, which contains a Diaporthe in good mature condition. It is characterized by the broad spores and the irregularly pustulate stromata.
On surface as circular to fusoid, pustulate disks 0.2–1 mm. in diameter, consisting of a compact cluster of short, stout, cylindric, punctate ostioles. Entostromata normally pustulate-effuse, sometimes evenly effuse when the perithecial clusters are crowded, rarely isolate. Dorsal zone dipping into the bark between perithecial groups or, where these are crowded, running along the bark surface. Ventral zones absent, greenish or yellowish discolorations sometimes seen in the wood. Perithecia usually definitely clustered, sometimes irregularly crowded, 320–640 × 240–400 μ, often causing pustulate swellings of the entostromata, collectively erumpent. There is a slight development of grayish ectostroma within which flattened pycnidial locules may sometimes be seen. Asci clavate, with a refractive ring in the apex, 60–75 × 7–10 μ. Spores biseriate, fusoid-ellipsoid, two-celled, hyaline, constricted at the septum, 13–19 × 2.5–4 μ.

Under this species and its variety patria are grouped a number of forms which are related on the one hand to D. spiculosa and D. Beckhausii, and which on the other show the transition to such forms as D. impulsa and D. Pruni in the tendency of the spores to become more elongate and in the slighter development of the ectostromata and more pustulate entostromata. An almost complete intergrading series of forms from D. eros to D. Pruni can be found, even on a single host genus such as Prunus or Sorbus, so that specific and varietal separations must be more or less artificial until more exact data are available. This species was apparently first described by Otth as D. Padi on Prunus Padus and differs from D. impulsa in the narrower spores and less well developed ectostromata and entostromata.

On Prunus

Sphaeria decorticans Lib., in Herb. No. 682.
Diaporthe decorticans (Lib.) Sacc. & Roum., Rev. myc. 3 (11): 42. 1881.

Disks not strongly erumpent. Entostromata strongly differentiated, pustulate areas sometimes confluent and appearing more or less evenly effuse. Ectostromata rather well developed, often with pycnidial locules. No ventral zone, greenish discolorations often in wood. Spores 13–18 × 2.5–4 μ.
PLATE VI

(Diaporthe
(Spores X 1000; 1 mm. = 1 μ)

D. Araliæ Ell. & Ev. 3. Stroma 4. Ascospores
Host: *Prunus Padus*.
Distribution: Germany; Poland; Sweden.

On Prunus most of the spores are often 13–15 μ, as in *D. ecris*, and may be confused with those of that species, but there are usually some spores running to 18 μ.

Conidial connections
- *Phoma padina* Sacc. & Roum., Rev. myc. 3(11): 42. 1881.

*Phoma padina*, with “spermatia” fusoid and 9–11 × 3 μ, is given as the conidial stage of *D. decorticans*.

On Rhamnus

Disks rather prominent. Entostromata not so strongly differentiated, pustulate areas sometimes confluent. No ventral zones, but brownish areas in wood. Spores 14–17.5 × 3–4 μ.

Host: *Rhamnus Frangula*.
Distribution: Moravia.
Exsiccati: *(D. syngenesia)* Petr., Fl. Boh. et Mor. 42.

Var. *patricia*, comb. nov.

This variety differs in the presence of ventral zones within the wood and in the somewhat larger ostiolar disks (0.5–1.5 mm.). The greenish discolored areas are often present in the wood.

On Aesculus

On surface as definite, circular, compact, disklike clusters of short-cylindric, conic, or somewhat elongated ostioles. Disks 0.2–1 mm. in diameter. Entostromata strongly differentiated, definitely pustulate-effuse. Dorsal zone definite, pustulate. Ventral zone deep in wood, definite and complete. Wood often discolored outside entostromatic areas. Perithecia 350–425 μ in diameter, definitely clustered in pustulate areas. Asci clavate, with a refractive ring in the apex, 55–75 × 6–8 μ. Spores biseriate, fusoid-ellipsoid, 13–17.5 × 3–4.5 μ.

Host: *Aesculus parviflora*.
Distribution: Alabama.
On Quercus

Ostiolar disks 0.5-1.5 mm. in diameter. Dorsal zone well developed, pustulate. Entostromatic bark areas strongly differentiated. Ventral zones definite. Greenish discolorations usually in wood. Spores 13-16 (18) x 2.5-4 μ.

Host: *Quercus robur*.
Distribution: Moravia.
Exsiccati: (*Diaporthe quercina*) Petr., Fl. Boh. et Mor. 36.

On Sorbus


Ostiolar disks pustulate-erumpent, 0.5-1.5 mm. in diameter. Dorsal zone fine, pustulate. Ventral zone definite in wood. Entostromata not strongly differentiated. Greenish discolorations sometimes present. Spores 14-17.5 μ.

Host: *Sorbus Aria*.
Distribution: Germany.

Von Höhnel (Sitz. Akad. Wiss. Wien, 126: 389) states that *D. patria* is the same as *D. sorbicola* (Nit.) Höhn., but at the same time cites *Fung. Bav. 247*, which he says is a chorostate form and has larger spores. From the description of *D. patria* (spores 12-15 x 4 μ) and from *Fung. Bav. 247* (spores 14-17.5 x 3-4 μ) it appears that this species differs from *D. Padi* only in the presence of a ventral zone.

31. **DIAPORTHE ARALIAE** Ell. & Ev.


(Plate VI, Figs. 3-4)


Appearing on the surface as isolate, flattened, hemispheric or conic pustules with an apical rupture or perforation of the periderm, exposing the heavily blackened bark surface, through which the few short-cylindric ostioles are erumpent. Entostromata effuse within the wood, with pustulate extensions into the bark. Dorsal zone dipping deeply into the wood. Ventral zone probably present deep
within the wood, but not seen on the small portions of the type material. Perithecia 320–480 × 240–320 μ, clustered in the pustulate areas of the bark. Very little ectostroma formed. Asci (according to Ellis) 40–45 × 5–6 μ. Spores narrow-fusoid, two-celled, hyaline, straight, constricted at the septum, four-guttulate, 11–15 × 2.5–4 μ.

Host: *Aralia spinosa.*

Distribution: West Virginia.

Collections: Ellis Herb. 312 (N. Y. G. Herb. and Farlow Herb.), Nuttalburg, West Virginia, Feb., 1894 (type).

This species has the same kind of spores as *D. spiculosa* or *D. Beckhausii*, but the stromata are much more definitely pustulate and more widely scattered. It stands between *D. spiculosa* and *D. Padi*.

32. **DIAPORTHE CELASTRINA** Ell. & Barth.

*Journ. Myc. 8: 173. 1902.*

(Plate VI, Figs. 5–8)

Causing circular blackened swellings on the wood surface beneath the periderm, but scarcely visible superficially. Usually erumpent through the lenticels as loose clusters of barely erumpent or slightly elongated ostioles. Definite dorsal zone dipping to wood between the perithecial clusters. Ventral zone definite, deep within the wood or along the margin of the pith. Entostromatic areas often limited in extent. Perithecia 400–640 μ in diameter, in small but definite clusters within the pustulate areas, collectively erumpent. Asci clavate, with a refractive ring in the apex, 47–60 × 7–10 μ. Spores biseriate, fusoid-ellipsoid, two-celled, hyaline, slightly constricted at the septum, 11–14 × 3–4 μ.

Host: *Celastrus scandens.*

Distribution: Kansas; Michigan; New York.


This species represents an intermediate form between *D. Beckhausii* and *D. acerina*, differing from the former in the more definite and regularly pustulate dorsal zone, slightly broader spores, and larger asci, and from the latter in the smaller spores and asci. There is also a difference in the conidia.
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Conidial connections

A Phomopsis type of pycnidial stage has been obtained in single-ascospore cul­
tures of this species (Papers Mich. Acad. ii : 314). The alpha conidia were
fusoid-ellipsoid, one-celled, hyaline, and 5.5-9 × 2-3 μ. The beta conidia
were long-cylindric, one-celled, hyaline, and 15-25 × 1-1.5 μ.

33. DIAPORTHE ACERINA (Pp.) Sacc.

Syll. i : 611. 1882.

(Plate VI, Figs. 9-12)

Valsa acerina Pk., Rep. New York State Mus. 28 : 74. 1876.
Diaporthe albo-cincta (Cke. & Pk.) Sacc., Syll. i : 610. 1882.

Appearing on the surface as numerous pustulate ruptures of the
periderm through which the short, stout-cylindric ostioles are barely
erumpent in small loose clusters. Entostromata pustulate-effuse,
more or less differentiated, widely extended or often more or less
limited in area. Dorsal zone definite, dipping into the bark between
the perithecial groups. Ventral zone definite and complete, within
the wood. Perithecia 300-500 × 225-300 μ, irregularly scattered or
in loose groups within the pustulate areas but usually collectively
erumpent. Asci clavate, with a refractiive ring in the apex, 60-73
× 7-10 μ. Spores biseriate, fusoid-ellipsoid, two-celled, hyaline, not
constricted except at full maturity, 12-15 × 4-5 (5.5) μ.

Host: Acer spicatum.


Exsiccati: (Diaporthe acerina) Rehm, Asc. 2092; Ell. and Ev., N. A. F. 2531;
Ellis, Fung. Col. 942; Shear, New York Fung. 90.

Collections: (Diaporthe acerina) N. Y. M. Herb., Indian Lake, July, 1874, Peck
(type); Weh. Herb., Wehmeyer 52 e, Colchester Co., Nova Scotia, June,
1926; Wehmeyer 52 d, Wolfville, Nova Scotia, June, 1926; Wehmeyer 52 e,
Mt. Adams, New Hampshire, June, 1927; Wehmeyer 52 f, Randolph, New
Hampshire, June, 1927.

(Diaporthe Peckiana) N. Y. M. Herb., Catskill Mts., July, Peck 45 (S) (type).
(Diaporthe albo-cincta) Kew Herb. (Cooke Herb. 317), labeled "Valsa (Dia-
trype) albo-cincta" (type).

This species differs from D. pustulata in the more widely ex-
tended stromata, more scattered perithecia, and lack of any super-
ficial ridge. It differs from D. dubia on Acer saccharum and A.
saccharinum in the narrower spores and the always definite ventral
zone. It differs from *D. celastrina* only in the slightly larger asci, spores, and alpha conidia.

Conidial connections

A pycnidial stage of the Phomopsis type has been obtained from single‐ascospore cultures of this species (Papers Mich. Acad. 11: 310). The alpha conidia are fusoid-ellipsoid, one‐celled, hyaline, and (7) 8-12 (13) × 2-3.5 (4) μ. The beta conidia are long-cylindric, one‐celled, hyaline, straight or curved, and 16–27 × 1–1.5 μ. These conidia were constant in shape and within this range of measurements on oat agar and on twigs of *Acer spicatum*, *A. saccharum*, *A. Pseudoplatanus*, and *A. platanoides*.

34. **DIAPORTHE ONCOSTOMA** (Duby) Fck.

*Symb. Myc. 205. 1869.*

*(Plate VII, Figs. 1-4)*


*Valsa personata* Cke. & Ell., *Grev. 7: 9. 1878.*

*Diaporthe enteroleuca* (Curr.) Sacc., *Syll. 1: 612. 1882.*

*Diaporthe personata* (Cke. & Ell.) Sacc., *Syll. 1: 612. 1882.*


Appearing on the surface as more or less pustulate ruptures or perforations of the periderm through which the short, stout, cylindric ostioles are erumpent in small loose clusters or somewhat larger irregular groups. Pycnidial ectostromata often present, forming papillate pustules, which are later open to the exterior. Entostromata strongly differentiated, of the color of the wood, characteristically pustulate-effuse, but pustulate areas sometimes crowded-confluent and appearing somewhat evenly effuse, usually widely extended, but sometimes limited in size and including only one or a few pustules. Dorsal zone definite, dipping into bark between the perithecial clusters. Ventral zone usually definite and complete beneath, but often interrupted or present only at the lateral margins. Perithecia 350–600 × 350–550 μ, in more or less definite clusters within the pustulate areas, occasionally irregularly scattered. Asci clavate, with a refractive ring in the apex, 60–80 × 6–9 μ. Spores biseriate, rather narrow fusoid-ellipsoid, two-celled, hyaline, constricted at the septum 13–17 (25) × 3–4 (5) μ.
THE GENUS DIAPORTHE

Hosts: Robinia macrophylla; R. microphylla; R. Pseudo-Acacia; R. viscosa.

Distribution: Austria; Bosnia; England; France; Germany; Italy; Poland; Switzerland; Illinois; Michigan; New Jersey; New York; North Carolina.

(Falsa oncostoma) Fek., Fung. Rhen. 1730; Ell. and Ev., N. A. F. 1952.

Excl. (Sphaeria enteroleuca) Desm., Pl. cr. Fr. I, 335.


(Diaporthe dolosa) Roum., Fung. Gall. 2689 (pycnidia?) (authentic?)

Collections: (Sphaeria enteroleuca) Curtis Herb. 439.11.3, Hillsborough, North Carolina; excl. Curtis Herb. 439.11.2 (Schweinitz Herb. 167); 439.11.5, ex Desmazière Herb.


(Diaporthe fasciculata) Nit. Herb. 2, Erdhaus, April, 1864 (pycnidia); Schlossgarten, May, 1867 (type).

Under favorable conditions the spores of this species may become very much elongated. A specimen in Von Höhnel’s herbarium (A 4022, May, 1916) shows spores 15-20 x 2.5-4 μ; material collected by the writer and matured in a damp chamber showed spores 16-20 (27) x 4 μ. A similar elongation of the ascospores has been noticed in D. Fagi, which is closely related to this species (see var. longispora under that species).

This species differs from D. Padi chiefly in the short, stout, loosely clustered ostioles in the disk, and from D. Fagi in the larger asci and more strongly differentiated entostromata.

As pointed out by Nitschke, some of the collections of Sphaeria spiculosa on Robinia are of this species, but Sph. spiculosa is so confused that it cannot be fixed as any one species. Sphaeria enteroleuca is another very confused species. Fries gives it as on various twigs and cites Variolaria ceratosperma Bull. (Champ. 184) as a synonym. Bulliard lists Quercus as the most common host of his fungus, and his figures resemble D. leiphaemia. Desmazière’s Pl.
PLATE VII

DIAPORTE

(Spores X 1000; 1 mm. = 1 μ)

*D. Caraganae* Jacz. 9. Stroma 10. Ascospores
cr. Fr. I, 335, is *D. leiphaemia* on Quercus. In 1858 Currey gave this species as *Valsa enteroleuca* and as on Robinia. His figures and descriptions are undoubtedly those of *D. oncostoma*. He states that specimens of *Sph. enteroleuca* Fr. from Bloxam have allantoid spores, which are brown in mass, and figures a polysporous ascus. A specimen of *Sph. enteroleuca* in the Curtis Herbarium, from the Schweinitz Herbarium, shows such a Diatrypella with spores 5–6.5 \( \times \) 1 \( \mu \); a second specimen shows a Eutypella with eight-spored asci. On the basis of the Schweinitz specimen, Ellis described *Diatrypella enteroleuca* (Fr.) Ell. & Ev. with *Sph. enteroleuca* Fr. and *Valsa enteroleuca* Cke. as synonyms. This is merely one example of the hopeless confusion arising from attempts to base species on the old mixed species of the earlier writers, particularly without examining type or authentic material.

Material of *D. dolosa* (*Fung. Gall.* 2689) in the Farlow Herbarium shows only a remnant with a few pycnidia, which may be of *D. oncostoma*. Von Höhnel (*Sitz. Akad. Wiss. Wien, 126* : 393) says that this specimen is on Sambucus and is *Diatopthe spiculosula* (Alb. & Schw.) Nit., which may be true. No material of *D. personata* has been seen, but Ellis (*North Am. Pyr.* 423) states that Cooke's spore measurements (25–28 \( \times \) 6 \( \mu \)) are too large and places the species under *D. oncostoma*, with spores 12–16 \( \times \) 3–3.5 \( \mu \), which seems more probable.

Conidial connections

<table>
<thead>
<tr>
<th>Name</th>
<th>Reference</th>
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<tbody>
<tr>
<td>Phoma oncostoma De Thüm., in Myc. Univ. 877.</td>
<td></td>
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<tr>
<td>Cytispora abnormis Berk. &amp; Curt., Grev. 2 : 98. 1874.</td>
<td></td>
</tr>
<tr>
<td>Cytospora orthospora Berk. &amp; Curt., Grev. 2 : 98. 1874.</td>
<td></td>
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<tr>
<td>Fusicoecum Farlowianum Sacc. &amp; Roum., Rel. Lib. IV, No. 98.</td>
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<tr>
<td>Myxosporium Russelii (Berk. &amp; Curt.) Sacc., Syll. 3 : 722. 1884.</td>
<td></td>
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<tr>
<td>Phoma Robiniace (Preuss) Sacc., Syll. 3 : 69. 1884.</td>
<td></td>
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</tbody>
</table>

The "spermatia" of *D. oncostoma* are given by Fuckel as oblong-lanceolate and 10 \( \times \) 2–3 \( \mu \). Nitschke cites them as 8–10 \( \times \) 2.5–3 \( \mu \) and gives the stylo-
spores as filiform, curved, and 20–22 (24) × 1 μ. This synonymy is taken from Von Höhnel (Sitz. Akad. Wiss. Wien, 126: 394) and Grove (Kew Bull. Misc. Inf. 1917: 60). The species included are given as having alpha spores 7–13 × 2–3 μ and beta spores 18–23 × 1 μ.

Single-ascospore cultures of this species produced a Phomopsis type of pycnidial stage with alpha spores fusoid-ellipsoid, one-celled, hyaline, and 8–10 × 2–2.5 μ. The beta conidia were filiform-hamate, hyaline, and 13–22 × 1–1.5 μ (Papers Mich. Acad. 3: 247).

35. DIAPORTHE AMORPHAE ELL. & Ev.


(Plate VI, Figs. 13–14)

Appearing upon the surface as small pustulate ruptures of the periderm, 0.5 mm. in diameter, through which the short, stout, conic to cylindric ostioles are erumpent in small clusters. Entostromata pustulate-effuse. Dorsal zone dipping deeply into the bark or wood, where it is often accompanied by an olive-green discoloration of the wood. Ventral zone usually absent, or present along margin of the pith. Perithecia usually in small clusters, often within the wood, 320–560 × 240–320 μ, sometimes irregularly scattered. Asci clavate, with a refractive ring in the apex, 55–80 × 7–9 μ. Spores biseriate, fusoid-ellipsoid, straight or sometimes slightly inequilateral, two-celled, hyaline, slightly or not at all constricted at the septum, 12–16 (17) × 3–5 μ.

Host: Amorpha fruticosa.

Distribution: Kansas; North Dakota.


The type of Ellis (941) is apparently immature and has spores 9–11 × 3–4 μ and asc 47–54 × 6–8 μ. More mature material shows spores like those mentioned in the description.
36. **DIAPORTHE FAGI**, sp. nov.¹
(Plate VII, Figs. 5–8)

On the surface as numerous pustulate ruptures or angular perforations of the periderm, 0.5-2 mm. in diameter, through which a small loose cluster of short, stout ostioles are erumpent. Entostromata pustulate-effusive, not strongly differentiated. Dorsal zone fine, sharp, dipping into the bark between the perithecial clusters. Ventral zone usually not definitely present, or present merely at the margins of the fruiting areas. Blackened discolored areas sometimes present in wood. Perithecia 300–350 μ in diameter, in small groups in the upper bark just beneath the periderm, within the pustulate areas, which are sometimes confluent, collectively erumpent through the blackened bark surface. Ascii clavate, with a refractive ring in the apex, 47–55 × 6–9 μ. Spores biseriate, fusoid-ellipsoid, two-celled, hyaline, constricted at the septum, 12–16 × 2.5–4 μ.

Host: *Fagus grandifolia*.

Distribution: Michigan; New York.


This species is very similar to *D. oncostoma*, but differs in the finer dorsal zone, less strongly differentiated entostroma, usually absent ventral zone, the smaller ascus, and somewhat narrower spores.

Conidial connections

The cultural connection of the imperfect stage of this species was given by the writer (Papers Mich. Acad., 6:389) under the name *Diaporthe faginea* (Curr.) Sacc. Subsequent examination of Currey's type of *Valsa faginea* shows it to be *D. eres* on *Fagus*. The pycnidia obtained in culture were of the Phomopsis type. The alpha conidia were fusoid-ellipsoid, one-celled,


*D. oncostomati* similis sed differt zona dorsali tenui, entostromate minus obvio, absentia zonae ventralis, ascis minoribus et sporis angustioribus.
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hyaline, and 8–16 × 2.5–3 μ. The beta conidia were long-cylindric, variously curved or bent, and 24–40 × 1–2 μ.

Var. longispora, var. nov.

Asci long-clavate, 55–75 × 7–9 μ. Spores long fusoid-ellipsoid, straight, constricted at the septum, 14–20 (22) × 3–4 μ.

Host: Fagus grandifolia.

Distribution: Michigan.


This variety is based upon the collection by Dr. Kauffman, which is identical with D. Fagi except that the spores and asci are much longer. A similar elongation of the ascospores has been noted in material of D. oncostoma, a closely related species, when matured in a damp chamber. Only further observation or cultural study can determine whether these longer spores are a constant character and constitute a valid species or whether they are merely an extreme variation due to growth conditions.

37. DIAPORTHE CARYIGENA Ell. & Ev.


Appearing on the surface as small pustulate ruptures of the periderm, through which a small compact cluster of cylindric ostioles is erumpent. The lateral bounding zone of the entostroma is sometimes visible on the surface as a marginal ridge inclosing one or more pustules. The entostromatic areas are effuse, but usually limited in extent (2–8 [21] mm. in diameter), irregular in shape, and sometimes with only a single group of perithecia. Within the wood there is a definite ventral zone which encroaches sharply upon the periderm at the lateral margins. The surface of the bark is not blackened, but where the entostromata are more widely effuse a dorsal zone often dips from the periderm into the bark between the perithecial clusters. Perithecia 400–480 × 320 μ, in small definite groups beneath very small and usually blackened ectostromata, through which the


A specie typica differt sporis et ascis longioribus.
DIAPORTHE

ostioles are collectively erumpent. Asci clavate, 60-70 × 8-10 μ. Spores biseriate to almost uniseriate, broad fusoid-ellipsoidal, two-celled, hyaline, constricted at the septum, with a single large globule in each cell, 9-13 (15) × 3.5-5 μ.

Hosts: Carya amara; C. minima.
Distribution: Ontario.
Exsiccati: Ellis, Fung. Col. 1919 (authentic).

This species has a structure identical with that of D. tuberculosa, but has smaller ascospores and may be the same as D. tuberculosa var. Pruni.

38. DIAPORTHE PENNSYLVANICA (BERK. & CURT.), COMB. NOV.

Valsa pennsylvanica Berk. & Curt., Grev. 4: 100. 1876.
Calospora pennsylvanica (Berk. & Curt.) Sacc, Syll. 2: 232. 1883.
Cryptospora pennsylvanica (Berk. & Curt.) Ell. & Ev. pro parte, North Am. Pyr. 536. 1892.

On surface as pulvinate-pustulate ruptures of the periderm, 1-2 mm. in diameter, with a central loose cluster of cylindric ostioles, which are often somewhat elongate-sinuous. Entostromata differentiated in color, irregularly pustulate-effuse. Dorsal zone dipping into bark about the perithecial clusters, but pustulate areas sometimes confluent and then appearing evenly effuse. Ventral zone absent or rarely present at lateral margins. Asci 40-50 × 6-7 μ. Spores biseriate, fusoid-ellipsoidal, two-celled, hyaline, constricted at the septum, 16-23 × 2.5-4 (5) μ, often slightly curved.

Hosts: Aronia melanocarpa; Prunus demissa; P. pennsylvanica.
Distribution: Kansas; New York.
Collections: (Valsa pennsylvanica) Kew Herb. (sheet 2043) (Berkeley Herb. 4434). (type).

This is a doubtful and confused species. The type of Valsa pennsylvanica contains only old decayed stromata which showed no structure, but which yielded long-fusoid, occasionally septate spores
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16-25 × 4-5 μ, as given in the description. The specimens of Ellis cited above appear to be the same fungus; they show immature spores, which are often somewhat curved and measure 17-21 × 2.5-4 μ. This species differs from D. Padi in the longer, somewhat curved spores and from D. Pruni in the lack of well-developed ectostromata. D. melanocarpa differs in the presence of a definite ventral zone and D. Hickoriae in the irregularly scattered perithecia.

39. DIAPORTHE CARAGANAE Jacq.

Hed. 34 (38). 1895.

(Plate VII, Figs. 9-10)

Appearing on the surface as laterally elongated, conic pustules with a central fusoid disk of densely clustered, stout-cylindric to conic ostioles, 180-240 μ in diameter. The disks measure 1.5-6 × 1-2 mm. There is a definite dorsal zone which is strongly pustulate, dipping into the bark or to the wood between the perithecial clusters. Perithecia irregular in shape and size, 320-800 × 320-640 μ, often polystichous and densely clustered in the pustulate areas. There is scarcely any ectostromatic development in the disk. Ventral zone absent or present laterally, sometimes ventrally. Broad brownish discolored zones present within the wood. Asci clavate, 65-75 × 9-11 μ. Spores biseriate, fusoid-ellipsoid, ends acute or rounded, two-celled, hyaline, constricted at the septum, 14-19 × 3.5-5.5 μ.

Host: Caragana arborescens.

Distribution: Russia.


This species has spores like those of D. impulsa, but differs in the lack of well-developed ectostromata and the widely erumpent disks, in which it also differs from D. Padi and D. pennsylvanica.

Conidial connections

Cytosporina Serebraniakowii Bub.
Phomopsis Serebraniakowii (Bub.) Höhn., Ber. deut. bot. Gesell. 35 : 354. 1917.
Connection given by Von Höhnel.
40. DIAPORTHE HICKORIAE, sp. nov.¹

(Plate VII, Figs. 11-14)

On surface as minute pustulate ruptures of the periderm, 0.2-
0.5 mm. in diameter, through which small groups of short-cylindric
ostioles are erumpent. Ostioles sometimes elongated and then often
appressed beneath the periderm. Dorsal zone very irregularly pus-
tulate, dipping irregularly into the bark. No true ventral zone
present in wood, although the irregular dorsal zone sometimes lies
somewhat ventrally in the bark. Perithecia 380-460 x 350-380 μ,
irregularly scattered or in loose clusters, usually collectively erum-
pent, often through small conic blackened ectostromata. Entostro-
matic areas strongly differentiated. Asci clavate, with a refractive
ring in the apex, 60-70 x 8-9 μ. Spores biseriate, fusoid-ellipsoid,
two-celled, hyaline, straight or often somewhat curved, constricted
at the septum, 16-20 x (3) 4-5 μ.

Host: Carya glabra.

Distribution: Michigan.


This species differs from D. Padi in the somewhat larger, often
curved spores, less well defined ostiolar disks, and the irregularly
scattered perithecia. It differs from D. pennsylvanica and D. melano-
carpa in the scattered perithecia and rather short, broad spores.

Conidial connections

The cultural connection of the conidial stage of this species was reported
under Diaporthe sp. on Carya (Papers Mich. Acad., 6: 385). The conidial
stage is of the Phomopsis type. The alpha conidia are cylindric to fusoid-

¹ Diaporthe Hickoriae, sp. nov.—In superficie corticis Caryae glabrae rimas
minutas pustulatas diam. 0.2-0.5 mm. formans; ostiolis laxe fasciculatis brevi-
bus cylindricis erumpentibus vel intetudum elongatis et sub peridermate appressis.
Zona dorsalis irregulariter pustulata. Zona ventralis deest sed zona dorsalis
irregularis interdum deorsum in cortice eam simulans. Perithecia 280-460 X 350-
380 μ, irregulariter dispersa vel laxe aggregata, phlegmatas gregatim saepe per
ectostromata parva conica nigricantia erumpentia. Areae entostromaticae obviae.
Asci clavati cum cingulo refractivo ad apicem, 60-70 X 8-9 μ. Sporae biseriatae,
fusiformi-ellipsoidales, bicellulae, hyalinae, rectae vel paululum curvatae, ad septe
constrictae, 16-20 X (3) 4-5 μ.—Specimen typicum Wehmeyer 245, Ann

A D. Padi differt sporis grandioribus saepe curvatis, discis ostiolaribus laxi-
oribus et peritheciis dispersis. A D. pennsylvanica et D. melanocarpa differt peri-
theiciis dispersis et sporis breviscusce crassis.
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ellipsoid, one-celled, hyaline and measure 8-13 x 2-2.5 μ on oat agar and 12-16 x 2.5 μ on twigs of Carya. The beta conidia are filiform, curved or hamate, one-celled, hyaline, 10-13 (18) x 1-1.5 μ.

41. DIAPORTHE MELANOCARPA DEAR.
Mycologia, 18: 247. 1926.
(Plate VIII, Figs. 1-2)

On surface as small conic pustules with a central minute disk, 0.2-0.4 mm. in diameter, consisting of a compact cluster of a few short-cylindric ostioles. Entostromata pustulate-effuse, strongly differentiated, pustulate areas rather widely scattered. Dorsal zone definite, dipping to the wood surface. Ventral zone definite within the wood. Perithecia 400-520 x 320-400 μ, clustered in small groups within the pustulate areas. Asci clavate, with a refractive ring in the apex, 60-70 x 6-8 μ. Spores biseriate, fusoid-ellipsoid, two-celled, hyaline, usually somewhat inequilateral or curved, slightly constricted at the septum, 16–23 x 2.5-4.5 μ.

Hosts: Amelanchier canadensis; Cornus alternifolia; Pyrus melanocarpa.
Distribution: Ontario; Michigan.
Exsiccati: (Diaporthe stictostoma) Barth., Fung. Col. 4015; Rehm, Asc. 1986.
Collections: (Diaporthe melanocarpa) Weh. Herb., Dearness (type); also material from Peck on Viburnum (?) and collection labeled "D. impulsa, May, 1913"; Wehmeyer 92, Ann Arbor, Michigan, Oct. 12, 1921.

Although these exsiccati of D. stictostoma are of D. melanocarpa, the type of D. stictostoma (D. punctostoma) is a Cryptospora and shows one-celled ascospores 12-14 x 3.5-4.5 μ, as given in the original description.

This species differs from D. Opuli in the larger spores, from D. Padi in the larger, curved spores, and from D. pennsylvanica and D. Hickoriae in the definite ventral zone.

42. DIAPORTHE CRATAEGI (CURR.) NIT. IN LITT. AD FCK.
Symb. Myc. 204. 1869.
(Plate VIII, Figs. 3–4)

PLATE VIII

DIAIPORTHE

(Spores × 1000; 1 mm. = 1 μ)

D. melanocarpa Dear. 1. Stroma 2. Ascospores
D. Crataegi Nit. 3. Stroma 4. Ascospores
D. pusulata (Decam.) Sacc. 9. Stroma 10. Ascospores
Appearing on the surface as small pustulate ruptures of the periderm, which expose a minute blackened disk, 0.2-0.8 mm. in diameter and containing the few cylindric ostioles. Entostromata pustulate-effuse, occasionally isolate. Dorsal zone dipping between the perithecial clusters into the bark or to the wood. Ventral zone absent or very faint and irregular. Perithecia spherical, flattened, or irregular from crowding, 240-800 x 160-480 μ, clustered in the differentiated, pustulate areas, collectively erumpent. Very little if any ectostromatic development present in the mature disk. Asci clavate, with a refractive ring in the apex, 67-95 x 10-12 μ. Spores biseriate, oblong-ellipsoid, two-celled, hyaline, constricted at the septum, often somewhat curved when young, 15-18 x 4.5-5.5 μ. Apparently with an outer gelatinous sheath, probably of periplasm, which makes the separation of spores in old material difficult.

Host: Crataegus Oxyacantha.

Distribution: Austria; England; France; Germany; Italy; Poland.


This species appears to be purely European in its distribution. All American specimens examined were of the D. eres type. It differs from the American D. aliena, on Crataegus, in the longer, narrower spores and in the tendency of the dorsal zone to dip somewhat less deeply into the bark.

43. DIAPORTHE SUBLUTEA Ell. & Ev.

In Herb. 1890.

Appearing on the surface as flat pustulate ruptures or circular perforations of the periderm, 1-1.5 mm. in diameter. Ostioles stout (160-200 μ in diameter), punctate, erumpent in small loose clusters. Entostromata pustulate-effuse, dorsal zone dipping into the bark between the perithecial clusters. Ventral zone definite, well within the wood. Perithecia 560-720 x 400-480 μ, clustered in small groups within the bark or partly within the wood, collectively erum-
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pent. Asci clavate, 50-65 × 6-10 μ. Spores biseriate, fusoid-ellipsoidal, finally two-celled, hyaline, slightly constricted at the septum, (11) 13-17 × 3-4(5) μ.

Host: Cornus sericea.
Distribution: Ontario.


Apparently this species has never been published. It has the stromatic configuration of D. acerina and the spores of D. oncostoma and is very similar to both these species. The material in the Everhart herbarium is immature and contains one-celled spores 11-13 × 3-4 μ. Further collections on Cornus are needed to determine whether or not this is a distinct species.

44. DIAPORTHE DUBIA Nrr.

Pyr. Germ. 317. 1867.
(Plate VIII, Figs. 5-8)


On surface as hemispheric to flattened conic pustules, through which there are erumpent small or irregular clusters of short, stout ostioles. Entostromatic areas differentiated in color, isolate to pustulate-effuse in character. Dorsal zone, when present, dipping into the bark between the perithecia. Ventral zone sometimes complete, particularly in the isolate stromata, but usually incomplete, present only laterally or entirely lacking. Perithecia 300-600 μ in diameter, definitely clustered in the pustulate areas, and collectively erumpent. Asci clavate, with a refractive ring in the apex, 65-85 × 9-15 μ. Spores biseriate, broad fusoid-ellipsoid, two-celled, hyaline, somewhat constricted at the septum at maturity, 13-16 × 4-7 μ.

Hosts: Acer Negundo; A. nigrum; A. saccharinum; A. saccharum; Fraxinus (?).
Distribution: Ontario; Michigan; Missouri; New Hampshire; New York.

Exsiccati: (Diaporthe subcongrua) Ell. and Ev., N. A. F. 2744 (authentic), 2930; Ell. and Ev., Fung. Col. 1235.
Excl. (Diaporthe dubia) Rehm, Asc. 876.
(Diaporthe congener) Ell. and Ev., N. A. F. 2532 (authentic); Rel. Farl. 11.
(Diaporthe ontariensis) Barth., Fung. Col. 1921; Syd., Fung. Exot. 78; Rehm, Asc. 2094.

Collections: (Diaporthe dubia) Nit. Herb. 61, Tilsinkeller, Beckhaus (type); Weh. Herb., Wehmeyer 52, Ann Arbor, Michigan, Oct., 1921; 52 a, East Lansing, Michigan, May, 1923; 52 b, St. Louis, Missouri, June, 1923; 52 f, Mt. Madison, New Hampshire, June, 1927; 52 g, Mt. Adams, New Hampshire; 52 h, Randolph, New Hampshire, June, 1927.
(Diaporthe acerina) N. Y. M. Herb., Gansevoort, Reck (var. robusta) (type).

Nitschke's type of Diaporthe dubia on Acer Negundo consists of only a few fragments of bark, but from spore measurements and general structure it appears to be the same as the form occurring on Acer saccharum and A. saccharinum. The occurrence of D. congener on Fraxinus is somewhat doubtful, since Acer twigs are easily mistaken for Fraxinus and no definite check has been made on this host.

D. dubia differs from D. acerina on Acer spicatum in the usually incomplete ventral zone, and also in the broader spores and either longer or broader asci. The immature spores of D. dubia have the same appearance as those of D. acerina, but there are usually some broader mature spores with a definite constriction.

Conidial connections

Single-ascospore cultures of Diaporthe dubia from Acer saccharum (Papers Mich. Acad., 11:313) produced Phomopsis-like pycnidia containing alpha conidia which were fusoid-ellipsoid, one-celled, hyaline, and 9.5-13 × 2.5-4 μ, and beta conidia which were short-cylindric, straight or slightly curved, one-celled, hyaline, and 9-12 × 1.3-1.5 μ. These conidia were constant in size and shape on Acer pensylvanicum, A. platanoides, A. Pseudoplatanus, A. rubrum, and A. saccharum, but the alpha conidia were slightly smaller on oat agar (8-11 × 2.5-4 μ). The beta conidia from this species on Acer saccharum were definitely shorter and less strongly curved than those obtained from Diaporthe acerina from Acer spicatum.

45. DIAPORTHE PUSTULATA (Desm.) Sacc.
Syll. 1: 610. 1882.
(Plate VIII, Figs. 9-10)

Valsaria Fraxini Hazsl., in Nit. Herb.
Diaporthe fraxinea Nit. in litt. ad Hazsl., in Nit. Herb.
THE GENUS DIAPORTHE

Calospora Zopfii (Kze.) Sacc., Syll. 2 : 232. 1883.

On surface as truncate-conic or angular pustules with a central blackened disk through which a small cluster of stout-cylindric ostioles are erumpent. Each pustule may or may not be surrounded by a slightly raised, blackened ridge caused by the abutting of the ventral zone against the periderm at the margin of the entostroma. Entostromata strongly differentiated, limited in area, usually isolate in character and containing a single cluster, but often with two or more pustules in a single area. Dorsal blackening absent except on the surface of the blackened ectostromatic disks. Ventral zone definite within wood. Perithecia 250–640 μ in diameter, in definite clusters, collectively erumpent. Asci clavate, with a refractive ring in the apex, 67–80 × 6–8 μ. Spores biseriate, fusoid-ellipsoid, two-celled, hyaline, slightly constricted at maturity, 12–15 (16) × 3–4 (5) μ.

Host: Acer Pseudoplatanus.

Distribution: Austria; France; Hungary; Moravia; Poland.

Exsiccata: (Sphaeria pustulata) Desm., Pl. cr. Fr. I, 1755.
(Diaporthe Zopfii) Kze., Fung. Sel. 264 (type).
(Diaporthe hystricula) Petr., Fl. Boh. et Mor. 680.

Collections: (Diaporthe pustulata) Höhn. Herb. A 4026 (6952), Schneeberg, 1887; Wiener Wald, 1902.
(Sphaeria pustulata) Curtis Herb. 460.15.7, Caen, Roberge; 459.1.3, ex Desmazière Herb.
(Diaporthe fallaciosa) Höhn. Herb. A 3952 (6904), Wiener Wald, 1902.

The type of D. Niesslii Sacc. has not been seen, but, to judge from the description and Rehm, Asc. 1418, it is this species. D. valsiformis is very similar to this species, differing only in the somewhat narrower spores and the lack of the superficial ridge. This species differs from D. acerina in the isolate stromata, marginal ridge, and somewhat narrower spores.
Conidial connections

Phoma pustulata Sacc., Syll. 3:91. 1884.

The Tulasnes (Sel. Fung. Carp. 2:165) give the "stylospores" of their Aglotsora pustulata as ovoid and 10-13 × 3.5 μ long, and the "spermatia" as filiform and 25-35 μ long. Saccardo describes the "basidia" of his Phoma pustulata as filiform-hamate and 14 μ long.

46. DIAPORTHE VALSIFORMIS REHM.

Appearing upon the surface as conic pustules, 0.5-1 mm. in diameter, with a central disk consisting of a small dense cluster of short-cylindric ostioles. Entostromata isolate, 1-3 mm. in diameter, strongly differentiated. No dorsal zone. Ventral zone sharp and definite in bark or wood. Somewhat of a grayish stromatic disk sometimes developed. Perithecia 320-480 × 240-320 μ, definitely grouped in the entostromatic areas, and collectively erumpent. Asci clavate, 60-70 × 5-7 μ. Spores biserrate, fusoid-ellipsoid, two-celled, hyaline, constricted at the septum at maturity, four-guttulate, 12-16 × 2.5-3.5 μ.

Host: Alnus glutinosa.

Distribution: Germany.


This is a very confused species. In Rehm's herbarium there are five packets under this species name, representing four different species. The description in Ann. Myc. 11:152 is taken from the material sent to Rehm by Petrak. Packets 2 and 46 from Petrak, in Rehm's herbarium, are Diaporthe decorticans, as issued in Petr., Fl. Boh. et Mor. 755. Packet 3 is Diaporthe eres. Petrak (Hed. 62: 290) later states that the host of this material was wrongly determined and that it should be Diaporthe syngenesia on Rhamnus, which is incorrect. The original D. valsiformis, which Rehm considers the same as Petrak's material, is described in Rehm's herbarium (No. 6) from material sent by G. Wagner from Winterberg in 1892. The description given above is taken from this material, which is somewhat immature. The material from Vess (Ulrichsberg, 1889), given as forma valsoidea, is a dothideaceous fungus and not a Diaporthe.
This species is somewhat similar to *Diaporihe perjuncta* Niessl, but differs in the more restricted and definitely organized isolate entostromata. It differs from *D. staphylina* in the definitely organized disks, clustered perithecia, and narrower spores.

47. **DIAPORTHE VARIANS (CURR.) SACC.**

Syll. 1 : 614. 1882.

**Dialytes Aceris** Fck., in Fung. Rhen. 1984. 1867.
**Diaporthe Aceris** Fck., Symb. Myc. 204. 1869.

On the surface as flattened conic pustules, with a small central cluster of short, stout, barely erumpent ostioles. Entostromata isolate to pustulate-effuse in character. Dorsal zone dipping into the bark. Ventral zone definitely present in bark or wood. Perithecia 320–640 × 240–480 μm, definitely clustered in the pustulate areas and collectively erumpent. Asci clavate, 60–70 × 10–12 μm. Spores biseriate, fusoid-ellipsoid, usually characteristically inequilateral or curved, two-celled, hyaline, not at all or only slightly constricted at the septum, 13.5–19 × 4–6.5 μm.

**Host:** *Acer campestris*.

**Distribution:** England; Germany.

**Exsiccati:** *(Dialytes Aceris)* Fck., Fung. Rhen. 1984 (type).
**Collections:** *(Diaporthe varians)* Kew Herb. (Berkeley Herb.), labeled "*Sphaeria varians*," 1612 (type).

This species differs from the closely related ones on other species of *Acer* in the inequilateral spores. The spores of Fuckel's *Fung. Rhen.* 1984 are 13.5–16 × 4–5.5 μm; those of Currey's *D. varians* are 15–19 × 5–6.5 μm, but they are probably of the same species.

48. **DIAPORTHE INAEQUALIS (CURR.) NIT.**


(Plate IX, Figs. 1–2)

1859.

*Sphaeria Fuckelii* Duby in litt., in Fck., Fung. Rhen. 919.
PLATE IX

DIAPORTHE

(Spores X 1000; 1 mm. = 1 μ)

D. inaequalis (Curr.) Nit. 1. Stroma 2. Ascospores
D. Laschi Nit. 3. Stroma 4. Ascospores
Sphaeria neglecta Duby ined., in Curr. Herb.
Valsa neglecta Duby, Grev. 14: 47. 1885.
Diaporthe neglecta (Duby) Berl. & Vogl., Syll. Add. 188. 1886.

Appearing on the surface as small pustulate stromata, 0.2-0.5 mm. in diameter, and erumpent through the adherent periderm as small clusters of short, stout, cylindric or sometimes somewhat elongate or bent ostioles. Entostromata pustulate-effuse, dorsal zone running along or just beneath the bark surface and dipping into the bark or wood between the perithecial groups. Perithecia flattened-spherical, rather large, 450-720 × 240-500 μ, scattered singly, clustered in small groups, or crowded in large clusters, usually collectively erumpent. Ventral zone absent or present as a rather broad brownish zone well within the wood. Ascii clavate at first, becoming cylindric at maturity, varying in size from 70-110 to 9-15 μ. Spores biseriate, becoming obliquely uniseriate to uniseriate, broadly ellipsoid, hyaline, two-celled, constricted at the septum, composed of two almost isodiametric cells, each with a single large globule and measuring (12)13-17(18) × 5.5-9 μ.

Hosts: Amorpha fruticosa; Cytisus capitatus; C. scoparius; Genista germanica; G. tinctoria; Ulex europaeus.

Distribution: Austria; England; France; Germany; Italy; Poland.

(Sphaeria Fuckelii) Fck., Fung. Rhen. 919 (type).

Collections: (Diaporthe inaequalis) Nit. Herb. 33; Nubbenburg, Aug., 1866; Handorf, Feb., 1866; Kinderhaus; Sugenheim in Franken, Rehm.
(Sphaeria neglecta) Kew Herb. (Currey Herb.), on Genista tinctoria (type).

This species is easily distinguished from D. Sarothamni by the broad brownish ventral zone as well as by the somewhat larger perithecia and spores.

On Genista and Amorpha the fungus is found on smaller twigs and the stromata are usually more pustulate on the surface and the ostioles are more prominent. The perithecia are also somewhat smaller, and the ventral zone is normally absent.

Conidial connections
Nitschke gives filiform, curved conidia, 21-27 × 2 μ, for his D. inaequalis. Spagazzini describes the conidia of his Phoma inaequalis as elongate-ellipsoidal, inequilaterial, and 7-10 × 2-3 μ.

49. DIAPORTHE LASCHII NIT. V
Pyr. Germ. 292. 1867.
(Plate IX, Figs. 3-4)

Scarcely visible on the surface, the short-cylindric ostioles barely erumpent through the periderm. Entostromata irregularly pustulate-effuse; pustulate areas rather widely extended within the bark. Ordinarily the dorsal zone is present only where it dips into the bark, being absent from the bark surface beneath the periderm; in other cases causing a blackening of the bark surface which may be exposed by the falling away of the periderm. Entostromatic areas bleached and compacted. Ventral zone present within the wood. Perithecia 400-640 × 320-480 μ, scattered singly or in small groups within the pustulate areas, usually separately erumpent. Asci clavate, with a refractive ring in the apex, 55-67 × 7-9 μ. Spores biseriate, fusoid ellipsoidal, two-celled, hyaline, constricted at the septum, four-guttulate, 13-17.5 × 3.5-5 μ, and often with a faint, hyaline appendage at each end, one usually straight and the other curved.

Host: Evonymus europaeus.
Distribution: Germany; Poland.

This species is similar to the American D. Evonymi, but differs in the somewhat narrower appended spores, smaller asci, and more pustulate entostromata.

It is very similar to D. eres in outward appearance; when in the immature stage it is often mistaken for that species. In fact, Nitschke had both these species when he described D. Laschii. The D. rostellata from Lasch mentioned in his description is D. eres on Evonymus, and the material from Fuckel is the species described above. Since Fuckel's material is cited as the type and was distributed in Fung. Rhen. 1990, the name is retained for that species.
Conidial connections
Phoma foveolaris (Fr.) Sacc., Mich. 2: 94. 1880.
Phomopsis foveolaris (Fr.) Trav., Fl. Ital. Crypt. 2: 257. 1906.
Saccardo gives the conidia of his Phoma as ovoid and $6 \times 3 \mu$. According to Grove (Kew Bull. Misc. Inf. 1917: 70), the British specimens do not belong in Phomopsis.

50. DIAPORTHE OXYSPORA (Pk.) SACC.
Syll. 1: 627. 1882.
(Plate IX, Figs. 5-8)
Valsa oxyspora Pk., Rep. New York State Mus. 28: 73. 1876.
Valsa ocularia Cke. & Ell., Grev. 6: 11. 1877.
Diaporthe ocularia (Cke. & Ell.) Sacc., Syll. 1: 616. 1882.
Diaporthe cercophora (Ell.) Sacc., Syll. 2, Add. xlix. 1883.

Appearing on the surface as broad, circular to elongated, blackened disks, 1-2 mm. in diameter, erumpent through wide angular ruptures of the periderm caused by a rich development of stromatic hyphae upon and within the surface layers of the bark. Ostioles stout-cylindric to hemispheric, clustered or scattered throughout the disk. Entostromata isolate or confluent, strongly differentiated, with the dorsal blackened zone dipping at an angle from the periderm to the wood surface, and occasionally penetrating somewhat into the wood beneath, or continuing beneath as a more or less complete ventral zone. Perithecia 400–520 $\mu$ in diameter, grouped within the differentiated entostromatic areas. Asci long-clavate, with a refractive ring in the apex, 54–60 $\times$ 6–7 $\mu$. Spores biseriate, long-fusoid, two-celled, hyaline, constricted at the septum, and with a curved, bristle-like appendage at each end when young. These appendages are evanescent and usually disappear very early. The spores are 12.5–16 (19) $\times$ 2.5–4 $\mu$.

Hosts: Ilex opaca; I. verticellata.
Distribution: Nova Scotia; Ontario; New Jersey; New York.
Exsiccati: (Diaporthe oxyspora) Ell. and Ev., N. A. F. 2823.
(Valsa cercophora) Ell. and Ev., N. A. F. 1187 (authentic).
(Diaporthe epimicta) Ell. and Ev., Fung. Col. 635; Rehm, Asc. 2039 (pro parte);

The spores of this species are usually obtained in an immature condition, and the spores of all the exsiccati examined must be considered as such. Spores fully matured in a damp chamber measured (14)16-20(22) x 3-4(5.5) μ. Specimens from Dearness showed spores 14-19 x 3.5-4.5 μ. Diaporthe cercophora is apparently a form of this species, on Ilex opaca, with less strongly developed and widely erumpent disks and a more closely adherent periderm.

N. A. F. 2823 is not on Birch, as given, but on Ilex.

Conidial connections
A Phomopsis type of imperfect stage has been obtained in cultures of this species made by the writer (Papers Mich. Acad. 8 : 224). The alpha conidia were fusoid-ellipsoid, one-celled, hyaline, and 8-13 x 2.5-3.5 μ. The beta conidia were cylindric, straight or slightly allantoid, one-celled, hyaline, and 8-9 x 1.3-1.5 μ.

51. DIAPORTHE TUBERCULOSA (ELL.) SACC.
Syll. 1 : 620. 1882.
(Plate IX, Figs. 9-12)


Appearing on the surface as small loose clusters of slightly erumpent ostioles, often producing small circular perforations of the periderm. Entostromata pustulate-effuse or occasionally isolate. There is no blackening of the bark surface and the dorsal zone is present only where it dips into the bark between the perithecial clusters. Ventral zone continuous beneath, usually well within the wood. Perithecium spherical, 400-600 μ in diameter, in small groups within the pustulate areas or sometimes irregularly gregarious in the more evenly effuse areas, but nearly always collectively erum-
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pent. Asci clavate, with a refractive ring in the apex, 60–80 × 10–14 μ. Spores biseriate, fusoid-ellipsoid, obtuse, two-celled, hyaline, constricted at the septum, (12)14–17 × 4.5–7.5 μ.

Host: *Amelanchier canadensis.*

Distribution: Ontario; Michigan; New Jersey; New York.

Exsiccati: (*Falsa tuberculosa*) Ell. and Ev., N. A. F. 880 (authentic).  
 (*Diaporthe tuberculosa*) Ell. and Ev., Fung. Col. 633, 724, 1234; Shear, New York Fungi, 165; Rehm, Asc. 1987; Syd., Fung. Exot. 129.


This species is similar to *D. Beckhausii*, but has larger spores.

Conidial connections

Single-ascospore cultures of this species, from *Amelanchier*, have given a *Phomopsis* conidial stage with fusoid-ellipsoid alpha conidia measuring 7–12 × 3.5–4.5(5) μ, and crescent-shaped beta conidia with tapered ends and measuring 11–20 × 1.3–2 μ.


This variety on *Prunus* has a lateral blackened zone which meets the periderm at an abrupt angle and causes a raised ridge which appears on the surface as a marginal ridge about the entostromatic areas. The spores are also somewhat smaller (10–13 × 4–5 μ). Cultures of *D. tuberculosa* from *Amelanchier* on stems of *Prunus* and *Amelanchier* produced similar ridges on both hosts. Since the smaller spores may be due to immaturity, there is some doubt concerning the validity of this variety. If these are mature spores this variety would be more closely allied to *D. caryigena* Ell. & Ev.

Host: *Prunus serotina.*

Distribution: New York.


Var. corymbosa (Cke. & Ell.), comb. nov.

*Valsa corymbosa* Cke. & Ell., Grev. 8: 15. 1879.

*Diaporthe corymbosa* (Cke. & Ell.) Sacc., Syll. 1: 622. 1882.

*Diaporthe binoculara* var. Clethrae Dear., Myc. 16: 158. 1924.

Stromata as in *D. tuberculosa*, usually limited in area (2–6 mm.). Perithecia scattered singly or loosely grouped, 400–480 × 320–400 μ. Spores somewhat smaller, 12–14 × 5.5–6.5 μ.
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Hosts: Clethra sp.; Vaccinium corymbosum.
Distribution: New Jersey; New York.
Collections: *(Falsa corymbosa)* N. Y. G. Herb., Ellis Coll. 3224 (type).


The spores in the Ellis material of *D. corymbosa* may be somewhat immature, but this species seems to be the same as Dearness' variety on Clethra.

The type of Dearness' variety shows the clay-colored ectostromata which Dearness has given as the distinctive character of this variety. Although these ectostromata occasionally occur above the entostromatic areas, there does not seem to be any definite genetic connection between them and the perithecial stromata, and since they are atypical for the genus Diaporthe there is some doubt in the writer's mind concerning their connection with this fungus. The spore measurements given by Dearness (12-15 × 7-7.5 μ) include the sheath of periplasm often found around the spores. The measurements as given above would place the variety under *D. tuberculosa*.

52. DIAPORTHE ALIENA Ell. & Ev.


Appearing on the surface as pustulate stromata, 1 mm. in diameter, with a central blackened disk composed of a cluster of stout-cylindric ostioles. Entostromata pustulate-effuse, well differentiated, light in color. Dorsal zone dipping into the bark, usually to the wood, between the perithecial clusters, and continuous along the wood surface or partly absent. No ventral zone present. Very little ectostromatic development. Perithecia spherical to irregular in shape, 320-720 × 320-480 μ, clustered in the pustulate areas and collectively erumpent. Asci clavate, 70-80 × 8-10 μ. Spores obliquely uniseriate to uniseriate, broad oblong-ellipsoid, obtuse, two-celled, hyaline, constricted at the septum, with a single large guttula in each cell, 10-13 × 6.5-8 μ.

Host: Crataegus.
Distribution: Ontario.
Exsiccati: Ell. and Ev., N. A. F. 3431.
In this species the dorsal zone shows a greater tendency to dip deeply into the bark, often to the wood, than in *Diaporthe Crataegi*. This species differs from *D. detrusa* in the shorter spores and less well developed ectostromata, and from *D. fibrosa* in the light-colored entostromatic areas and less well developed ectostromata.

This species has been reported from America only.

53. *DIAPORTHE BINOCULATA* (ELL.) SACC.
Syll. 9: 708. 1891.
(Plate X, Figs. 1-2)


Scarcely visible on the surface except when the small clusters of cylindric ostioles are elongated and strongly erumpent. Entostromatic areas light in color, isolate, or sometimes confluent, limited in area and usually containing only a single cluster of perithecia. Dorsal zone dipping into the bark and continuing beneath as a ventral blackened zone, which is usually within the bark but sometimes extends into the wood. Ectostromata not well developed. Perithecia 400-550 μ in diameter, in groups of 4–8 within the differentiated entostromatic areas. Asci clavate with a refractive ring in the apex, 90–120 × 10–20 μ. Spores irregularly biseriate at first, becoming obliquely uniseriate, broad-fusoid to oblong-ellipsoid, obtuse, two-celled, hyaline, more or less constricted at the septum, variable in size, 12-16(19) × 6.5-9(10) μ.

*Hosts:* *Magnolia acuminata; M. glauca.*

*Distribution:* New Jersey; New York; West Virginia.

*Exsiccati:* (*Valsia binoculata*) Ell. and Ev., N. A. F. 879.
(*Sphaeronema Magnoliae*) Ell. and Ev., N. A. F. 3358.

*Collections:* (*Valsia binoculata*) N. Y. G. Herb., Ellis Coll. 3419, Dec., 1881 (type); June 15, 1882.

The var. *Ilicis* Ell. & Ev. (*N. A. F.,* 2746) of *D. binoculata* is a separate species, *D. Ilicis* (Ell. & Ev.). The variety *Clethrae* of Dearness (*Myc.* 16: 158) is more closely related to *D. tuberculosa* and is placed under that species.
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54. DIAPORTHE ILICIS (ELL. & EV.), COMB. NOV.

Ell. and Ev., N. A. F. 879. 1882.

(Plate X, Figs. 3–6)

Diaporthe binoculata (Ell.) Sacc. var. Ilicis Ell. & Ev., in N. A. F. 879. 1882.

Appearing on the surface as conic, erumpent pustules 0.5–1 mm. in diameter, with a central, crowded, disklike fascicle of ostioles. Entostromata pustulate-effuse. Dorsal zone dipping to the wood about each perithecial cluster and running along the wood surface between these clusters. No definite ventral zones present; irregular discolored areas sometimes present in the wood. Conic ectostromata rather well developed. Perithecia 450–600 × 320–400 μ, definitely clustered in light-colored pustulate areas of the bark, 0.5–1.5 mm. in diameter. Asci clavate to clavate-cylindric, with a refractive ring in the apex, 95–130 × 11–16 μ. The spores are irregularly biseriate to obliquely uniseriate, broad-ellipsoid, two-celled, hyaline, slightly constricted at the septum, have a large globule in each cell, and measure 12–16.5 × 6.5–9.5 μ.

Host: Ilex verticillata.

Distribution: Ontario; Michigan.

Exsiccati: (Diaporthe binoculata) Ell. and Ev., N. A. F. 2746 (var. Ilicis) type; Ell. and Ev., Fung. Col. 836; Rehm, Asc. 1972 (forma Ilicis).

Collections: (Diaporthe Ilicis) Weh. Herb., Wehmeyer 197, Ypsilanti, Michigan, April, 1923; Wehmeyer 197 a, Ann Arbor, Michigan, May, 1925.

This species differs from D. binoculata in the definite ostiolar disks, well-developed ectostromata, pustulate-effuse entostromata, and lack of any ventral zone. It differs from D. oxyspora in the diameter of the spores. Perithecia of this species were obtained in culture on twigs of Ulmus americana and Tilia americana.

Conidial connections

Cultural connection (Papers Mich. Acad. 4: 400) with a Fusicoccum or Phoma type of pycnidium has been obtained. On Tilia americana, in culture, dark-colored pycnidial stromata were formed in which were produced irregular conidial cavities, often exposed as open cavities. The conidia in these cavities were cylindric to fusoid or ellipsoid, one-celled, hyaline, and 6–13 × 1–2 μ, and may be regarded as the alpha type. On Ulmus, in culture, inclosed locules were formed in a lighter-colored stroma and contained filiform, curved conidia measuring 13–16 × 1–1.5 μ.
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(Spores × 1000; 1 mm = 1 μ)

D. binoculata (Ell.) Sacc. 1. Stroma 2. Ascospores
D. Garpini (Fr.) Fck. 7. Stroma 8. Ascospores
D. leiopharmiae (Fr.) Sacc. var. Ravenniana (De Thüm. & Rehm), comb. nov. 9. Beta conidia 10. Stroma
11. Ascospores 12. Alpha conidia
D. leiopharmiae (Fr.) Sacc. 12. Ascospores
55. DIAPORTHE COLUMBIENSIS Ell. & Ev.

Scarcely visible on the surface as short, stout ostioles, erumpent singly or in small loose groups through slightly pustulate ruptures of the periderm or appearing as small slightly blackened patches, 1-5 mm. in diameter, bounded by marginal lines. The entostromata are strongly differentiated and strongly pustulate-effuse. The dorsal blackened zones dip through the bark into the wood between the perithecial clusters. Perithecia large, 480-650 x 480-560 µ, and scattered singly or in small groups within the small pustulate areas. Ascii clavate-cylindric, with a refractive ring in the apex, 100-122 x 11-19 µ. Spores irregularly biseriate to uniseriate, oblong-ellipsoid, blunt, two-celled, hyaline, constricted at the septum, 16-20 x 7-9 µ.

Host: Original host given as unknown. In 1916 (Myc. 8: 100) Dearness reported this species from Macoun as on Nuttalia cerasiformis (given as on Rosa sp. in the New York Mus. Herb.).

Distribution: British Columbia.
Collections: Ev. Herb., 4-57, April, 1889, Macoun 32; N. Y. M. Herb., Macoun, fide Dearness; N. Y. G. Herb, (both authentic).

This species is similar to D. binoculata, but the entostromata are pustulate-effuse instead of isolate, and the spores are longer. It also resembles D. tuberculosa, but has longer spores.

56. DIAPORTHE CARPINI (Fr.) Fck.

(Plate X, Figs. 7-8)

Diaporthe quercina Nit., in litt., in Fck., Symb. Myc. 204. 1869.
Diaporthe Betuli f. quercina (Nit.) Rehm, Asc. Diagn. 149.

Appearing on the surface as numerous conic, pustulate stromata, 0.5-1.5 mm. in diameter. Erumpent as a compact cluster of stout-cylindric, punctate ostioles, which often cause-wide angular ruptures
of the periderm. Entostromata pustulate-effuse, with a fine but definite dorsal zone, which may run along the surface of the bark when the perithecial clusters are confluent, but usually dips into the bark or to the wood between perithecial groups. This dorsal zone may at times be absent between the perithecial pustules, giving rise to isolate stromata. Perithecia spherical or irregular from crowding, 320–480 × 320–400 μ, clustered in the pustulate entostromatic areas. No ventral zones present. Asci clavate, 55–65 × 6.5–9.5 μ. Spores biseriate, oblong-cylindric with rounded ends, two-celled, hyaline, not, or only slightly, constricted at the septum, four-guttulate, (13) 15–17(20) × 2.4–3.5(4) μ.

Hosts: Carpinus Betulus; Corylus avellana (?)

Distribution: Austria; Belgium; France; Germany; Poland; Sweden.

Exsiccati: (Sphaeria Betuli) Fr., Scler. Suec. 228.
(Valsa Carpinii) Fck., Fung. Rhen. 600; Rab., Fung. Eur. 322.
(Diaporthe Betuli) Syd., Myc. March. 1941; Petr., Fl. Boh. et Mor. 15.
(Diaporthe conjuncta) Petr., Fl. Boh. et Mor. 17.


This seems to be a strictly European species. All the American specimens which are at all similar are D. Bakeri, which differs in the shorter spores and the more effuse type of stromata.

The host of Fuckel’s D. quercina (Dialytes quercina) is apparently Carpinus and not Quercus.

Conidial connections
Fusicoccum Carpini Sacc., Syll. 3 : 250. 1884.
Saccardo gives this species, with lanceolate-fusiform conidia 12 × 3–4 μ, as the conidial stage of D. Carpini.
57. DIAPORTHE SYNGENESIA (Fr.) Fck.

Symb. Myc. 204. 1869.

(Plate XI, Figs. 1-2)

Sphaeria Frangulae Pers., in Kew Herb. (?), according to Cooke.
Diatrype syngenesia Cke., (Seem. Journ.).

Erumpent as more or less pustulate, circular to fusoid disks, 0.5-1 mm. in diameter, and composed of a compact cluster of stout-cylindric ostioles. Entostromatic areas pustulate-effuse, with the dorsal zone dipping to the wood between the pustules, or with the pustulate areas more or less confluent. There is a well-developed ectostromatic disk of brown hyphae, and the entire entostromatic areas are filled with a growth of these brownish hyphae, which blacken the host tissue. No ventral zones in either the bark or wood. Perithecia 250-480 x 240-320 µ and clustered within the pustulate stromatic areas. Asci clavate, 47-54 x 6-8 µ. Spores biseriate, oblong-ellipsoid to fusoid-ellipsoid, two-celled, constricted at the septum, 12-13.5 x 2-3.5 (4) µ, and rarely with faint appendages, which are quickly evanescent.

Hosts: Rhamnus Frangula; R. infectoria.

Distribution: Austria; Belgium; Bohemia; Finland; France; Germany; Italy; Russia; Switzerland.


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(Diaporthe Berlesiana) Roum., Fung. Gall. 2687; Rehm, Asc. 1598.

This species has often been confused with D. eres on Rhamnus (D. nigricolor), which it does resemble when the pustulate stromata are numerous and confluent. It is usually easily distinguishable, however, by the pustulate entostromata, the compact disklike fascicles of ostioles, and the lack of any ventral zone. It differs from D. fibrosa and D. detrusa in the much narrower spores.

Conidial connections
Phoma Frangulae Oud., Hed. 37: 314. 1898.
Phomopsis syngenesia (Brun.) Höhn., Ber. deut. bot. Gesell. 35 : 255. 1917.
Phomopsis moravica (Bub.) Petr., in Fl. Boh. et Mor. 1064. 1919.

Connection pointed out by Von Höhnel in 1917. The synonymy is taken from Petrak (Hed. 62: 305). Bubak gives the conidia as cylindrical to oblong-cylindrical, straight or curved, and 6–11 × 2–3.5 μ. Tab. Fung. Eur. 1832 of the "stylospore stage" [Sphaeronema ventricosum] shows small pulvinate, erumpent stromata, yellow within and with a blackened crust. These stromata contain conidia which are taper-pointed, fusoid to crescent-shaped, one-celled, and 20–23 × 3–4 μ. Traverso suggests Myxosporium Rhamni All. as the imperfect stage of D. syngenesia.

58. DIAPORTHE STRUMELLA (FR.) FCK.

(Plate XI, Figs. 3–6)

Sphaeria versatilis Fr., Syst. Myc. 2 : 364. 1823.
Valsa strumella (Fr.) Fck., in Fung. Rhen. 598. 1863.
Diaporthe strumellaformis (De Not.) Sacc., Syll. 1 : 614. 1882.

Visible on the surface as scattered, pustulate, circular or laterally elongated, blackened, stromatic disks, 0.5–2 × 0.2–1 mm. The flat blackened disks contain scattered, papillate to conical ostioles, or are nearly obliterated by a dense fascicle of ostioles, which are occasionally much elongated and bent. Perithecia spherical to ovoid, 250–
PLATE XI

DIAPORTHE

(Spores × 1000; 1 mm. = 1 μ)

D. syngenesia (Fr.) Fck. 1. Stroma 2. Ascospores
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400 µ in diameter, definitely clustered beneath a strongly developed ectostroma. There are usually no darkened zones visible in either bark or wood. This condition is due to the obscurity of the dorsal zone, which runs between the bark and the wood, and to the fact that the entire woody tissue is entostromatic in character, so that any blackening that is present is along the margin of the pith and is not noticeable. Ventral zones sometimes definitely seen deep in the wood. Asci clavate, with a refractive ring in the apex, 37-45 × 6-9 µ. Spores biseriate, fusoid, often somewhat inequilateral or curved, two-celled, hyaline, slightly constricted at the septum at maturity, 11-15(16) × 2-3(3.5) µ.

Hosts: Ribes alpinum; R. aureum; R. carpaticum; R. Grossulariae; R. intermedium; R. lacustre; R. rubrum; R. uva-crispa.

Distribution: Belgium; Bosnia; England; Finland; France; Germany; Luxembourg; Poland; Sweden; Ontario; Massachusetts; Michigan.


(Valsa strumella) Fck., Fung. Rhen. 598.


(Diaporthe pungens) Syd., Myc. March. 2055; Petr., Fl. Boh. et Mor. 35.

(Diaporthe mitis) Roum., Fung. Gall. 2938.

Collections: (Diaporthe strumella) Hohn. Herb. A 4021 (6946), Schlesien, 1916, G. J. Weese; Luxemburg, April, 1902, J. Fellgen (type of D. spiculosa); Nit. Herb., Garten zu Cappenberg, Sept., 1866; Schlossgarten, Dec., 1864; Handorf, April, 1864; Pat. Herb., Ecouen (Seine et Loire), 1906; Weh. Herb., Wehmerger 304, Ann Arbor, Michigan, Oct., 1924; Wehmerger 304 a, Boxford, Massachusetts, Oct., 1926.


The spores of this species are slow in maturing and most collections show immature spores without cross-walls or constriction, only slightly inequilateral or 11-13 × 2-2.5 µ.

This species differs from D. spiculosa in the more definitely clustered perithecia collectively erumpent through a definite, well-developed ectostroma.
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Roum., Fung. Gall. 2938 of Diaporthe mitis, is D. strumella. D. magellanica Speg. is given as being similar to D. mitis. The descriptions of both these species, however, might very well apply to D. eres, so that without type material their true position is doubtful.

Conidial connections

The conidial stage of this species has been obtained in cultures by the writer (Myc. 19 : 178). Large pycnidial ectostromata with one to several locules containing two types of conidia were formed on stems of Ribes. The alpha conidia were fusoid-ellipsoid, one-celled, hyaline, and 6-8 x 2.5 μ. The beta conidia were long fusoid-cylindric, straight or slightly curved, one-celled, hyaline, and 11-15 x 1.5 μ.

Var. Pteleae (Rehm), comb. nov.


Stromatic disks more strongly erumpent. Periderm not so closely adherent. Disks not laterally elongated. Perithecia often surrounded by a rich entostromatic development. Dorsal zones usually absent, ventral blackening sometimes at base of entostromatic development about perithecia. Inner surface of wood or pith sometimes blackened. Spores usually immature, fusoid, inequilateral or curved, four-guttulate, finally slightly constricted and septate, 11-15 x 2-3.5 μ. Asci 35-45 x 6-7 μ.

Host: Ptelea trifoliata.

Distribution: Germany.

Exsiccati: (Diaporthe Pteleae) Syd., Myc. March. 1568 (type).

Although only two specimens of this species have been seen, it appears to be a good variety of the species given above, on Ptelea.

59. DIAPORTHE PRUNI ELL. & Ev.


Appearing on the surface as pustulate, conic, mostly laterally elongate stromata with a central circular to elliptic, whitish to blackened disk, 1-1.5 x 0.3-0.7 mm. in diameter, through which the cluster of cylindric ostioles is erumpent. Entostromata pustulate-effuse, dorsal zone dipping to the wood between the perithecial clusters and inclosing the lighter-colored, differentiated, entostromatic areas, within which the perithecia are clustered beneath a well-developed grayish to greenish ectostroma. Ventral zone definite
within the wood. Perithecia 500–700 × 300–500 μ, usually partly or entirely sunken in the wood. Asci clavate, 65–92 × 6–10 μ. Spores biseriate, fusoid-ellipsoid, two-celled, hyaline, constricted at the septum, 15–20(23) × 4–5.5 μ, and with a short, thick, hyaline, evanescent appendage, 4–8 μ in length, at each end of the spore.

Hosts: Betula alba; Prunus serotina; P. virginiana.

Distribution: Ontario; Kansas; Massachusetts; Michigan; New York.

Exsiccati: (Diaporthe Pruni) Ell. and Ev., N. A. F. 2822 (authentic), 3024; Ell. and Ev., Fung. Col. 4722.


This species differs from D. impulsa in the somewhat longer ascospores and the presence of appendages on the spores, and from D. pennsylvanica in the presence of a well-developed, definite ectostroma.

Conidial connections


Specimens labeled “spermagonia” in Ellis’ type collections show only fusoid alpha conidia, but pycnidia produced in the writer’s cultures of this species proved to be of a true Phomopsis with both types of conidia. The alpha conidia are fusoid-ellipsoid, one-celled, hyaline, and 10–16 × 2.5–3 μ. The beta conidia are long-cylindric, hamate, one-celled, hyaline, and 10–15 × 1–1.5 μ.

60. DIAPORTHE IMPULSA (Cke. & Pk.) Sacc.

Syll. 1: 618. 1882.

(Plate XI, Figs. 7–10)


Diaporthe expatriata Rehm (?), in Syd., Myc. March. 1657. 1887.


Diaporthe sorbicala (Nit.) Bref., Unters. Mykol. 10: 236. 1891.


Appearing on the surface as pustulate, conic stromata with central grayish to blackened disks, 1–1.5 mm. in diameter and containing a compact cluster of stout-cylindric ostioles. Entostromata pustulate-effuse, the definite dorsal zone dipping into the bark be-
between the perithecial clusters and bounding the lighter-colored pustulate areas. Ventral zone usually present well within the wood. Perithecia 320–640 × 320–480 μ, clustered within the pustulate areas beneath a strongly developed, grayish, conic ectostroma, through which the ostioles are collectively erumpent. Asci clavate, 60–70 × 7–10 μ. Spores biseriate, fusoid-ellipsoid, two-celled, hyaline, constricted at the septum, 13–18 × 2.5–5.5 μ.

Hosts: Sorbus americana; S. Aucuparia.

Distribution: Germany; Hungary; Moravia; Poland; Russia; Sweden; Michigan; New Hampshire; New York.


This species differs from D. Pruni only in the somewhat shorter ascospores, which are unappendaged. It differs from D. Padi only in the presence of a well-defined ectostroma and a somewhat more pustulate and well-defined entostroma, and from D. pennsylvanica in the shorter spores. These species form an almost continuous series of variation, and many specimens are difficult to place.

The D. sorbicola cited by Brefeld is probably this species, but Nitschke's original material of this species is D. eres. The label of Syd., Myc. March. 1657 of D. expatriata in the Farlow Herbarium, has no accompanying specimen, but a second packet labeled Valsa Sorbi and numbered 1657 also contains material of D. impulsa. There is some doubt whether Jaczewski's material of D. Woroniniae on Caragana cited above is this species. It is decayed and may possibly be D. Caraganae.
Conidial connections

The conidial stage of this species has been obtained in culture by the writer (*Papers Mich. Acad.* 9: 483). The pycnidia are of the usual *Phomopsis* type. The alpha conidia are long-fusoid, one-celled, hyaline, and 15-27 × 2.5-5 μ. The beta conidia are long-cylindric, hamate or allantoid, one-celled, hyaline, and 10-15 × 1-1.5 μ.

Bondarsew (*Not. syst. Inst. Crypt. Hort. Petropol.* 1: 84) has described *Phomopsis Caraganae* Bond. on *Caragana*, with alpha conidia 13-18 × 3-3.5 μ and beta conidia 14-20 × 1.5 μ, as the imperfect stage of *D. Woroniniae*. This may be the same as the *Phomopsis* obtained by the writer, but inasmuch as there is a second species, *D. Caraganae*, on *Caragana* and the conidial measurements are not in entire agreement, a cultural comparison of these two species is desirable.

Grove (*Journ. Bot.* 68: 296) gives his *Phomopsis sorbicola* as the pycnidial stage of *D. sorbicola* (Nit.) Bref. He describes the alpha conidia as fusoid-ellipsoid and 9-12 (14) × 2-2.5 μ. As already pointed out, *D. sorbicola* has been a very confused species. This imperfect stage is not that of *D. impulsa*, but of some other species on *Sorbus*.

**61. DIAPORTHE FIBROSA (Pers.) Fck.**

*Symb. Myc.* 204. 1869.

*Diaporthe extensa* (Fr.) Sacc., *Syll.* 1: 618. 1882.

Pustules variable in size, appearing on small twigs as small conic to fusoid ruptures, 0.2-1 mm. in diameter, with a central cluster of stout-cylindric ostioles; on larger twigs forming larger fusoid to elliptic disks 1-2.5 × 0.5-1.5 mm., which rupture and throw back the periderm. The bark tissues are strongly blackened and disintegrated. Certain layers of stone cells and schlerenchyma tissue are not affected by this blackening and cause the characteristic fibrous appearance of the infected bark. Entostromatic areas pustulate-effuse, compact, gray to black, and bounded by a dorsal zone which dips to the wood surface between the perithecial clusters, but is often difficult to distinguish on account of the blackened bark. There are no ventral zones. The perithecia are spherical to somewhat flattened, 480-720 × 320 × 720 μ, and clustered in the pustulate areas beneath a well-developed ectostroma, through which the ostioles are erumpent. Asci clavate, with a refractive ring in the apex,
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80–95 X 8–10 μ. The spores are uniseriate to obliquely uniseriate, broad fusoid-ellipsoid, obtuse, two-celled, hyaline, constricted at the septum, have a single large guttula in each cell, and are 11–14(16) X 6–8 μ.

Hosts: Prunus spinosa; Rhamnus cathartica; R. Frangula; Sorbus Aucuparia (?).

Distribution: Austria; Belgium; Bosnia; England; France; Germany; Hungary; Italy; Poland; Sweden.


Collections: (Sphaeria fibrosa) Curtis Herb. 439.12; (3) Sweden, Fries; (4) England, Berkeley; (7) Prunus spinosa, Duby; 439.10.2 Prunus, ex Lenormand Herb.: excl. Curtis Herb. 439.12; (1) Upsala, E. P. Fries; (5) Schweinitz, Ulmus; (6) Alnus, Sept., 1854, No. 4467.
(Sphaeria extensa) Farlow Herb., Vadstena, Acharius: excl. Curtis Herb. (439.4.6) ex Schweinitz Herb.

This species has been reported a number of times on Prunus and, by Sydow (Myc. March. 490), on Sorbus. These specimens on Prunus and Sorbus always show the characteristic appearance of this fungus on Rhamnus, and since the twigs of Rhamnus may easily be mistaken for Prunus, there is some doubt in the writer’s mind whether this species occurs on any host besides Rhamnus. It differs from D. detrusa in the blackened character of the bark, and from D. syngenesia in the broader spores. The copy of Wuestneia fibrosa Auers. (Fung. Rhen. 589) in the Farlow Herbarium shows only a Valsa of the Leucostoma type, with spores 12–17 X 2.5–3.5 μ.

Conidial connections
Fusicoccum fibrosum Sacc., Syll. 3: 247. 1884.
Saccardo gives the conidia of his Fusicoccum fibrosum as ellipsoid, with an acuminate base, and measurements of 11 X 5 μ. 'Material of this Fusicoccum accompanying D. fibrosa on Jaap's Fung. Sel. 433 shows grayish ectostromata which contain fusoid to oblong-ellipsoid conidia measuring
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6–11 × 2–2.5 μ. A copy of Syd., Myc. Germ. 1100, in the New York State Museum shows, on the other hand, broad ellipsoid or pointed conidia 8–13 × 4–5 μ. These may represent the two types of conidia of a Phomopsis, but further cultural proof is certainly needed.

62. DIAPORTHE DETRUSA (Fr.) Fck.


(Plate XI, Figs. 11–14)

Valsa detrusa Fr., Sum. Veg. Scand. 411. 1846.

Appearing on the surface as conic, pustulate, circular, blackened disks, 1–1.5 mm. in diameter, erumpent through the closely adherent periderm and containing the stout-cylindric ostioles either in a dense cluster or more or less scattered throughout the lighter-colored ectostromatic disk. Entostromata pustulate-effuse, the heavy dorsal blackening dipping into the bark or to the wood surface among the perithecial clusters. Ventral zone absent, or present only at the margins of the fruiting area, or occasionally in the pith (definite ventral zone seen in the one American specimen (Weh. Herb. 390). Perithecia spherical to irregular in shape, from crowding, 320–560 μ in diameter, clustered in the differentiated, light-colored, pustulate areas beneath well-developed conic ectostromata. Asci clavate, with a refractive ring in the apex, 60–80 × 9–12 μ. Spores biseriate to obliquely uniseriate, oblong-ellipsoid to fusoid-ellipsoid, obtuse, two-celled, hyaline, scarcely constricted at first, 14–16 × 4.5–5.5 μ. When fully matured, more strongly constricted and 15–17 × 5–7 μ.

Hosts: Berberis microphylla; B. spathulata; B. vulgaris; Mahonia aquifolia.

Distribution: Belgium; Germany; Italy; Moravia; Sweden; Switzerland; Massachusetts.

Exsiccati: (Sphaeria detrusa) Fr., Scler. Suec. 6 (type); Desm., Pl. cr. Fr. I, 1754; II, 1494.

(Wuestneia aquilineariformis) Fck., Fung. Rhen. 588 (type).
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(Diaporthe Mahoniae) Roum., Fung. Gall. 5840.
(Diaporthe crassiuscula) Syd., Myc. March. 2667; Sacc., Myc. Ven. 1456; Rehm, Asc. 979.

Collections: (Sphaeria detrusa) Curtis Herb. 439.8.1, ex Lenormand Herb.
(Diaporthe pycnostoma) Nit. Herb. 63, labeled “Varia pycnostoma” (type).

Forma Sorbariae Rehm (Myc. March. 1449) shows only immature stromata and appears to be on Berberis, whereas forma Mahoniae Rehm (Myc. March. 1159) is typical of the species.

Conidial connections

The conidia of Diaporthe detrusa are given by Fückel (Symb. Myc. 205) as being 8–10 × 2.5 μ. Saccardo described this conidial stage as Phoma detrusa and gave the “basidia” as 20 × 1 μ. This species has produced the Phomopsis stage in single-ascospore cultures made by the writer (Papers Mich. Acad. 9:477). The alpha conidia were fusoid-ellipsoid to elongate-fusoid, one-celled, hyaline, and 8–17 × 2.5–3(5) μ; the beta conidia were cylindric, one-celled, hyaline, strongly bent or curved, and 11–33 × 1–1.5 μ.

This species was found associated with D. Mahoniae by Grove. The alpha conidia were oval-lanceolate and 6–8 × 1.5–2.5 μ. A few filiform, curved beta conidia, 20 × 1 μ, were also seen.

63. DIAPORTHE LEIPHAEMIA (Fr.) Sacc.
(Plate X, Fig. 12)

Sphaeria leiphaemia Fr., Syst. Myc. 2:399. 1823.
Sphaeria enteroleuca Fr. pro parte (?), Syst. Myc. 2:381. 1823.
Cryptospora leiphaemia (Fr.) Fck., Symb. Myc. 194. 1869.
Diaporthe dryophila (Niessl) Sacc., Syll. 1:615. 1882.
Valsa fuscidula Cke., Grev. 44:48. 1885.
Diaporthe fuscidula (Cke.) Berl. & Vogl., Add. Syll. 106. 1886.
Chorostate leiphaemia (Fr.) Trav., Fl. Ital. Crypt. 2:203. 1906.

First appearing upon the surface as hemispheric swellings caused by the formation, on the surface of the bark, of well-developed pulvinate ectostromata, which soon rupture the periderm in an angular fashion, exposing erumpent circular to angular or fusoid, orange-yellow to brownish disks, which become cracked and roughened in age. Ostioles usually scarcely or only slightly erumpent, but sometimes strongly erumpent as stout-cylindric to conic or clavate beaks. Flattened pycnidial locules, which are irregular in shape, may be formed on the lateral flanks of the ectostromata. The surfaces of the ectostromata are finally blackened, and there is usually a blackened dorsal zone on the bark surface at maturity. Perithecia radially elongated, 240–480 x 320–640 μ, definitely clustered beneath the ectostromatic disks and surrounded by a rich development of entostromatic mycelium, which may give the stromatic areas a lighter color. Asci clavate, with a refractive ring in the apex, 55–65 x 6–9 μ. Spores biseriate, fusoid-ellipsoid, hyaline, two-celled, often inequilateral or slightly curved, constricted at the septum, 15–20 x 2.5–5.5 μ.

Hosts: Quercus palustris; Q. pedunculata; Q. robur; Q. rubra.

Distribution: England; France; Germany; Italy; Poland; Switzerland.

  (Falsa leiphaemia) Fck., Fung. Rhen. 611.
  (Cryptospora leiphaemia) Kze., Fung. Sel. 348.
  (Diaporthe dryophila) Syd., Myc. March. 1734, 4746.

Collections: (Diaporthe leiphaemia) Höhn. Herb. A 4018 (6943), Wiener Wald, June, 1902, and May, 1916; Pat. Herb., Lille, on Quercus.
  (Falsa fuscidula) Kew Herb. (Cooke Herb.), 1885, Highgate 24 (type).
  (Diaporthe Cerasi) Höhn. Herb. A 4018 (6943), Luxemburg, J. Feltgen (type).

The structure of this species deviates somewhat from the typical species of the genus. Although there is often a blackening of the bark surface there are no definite blackened zones in the substratum, even though there is a well-developed entostromatic mycelium about the perithecia. The conidial stage is also somewhat different in the
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formation of cavities on the lateral flanks of the pycnidial stromata and in the more or less exposed character of these cavities.

Conidial connections

Cytispora leucosperma Desm., in Pl. cr. Fr. 489.
Cytispora quercina West., in Lamb., Fl. myc. belg. 3 : 150. 1880.
Myxosporium lanceola Sacc. & Roum., Rev. myc. 6 : 36. 1884.

The imperfect stage of *D. leiphaemia* has been variously reported and interpreted. The Tulanes (Sel. Carp. Fung. 2 : 197) described *Cytispora leucosperma* Desm., with "stvosporæ" 10 μ long, linear and straight, as the imperfect stage of their *Falsa leiphaemia*. Their figures show the typical position of the cavities on the lateral flanks of the ectostromata. Fuckel (Symb. Myc. 64) gives the conidia of his *Cryptospora leiphaemia* as lanceolate-cylindric and 10 × 2 μ. Saccardo cites the "spermata" of *Cytispora quercina* as 10-12 × 2-3 μ and slightly curved. He says that the conidia of *Fusicoccum quercinum* are fusoid and measure 15-18 × 3-3.5 μ. Von Höhnel regards *Myxosporium lanceola*, with fusoid conidia 20-22 × 4 μ, as the same as *F. quercinum*. He places this species in the genus Phomopsis and gives two types of fusoid conidia, one 6-10 × 2 μ and the other 16-22 × 2-3 μ. He also reports filiform-hamate conidia 20 × 1 μ from Krieger's *Fung. Sax.* 1782, which is apparently incorrect, since no such conidia have ever been otherwise reported and were not found in cultures by the writer (see var. *Raveneliana*). Grove (Kew Bull. Misc. Inf. 1917 : 62) gives the conidia of this species as 7-10 × 1.5-2 μ and says that there exist two larger forms measuring 15-16 × 3-3.5 μ and 16-14 × 3-3.5 μ. From these descriptions two types of conidia, one cylindric, more or less curved, and measuring 6-12 × 1.5-2 μ, and one fusiform and measuring 14-22 × 3-4 μ, may be distinguished. These two types agree very well with the conidia of the variety *Raveneliana* obtained in cultures by the writer.

Var. Raveneliana (De Thüm. & Rehm), comb. nov. (Plate X, Figs. 9-13)

*Diaporthe Raveneliana* De Thüm. & Rehm, Flora, 61 : 178. 1878.

Disks usually less widely erumpent; periderm more adherent. Dorsal zone usually absent, or less strongly developed. Spores usually broader fusoid-ellipsoid, shorter and more blunt, not so strongly constricted, sometimes inequilateral, 12-15 (16) × 4-6 (7) μ.

Host: *Quercus alba*.

Distribution: Florida; Massachusetts; Michigan; Missouri; New Jersey; New York; Pennsylvania; South Carolina.


(*Falsa leiphaemia*) Ell. and Ev., N. A. F. 93.
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Collections:

(Valsa taleola) Curtis Herb. 4406.4, Ravenel 1580.
(Diaporthe leiphaemia) Farlow Herb., Newton, April, 1893; N. Y. M. Herb., Bethlehem, Peck; Weh. Herb., Wehmeyer 90, Ann Arbor, Michigan, Dec., 1921; Wehmeyer 90 a, Gainesville, Florida, July, 1923; Wehmeyer 90 b, Potosi, Missouri, June, 1923; Wehmeyer 90 c, Canton, Massachusetts, July, 1927; 300, Ann Arbor, Michigan, March, 1929, D. V. Baxter.

This variety is confined to America and differs from the European form in the shorter, blunter, and less curved spores. One American collection by D. V. Baxter (Weh. Herb. 300) shows spores 14.5–19 x 6–7 μ, which are somewhat intermediate but not so extreme in shape as those of the European species.

Conidial connections

The imperfect stage of this variety has been obtained from single-spore cultures (Papers Mich. Acad. 9: 486). On Quercus twigs ectostromatic pycnidia were formed. The conidial cavities arose in the upper and lateral peripheral parts of these stromata as irregular, flattened, often confluent locules, which often broke open widely to the exterior. On agar a number of locules were formed within a stroma, but they were entirely inclosed. Two types of conidia were formed. The beta conidia were short-cylindric to somewhat allantoid, one-celled, and hyaline, and measured 5.5–10 x 1.5–2 μ. The alpha conidia were long, fusoid-cylindric, one-celled, hyaline, and 11–20 x 2–5 μ. These conidia agree fairly well with the conidia of the European species mentioned above. The conidial stage is somewhat intermediate between the form genera Phomopsis and Fusicoccum.

64. DIAPORTHE TESSELLA (Pers.) Rehm

Rehm, Asc. 176. 1873.

(Plate XII, Figs. 1–3)

Sphaeria glyptica Berk. & Curt., in Berkeley Herb. 1839.
Diaporthe tessellata (Pers.) Nit., in Nit. Herb. 1864.
Hapalocystis tessella Auers., in Nit. Herb. 1864.
Valsia glyptica Berk. & Curt., Grev. 4: 100. 1876.
Valsia mucronata Pk., Rep. New York State Mus. 28: 74. 1876.
Diaporthe glyptica (Berk. & Curt.) Sacc., Syll. 1: 629. 1882.
Diaporthe mucronata (Pk.) Sacc., Syll. 1: 629. 1882.
Visible upon the surface as clusters of separately erumpent, black, papillate ostioles, which are usually grouped about a minute perforation of the periderm which exposes a blackened ectostromatic disk 0.2–0.4 mm. in diameter. When the periderm is thin and transparent, as it often is, the blackened zone in the bark appears on the surface as a black line surrounding each cluster of ostioles. These outlined areas are irregular in shape and 1–3 mm. in diameter. The entostromatic areas in the bark are either isolated or confluent, so as to form a pustulate-effuse stroma. The perithecia are irregularly spherical, 400–725 μ in diameter, and occur singly or in groups of 2–8 within pustulate stromatic areas 1–4 mm. in diameter. There is no blackening of the bark surface within these areas, but a sharp black zone extends from the margins into the bark tissue. When the entostromata are isolate, this dark zone continues along the lower bark surface between the stromata, but when the stromata are confluent, it dips only slightly into the middle or upper portion of the bark. There is no ventral zone within the wood. The perithecia are separately erumpent through the periderm, usually about a central cushion of ectostromatic tissue. Asci clavate, with a refractive ring in the apex, 110–145 × 18–21 μ. The spores are fusoid-cylindric, usually curved or bent at the septum, two-celled, hyaline, constricted at the septum, 35–55 × 7–9 μ, and often possess a faint, short, hyaline appendage at each end.

Hosts: *Salix alba*; *S. Caprea*; *S. fragilis*; *S. nigricans*.

Distribution: England; Finland; France; Germany; Italy; Poland; Ontario; Michigan; New Hampshire; New York.


(*Cryptospora tessella*) Karst., Fung. Fenn. 985.


Collections: (*Sphaeria glyptica*) Kew Herb. 2026 (Berkeley Herb.), four packets from Kings Cliffe, 1839; one from Apethorpe, 1833 (type).

(*Diaporthe tessellata*) Nit. Herb., Wollbeck, Aug., 1865; Münster, Feb., 1866; Wilkinghage, May, 1869.

(*Hapalocystis tessella*) Nit. Herb., Münster, April, 1864.
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(Spores x 1000; 1 mm. = 1 μ)

D. intenia (Fr.) Sacc. 4. Stroma 5. Ascospores
D. tiliacea (Ell.) Höhn. 10. Stroma 11. Ascospores 12. Conidia
(Diaporthe mucronata) N. Y. M. Herb., Sandlake, Sept., 1874 (type).
(Diaporthe tessella) Weh. Herb., Wehmeyer 312, Whitmore Lake, Michigan, June, 1925; Wehmeyer 312 a, Randolph, New Hampshire, June, 1927.

This species is given by Petrak (Hed. 62: 289) as the type of his genus Allantoporthe. This genus is separated from the genus Diaporthe on the basis of the large allantoid spores and the lack of a Phomopsis stage in the life-history. The spores are not larger than those of other large-spored species of Diaporthe, and spore size cannot be used for separation, even if this were a good character. The spores are not truly allantoid, but merely bent at the septum, which is true of many other species of Diaporthe. Petrak himself states that no conidial stage was known for this species, but decides that Discella carbonacea is the imperfect stage. He later changes this decision in order to use this conidial form in connection with his Cryptodiaporthe salicella. Cultures of the writer have shown an entirely different pycnidial stage, so that Petrak’s genus has no basis whatever.

Conidial connections

Single-spore cultures of this species have produced the pycnidial stage on both agar and sterilized twigs of Salix (Papers Mich. Acad. 8: 224). The conidia were of only one type, which was inequilateral to curved-fusoid or allantoid, one-celled, hyaline, and 5.5-9 \times 1-1.5 \mu. These were formed within spherical or irregular cavities in the stromatic pycnidia. The manner of conidial formation was variable, depending apparently upon the physiological condition of the stromatic cells of the pycnidium. In some cases the conidia were produced on definite conidiophores, whereas in others they were merely budded off from the protoplast of the fertile cell or even formed endogenously within the fertile cell.

65. DIAPORTHE TALEOLA (FR.) SACC.
Fung. Ven. 4: 12. 1875.
(Plate XII, Figs. 4-5)

Diaporthe nigro-cincta Pass., in Brun., Nouv. fragm. myc. 27. 1885-86.
Hercospora Karnhuberi Keunler, in Höhn. Herb. 1887.
Chorostate taleola (Fr.) Trav., Fl. Ital. Crypt. 2: 212. 1906.
Appearing on the surface as small conic pustules with a closely adherent periderm and a central, circular to fusoid, whitish or blackened disk, 0.2–1 mm. in diameter. Sometimes with stout, hemispheric, erumpent ostioles. Entostromata isolate, definitely outlined beneath by a sharp ventral zone entirely within the bark. No dorsal zone present. The line along which the ventral zone abuts upon the periderm often appears upon the surface as a marginal ridge about the pustule. Perithecia mostly somewhat radially elongated, 240–400 × 320–400 μ, arranged in a definite cluster within the isolate entostromatic area and beneath a definite white, conic to pulvinate ectostroma. Ostioles collectively erumpent through this ectostroma. Asci long-cylindric, with stipelike base and a refractive ring in the apex, usually eight- but sometimes four-spored, 130–160 × 10–13 μ. Spores uniseriate, broad-ellipsoid, two-celled, hyaline, constricted at the septum, with cylindric, hyaline, apical appendages, 6–10 × 1–1.5 μ, and 2–3 lateral, somewhat longer appendages radiating from the region of the septum. Spores 17–25 × 7–9.5 μ.

Hosts: *Quercus robur; Q. spp.* (Castanea?).

Distribution: Austria; England; France; Germany; Poland.


Collections: *(Sphaeria taleola)* Curtis Herb. 440.6.1 and 3: excl. 2 and 4.

*(Diaporthe taleola)* Höhn. Herb. A 4041 (6960, 6961, 6965), six packets, one of which is the type of *Hercospora Karnhuberi* (March, 1887, Keunier).

This species, which was made the type of a new genus, Caudospora, by Starbeck, is apparently confined to Europe. All the American specimens examined have turned out to be *Diaporthe leiphaemia* or some other fungus. The appendages are often absent from the spores in older material.

Passerini’s *Diaporthe nigro-cincta* is given on Castanea, but the original description cites asci and spores that are larger than any species on that host and agree more closely with this species. It is very probably this species on *Quercus*.

Currey’s description and figures of *Sphaeria angulata* Fr. (*Trans. Linn. Soc. Lond. 22: 276*) are of *D. taleola*, whereas his *Sphaeria taleola* is *D. leiphaemia*.
Conidial connections

Libertella taleola Sacc., Syll. 3:745. 1884.
Myxosporium taleola Sacc., Syll. 5:726. 1884.

The Tulasnes describe the "stylospores" of Aglaospora taleola as linear, cylindrical, curved, and 20-30 x 4 μ. They also give globular conidia, 3.5 μ in diameter, which form agglutinate masses. Fuckel (Symb. Myc., Nachtr. 1:312) found similar stylospores 24 x 4-5 μ and also straight, elliptic "leucoconidia" 16 x 8 μ, but no spherical conidia as reported by the Tulasnes. Tubeuf and Smith (Diseases of Plants, 226) figure similar sickle-shaped conidia, and Currey (Trans. Phil. Soc. Lond. 1857:550) reports and figures straight to strongly curved spores, although he makes the mistake of thinking that they arise within the perithecium. Fuckel gives the locules as being labyrinthiform and in the apex of the ectostroma, and they are similarly figured by Tubeuf and Smith. All the conidia are one-celled.

66. DIAPORTHE PECKII SACC.

Syll. 9:713. 1891.

Diaporthe sparsa Pk., non Niessl, Rep. New York State Mus. 39:52. 1886.

Appearing on the surface as irregular, dirty gray, erumpent disks, which are scarcely visible and contain 2-5 papillate ostioles, or as more noticeable perforations of the periderm, like shot holes, or again as minute, separately erumpent, conic ostioles. The pycnidia often appear as numerous minute, pustulate ruptures of the periderm. The entostroma is effuse. An indefinite dorsal blackened zone dips irregularly into the bark between the perithecia and extends into the wood at the margins of the entostromatic areas. There may or may not be a ventral blackened zone bounding the lower margin of the stromatic areas within the wood. Perithecia spherical, 300-600 μ in diameter, scattered singly or clustered in small groups. They are usually collectively erumpent through a small ectostromatic disk, but may occasionally be singly erumpent. Asci clavate, with a refractive ring in the apex, 65-85 x 8-10 μ. Spores biseriate, fusoid-ellipsoid to fusoid-cylindric, usually somewhat curved and often irregular in shape. They are two-celled, hyaline, constricted at the septum, and (18) 20-40 x 3-5 μ.

Hosts: Rhus toxicodendron; R. vernix.

Distribution: Michigan; New Jersey; New York.

Exsiccati: (Calospora rhoina) Ellis, Fung. Col. 1511.
(Diaporthe rhoina) Ellis, Fung. Col. 1046 a.

Collections: (Diaporthe Peckii) N. Y. M. Herb., Saugerties, 1885, Peck (type); Weh. Herb., Wehmeyer 314, Whitmore Lake, Michigan, June, 1925.
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Conidial connections

Single-spore cultures of this species (Myc. 19: 169) have given a Phomopsis-like pycnidial stage on both oat agar and stems of Rhus. The alpha conidia are fusoid-ellipsoid, one-celled, hyaline, and 9−12(15) × 2−2.5 μ. The beta conidia are filiform-hamate, one-celled, hyaline, and 16−23 (28) × 1.5 μ.

67. DIAPORTHE MEGALOSPORA Ell. & Ev.


(Plate XII, Figs. 6–9)

Often scarcely visible on the surface as scattered barely erumpent ostioles, or appearing as numerous short-conic to cylindrical, occasionally elongated, ostiolar beaks. Ostioles often growing laterally beneath the resistant periderm. Entostromata irregularly pustulate-effuse to evenly effuse. Dorsal zone running along bark or wood surface, and often penetrating irregularly into the bark to form pustulate areas. Ventral zones absent, present only at the lateral margins, or present as indefinite greenish black zones within the wood. Perithecia spherical to somewhat flattened, 380−575 × 320−400 μ, scattered singly in the bark or wood. Asci clavate, with a refractive ring in the apex, 65−90 × 10−15 μ. Spores biseriate, fusoid-cylindric, two-celled, hyaline, usually somewhat curved or inequilateral, constricted at the septum, 24−39 × 3.5−6 μ.

Host: Sambucus canadensis.

Distribution: Ontario; Massachusetts; Michigan.

Exsiccati: Rel. Farl. 12; Rehm, Asc. 2093.

Collections: N. Y. G. Herb., Ellis Coll., Manchester, Massachusetts, July, 1889 (type); Weh. Herb., Wehmeyer 310, Ann Arbor, Michigan, May, 1925; Wehmeyer 315, Waverly, Massachusetts, Sept., 1925.

This species is almost identical with D. Peckii on Rhus, but the spores are generally broader and more regular in shape, and the perithecia are more scattered. There is also a slight difference in the size of the alpha conidia.

Conidial connections

Single-spore-cultures of this species (Myc. 19: 165) have produced Phomopsis-like conidial fruiting bodies on both agar and Sambucus twigs. The alpha conidia are ellipsoid to fusoid, one-celled, hyaline, and 10−15 × 3−6 μ. The beta conidia are long-cylindric, hamate, one-celled, hyaline, and 14−20 × 1 μ.
68. DIAPORTHE TETRAPTERA Ell. & Ev.

On surface as small conic pustules barely rupturing the periderm, with 1-4 slightly erumpent ostioles in a compact fascicle. Pustules 0.2-0.5 mm. in diameter. Perithecia 320-450 × 240-320 μ, clustered in small groups of 4-12 within the strongly differentiated pustulate entostromata. Entostromata pustulate-effuse; dorsal zone definite, irregularly pustulate; ventral zones absent except for irregular discolored bands at the margin of the stroma. Asci 75-80 × 12 μ, clavate-cylindric (according to Ellis). Spores biseriate, two-celled, hyaline, broad fusoid-ellipsoid, slightly constricted, sometimes somewhat inequilateral, 20-27 × 6.5-8 μ. Definite ectostromata are formed, but usually not in the perithecial stromata.

Host: Halesia tetraptera.
Distribution: West Virginia.
Collections: N. Y. G. Herb., Ellis Coll., West Virginia, May, 1894, L. W. Nuttall (type).

Differs from the form of D. Beckhausii on Halesia in the much larger spores.

69. DIAPORTHE TILIACEA (Ell.) Höhn.
(Plate XII, Figs. 10-12)

Hercospora tiliacea (Ell.) Sacc., Syll. 2, Add. xlvii. 1883.
Melanconis tiliacea (Ell.) Ell. & Ev., North Am. Pyr. 524. 1892.
Chorostate atropuncta (Pk.) Sacc. & Trott., Syll. 22: 376. 1913.

Appearing on the surface as numerous minute, conic, pustulate ruptures of the periderm exposing a disklike cluster of short or somewhat elongated, cylindric, black ostioles. Disks 0.1-0.6 mm. in diameter. Very little ectostroma produced. Perithecia spherical or radially elongated, 320-600 × 320-560 μ, grouped in clusters of 3-15 within slightly differentiated entostromatic areas, which are usually bounded by a more or less definite dorsal and lateral blackened zone, which is irregularly pustulate about the confluent stromata. There is usually a broad brownish discolored ventral zone within the wood. Asci clavate, with a refractive ring in the apex, 90-120 × 13-20 μ.
Spores biseriate, fusoid-ellipsoid, straight or slightly curved, two-celled, hyaline, with a granular protoplasmic content, constricted at the septum, 24-39 × 6-9.5 μ.

Host: *Tilia americana*.

Distribution: Ontario; Iowa; Michigan; New York.

Exsiccati: *(Melanconis tiliacea)* Ell. and Ev., N. A. F. 2826; Ellis, Fung. Col. 34; Barth., Fung. Col. 4436; Shear, New York Fung. 174; Rehm, Asc. 1179.

Collections:
*Diaporthe atropuncta* N. Y. M., Alcove, New York, April, 1893, C. L. Shear.


The conidial stage of this species, which is somewhat atypical for the genus Diaporthe, was described by the writer under the name *Diaporthe furfuracea* (*Papers Mich. Acad. 3: 260*). The *Sphaeria furfuracea* of Fries, however, as pointed out by Von Höhn (Sitz. Akad. Wiss. Wien, 126: 386), is a mixed species and not the same as *D. tiliacea*.

Conidial connections

Single-spore cultures of this species have given (*Papers Mich. Acad. 3: 260*) conidial fruit bodies which are not typical of the genus *Diaporthe*. The conidia formed were long-fusoid to cylindric, granular, hyaline, and measured 31-45 × 4.5 μ. They were one-celled at first, but often became one- or two-septate, although the septa were faint. These conidia were formed in minute lens-shaped cavities just beneath the periderm. There was very little stromatic development above the hymenial layer, and this layer was easily exposed, giving a Fusicoccum or Septomyxa type of fruit body.

70. DIAPORTHE HEDERAE WEHM.


Seen chiefly on decorticated areas as widely effused, heavily blackened surface areas of the wood. Visible through the bark only as scattered exposed areas of this blackening or as isolated elongate ostioles. Perithecia large, 400-750 μ in diameter, scattered singly within the wood and erumpent separately as conic to short-cylindric or elongate-sinuous ostioles. Perithecia often causing small papillate swellings on the wood surface. Ventral zones present deep in the wood or as a blackening of the pith when the entire stem is entostromatic. Entostromata widely effuse, softening and discoloring the wood a yellowish white. Asci clavate to cylindric, with a refractive
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ring in the apex, 50–60 × 6–8 μ. Spores biseriate to obliquely uni-seriate, broad fusoid-ellipsoid, hyaline, two-celled, constricted at the septum at maturity, two-guttulate, 10–12 × 3.5–5 μ.

Host: Hedera helix.
Distribution: England.
Collection: E. W. Mason Herb. 751, Box Hill, July, 1930 (type).

This species is very similar in structure to D. Sarothamni var. Dulcamarae, but has shorter and broader spores. The spores are similar to those of D. Kolreuteriae, but the dorsal zone of that species is fine and pustulate-effuse instead of having a heavy effuse surface blackening, as in this species.

**Addenda**

Since the completion of this account, the following species have been described:

**DIAPORTHE VACCINII Shear**

"Perithecia in stromata on cranberry fruit and in culture, but separate and without any trace of stroma on dead cranberry vines; perithecia on stems grow between bark and wood, with eccentric neck protruding through the bark, nearly hemispherical, 0.3–0.5 by 0.2–0.4 mm.; wall two to several cell layers thick, black, carbonous; on decayed berries perithecia in stromata, with long perithecial necks protruding in all directions from folds of the shrivelled berry; in corn meal agar cultures perithecial stromata are partly embedded, about 1.5–2 mm. in diameter, with numerous beaks growing to a length of 0.5 mm.; perithecial necks several cells thick, heavy-walled, black, carbonous, copiously supplied with upward directed hairs; asci oblong-fusoid, sessile, 37–51 by 6.8–11.7 μ, apex thickened and pierced by a narrow pore; spores irregularly biseriate, ellipsoid, obtuse, 2-celled, slightly constricted at the septum, each cell typically biguttulate, 8.8–11.8 by 2.4–3.4 μ.""
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Type material kindly sent by Dr. C. L. Shear showed only a few old pustules with perithecia containing no ascospores. The perithecia are arranged singly or in small groups. A ventral zone was seen within the wood in one case only. Otherwise the material agreed with the description given by Shear as quoted above. With this scant material the species is difficult to place, but it appears to be very closely related to *D. Phaseolorum*, particularly the varieties *batatatis* and *Soyae*. It has the same kind of small perithecia and spores of that species, and the production of stromata and elongated ostioles in culture is similar to that of the two varieties mentioned. The scattered perithecia within minute pustules on Vaccinium may be an adaptation to its growth on woody stems.

Conidial connections


"Pycnidia vary in size and shape with the substratum on which the fungus is grown, from about 0.3-0.5 mm. in diameter on cranberry fruits to 1-2 mm. in agar cultures; pycnidia in agar cultures partly embedded, thick-walled, black, leathery, usually chambered, rupturing irregularly to emit whitish or slightly pinkish masses of spores; spores hyaline, one-celled, long-elliptic, typically with two prominent oil globules, 6-11 × 2-5 μ; sporophores simple, tapering toward apex, somewhat spindle-shaped, about 15-25 μ long in young pycnidia; scolecospores observed but once in culture grown on box elder twig, abundant, 14-20 × 0.35 μ, usually hamate."

A Diaporthe recently received from C. M. Tucker, which was isolated from pepper fruits (*Capsicum annuum*), also seems to fall in this group of varieties of *D. Phaseolorum*. Tucker states that his fungus produces pycnidia on pepper fruits and on potato dextrose agar, but develops perithecia only in culture. The perithecial stromata are formed as small heavily blackened areas, somewhat raised above the agar surface and partly embedded in the agar. Definite and complete dorsal and ventral zones are produced. The stromatic areas are 1-12 × 1-4 mm. The perithecia are spherical, 200-250 μ in diameter, and clustered in pustulate areas of the stromata. The ostioles are long-cylindric, sinuous, and 0.5-1.5 mm. in length. The asci are clavate, with a refractive ring in the apex, 33-36 × 7.5-8.5 μ. The spores are fusoid-ellipsoid, slightly constricted, two-celled, hyaline, four-guttulate, and 10-11.5 × 2.5-3.5 μ.
III. CRYPTODIAPIORTHÉ PETRAK EMEND.


Perithecia immersed in the bark, more or less irregularly scattered or in definite clusters, but usually with convergent ostiolar necks which are erumpent through the periderm or through variously formed ectostromata. Ectostromata scantily developed or as definite conic to pulvinate erumpent disks, or as a loose web of hyphae causing broad angular ruptures of the periderm. Entostromata very scanty or as a rich development of hyphae about the perithecia, often forming definitely oriented stromata. No blackened marginal zones within the substratum. Asci clavate, often with a refractive ring in the apex and with a tapering base which is evanescent, freeing the asci within the peritheciurn. Spores hyaline, two-celled, ellipsoid to fusoid, straight or curved and often appendaged. Conidial stages various.

Petrae erected the genus Cryptodiaporthe in 1921 to include C. Aesculi, C. populina (C. salicella), C. hystrix and such other species of Diaporthe which possessed a rather weak stromatic development and no blackened zones within the substratum. He considered the imperfect stage of these forms to belong to the form genus Septomyxa. This may be the case in certain of the species which he cites, but the genus, as here extended, contains species with a variety of conidial forms, as shown by cultural connections.

The genus itself, as here outlined, contains a heterogeneous grouping of species with a simple type of development which probably represent primitive species showing relationships with various genera of the Diaporthaceae of Von Höhnel, such as Diaporthe, Melanconis, Pseudovalsa, Cryptospora, etc. A further knowledge of the complete life-histories of these species will probably reveal many interesting facts in regard to the interrelationships of the Diaporthaceae.

KEY TO THE SPECIES OF CRYPTODIAPIORTHÉ

A. Spores not over 11 μ in length
   B. Spores 1.5-2 μ in diameter .................. 1. C. MACOUNH (Spiraea)
   B. Spores 2-2.5 μ in diameter .................. 2. C. LEBISEYI (Acer)
A. Spores over 11 μ in length
   B. Spores appendaged
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C. Spores 2.5–3.5 μ in diameter
D. Erumpent as angular brownish disks

13. C. CASTANEA (Castanea)

D. Erumpent as dense fascicles of ostioles through a whitish to grayish pulverulent ectostroma

16. C. ACULEANS (Rhus copallina, R. glabra, and R. typhina)

C. Spores 4.5–9 μ in diameter
D. On surface as elongate, irregular, brownish ruptures of the periderm

15. C. PYRRHOCYSTIS (Alnus, Corylus)

D. On surface as circular whitish, flocculent disks

E. Spores constantly appendaged, scarcely constricted, on Fagus

17. C. GALERICULATA (Fagus)

E. Spores appendaged only when young, definitely constricted, on Aesculus

16. C. AESCULI (Aesculus)

B. Spores not appendaged

C. Spores over 30 μ in length

12. C. MAGNISPORA (Acer)

C. Spores less than 30 μ in length
D. Spores 4 μ or less in diameter (2.5–5 μ in C. Aubertii)

E. Ostioles definitely flattened, ribbon-like, erumpent in dense clusters

14. C. HYSTRIX (Acer, Alnus)

E. Ostioles cylindric, not flattened

F. Ostioles stout-conic, covered with a grayish pulverulence and erumpent in dense clusters through an ectostroma

19. C. HRANICENSIS (Tilia)

F. Ostioles not as above

G. Spores 2–2.5 μ in diameter

3. C. SALICELLA (Salix, Populus)

G. Spores 2.5–5 μ in diameter
H. Ostioles fine, bristle-like, perithecia irregularly scattered or loosely clustered

I. Spores quite variable (11–32 × 2.5–4 μ), one-celled at first, straight or curved

7. C. NIESLLII (Acer)

I. Spores more regular, 12–17.5 × 2.5–3 μ, usually curved

5. C. DENSISSIMA (Quercus, Acer)

H. Ostioles stout, barely erumpent, perithecia usually in definite though loose groups

I. Perithecia often surrounded by a slight entostromatic mycelium, spores 2.5–5 μ in diameter

10. C. AUBERTII (Myrica)

I. Perithecia not embedded in any entostromatic mycelium, spores 2.5–3.5 μ in diameter

J. Spores strongly curved, almost cylindric

11. C. CALOSPHAERIOIDES (Sambucus)

J. Spores less strongly curved, fusoid-ellipsoid

9. C. PAULULA (Nyssa)
D. Spores over 4 μ in diameter
E. Ostioles erumpent through a definite white ectostroma
   (spores appendaged when young)

16. C. Aesculi (Aesculus)
E. Ostioles erumpent singly or in loose clusters through pustulate ruptures of the periderm
F. Spores inequilateral or curved

4. C. salicina (Salix, Populus)
F. Spores straight
   G. Spores 5-7 μ in diameter ......... 6. C. myinda (Acer)
   G. Spores 4.5-5 μ in diameter

8. C. Robergeana (Staphylea)

1. CRYPTODIAPORTHE MACOUNII (DEAR.), COMB. NOV.
   (Plate XIII, Figs. 1-2)

Diaporthe Macounii Dear., Myc. 8: 100. 1916.

On the surface as minute papillate pustules, 0.1–0.2 mm. in diameter, through which the minute ostioles are barely erumpent and visible only with a lens. There is no blackening of the substratum whatever. Perithecia small, spherical to flattened, with rather thick walls of heavily blackened parenchyma, 150–250 × 120–160 μ, clustered in groups of 1–6 on the surface of the bark just beneath the periderm. Asci narrow-clavate, 30–35 × 4–5 μ. Spores biseriate, oblong-ellipsoid, two-celled, hyaline, not constricted at the septum, 8–10 × 1.5–2 μ.

Host: Spiraea Menziesii.
Distribution: British Columbia.
Collections: J. Dearness Herb., J. Macoun, Vancouver Island, May, 1915 (type).
   Copy in Weh. Herb.

Dearness in his original description gives the spores as sometimes separating at the septum and with the lower cell smaller. If this were true this species would fall in the genus Apioporthe, since its stromatic structure is similar, but type material examined by the writer showed the spores to be equally two-celled. It is possible that more mature material would show unequally two-celled spores, but only an examination of such material can determine this.
2. **CRYPTODIAPORTHE LEBISEYI** (Desm.), **COMB. NOV.**

*Diaporthe Lebiseyi* (Desm.) Niessl, Beitr. 54. 1872.
*Diaporthe blepharodes* (Berk. & Br.) Sacc, Syll. 1: 678. 1882.

Appearing on the surface as numerous minute, conic or elongate, pustulate ruptures of the periderm; through which the minute, fine-filiform ostioles (30-40 μ in diameter) are more or less erumpent, singly or in small clusters of 2-4. Perithecia spherical or somewhat flattened, 200-350 μ in diameter, scattered singly or in loose clusters within the bark cortex. Singly erumpent or with the ostioles convergent and collectively erumpent. There are no blackened zones within the bark or wood. Asci clavate, 30-45 × 4-8 μ. Spores biseriate, narrow-fusoid, hyaline, often one-celled at first, becoming two-celled, sometimes inequilateral (?), 9-11 × 2-2.5 μ.

Hosts: *Acer campestris*; *A. Pseudoplatanus*.

Distribution: England; France; Luxemburg; Moravia.

*(Diaporthe hystricula)* De Thüm., Myc. Univ. 1158.

Collections: *(Sphaeria blepharodes)* Kew Herb. (sheet 2372) (Berkeley Herb. 1879) (type).

This is a very confused species; it seems to be a European form of *Cryptodiaporthe densissima* var. *spicata*, from which it differs in the smaller spores and less elongated ostioles. If it is a distinct species, it is easily confused with immature conditions of *Diaporthe eres*, from which it differs in the smaller spores and lack of any blackening of the substratum, and with *Cryptodiaporthe Niesslii*, which has similar non-septate ascospores in its immature condition.
PLATE XIII

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(Spores × 1000; 1 mm. = 1 μ)

C. mucorii (Dear.), comb. nov. 1. Stroma 2. Ascospores
C. salicella (Fr.), comb. nov. 7. Ascospores
C. densissima (Ell.) var. spicata (Ell. & Ev.), comb. nov. 6. Stroma 8. Ascospores 9. Conidia
C. myinda (Cke. & Ell.), comb. nov. 10. Ascospores
C. Robergeana (Desm.), comb. nov. 11. Stroma 12. Ascospores
Saccardo and Spegazzini give the spores of their *D. hystricula* as $12-14 \times 2.5 \mu$, but Roum., *Fung. Gall.* 482 of *Sph. Lebiseyi*, which they cite as a synonym, is *C. Lebiseyi*. Berkeley's type of *Sph. blepharodes* sometimes shows flattened ostioles similar to those of *Cryptodiaporthe hystrix*.

Conidial connections
Saccardo gives the conidia of this species as fusoid and 8-10 $\times$ 3 $\mu$.

3. **CRYPTODIAPORTHE SALICELLA** (Fr.), comb. nov.: non Petrak.
(Plate XIII, Fig. 7)

*Valsaria decipiens* Auers., in Nit. Herb. 1863.

Visible on the surface as numerous minute, papillate swellings of the periderm, which are soon ruptured by the separately erumpent, fine-conic to cylindric ostioles. Perithecia small, 280-400 $\mu$ in diameter, spherical, with membranous walls, scattered singly or in small loose clusters of 3-4. There is no stromatic development about the perithecia, but there is sometimes a slight grayish ectostromatic cushion, through which the ostioles are erumpent. There are no blackened zones in either the bark or the wood. Asci clavate, often stipitate, with a refractive ring in the apex, 25-50 $\times$ 9-12 $\mu$. Spores biseriate or obliquely uniseriate, fusoid-cylindric, acute at the ends, two-celled, hyaline, scarcely or not at all constricted at the septum, straight or sometimes curved, 15-22 $\times$ 2-2.5 (3) $\mu$. (When young, the spores may be shorter-fusoid, 13-18 $\times$ 2-2.5 $\mu$.)

Hosts: *Populus tremula*; *Salix Caprea*; *S. fragilis*; *S. vitellina*.

Distribution: Austria; Belgium; England; Germany; Poland; Sweden.


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Roum., Fung. Gall. 7019.

(Cryptodiaporthe populina) Petr., Fl. Boh. et Mor. 1570.

(Cryptosporella populina) Roum., Fung. Gall. 5723.

(Gnomonia salicella) Petr., Fung. Pol. 411(?).


(Diaporthe Briardiana) Roum., Fung. Gall. 6823.


This species might easily be considered a Gnomonia, but inasmuch as it often shows clustered perithecia and sometimes produces small ectostromata through which the ostioles are erumpent, it is here considered under Cryptodiaporthe. It is very similar to C. salicina in outward appearance, but has more scattered perithecia, less ectostromatic development, thinner ostioles, and narrower fusoid spores.

Contrary to most exsiccati issued, Sphaeria salicella Fr. is this species (see discussion of synonymy under C. salicina).

Conidial connections

Given by Petrak as the imperfect stage of his Cryptodiaporthe populina.

Conidia cited as long-cylindric to spindle-shaped, straight or slightly curved, with an indefinite cross wall, and 15-24 × 2.5-5 μ. These conidia are strikingly similar to those obtained by the writer in cultures of Cryptodiaporthe salicina.

4. CRYPTODIAPORTHE SALICINA (Curr.), comb. nov.
(Plate XIII, Figs. 3-5)

Halonia salicella Rab., in Fung. Eur. 1445. 1850.
Diaporthe salicis Nit., in Fck., Fung. Rhen. 1867.
Sphaeria sphingiophora Oud., M. M. Neet. 2: 64. 1873.
Diaporthe convexa (Preuss) Sacc., Syll. 1: 630. 1882.
Diaporthe sphingiophora (Oud.) Sacc., Syll. 1: 622. 1882.
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Metasphaeria apiculata (Fck.) Sacc., Syll. 2: 166. 1883.
Valsa punctata Cke., Grev. 14: 47. 1885.
Diaporthe punctata (Cke.) Berl. & Vogl., Syll., Add. 108. 1886.
Gnomonia apiculata (Fck.) Wint., Rab., Krypt.-Fl. 1(2): 589. 1886.
Chorostate populea (Sacc.) Trav., Fl. Ital. Crypt. 2: 204. 1906.
Diaporthe populina (Fck.) Höhnn., Ann. Myc. 16: 166. 1918.

Visible on the surface as numerous minute, conic pustules consisting of one or more ostioles surrounded by the closely adherent and pustulate periderm. The ostioles are usually separately erumpent, but are often in clusters of 2–8, which sometimes become fused to form a small disk. Perithecia spherical or somewhat flattened, 300–480 × 280–400 μ, walls membranous, 18–27 μ in thickness, composed of 4–5 layers of dark-walled pseudoparenchyma cells. The perithecia are scattered singly or in small loose groups within the bark cortex. Slight pulvinate ectostromata are often formed on the bark surface, but these ectostromata are usually obliterated by the ostioles, which are erumpent through them. There are no blackened zones within the substratum. Asci clavate, 45–70 × 9–15 μ. Spores biseriate, ellipsoid to inequilateral, blunt at the ends, two-celled but often tardily or faintly septate, hyaline, not constricted at the septum, 15–20 × (3.5) 4.5–7.5 μ.

Hosts: *Populus nigra; P. pyramidalis; P. tremula; Salix alba; S. babylonica; S. Caprea; S. incana; S. longifolia; S. pentandra; S. vitellina.*

Distribution: Austria; Belgium; England; France; Germany; Italy; Poland; Russia; Ontario; Michigan; New York.


*(Halonia salicella) Rab., Fung. Eur. 1445 (type); Fck., Fung. Rhen. 800.*


*(Sphaeria apiculata) Fck., Fung. Rhen. 918.*

*(Cryptospora populina) Fck., Fung. Rhen. 2004 (authentic).*

*(Cryptospora salicella) De Thiim., Myc. Univ. 170.*
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(Diaporthe spheniophora) Roum., Fung. Gall. 2940 (pycnidia?).

(Gnomonia salicella) Krieg., Fung. Sax. 2070, 2217.

(Diaporthe pulchella) Roum., Fung. Gall. 7017.

(Diaporthe populina) Weese, Eumyc. 131.

(Diaporthe reecedens) Petr., Fl. Boh. et Mor. 979.

(Cryptodiaporthe salicella) Petr., Myc. Carp. 152.


(Diaporthe pulchella) Höhn. Herb. A 4051 (7009), ex Fautr., Herb. cr. de la Côte-d'Or, 2103.

(Valsa punctata), Kew Herb. (Cooke Herb.) 210, four packets, one labeled "type (Edinburgh, Aug., 1871)."

(Diaporthe populea) Höhn. Herb. A 4051 (7009), Sonntagsberg, April, 1912, P. Strasser; Tullnerbach, Wiener Wald, April, 1916.


This species also has been placed under Gnomonia, but the grouping of the perithecia and the formation of definite ectostromata would exclude it from that genus.

The synonymy and exsiccata of this and the preceding species on Salix and Populus are greatly confused. This species has been generally considered the Sphaeria salicella of Fries, but an examination of Fries' type (Scler. Suec. 188), in the Farlow Herbarium at least, shows the spores (16–18 x 3–3.5 µ) of the preceding species, and the name salicella is therefore retained for the narrow-spored species. Desmazière (Pl. cr. Fr. 838) states that in some issues of Fries' Scler. Suec. 188 there are two distinct species, which may be the two species here confused.

The first species name which can be definitely applied to the species is that of Sphaeria salicina Curr. (1858). Currey's description and figures of the spores indicate the typical broad inequilateral spores of this form. Saccardo cites Currey's Sph. salicina as a synonym of his Diaporthe salicella, and his description shows that he has this species in mind. Von Höhnel (Ann. Myc. 16: 122) gives D. convexa (Preuss) Sacc. as a synonym of Saccardo's D. salicella. Preuss' description of his Sph. convexa (1852) is very incomplete and
cannot be definitely identified without type material. The same thing is true of Wallroth's *Sph. apiculata* (1833). Fückel's *Sph. apiculata* (*Fung. Rhen. 918*), on the other hand, is definitely *D. salicina*, and inasmuch as Winter and Saccardo base their descriptions of *Gnomania apiculata* and *Metasphaeria apiculata* upon these exsiccati, both these species are *Cryptodiaporthe salicina*. As pointed out by Von Höhnel (*Ann. Myc. 16: 120*), the original description of *Sphaeria sphingiophora* seems to be that of *C. salicina*.

*Cryptospora populina* Fck. (*Fung. Rhen. 2004*) is the foregoing species. Von Höhnel placed this species in the genus *Diaporthe*, and Petrak (*Ann. Myc. 19: 119*) put it in his genus *Cryptodiaporthe*, but his exsiccatus (*Fl. Boh. et Mor. 1570*) of *C. populina* proves to be *C. salicella* (Fr.). Later, Petrak (*Ann. Myc. 19: 177*) made *C. populina* a synonym of his *C. apiculata*, the description of which is that of *C. salicella* (Fr.) and is based on Von Höhnel's conclusion (*Sitz. Akad. Wiss. Wien, 126: 397*) that *Sphaeria apiculata* Fck. and *Diaporthe spina* Fck. are identical, which is incorrect, as pointed out above. From Petrak's interpretation, therefore, *C. apiculata* appears to be *C. salicella* (Fr.).

*Diaporthe populea* and *D. pulchella*, as pointed out by Von Höhnel, appear to be this species.

The forms of this species on *Populus* usually show spores with a greater range in size (15–18 × 4.5–5.5 μ) than do those on *Salix* and a greater tendency for the perithecia to be clustered and the ostioles erumpent in small fascicles.

The American collections examined and cultured show a definite tendency to have spores which are longer (15–28 × 3.5–7.5 μ), more strongly constricted at the septum, and more acute at the ends, but this tendency is scarcely constant enough in the few specimens examined to constitute a good variety.

**Conidial connections**

*Phacidium carbonaceum* Fr., *Syst. Myc. 2: 574.* 1823.


Although Petrak first gives this species as the imperfect stage of *Allanto-diaporthe tessella* (*Diaporthe tessella*), he later (*Ann. Myc. 19: 182*) regards it as belonging to the genus *Septomyxa* and as the imperfect stage of *Cryptodiaporthe salicella* Petr. The conidia of *Discella carbonacea* are spindle-shaped, two-celled, and 18 × 6 μ.

In the writer's single-ascus cultures of this species there have been produced minute ectostromatic pycnidia. On agar these pycnidia formed entirely inclosed locules within which there were found long-cylindric to fusoid
conidia, straight or somewhat curved, and 15–22 × 1.8–2.5 μ. These conidia were usually one-celled, but sometimes became septate when fully mature.

5. CRYPTODIAPORTHE DENSISSIMA (ELL.), COMB. NOV.


On surface as numerous irregular pustulate ruptures of the periderm, often longitudinally confluent. Ostioles thin-cylindric, often somewhat elongated, erumpent singly or in loose clusters. The bark surface about the erumpent ostioles may be somewhat blackened, forming small blackened disks, but there is no dorsal or ventral blackened zone. Perithecia small, spherical, 160–240 μ in diameter, thickly scattered or loosely clustered in the unaltered bark cortex. Asci clavate, 45–50 × 7–8 μ. Spores biseriate, long-fusoid, ellipsoid, two-celled, hyaline, usually inequilateral or somewhat curved, scarcely constricted at the septum, 13–17.5 × 2.5–3 μ.

Host: Quercus coccinea.

Distribution: New Jersey.

Exsiccati: Ell. and Ev., N. A. F. 1192 (authentic).

Only one collection of this species has been seen. Var. spicata is much more common.

Var. spicata (ELL. & EV.), COMB. NOV. Plate XIII, Figs. 6–9.


Surface of the twig roughened by the numerous minute, pustulate swellings due to the perithecia formed just beneath the periderm. The short-cylindric, or sometimes elongated, ostioles are erumpent singly or in small groups of 2–5 through these small swellings. Perithecia spherical or somewhat flattened, 240–320 μ in diameter, irregularly scattered in the unaltered bark cortex. Asci clavate, 40–50 × 7–11 μ. Spores biseriate, narrow-fusoid, two-celled, slightly curved, constricted at the septum, 12–15 × 2.5–3 μ.

Host: Acer spicatum.

Distribution: Ontario; New Hampshire; New York.

Exsiccati: Ell. and Ev., N. A. F. 3330 (authentic).

This variety on Acer differs from *C. densissima* in the somewhat larger perithecia and smaller spores.

Conidial connections

In cultures carried by the writer (*Papers Mich. Acad. 9: 481*) this variety produced ectostromatic pycnidia in which locules were formed by the breaking up of meristematic hyphae into conidia without the formation of a definite hymenium. Only one type of conidium was formed, and this was fusoid to cylindric, straight or somewhat curved, and 6.5–12 × 3–4 μ. This is a more primitive type of conidial formation than that of the *Phomopsis* types found in the genus *Diaporthe* and approaches that of the genus *Apioporthe*.

6. **CRYPTODIAPORTHE MYINDA** (Cke. & Ell.), **COMB. NOV.**

(Plate XIII, Fig. 10)

*Valsa myinda* Cke. & Ell., Grev. 6: 93. 1878.
*Diaporthe myinda* (Cke. & Ell.) Sacc, Syll. i: 611. 1882.

Appearing on the surface as numerous pustulate ruptures of the periderm through which the short-cylindric ostioles are more or less erumpent either singly or in loose clusters. Pustules often confluent longitudinally, forming long linear breaks in the periderm. Perithecia spherical or somewhat flattened, 300–500 × 300–400 μ, loosely clustered or scattered in the unaltered bark cortex. There is probably a slight development of ectostromata, and the surface of the bark is blackened where the ostioles break through the periderm, but there are no dark-colored zones in bark or wood. Asci clavate, 50–65 × 13–15 μ. Spores biseriate, broad fusoid-ellipsoid, two-celled, hyaline, constricted at the septum, two-guttulate, 13–17 (18) × 5–7 (8) μ.

*Host: Acer spicatum.*

*Distribution: New Jersey; New York; West Virginia.*

*Exsiccati:* (*Falsa myinda*) Ell. and Ev., N. A. F. 180 (authentic).
(*Diaporthe Aceris*) Ell. and Ev., Fung. Col. 723.


This species resembles *C. densissima* var. *spicata* in outward appearance, but differs in the slightly blackened disks and the shape and diameter of the spores.

7. **CRYPTODIAPORTHE NIESSLII** (Kze.), **COMB. NOV.**

*Cryptospora Niesllii* (Kze.) Niessl, Hed. 17: 46. 1878.
*Cryptosporella Niesllii* (Kze.) Sacc., Syll. 1: 470. 1882.
Appearing on the surface at first as numerous minute, papillate pustules, 0.2 mm. in diameter, caused by the formation, on the bark surface, of very small ectostromatic cushions through which the cylindric, bristle-like ostioles are erumpent. The periderm is soon ruptured and falls away, and the ectostromata disintegrate, leaving minute perforations exposing the bark surface and the loose cluster of ostioles. Perithecia spherical or flattened, 320–480 × 300–600 μ, usually irregularly scattered or sometimes loosely grouped in the upper bark. Ostioles erumpent singly or convergent and collectively erumpent. The perithecia remain adherent to the periderm when it falls away. Asci clavate (30–40 × 9–10.5 μ, according to Winter). Spores biseriate, hyaline, variable in size, shape, and septation, usually fusoid-ellipsoid to inequilateral-fusoid, one-celled, 11–15 × 2.5–3 μ, but often becoming longer, oblong to cylindric, sometimes slightly curved, and then often one-septate, 15–32 × 2.5–4 μ.

Host: Acer Pseudoplatanus.
Distribution: France; Germany; Moravia.
(Diatrype hystrix) Roum., Fung. Gall. 76.

This species must have quite variable spores, for specimens with identical characters show spores varying as mentioned (Kze., Fung. Sel. 138; Rab., Fung. Eur. 2349; Roum., Fung. Gall. 76). It represents an intermediate form between the genera Cryptosporella and Diaporthe, the spores being one-celled until full maturity, when they become septate.

Conidial connections
Niessl (Hed. 17:46) reports small cavities in the stromata of Kunze's original material, but saw no spores. Von Höhnel, for no reason whatever, supposes this to be a Phomopsis. The writer noticed what were apparently pycnidial stromata of Diaporthe pustulata on the twigs of Kunze's D. Niesslii.

8. CRYPTODIAPORTHE ROBERGEANA (DESM.), COMB. NOV.
(Plate XIII, Figs. 11–12)
Diaporthe Robergeana (Desm.) Niessl, in Rab., Fung. Eur. 2222. 1882.

Appearing on the surface as numerous minute, pustulate ruptures of the periderm (0.1–0.5 mm. in diameter), through which the
minute cylindric ostioles are only slightly erumpent, either singly or in small loose clusters. Periderm usually strongly adherent. Ostioles 90–120μ in diameter. A small amount of ectostroma is formed in the periderm, but in most cases soon disappears. Perithecia 240–400 × 200–320μ, scattered singly or more or less grouped in the unaltered bark cortex, usually collectively erumpent. No blackened zone present in the substratum. Asci usually more or less flattened-clavate, 40–55 × 13–15 × 7–8μ. Spores biseriate to obliquely uniseriate, fusoid-ellipsoid, ends blunt, straight, two-celled, hyaline, constricted at the septum, 12–15 × 4–5.5μ.

Host: Staphylea pinnata.
Distribution: Austria; France; Poland; Switzerland.


9. CRYPTODIAPORTHE PAULULA (Cke. & Ell.), comb. nov.

Valsa paulula Cke. & Ell., Grev. 7: 9. 1878.
Diaporthe paulula (Cke. & Ell.) Sacc., Syll. 1: 617. 1882.

Appearing on the surface as numerous minute, conic, papillate pustules, 0.1–0.3 mm. in diameter. Ostioles short, stout, not erumpent. Perithecia small, 240–320μ in diameter, clustered in small groups, sometimes with blackened ectostromata containing flattened pycnidial locules above them. No other blackened zones within the substratum. Perithecia collectively erumpent. Spores fusoid-ellipsoid, inequilateral or slightly curved, two-celled, hyaline, scarcely constricted, 13–15 × 2.5–3.5μ.

Host: Nyssa multiflora.
Distribution: New Jersey.
Collections: (Valsa paulula) N. Y. G. Herb., Ellis Coll. 3385, Vineland, New Jersey, March, 1878 (type).

This is a doubtful Cryptodiaporthe. A Phomopsis-like imperfect stage was found associated with this species and it has the appearance of a true Diaporthe, but shows no blackened zones in the substratum. It is probably a species similar to D. decedens, which has shown the blackened zones in culture only.
Conidial connections

On the type material there were found flattened, irregular or dome-shaped cavities within the ectostromata of some of the pustules. These pycnidia, which were of the Phomopsis type, contained one-celled, hyaline, fusoid-ellipsoid conidia which measured 7-9 × 2-2.5 μ.

10. CRYPTODIAPORTHE AUBERTII (West.), comb. nov.

Diaporthe Wibbei Nit., Pyr. Germ. 305. 1867.
Diaporthe Aubertii (West.) Lamb., Fl. myc. Belg. 2: 283. 1880.

Appearing on the surface as numerous minute, papillate pustules, 0.1-1 mm. in diameter, which are tardily ruptured by the clustered, short, stout ostioles, which are scarcely erumpent. Sometimes a minute grayish disk is formed by the slight development of a gray pulverulent stroma about the ostioles. Perithecia spherical to flattened, 240-440 × 80-240 μ, loosely clustered in the upper bark or even in the periderm. There is usually a more or less abundant development of entostromatic mycelium about the perithecia, but there are no blackened zones within the substratum. Ectostromata are formed, within which conidia are found, but these are absent from the perithecial stromata. Asci short-clavate, with a refractive ring in the apex, 40-50 × 8-11 μ. Spores crowded-biseriate, fusoid-ellipsoid, somewhat curved or bent at the septum, two-celled, hyaline, constricted at the septum, 13.5-17.5 × 2.5-5 μ.

Hosts: Myrica cerifera; M. Gale.

Distribution: Belgium; Germany; Poland; Sweden; New Hampshire; New York.


(Diaporthe phomaspora) N. Y. M. Herb., Grassy Pond, Peck.

Nitschke gives his D. Wibbei as having a circumscribing line, but the specimens in his herbarium show no such line and are as given
CRYPTODIAPORTHE
(Spores X 1000; 1 mm. = 1 μ)
C. Auberti (West.) var. Comptoniae (Schw.), comb. nov. 1. Stroma 2. Ascospores 3. Conidia
C. magnispora (Ell. & Ev.), comb. nov. 4. Stroma 5. Ascospores
C. castanea (Tul.), comb. nov. 6. Stroma 7. Ascospores
above. Material of *D. Auhertii* has not been seen, but the description of *Sph. Auhertii* appears to be this species. The original description of *D. prominula* gives the spores as ciliated at one end, and House also mentions appendages on the spores of his specimen of *D. phomaspora*. These ciliated spores are undoubtedly the conidia of this species, since such conidia were found in cultures of var. *Comptoniae*.

**Var. Comptoniae** (Schw.), comb. nov. Plate XIV, Figs. 1–3.


Structure as in *Cryptodiaporthe Auhertii*, but with shorter spores, 9.5–13.5 × 3.5–5 μ, which are more strongly bent at the septum.

Host: *Myrica asplenifolia*.

Distribution: Massachusetts; New Jersey; New York.

Exsiccati: (Diaporthe Comptoniae) Ell. and Ev., *N. A. F.* 2364.


(Diaporthe confragosa) N. Y. G. Herb., Ellis Coll., three packets, June, 1889; March, 1890, Newfield, New Jersey (type).

Ellis' type material in the New York Botanical Garden is labeled "*Diaporthe confragosa*,” but was published as *D. Comptoniae*, since Ellis considered it synonymous with *Sph. Comptoniae* Schw.

Conidial connections


Barklayella flagellifera (Ell. & Ev.) Sacc., *Syll.* 10: 476. 1892.


This imperfect stage was obtained in cultures of this variety made by the writer (*Papers Mich. Acad.* 8: 215). The pycnidia consist of ectostromata of upright, parallel, separate hyphae, within which conidial locules arise. These locules are usually inclosed, but are sometimes widely exposed or open. The conidia themselves are two-celled, hyaline, more or less inequilateral or curved, and bear a long flagellate appendage at one end. The conidia are 8–15 × 2.5–4 μ, and the appendages are 0.5–0.7 μ in diameter and as long as 45 μ. The conidia are black in mass.

These unusual two-celled, appendaged conidia again illustrate the heterogeneity of the genus Cryptodiaporthe.
11. CRYPTODIAPORTHE CALOSPHAERIOIDES (Ell. & Ev.), comb. nov.


"Stroma cortical, convex, 2–4 mm. in diameter, raising the bark into broad pustules sunk to the wood but not penetrating it, nor surrounded by any black (circumscribing) line, thin, brownish-black, mostly coming off with the bark. Perithecia 6–12, circinate, thin-membranous, and collapsing when dry, about ½ mm. diameter, necks slender decumbent, converging with their broad-papilliform, finally sub-umbilicate ostioli joined in a flat brown disc, erumpent through the epidermis and closely surrounded by it. Asci fusoid-clavate, p. sp. 50–60 × 8–10 μ, with a fugacious stipe, 15–20 μ long, and long-lanceolate but very evanescent paraphyses. Sporidia biseriate, allantoid, hyaline, 3–4 nucleate, rounded at the ends, finally uniseptate, about 15 × 3–3.5 μ."

Host: Sambucus.
Distribution: Ontario.
Collections: Ev. Herb. 6.9, April, 1892, Dearness 1744.

This is the original description as given by Ellis. The only material of this species (Ev. Herb. 6.9) examined by the writer contained only a few old decayed pustules, and it was impossible to determine the stromatic structure. The spores, however, were as described above, i.e. hyaline, two-celled, cylindric to somewhat fusoid, strongly curved or allantoid, sometimes slightly constricted at the middle, and 12–16 × 2.5–3.5 μ. There was not any very definite septum visible in these spores, but there were four droplets and evidences of a constriction and septum. Von Höhnel (Ann. Myc. 16:118) places this as a Calosphaeria without having seen any material. It fits very well in the genus Cryptodiaporthe.

12. CRYPTODIAPORTHE MAGNISPORA (Ell. & Ev.), comb. nov.
(Plate XIV, Figs. 4–5)

Diaporthe magnispora (Ell. & Ev.) Sacc., Syll. 9:707. 1891.

On the surface as angular pustulate ruptures of the periderm, exposing slightly stromatic disks containing the scattered, stout-cylindric ostioles. No blackened zones in the substratum except an irregular blackening above the perithecia. Perithecia 240–320 μ in diameter, clustered in small groups, with a slight development of
entostromatic mycelium about them. Asci broad-clavate, short-stipitate at the base, \(110-120 \times 20-23\ \mu\). Spores crowded-biseriate, two-celled, often somewhat inequilateral, not constricted, \(35-40 \times 7-9\ \mu\).

Host: *Acer* sp.

Distribution: New Jersey.


Another species resembling certain species of *Pseudovalsa* in structure. Differing from the other species on *Acer* in its larger spores.

13. **CRYPTODIAPORTHE CASTANEA** (Tul.), **COMB. NOV.**

(Plate XIV, Figs. 6-7)


Cryptospora liphaemoides Fck., Symb. Myc., Nachr. 2: 34. 1873.


Diaporthe castanea (Tul.) Sacc., Syll. 1: 624. 1882.

Diaporthe liphaemoides (Fck.) Sacc., Syll. 1: 624. 1882.


Appearing on the surface as angular ruptures of the periderm exposing brownish ectostromatic or cortical disks of variable size and form, from 0.2 to 2 mm. in diameter. Conic to broad-pulvinate ectostromata are usually but not always formed on the bark surface, often causing wide ruptures of the periderm, but soon becoming blackened or falling away. There are no blackened zones within the substratum. Irregularly shaped conidial locules may be formed, usually within the lateral parts of the ectostromata. Perithecia spherical to flattened, \(240-800 \times 200-500\ \mu\), clustered in small or larger groups within the upper bark and often surrounded by a rich development of entostromatic hyphae, forming a light-coloredstromatic area. Ostioles barely erumpent through the ectostromata or bark surface. Asci \(50-60 \times 7-8\ \mu\), clavate. Spores biseriate, cylindric to cylindric-fusoid, two-celled, hyaline, often tapering toward one end, usually somewhat curved, very slightly constricted if at all, \(11-16 \times 2-2.5\ \mu\), and usually having a short-cylindric appendage at each end.

Hosts: *Castanea vesca; C. vulgaris*.

Distribution: Germany; Italy.
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*(Cryptospora liphaemoides)* Fck., Fung. Rhen. 2453 (authentic).

Many of the characters of this species suggest its close relationship with the genus Apioporthe. Such are the development of entostromatic hyphae about the perithecia, the often tapered spores, and the formation of small ellipsoid to oblong conidia in irregular locules in a stroma.

Conidial connections

*Fusicoccum castaneum* Sacc., Syll. 3 : 249. 1884.

The Tulasneses *(Sel. Fung. Carp. 2 : 202)* describe the conidia of this species as sublanceolate, 6.5 × 2 μ, and figure irregularly shaped locules, usually in the lateral portions of the ectostromata. Saccardo gives the conidia as 6.5–8 μ, sometimes 10–12 × 2–2.5 μ. Fuckel says that the conidia of his *Cryptospora liphaemoides* are 6–10 × 3–4 μ, but his Fung. Rhen. 2453 shows small ellipsoid conidia 4–6 × 1.5–2 μ. These are borne in irregular or lateral locules within an ectostroma. The conidia are borne on true conidiophores, which does not seem to be the case in species of the genus Apioporthe (see above).

14. CRYPTODIAPORTHE HYSTRIX *(Tode)* PETR.


(Plate XIV, Figs. 8–9)

*Sphaeria hystrix* Tode (?), Fung. Meckl. 2 : 53. 1790.
*Diaporthe mamiana* Sacc., Syll. 1 : 609. 1882.
*Chorostate mamiana* (Sacc.) Trav., Fl. Ital. Crypt. 2 : 201. 1906.

Producing small, characteristically widely erumpent pustules on the surface. There is a sparse production of stromatic hyphae in and upon the surface layers of the bark, which causes the periderm to be ruptured and thrown back, thus exposing the cortical disk, which is light-colored when fresh. These open pustules may be small and scattered or larger, longitudinally elongated, 1–4 mm. in length, or
confluent in longitudinal series for long distances. The perithecia
are spherical or flattened, 480-640 x 240-480 μ, are formed in dense
clusters or irregularly scattered in the upper layers of the bark, and
are separately erumpent through the cortical disk as clusters of
more or less elongated sinuous ostioles, which are characteristically
flattened or bandlike. There are no blackened zones in either bark
or wood. Asci clavate, 40-54 x 7-11 μ. Spores biserial or irregu­
larly triseriate, long-fusiform, somewhat curved or inequilateral,
two-celled, slightly constricted at the septum, hyaline, 15-20(23) x
2-3 (3.5) μ.

Hosts: *Acer Pseudoplatanus; Alnus viridis (?)*, (Fung. Gall. 4648)
Distribution: Austria; France; Germany; Italy; Moravia; Switzerland.

Excl. (*Diatrype hystrix* Roum., Fung. Gall. 76; Ell. and Ev., N. A. F. 89).
(*Diaporthe hystrix*) Sacc., Myc. Ital. 1034; Rehm, Asc. 582.
(*Diaporthe longirostris*) Syd., Myc. Germ. 74; Roum., Fung. Gall. 2192;
Krieg., Fung. Sax. 1616.
(*Diaporthe mamiana*) Roum., Fung. Gall. 4648.

The spores of this species are generally given in the literature as
having short appendages. No such appendages were seen in any of
the exsiccati examined, but they may be merely evanescent, as often
happens.

This species is a transitional type having the almost erumpent-
superficial perithecia, elongated ostioles and long-narrow, curved,
triseriate ascospores of many species of Gnomonia, but the clustered
perithecia and slight ectostromatic development of the genus Crypto-
diaporthe.

It seems to be exclusively European. Ellis, *N. A. F.* 89, is *C.
densissima* var. *spicata* and shows conidia (fusoid, 8 x 2.5-3 μ) which
are similar to those obtained in cultures of *C. densissima* var. *spicata*.

Conidial connections
- *Myxosporium Tulasnei* Sacc., Syll. 3:723. 1884.

*Tulasne* (*Sel. Fung. Carp.* 2:200) gives the "stylospores" of his *Valga longi-
rostris* as 13-16 x 5.3 μ and one-septate at maturity. Saccardo describes
the conidia of *Myxosporium Tulannae* as 18–25 × 2.5–3 μ. Allescher's *M. spathianum* has one-celled conidia 8–11 × 2–3.5 μ and his *S. negundinis* two-celled conidia 12–20 × 2.5–4 μ. The synonymy is taken from Von Höhnel (*Ann. Myc. 1: 527*). This imperfect stage is very much confused in the literature and has no cultural basis for its connection. Grove (*Kew Bull. Misc. Inf. 1919: 182*) gives *Gloeosporium acerinum West* and *Marssonia acerina* Bres. as further synonyms.

15. **CRYPTODIAPORTHE PYRRHOCYSTIS** (Berk. & Br.), **Comb. Nov.**

(Plate XV, Figs. 1–2)


Visible on the surface as irregularly elongate, perforate ruptures of the periderm, which expose a disk the color of the bark cortex and containing a number of separately erumpent papillate ostioles. There are no blackened zones in either the bark or wood. Perithecia spherical or irregular from crowding, 250–400 μ in diameter, with light brown walls 20 μ thick. The perithecia are always in groups and have more or less of a development of entostromatic mycelium about them and usually a small ectostromatic cap. The ostioles are usually separately erumpent through this broad, flat cortical disk, which causes an irregular rupture of the periderm. Asci 85–105 × 16–18 μ. Spores biseriate, ellipsoid, rounded at the ends, two-celled, hyaline, constricted at the septum, 21–27 (30) × 6–9 μ, with a short, stout, hyaline appendage at each end.

**Hosts:** *Alnus incana*; *Corylus avellana*.

**Distribution:** Czechoslovakia; England; France; Germany.

**Exsiccati:**


**Collections:**

(*Diaporthe pyrrhocystis*) Höhn. Herb. A 4038 (6962), May, 1916 (var. *alnina*).

This species is very similar to *Diaporthe decedens* in general appearance, but differs in the further grouping of the perithecia and the formation of entostromatic mycelium and in the larger spores, which are constantly appendaged. The forma *avellanae rubrae* in
CRYPTODIAPORTHE
(Spores X 1000; 1 mm. = 1 μ)

C. pyrrohcystis (Berk. & Br.), comb. nov. 1. Stroma 2. Ascospores
C. galericulata (Tul.), comb. nov. 3. Stroma 4. Ascospores
C. hranicensis (Petr.), comb. nov. 9. Stroma 10. Ascospores
CRYPTODIAPORTHE

Roum., *Fung. Gall.* 6326, has smaller spores (18–22 × 5–7.5 μ) resembling those of *D. decedens*, but the stromatic structure of *C. pyrrhocystis*. Von Höhnel’s var. *alnina* (Höhn. Herb. A 4038) has an even greater stromatic development, fewer perithecia in a stroma, and broader spores (9.5 μ) with more rounded ends, and may be a good variety on Alnus.

The description of Fries’ *Sphaeria tessera* seems to be that of this species rather than *D. decedens*, although no material was seen.

Conidial connections

Small allantoid, one-celled, hyaline conidia, measuring 9–12 × 1.5 μ, were seen in Plowr., *Sphaer. Brit.* 35 of this species and similar conidia measuring 13–15 μ in length were seen in Krieg., *Fung. Sax.* 84. These conidia are similar to the beta type of conidia obtained in the writer’s cultures of *D. decedens*.

16. CRYPTODIAPORTHE AESCULI (FCK.) PETR.


Cryptosporella Aesculi (Fck.) Sacc., Mich. 1: 30. 1877.
Valsa Hippocastani Cke., Grev. 13: 98. 1884.
Valsa aesculicola Cke., Grev. 14: 47. 1885.
Diaporthe Hippocastani (Cke.) Berl. & Vogl., Syll., Add. 105. 1886.

Appearing on the surface as circular perforations or pustulate ruptures of the periderm, 0.2–0.5 mm. in diameter, exposing a minute white, flocculent, ectostromatic disk, through which a small cluster of cylindric, sometimes slightly elongated, ostioles are erumpent. There are no blackened zones within the substratum. A small white ectostromatic cushion, within which irregular pycnidial chambers are formed, is produced within the periderm. The perithecia are spherical or somewhat flattened, have thick heavily blackened walls, measure 240–680 × 240–400 μ, and are formed in small groups within the upper bark layers or within the periderm itself. They are formed beneath the ectostromata, through which they are collectively erumpent. Asci clavate, with a refractive ring in the apex, 80–90 × 8–9.5 μ. Spores biseriate, one-celled, ellipsoid when immature, two-celled and fusoid-ellipsoid when mature, hyaline, constricted at the septum, 14–23 × 4.5–7 μ. When young the spores may show a very slight gelatinous appendage at each end.
THE GENUS DIAPORTHE

Host: Aesculus Hippocastanum.
Distribution: Austria; England; Germany; Moravia.
(Falsa Hippocastani) Vize, Micr.-Fung. Brit. 597.
(Diaporthe Hippocastani) Rab., Fung. Eur. 2752.
(Diaporthe aesculicolata) Krieg., Fung. Sax. 2022; Rehm, Asc. 1804; Petr., Fl. Boh. et Mor. 678.

Another species with rather tardily septate spores and a slight ectostromatic development suggesting the genera Cryptosporella and Cryptospora.

Conidial connections

Septomyxa Aesculi Sacc., Syll. 3: 766. 1884.
Fusicoccum Aesculi Corda, in Sturm, Deut. Fl. 52.
Fusicoccum Hippocastani (Cke.) Höhn.

The imperfect stage of Fuckel's Cryptospora Aesculi (Symb. Myc. 193) was described by Saccardo as Septomyxa Aesculi. The conidia were given as fusoid-ellipsoid, sometimes slightly curved, two-celled, and 15-16 × 3-4 μm. There has been much theoretical discussion regarding the position and connection of this species. Petrak (Ann. Myc. 19: 119) lists C. Aesculi as the type of the genus Cryptodiaporthe, and from his supposed connection of Septomyxa with C. Aesculi gives the genus Septomyxa as the imperfect stage of the genus.

Von Höhnel (Sitz. Akad. Wiss. Wien, 125: 84), on the other hand, considers that S. Aesculi cannot be the imperfect stage of Fuckel's Cryptospora Aesculi because this species is a Diaporthe and must have a Phomopsis as the imperfect stage. Both of these, of course, are premature conclusions. Cryptospora Aesculi Fck. is not a true Diaporthe, but a Cryptodiaporthe, and needs not have a Phomopsis conidial stage. The genus Cryptodiaporthe, as has been shown by the writer, is a heterogeneous group and may have various types of conidial stages (see C. densissima var. spicata, C. Aubertii) and need not necessarily be of the Septomyxa type.

The synonymy is taken from Petrak. He gives the conidia as being 14-32 × 3-5 μm. Many of the exsiccati show an accompanying conidial stage, apparently Septomyxa Aesculi, which have conidia that are elongate-fusoid, sometimes slightly curved, one-celled or with a faint septum, and 14-23 × 2.5-4 μm. The conidia seem to be quite variable in size and septation.

Grove (Kew Bull. Misc. Inf. 1919: 183) gives Phoma diplodioides Sacc. and Diplodina truncata Sacc. as synonyms of this species.
17. CRYPTODIAPOR THE GALERICULATA (TUL.), COMB. NOV.

(Plate XV, Figs. 3-4)

Diaporthe galericulata (Tul.) Sacc., Syll. 1: 629. 1882.
Melanconis leucostroma (Niessl in litt.) Rehm., Hed. 22: 40. 1883.
Melanconiella leucostroma (Rehm) Sacc., Syll. 2, Add. liv. 1883.

Appearing on the surface as small pustulate swellings with a central stellate rupture of the periderm, through which the white ectostroma is barely erumpent as a minute elliptic to fusoid disk containing the few barely erumpent ostioles. There are no blackened zones within the substratum. The perithecia are 240–400 × 160–320 µ, and are grouped in a subcircinate manner in the upper bark beneath the conic to pulvinate, whitish, often flocculent ectostroma, through which the ostioles are collectively erumpent. Asci clavate, 65–78 × 10–16 µ. Spores biseriate to triseriate, ellipsoid-cylindric, two-celled, hyaline, slightly constricted at the septum, sometimes slightly inequilateral, 18–26 × 4–5.5 µ, and with a short, stout, cylindric, hyaline appendage, 5–7 × 2.5 µ, at each end.

Hosts: Fagus grandifolia; F. sylvatica.
Distribution: Austria; Germany; Moravia; Michigan; New York.
(Calospora leucons troma) Krieg., Fung. Sax. 177.
Collections: (Diaporthe leucostroma) Höhn. Herb. A 4229(6918), Pfalzau bei Pressbaum, May, 1903; Wiener Wald, May, 1904; and six other packets.
(Diaporthe galericulata) N. Y. M. Herb., Sandlake, Peck; Weh. Herb., Wehmeyer 152, Ann Arbor, Michigan, May, 1922; Wehmeyer 152 a, Ann Arbor, Michigan, May, 1923.

This species differs from C. Aesculi only in the more constantly appendaged and less constricted spores, and might be considered merely a variety of that species.

The type of Melanconis leucostroma (Rehm, Asc. 674) shows only old decayed stromata, with very few spores. Those seen were old and light brown. The specimen seems to be C. galericulata, however. The spores of this species apparently may turn brownish when old, since such brownish spores were also seen in Krieg., Fung. Sax. 177 of Calospora leucons troma.
Conidial connections

Myxosporium carneum De Thüm., Hed. 18: 189. 1880.
Fusicoccum galericulatum Sacc., Syll. 3: 250. 1884.

The Tulasnes give the pycnidia of their Falsa galericulata as multilocular, with "stylospores" fusoid-ellipsoid and 6.5-10 × 3.5 μ. Myxosporium carneum is given as forming rose-red stromata and having spindle-shaped, sometimes inequilateral, conidia 15-17 × 3.5-4.5 μ. Niessl describes the conidia of his Calospora leucostroma as spindle-shaped and one- to two-celled. The writer has seen pycnidia in association with C. galericulata which contained hamate beta conidia 13-21 × 1-1.5 μ; in culture this species produced no pycnidia whatever, but numerous perithecia. It is obvious that these conidial associations need careful cultural checking. It is possible that there is a European form which produces the conidial stage more readily than does the American form.

18. CRYPTODIAPORTHE ACULEANS (Schw.), Comb. Nov.
(Plate XV, Figs. 5-8)

Sphaeria albo-velata Berk. & Curt., in Curtis Herb. 1848.
Sphaeria polystoma Berk. & Curt., in Curtis Herb. 1849.
Valsa albo-velata Berk. & Curt., Grev. 4: 102. 1876.
Diaporthe albo-velata (Berk. & Curt.) Sacc., Syll. 1: 615. 1882.
Diaporthe stilbostoma (Cke.) Sacc., Syll. 1: 615. 1882.
Calospora aculeans (Schw.) Sacc., Syll. 2: 233. 1883.
Diaporthe Rauiana Wint., Hed. 22: 130. 1883.
Valsa (Calospora) aculeans (Schw.) Cke., Grev. 14: 54. 1885.
Cryptospora aculeans (Schw.) Ell. & Ev., North Am. Pyr. 535. 1892.
Diaporthe inornata Fk., Rep. New York State Mus. 65: 47. 1911.

Appearing upon the surface as pustules containing small groups of a few ostioles emergent through the adherent periderm, or as larger dense fascicles of elongate-cylindric ostioles, erumpent through a whitish pulverulent disk, 0.3-1 mm. in diameter. This disk is often obliterated by the erumpent ostioles, many of which are covered by a whitish pulverulence. The perithecia are spherical or somewhat flattened, 260-480 × 250-400 μ, have long slender necks, and are thickly clustered beneath the ectostromatic disks. There are no
blackened zones within the substratum. Asci clavate, 47-65 × 5-8 μ. Spores biseriate, long fusoid-ellipsoid, two-celled, hyaline, constricted at the septum, 12-18 × 2.5-3 μ, and usually with a short, hyaline, bristle-like appendage, 2-2.5 μ in length, at each end.

Hosts: *Rhus copallina; R. glabra; R. typhina*.

Distribution: Alabama; Maryland; Michigan; Mississippi; New Jersey; New York; South Carolina.


*(Falsa aculeans)* Rav., Fung. Amer. 195; Ell. and Ev., N. A. F. 1569.


Collections: *(Sphaeria rufescens)* Curtis Herb., 442.2.2, ex Schweinitz Herb. 248 (authentic).

*(Sphaeria aculeans)* Curtis Herb., 442.2.3, ex Schweinitz Herb. 242 (authentic).

*(Sphaeria albo-velata)* Curtis Herb., 242.2.1 (1885), Santee Canal, South Carolina, Ravenel 377 (type?); 242.2.7 (2479), Society Hill, South Carolina, Dec., 1848.

*(Sphaeria polystoma)* Curtis Herb. 242.2.6 (2774), Society Hill, South Carolina, 1849 (type).


*(Diaporthe inornata)* N. Y. M. Herb., Cabin John Bridge, Maryland, June, 1910, Bartholomew 4326 (type).

*(Diaporthe rhoina)* B. P. I. Path. and Myc. Coll. 1404, Alabama, Feb., 1897.


This species is arbitrarily placed in the genus Cryptodiaporthe. If the writer were anxious to create new genera, he would certainly do so for this species, since it does not show the typical characters of any of the two-celled, hyaline-spored, stromatic genera. It differs widely from Melanconis in its conidial stage, although it might be crowded into that genus; it lacks the blackened zones of Diaporthe and has too well developed a stroma to fall naturally into Cryptodiaporthe. But since this species at present seems to stand as an isolated case — *(Diaporthe leiphaemia* occupies a somewhat similar position) — and since the genus Cryptodiaporthe is already a heterogeneous group of species which will probably be segregated into several genera when the relationships of its species are better known, this species is provisionally placed here.

It appears to be entirely American in its distribution and is parasitic upon species of Rhus.

The *Sph. rufescens* of Schweinitz is in reality the first specific
name given to this species, but since only poor material exists in the Curtis Herbarium and since Sph. aculeans was described at the same time and has become established in the literature, the species name aculeans is retained. Cooke (Handb. Brit. Fung. 2498) gives Valsa Rhois as the same as his V. stilbostoma, which probably is C. aculeans, but his Fung. Brit. II, 228 of V. Rhois is the same as the Diaporthe Rhois of Nitschke (D. eres).

Conidial connections

Sporocybe Rhois (Berk. & Curt.) Sacc., Syll. 4: 605. 1886.

Two types of conidial fruit bodies have been obtained in single-spore cultures of this species (Papers Mich. Acad. 3: 262; 4: 398). On twigs of Rhus there were produced sporodochia with slender, cylindric black stalks, 1-2 mm. in length, and a spherical, capitate, shiny black mass of conidia which were cut off from the ends of the numerous entwined hyphae of the stalk. These conidia were ovoid to fusoid, one-celled, dilute blackish hyaline (black in mass), and 6-9 × 2.5-3 μ.

On twigs of Tilia americana there were produced Phomopsis-like stromata containing an irregular one-chambered locule with a differentiated wall of closely woven hyphae. The conidia produced in these pycnidia were ovoid to oblong-fusoid, one-celled, hyaline, light yellow in mass, and 5-8(10) × 2-3 μ.

This species forms conidial fruit bodies showing all intergradations between true pycnidia and true sporodochia when grown on agar.

19. CRYPTODIAPORTHE HRANICENSES (PETR.), COMB. NOV.
(Plate XV, Figs. 9-10)


Appearing upon the surface as broad, angular, pustulate ruptures of the periderm, 1-3 mm. in diameter, through which there is erumpent a dense cluster of stout, elongate, cylindric ostioles (100-200 μ in diameter), with tapered conic tips and clothed with a grayish pulvcrulence. There may be a slight blackening of the bark surface about the ostioles, but there are no blackened zones within the substratum. Perithecia 480 × 320-480 μ, clustered in groups of 12-20 within the upper bark cortex, which is filled with a sandy furfuraceous deposit of crystalline matter. Asci clavate, stipitate, with thickened apical walls and a refractive ring in the apex, 60-80 × 8-9 μ (sp. p. 50-60 μ). Spores biseriate above, uniseriate below, oblong-ellipsoid to ellipsoid, sometimes slightly inequilateral or curved, finally faintly one-septate, hyaline, not constricted at the septum, 11-15 × 2.5-4 μ.
Host: *Tilia platyphyllo.*
Distribution: Moravia.
Exsiccati: *(Diaporthe hranicensis)* Petr., Fl. Boh. et Mor. 1045 (authentic).

This species is in many respects similar to the group of species including *D. leiphaemia* and *C. aculeans*, which do not seem to be definitely related to any of the two-celled, hyaline stromatic genera, and the remarks concerning the position of *C. aculeans* hold here also.

Petrak gives the spores of this species as 10–18 × 3–6 μ, but no spores larger than 15 × 4 μ were found in his type material.
IV. DIAPORTHELLA PETRAK


Perithecia immersed, in a monostichous or irregularly poly-stichous manner, within a strongly developed stroma composed entirely of fungous tissue, which is widely erumpent through the periderm as a broad stromatic Diatrype-like disk. Ostioles erumpent, often elongate to sinuous. Asci clavate, with evanescent bases which free the asci within the perithecium. Spores fusoid, hyaline, two-celled, straight or slightly curved. Conidial stage unknown.

The species of this genus are quite distinct in the very strongly developed erumpent stroma.

KEY TO THE SPECIES OF DIAPORTHELLA

A. Ostioles elongated, no blackened zones in the substratum
   B. Spores 13-17 × 2.5-4 μ ....................................... 3. D. aristata (Betula)
   A. Ostioles not elongated, blackened zones within the substratum

1. D. sphendamnina (Acer)

1. DIAPORTHELLA SPHENDAMNINA (BERK. & CURT.), COMB. NOV.

(Plate XVI, Figs. 1-2)

Diatrype sphendamnina Berk. & Curt., Grev. 4: 96. 1875.
Diaporthe sphendamnina (Berk. & Curt.) Sacc., Syll. 1: 611. 1882.

Appearing on the surface as large pulvinate, strongly erumpent, black, carbonaceous stromata, 1.5-4 mm. in diameter. Ostioles stout-cylindric or disklike. Perithecia irregular in shape from crowding, 300-480 μ in diameter, numerous, arranged in a polystichous manner in the base of the well-developed Diatrype-like stromata, which are as large as one millimeter in height and composed almost entirely of fungous hyphae. The stromata are seated on the surface of the bark, and the outer layers are blackened, forming an outer crust which extends as a blackened zone diagonally into the bark tissue and often continues beneath as a more or less complete ventral zone within the wood. Perithecia with elongated necks which penetrate to the surface of the stroma. Asci clavate, 47-54 × 6-7 μ. Spores biseriate, narrow fusoid-ellipsoid, hyaline, two-celled, four-guttulate, slightly constricted at the septum, 12-13.5 × 2.5-3 μ.
DIAPORTHELLA

(Diagrams × 1000; 1 mm. = 1 µ)

*Diaporthella* spp.: 1. Stroma 2. Ascospores

1. *Diaporthella sphendamnina* (Berk. & Curt.), comb. nov.
2. *D. aristata* (Fr.) Petr.

APIOPORTHE

(Spores × 1000; 1 mm. = 1 µ)

*Apioporthe* spp.: 5. Stroma 6. Ascospores

3. *Apioporthe Corni*, sp. nov.
4. *A. trichophila* (D. Lager.), comb. nov.

7. *Apioporthe Corni*, sp. nov.
8. *A. trichophila* (D. Lager.), comb. nov.

9. Conidia
Host: *Acer rubrum*.
Distribution: Pennsylvania.
Collections: *(Sphaeria sphendamnina)* Curtis Herb. 459.14.3(4221), Pennsylvania, Dr. Michener 2055 (type).

This species differs from *D. aristata* in the shorter ostioles, smaller spores, and presence of blackened zones in the substratum.

2. **DIAPORTHELLA PLATASCA** (PK.), **COMB. NOV.**


Appearing on the surface as erumpent, circular, disklike stromata, 1–2 mm. in diameter. These stromata are composed of upright, parallel, ectostromatic hyphae 700–800 μ in height. The surfaces of these stromata have a definite bluish cast. There are no blackened zones in the substratum. The perithecia are spherical, 380–530 μ in diameter, formed in the bark layers just beneath the ectostromata in a polystichous manner and are surrounded by a well-developed entostromatic mycelium. The perithecial necks are much elongated and erumpent through the ectostromata as long, sinuous ostioles as much as 1 mm. Spores long-fusoid, two-celled, hyaline, somewhat constricted at the septum, often slightly bent at the septum, 16–23 × 3–5 μ.

Host: *Betula sp.*

This American species is very similar to the European *Diaporthella aristata*, but differs in the larger spores, smaller stromata, and the bluish cast on the surface of the disks. *Peck* gives the spores of this species as 12.5–15 μ in length, but these measurements must have been of immature spores.

3. **DIAPORTHELLA ARISTATA** (FR.) **PETR.**


(Plate XVI, Figs. 3–4)

*Sphaeria aristata* Fr., *Syst. Myc.* 2: 363. 1823.
THE GENUS DIAPORTHE

Appearing on the surface as large, angular to fusoid, laterally elongated, often confluent, black, raised, stromatic disks, 2–8 × 1–2 mm., erumpent through the periderm. These stromata consist of a large pulvinate ectostroma composed of upright hyaline hyphae, and with an outer blackened crust. Perithecia spherical or irregular in shape, 400–640 μ in diameter, arranged in a polystichous manner in the upper bark layers or within the lower portion of the ectostromata. There is a rich development of entostromatic hyphae about the perithecia, so that at maturity they are immersed within a well-developed stroma. The perithecial necks are long and sinuous and project above the surface of the disk for 1 mm. or more. These filamentous ostioles are usually appressed to the surface and soon break off. Asci broad-clavate, 47–52 × 9–12 μ. Spores two- to three-seriate, long-fusoid, two-celled, hyaline, slightly constricted at the septum, sometimes somewhat curved, 13–17 × 2.5–4 μ.

Hosts: Betula alba; B. nana; B. odorata.
Distribution: Finland; Moravia; Norway.
(Diaporthe aristata) Rehm, Asc. 1182, 1182 b; Vestrgr., Micr. Rar. Sel. 283.
(Diaporthella aristata) Petr., Fl. Boh. et Mor. 1827.

This species, found so far only in Europe, differs from D. platasca in the larger blackened stromata and the smaller spores.
PERITHECIA immersed in the substratum, usually clustered. Entostromatic development scanty or variously developed as a mycelial weft or definite stromatic tissue about the perithecia. Ectostromata also various. Tissues above the perithecia sometimes blackened, but no definite marginal zones within the substratum as in Diaporthe. Asci clavate, with a refractive ring in the apex, stalks evanescent. Spores hyaline, _unequally two-celled_, fusoid to pyriform, commonly tapered toward one end, which contains the smaller cell. Conidiial stage consisting of variously shaped cavities formed within a stromatic pycnidial tissue by the simultaneous breaking up of the hyphae, in these locular areas, into conidia without the formation of a definite hymenium.

A genus characterized by the unequally two-celled ascospores. Von Höhnel based the genus on _A. anomala_ and gave the stroma as being Diatrype-like, as it is in that species. Species with unequally two-celled spores and the typical conidial stage show quite a variation in the type of stromatic development, however, and all these species are here included in the genus. Petrak (Ann. Myc. 27: 392), upon examination of material of _A. vepris_ identified as _A. obscura_ (Pk.) Wehm. by the writer, stated that this species could not be included in the genus Apioporthe, and later (Ann. Myc. 27: 401) described a genus Apioporthella which differs from Apioporthe only in the less well developed stroma. _A. obscura_ and related species should be included in such a genus if it were retained, but the writer is not in sympathy with the indiscriminate erection of new genera when the existence of numerous transitional forms will only necessitate a later recasting and renaming of the group. The genus Apioporthella is considered a synonym, therefore, and the original description of the type species, which has not been seen, is listed under Apioporthe.

KEY TO THE SPECIES OF APIOPORTHE

A. Spores over 20 μ in length .................. 5. _A. LINEARIFORMIS_ (Solidago)
A. Spores under 20 μ in length
B. Stromata elongate, 1-5 × 1-2 mm., strongly erumpent as a black carbonaceous disk .................. 7. _A. ANOMALA_ (Corylus)
THE GENUS DIAPORTHE

B. Stromata not so strongly developed
C. Spores 11 μ or less in length
   D. Spores 2-2.5 μ in diameter, perithecia often fused together to
      form a blackened stroma .......................... 2. A. VEPRIS (Rubus)
   D. Spores 2.5-4 μ in diameter, perithecia clustered, but not fused
      together ........................................... 3. A. PHOMASPORAE (Myrica)
C. Spores over 11 μ in length
D. Surface of bark blackened above the perithecia
   6. A. UTAHENSIS (Quercus)
D. Surface of bark not blackened
E. Ostioles erumpent through minute orange-colored papillae
   or ectostromata ................................. 1. A. CORNI (Cornus)
E. Ostioles erumpent as a minute blackened disk
   4. A. APIOSPORA (Ulmus)

1. APIOSPORA CORNI, sp. nov.¹

(Plate XVI, Figs. 5-6)

Appearing upon the surface as minute scarcely visible, papillate,
orange-colored pustules, through which one to several ostioles are
erumpent. Perithecia 200-320 × 160-240 μ, one or several clustered
beneath the minute orange-colored ectostromatic disk, and usually
more or less surrounded by, or embedded in, yellowish entostroma.
There are no blackened zones within the substratum. Asci longi-
clavate, 54-65 × 5.5-6.5 μ. Spores biseriate, variable in shape,
ellipsoid or inequtilateral-fusoid to pyriform, often tapered toward
one end, hyaline, one-celled at first becoming unequally two-celled,
four-guttulate, 12-15 (17) × 2.5-4 (6) μ.

Host: Cornus alternifolia.
Distribution: Ontario; Michigan.
Exsiccata: (Diaporthe Corni) Barth., Fung. Col. 3809.
Herb., Coldwater, Michigan, E. B. Mains 745.
(Diaporthe Corni) N. Y. G. Herb., Ellis Coll., London, Canada, Dearness.

¹ Apioporthe Corni, sp. nov. — Sori in aspectu superficiali minuti vix visibles
aurantiaci papillati uno vel pluribus ostiolis erumpentibus praediti. Perithecia
200-320 × 160-240 μ, aggregata vel solitarie sub ectostroma aurantiacum minu-
tum in entostromate flavido immersa. Zonae nigricantes desunt. Asci longi-
dlavati, 54-65 × 5.5-6.5 μ. Sporae biseriatae, forma variabiles, ellipsoidales vel
inaequilateraliter fusiformes vel pyriformes, saepe apicem versus angustatae,
yhalinae, juventate unicellularae, acetate inaequaliter bicellulae, 4-guttulatae,
Apioporthe phomasporae similis sed differt sporis et ascis magnis; interdum
forma subaequaliter bispora similis est speciebus affinitatis Cryptodiaporthis Auberti.
This species is based on the listed collections which show a definite Apioporthe. The material (9.1) in the Everhart Herbarium in the Farlow Herbarium contains two fungi, one of which is of this species.

This species is similar to \( A. \text{phomaspora} \), but has large spores and asci. Sometimes the spores are very nearly equally two-celled, and this species then approaches such species of the genus Cryptodiaporthe as \( C. \text{Auberti} \).

**Conidial connections**

Small, irregularly shaped pycnidial locules were seen in the ectostromata on the specimens listed above. The conidia were ellipsoid, one-celled, hyaline, and \( 4 \times 1.5 \mu \).

2. **APIOPORTHE VEPRIS** (De Lacr.), *comb. nov.*

(Plate XVI, Figs. 7-9)

Calosphaeria idaeicola Karst., in *Fung. Fenn.* 856. 1866.
Diaporthe vepris (De Lacr.) Fck., in *Nit., Pyr. Germ.* 300. 1867.
Gnomoniella idaeicola (Karst.) Sacc., *Syll. i:* 418. 1882.
Diaporthe obscura (Pk.) Sacc., *Syll. i:* 627. 1882.

Usually forming longitudinally elongate pustulate ruptures of the periderm with small central blackened disks containing the scarcely crumplulent ostioles. Sometimes crumplent merely as circular blackened disks, 0.1–0.2 mm. in diameter, composed of one or a few ostioles. No blackened zones within the substratum. Perithecia 160–300 \( \times \) 160–200 \( \mu \), usually in definite clusters, but occasionally in small thickly scattered groups. Stromatic development quite variable. Disk sometimes composed of only a few fused ostioles, again composed of a definite ectostromatic cushion of brownish parenchyma, through which the ostioles are erumpent. In some cases the perithecia may also be more or less embedded within this stromatic matrix. Asci clavate, 30–40 \( \times \) 6–8 \( \mu \). Spores obliquely biseriate,
ellipsoid, narrowed toward one end, often somewhat curved, unequally two-celled, often constricted at the septum, 6–9 (10) × 2–2.5 μ, and often with a short, bristle-like, hyaline appendage at each end.

Hosts: Rubus caesius; R. fruticosus; R. idaeus; R. saxatalis; R. sirigosus.

Distribution: Austria; England; Finland; France; Galicia; Germany; Italy; Poland; Sweden; Nova Scotia; Ontario; Michigan; New Jersey; New York.

(Calosphaeria idaicola) Karst., Fung. Fenn. 856 (type).
Krypt. Exs. Vind. 2726; Rehm, Asc. 982 b; Petr., Pl. Boh. et Mor. 606.
(Valsa obscura) Ell., Fung. Col. 426; Ell. and Ev., N. A. F. 877.
(Diaporthe obscura) Ellis, Fung. Col. 941.

(Diaporthe obscura) N. Y. M. Herb., Albany, May, 1874, Peck (type); Weh. Herb., Wehmeyer 148, Ann Arbor, Michigan, May, 1922; Wehmeyer 148 a, Dec., 1923; Wehmeyer 148 b, Truro, Nova Scotia, June, 1926.

This species is quite variable in the character of the stroma and the shape and size of the ascospores.

Conidial connections
Phoma vepris Sacc., Syll. 3 : 76. 1884.
Nitschke reports only one type of conidium for this species. These were fusoid to subcylindric and 6 × 1.5 μ. In cultures of this species made by the writer (Am. Journ. Bot. 8 : 244) there were produced similar conidia, which were formed irregularly from the loose hyphae within the central portion of the stromatic pycnidia. These conidia were one-celled, hyaline, ellipsoid to fusoid-cylindric, and 4–7 × 1–2 μ.

3. APIOPORTHE PHOMASPORA (Cke. & Ell.), COMB. NOV.

(Plate XVII, Figs. 1–3)
Valsa phomaspora Cke. & Ell., Grev. 6 : 10. 1877.
Diaporthe phomaspora (Cke. & Ell.) Sacc., Syll. 1 : 630. 1882.
Diaporthe tecta (Cke.) Sacc., Syll. 2, Add. xlviii. 1883.
Cryptosporella phomaspora (Cke. & Ell.) Cke., Grev. 14 : 53. 1885.
APIOFORTHE

(Spores X 1000; 1 mm. = 1 μ)

A. phomospora (Cke. & Ell.), comb. nov. 1. Stroma 2. Ascospores 3. Conidia
A. lineariformis (Petr.), comb. nov. 4. Stroma 5. Ascospores
A. wisconsinensis (Sacc.), comb. nov. 6. Stroma 7. Ascospores
A. anomala (Pk.) Höhn. 8. Stroma 9. Ascospores
Appearing on the surface as numerous spherical pustules, somewhat larger on the average (0.5-1 mm.) than those of *Cryptodiaporthe Aubertii*. These pustules burst open by an elongated rupture of the periderm, through which the ostioles are scarcely erumpent. Perithecia 200–300 μ in diameter, clustered and collectively erumpent. There is a blackening of the bark surface about the ostioles and above the perithecia, but there are no blackened zones within the substratum. Ascii clavate, with a refractive ring in the apex, 43–46 × 8–9 μ. Spores biseriate, hyaline, ellipsoid, narrowed toward one end, one-celled at first, becoming unequally two-celled, 8–11 × 2.5–4 μ. The smaller cell sometimes enlarges to the size of the second cell, and the spore then approaches the appearance of those of *Cryptodiaporthe Aubertii* var. Comptoniae.

Hosts: *Myrica asplenifolia;* *M. carolinensis; M. sp.*

Distribution: Nova Scotia; Georgia; New Jersey; New York.

Exsiccati: *(Valsa phomaspora)* Ell. and Ev., N. A. F. 179.

*(Valsa tecta)* Rav., Fung. Am. 747 (type).


Superficially this species resembles *Cryptodiaporthe Aubertii*, but the pustules average somewhat larger and are sooner and more widely ruptured. The perithecial necks are longer and more slender; there is a greater blackening of the bark surface about the ostioles and the perithecia are smaller and whitish within.

*Diaporthe tecta* is a doubtful species, and the type of *Valsa tecta* (Rav., Fung. Am. 747) shows very few ascospores. It appears to be this species, however, and one or two unequally two-celled ascospores were seen in this material.

Conidial connections

The imperfect stage of this species has been obtained in the writer’s cultures *(Papers Mich. Acad. 8: 219)*. Conidia were formed in small spherical or irregular masses of stromatic hyphae by the breaking up of the hyphae directly into numerous conidia, thus forming a central cavity. The conidia were ellipsoid, often narrowed toward one end and inequilateral or slightly curved, one-celled, hyaline, and 6.5–11 × 2.5–4 μ.
4. APIOPORTHE APIOSPORA (Ell. & Ev.), COMB. NOV.


Barely visible on the surface as minute pustules with a small central, blackened disk composed of a cluster of a few barely erumpent ostioles. There are no blackened zones within the substratum. Perithecia 240–320 μ in diameter, formed in small groups in the surface layers of the bark. Perithecial walls thick (25–35 μ), membranous, black. The walls of several perithecia are often fused together to form a stroma-like structure. Ostioles collectively erumpent. Asci 75–80 × 8–10 μ (according to Ellis). Spores obliquely uniseriate to sub-biseriate, ellipsoid-ovoid, narrower toward one end, unequally two-celled, hyaline, constricted at the septum, 11–14 × 2.5–5.5 μ.

Host: Ulmus sp.
Distribution: Ontario; Iowa.
Collections: (Diaporthe apiospora) Ellis, Herb. Myc., 111.21, Iowa, Holway, Canada, Dearness (type).

5. APIOPORTHE LINEARIFORMIS (Petr.), COMB. NOV.
(Plate XVII, Figs. 4–5)


Appearing on the surface as minute blackened spots, often more or less seriately arranged and consisting of the conic ostioles or blackened apices of the perithecia, which are erumpent singly or in crowded groups. When the epidermis is deciduous the usually flattened or somewhat collapsed perithecia may appear to be superficial. The perithecia are 320–480 × 160–240 μ. The host tissue above and about the perithecia is often irregularly blackened. Asci clavate, with a refractive ring in the apex, 67–75 × 10–12 μ. Spores biseriate, fusoid-clavate, unequally two-celled, hyaline, mostly curved and tapered toward one end, slightly constricted at the septum, 20–26 × 4–6 μ.

Host: Solidago missouriensis.
Distribution: North Dakota.
This species must be placed more or less arbitrarily. The only evidence for placing it among the stromatic forms is the often grouped perithecia and the irregular blackening of the substratum. Although the spores sometimes appear to be equally two-celled, they are normally tapered toward one end and composed of two unequal cells, the smaller of which shows smaller guttulae than the larger.

No four-spored asci, as reported by Petrak, were seen.

6. APIOPORTHE UTAHENSI S (Sacc.), comb. nov.
(Plate XVII, Figs. 6–7)


Appearing on the surface as angular ruptures of the periderm, 1–2 mm. in diameter, exposing blackened pustulate areas of the bark surface, through which a small cluster of cylindric ostioles is erumpent. Surface of the bark heavily blackened above the perithecia, and the bark tissues about the entostromatic areas sometimes irregularly blackened, but with no definite blackened zones. Perithecia 400–800 × 300–400 μ, grouped in small isolate clusters. There is a rich development of entostromatic hyphae in the upper bark tissues about the perithecia, forming a light-colored, somewhat pustulate, entostromatic area. Asci clavate, 55–65 × 5–7 μ. Spores biseriate, unequally two-celled, hyaline, straight or usually curved, tapered toward one end, slightly constricted at the septum, three- to four-guttulate, 11–13 × 2.5–4 μ.

Host: Quercus utahensis.

Distribution: Utah.


This species appears superficially somewhat like Diaporthe leiphaemia, but there is no yellowish ectostroma, and the spores are smaller, definitely unequally two-celled, and strongly curved.

7. APIOPORTHE ANOMALA (Pk.) Höhn.

(Plate XVII, Figs. 8–9)

Cryptosporella anomala (Pk.) Sacc., Syll. 1: 470. 1882.
Cryptospora anomala (Pk.) Ell. & Ev., North Am. Pyr. 531. 1892.
Appearing on the surface as elliptic, longitudinally elongate, blackish brown to black carbonaceous stromatic disks, 1.5-5 x 1-2 mm., which are often slightly whitish pulverulent and contain a number of scattered circular, 4-5-sulcate disklike ostioles. Perithecia elongate, cylindric, crowded in a blackened stroma composed almost entirely of fungous tissue embedded in the bark or reaching to the wood. These stromata crumble rapidly, so that fresh stromata in good condition are difficult to find. Asci clavate, with a short stipelike base, eight-spored, 33-45 x 10-12 μ. Spores biseriate, ellipsoid to fusoid-ellipsoid, apparently one-celled, but with a minute, caplike cell at one end, 10-12 x 3.5-4 μ.

Hosts: Corylus americana; C. rostrata.
Distribution: Nova Scotia.
Exsiccati: Ell. and Ev., N. A. F. 1185.

8. APIOPORTHE BAVARICA (PETR.), COMB. NOV.


"Stromata mehr oder weniger weitläufig, ziemlich gleichmässig und zerstreut oder herdenweise, oft grosse Strecken der Astchen dicht und gleichmässig überziehend, nicht selten zu zwei oder mehreren dicht gedrängt beisammenstehend, dann etwas verwachsen oder zusammenfließend, ziemlich typisch euvalsoid, aus rundlicher oder breit elliptischer, oft ziemlich unregelmässiger Basis flach und stumpf kegelförmig, ca. ½ bis 1 mm. im Durchmesser, selten noch etwas grösser, im Rindenparenchym sich entwickelnd, das Periderm ziemlich stark pustelförmig aufreibend, bald zersprengend und mit dem Scheitel hervorbrechend. Unten, an den Seiten und zwischen den Perithezien besteht das Stroma der Hauptsache nach nur aus den verschwundeneften Resten des Rindenparenchymes, welche von locker oder ziemlich dicht verzweigten, dünnwandigen, sehr undeutlich septierten meist schon ganz verschwundenen, ca. 2-5 μ dicken, subhyalinen, hell grau- oder olivenbräulich gefärbten Hyphen durchzogen werden. Nur am Scheitel ist das Stroma oft etwas stärker entwickelt und besteht dann aus einem parenchymatischen, mehr oder weniger von verschwundenen Substratresten durchsetzten Gewebe von unregelmässig oder rundlich eckigen, dünnwandigen ca. 4-7 μ grossen durchscheinend grau- oder olivenbraunen Zellen. Perithezien mehr oder weniger dicht einschichtig zusammengedrängt,
meist ca. 5–10 in einem Stroma, rundlich oder breit ellipsoidisch, durch gegenseitigen Druck oft etwas abgeplattet, oder kantig und dann oft eine sehr unregelmässige Form zeigend, ca. 400–600 μ im Durchmesser, oben rasch in die zylindrischen, oft gekrümmten, konvergierenden, entweder büschelig oder kreisingförmig am Rande des Peridermspalts hervorbrechenden und ca. 100–200 μ weit vorragenden ca. 70–100 μ dicken, oben plötzlich ziemlich stark und sehr stumpf kegelförmig verdickten Mündungen übergehend. Peritheziennembran häufig, ringsum von ziemlich gleicher Stärke, meist ca. 12–18, seltener bis 25 μ dick, aus mehreren Lagen von stark zusammengepressten, aussen durchscheinend und ziemlich hell grau- oder olivenbraun gefärbten, innen völlig hyalinen, sehr verschiedenen, meist ca. 6–15 μ grossen, meist auch ziemlich undeutlichen Zellen bestehend, aussen mehr oder weniger mit kleinen, krümmligen Substratresten, am Scheitel oft fest mit dem Stroma verwachsen und dann hier keine scharfe Grenze zeigend. Aszi sehr zahlreich, in ungleicher Höhe stehend, keulig oder etwas spindelig, oben kaum oder schwach, unten meist stärker und allmählich verjüngt, sehr zart und dünnwandig, leicht zerrissend, 8-sporig, 55–78 × 8–12 μ. Sporen mehr oder weniger zwei-seltener sehr unvollständig dreireihig, länglich keulig oder etwas spindelig, oben kaum oder schwach, unten meist stärker und allmählich verjüngt, beidendig stumpf, gerade, seltener etwas ungleichzeitig oder schwach gekrümmt, nahe dem unteren Ende, meist ungefähr im unteren Drittel septiert, an der Querwand kaum oder nur schwach eingeschnürt, hyalin, Oberzelle ellipsoidisch oder eiförmig. Unterzelle stumpf konisch, mit sehr undeutlich feinkörnigem, ziemlich stark leichtbrechendem Plasma, 12–17 μ selten 22 μ lang, Oberzelle 4.5–6.5 μ, Unterzelle an der Querwand 3.5–5 μ breit. Pseudoparaphysen sehr spärlich, fast ganz verschrumpft und verschleimt, nicht mehr deutlich erkennbar.”

Host: *Alnus viridis.*

Distribution: Bavaria.
VI. DIAPORTHOPSIS Fabre

Ann. sci. nat., Ser. 6, 15: 35. 1883.

PERITHECIA immersed, scattered singly or crowded within an evenly effuse entostromatic area, separately erumpent. Surface of substratum usually more or less blackened. Entostromatic areas often margined by a blackened zone. Asci clavate, with evanescent stalks which free the asci within the perithecium. Spores hyaline, one-celled, ellipsoid to fusoid, straight or curved, sometimes appendaged.

The genus Diaporthopsis includes a group of species very similar to the effuse forms of Diaporthe upon herbaceous stems except for the one-celled ascospores.

KEY TO THE SPECIES OF DIAPORTHOPSIS

A. Spores 6–9 μ in length and 2–3 μ in diameter
B. Surface evenly blackened over wide areas... 3. D. APICULOSA (Erigeron)
B. Minute blackened areas on surface........... 4. D. THEROPHILA (Juncus)
A. Spores over 9 μ long and 3 μ in diameter
B. Spores over 20 μ in length ............... 6. D. APPENDICULATA (Aster)
B. Spores less than 20 μ in length
C. Forming small elongate blackened patches (0.5–3 mm.) on surface, ventral zone definite............. 5. D. PANTHERINA (Pteris)
C. Surface blackening, if present, not in small isolated areas, ventral zone faint or absent
D. Surface often blackened (when mature) or with a violet tinge, on Umbelliferae .............. 1. D. ANGELICA (Umbelliferae)
D. Surface not blackened ...... 2. D. TRINUCLEATA (Eupatorium)

1. DIAPORTHOPSIS ANGELICA (Berk.), comp. nov.

(Plate XVIII, Figs. 1–2)

Leptosphaeria nigrella Auers., Myc. Eur. Pyr., Pl. 12, Fig. 163. 1869.
Diaporthe nigrella (Auers.) Niessl, Beitr. 51. 1872.

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DIAPORTHOPSIS

(Spores X 1000; 1 mm. = 1 μ)

*D. Angelicae* (Berk.), comb. nov. 1. Stroma 2. Ascospores
*D. apiculosa* (Ell.), comb. nov. 3. Stroma 4. Ascospores
*D. pantherina* (Berk.), comb. nov. 5. Stroma 6. Ascospores
*D. appendiculata*, sp. nov. 7. Stroma 8. Ascospores
Gnomoniella Angelicae (Fck.) Sacc., Syll. 1: 417. 1882.
Diaporthe nigrella (Auers.) H. Fabre, Ann. sci. nat., Ser. 6, 15: 35. 1883.

Nearly invisible at first, no blackening of the substratum when young and immature; ostioles barely visible as minute black dots. Surface of substratum later becoming more or less blackened over wide areas. These areas when exposed by defoliation of the periderm often show a violet tinge. Ventral zones absent or rather faintly developed within the pith. Ostioles small, barely erumpent as small papillate to cylindric or conic projections, or rarely somewhat elongated. Perithecia small, spherical or flattened, 240–400 × 160–240 μ, scattered singly or sometimes crowded, usually rather deeply immersed, within the pith and with long slender necks. The perithecia, when young, are filled with numerous broad, paraphysis-like hyphae. Ascii clavate at first, becoming long-cylindric, 40–50(85) × 4–7 μ. Spores biseriate to obliquely uniseriate, fusoid-ellipsoid, one-celled, hyaline, non-constricted, 9–15 × 3–4(4.5) μ.

Hosts: Angelica sylvestris; Daucus carota; Eryngium campestris; Foeniculum officinale; Heracleum Sphondylium; Peucedanum oreoselinum.

Distribution: Austria; Belgium; England; France; Germany; Portugal; Switzerland.

Exsiccati: (Sphaeria Angelicae) Berk., Brit. Fung. 88 (authentic).
(Sphaeria Berkeleyi) Desm., Fl. cr. Fr. I, 1769; II, 1419; West et Wall., Herb. cr. Belg. 912.
(Sphaeria Angelicae Fck.) Fck., Fung. Rhen. 2164.

Collections: (Diaporthe Berkeleyi) Nit. Herb. 26, Ulenkotten, Sept., 1865.
Excl. (Diaporthe denigrata) N. Y. G. Herb., Ellis Coll., ex A. Commons Herb., 2224, on Aralia.
(Diaporthe foeniculacea) Farlow Herb., ex De Thümm. Herb., Coimbra, Lusitania, Moller.

This species on Umbelliferae is similar in appearance to Diaporthe Arctii on the same hosts and is often difficult to separate, since the
spores of *D. Arctii* are often tardily septate and appear as one-celled. The following differences, however, may be enumerated:

**D. Angelicae**

Surface often blackened, but not incrusted, blackening usually with a reddish or violet tinge, irregular over wide areas and not sharply bounded. Perithecia small (240–400 μ), usually rather deeply embedded with elongated necks. Ventral zones faint or absent. Spores broad, fusoid-ellipsoid, 9–15 × 3–4 μ, three-guttulate with a single guttula in the center of the spore, never constricted, one-celled.

**D. Arctii**

Surface heavily blackened or incrusted over wide areas or in sharply bounded limited areas (2–20 mm.), smaller areas often outlined by raised ridges, similar ridges often seen irregularly arranged in the larger areas also. Perithecia tending to be larger (up to 480 μ), usually just beneath the surface with short stout necks. Ventral zone, when present, sharp and distinct. Spores may be one-celled, but longer and more narrowly fusoid, often inequilateral or curved, 9–15 × 2.5–3.5 μ, four-guttulate with two guttulae placed at the center of the cell, often slightly constricted and eventually septate.

Montague changed the species name of *Sph. Angelicae* to *Sph. Berkeleyi* because the fungus was found to occur on hosts other than Angelica. Since this is not a valid reason Berkeley’s original name is retained.

Winter states that Fck., *Fung. Rhen. 2164* is sterile, but the copy in the Farlow Herbarium shows typical spores of *Diaporthe Angelicae*.

Conidial connections


Given by Fückel as the conidial stage of his *Sphaeria Angelicae*. Conidia oblong, curved, 5–6 × 2–2.5 μ.


Given by Traverso as the conidial stage of *Diaporthe nigrella*. Conidia oblong-cylindric, 10 × 3 μ.


Conidial connections given by Grove. Alpha conidia ellipsoid, 7–8 × 2–2.5 μ. Sporophores cylindric, arcuate, 12–20 × 1–1.25 μ.
2. **DIAPORTHOPSIS TRINUCLEATA** (Niessl) Höhn.


Barely visible on the surface as minute conic ostioles erumpent singly or in loose groups and usually in longitudinally seriate rows. There is a slight dorsal blackening above the perithecia which is more or less masked by the overlying epidermis. No ventral zone present. Perithecia 200–400 × 160–320 μ, scattered singly or in small seriate clusters. Asci clavate, 44–54 × 8–9 μ. Spores biseriate, fusoid-ellipsoid to inequilateral or somewhat curved, one-celled, hyaline, containing three large globules, 11–15 × 3–4 μ.

Hosts: *Eupatorium cannabinum; E. purpureum.*

Distribution: Germany; Ontario.


Excl. (Diaporhopsis trinucleata) Rehm, *Asc.* 732; Petr., *Fl. Boh. et Mor.* 43

Collections: (Diaporthe linearis) Ev. Herb. 191.11.

(‘Diaporhopsis trinucleata’) Höhn. Herb., three slides labeled “Niessl’s orig. material.”

This species differs from the typical species of this genus in the lack of any ventral zone. It is very similar in structure to *Diaporthe linearis*, but differs in the one-celled, three-guttulate spores. No apical appendages were seen on these spores as reported by Niessl.

3. **DIAPORTHOPSIS APICULOSE** (Ell.), *comb. nov.*

(Plate XVIII, Figs. 3–4)


The surface of the substratum is heavily and evenly blackened over wide areas. The ostioles are separately erumpent and short-cylindric, 250–480 × 80–100 μ. The ventral zone is definitely present along the margin of the pith. The perithecia are small, 200–320 × 150–200 μ, and thickly but singly scattered just beneath the dorsal blackening. The asci are clavate, 35–50 × 7 μ. The spores are biseriate, fusoid-ellipsoid, one-celled, non-constricted, two- to three-guttulate, and 7–9 × 2.5–3 μ. When young, the spores often show mucronate protoplasmic appendages at the ends, but these soon disappear.
THE GENUS DIAPORTHE

Host: Erigeron canadense.
Distribution: New Jersey.
Exsiccati: (Diaporthe apiculosa) Ell. and Ev., N. A. F. 787 (type).

This species is somewhat similar to Diaporthe Angelicae, but differs in the smaller ascospores, which are appendaged when young.

4. DIAPORTHOPSIS THEROPHILA (Desm.) Höhn.


On surface as numerous minute blackened or brownish spots, 0.2–0.5 mm in diameter, forming a clypeus about the ostiolar mouths, which are erumpent singly or in small groups. No ventral zones present. Perithecia small, spherical, 120–200 μ in diameter, scattered singly or in small groups, usually separately erumpent through the blackened clypeus. Asci cylindric, 60 × 4–6 μ (according to Von Höhnel). Spores one-celled, hyaline-fusoid, 6.5–9.5 × 2–3 μ.

Host: Juncus articulatus.
Distribution: France.
Collections: Höhn. Herb., three slides labeled "orig. exs. Desm."

Von Höhnel places this species in the genus Diaporthe, where it may very well belong, although the blackened areas are so minute that it might be considered one of the Clypeosphaeriaceae. There are usually several ostioles separately erumpent, however, so that these stromata may be considered minute effuse ones. The spores seen in the slides were in a mass, but appeared to be non-septate, as given by Von Höhnel.

5. DIAPORTHOPSIS PANTHERINA (Berk.), comb. nov.

(Plate XVIII, Figs. 5–6).

Diaporthe pantherina (Berk.) Cke., Grev. 7: 82. 1879.

On surface as fusoid to elongate-oblong dark-colored areas, which are faintly or definitely outlined and 0.5–3 × 0.2–0.5 mm. Ventral zones definite within the stem. Perithecii 240–400 μ in diameter, scattered singly and separately erumpent. Ostioles barely
emergent. Asci 64 × 13 μ. Spores fusoid-ellipsoid, one-celled, hyaline, two- to three-guttulate, 11–12 × 3.5–4.5(5) μ.

Host: Pteris aquilina.
Distribution: England.

In Cooke’s Handbook (2689) the spores of this species are given as having two or more obscure septa. Berkeley’s original specimen (Brit. Fung. 34) in the Farlow Herbarium showed no spores, but Plowright’s exsiccati, which are of the same fungus, show one-celled spores with two to three guttulae.

6. DIAPORTHOPSIS APPENDICULATA, sp. nov.¹

(Plate XVII, Figs. 7–8)

 Appearing on the surface as numerous short, stout-cylindric to conic ostioles, erumpent singly or in loose groups of 2–4, often arranged in more or less linear series. Perithecia spherical or somewhat flattened, 280–350 × 210–280 μ, scattered singly in the bark tissue, or loosely aggregated. Surface of bark more or less blackened and with a more or less well developed entostromatic tissue between the perithecia, giving a differentiated entostroma. No ventral zone present. Asci clavate, with a refractive ring in the apex, 70–85 × 11–14 μ. Spores biseriate, elongate-ellipsoid, inequilateral or slightly curved, one-celled, hyaline, four-guttulate, 24–28 × 5.5–7 μ, with a long, delicate, filiform, hyaline, usually curved appendage at each end.

Host: Aster sp.
Distribution: Michigan.

THE GENUS DIAPORTHE

SPECIES NOT EXAMINED


These two species of *Phyllachora* are given by Petrak as synonomous and as having a diaporthaceous structure with one-celled spores, as a result of which he places them in the genus *Diaporthopsis*. No material has been seen by the writer. Descriptions are given by Petrak, and also by Theissen and Sydow (*Ann. Myc.* 3: 564).


This species is regarded both by Rehm and by Theissen and Sydow (see *Ann. Myc.* 13: 564) as the same as *Phyllachora atronitens*, but according to Petrak it is a different fungus, with different spore and ascus measurements, and belongs in the genus *Diaporthopsis*. See Petrak for description.
VII. DOUBTFUL SPECIES


This species was placed in the genus Diaporthopsis by Von Höhnel, but an examination of his description (Ann. Myc. 16: 112) and his slides shows that there are two fungi concerned, which has resulted in a composite description. The stems contain *Diaporthe Arctii*, which furnishes the ventral zone and the occasional scattered perithecia in the wood, and a second fungus, which is undoubtedly the Phomatospora of Rehm. This fungus has broad-ellipsoid, one-celled, hyaline spores 11–14 × 5–6 μ in asci measuring 67 × 8–10 μ. The perithecia of this fungus occur in small groups, often embedded in a slight yellow-green entostromatic development or circinate about a small central disk. The surface above the perithecia is slightly blackened, through which area the short-cylindric ostioles are erumpent. There is no ventral zone. This does not fall in Fabre’s conception of the genus Diaporthopsis, which is an effuse *Diaporthe* with one-celled spores.

**Host:** *Lysimachia vulgaris*.

**Distribution:** Germany.

**Exsiccati:** Krieg., Fung. Sax. 2114, eight slides in Von Höhnel Herbarium examined.


This species was described by Spegazzini as effuse, but no spore measurements were given. Peck (*Rep. New York State Mus.* 44: 29) gave the spores as 15–17.5 μ long, which fits very well a specimen in the New York Herbarium collected by Peck at Carrollton, New York, and labeled “*D. binoculata*.” Ellis (*Proc. Acad. Nat. Sci. Phila.* 1890: 235) gave the spores of *D. americana* as 10–12 × 3 μ, but later erected his *D. Magnoliae* upon this specimen on the consideration that the perithecia were larger and more clustered. Dearness and House (*Rep. New York State Mus.* 70: 27) later stated that the variation in perithecial size and arrangement covers both these species.
THE GENUS DIAPORTHE

Ellis' material is a form of *D. eres*. Spegazzini's species may be the same, but without authentic spore measurements the species cannot be fixed.

Host: Magnolia.
Distribution: Italy.

**DIAPORTHE APOCRYPTA (Cke. & Ell.) Sacc., Syll. 1:621. 1882.**

Valsa apocrypta Cke. & Ell., Grev. 7: 14. 1878.

This is a confused species. Cooke gives the spores as 25–28 × 8–9 μ, but Ellis cites them as 18–20 × 6 μ. It is given as having grouped perithecia and without any circumscribing line. Examination of the type showed a number of bark fragments with more or less clustered perithecia and no ventral zone. Only two perithecia yielded spores, and these were of different sizes. One perithecium yielded ascospores 16–18 × 5 μ, measurements which correspond to Ellis' and are similar to those of *D. Hickoriae*; the second perithecium yielded spores 11–13 × 4–4.5 μ, which are similar to those of *D. caryigena*, but both these species on Carya have definite ventral zones.

Host: *Carya alba*.

**DIAPORTHE CHRYSOIDES (Tul.) Sacc., Syll. 1:629. 1882.**


This species may possibly be the same as *Diaporthe inaequalis*, but without authentic material it is impossible to say. The measurements given by the Tulasnes for the asci are somewhat larger, and for the spores somewhat smaller, than those of *D. inaequalis*.

Host: Sarothamnus.

**DIAPORTHE CILIATA (Pers.) Sacc., Syll. 1:631. 1882.**

Cryptospora ciliata (Pers.) Ell. & Ev., North Am. Pyr. 537. 1892.

This species may be a form of *D. eres*, but without authentic material definite determination is impossible. Material in the Curtis Herbarium on Prunus and Ulmus from Schweinitz is *D. eres*. Von Höhnel (*Ber. deut. bot. Gesell. 35:255*) considers it an excluded species.
DOUBTFUL SPECIES

Host: *Ulmus campestris*.

Collections: *(Sphaeria ciliata)* Curtis Herb., 441.2.5, Prunus and Ulmus, Bethlehem, ex Schweinitz Herb. 202 (441.2.4 shows only decayed shredded bark of Malus with sterile carbonaceous stromata).


Nees' description and figure of this species give a very faint idea of the identity of the fungus. Exsiccati under this name are a varied assortment of species, but *Fung. Rhen.* 1971, upon which Fückel's description is based, shows a Melanconis near *M. marginalis*. This specimen has fusoid, brownish to black disks and clustered perithecia 400–480 μ in diameter. The ectostroma is yellowish white to grayish. The asci are clavate and 75–80 × 6–8 μ; the spores biseriate, fusoid-ellipsoid, often inequilateral, and 15–20 × 3–5 μ. This material is similar to a form of *D. decedens* obtained from England (see remarks under that species, p. 129).

Von Höhnel (*Ann. Myc.* 16: 120) gives this species as a synonym of *Diaporthe leucopis* (Fr.) Sacc. (see that species, p. 257). The spores are similar to Quélet's *Valsa leucopis*, but this is doubtfully Fries' species.

Host: *Corylus*.

Exsiccati: *(Sphaeria conjuncta)* Desm., *Pl. cr. Fr.* 1, 1258 (*Apioporthe vepris*).


This is probably the form of *D. eres* on conifers. Both this species and *D. thujaena* on Juniperus and Thuja respectively are given as having slightly larger spores (12–17 × 3–5 μ) than the other coniferous forms. Hahn (*Phytopath.* 10: 249) reports a *Phomopsis juniperovora* which is parasitic upon Juniper, Cupressus, and Pseudotsuga, but not on Pinus and Picea, and it is possible that there is a distinct variety on these hosts.

Host: *Juniperus Sabini*.

THE GENUS DIAPORTHE


This species is given as distinct from *D. incongrua* (*D. Phaseolorum* on *Zea*) by Ellis (*North Am. Pyr. 453*), the chief distinction being the absence of a stroma (ventral zone) and the non-constricted ascospores.

Material from Newfield, New Jersey, in the New York Botanical Garden, shows a blackening of the surface of the stems over wide areas and a ventral zone within the pith, but is immature and has no perithecia or ostioles. It is doubtfully distinct from *D. Phaseolorum*, but without mature or type material its exact position is doubtful.

Host: *Zea Mays.*
Distribution: New Jersey (type from Kentucky).


In the original description the asci of this species are given as 45–50 × 6–7 μ and the spores as spindle-shaped, four-celled with four cubical oil drops, and 9–10 × 2–3 μ. If it is four-celled, it is obviously not a Diaporthe. The type shows circular to elliptic blackened areas on the surface of completely decorticated wood. There is a definite ventral zone. Within these blackened areas there were found several short-conic pycnidia with one to several ellipsoid or irregular cavities containing oblong-ellipsoid, one-celled, hyaline conidia, with a large oil drop in each end and measuring 4–5 × 1.5 μ. No perithecia or spores were seen.

Host: Dead wood.
Distribution: Java.


If *D. recondita* (Schw.) Ell. is a true Diaporthe, this name is pre-occupied. Saccardo's description gives the species as *Euporthe*, but the spores merely as oblong and immature. The portion of the original material of this species in the Farlow Herbarium (Baker, *Fung. Malay. 222*) shows no perithecia whatever. There are brown-
ish, irregular, discolored areas on the surface, with one or two old ectostromata suggesting *D. pardalota*, but there is nothing here upon which to describe a species.

Host: *Glyricidia maculata*.
Distribution: Philippine Islands.

**Diaporthes recondita** (Schw.) Ell., North Am. Pyr. 448. 1892.

*Sphaeria recondita* Schw., Syn. Am. Bor. 1300. 1832.

Given as having an effuse stroma with a blackened bark surface and elongated ostioles. Ellis cites the spores as oblong-fusoid, 5-7 \( \times \) 1.5 \( \mu \), which suggests conidia rather than ascospores. The only material seen, from Ellis’ herbarium, was on pine twigs; it showed only a few isolated perithecia with one-celled brown ascospores. This may be *D. eres*, but is very doubtful.

Host: *Ribes floridum* (Pinus ?).
Distribution: Pennsylvania (New Jersey?).


Appearing on the surface as minute elliptic to elongate, heavily blackened spots, with a more or less sharp margin and containing 2-4 small erumpent ostioles. These spots are 0.5-2.5 \( \times \) 0.25-0.5 mm. Perithecia 2-4 in a stroma, 300-350 \( \times \) 200 \( \mu \), with elongate ostioles (according to Von Höhnel). Asci clavate, 35-45 \( \times \) 6-10 \( \mu \). Spores two- to three-seriate, two-celled, four-guttulate, spindle-shaped, straight or weakly curved, with terminal gelatinous caps, 12-14 \( \times \) 3-4.5 \( \mu \).

Host: Given as *Rhus typhina*, but extremely doubtful.
Distribution: Luxemburg.

This is a doubtful species and the type in Von Höhnel’s herbarium is a mere fragment with no good stromata. The description given above is a composite one, taken from Feltgen’s and Von Höhnel’s, and based on what could be seen of the type material. Von Höhnel gives the spores as two- to four-celled, but his drawings on the label show typical *D. Arctii* spores which are two-celled and four-guttulate.
This is a species closely related to *D. pardalota*, but differs from it in the very small entostromata.

In 1927 (*Myc.* 19: 172) the writer stated that *Gnomonia rhoina* Feltg. and *Diaporthe rhoina* Feltg. were the same species. This is incorrect. The *Gnomonia rhoina* Feltg., placed as *Diaporthe rhoina* (Feltg.) Rehm by Von Höhnel (*Sitz. Akad. Wiss. Wien, 115: 1250), is *D. eres*, whereas the *D. rhoina* of Feltgen is this species and is placed in *Hypospila* by Von Höhnel.


This name is reported by Harkness in the reference above as on *Rosa californica*, with no description. It was not described by Berkeley and Curtis under *Diaporthe*, *Valsa*, *Sphaeria*, or *Diatrype*. Without Harkness’ original material it is an unknown species.

**Diaporthe salviaecola** (Cke. & Ell.) Sacc., *Syll.* 1: 657. 1882.

*Sphaeria (Diaporthe) salviaecola* Cke. & Ell., *Grev.* 5: 93. 1877.

Cooke describes the perithecia as embedded in a blackened stroma, with elongated ostioles and spores 15 µ long. Ellis describes the perithecia as scattered beneath a blackened bark surface, and with short-conic ostioles and spores 15-20 × 2.5-3 µ. Type material in the Farlow Herbarium shows only small dothideaceous perithecia with one-celled hyaline spores. Material of the same collection in the New York Museum Herbarium shows an effuse stroma, with ventral zones at the lateral margins only, and small scattered perithecia with long, sinuous ostioles and two-celled spores 8-10 × 2.5-3 µ. This last material is a small-spored form of *D. Arctii* and probably a variety of *D. Phaseolorum*.

Host: *Salvia officinalis*.

Distribution: New Jersey.

Collections: Ellis, Herb. Myc. 176.57 (2400), Newfield, New Jersey; N. Y. M. Herb., *J. B. Ellis* 2400 (type).

**Diaporthe spinulosa** Karst., *Myc. Fenn.* 2: 111. 1873.

Described as having the habit of *Eutypa spinosa*, with quadrissulcate ostioles and oblong spores 14-22 × 4-6 µ. A very doubtful *Diaporthe* although no specimens have been seen by the writer.

Host: *Quercus* sp.

Distribution: Finland.
**Doubtful Species**

**Diaporthia subpyramidata** (Berk. & Curt.) Sacc., *Syll.* 1: 636. 1882.


Described with an effuse stroma with a rasplike surface. Perithecia black, subpyramidal. Spores biconic, elongate. Probably not a *Diaporthe*. Very probably similar to the species listed above. The Kew Herbarium reports that it has no authentic material of this species.

Host: *Quercus sp.*

Distribution: North Carolina.

**Diaporthia tortuosa** (Fr.) Sacc., *Syll.* 1: 630. 1882.


Dr. Juel states that there is no type specimen of this species in the Botanical Institute at Upsala, but kindly sends a photograph of a specimen on *Populus tremula*, upon which Fries had written "*Sphaeria tortuosa* Fr." This specimen shows large irregular masses of tortuous ostioles and old carbonaceous stromata. It appears to be a form of *D. medusaeae*.

Hosts: *Pinus; Populus tremula.*

Distribution: Sweden (New Jersey?)


Fuckel describes this species with spores 12 x 3.5 μ and three-septate. The species on herbaceous stems are so confused that they cannot be placed without authentic material. Fuckel apparently did not issue exsiccati of this species. The only specimens seen have been those in Nitschke's herbarium. One of these is immature and shows only small blackened areas 1-4 mm. in diameter, and the other is a copy of *Mazzantia rhytismoides* De Not.

Host: *Valeriana officinalis.*

Distribution: Germany.

Collections: *Nit. Herb., March, 1870, labeled "Mazzantia rhytismoides" from De Notaris Herb., 1865.*
VIII. EXCLUDED SPECIES


Von Höhnel placed this species in the genus Diaporthæ because of its lack of paraphyses and stromatic development above the perithecia. Petrak, on the basis of these characters and the large spores and thick, violet-colored perithecial walls, erected for it a new genus, Macrodiaporthe. The stroma above the perithecia is nothing but the fusion and enlargement of the ostioles. The spore, ascus, and perithecial characters are those of the *Pseudovalsa* group. It may eventually represent a new genus, but this whole group needs careful comparative study and revision.

**Host:** Populus.


**Diaporthæ acervata** Ell. & Ev., North Am. Pyr. 738. 1892.

- Diatypæ acervata Ell. & Ev., Journ. Myc. 4: 75. 1888.

On surface as large elliptic or irregular areas 1-8 cm. long, light in color and bounded by a brown marginal zone. Numerous minute dots are scattered over the surface of these spots. These are the barely erumpent spherical pycnidia (160–400 μ in diam.) filled with a black mass of spherical, one-celled brown conidia, 4 μ in diameter. In the center of these spots there are larger, more widely erumpent blackened stromata containing spherical areas of hyaline cells which become the perithecia. The ascospores are cylindric, straight or curved, two-celled, hyaline, and 17.5–20 × 3–4 μ. This not a Dia­porthe, but some dothideaceous fungus.

**Host:** *Yucca filamentosa.*

**Distribution:** New Jersey.

**Exsiccati:** *Diatypæ acervata* Ell. and Ev., N. A. F. 2124; Ev. Herb. 7.51, New­field, July, 1888 (type).
EXCLUDED SPECIES

**Diaporthae Acus** (Blox.) Cke., Grev. 7: 81. 1879.


The type of this species is a Gnomonia, as are most of the other collections obtained from Kew. The fungus appears on the surface as minute papillate pustules caused by the barely erumpent conic ostioles. The perithecia are 240–280 μ in diameter and scattered singly. There are no dorsal or ventral blackened zones present. The spores are fusoid-ellipsoid, hyaline, finally two-celled, slightly constricted, and 9.5–12 × 2.5–4 μ. This appears a good deal like an immature *D. Arctii*, but the entire absence of any blackened zones and the smaller spores distinguish it.

**Host:** Rumex sp.

**Distribution:** England.

**Collections:** *(Sphaeria Acus)* Kew Herb.; (Currey Herb.), on Rumex, Bloxam (type), and from Haven Bridge; (Cooke Herb.), Pleasure Grounds, Kew, March, 1883; (Berkeley Herb.), on Rumex: excl. (Cooke Herb.), Neathead, Norfolk, Sept., 1864 (*D. cres*).

**Diaporthae Aesculi** Cke. & Hark., Grev. 9: 86. 1881.

The type of this species in the Harkness collection shows two fungi on the twigs, one of which is a Cryptosphaeria and the other a Diatrypella. The description cannot possibly be of either of these two species, so that unless Cooke had a third fungus and this is in existence at Kew, this species must be excluded.

**Host:** Aesculus californica.

**Distribution:** California.

**Collections:** Cal. Acad. Sci. 1064, Harkness Coll. 1463, San Rafael, April, 1880 (type).


Saccardo (Syll. 1: 625) says that this species differs from *D. sulphurea* in the broader, more rounded, spores and obscure stroma, but his figures (*Fung. Ital. 1225*) show the typical appendaged spores and colored ectostromata of *D. sulphurea*. Von Höhnel (*Ann. Myc. 16: 120*) gives it as a synonym of *D. sulphurea* (see p. 268), which it is.

**Host:** Corylus sp.

**Exsiccati:** excl. Syd., Myc. March. 458 (near Melanconis marginalis).

As pointed out by Von Hohnel (*Ann. Myc.* 16: 120), this is not a Diaporthe. Type material shows singly scattered perithecia with a white interior filled with paraphyses, asci 65–90 × 9–13 μ, and spores which are at first two-celled, hyaline, biconic-fusoid, and later becoming four-celled and sometimes brown. It is a Leptosphaeria. *Aphioporthia Corni* is sometimes found associated with it.


**Host:** *Cornus alternifolia.*

**Distribution:** Ontario.

**Exsiccati:** Ell. and Ev., N. A. F. 2820; Ev. Herb., 9.1, Nov., 1903.

**DIAPORTHE ALNIELLA** Karst., in *Fung. Fenn.* 872. 1869.

The type exsiccatus of this species in the Farlow Herbarium shows only the black stromata of some dothideaceous fungus. No spores or asci were seen. The description gives the perithecia as sparsely gregarious in the cortex, depressed-spheroid, furfuraceous-tomentose; ostioles short. Spores oblong-fusoid, one- to three-septate, hyaline, 20–26 × 6–8 μ.

The description does not fit the fungus seen on the type material, but neither is it a Diaporthe.

**Host:** *Alnus incana.*

**Distribution:** Finland.

**Exsiccati:** Karst., *Fung. Fenn.* 872 (type).

**DIAPORTHE AMBIENS** Fck., *Symb. Myc.* Nachtr. 2: 38. 1873.

*Dothidea ambiens* Lib., *Exs.* 366.


Fuckel’s specimen of *Eurachora ambiens* is a sterile stroma. He found only “peritheciis spermatiferis” in his *Diaporthe ambiens*, having never seen asci in this species. *Fung. Rhen.* 1027 shows heavily blackened effuse areas at the nodes of the stems. These areas are composed of heavily browned parenchymatous cells and contain spherical to flask-shaped areas of hyaline cells which are the immature pycnidia or perithecia and form papillate swellings on the surface. Von Hohnel’s material of this species is also sterile. It is some dothideaceous fungus and not a Diaporthe.

**Host:** *Stellaria nemorosum.*

**Distribution:** Austria; Germany.
EXCLUDED SPECIES


The description, together with Fung. Rhen. 1995, gives “Perithecia globose, scattered. Ostioles straight, exserted, twice as long as perithecia. Asci 46 × 8 μ. Spores biseriate, fusiform, slightly curved, sometimes apiculate, four-guttulate, 14 × 4 μ.”

The type exsiccatus shows the perithecia 320-400 μ in diameter, scattered singly and barely erumpent, forming minute conic pustules. There are no blackened zones or stromatic development whatever in the substratum. The perithecia are old and decayed and show no spores.

This appears to be a Gnomonia, although no spores were seen. The elongated ostioles are probably broken off.

Host: Euphorbia amygdalina.


According to Von Höhnel (Sitz. Akad. Wiss. Wien, 115:1256), the type of this species is nothing but a short decayed piece without a Diaporthe or any other fungus present, and therefore is to be eliminated.

Host: Androsaema (Hypericum) officinale.
Distribution: Luxemburg.


Valsa appendiculata Otth, in Nit. Herb. 29.
Melanconiiella appendiculata (Orth) Sacc., Hed. 35:29. 1896.

The type of this species (in Nitschke Herbarium) shows it to be a typical Melanconis with two-celled brown ascospores, 29–38 × 12–15 μ. They have a granular content and often show a small caplike appendage at each end. There is very little ectostromatic development and there are no blackened zones in the substratum.

Hosts: Acer platanoides; A. Pseudoplatanus.
Distribution: Germany; Moravia; Switzerland.
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Exsiccati: (Melanconiella appendiculata) Krieg., Fung. Sax. 1825; Petr., Fl. Boh. et Mor. 1621.
Collections: (Falsa appendiculata) Nit. Herb. 29, Bern, Otth (type).


According to the type and also to a note from Dearness, this species is a Gnomonia (Gn. petiophila Pk. f. Fraxini Ell. & Ev., according to Dearness).

Host: Fraxinus nigra (petioles).
Collections: N. Y. M. Herb., Sandlake, Peck (type).


Leptosphaeria Asparagi Fck., in Fung. Rhen. 2155. 1868.
Clypeosphaeria Asparagi (Fck.) Wint., Rab., Krypt.-Fl. 1(2): 563. 1887.

Fuckel’s type shows a fungus forming irregular blackened areas on the surface. The perithecia are small (240-400 \( \times \) 160-300 \( \mu \)) and are seated on the surface of the blackened decayed bark, scattered singly and causing small swellings on the surface. Spores elongate, yellowish, septate (21-24 \( \times \) 4 \( \mu \) and three- to four-septate, according to Winter).

This is a Leptosphaeria with a heavily blackened periderm and a blackening of the bark tissues beneath and should, therefore, probably be placed in Clypeosphaeria, as is done by Winter.

Host: Asparagus officinalis.
Collections: Nit. Herb., Wienberg, March, 1867 (as C. Asparagi).
Exsiccati: (Leptosphaeria Asparagi) Fck., Fung. Rhen. 2155 (type).


Type material of this species shows erumpent, stout-cylindric, irregular, grayish to black ostioles, erumpent singly or in small groups and united beneath into an enlarged stroma containing several cavities in which are found sickle-shaped, one-celled, hyaline conidia, 20-24 \( \times \) 1.5-2 \( \mu \). This is one of the Fungi Imperfecti of the form genus Sphaeronema or Micropera.

Collections: Ex Herbario Frid. Hazslinskyi, Magyar Nemzeti Muzeum (type).
EXCLUDED SPECIES


On surface as numerous circular, discolored, often confluent spots, 0.3–0.5 mm. in diameter. These spots have no definite margin; in the center of each there is a circular, white, ectostromatic disk, through which a single cylindric ostiole is barely erumpent. This ectostroma later falls out, leaving a central, circular, unblackened area. There are no dorsal or ventral zones, outside this clypeus. Perithecia 320–480 × 240–400 μ, solitary beneath these localized blackenings. Asci (according to Patouillard) cylindric, obtuse at the apex, 130 × 10 μ. Spores biseriate, long-ellipsoid, straight, two-celled, hyaline at first becoming light brown, slightly constricted, 21.5–25 × 5–6 μ.

This is not a good Diaporthe; the spores become brown at maturity. Von Höhnél has put it in his new genus Clypeoporthae as C. Bambusae, and since he does not mention spore color in the description of this genus, it should probably remain there for the present.

Host: Bambusa.

Distribution: Tonkin.

Collections: Pat. Herb., Kien Khe (HN), Jan., 1891, 4954 (type).

Conidial connections


DIAPORTHE BITORULOSA (Berk. & Br.) Sacc., Syll. 1: 608.

This is a typical Melanconis, although the synonymy and exsiccati of the species are greatly confused. It is very similar to Melanconis hyperopta (see p. 254) and is an extension of the range of variation of that species. It differs in the broader spores (14–23 × 6–9.5 μ) with more rounded ends and thick gelatinous walls. Its synonymy, with reservations, may be given as follows:

Melanconis xanthostroma (Mont.) Schroet., Pilze Schles. 441. 1908.
Cryptospora bitululosa (Berk. & Br.) Niessl, Hed. 1877: 119.
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Cryptospora nigro-annulata (Kze.) Rehm, in De Thüm., Myc. Univ. 2063. 1881.
Diaporthe bitorulosa (Berk. & Br.) Sacc., Syll. 1:608. 1882.

The exsiccati of Melanconis bitorulosa which I have seen (Ellis, Herb. Myc. 189.1, and Shear, New York Fungi, 173) are not of the genus Diaporthe, but Ellis bases his species on Valsa bitorulosa. No type material of V. bitorulosa was obtainable from Kew, and the other specimens were of various species. It is merely supposed that Broomes' original material was of the type of Sphaeria xanthostroma. Only the exsiccati typical of this species are given below.

Host: Carpinus Betulus.
Exsiccati: (Sphaeria xanthostroma) Fr., Scler. Suec. 444; Berk., Brit. Fung. 296.

DIAPORTHE BLOXAMI (Cke.) Berl. & Vogl., Syll., Add. 105. 1886.
Valsa Bloxami Cke., Grev. 14:47. 1885.

The type of this species is apparently Melanconis stilbostoma on Betula. Cooke gives no host on the type sheet, and in his description regards Fagus as doubtful.

Host: Betula?
Distribution: England.
Collections: (Valsa Bloxami) Kew Herb.; (Cooke Herb.), Bloxam 141 (two sheets) (type); 312 Sphaeria on birch.


According to Von Höhn (Sitz. Akad. Wiss. Wien, 115:1251), the type of this species contains nothing but a few scattered perithecia of Metasphaeria sepincola (Niessl) Sacc., and is to be excluded.


This species, given first as D. Carpini (P.) Fck. (Myc. Ven. Spec. 137), was later (Syll. 1:607) regarded as a synonym of D.
EXCLUDED SPECIES

Kunzeana. They are both Melanconis hyperopta (see Diaporthe hyperopta, p. 254).

**DIAPORTHE CARPINICOLA** Fck., Symb. Myc., Nachtr. 2: 37. 1873.

The type (Fung. Rhen. 2660) of this species is Melanconis hyperopta (see Diaporthe hyperopta, p. 254).

Host: *Carpinus Betulus.*


**DIAPORTHE CARPINIGERA** (Berk. & Curt.) Sacc., Syll. 2, Add. xlviii. 1883.

Diatype carpinigera Berk. & Curt., Grev. 4: 96. 1876.

The type material of this species, cited below, is a small-spored form of *Melanconis hyperopta* (see *Diaporthe hyperopta*, p. 254).

Host: *Carpinus.*

Distribution: Pennsylvania.

Collections: Curtis Herb. 459.11.1 (*Sphaeria carpinigera* Berk. & Curt.), 4388, Pennsylvania, Michener 2227 (type).

**DIAPORTHE CONRADII** Ell., Am. Nat. 1883: 316.

Type material of this species proves it to be a Gnomonia. There is no stromatic development, although a few perithecia may occasionally be formed adjacent to one another. The perithecia form minute papillate swellings on the surface through which the short-cylindric ostioles are erumpent. No blackened zones present. Asci clavate, 35–40 × 6–7 μ. Spores fusoid-ellipsoid, scarcely constricted, 9–11 × 3–4 μ.

Host: *Hudsonia tomentosa.*

Distribution: New Jersey.

Exsiccati: Ell. and Ev., N. A. F. 1193 (type).


Material of this species collected by S. C. Bruner proves to be a Gnomonina and not a Diaporthe. The spores are ellipsoid, one-celled, hyaline, and 5–5.5 × 1.5–2 μ. The perithecia are spherical, 400 × 250–400 μ, and thickly crowded in the upper layers of the bark. The ostioles are long-filiform, erumpent, and sinuous.
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Host: Eucalyptus sp.


Type material shows this to be Melanconis hyperopta (see Diaporthe hyperopta, p. 254).

Hosts: Carpinus Betulus; C. caroliniana.
Distribution: Austria; Belgium; Germany; Italy; Switzerland; Ontario; New York.


Diaporthe dichaenoides (Berk. & Curt.) Sacc., Syll. 1:616. 1882.
Melogramma dichaenoides Berk. & Curt., Grev. 4:98. 1875.
Myrmaecium dichaenoides (Berk. & Curt.) Ell., North Am. Pyr. 551. 1892.

Type material of this species in the Curtis' Herbarium shows clusters of perithecia with their bases slightly buried in the substratum and the necks much enlarged, erumpent, stout-cylindric, and with trisulcate apices. There are numerous fine hyaline paraphyses. The spores are two-celled, hyaline, fusoid-ellipsoid, constricted at the septum, 24-31 × 7-8 µ, and become brown at maturity. It is obviously not a Diaporthe.

Host: Quercus.
Distribution: Alabama.
Collections: Curtis Herb. 459.6(4662), labeled "Sph. dichaenoides B. & C.," Tuskegee, Alabama, Beaumont 112 (type); N. Y. M. Herb., ex Curt. Herb.

Diaporthe disciformis (Hoffm.) Fr.
This combination was given by House in 1925 in Rep. New York State Mus. 75:79. It is undoubtedly meant for Diatrype disciformis.

This name combination is preceded by *D. dubia* Nit.

Feltgen gives the perithecia of this species as scattered singly or heaped together, ostioles elongate, curved at the tip. Asci clavate, short-stalked, \(40 \times 10-13 \mu (80-87 \times 12-14 \mu)\). Spores two- to three-seriate, spindle-shaped, \(13-18 \times 2.8-4 \mu\).

Von Höhnel placed the species in this genus on the basis of the crowded perithecia. The type in Von Höhnel's herbarium contains only a few fragments, with a few decayed perithecia, which are as described by Feltgen. It appears to be a Gnomonia, but owing to the scant type material cannot be definitely placed.

Host: *Calluna vulgaris*.

Distribution: Luxemburg.


**Diaporthe elaeostroma** (Cke.) Berl. & Vogl., Syll., Add. 107. 1886.


The host of this species was given as *Cerasus avium*, but the type appears to be on Corylus, and the fungus is *Melanconis sulphurea* (see *Diaporthe sulphurea*, p. 268).

Host: *Cerasus avium*? (Corylus).

Collections: *(Valsa olivaestroma)* Kew Herb. 2009 (Cooke Herb. 209), Jerdon, 1885 (type).


*Valsa Ellisii* Rehm, in Ell. and Ev., N. A. F. 1567.

The type of this species is a small-spored form of *Melanconis hyperopta* (see *Diaporthe hyperopta*, p. 254).

Host: *Carpinus caroliniana*.

Distribution: New York; Pennsylvania.


*(Diaporthe Ellisii)* Barth., Fung. Col. 4221.

**Diaporthe Epilobii** Fck., Symb. Myc. 206. 1869.

The type of this species is *Didymella tosta* (see *Diaporthe tosta*, p. 269).

Hosts: *Epilobium angustifolium; E. hirsutum*.

Distribution: England; Switzerland.
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Fung. Brit. 591 (?).

DIAPORTHE EXIGUESTROMA Dear., Myc. 9: 348. 1917.

Type material of this species from Dearness shows numerous
small perithecia (240–280 x 160–240 μ) scattered singly just beneath
the periderm on the bark surface. These perithecia are mostly
decayed, but show a few spores as described (19–23 x 4–5 μ, long-
fusoid, constricted). This should be a Didymella, as is borne out
by the description which gives the perithecia with paraphyses and
only a few asci.

Host: Rosa sp.
Distribution: British Columbia.
Macoun.

DIAPORTHE FARCATA (Berk. & Br.) Niessl, Notiz. Pyr. 51. 1876.


Under his description of Diaporthe conjuncta Niessl cites “Dia-
porthe farcata” as being different. Sphaeria farcata, as represented in
Plowr., Sphaer. Brit. II, 68, is mostly an effuse Anthostoma, and so
far as can be determined, was never before cited as a Diaporthe.

Host: Ulmus sp.


The type of this species is on Carpinus, not Tilia, as given, and
is Melanconis hyperopta (see Diaporthe hyperopta, p. 254).

Distribution: New York.

DIAPORTHE FLAVO-VIRENS Otth, Nachtr. 6, Mittheil. nat. Gesell.
Bern, 1868: 47.


The type of this species, given as on Carpinus and Corylus, is
apparently Melanconis sulphurea (see Diaporthe sulphurea, p. 268),
differing from M. xanthostroma only in the acute apices of the spores.
EXCLUDED SPECIES

Distribution: Switzerland.

**Diaporthe fulvo-pruinata** (Berk.) Sacc., Syll. 1: 621. 1882.


Material of this species from Berkeley’s herbarium, from Ohio (1879), shows a Valsaria *(V. exasperans)* with subangular pustules, tawny in color with a tawny pulverulent disk pierced by the ostioles. The spores are uniseriate, ellipsoid, two-celled, brown, constricted at the septum, 13.5-16 × 7-8 μ, much as given by Currey.

Host: *Platanus occidentalis*.
Distribution: Ohio.
Collections: Kew Herb. 1993 (Berkeley Herb.), Ohio, 1879.

**Diaporthe furfuracea** (Fr.) Sacc., Syll. 1: 618. 1882.

*Sphaeria furfuracea* Fr., Syst. Myc. 2: 409. 1823.

The *Sphaeria furfuracea* of Fries may have been a mixed species, but was most probably a Melanconis. Type material from Fries’ herbarium at Upsala shows numerous minute pustules with crowded clusters of ostioles and perithecia more or less circinate in the unaltered bark cortex. The spores are broad fusoid-ellipsoid, constricted, hyaline at first and later brown, and 16–20 × 5–7 μ. The yellowish furfuraceous disks and uniseriate spores given in various descriptions also suggest a Melanconis.

Hosts: *Populus; Tilia; etc.*?


Type material of this species is *Gnomonia rostellata* (see **Diaporthe rostellata**, p. 266).

Host: *Rubus villarus*.
Distribution: New Jersey.
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Diaporthe griseo-tingens (Berk. & Curt.) Sacc., Syll. 1: 646. 1882.


The placing of this species in Diaporthe by Saccardo was a mere guess. The type shows a Physalospora \( (Ph. Cupressi?) \) with one-celled, hyaline, ellipsoid spores measuring \( 33 \times 13 \mu \).

Host: Juniperus virginiana.

Distribution: Pennsylvania.

Collections: (Sphaeria griseo-tingens) Curtis Herb. 459.4.6 (6029), Pennsylvania, Michener 2723 (type).


The type of this species in Nitschke’s herbarium shows a typical Melanconis with grayish cylindric to fusoid disks containing a cluster of cylindric ostioles. The perithecia are \( 240-480 \mu \) in diameter and circinately arranged in the unaltered bark cortex. Spores biseriate, two-celled, hyaline, acute at the ends, sometimes inequilateral, \( 20-22 \times 4.5-6 \mu \).

This species of Melanconis is quite variable and has been described under a number of names. The disks may be grayish to olive-green, and there may often be a stromatic development about the perithecia. The disks and perithecia are variable in size and arrangement. A forma minor with spores \( 12-15 \times 3-4 \mu \) and a forma major with spores \( 16-23 \times 4-5.5 \mu \) can be recognized in the wide range of spore measurement. The forma minor is more common on Carpinus caroliniana. The spores sometimes show caplike hyaline appendages on the ends. It differs from \( M. sulphurea \) in the smaller spores and non-gelatinous walls, and from \( M. xanthostroma \) in the narrower more acute spores with non-gelatinous thickened walls.

The synonymy is as given below:

Melanconis hyperopta (Nit.), comb. nov.
Diaporthe nigro-annulata Kze. in Fung. Sel. 122. 1875.
Sphaeria carpinigera Berk. & Curt., in Curtis Herb. 459.11.1.
Diatrype carpinigera Berk. & Curt., Grev. 4: 96. 1876.
Diaporthe carpinigera (Berk. & Curt.) Sacc., Syll. 2, Add. xlvi. 1883.
EXCLUDED SPECIES

Valsa Ellisii Rehm, in Ell. and Ev., N. A. F. 1567.
Chorostate suspecta Sacc., Ann. Myc. 11: 15. 1913 (?).
Diaporthe Ostryae Dear., Myc. 18: 246. 1926.

Petrak's material (Fung. Pol. 637) of Discodiaporthe xanthostroma is this species, but his species name is based on Montagne's Sphaeria xanthostroma. Exsiccati and collections are cited under the respective synonyms.

Hosts: Carpinus Betulus; C. caroliniana; Ostrya sp.
Distribution: Austria; Belgium; Germany; Italy; Luxemburg; Poland; Switzerland; Ontario; Michigan; New York; Pennsylvania.
Collections: Nit. Herb. Bern (115), labeled "Valsa chrysostroma" (type); Wehm. Herb., Wehmeyer 38, Ann Arbor, Michigan, Oct., 1921; Wehmeyer 199, April, 1922; Wehmeyer 38 a, March, 1923.

Diaporthe Hypoxyloides Rehm, in Sacc., Syll. 9: 712. 1891.

The three copies of Rehm, Asc. 874, examined all show only sterile entostromatic masses exposed by weathering and with a blackened superficial crust. No perithecia were seen, but old pycnidial cavities were found on the surface of these areas. These yielded a few oblong to ellipsoid conidia measuring 8 x 2–2.5 μ.
Host: Acer.
Distribution: Germany.
Exsiccati: Rehm, Asc. 874 (Farlow Herb.; Höhn. Herb.; N. Y. G. Herb.).

Nomen nudum. Published without description.

Diaporthe Innata (Berk. & Curt.) Sacc., Syll. 1: 630. 1882.
Valsa innata Berk. & Curt., Grev. 4: 102. 1876.
Cryptospora innata (Berk. & Curt.) Sacc., Syll. 1: 470. 1882.

Saccardo's placing Valsa innata in both Diaporthe and Cryptospora proves both of these assignments to be guesses. The
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_Sphaeria innata_ on _Castanea_ in Curtis' herbarium, as cited below, is an Anthostoma. This, however, may be the type of _Diatrype innata_, which is possibly different from their _Valsa innata_. Until a type of _Valsa innata_ is found this must remain an excluded species.

Host: _Castanea vesca_.
Collections: (_Sphaeria innata_) Curtis Herb. 437.8.1, Castanea, Sept., 1854, Black Mt., North Carolina 4496.

**Diaporthe Innesii** (Curt.) Fck., Symb. Myc. 204. 1869.


This is _Pseudovalsa platanoides_ (Pers.) Wint. (see Rab., _Krypt.-Fl._ 1 (2) : 790, for complete synonymy). Von Höhnel (Ber. deut. bot. Gesell. 35 : 252) has called this a four-celled Diaporthe (D. _platanoides_ (Pers.) Höhn.).

Host: _Acer Pseudoplatanus_.
(_Sphaeria platanoides_) Fr., Scler. Suec. 186.


This is _Melanconis Juglandis_ (Ell. & Ev.) Graves (Myc. 11 : 113. 1919).

Host: _Juglans cinerea_.
Exsiccati: (_Diaporthe Juglandis_) Shear, New York Fungi, 340 (type material).


According to Von Höhnel (Sitz. Akad. Wiss. Wien, 115 : 1253), the type of this species is not on juniper, but on Ulmus, and consists of nothing but old decayed stromata of some Eutypa parasitized by _Debaryella vexans_ Höhn.


_Sphaeria Ketmiae_ and _Diaporthe Ketmiae_ are based on Rab., _Herb. Vin. Myc._ 1938. The copy of this exsiccatus in the Farlow Herbarium shows only a fungus with allantoid spores yellow-brown.
in mass which must be a Eutypella, Diatrypella, or Cryptovalsa (no asci were seen), and is not a Diaporthe.

Host: *Ketmia* (*Hibiscus*) *syriaca*.


**DIAPORTHE KUNZEANA** Sacc., Fung. Ven. 5 : 181, 1876.

This is *Melanconis hyperopta* (see *Diaporthe hyperopta*, p. 254). Sacc., *Myc. Ven.* 665 of *D. Carpini*, which is given under the description of *D. Kunzeana* as characteristic of that species, is *Melanconis hyperopta*.

Host: Carpinus.


**DIAPORTHE LEUCOPIS** (Fr.) Sacc., Syll. 2, Add. xlviii. 1883.


*Cryptospora leucopis* (Fr.) Ell. & Ev., *North Am. Pyr.* 529. 1892.

Fries' description of this species gives a whitish disk with a cluster of erumpent ostioles, which suggests a *Melanconis*. Quélet's description and figures, which approach the type of *D. conjuncta*, give spores 20 µ long and with appendages. The species is represented in the Fries Herbarium by one collection, labeled "*Valsa leucopis var.? non typica,*" which shows only a Diplodia with two-celled brown conidia 20 × 8 µ. With no type in existence the species cannot be fixed.

Host: Corylus sp.

Collections: Bot. Inst. Upsala, Fries Herb., labeled "*V. leucopis var.? non typica, Scanica in Corylo."


This is one of the Massariaceae. It appears on the surface as numerous small, circular, papillate openings which are the mouths of the stout, short ostioles of the immersed perithecia which are scattered singly, flattened-spherical, 400–600 × 240–320 µ. The asci are clavate-cylindric. The spores are large, fusoid-ellipsoid, biseriate in the ascus, two-celled, hyaline, often somewhat curved, constricted at the septum, with two large oil globules in each cell, and 27–34 × 8–10 µ.
THE GENUS DIAPORTHE

Host: *Carpinus caroliniana.*
Distribution: Ontario.
Exsiccati: Ell. and Ev., N. A. F. 2743 (type).


This is *Melanconis hyperopia* (see *Diaporthe hyperopia*, p. 254).
Host: *Carpinus Betulus.*
Collections: (*Diaporthe bitorulosa*) Höhn. Herb. A 4030 (6918), Luxemburg, July, 1900, J. Feltgen ("sub *Diaporthe leucostoma* n. sp. in sched.") (type).


A pleosporaceous fungus of the Didymella type appearing on the surface as stout-cylindric ostioles, which are the separately erumpent necks of thick-walled coriaceous perithecia buried just beneath the periderm. Paraphyses numerous, hyaline, filiform. Spores long fusoid-ellipsoid, straight or curved, two-celled, hyaline, 27-33 × 4-5.5 μ.
Host: *Ligustrum vulgare.*


This species is not a good Diaporthe, but rather one of the Clypeosphaeriaceae (*Hypospila*?). It appears on the surface as numerous longitudinally elongate blackened areas, 0.5-1 × 0.1-0.2 mm., often with a light-colored central area through which are erumpent the one or more masses of the fused ostioles. The perithecia are 150-300 μ in diameter, clustered beneath the blackened peridermal clypeus and more or less fused together by the presence of an interperithecial stromatic development. There is no ventral zone present, and the perithecial group is adherent to the periderm. Asci clavate, 30-40 × 5-7 μ. Spores biseriate, long spindle-shaped, doubtfully septate, hyaline, 8-10 × 1.5-2 (2.5) μ.
Host: *Spiraea Ulmaria.*
Distribution: Austria; England; Finland; France; Germany; Moravia.
**EXCLUDED SPECIES**


Collections: Nit. Herb., Garten, Zippendorf, May, 1851; second packet has no data.


The copy of this type, in the Farlow Herbarium, contains only a few decayed perithecia of some dothideaceous fungus. A few two-celled, hyaline spores measuring 27 x 7-9 μ were seen.

Host: Symphoricarpos racemosa.


**Diaporthe Marginalis** Pk., Rep. New York State Mus. 39: 52. 1886.


This is Melanconis marginalis (Pk.) Wehm. (Papers Mich. Acad. 6: 382. 1926). The type of *D. nivosa* is also this species of Melanconis.

Hosts: *Alnus tenuifolia*; *A. viridis*.

Distribution: Idaho; Michigan; New Hampshire; New York.

Exsiccati: (Diaporthe nivosa) Ell. and Ev., N. A. F. 2535 (authentic).

Collections: (Diaporthe marginalis) N. Y. M. Herb., Elizabethtown, May, 1885; Peck (type); Weh. Herb., Wehmeyer 181, Boundary Co., Idaho, 1922; Wehmeyer 181 a, Mt. Adams, New Hampshire, June, 1927.

**Diaporthe Maydis** (Berk.) Ell., North Am. Pyr. 452. 1892.


Material from Berkeley's herbarium, from Ohio, proves to be a Diplodia as given by Saccardo (Syll. 3: 373). It appears on the surface as papillate ostioles surrounded by a blackened area of the bark surface, caused by the underlying pycnidia, which are 400 x 160 μ. The spores are long-cylindric, sometimes slightly curved, two-celled, brown, and 21.5-30 x 4-5.5 μ.
THE GENUS DIAPORTHE

Host: *Zea Mays*.
Distribution: Ohio.
Collections: Kew Herb. (Berkeley Herb.), 1879, Ohio.

**DIAPORTHE MEDUSINA** (Fr.) Sacc., Syll. 2: 687. 1882.

*Sphaeria medusina* Fr., Elench. Fung. 2: 75. 1828.

Fries' type of *Sph. medusina* shows only a sterile fungus. There are numerous minute fascicles of threadlike strands of interwoven heavily blackened hyphae which radiate from erumpent ectostromata, imitating ostiolar necks, but these are entirely sterile and appear to be a parasite upon the ectostromata or some abnormal development. There is a heavy dorsal blackening on the bark surface. Only a few immature perithecia were seen. It appears to be a sterile *D. eres* parasitized by some other fungus.

Host: Platanus.
Distribution: France.

**DIAPORTHE MEGASTOMA** Ell. & Ev., in Ellis Herb. 1903.


Host: *Cornus alternifolia*.


The type of this species is a Gnomonia rather than a Diaporthe. The perithecia are scattered singly just beneath the periderm and are 320-480 x 200-320 μ. They are erumpent separately as elongated, fine-sinuous ostioles. There are no blackened zones in the substratum. Asci broad-clavate, 67 x 20-22 μ. Spores two- to three-seriate, long fusoid-cylindric, two-celled, hyaline, constricted at the septum, four-guttulate, 38-40 x 6-7 μ.

Host: Desmodium.
Collections: N. Y. G. Herb., Ellis Coll.; ex A. Commons Herb. 2309, July, 1893 (type); Ev. Herb., 321, Wilmington, Delaware (Commons 2309).
EXCLUDED SPECIES


The original description of this fungus is a combination of the old decayed stromata of Diaporthe acerina and a second fungus, the perithecia of which are to be found on the bark surface of these stromata. These are perithecia of a Didymella or Myrmaecium (near Diaporthe subaquila?) and occur singly or in small groups of 2–5. They are thick-walled and contain numerous paraphyses and large clavate asci. Spores curved, fusoid-ellipsoid, hyaline, two-celled, four-guttulate, 27–33 × 6–8 μ.

Host: Acer saccharum.
Distribution: Ontario.


This species name is preceded by D. minuta Nit. (1867). Type material of this fungus deposited in the New York State Museum shows a Diaporthe with a dorsal zone visible through the periderm and spores 8–12 × 3–5 μ. This, however, is not the fungus as given in the original description. The fungus as originally described was found on material from Dearness. This proves to be a pleosporaceus fungus, probably a Didymella, with scattered perithecia, numerous paraphyses, and two-celled, hyaline spores measuring 15–17.5 × 2.5–3.5 μ.

Host: Ceanothus americana.


This species is Melanconis xanthostroma (see D. bitorulosa, p. 247).

Host: Carpinus Betulus.


Fuckel's Fung. Rhen. 2661 of this species shows numerous punctate black dots on the surface, which are the barely erumpent ostioles of scattered, separately erumpent perithecia with thick coriaceous
walls. There are no blackened zones in the substratum. Asci long-cylindric with a short-stipitate base. Spores uniseriate, ellipsoid, brown, two-celled, constricted at the septum, 12-15 × 5.5-6.5 μ. This has the appearance of a Valsaria, but has separate perithecia. Petrak (Ann. Myc. 21: 329) has placed this species in the genus Amphisphaeria as A. millipunctata (Fck.) Petr., but these perithecia are definitely sunken in the substratum with merely the ostioles erumpent (see Petrak for fuller synonymy).

Host: Corylus avellana.
Distribution: Switzerland.


*Diaporthe nigro-annulata* Kze. is given as a synonym of *D. decipiens* in Kze., Fung. Sel. 122. The fungus is *Melanconis hyperopia* (see *D. hyperopta*, p. 254). This species is also given in De Thûm., Myc. Univ. 2063 as a synonym of Cryptospora nigro-annulata, but this fungus is *Melanconis xanthostroma*.

Host: Carpinus Betulus.
Exsiccati: (Diaporthe decipiens), Kze., Fung. Sel. 122 (type).


This is the same as *Diaporthe marginalis* (see p. 259), which is *Melanconis marginalis* (Pk.) Wehm.

**Diaporthe occultata** (Fr.) Sacc., Syll. 1: 675. 1882.

*Sphaeria occultata* Fr., Elench. Fung. 2: 72. 1828.

Material from Fries' herbarium labeled "*Sphaeria occultata?*" shows only the immature condition of some Cryptovalsa. It has scattered perithecia 320-480 × 320 μ, erumpent as small disklike ostioles and lying in an effuse stroma with a dorsal blackening along the bark surface which dips into the wood at the margin of the fruiting area. This fits Fries' description very well, and since no spore characters were given, Saccardo's placing this in the genus Diaporthe was a mere guess.
EXCLUDED SPECIES

Host: Syringa sp.
Distribution: Sweden.

**Diaporthe Ostryae** Dear., Myc. 18: 246. 1926.

Diaporthe ostryigena Ell. & Ev., non Ell. & Dear., in Ell. and Ev., N. A. F. 3430. 1896.

Type material from Dearness proves this species to be one of the smaller-spored forms of Melanconis hyperopta (see Diaporthe hyperopta, p. 254).

Host: Ostrya virginiana.

**Diaporthe ostryigena** Ell. & Ev., in Ell. and Ev., N. A. F. 3430. 1896. (See Diaporthe Ostryae, above.)

Host: Ostrya.
Collections: Ell. and Ev., N. A. F. 3430.

**Diaporthe Oudemansii** Sacc., Syll. 1: 611. 1882.

Valsa Aesculi (Fck.) Oud., M. M. Neer. 2: 61. 1873 (Arch. Neer. 8: 61).

Oudemans gives Cryptospora Aesculi Fck. (Cryptodiaporthe Aesculi) as a synonym of his Valsa Aesculi, but his plates show spores which are cylindric to allantoid and sometimes uniseptate and are obviously not those of a Diaporthe. Saccardo, merely on the strength of the two-celled spores, described this as a new species of Diaporthe. If a Diaporthe it is probably Cryptodiaporthe Aesculi as given by Oudemans.

Host: Aesculus.
Distribution: Holland.

**Diaporthe parasitica** Murr., Torreya, 6: 189. 1906.

Now Endothia parasitica (Murr.) P. J. & H. W. And.

Host: Castanea dentata.


According to Von Höhnel (Sitz. Akad. Wiss. Wien, 115: 1256), the type of this species consists of old decayed stromata without a trace of the fungus described, and the species should be eliminated.
THE GENUS DIAPORTHE

Host: Pinus sylvestris.
Distribution: Luxemburg.

DIAPORTHE PLATANOIDES (Pers.) Höhn., in Höhn. Herb. (See Ber. deut. bot. Gesell. 35: 252. 1917.)

This is Pseudovalsa platanoïdes (Pers.) Wint., which Von Höhnel considered a four-celled Diaporthe (?).

Hosts: Acer platanoides; A. spp.


Type material (Myc. March. 4424) shows a fungus that should be placed in the genus Gnomonia. There are minute papillate swellings on the surface caused by the perithecia, which measure 240-280 × 80-120 μ, and are scattered singly just beneath the periderm. Ostioles short-cylindric. There is scarcely any dorsal blackening, and there is no ventral zone. Asci 35-45 × 7-8 μ. Spores oblong, not constricted, one-celled, apparently immature, 8-10 × 2-3 μ. Rehm in his description states that there is a scarcely visible line within the substratum and that the spores are finally three-septate. No line was seen in this material, and it seems extremely doubtful whether the spores are ever three-septate. It resembles D. Arctii, but is smaller throughout and shows no blackening of the substratum.

Host: Polygonum aviculare.
Distribution: Germany.


Rehm states that his material from Atkinson contains only undeveloped perithecia. Nomen nudum.

Host: Prenanthes sp.
Distribution: New York.

DIAPORTHE RACEMULA (Cke. & Pk.) Sacc., Syll. 1: 691. 1882.


This species is not a true Diaporthe. It has a peculiar structure which makes its generic position difficult to determine and may rep-
EXCLUDED SPECIES

represent a new generic type. It appears on the surface as minute fusoid, conic pustules with a small central blackened disk, consisting of the fused ostioles. Where the periderm is exfoliated the perithecia adhere to the periderm or remain on the bark surface as a fused cluster of flattened perithecia. The perithecia are formed on the bark surface and become fused together into a more or less complete, blackened, leathery stroma measuring 680–800 × 280–400 μ and composed of dark thick-walled pseudoparenchyma with an outer blackened crust. The perithecial locules are more or less circinately arranged about the central erumpent disk and measure 150–175 μ in diameter. The cells about these locules are flattened peripherally to form a wall, and the ostioles are apparent as canals of lighter-colored cells converging toward the central erumpent disk. No paraphyses apparent. Asci clavate, with a refractive ring in the apex, 35–45 × 5.5–8 μ. Spores biseriate, fusoid-ellipsoid, two-celled, hyaline, constricted at the septum, often somewhat inequilateral or bent, 8–10 × 2–3 μ.

Host: Epilobium angustifolium.


Collections: N. Y. M. Herb., Lower Ausable, 1873, Peck (type); Aden Lair (130 S), Peck; Weh. Herb., Wehmeyer 374, Wolfville, Nova Scotia, June, 1926.


The small remnant of this species (never published) which was seen was a Gnomonia (or Gnomonina). It appears on the surface as small punctate, black dots, which are the barely erumpent ostioles. The perithecia are scattered singly and are 360–480 × 240–320 μ with short, stout ostioles. Spores small, two-celled, fusoid-ellipsoid, somewhat curved or inequilateral, 6.5–7.5 × 2–2.5 μ.

Host: Rosa sp.

Distribution: Pennsylvania.


Diaporthi RIBESIA Rehm, Oest. bot. Zeitschr. 54: 82. 1904.

The type of this species is a typical Melanconis with white disk. It appears on the surface as conic pustules with a central elliptic, white to grayish disk containing 3–8 hemispheric to conic ostioles, usually erumpent about the margin of the disk. Perithecia circinate, 400–640 × 320–400 μ. No blackened zones present. Asci 60–70 ×
15–18 μ (according to Rehm). Spores oblong-ellipsoid, two-celled, hyaline, constricted at the septum, 14–17.5 × 5.5–6.5 μ.

Rehm gives the spores as having bristle-like appendages 5 μ in length. These were not seen, but may very well be present in some cases.

Host: *Ribes saxatalis*.

Distribution: Tirol.

Collections: Riksmuseet, Stockholm, Rehm Herb., Oetz Thal (Tirol), Sept., 1888 (type).

**Diaporthe rostellata** (Fr.) Nit., Pyr. Germ. 298. 1867.

*Sphaeria rostellata* Fr., Syst. Myc. 2: 476. 1823.

*Sphaeria Rubi Mart., Flor. Erlang. 487.

*Sphaeria clavus* Schm., sec. Fr.

*Diaporthe Rubiae* H. Fabre, Spher. Vaucl. 46. 1880.


This species should be placed in the genus *Gnomonia*. The perithecia are thickly but singly scattered. They are formed in the upper bark layers and are often densely crowded with the long-filiform ostioles separately erumpent. There are no blackened zones in either bark or wood, and there is no stromatic development. Spores (12)13–17.5 × 2.5–4 μ, fusoid-ellipsoid, straight or somewhat curved, two-celled, hyaline, often somewhat mucronate at the tip.

Hosts: *Rubus caesius*; *R. idaeus*; *R. odoratus*; *R. villosus*.

Distribution: Austria; England; France; Germany; New York.


**Diaporthe Rubi** (Mart.) Rehm, in Höhn. Herb. A 4051(7014) (f. appendiculata).

Von Höhnel's material labeled as above is *Gnomonia (Diaporthe) rostellata*. 
**EXCLUDED SPECIES**

Host: *Rubus fruticosus.*  
Distribution: Austria  
Collections: Höhn. Herb. A 4051 (7014), Neufriedenheim, Dr. Rehm.

**Diaporthë Rubiæ H. Fabre, Spher. Vaucl. 46. 1880.**  
This species is *Gnomonia* (*Diaporthë*) *rostellata*; see p. 266.  
Host: *Rubus peregrina.*

**Diaporthë stictostoma* (Ell.) Sacc., Syll. 2, Add. xlviii. 1883.**  
Type material of this species shows it to be a Cryptospora. Ellis originally described the spores as being slightly constricted, with four guttulae and measuring 11–13 × 4–4.5 μ, which agrees with the type (spores 12.5–14.5 × 3.5–4.5 μ), except that no guttulae are now visible, and no constriction was seen. There are no blackened zones in the substratum, and there is a well-developed ectostromatic disk which is grayish rather than olivaceous, as given by Ellis.  

Host: *Amelanchier canadensis.*  
Distribution: Iowa.  

**Diaporthë subaquïla* (Berk. & Curt.) Sacc., Syll. 1: 611. 1882.**  
*Melogramma subaquilum* Berk. & Curt., Grev. 4: 98. 1876.  
This is a *Myrmaecium* (*M. subaquilum*) as given by Ellis. The perithecia are 400–500 μ in diameter and crowded loosely together in groups on the bark surface. They are erumpent as a cluster of ostioles or throw back the periderm and become exposed as erumpent-superficial perithecia. Paraphyses numerous, filiform. Asci clavate to clavate-cylindric. Spores fusoid-ellipsoid, two-celled, hyaline, strongly constricted, with two large oil globules in each cell, 23–25 × 6–7 μ.  
Host: *Acer striatum.*  
Distribution: Massachusetts.
THE GENUS DIAPORTHE

Collections: (Sphaeria subaquila) Curtis Herb., 459.17.1, Stockbridge, Massachusetts, Aug., 1851 (authentic).


Valsa flavo-virens Otth, in Nit. Herb.


Discodiaporthe sulphurea (Fck.) Petr., Hed. 62: 291. 1921.

This species is a Melanconis as finally given by Petrak. It shows a continuation of the range of M. hyperostra and M. xanthostroma. It has spores usually longer than those of either of these species; they have the thick gelatinous walls of M. xanthostroma, but the acute tips of M. hyperostra. The circular or laterally elongated disks are blackish to dark olive-green. The perithecia are circinately arranged, 320–640 × 320–440 μ, collectively erumpent through the disk, and often with an amount of olivaceous stromatic development about them in the bark. There are no blackened zones in the substratum. Asci clavate, 85–108 × 10–15 μ. Spores biseriate, two-celled, hyaline, fusoid-ellipsoid with acute tips, often inequilateral, scarcely or not at all constricted, 17.5–27 × 6–9.5 μ, sometimes with faint vestiges of caplike appendages at the ends.

Host: Corylus avellana.

Distribution: Austria; Germany; Poland; Switzerland.


As has been stated by Von Höhnel (Ber. deut. bot. Gesell. 35: 249), the type of this species is plainly Melanconis thelebola (Fr.) Sacc. (Pseudovalsella thelebola (Fr.) Höhn.), and is on Alnus, not Sorbus.

**EXCLUDED SPECIES**

**Diaporthe thelebola** (Fr.) Sacc., in Myc. Ven. 224. 1874 (Syll. 15: 116. 1901).

This species is given in *Myc. Ven.* 224 as *D. thelebola*, but is *Melanconis thelebola*, as pointed out in Syll. 15: 116.

**Diaporthe tosta** (Berk. & Br.) Niessl, Hed. 14: 131. 1875.

Didymella tosta (Berk. & Br.) Sacc., Syll. 1: 556. 1882.

The blackening of the bark surface in some cases is the only reason for placing this species in the genus Diaporthe. It is a typical Didymella with singly scattered, papillate, prominent, often fused perithecia; long-cylindric asci, 70–85 × 6–8 μ; hyaline, filiform paraphyses; and uniseriate, broad fusoid-ellipsoid, inequilateral, hyaline, non-constricted spores measuring 10–14 × 3–4 μ, one-celled at first, becoming two-celled.

This species is often associated with a similar one, *Didymosphaeria fenestranse*, with larger perithecia and constricted spores, 19–23 × 8–10 μ.

Sphaerella Fuckelii Pass. is the same as *D. Epilobii* Fck. (spores slightly broader, 12–14 × 4–5 μ, in type). *Didymella* and *Didymosphaeria* Fuckeliana are based on *Sphaerella* Fuckelii.

The description and all exsiccati of *Sphaeria tosta* that have been seen are of this same species.

The *Sphaeria Epilobii* of Fuckel (*Fung. Rhen. 2020*) is *Didymosphaeria fenestranse*, as are *Didymella Epilobii* (Fck.) Sacc. and *Gnomonia Epilobii* (Fck.) Auers.

The *Sphaeria tritorulosa* of Berkeley and Broome is probably not *D. tosta*. Von Höhnel suggests that this may be *Gnomonia riparia* Niessl. In 1875 (Hed. 14: 131) Niessl pointed out that the *Sph. tritorulosa* issued in Plowr., *Sphaer. Brit. II*, 82, should belong in the genus Diaporthe. This exsiccatus is *Sphaeria tosta*, and this species.

**Hosts:** Epilobium angustifolium; E. Dodonaei; E. hirsutum; E. montanum; E. spicatum.

**Distribution:** Belgium; England; France; Germany; Italy; Poland; Switzerland.
THE GENUS DIAPORTHE

(Sphaerella Fuckelii) Erb. critt. ital. II, 645.
(Didymella tosta) De Thüm., Myc. Univ. 2262; Roum., Fung. Gall. 3958 (pro parte), 3761, 5034; Petr., Fung. Pol. 375.

Collections: (Sphaeria tosta) Kew Herb. (Berkeley Herb.), 1879, Rudloe, Feb., 1843 (sheet 4398) (type).


As has been pointed out by Dearness on material sent to the writer, this should be a Gnomonia (Gn. Triostei (Dear. & House) Dear. in litt.). The ostioles are barely erumpent. The perithecia are 240-320 x 160-240 μ, scattered singly or occasionally in loose groups. Where two perithecia lie adjacent there is sometimes a slight blackening between them, showing a tendency toward zone formation, but there are no other blackened zones present. Asci clavate, 35-50 x 6-7 μ. Spores biseriate, long spindle-shaped, two-celled, hyaline, tapered at the ends, 15-18 x 2.5 μ.

Host: Triosteum aurantiacum.


DIAPORTHE UMBRINA Jenkins, Journ. Agric. Res. 15:593. 1918.

This species, which is described as causing a canker of roses, is not a true Diaporthe, since the spores are usually one-celled and only occasionally “pseudo-septate.” It forms definite, light brown, conic ectostromata within which conidial locules often arise. The perithecia are 100-290 μ in diameter, clustered beneath the ectostroma, through which they are erumpent collectively as short, stout ostioles. There is often a development of entostromatic hyphae about the perithecia, but there are no blackened zones present. Asci clavate, 30-50 x 6.5-10 μ. Spores biseriate, ellipsoid, one-celled or pseudo-septate, hyaline, 8-11 x 2.5-4 μ. It is a primitive type of the genus Cryptospora.
EXCLUDED SPECIES

Hosts: *Rosa* spp.
Collections: B. P. I. Path. and Myc. Coll. 1495.

**Diaporthe vacillans** (De Not.) Sacc., Syll. 1: 694. 1882.

Sphaeria vacillans De Not., Sfer. ital. 66. 1863.

Although no material of this species has been seen, the description and figures given by De Notaris are those of a Leptosphaeria. The perithecia are given as being in linear series, sometimes fused together and partly erumpent with short, mammillate ostioles. De Notaris states that fully mature spores were not found. Those seen were fusoid, elongate, four-guttulate (septate?), torulose (constricted at septa?) and 25 μ long. His figures show spores with constrictions between the guttulae, suggesting septa.

Hosts: Herbaceous stems.

**Diaporthe Vitis** Ell. & Ev., in Ev. Herb. 2.33. 1895.

This species was apparently never published. It is not a Diaporthe but one of the Massariaceae, probably immature. The perithecia are 320–400 μ in diameter and irregularly scattered or in dense clusters, and often more or less united by a dark-colored entostromatic tissue. No blackened zones in wood or bark. Ascii long-clavate with a tapering base. Spores fusoid-ellipsoid, two-celled, hyaline, constricted, thick-walled, 23–27 × 5.5–6.5 μ.

Host: *Vitis* sp.
IX. SPECIES NOT SEEN

MATERIAL of the following species was not available for examination. Without authentic material many of them are difficult to place. The original descriptions and occasional pertinent remarks are, therefore, all that are given here.


Stromate ramos corticatos late ambiente et superficiem parum infuscante, linea nigra tortuosa per lignum immutatum excurrente limitato; peritheciis ligno immersis, globulosis, majusculis, ½ mill. diam., ostiolis peridermium perforantibus et vix superantibus, obtusis; ascis clavato-cylindraceis, 70-80 x 10 μ, apice rotundatis, breve crasse stipitatis, apophysatis, octosporis; sporidiis distichis oblongodidymis, 15 x 5 μ, utrinque obtusiusculis, 4-guttulatis, hyalinis.

Probably similar to *D. eres*.

Host: *Melia Azederach*.

Distribution: Italy.


Euporthe; perithecio ligno denudato non v. vix infuscato omnino immersa, globosa minuta membranacea, ostiolo carbonaceo vix exerto coronata; ascì subcylindracei breviter crasse pedicellati octospori; sporae distichae subcylindraceae subparvae ad medium 1-septato-constrictulae hyalinae, loculis aequilongia bigutulatis obtusis.

Obs. Esta especie, por sus caracteres periteciales y esporales, es una *Diaporthe*, pero por sus ascos difiere muchísimo. Los peritecios no son visibles sino cortando capas tangenciales del substrato, apareciendo entonces como pequeños globitos parduzcos (100-120 μ diam.), llenos de substancia incolora mucilaginosa, escóndidos en la madera; los ascos casi cilíndricos, ofrecen un ápice obtuso con gruesa membrana y en la base se adelgazan en un grueso y corto pedicelo (65-70 × 10-12 μ) acompañados de algunos parafises filiformes, conteniendo cada uno 8 esporas; las esporas son casi cilíndricas ó ligeramente bicónicas, obtusas en ambos extremos (14-15 × 4-5 μ) con un
SPECIES NOT SEEN

tabique con ó sin extrangulación, que las divide en dos células de igual longitud y con dos gruesos núcleos cada una.

The large cylindric asci suggest a Didymella.

Host: *Lobelia salicifolia*.

Distribution: Chile.


Tetrastaga, cortice infuscato infossa densiuscule gregaria, ascis sporisque minoribus.

Obs. Perithecia numerosissima conferta corticem ramulorum vix infuscatum latissime ambientia, globosa (100–120 μ diam.), ostiolo non v. vix papillato, matricis superficiem attingente, coronata; asci e fusoide subclavulati (45–50 × 7–8 μ) citissime decidui, apara-physati octospori; sporae distichae e cylindraceae subfusoideae utrinque obtusiusculae (12–14 × 3–4 μ) medio 1-septatae non v. lenissime constrictae hyalinae, loculis subaequalibus biguttulatis.

*D. eres?*

Host: *Abutilon sordidus*.

Distribution: Argentina.


Tetrastaga: perithecia sparsa subglobosa mediocria, cortice fere immutato immersa, saepius ostiolo breviter crasque papillulato vix prominulo delatata; membranacea fuscidula, contextu indistincto; asci subfusoidei mediocres octospori sessiles mox decidui apara-physati, octospori; sporae mediocres, medio 1-septato-constrictulae, loculis lenissime 2-cingulatis v. coarctatulis grosse 2-guttulatis, laeves, hyalinae.

Obs. Las ramas afectadas no ofrecen caracteres específicos manifestos y sólo unas pocas y pequeñas protuberancias esparracidas, debajo de cada una de las cuales anida un peritecio totalmente emplantado en el tejido cortical, el cual permanece en absoluto inalterado; los peritecios son casi globosos (250 μ diam.), membranasos delgados, de color pardusco, de textura no aparente, y coronados por un pequeño ostiolo papiliforme más resistente, coriáceo y negro, que es el que levanta y perfora la superficie de la corteza; toda la cavidad peritecial se halla rellena de una substancia gomosa
THE GENUS DIAPORTHE

blanquecina, constituida por una infinidad de ascos que parecen sueltos y libres, fusiformes ú oblaneolados (50-55 x 10 μ), sin paráfises y con 8 esporas cada uno, distribuidas oblicuamente en dos hileras longitudinales; las esporas son casi fusoides (15-16 x 4 μ), agudamente redondeadas en ambos extremos, lisas e incoloras, con un tabique y una estrangulación bastante marcada al medio, quedando divididas en 2 células cónicas opuestas, cada una con 2 grandes vacuolos y con dos leves enangostamientos poco aparentes.

Host: Aetoxicon punctatum.

Distribution: Chile.


Preceded by D. affinis Sacc. and changed to D. Vogliniana Sacc. & Trott. See that species for description.


Stromate ramulos corticatos hinc inde ambiente et superficie nigrificante; peritheciis gregariis globulosis, ½ mill. diam., cortice nidulantibus, ostiolo breve papillato, epidermidem parum excedente; ascis fusoides, utrinque obtusiusculis, 50-60 x 7 μ, aparaphysatis, octosporis; sporidiis distichis fusoides, saepe curvulis, medio constricto-septatis, 14-16 x 3-4 μ, 4-guttulatis, hyalinis.

Probably a form of D. Arctii.

Host: Lotus corniculata.

Distribution: Italy.


Euporthe, parva, matrice nigrificata hinc inde gregaria subseriata, vix ostiolato-producta, ascis sporisque minoribus.

Obs. Matrix hinc inde extus late sordideque infuscata, intus subdealbata linea nigra angusta sinuosa per cursa; perithecia in maculis gregaria relaxata v. conferta, matrice infossa, globulosa (120-150 μ diam.), tenui membranaceae olivacea, sursum prominula atque ostiolo carbonaceo saepius breviusculo armata; asci fusoides, a strato proligero mox secedentes (45-50 x 8 μ), aparaphysatti octospori; sporae distichae ellipticae medio 1-septato-constrictae, loculis subaequalibus hyalinis grosse biguttulatis (10-12 x 4 μ).

Appears to be an immature D. Arctii.
Host: *Amaranthus chlorostachys*.
Distribution: Argentina.

**Diaporthe anisomera** Sacc. & Scalia, Harriman Alaska Exp. 5: 30. 1904:

Stromatibus gregariis, corticolis, erumpentibus, ambitu suborbicularibus, convexit, 1.3-1.5 mm. diam., intus ligneo-pallidus; peritheciis 10-20, globosis v. mutua pressione irregularibus, 200-250 μ diam., monostichus, ostiolis breve cylindraceis, parum emergentibus, apice rotundatis; ascis fusioideo-clavatis, apice obtusis, deorsum tenuatis, 80-90 × 11-13 μ, octosporis; sporidiis distichis, obovatis, 14-17 × 5-5.5 μ, infra medium septatis, non constrictis, farcis, hyalinis et initio strato mucoso inaequali obductis, articulo superiore fere duplo majore.

Etsi matrix non certa, species videtur distinguisha ob sporidia eximie anisomera.

The unequally two-celled spores would place this species in the genus Apioporthe.

Host: *Corylus sp.?*
Distribution: Alaska.


Euporthe, peritheciis minutis cortice immersis, ascis sporisque minoribus.

Obs. Matrix immutata sed intus lignum sub peritheciis dealbatum; perithecia cortice omnino immersa e globosa depressa membranacea olivacea (120-160 μ diam.), ostiolo vix papillato exertoque coronata; ascis fusioidei max decidui (45-50 × 8 μ) a paraphysati octospori; sporae distichae e cylindraceae subfusioideae utrinque obtusiusculae (12-13 × 3 μ) medio 1-septatae non v. vix constrictae, grosse 4-guttulatae, loculis aequalibus.

Apparently *D. eres*.

Host: *Anona Cherimolia*.
Distribution: Argentina.


Euporthe; stromata plus minusve late effusa, in ramis denudatis maculas extus irregulariter elongata, strictas (1-2” × 1-2” tumidulas
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atras subcrustosas, intus pallescentes v. albas linea tenuissima candida limitatas efficiencia; perithecia densiuscule constipata subseriata ligno immersa subprominula globulosa (400-450 μ) tenui membranae fusca, contextu parenchymatico oblongo subimperceptuo donata, ostiolo minuto obtuso brevissimo non v. vix papillulato coronata; asci fusoidei, antice obtuse rotundati, postice attenuato-acutati (40–60 x 10–14 μ), octospori, aparaphysati; sporidia oblique disticha, elliptica utrine obtuse acutata (14–15 x 5–6 μ) medio 1-septata lenissime constricta, loculis non v. grosse 2-guttulatis, hyalina.

Probably of the D. Arctii or D. eres group, although the spores are slightly larger than those commonly found in those species.

Host: Pernettya mucronata.
Distribution: Tierra del Fuego.


Stromate effuso caulis superficiem nigrificantem, zona nigra infra-limitato; peritheciis immerso-prominulis, sparsis lenticularibus | mill. d., ostiolis punctiformibus; ascis clavulatis, subsessilibus, 70–80 x 8, apice lumine bifoveolato, octosporis, aparaphysatis; sporidiis distichis breve fusoidis, curvulis, 14–15 x 4–5, 1-septatis, vix constrictis, 4-guttulatis, hyalinas, utrine obtusiusculis.

A D. Asparagi (Fck.) Nke. certe diversa.

Probably a form of D. Arctii.

Host: Asphodelia.
Distribution: France.

DIAPORTHE ASTERISCINA Speg., Fungi Chilenses, 63. 1910.

Europhtae; peritheciis ligno denudato, extus nigrefacto, immersa globulosa minuta membranacea, ostiolo carbonaceo parum exerto armata; asci subfusoides mox liberi aparaphysati, sporae subcylindraceae parvae hyalinae 1-septato-constrictulae.

Obs. Los tallos infectados, presentan manchas elípticas (2–5 mm. diam.) negruzcas, de bordes indefinidos, en cuyo medio se levantan una ó varias púas negras carbonaceas, que son los ostiíolos de otros tantos peritecios que se hallan escondidos en la madera subyacente, siendo membranosos globulosos (90–110 μ diam.); los ascos son fusiformes (50 x 10 μ) flotantes, sin parafises; las esporas dísticas, cilíndricas ó ligeramente bicónicas, bastante obtusas en cada extremo
(12–13 x 4–4.5 μ) y divididas por un tabique y una ligera estrangulación en dos células de igual longitud, con dos grandes núcleos cada una.

Similar to D. Arctii.

**Host:** Asteriscium chilense.

**Distribution:** Chile.


- Status ascophorus: stromate ramulos, cortice relaxato, hinc inde ambiente, lineaque nigra in ligni superficie et profunditate excurrente limitato; perithecii globulosos gregariis; \( \frac{3}{2} \) mill. diam., ligno infossis, ostioloque vix emergente; ascis fusoidis, 45–48 x 7–8, aparáphysatis, octosporis; sporidiis distintis, oblongo-fusoidis, 14–16 x 3–3.5, constricto-1-septatis, 4-guttulatis, hyalinis.

**Host:** Aucuba japonica.

**Distribution:** Europe.

Conidial connections
- Phoma Aucubae f. ramicola Oud., Contr. myc. Pays-Bas, 14 : 38. 1891.

**Diaporthe australis** Sacc. & Spec., Mich. i : 29. 1877.

- Perithecii sparsis ligno subimmutato immersis v. saltem basi infossis, et tunc cortice parum mutato partim exceptis, linea nigra sinuosa per lignum excurrente, limitatis, globosis; ostiolo cylindraceo vix peridermium superante; ascis fusoidis, 50–60 x 7–10, aparáphysatis, octosporis; sporidiis distinctis v. oblique monostichis breviter fusoidis, 14–16 x 3.5–5, medio constrictis, 3-septatis, septis extimis tenioribus, 4-guttulatis, hyalinis.

If the spores are truly three-septate this is not a Diaporthe; otherwise it seems to fit D. eres.

**Host:** Celtus australis.

**Distribution:** Italy.


- Stroma late et continue ramos ambiens, intime penetrans, linea nigra atque cortice infuscato limitatum; perithecia conflatas, globosas, basi ligno insculpta, epidermide tecta (\( \frac{1}{4} \)-\( \frac{1}{3} \) mill.), extus cinerascentia,
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ostiolo acuto, atro-carbonaceo, robusto, conico, corticem perforante, atque exertiuscula ornata; asci fusoides, octospori (65 x 10), apara-
physati; sporidia disticha, medio 1-septata, non constricta, 4-magni-
gutulata (14-15 x 6), hyalina.

Host: Jussieua longifolia.

Distribution: Argentina.

DIAPORTHE BICINCTA (Bomm. & Rouss.) Syd., non (Cke. & Pk.)

1919.

Perithezien dem Schwammparenchym eingewachsen, mit der Basis das Palisadengewebe erreichend, hypophyll die Epidermis flach pustelförmig vorwölbend, mehr oder weniger dicht gedrängt beisammenstehend, rundlich, ellipsoidisch oder eiförmig, durch gegen-
seitigen Druck mehr oder weniger abgeplattet, oft verbogen und sehr unregelmässig, in trockenem Zustande meist stark zusammenfallend, ca. 150-250 μ im Durchmesser, oben plötzlich in das zylindrische, meist ganz gerade, mehr oder weniger schnabelartig verlängerte, bis ca. 130 μ lange, ca. 50 μ dicke, durchbohrte, innen reich mit fädigen Periphysen ausgekleidete, an der Spitze stumpf abgerundete, punktförmig und oft etwas schief nur hypophyll hervorbrechende Ostiolum verjüngt. Stroma schwach entwickelt, der Hauptsache nach aus den stark verschümmpten, schmutzig und ziemlich hell karmin oder weinrot gefärbten, von subhyalinen oder sehr hell kar-
mninröthlich gefärbten reich verbreiteten, ca. 2-3 μ dicken, zartwan-
digen Hyphen durchzogenen Resten des Substrates bestehend. Peritheciummembran hautig, sich von der Höhlung im Stroma leicht loslösend, ca. 7-10 μ dick, meist aus 3 Lagen von sehr stark zusammengepressten, ganz unregelmässig eckigen, ziemlich dünnwan-
digen, fast opak schwarzbraunen, 6-10 μ grossen Zellen bestehend, auf Querschnitten oft fast konzentrisch parallelfaserig gebaut erscheinninh, innen rasch in eine sehr dünn hyaline faserige Schicht übergehend. Aszi keulig spindelförmig, oben schwach, unten stärker verjüngt, kurz und zart gestielt, dünnwandig, leicht zer-
fließend, 8-spòrig, 36-48 x 6-9 μ. Sporen mehr oder weniger zwei-
reihig, schmal, spindelförmig, beidendig ziemlich stark verjüngt, stumpf zugespitzt, gerade, seltener ungleichzeitig oder schwach
Sichelförmig gekrümmt, hyalin, in der Mitte mit einer undeutlichen Querwand, meist mit 4 in einer Reihe hintereinander stehenden ziemlich undeutlichen Oltropfen, 11–15 × 2.5–3.2 μ. Pseudoparaphysen äußerst spärlich und meist vollständig verschleimt.

Sydow states that the original descriptions of this fungus are composite ones of the Diaporthe and the Endoodothella upon which it is parasitic. From his description of it as having carmine-colored stromata and being parasitic upon a leaf fungus, it seems to be a very doubtful Diaporthe. If it is a Diaporthe the name bicincta is preoccupied by D. bicincta (Cke. & Pk.) Sacc. (1878).

Host: Parasitic on Endoodothella Picramniae Syd. on leaves of Picramnia Bonplandiana.

Distribution: Costa Rica.

**Diaporthe biconica** (Curt.) Sacc., Syll. 11:310. 1895.


Sporidia biconical; endochrome granular or oleaginous, greenish; 0.0011 to 0.0012 inch long; perithecia globose or depressed, few together, arranged in circles, penetrating the bark with their rather short ostiola and forming small pustules (Tab. 48, f. 142).

This seems to be a Melanconis with circinate perithecia.

No host given.

Distribution: England.

**Diaporthe biglobosa** (Cke. & Ell.) Sacc., Syll. 1:642. 1882.

Sphaeria biglobosa Cke. & Ell., Grev. 7:9. 1878.

Epidermide nigrofacta tecta. Perithecii depressis. Ascis cylindraceis. Sporidiis uniseriatis, ellipticis, uniseptatis, forte constrictis, hyalinis, 0.014 × 0.007 mm., cellulis globosis.

Host: Sassafras.

Distribution: New Jersey.


Euporthe, ligno dealbato linea stromatica nigra limitato innata, perithecii majusculis membranaceis, ostiolo carbonaceo non v. vix exerto, ascis fluentibus fusoides; sporis elliptico-biconicis medio-cribus.
Obs. Caules quandoque cortice tecti, quandoque denudati albescentesque, lineis stromaticis nigra tenuibus repando-undulatis eleganter picti; perithecia ligne immersa cortice tecta eaque secedente punctulatim nigro-manifesta globosa (200-400 μ diam.); asci utrinque acuminati (50 × 8-9 μ) octospori; sporae oblique distichae rectae v. leniter ieniter inaequilaterales, utrinque subacutiuscula rotundatae (12-14 × 5-6 μ), ad medium 1-septatae, primo non constricta serius plus minusve coarctatae, hyalinae, loculis aequilongis saepius grosse biguttulatis.

Host: *Boehmeria candidissima*.

Distribution: Argentina.

**DIAPORTHE Bonafidi** Sacc., Syll. 14: 545. 1899.


Peritheciis in soros minutos gregarios subvalseos, quaterno-senis, cortice immutato minute pustulato immersis, globosis, 300 μ diam., ostiolis conoideis vix convergentibus, erumpentibus, contextu olivaceo-fuligineo; ascis cylindraceo-fusoidis, 90-100 × 15, fluxilibus, octosporis, utrinque appendedis curvis circ. 5 × 2 auct.

Proxima *D. affini* Sacc. a qua differt præcipue stromate baud lutescente furfuraceo, ostiolis brevibus ceterisque.

From the description this is a Melanconis, or possibly a Pseudovalsa.

Host: *Ulmus major*.

**DIAPORTHE BRACHYSTOMA** Sacc. & Malbr., Fung. Gall., Ser. 5, No. 2163. 1883.

Stromate effuso, epidermidem decolorante, lineaque sinuosa nigra circumscripto; peritheciis gregariis cortice tectis; lignoque adnatis; globoso-depressis, ½-1 mill. d., nigris; ostiolo brevissimo vix emergente; ascis fusoidis, sessilibus, aparaphysatis, octosporis, 70 × 7; sporidiis distichis ovato-fusoidis, 12 × 3.5, rectis, utrinque obtusisculatis g-guttatis, dein i-septatis, hyalinis. Spermagonis *Phomam Dianthi* sistentibus; peritheciis in macula picae plerumque innatis, epidermide velatis, globoso-depressis; spermatiis ovato-oblongis, 7 × 3, biguttatis, hyalinis, stipitellis filiformibus curvis, 10-12 × 1-2 suffultis.
Hinc *Diaporthe intermedia*, illinc *D. Tulasnei* affinis species.
Except for the long asci this appears to be *D. Arctii*.

**Host:** *Dianthus barbata*.
**Distribution:** France.


*Euporthe; peritheciis gregariis hinc inde 3-5 constipatis minutis immersis, ostiolis carbonaceis longiusculis exsertis; ascis clavulato-fusoides; sporis mediocribus ellipsoideo-fusoides exappendiculatis.*

**Obs.** Stroma late effusum ramulos totos vestiens atque illos colore sordide fusco v. obscure cinerascente tingens; perithecia per totum stromate laxe sparsa hinc inde 3-5 aggregato-constipata, rarius solitaria, globulosa (180-220 μ diam.) ligno immaera, ostiolo cylindraceo carbonaceo longiusculo (500 μ long. x 50-80 μ crass.) exerto nigro opaco glabro sublaevi recto v. vix flexuoso coronata; asci fusoido-clavulati (35-40 μ long. x 8-10 μ crass.) ap paraphysati octospori; sporae distichae ellipsoideo-elongatae v. subconicae utrinque obtusiusculae (13-15 μ long. x 3-4.5 μ crass.) medio 1-septatae leniter constrictae hyalinae.

May be a form of *D. medusaea*.

**Host:** *Broussonetia papyrifera*.
**Distribution:** Argentina.


*Peritheciis sparsis vel sub-gregariis, prominulis, cortice immutato immersis, basi strato stromatico nigra exiguus limitatis, globosis, nigris, ostiolo conoideo pertusis, circiter \( \frac{1}{3} \) mm. diam.; ascis clavatis, basi longe attenuato-stipitatis, octo-sporis, 50-70 x 9-10 μ; sporidiis sub-distichis, cylindraceo-fusoides, obtusiusculis, constricto 1-septatis, 4-guttulatis, 12-14 x 4-4.5 μ utrinque appendiculatis.*

*D. Arctii?*

**Host:** *Camellia japonica*.
**Distribution:** Italy.

**Diaporthe canina** Sacc., *Syll.* 1: 657. 1882.

*Stromate hinc inde maculiformi ligni superficiem atroquinante; peritheciis gregariis ligno dealbato immersis, ostiolis vix emergenti-bus, punctiformibus; ascis fusoides, subsessilibus, 60 x 10 lumine*
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apice 2-foveolato; sporidiis distichis v. oblique monostichis, oblongo-fusoides, utrinque obtusiusculis, constricto-i-septatis, 4-guttatis; 15 × 4, hyalinis.

Paraffinis D. Tulasnei a quae ascis sporidiisque paulo majoribus differre videtur.

This seems to be D. Arctii, or probably D. eumorpha.

Host: Scrophularia canina.
Distribution: Italy.

Stromate ramulos decorticatos longe lateque ambiente et superficie atroinquinante; peritheciis globulosis ½ mill. diam., ligno infossis gregariis, ostiolis nunc punctiformibus nunc breve exsertis; ascis fusoides 60-70 × 10, aparáphysis, octosporis; sporidiis distichis, fusoides, 1-septatis, lenissime constrictis, 15-17 × 3.5-4.5, 4-guttulatis hyalinis.

Host: Capparis rupestris.
Distribution: Italy.

Conidial connections

Phoma Capparidis Pass., Diagn. fung. nuov. 4 : 95. 1889.
Alpha conidia oblong-ellipsoid, 10 × 2.5 μ. Beta conidia 20-25 μ.

DIAPORTHE CASTRIFORMIS (Preuss) Sacc., Syll. 1 : 630. 1882.
In lineis erumpens; stromate conico-obtuso, basi latissimo, crustaceo-dilatato, simplex vel confluentes; subiculum latissime effusum, atrum, intus cinereo-fuscum; disco depresso et margine acuto cincto; peritheciis subglobosis, subaggregatis; ostiolis distantibus, exsertis, spinulosis, scabris; ascis clavatis; sporis octo, fusiformibus, bi- vel tricellulatis, albis.

Host: On frondose stems.
Distribution: Germany.

This seems to be a very doubtful Diaporthe.


Euporthe, peritheciis ligno exsuscissim peritheciis ligno exsuscis sparse immersis, ascis sporidique minoribus sed crassioribus.
SPECIES NOT SEEN

Obs. Ramuli cortice longitudinaliter rimulosa vestiti v. denudati, extus atri intus non v. vix dealbati, linea nigra stromatica late excurrente notati; perithecia minuta globulosa (100-120 μ diam.) ligno profundiuseculae delitescentia, membranacea olivacea, ostiolo carbonaceo parvo superficiem matricis attingente non v. vix exerto armata; asci e fusoidico subclavulati (50–60 × 10–12 μ), cito decidui, aparaphysati octospori; sporae ellipticae utrinque acutiusculae acutatae (12 × 6 μ), medio 1-septato-constrictae, loculis subequalibus grosse 1–2-guttulatis hyalinis.

Similar to D. eres except for the short, broad spores.

Host: Casuarina stricta.
Distribution: Argentina.


Euporthe; peritheciis ligno corticato immersis ostiolo tenui longiusculo exerto ornatis; ascis sporisque minoribus.

Obs. Perithecia globosa (120–150 μ diam.) ligno, intus dealbato extus infuscato, cortice inmutato sed rimoso arcte vestito, immersa, ostiolis carbonaceis rigidulis nigris per rimis corticis longiusculae pro-trudentibus armata; asci fusoides (40–45 × 7–8 μ), mox decidui, aparaphysati octospori; sporae distichae elliptico-fusoideae utrinque obtusiusculae (12–15 × 3–4 μ) medio 1-septato-constrictae grosse 4-guttulatae, loculis aequalibus.

According to Von Höhnel (Ann. Myc. 16: 22), this is merely a form of D. Humboldtiana Speg., a conclusion which seems probable.

Host: Salix chilensis var. pyramidalis.
Distribution: Argentina.


Peritheciis laxe gregariis globosis v. globoso-depressis in cortice immutato nidulantibus, 300–400 micr. diam., ostiolo punctiformi papillato, vix erumpente; contextu peritheciis cellulosio rufo-fulgineo (non olivaceo); ascis fusoides subsessilibus, apice obtusulis luminequeae 2-foveolatis, 45–48 × 7–7.5 micr., octosporis, aparaphysatis; sporidiis distichis, crassiusculae oblongo-fusoideis 10–12 × 3–3.5, medio lenissime constrictis, 4-guttatis apicibus initio subimpressicue mucoso-apiculatis, mox muricis.
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Linea stromatica nigra nulla, hinc, prae ceteris, species diversa a D. disputata.
Host: Thuja.
Distribution: France.


Euporthe, matrice corticata v. decorticata lateque infuscata infossa, peritheciis parvulis ostiolo minuto rostellato armatis, ascis sporisque minoribus angustis.

Obs. Ramuli continue v. interrupte atrati; perithecia minuta globulosa (90-120 μ diam.) membranacea olivacea, ligno omnino immersa, ostiolo carbonacea cylindraceo corticem perforante non v. vix exerto praedita; asc e fusoideo subclavulati (55-60 x 7-8 μ) decidui octospori aparaphysati; sporae distichae e cylindraceo sub-fusoidea (12-13 x 3-4 μ) utrinque obtusiusculae, medio i-septatae non v. vix constrictae, grosse 4-guttulatae, loculis aequalibus.
Host: Cestrum terminale.
Distribution: Argentina.


Stromate linea nigricante limitato; peritheciis solitariis, raro proximaris, immersis, subglobosis, atratris, 220-240 μ latis, collo oblongo cylindraceo obtuso et inaequali erumpentibus; ascis cylindraceo-fusoideis, octosporis, aparaphysatis, 62-66 x 6-8 μ; sporidiis uniseptatas, hyalinis, medio constrictis, 4-guttulatis, oblique monostichis, saepe ad apicem acutiusculis, 12-14 x 5-6 μ.

Obs. Affinis Diaporthe Phoenicis a qua differt substrato, collo peritheciorum longiore, sporidiis crassioribus et medio constrictis. Except for the broad spores this is the same as D. Phoenicis (D. Arctii).
Host: Chamaerops humilis.
Distribution: Italy.


Stroma superficiale, late effusum, lignum denudatum fuliginoe inquinans. Perithecia sparsa, ligno immutato infossa, globosa, ma-
 SPECIES NOT SEEN

tricem subtile inflantia, 1–3 mm. lata; ostiolo elongato, stricto, recto vel deflexo, corticem secedentem perforante.

Asci lanceolati, sessile, 8-spori. Long. 55–70; lat. 7–9.

Sporidia disticha, hyalina, oblonga, utrinque obtusiuscula, medio constricta et tenuissime septata, 4-guttata. Long. 15–18; lat. 4.

Host: Euphorbia Characiadis.

Distribution: France.

This appears to be similar to D. Arctii, but has longer spores, in which respect it is similar to D. palustris Brun. on Euphorbia.


Stroma petit, oblong ou allongé étalé sur les rameaux décortiqués dont il tache de noir la superficie, limité par une ligne noire pénétrant dans le bois. Périthecès noirs, rapprochés, immersés dans le bois, globuleux, à ostiole éruptant à peine. Thèques fusoides, long. 52–60, larg. 7–8, octospores. Sporidies distiques, oblongues-fusoides, 3-septées, non ou à peine rétrécies au milieu, hyalines, long. 12, larg. 3.

If there are three true septa this is not a Diaporthe. If these are merely apparent, owing to the four guttulae, the species is probably D. eres, in spite of the rather long asci. Diedicke (Ann. Myc. 9: 21) gives the conidial stage of this species as Phomopsis Chionanthi (Brun.) Died.

Host: Chionanthus virginica.

Distribution: France.


Euporthe; stromate nigro, nigro-limitato sparso, peritheciiis sparsiis mediocribus ostiolo carbonaceo tuberculoso coronatis, ascis cylindraceis, sporis ellipticis loculis subglobosis.

Obs. Stromata versiformia quandoque minuta quandoque maxima ac totum ramulum obtegentia, saepe cortice velata, atra, linea nigra per lignum excurrente limitata; perithecia instromatibus sparsa v. saepius hinc inde 3–5 aggregata sed non constipata ligno immersa, globulosa (250–300 μ diam.) tenui membranacea nucleo albo farcta, ostiolo crasso plus minusve evoluto saepius breviusculo carbonaceo nigro conoideo-tuberculoso armata; ascis cylindraceis anticae rotundati
postice breviter cuneato-pedicellati (80–100 μ long. × 10–15 μ crass.) aparaphysati octospori; sporae oblique v. transverse monostichae ellipsoideae (12–15 μ long. × 8 μ crass.) utrimque late rotundatae medio-septato-constrictae, loculis subglobosis non v. grosse i-guttulatis, hyalinae.

The spore and ascus measurements and the fact that it occurs upon one of the Rhamnaceae suggest D. fibrosa or a closely related species.

Host: Colletia ferox.
Distribution: Argentina.


Tetrastaga; perithecia stromate corticem fusco-maculosum v. areolas nigro-limitatus efficiens dense gregaria nigro-punctiformia minuta, ascis clavulatis, sporis elliptico-biconicis valde i-septato-constrictis.

Obs. Stromata corticem ambientia, maculas saepius elongatas difformes fuscas v. lineola nigra limitatas efficientia; perithecia in maculis dense gregaria globulousa, in sicco collabescencia minuta (150–200 μ diam.) cortice infossa, epidermide adnata ac illam punctis nigris maculantia, ostiolo vix papillato donata; asci fusioideo-subclavulati antice subtruncati (50–55 μ long. × 7–8 μ crass.) aparaphysati octospori; sporae elliptico-biconicae utrimque obtusae (12–13 μ long. × 3–5 μ crass.) i-septatae, ad septum valde constrictae, loculis grosse biguttulatis saepius medio coarctatulis, hyalinae.
Cum D. Colletiae Speg. non comparanda.

 Probably a form of D. eres.

Host: Colletia ferox.
Distribution: Argentina.


Euporthe; perithecia ligno denudati v. corticato sordide infuscato immersa, vix ostiolato-papillata; asci sporisque sub-minoribus angustis.

Obs. Rami infecti intus immutati extus, cortice vestiti v. denudati, sordide pallideque infuscati; perithecia hinc inde ligno immersa parvula (120–130 μ diam.), membranacea, olivacea, ostiolo car-
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bonacea minuto superficiem matricis attingente sed non v. vix pro-
minulo coronata; asci e fusoido subclavati (55–60 \times 7–8 \mu), mox
decidui, octospori aparaphysati; sporae distichae subfusoidae
utrinue obtusiuscule subacutatae (14–15 \times 3.5–4 \mu), medio 1-
septatae non v. leniter constrictae, grosse 4-guttulatae hyalinae,
loculis subaequalibus.

Host: *Corallodendron Cristae-galli*.
Distribution: Argentina.

**DIAPORTHE**

Stromate ramos primo corticatos late ambiente, dein cortice
secesso, ligni superficiem infuscente v. nigrificante; perithecis ligno,
lineola nigra obsoleta circumscripto, infossis, globulosis, \frac{1}{2} mill. d.
ostiolis cylindraceis peridermium primo perforantibus, parumque ex-
cedentibus; ascis cylindraceo-fusoides, obtusiusculis, 40–50 \times 5,
aparaphysatis, octosporis; sporidiis distichis oblongis, constricto-
1-septatis, utrinque acutiusculis, 4-guttulatis, hyalinis.

Probably a form of *D. eres*.

*Host: Jasminum officinale*.
Distribution: Italy.

Conidial connections

*Phoma jasmina* Cke.


as being filiform-hamate and 18–20 \times 1 \mu.

**DIAPORTHE CYDONIAE**

Acervuli valsei laxe vel crebre erumpentes, pulvinati, parenchym-
mati corticali insidentes. Perithecia subglobose intus albida, ostiolo
obtuso vix emergente. Asci cylindraceo-clavati curvi 8 spori, 100–
112 \times 12; sporae oblique vel subdistichae, oblongo-ovatae, prope
medium septatae, leniter constrictae, loculis inaequalibus haud gut-
tulatis, altero angustiore, hyalinae 17.5 \times 7.5.

Su rametti di Cotogno insieme a *Phoma Cydoniae* Sacc., *Ascochita*
sp., *Rhabdospora* sp., etc.

Host: *Cydonia*.
Distribution: Italy.
THE GENUS DIAPORTHE


Perithecii corticolis, peridermio tectis, globulosis, nunc 5-15 subcircinantis substromate albo-furfuraceo linea nigra cincto exceptis, nunc inaequaliter sparsis et substromate subnullo; ostiolis convergentibus; ascis clavatis, 45-57 X 9-10, p. sporif., octosporis, subsessilibus, aparaphysatis; sporidiis distichis, ellipsoideis, mucronulatis, 1-septatis, constrictis, 12-15 X 4-5.

This is probably a form of D. eres with rather broad spores.

Host: Liriodendron Tulipifera.
Distribution: Belgium.

Conidial connections
Grove describes the alpha conidia as ellipsoid and 7-9 X 2 μ. Rhodes (loc. cit.) has reported hamate beta spores, 20 X 1 μ.


Stromate breviter hinc inde per lignum immutatum excurrente linea tortuosa infra limitato, stratoque exteriore corticali v. ligneo tandem atroinquinato, perithecii ligno immersi subglobosi, ½ mill. diam., ostiolo cylindraceo, brevi peridermum vix superante; ascis fusoido-oblongis 50 X 8-9, 8-sporis; sporidiis distichis, oblongis, 12-14 X 3.5-3.75, utrinque rotundatis tenuiter 1-septatis, 4-guttulatis, hyalinis.

Obs. D. crypticae Nit. affinis.

Host: Clematis vitalbae.
Distribution: Italy.

Conidial connections
Saccardo gives the conidia of this species as ovoid and 6 X 2.5 μ and the "basidia" as filiform-hamate, and 20 X 1 μ.


Euporthe; stromate latissime effuso nigro, perithecii laxe gregariis immersis minutis ostiolis carbonaceis gracilibus exertis, ascis fusoido-clavulatis, sporis subfusoido-cylindraceis utrinque obtusis, medio constrictulis.

Obs. Stromata latissime per matricem excurrentia ac ejusdem superficem nigerrimam efficientia; perithecia ligno immersa globulosa
**SPECIES NOT SEEN**

(180–220 $\mu$ diam.) tenuiter membranacea ostiolo carbonaceo rostelliformi longiusculae exerto gracili (250–300 $\mu$ long. $\times$ 60–80 $\mu$ crass.) coronata; asci fusoideo-clavulati (50–55 $\mu$ long. $\times$ 8 $\mu$ crass.) octospori apaphysati; sporae oblique distichae fusoido- v. biconico-ellipsoideae, utrimque obtusiusculae (10–13 $\mu$ long. $\times$ 3–4 $\mu$ crass.) medio 1-septato-constrictulae, loculis grosse biguttulatis medio co-arctatulis, hyalinae. 

Seems to belong to the *D. Arctii* group.

Host: *Dickia* sp.

Distribution: Argentina.

**Diaporthe Digitifera** Mout., Bull. Soc. roy. de bot. Belg. 28: 75. 1889.

Stroma sub epidermide non mutato ambiens, corticis superficiem nigricans, et in ligno linea nigra limitatum. Perithecia cortici immersa, subglobosa, $\frac{1}{4}$ mm. lata, colis usque triplo longioribus, erumpentibus, a basi leviter artenuatis, curculis. Asci clavati, 8-spori, apice truncati, 110–15 $\mu$. Sporidia cylindrico-oblonga, medio septata et vix constricta, guttulis minutis repleta, 25–32 $\times$ 8.5 $\mu$.

This species has spores much longer than any other species on Sarothamnus. Otherwise, it might be *D. inaequalis*.

Host: *Sarothamnus scoparius*.

Distribution: Belgium.


Pseudostromatibus varie effusis, e cortice subimmutato constitutis, linea tenui atra per lignum excurrente intus limitatum; peritheciis solitaris vel 2–4 approximatis, globulo-so-depressis, $\frac{1}{4}$ mm. circ. diam., in collum breviter cylindraceum vel subnullem productis, ostiolo conoideo vix erumpente praeditis, excipulo indistincte pseudoparenchymatico, atro; asci cylindraceo-oblongis, sessilibus, utrinque attenuatis, apice distincte bifoveolatis, 55–65 $\times$ 7–9; sporidiis distichis, anguste ellipsoideis, medio tenuiter septatis, non constrictis, hyalinis, grosse 4-guttatis, 14–15 $\times$ 4.5.

Status pycnidicus *Phomopsis Diospyri* (Sacc.) Trav. & Migl. in iisdem ramulis copiosus.

Host: *Diospyros Kaki*.

Distribution: Italy.
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Stromate effuso obsolete, linea nigra nulla circumspecta; peritheciis subcutaneis lignoque partim infossis, sparsis, globulosis, diam. \( \frac{1}{2}-\frac{3}{4} \) mill., ostiolis vix extantibus; ascis cylindraceo-fusoides, 80-90 \( \times \) 12-14, apice lumine 2-foveolato, apaphysatis, 8-sporis; sporidiis biconico-fusoides utrinque obtusiusculis 15-20 \( \times \) 5-6, constrictis, 4-guttulatis.

A D. Ailanthi Sacc. stromate haud valseo, ascis sporidiisque majoribus satis superque recedit.

Has larger spores and asci than any other species described on Ailanthus.

Host: Ailanthus.
Distribution: France.

DIAPORTHE DORYCNII H. Fabre, non Sacc., Ann. sci. nat., Ser. 6, 9 : 75. 1878.

Perithecia nunc solitaria, nunc acervulos punctiformes vel lineares efformantia, globosa, flaccida, atra, in corticis parenchymate nigricato nidulantia; ostiolis brevibus, crassis, epidermide rupta cinctis.

Asci lanceolati, brevissime stipati, 8-spori. Long. 60-70, lat. 14-16.

Sporidia subdisticha, oblonga, hyalina, medio constrictula, subtiliter 1-septata, loculis binis 1-magniguttatatis. Long. 15-27, lat. 4-6.

Host: Dorycnium suffruticosum.
Distribution: France.

Petrak's Fl. Boh. et Mor. 1585, of this species, is D. Arctii on Dorycnium and not D. Dorycnii, which has larger spores and asci.

DIAPORTHE DORYCNII (Mout.) Sacc., non Fabre, Syll. 1 : 664. 1882.


Sparsa, entophloea, cuticula nigrescente tecta, tandem decidua foveolas denudatas relinquent. Perithecia subintegra atra, sicca depresso-sphaerica, madida turgescerntia, globosa, diametro quintam millemetri partem metientia, ad librum usque immersa, ad ramuli superficiem tamen nec tahtum colore sed et forma orbiculari aut ellipsoidea exstantia, intus cava, atra, gelatina cinerea repleta. Asci cylindraceo-clavaeformes, hyalini, octospori, 8-10 centimillim.
longi, centimillimetrum crassi, haud pedicellati. Sporae uniseriatae, limpidae, oblongae utroque fine rotundatae, 0.0135 mm. longae, 0.0050 medio crassae, 2–3 nucleolus globosos seriatos foventes.

This appears to be one of the simple Sphaerales and is given by Montagne as near Sph. (Leptosphaeria) sepincola and Sph. (Leptosphaeria) Castagnei.

Host: Dorycnium suffruticosum.
Distribution: France.


Tetrastaga; stromata parum manifesta late per corticem excurrentia; perithecia hinc inde sparsa v. plus minusve dense aggregata, peridermium non v. vix fissum ac pustulato-elevatum tecta, globulosa (300–350 μ) coriaceo-membranacea atra glabra, contextu indistincto opaco, ostiolo carbonaceo vix papillulato coronata; asci fusoid-clavati, antice obtuse rotundati v. subtruncati crasse tunicati bifoveolati, postice attenuati acutato-rotundati sessiles (60–65 × 8–9 μ), octospori, aparaphysati; sporidia oblique mono- v. disticha, elliptica non v. subovata, utrinque obtuse rotundata (12–14 × 3.5–5 μ) recta v. leniter inaequilateralia, medio 1-septata constrictula, loculis (supero non v. vix crassiores) granulosa-farctis saepe minute biguttulatis, hyalina.

Saccardo gave the name Drymidis to D. Winteri Speg., which was preceded by D. Winteri Kze. Although the spores are somewhat too broad, this is probably a form of D. eres.

Host: Drimys Winteri.
Distribution: Tierra del Fuego.

**Diaporthe euryala** (Mont.) Sacc., Syll. 1: 619. 1882.


Pustulae urceolatae cortici Abietis plane immersae, subtus convexae, supra planiusculae, 2 ad 3 lineas latae, lineam sesquilineum altae, haud prominentes. Perithecia quam plurima, subpolysticha, ovato-oblonga, ardosioaceae, in stromate cinereo-olivaceo immersa, collo longissimo instructa, nucleo albo farcta, centralia erecta, peripherica convergenti-erecta, apice in discum conjuncta. Discus planus, latissimus, pluribus interdum confluentibus, atermus, nec nisi
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ostiolis sublatentibus aut annulos referuntibus inaequalibus. Asci lineares, subclavati, \( \frac{1}{2} \) mm. longi, \( \frac{1}{4} \) mm. crassi, sporidia octona oblonga \( \frac{1}{4} \) mm. diametro majori metientia, bilocularia, uniserialia includentes.

The olivaceous stroma and uniseriate spores make this a doubtful Diaporthe.

Host: Abies.


Perithecis cortice immutato tectis, ligno omnino v. ad medium immersis, globosis, nigris linea stromatica nulla manifesta limitatis; ostiolo cylindraceo-conoideo, peridermium vix superante; ascis subclavatis, 80 x 12, subsessilibus, apice subtruncatis lumineque bifoveolato, apaphysatis, octosporis; sporidiis distichis vel oblique monostichis, oblongo-fusoideis, 16-18 x 7-8, rectis, curvulisve, utrinque obtusiusculis, medio constricto-1-septatis, 4-guttulatis, hyalinis.

Host: Chimonanthus fragrans.

Distribution: Italy.


Stroma ramulos corticatos late ambiens per lignum immutatum tortuose excurrens, nigro-limitatum; perithecia globosa, atra totaliter immersa vel subimmersa et parum cortexem tumeantia discreta, rarius subaggregata (\( \frac{1}{4} \) mill. diam.), ostiolo papillato minutissimo, atro, epidermidem vix perforante ornata; asci oblonge fusoidei, apice rotundati crasseque tunicati, luce refracta, bifoveolati (50-55
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× 7–8); sporidia disticha cylindraceo-fusoidea (13–15 × 3–3.5), utrinque obtuse acuminata, medio constricto-1-septata, 4-guttulata, hyalina.

Apparently a form of D. eres.

Host: Metrosideros.

Distribution: Argentina.


Euporthe; stromata plus minusve late effusa in ramis decorticatis, maculas extus atras crustosae undulatas irregulariter lineares (1–5” × 1–3”) flexuosas intus albas linea nigra tenui limitata efficacia; perithecia densiuscula constipata v. subseriata ligno immersa, contextu parenchymatico-sinusuo subindistincto donata, ostiolo carbonaceo elongato longiuscula exerco crassiuscula recto v. flexuoso coronata; asci fusoides, apice stricte rotundato subtruncati, postice acutato-rotundati (60–65 × 10 μ), octospori, aparaphysati; sporidia oblique disticha, elliptico-elongata, utrinque acuta ac strictissime rotundato-subtruncata (18–20 × 5–6 μ) medio 1-septata non constricta, loculis saepe parce coarctatulis non v. grosse 2-guttulatis, hyalina.

Host: Chiliotrichium amelloides.

Distribution: Tierra del Fuego.

**Diaporthe Gillesiana** Speg., Fungi Chilenses, 63. 1910.

Euporthe; perithecia ligno cortice vestito immersa globosa parva, ostiolo cylindraceo carbonaceo corticem perforante, sed non exerto, armata; asci lanceolati fluxiles; sporae distichae cylindraceo-subbiconicae parvae hyalinae, ad septum medium non v. vix constrictae.

Obs. Las ramas infectadas no delatan el parásito que contienen, el cual sólo se puede hallar cortando astillas tangenciales; los periteciios pequeños y globulosos (150–180 μ diam.) de color parduzco, membranosos, llenos de una jalera incolora, se hallan totalmente emplantados en la madera casi inalterada, pero que presenta delgadas líneas estromáticas negras en los límites de la infección; los ostiílos de estos periteciios son cilíndricos negros carbonaceos y pasan á través de la corteza, pero no sobresalen de ella; los ascos fusiformes (50 × 8 μ) flotantes, carecen de parafises y contienen 8 esporas; las esporas son casi cilíndricas ó ligeramente bicónicas,
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bastante obtusas en ambos extremos (14-15 × 3.5-4 µ), divididas
por un tabique sin estrangulación en dos células de igual longitud,
cada una con dos grandes núcleos.

Probably a form of D. erez.

Host: Lithraea caustica.

Distribution: Chile.

DIAPORTHE HEMICYPTA (Dur. & Mont.) Sacc., Syll. 9: 714. 1891.

Sphaeria hemicrypta Dur. & Mont., Flore d’Algérie, 517. 1850.

Peritheciis tectis simplicibus aggregatisque subcircinantisibus glo-
bosis atris ligno semi-immersis collabentibus laevibus in ostiolum
longum angustatis, ostiolis erumpentibus solitariis aut junctis
cylindricis subdivergentibus.

Stroma nullum, nisi lignum immutatum quo démersa est basis
peritheciorum. Perithecia aterrima simplicia, sparsa aut subcircin-
natim aggregata, basi ligno immersa, epidermide ostiolo perforata
tecta, globosa, in siccus subitus collabentia, tertiam millimetri partem
circiter crasse, in ostiolum cylindraceum 125 millimillim. diametro
equantem, obtusum vel acutum perforatum attenuata, tum solit-
taria erecta, tum plura junctim emergentia, basi decumbentia, mox
erecta, epidermidem immutatum perforans et iterum paululum
divergentia, semimillimetro cum ostiolis longiora. Nucleus hyalinus,
gelatinosus. Asci oblongo-subclavati 5 centimillim. longi, 12 ad 13
millimillim. circiter crassi, sporidia octona duplici serie foventes.
Sporidia cymbiformia, hyalina, triseptata, centimillimetrum longa,
0.0025 mm. in medio crassa. Paraphyses?

Hosts: Anagyris foetida; Physalis somnifera; Rhus coriaria.

Distribution: Algiers.


Peritheciis discretis nigris, .5-1 mm. diam., circinantisibus, in
ligno nidulantibus, in collum circa .1 mill. diam., .5 mill. long., parum
e cortice emergens, attenuatis; ascis, anguste ovatis, octosporis,
40-45 × 6-8 micr.; sporidiis oblique monostichis, hyalinis, fusoides,
uniseptatis, 10-13 × 4 micr.

Perithecia distinct, black, .5-1 mm. diameter, in small groups.
Embedded in the wood; neck about .1 mm. diameter,‘up to .5 mm.
long, projecting slightly above the surface of the bark; asci 40-45 ×
6–8 micr. linear oval, eight-spored; spores obliquely uniseriate, hyaline, fusoid, one-septate, 10–13 × 4.

Host: *Hevea brasiliensis*.
Distribution: Ceylon.

**Diaporthë Hippophaës** Bomm., Rouss. & Sacc., Syll. 9: 707. 1891.

Acervulís compactís, subvalseís, sparsís; peritéchiís globulosis, 4–10 aggregátis, rarius solitáriís v. gemmíniís, cortícoliís, línea nigra circumscriptís et epídermide rupta cinctís, ostíolis longís, cylíndraceís, emergentibus, rugulosis, saepe apice curvis, divergentíbus; ascís cylíndraceís vel subfusoideís, 48–64 × 9, octosporís; sporídís bisériáti, cylíndraceís v. fusóideís, obtusiís, brevíssíme mucronáti, 1-septáti, leviter constrictís, 12–16 × 4.5–5, 4-guttáti, hyalínis, plerumque rectís.

Host: *Hippophaë rhamnoideís*.
Distribution: Belgium.

**Diaporthë Humboldtiana** Spec., Anal. Soc. cient. Arg. 10: 139. 1880.

Peritéchia laxé gregariás, fere totum ramulum occupántia, cortíciis immutáto immersa ac eum pustulato-tumefactum efficiéntia, atra, membránacea, contextu dense parenchymatico, ostíolo conico atro carbonáceo non v. vix matrici exerto ornáta (¾–½ mill.); ascí fusíformi-clavátí, apíce obtusiísculi, deorsum acuíscule attenuáti (50–60 × 7–8), octospori, aparáphýsati; sporídía oblique disticha, elongato-elliptíca, utríque acuíscule rotundáta, medio 1-septato-constricta, 4-guttuláta, hyalína (13–14 × 4–5).

According to Von Hohnel (*Ann. Myc*. 16: 122), *D. catamarcensis* Spec. is merely a form of this species, which seems probable.

Host: *Salix Humboldtiana*.
Distribution: Argentina.


Stromaté caules corticatós late ambiente atque parum infuscánta, línea nigra per lignum flexuose exercurrente limitató; peritéchiís ligno infossís, globulosis vix ¾ mill. diam., ostíolis cortícem perforántibus, parumque excedentibus; ascís fusóideís, 45–50 × 8–9, aparáphýsátis, octosporís; sporídís distíchís, oblóngís, 14–15 × 4, utríque obtusiísculi, constrictó-1-septáti, 2–4 guttéllátis, hyalínis.
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Host: *Tagetes hortensium*.
Distribution: Italy.


I — Status spermogonicus: spermagoniis sphaeroideis rugulosis inter corticem lignumque nidulantis, aterrimus, nucleo fusco foe­tis; spermatiis breve fusoideis acutis, 6 x 2.5, crass. 2-guttatis, ste­rigmatibus filiformibus, hamatis, 20 x ½, suffultis.

(Phoma intermedia Sacc., *Syll. Fung.* 3: 131. 1884.)
(Phomopsis intermedia *(Sacc.) Trav., Fl. Ital. Crypt.* 2: 222. 1906.)

II — Status ascophorus: stromate caulem late ambiente per lignum saepe infuscatum profunde ecurrente, linea nigra stratoque ligni extimo atroinquinato circumscripto, cortice permanente, immu­tato v. leniter infuscato; peritheciis globosis atris, ligno immersis, discretis, rarius subaggregatis, ½ mill. diam., ostioloris cylindraceo­conoideis epidermide longiusculè, ut plurimum, superantibus, nunc rectis nunc subobliquis; ascis oblongo-fusoideis, 50 x 6, 8 sporis; sporidiis distichis v. oblique monostichis, oblongo-fusoideis, 12–14 x 3.5–4, medio denique constrictis, utrinque obtusi sulcè acuminatis, 4-guttulatis, hyalinis.

Obs. Ambigit inter *D. immersam* (Fck.) Nke. et *D. orthoceras* (Fr.) Nke. sed *immersae* affinior, a qua peritheciis inordinate dis­positis, ostiologe longioribus differt.

Saccardo's figures (*Fung. Ital.* 1255) are excellent ones of a form of *D. Arctii*, which this species probably is.

Host: *Saponaria officinalis*.
Distribution: Italy.

DIAPORTHE INTERRUPTA (Mont.) Sacc., *Syll.* 1: 617. 1882.


Longitudinaler et interrupte erumpens lineari-lanceolata, nigra, peritheciis ovato-globosis intus nigris instromate ceraceo albo irregu­lariter stipatis, ostioliis vix exsertis rugulosus; ascis subclavatis, sporidiiis oblongis sporidiola globosa includentibus.

Given as similar to *Sph. strumella*, but differing in the light-colored stroma, longitudinally arranged perithecia and small ostioles. The spores figured are one-celled with 3 guttulae and are undoubtedly immature. Nitschke (*Pyr. Germ.* 303) gives this as a synonym of *D. Sarothamni*. 
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Host: *Cytisus scoparia*.
Distribution: France.


A *Diaporthe Lebiseyi* differt: Stromatis exiguis, peritheciis erostellatis, ascís magis elongátis.

Preceded by *D. interrupta* (Mont.) Sacc. and given the new name *D. Tecomae* Sacc. & Syd. in Syll. 14: 550.

Host: *Tecoma radicans*.
Distribution: Portugal.


Euporthe; peritheciis sparsís minutís vix papillato-ostiolatis, stromate late effusá nigro-limitata immersís, ascís fusoideís, sporís parvulis fusoide-cylindrácis.

Obs. Stromata per caules totos excurrentia ad ejusdem superficiem corticatum v. decorticatum fuscescentia v. nigricantia, linea nigra tenuissima limitata; perithécia imbers globulosa (200–220 μ diam.) atra, ostiolo carbonaceo papillato vix exerto ornata; asci fusoide-clavulati (50–55 μ long. × 5 μ crass.) octospori aparaphysati; sporae oblique monostichae e cylindraco fusioideae (10–12 μ long. × 3 μ crass.) utrimque obtusiusculae medio 1-septatae non v. vix leniter constrictulae loculis grosse 1- v. 2-guttulati non v. vix subcoarctatuli hyalinae.

 Apparently a form of *D. Arctii*.

Host: *Ipomoea sp*.
Distribution: Argentina.
THE GENUS DIAPORTHE

Diaporthe italica (Sacc.) Trav. in litt., Syll. 17:671. 1905.

Diaporthe forabilis f. acervata Sacc. in herb. Stromatibus valseis, sparsis vel gregariis, e basi ellipsoidea conico-applanatis, 1-2 mm. diam., corticolis, erumpentibus, infra linea nigra nulla circumscripitis; peritheciis in quoque stromate 4-8 circinatibus, subglobo, ½-½ mm. diam. in collum cylindraceum abrupte attenuatis; ostiolis in fasciculum dense stipatis, per peridermium perforatum erumpentibus, plus minusve longe exertis, apice saepe incrassatu, atris; ascis cylindraceo-clavatis vel oblongis, apice biformis octosporis, 40-48 × 7-8; sporidiis distichis vel, multo rarius, oblique monostichis, ellipsoidea-fusiformibus, 4-guttulatis, medio uniseptatis sed non constrictis, hyalinis, 11-12 × 3-3.5.

Host: Populus pyramidalis.
Distribution: Italy.

A Diaporthe (Ch.) populea et pulchella ascis sporidiisque minoribus, 4-guttati sed ad septum non constrictis, ostiolisque magis elongatis satis distincta.

To judge from the description this is probably D. medusae on Populus.


Euporthe; perithecia parva lenticularia, ligno cortice adhuc vestito immersa, linea stromatica limitata, acute papillato-ostiolata; asci mediocres fusoidei, liberi, aparaphysati, octospori; sporae elliptico-biconicae, leniter inaequilaterales, utrimque obtusae, medio 1-septato-constrictulae, loculis saepius grosse 2-guttulatis, laeves, hyalinae.

Obs. Los tallos afectados por su aspecto externo no delatan al saprófito sino por unos puntos negros muy pequeños que se observan irregularmente diseminados, pero cortándolos tangencialmente, se nota que su naturaleza no ha sido alterada, y sólo se perciben líneas estromáticas negras muy finas que forman anillos en cuyo centro se hallan los peritecios; tales peritecios pardos están entre el liber y la madera, siendo de forma lenticular (180-200 μ diam.) membranas y provistos de un ostiolo carbonáceo delgado que perfora la corteza; los ascos son fusiformes (45-150 × 10 μ), libres, sin pedicelo y sin paráfises, con 8 esporas cada uno; las esporas distribuidas en dos hileras longitudinales son elliptico-bicoláicas (12-15 × 4 μ), bastante
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obrusas en ambos extremos, con un tabique al medio y una estrangulación que las divide en dos células de igual longitud, levemente inequilaterales, cada una por 10 común con dos gruesos vacuolos, lisas e incoloras.

Host: Lapageria rosea.

Distribution: Chile.


Dans des échantillons morts de Triglochin palustre qui à l'état vivant, avaient été envahis par l'Asteroma Juncaigenearum Rhb., je trouvai, dans l'automne, en apparence produits par le même stroma, un Ascomycète qui, selon sa structure, doit être rapporté au genre Diaporthe, sous-genre Euporthe. Les périthèces formaient de petites verrues voutées et contenaient des asques claviformes mesurant 48 micr. sur 15 micr. Les spores sont claires, jaunes et bicellulaires, elles contiennent ordinairement 4 gouttes, et mesurent 20 à 22 micr. de long, sur 7 à 8 micr. de large.

Host: Triglochin palustre.

Distribution: Denmark.


Euporthe; peritheciis ligneo vestito v. denudato semperque infuscato infossis vix ostiolato-papillatis, ascis sporisque subminoribus angustis.

Obs. Perithecia hinc inde sparsa v. laxe gregaria, ligne saepius corticato, quandoque late vageve infuscato quandoque macula elongata subdeterminata aterima notato, intus plus minusve caldado linea stromatica tenuissima nigra percurso, immersa, globulosa (150–180 µ diam.), membranacea olivacea, ostiolo carbonaco nigro corticem perforante non v. vix exerto donata; ascis subfusoidi (50–60 x 8–10 µ), decidui octospori apaphysati; sporae distichae e cylin- draco fusoidae (15–16 x 3.5–4 µ) rectae v. leniter inaequilaterales utrinque subacutiuscule rotundatae, medio 1-septatae non v. vix constrictae, grosse 4-guttulatae hyalinae, loculis aequalibus.

Similar to D. Arctii.

Host: Kentrophyllum lanatum.

Distribution: Argentina.
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Stroma nullum manifestum; perithecia paucasti (2-4) in acervulos minutos usque \( \frac{1}{4} \) mm. longos caulem longe lateque ambientes diu epidermide tectos tandem eam disrumpentes collecta, 150-200 \( \mu \) diam., linea nigra nulla conspicua, nucleo albo; asci aparaphysati, cylindraceo-fusoides, p. sp. 40-50 \( \times \) 6-9 \( \mu \), octospori; sporae distichae, oblongae, utrinque leniter attenuatae, sed apicibus obtusis, medio 1-septatae, leniter constrictae, grosse 4-guttatae, hyalinae, 11-14 \( \times \) 3-4 \( \mu \).

Host: Allamanda Hendersoni.
Distribution: Philippines.


Euporthe: maculae stromaticae ligno denudato insidentes lineares determinatae aterrimae; perithecia sub maculis nidulantia, ligno fete seriatis imerse, parvula subglobosa, membranacea, ostiolo pusillo non v. vix in stromatis superficem prominulum coronata; asci fusoides liberi, aparaphysati octospori; sporae angustae elliptico-biconicae utrinque leniter attenuatae, medio 1-septae leniterque constrictae, hyalinae, laeves, loculis grosse 1-guttulatis.

Obs. Los tallos afectados son casi totalmente desprovistos de tejidos corticales y su madera desnuda de un color ceniciento pálido ofrece lineitas estromáticas longitudinales (2-5 mm. long.), negras planas y definidas; los peritecios en número de 2 a 5 se hallan emplantados totalmente en la madera debajo de dichas manchas, en las cuales á veces sobresalen levemente los ostiolos; estos peritecios globosos (150-200 \( \mu \) diam.) son membranosos, menos en el ostiolo, de textura no visible, de color pardo, y rellenos de substancia mucilaginosa blanco-subhialina; los ascos muy numerosos son libres, flotando en el mucus que rellena la cavidad peritectal, fusiformes (50-60 \( \times \) 8-10 \( \mu \), sin paráfises y con 8 esporas cada uno, en dos hileras longitudinales; las esporas son al principio cilíndrico-elípticas, más tarde subbicónicas (10-12 \( \times \) 3-4 \( \mu \) redondeadas en ambos extremos, lisas, incoloras, con un tabique y ligera estrangulación mediana, que las divide en dos células de igual largo, á veces siendo la superior algo más gruesa y obtusa que la inferior, ambas con 2 grandes vacuolos.

Near D. pardalota.

Host: Leuceria sp.
Distribution: Chile.
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Perithecia dense longa lateque sparsa, at non contigua, sub-globosa, atra, saepe singula (vel quandoque duo aut tria insimul) area subrotunda (0.5–0.8 mm. diam.) cinereo-nigrescente circumfusa, quae ipsa linea atra tenuissima cingitur. In centro uniusscijusque areae epidermis decolorata levatur, rumpitur, perforatur papilla brevi quae tamen vix usque ad 0.1 mm. proeminet. Perithecii nucleus albidos. Asci clavati, superne rotundati, 52–55 × 5–8 μ (part. sporifer.). Sporidia praesertim sursum disticha, elliptico-oblonga, utrinque non-nihil attenuata sed obtusata, bi-quadrugiutulata, hyalina, i-septata, ad septum subconstricta, 11–15 × 3–4 μ. Paraphyses nullae visae.

A remarkable species. Usually each perithecium, with a globose venter, 300–400 μ diam. is immersed wholly in the cortex, not reaching down to the wood; but the black lines can descend into the xylem, and the part enclosed by them tends to become pallescent. Additional faint black lines wander over the surface of the bark, quite independent of the special black lines which surround the discoloured area about each ostiole, and enclosing larger areas; it is probable that these mark what was the space occupied by each stroma at the various periods of development.

Host: *Leycestria formosa*.
Distribution: England.

Conidial connections


Alpha conidia ovate-fusoid, 5–7 × 2–2.5 μ. Beta conidia filiform-curved to hamate, 20–28 × 1 μ.

**Diaporthe Lithreae** Speg., Fungi Chilenses, 62. 1910.

Chorostate: perithecia cortice innata, eximia valsoideo-gregaria, globosa parva membranacea, ostiolis cylindraceis carbonaceis convinentibus coronata; asci subsfusoides aparaphysati mox liberi; sporae subcylindraceae i-septato-constrictulae, loculis aequilongis biguttulatis, hyalinae mediocres.

Obs. Los peritecios, agrupados en montoncitos, son globosos negros, submembranosos (200–250 μ diam.) y provistos de cortos ostíolos cilíndricos y carbonaceos, que convergen á un mismo punto, levantando y perforando la epidermis del hués ped; los ascos son fusoídeos é inmediatamente se despegan, flotando en el líquido de la preparación, careciendo de parafises y conteniendo cada uno 8 esporas (70–75 μ × 10–12 μ); las esporas incoloras, son disticas, casi cilin-
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Dricas, muy obtusas en ambos extremos (17–18 μ x 4–5 μ), divididas por un tabique y una lijera estrangulación en dos células, cada una de las cuales contiene dos grandes núcleos, siendo la inferior á veces un poco más delgada.

Host: Lithraea caustica.
Distribution: Chile.


Euporthe; perithecii ligno insculptis sed superne cortice obtegente adnatis minute papillato-ostiolatis, ascis sporique submediocribus.

Obs. Perithecia ligno dealbata, linea nigra stromatica tenui percurso, insculpta, globulosa (120–150 μ diam.), membranacea olivacea, superne prominula, cortice diu persistente subimmutato adnata eamque ostiolo brevi rostellato carbonaceo perforantia; asci e fusoidoe subclavulati (50–60 x 7–10 μ) decidui octospori apaphysati; sporae distichae ellipticae utrinque obtusiusculae (12–16 x 4–6 μ), medio 1-septatae plus minusve constrictae, grosse 4-guttulatae hyalinae, loculis subaequalibus.

Host: Machura aurantiaca.
Distribution: Argentina.


Stromate late effuso, ramosus ramulosque longe et late ambiente, strato extimo nigricante; perithecii minutis, globosis vel saepe basi plananatis, vel angulosus, irregulariter sparse gregarisve, peridermio immutato sed sub-prominulo tectis, tarde vetusta cortice erumpenti-bus, lignoque nigrificato insidentibus; ostioli abbreviati; ascis cylindricis vel sub-cylindricis, paraphysatis, intus apice foveolatis, basi attenuato-stipitatis, membrana plus minusve crassiuscula in-structis, 65–70 x 12–14 μ octosporis; sporidiis distichis, fusoides, medio constrictis 1-septatis, 16–18 x 4.5–5.5 μ exappendiculatis, guttulis magnis binis in singulis loculis ornatis.

Host: Escallonia montevicensis.
Distribution: Italy.


Perithecii singulis v. paucis in areolis elongatis, minutis, sub epidermide nigrificata, innato-prominulis, globosis, nigris, ½ mm.
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diam., ostiolis minutissimis; ascis fusoides, 40–48 × 7–8, aparaphysatīs, 8–sporis, apice bifoveolatis; sporidiis distichis tereti-fusoides, 1-septatis, constrictis, 4-guttatis, 15 × 4, hyalinis.

Maculis elongatis, 2–3 mm. long., ½ mm. lat., a precedente praecipue differt, sed utraque forte varietas D. ceuthosporoides.

Probably D. pardalota.

Host: Berberis vulgaris.
Distribution: France.


Tetrastaga; stroma effusum, obsoletum, corticis interioris et ligni superficiem nigrificans; perithecia laxe gregaris v. sparsa, cortice nidulantia, vix tumidula, lenticulari-globosa (300–400 μ diam.), ostiolis brevissimis, subconoides epidermidem perforantibus sed vix exertis donata; ascis fusoides (55–60 × 5–6 μ), apice subtruncati, inferne acutati, aparaphysati, octospori; sporae distichae, elliptico-elongatae (10–14 × 2.5–3 μ), utrinque obtusiusculae, subinaequilaterales medio 1-septato-constrictae, grosse 1-guttulatae, hyalinae.

Obs. D. mitis Sacc. peraffinis, sporis tamen minoribus obtusioribusque recedens; an tantum ejusdem varietas?

D. mitis is the same as D. strumella. This species appears to be D. eres on Ribes.

Host: Ribes magellanica.
Distribution: Patagonia.


Stromatibus subepidermicis, cortice interiore innatis, verruciformibus, basi applanatis, 2–3 mm. latis, apice conoides, pallidis; perithecis 3–10 in quovis stromatam majusculis, 300–500 micr. diam., obovatis vel mutua pressione difformibus, collis perithecii diam. paulo longioribus; ostiolis cylindraceis plus minus prominentibus apice subattenuatis; ascis fusoides, 65–72 × 10–14 micr.; sporis hyalinis, uniseptatis, ad septa subconstrictis, saepe subcurvulis, guttulatis, 18–25 × 4–6 micr.

Host: Pyrus Malus.
Distribution: Austria.
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Stromata formed in culture and on decayed twigs on culture media, irregular, black outside, white inside, 3-7 mm. diam. producing flat central Phomopsis pycnidia of about 1-1.5 mm. diam. and a certain number of surrounding Diaporthe perithecia with protruding ostiola visible to the naked eye; perithecia sphaeroidal or oblatesphaeroidal, 300-450 \( \mu \) diam., with intensely black outer wall and light-brown inner wall; ostiola rather long conspicuously hairy near the ends with projecting hyphae; asci fusoid, obtuse above, inconspicuously pedicellate below, 45-52 \( \times \) 5-10 \( \mu \), octosporous, aphasisate; ascospores biseriate, fusoid, both ends obtuse, one-septate, constricted, 2-nucleate in each cell, hyaline 11-13 \( \times \) 3.5-4.5 \( \mu \).

This species was apparently described chiefly from the imperfect state on fruits, twigs, and leaves, since the perithecia occurred only in culture. There is quite an array of conidial connections: a Phomopsis with "conidiospores" 15-18 \( \times \) 2-3 \( \mu \); "Phoma spores" ellipsoid, pointed, hyaline, continuous, 7-9 \( \times \) 3-4 \( \mu \); "Septoria spores" filiform-curved, hyaline, and 24-32 \( \times \) 1-3 \( \mu \); and also "cylindrospores" straight or curved, colorless, 38-70 \( \times \) 3-3.5 \( \mu \); and catenulate chlamydospores which were cinereous or greenish, thick-walled, and 10-14 \( \times \) 5.8 \( \mu \). It is extremely doubtful whether all these conidial stages are connected with a Diaporthe; they suggest contaminated cultures. This, together with the brief description of the perithecia from culture only, make a careful check of this species desirable.

Host: Pirus Malus.

Distribution: Japan.


Tetrastaga; peritheciis lenticularibus sparsis v. lae gregariis mediocribus albo-farcitis; ascis fusoidoe-clavulatis aphasisatis; sporis majusculis subbiconicis hyalinis.

Obs. Perithecia epidermide velata, cortice innata (150-200 \( \mu \) diam.), ostiolo minuto carbonaceo coronata, contectu membranaceo fuscidulo indistincto; asci utrinque acutiusculi (75-80 \( \times \) 15-20 \( \mu \)) octospori; sporae oblique distichae medio uni-septato-constrictae, utrinque subacutiusculae rotundatae (20-22 \( \times \) 7 \( \mu \)), loculis saepius grosse 1 v. 2-guttulatis.
Species *D. binoculatae* (Ell.) Sacc. vergens, sporis duplo angustioribus distincta.

As given by Spégozzi, this seems to be similar to *D. binoculata*, except for the longer spores and shorter asci.

Host: *Ilex paraguayensis*.

Distribution: Argentina.


Stromata ramos late ambiente per lignum leniter infuscatum v. immutatum, sinuose excurrente, nigrolimitato; perithecii in cortice nidulantis, discretis, globoso-depressiusculis, $\frac{1}{6}-\frac{1}{3}$ mill. diam., ostiolis brevibus, cylindraceis, epidermidem subimmutatum vix superantibus; ascis fusoides, 60 $\times$ 8, 8 sporis; sporidiis distichis oblongis, 12-15 $\times$ 5, saepe inaequilateralibus, constricto-1-septatis, utrinque obtusiusculis, 4-guttulatis, hyalinis loculis quandoque secundentibus.

Obs. *D. Ryckholtii* (West.) Nit. affinis.

Conidial connections


Saccardo gives the alpha and beta conidia of this species as 10 $\times$ 2 $\mu$ and 25 $\times$ 1 $\mu$ respectively. Traverso considers it the conidial stage of *D. mendax*.

This species was originally given as a form of *D. fasciculata*, but Saccardo’s figures (*Fung. Ital.* 1272) show no pustulate dorsal zone as in that species, and the description appears to be that of a form of *D. eres*.

Host: *Albizzia Julibrissin*.

Distribution: Italy.


Euporthe, perithecii ligno immersis ostiolo rostellato corticem perforante non v. vix exerto armatis submajusculis, ascis sporisque minoribus.

Obs. Perithecia sparsa v. laxe gregaria, ligno ramulorum extus sordide vageve infuscatorum immersa, globulosa (180–200 $\mu$ diam.), membranacea olivacea, ostiolo plus minusve sed semper breviussculae exerto praedita; asci subfusoides (50–55 $\times$ 7 $\mu$) decidui octospori aparaphysati; sporae elongato-ellipticae utrinque obtusiusculae
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(14–15 x 4–4.5 μ) non v. vix inaequilaterales, medio 1-septato-constrictulae, grosse 4-guttulatae hyalinae, loculis subaequalibus.

Host: Menispermum laurifolium.

Distribution: Argentina.


Stromate ramos corticatos varie ambiente, lineaque tortuosa nigra per lignum excurrente limitato; peritheciis globulosis, ligno infossis, ¾ mill. diam., ostiolo peridermium perforante vix emergente; ascis fusoides, 55 x 10, aparaphysatis, octosporis; sporidios distichis oblongo-fusoidis, medio leniter constrictis, 15 x 4.5–5, 1-septatis, 4-guttulatis, hyalinis.

Fung. Ital. 1257 shows figures of typical D. eres spores, and this is probably that species in spite of the slightly larger spore measurements.

Host: Palturus aculeata.

Distribution: Italy.

Conidial connections


Alpha conidia 8–11 x 2.5–3.5 μ. Beta conidia 20–28 x 1 μ.


Stroma ambiens, cortice interiore nigricans. Perithecia in acervulos valseos, in cortice interiore nidulantes, ca 8 monostiche congregata, globosa, nigra, ca 0.3 mm. diam., ostiolo brevibus, in disco rotundo, plano, pallido, subconice per epidermidem prorumpente, punctiformiter minutissime perspicua. Ascis fusiformes, apice rotundati, 50 x 8 μ. 8-spori. Sporidia fusiformia, recta, medio haud constricta, 4-guttulata, utraque apice brevissime filiforme appendiculata, hyalina, 15 x 4 μ.

This seems different from any species so far noted on Cytisus.

Host: Cytisus nigricans.


Stromatibus initio epidermide velatis, maculiformibus, nigris, acute limitatis, oblongis v. sublobatis, minutis, 3–4 mm. longis, lignum penetrantibus lineaque, atra saepe cinctis; peritheciis stromate innatis globulosis, exiguis, 250–300 μ diam., ostiolis punctiformibus, numquam emergentibus; ascis fusoides, aparaphysatis, apice bifo-
veolatis, 30–35 x 7, octosporis; sporidiis distichis, fusiformibus, obsoleti i-septati, rectiusculis, 10–12 x 3, hyalinis.

Species e subgenere Euporthe, cum Diap. cryptica nil commune habet.

This appears to be a form of D. pardalota on Lonicera.

Host: Lonicera sempervirens.
Distribution: Italy.


Stromate longe et caules decorticatos ambiente eosque superficie atro-inquinante; peritheciis globosis, $\frac{1}{4}$ mill. diam., ligno infossis, ostiolo perforante brevexerto; ascis fusoideis, 45 x 7–8, aparamphysatis, octosporis; sporidiis fusoideis, constricto i-septatis, 13–15 x 3–4, 4-guttulatis, hyalinis.

A D. Tulasnei Nk. ostiolis breve exertis praecipue recedit.

This is undoubtedly a form of D. Arctii.

Host: Campanula Trachelium.
Distribution: Italy.


Stromate late effuso, ramos ambiente, epidermidem nigrificantem, in cortice vel in ligno obsoletae nigro-limitato; peritheciis solitariis vel 3–4 coacervatis, cortice immersis, epidermide praecipua circa ostiolum nigrificantem tectis, globoso-conoideis, minutis, 180–200 micr. diam. in ostiolum brevissimum, obtusum subinde subtus cupulatis; ascis clavatis, brevissime stipitatis, apice uni-bifoveolatis, 36–40 x 7, octosporis; sporidiis irregulariter distichis, oblongis, utrinque rotundatis, muticis, 4–5 guttulatis primo continuus, medio constrictis demum uniseptatis, 10 x 3, hyalinis.

Si distacca per notevoli caratteri dalle altre specie moricole le quali appartengono al sottogenere Euporthe.

Berlese’s figures (Pl. 25) show a stromatic formation similar to that of D. eres on small stems. This is undoubtedly D. sociabilis. The small spore measurements may be due to immature material, since the spores are given as at first non-septate. D. orientalis on Morus, which is probably the same species, is given by Saccardo and Spegazzini as having spores 15–17 x 2.5–3, by Spegazzini as 12–15 x 4–5, and by Berlese as 14–16 x 3 $\mu$, so that spore measurements are not always dependable.
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Host: Morus alba.
Distribution: Italy.

Conidial connections
Grove gives the alpha conidia as curved and 8-9 × 2-2.5 μ.

DIAPORTHE MUHLENBECKIAE Fl. Tassi, Rev. myc. 69: 158. 1896.

Stromate effuso, plerumque substrato nigrante ambiente; peritheciis mediocribus, globulosis vel basi paullo planificatis, nigris, pertusis, ¼-½ mm. diam.: ascis sub-cylindricis, membrana statim deliquescente, octosporis, 50-60 × 7-8 μ: sporidiis distichis, fusoidibus, bicellularibus, medio constrictis, 4-guttulatis, hyalinis, 10-12 × 2-2.5 μ. Spermagonia phomatoidea: spermatiis ellipsoideis, continuis, primum breviter stipatis, 2-3 × 1-1.5 μ.

Ad stadium spermagonicum quod inveni una cum stadio ascophoro pertinet probabiliter Phoma Muhlenbeckiae Cke. & Mass.

Host: Muhlenbeckia complexa.
Distribution: Italy.


Stroma caulem late ambiens; peritheciis globosis, atris, ligno immutato immersis, discretis vel rarius subaggregatis, ¼-½ mm. diam., ostiolo cylindraceo-conicoide, plus minusve exerto, nunc recto, nunc obliquum ornatis. Asci oblongo-fusoides, 40-50 × 8-10, 8-spori, apaphysati. Sporidia disticha vel oblique monosticha oblongo-ellipsoidae, medio 1-septata atque constricta, utrinque obtusiuscula acuminata, 15 × 4 guttulata, hyalina.

Seems to be a form of D. Arctii. The imperfect stage is given by Von. Höhnel (Sitz. Akad. Wiss. Wien, 118: 890) as Plenodomus microsporus Berl.

Host: Sedum album.
Distribution: Italy.


Euporthe, parenchymate petiolorum immersa, minuta globosa quandoque inermis quandoque majuscule rostellata, ascis sporisque minoribus.
Obs. Matrix intus immutata extus plus minusve late vague in-fuscata; perithecia sparsa v. in maculis laxe subseriata, parenchymate profundiuscule et omnino immersa, globosa (150 μ diam.) nigra membranae-coriacea, contextu opaco indistincto, ostiolo carbonacea quandoque papilluliforme matricis superficiem vix attingente quandoque eximie graciliterque rostellato longiusculeque exerto donata; asc i e fusideo subclavulati (40-58 x 8-10 μ) decidui octospori apara-physati; sporae distichae rectae v. lenissime inaequilatere utrinque obtuse (10-13 x 5-6 μ), medio 1-septato-constrictae, grosse 4-guttulatae hyalinae, loculis subaequalibus.

Host: Musa sapientum.

Distribution: Argentina.


Stromate longe et late ramulos decorticatos ambiente et superficie atro-inquinante; peritheciis gregariis, ligno infossi, globoso-depressis, ½ mill. diam., ostiolis conico-cylindraceis, ½ mill. longis, emergenti-bus, apice obtususculis; ascis fusoides, deorsum acutioribus, 50-60 x 6-6.5, sessilibus, apice obtusiusculis, 12-15 x 3-4.5, utrinque obtusiusculis, 4-guttularis, hyalinis.

Probably a form of D. Arctii.

Host: Mesembryanthemum acinacifolia.

Distribution: Italy.


Pseudostromate effuso, vel plerumque brevi, epidermise nigr-icatis, peritheciis ± sparsis, gregariis vel inc inde [sic; = deinde] subacervulatis ligno immersa vel insculptis, globoso-depressis, minutis, usque 100-175 μ, bruneis; ostiolis cylindraceis, rectis vel obliquis, longiusculis usque 100 μ; ascis oblongis 50-70 x 12 μ; ascosporiis distichis vel subdistichis, ellipsoidis, utrinque sub-acutis, rectis, hyalini, nebulosis 4-guttulatis, ad septum non constrictis, 10-14 x 4.5-5.5 μ. Pycnidii probabiliter Phomopsis Nepetae Gz. Frag. nov. — Pycnidii minutis globoso-depressis, crumpetibus, primum tectis; sporulis numerosis, 6-8 x 2-3 μ, ovoideis, hyalini, nebulosis 2-4 guttulatis, basidiis non vidit.

El pseudo estroma de esta especie es difuso, y la mayoría de las veces corto, ennegreciendo la epidermis; las peritecas esparcidas, ó
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reunidas, y entonces a veces formando casi un acervulo, inmergidas ó incrustradas en la parte leñosoa, globoso-deprimidas, pequeñas, fluctuando entre 100–175 μ, parduzcas castanas, con ostiolo cilindráceno, recto ó oblicuo hasta de 100 μ; ascas oblongas de 50–70 × 10–12 μ; ascosporas disticas ó subdisticas, elipsoideas, atenuadas algo en ambos extremos, rectas, hialinas, nebulosamente 4-gutuladas, no contraídas al nivel del tabique, de 10–14 × 4.5–5.5 μ.—Su facies picnidica es probablemente el Phomopsis Nepetae Gz. Frag. nov.—Picnidios pequeños, globoso-deprimidos, primero cubiertos, luego superficiales con esporulas numerosas de 6–8 × 2–3 μ, ovoideas, hialinas, obscaramente 2–4 gutuladas; no vi esporoforos.

Host: Nepeta tuberosa.
Distribution: Spain.


Tetrastaga: matrice late nigrefacta infossa, ascis sporisque submediocribus.

Obs. Cortex ramorum infectorum late nigrefacta; perithecia omnino immersa confertiuscula globulosa (140–150 μ diam.) membranacea vix papillulato-ostiolata, asci e fusioideas subclavulati (50–55 × 8–10 μ), cito secedentes, octospori aparaphysati; sporae subelongato-elipticae utrinque obtusae (14–15 × 4–5 μ), medio 1-septato-constrictulae hialinae, loculis aequalibus biguttulatis.

Probably similar to D. eres.

Host: Nerium Oleander.
Distribution: Argentina.


Stromate ramos corticatos late ambiente et infuscante, linea nigra tortuosa intra lignum limitato; peritheciis gregariis majusculis corticolis, 2 mill. diam., ostiolo vix emergente papillato; asci clavato-fusioideas, utrinque obtusiusculis, 50 × 7, aparaphysatis, 8-sporis; sporidiis oblique 1-stichis, fusioideas, rectis, constricto-1-septatis, 13–16 × 4, 4-guttulatis, hyalinis, initio appendicula utrinque auctis.

Host: Laurus nobilis.
Distribution: Italy.

Conidial connections
Conidia 8–10 × 3–4 μ.
SPECIES NOT SEEN


Stroma ausgebreitet, fleckenförmig, bald nur von geringer Ausdehnung (0.4-0.8 mm.) rundlich oder länglich oder unregelmässig gestaltet und nur ein oder einige Perithecien einschliessend, bald von grösserer Ausdehnung (1-4 mm.) und von variabler Gestalt, rundlich, länglich, eckig, ausgebuchtet u. verschwommen begrenzt, eine grössere Anzahl Perithecien beherbergend, die bald einzeln, bald zu mehrern gruppenweise, manchmal fast euvalsaartig zusammen stehen, die Oberfläche des Substrates schwärzend, aber nicht erhebend, die innere Substanz nicht verändernd. Perithecien kuglig oder elliptisch-ellipsoid, oft an der Basis eingesunken, schwarz, 0.2-0.3 mm. gr., in die hervortretende, cylindrische, mehrfach knotig verdickte, stumpf oder spitz endigende, gerade oder verbogene, 0.3-0.8 mm lange, mitunter auch nur kugelige oder kurz stumpf-cylindrische Mündung übergehend. Asci oblong oder spindelförmig oder auch fast cylindrisch-spindelförmig, nach oben verschmälernt, abgestutzt und mit 2 Gruben versehen, unten stielartig verjüngt 47-58 x 6.5-7.5 μ, meistens 8 seltener nur 5-6 sporig. Sporen fast 2 reihig, stumpf spindelförmig, gerade oder gekrummt, 2 zellig in der Mitte quersseptirt und etwas eingeschnürt, mit 4 Öltropfen, hyalin, 13-18 x 4-5 μ, an beiden Enden mit einem kurz-kegelförmigen oder kurz-cylindrischen, hyalinen Anhängsel von 2.5-3 μ.

The spores appear to be those of D. decedens, but the blackened surface of the substratum and elongate ostioles do not correspond to those of that species.

Host: Corylus avellana.
Distribution: Luxemburg.


Stromate ramos corticatos varie ambiente et nonnumquam infuscante, linea stromatica infra vix limitato; periteciis corticolis, basi vero ligno infossis, globulosis, ½ mill. diam., ostiolis breve rostellatis, parum excedentibus; ascis fusoides deorum acutioribus, 45-50 x 8, aparaphysatis, octosporis; sporidiis fusoidis, utrinque obtususculis 12-14 x 4-5, rectis, 1-septatis, leniter constrictis, 4-guttulatis, hyalinis.

Except for the broad spores this appears to be D. Arctii.

Hosts: Artemesia camphorata.
Distribution: Italy.
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Stromate late per caules ramulosque parum insuscatos excurrente intusque nigro limitato: peritheciis discretis ligno infossis, globosis, subdepressiss, ½ mill. diam., fuscis; ostioliis cylindraceo-conoides corticem perforantibus et plerumque, cortice disrupto, spinulose exertis; ascis cylindro-fusoides 50–60 x 10, 8 sporis; sporidiis distichis, oblongo-fusoides, 15–18 x 4–4.5, utrinque obtuse acuminatis, tandem constricto-1-septatis, 4-guttulatis, hyalinis.


Fung. Ital. 1257 shows a typical D. Arctii structure, but the spores are too large for either this or D. linearis. It may be the same as D. hircina for which Feltgen gives spores as being 10–18 x 2.5–3.5 μ, but which Von Höhnel says has spores 12–13 μ long.

Host: Hypericum calycinum.

Distribution: Italy.


Stromate ramos corticatos decorticatosque late ambiente, eosque varie insuscatante, linea nigra per lignum varie excurrente limitato; peritheciis gregariis, ligno immersis, ½ mill. diam., globosis, ostiolo apice rotundato, vix emergente; ascis fusoides, apice obtusioribus, 45–50 x 7, aparaphysatis, octosporis; sporidiis distichis v. oblique monostichis, fusoides, 15–17 x 2.5–3, medio constrictis, 1-septatis, 4-guttulatis, septulis spuriis 2 accendentibus, hyalinis.

This is probably the same as D. sociabilis Nit., being very similar to D. eres, but with somewhat longer spores. D. Mori Berl. is probably an immature form of this same species, on smaller twigs.

Host: Morus alba.

Distribution: Italy.


Stromate late effuso maculas nigras, magnitudine varias saepe formante, vel epidermidem in nigrum tingente, intus linea atra circumscripto; peritheciis aggregatis sub epidermide plus minus nigrisciente nidulantibus, minutis, globosis, caulis substantiae immersis, sursum in collum longum, cylindraceum, sinuosum abeuntibus; ascis clavatis, apice 1–2 faveolatis, 70 x 7, octosporis; sporidiis distichis
vel sursum basique monostichis, oblongo-ovoideis, centro uniseptatis, ad medium constrictis, quadriguttulatis, 10–12 × 3 hyalinis.

Seems to be similar to D. Arctii, although the asci are larger than those of that species.

Host: Orobanche.
Distribution: Italy.

**Diaforthe pachystoma (Lev.) Sacc., Syll. 1 : 661. 1882.**


Innata, globosa vel elongata confluentes inaequalibus nigra, perithecii prominuis elongarius, intus albis stromae nigro immersis, ostiolis crassis elongatis rostratis.

Cette belle espèce de Sphérie se développe sur la tige même du Lycopode, et forme des tubercules noirs, arrondis ou irreguliers; les receptacles sont ovales, allongés, blancs à l’intérieur, placés dans un stroma noir; les spores, elliptiques, transparentes, sans cloisons, sont disposées sur une seule ligne dans les thèques linéaires extrêmement nombreuses.

The one-celled spores lying uniseriate in the ascus make this a very doubtful Diaporthe, in which genus it was placed by Saccardo.

Host: *Lycopodium flabellatum*.
Distribution: Peru.


Host: *Euphorbia palustris*.
Distribution: France.


Ramuli corticati v. decorticati superficialiter maculis stromaticis versiformibus ac saepius latiusculis, subdeterminatis, atris ornati, linea per lignum excurrente ac limitante nulla; perithecia ligno immutato immersa globosa (200–250), tenui-membranacea, in ostiolo
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subcarbonaceo superficiem stromatis attingente non v. vix exerto producta, contextu parenchymatico, fuligineo-olivaceo; asci fusoidi, sursum obtusiusculce rotundati, deorsum attenuato-subacuminati (50 × 7–8), aparaphysati, octospori; spora distichae, cylindraceo-ellipticae, utrinque subtruncato-rotundatae (12–14 × 3), medio 1-septato-constrictae, majuscule 4-guttulatae, hyalinae.

Seems near D. Arctii.

Host: Solanum glaucum.

Distribution: Argentina.


Stromate ramos late ambiente, sub epidermidem immutatum excurrente, linea tenuii nigra plus minusque flexuosa limitato; peritheciis sparsis globulosis, ostiolis brevibus cylindraceo-conoidis, epidermidem elevatum vix perforatibus atris, 200–250 micr. diam., nucleo cinereo; ascis oblongis v. syb cylindricis, apice membrana incassatula 2-foveolata instructis, basi attenuatis, aparaphysatis, 8-sporis, 60–70 × 8–10 micr.; spori diis distichis, oblongo-ellipticis, rectis v. leniter curvulis, bicellularibus medio plerumque constrictulis, 4-guttulatis, 12–14 × 4–4.5 micr., hyalinis.


Host: Patagonula americana.

Distribution: Italy.


I — Status spermogonicus: spermogoniis sub epidermide nidulantibus atris, socio fungo ascophoro; spermatiis fusoidis, curvulis, deorsum attenuatis, 6–8 × 3, crassiusculce 2-guttatis, hyalinis, stergmatibus, filiformibus, usque 32 × 1, apice uncinatis suffultis.

(Phoma perexigua Sacc., Syll. 2 : 123. 1884.)
(Phomopsis perexigua (Sacc.) Trav., Fl. Ital. Crypt. 2 : 228. 1906.)

II — Status ascophorus: stromate hinc inde caulem breviter ambiente et lignum subdealbatum penetrante, nigrolimitato; peritheciis
minutissimis, globoso-depressis, \( \frac{1}{2} \) mill. diam., atris, ligno omnino immersis, gregariis vel hinc inde crebrioribus, ostiolis cylindraceis, epidermidem non decoloratum perforantibus parumque excedentibus; ascis fusoidibus 40-50 \( \times \) 7-8, 8-sporis; sporidiis distichis oblongis, 12 \( \times \) 3-4, utrinque obtusi usculis, medio tandem leniter constrictis, 4-guttulatis, hyalinis.

Obs. Proxima Diaporthe Arctii, a qua differt stromate caulis superficiem non atroquinante, ostiolis vix emergentibus punctiformibus, sporidiis rectis medio dein constrictis et crassioribus.

Saccardo's figures (Fung. Ital. 1244) of D. perexigua are identical with his figures (1243) of D. Arctii, and these two species are probably the same.

Host: Carlina vulgaris.

Distribution: Italy.


Stromatibus valsaceis, discretis, oblongis, nigris, innato-erumpentibus; peritheciis circinato-monostichis, globosis, in singulo stromate circiter 5-6, 1 mm. diam., sub-nigris, intus albis, ostiolis parum prominulis; ascis sub-cylindraceis, 2-foveolatis, obtusulis, sessilibus, apaphysatis, 8-sporis, 40-50 \( \times \) 7-8 micr. mox evanescentibus; sporidiis distichis, oblongis, rectis, utrinque attenuatis, 1-septatis, leniter constrictis, 4-guttulatis, 12-13 \( \times \) 4 micr. hyalinis. Status spermagonicus; peritheciis sparsis, sub-conoideis, matrice denigrata circumdatis, 120-140 micr. diam.; spermatiis ovato-ellipticis, 2-guttulatis, 5-6 \( \times \) 2 micr., hyalinis, basidiis fasciculatis acicularibus fultis.

Obs. A D. adunca Niessl diversa.

No other species with valsaceous stromata known on Plantago.

Host: Plantago cynopsis.

Distribution: Italy.


Tetrastaga; stromate obsolete, peritheciis laxe gregariis ostiolo rostellato exerto donatis; ascis fusoidibus, sporis anguste ellipticis 1-septato-constrictis 4-guttulatis.

Obs. Stroma nullum v. vix manifestum latissime obsoleteque matricem nigrificans; perithecia subepidermica sparsa v. saepius laxe
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gregaria parvula (180-200 µ crass.) e lenticulari globosa tenuimembranacea ostiolo rigidulo subcarbonaceo plus minusve longiuscule exerto erecto v. curvulo subcarbonaceo plus minusve longiuscule exerto erecto v. curvulo atro donata; asci fusoides (50 µ long. x 8 µ crass.) octospori; sporae elliptico-cylindraceae rectae v. leniter curvulae, utrimque acutiuscule rotundae (14-15 µ long. x 3-5 µ crass.) medio 1-septato-constrictae, loculis subaequilongis biguttulatis.

From the description this seems to be somewhat similar to Rehm's D. (Gnomonia) Polygoni, but the spores are much larger than those of that species.

Host: Polygonum bonariensis.
Distribution: Argentina.


Stroma fleckenformig, klein, 1-6 mm lang, 1/2-2 mm breit oder weit ausgebreitet, grössere Strecken der Stengel ringsum und gleichmassig überziehend, aussen grauschwarz, kaum glanzend, innen von einer schwarzen, zarten, mehr oder weniger tief eindringenden Saumlinie begrenzt. Perithezien meist ziemlich locker und unregelmässig zerstreut oder reihenweise wachsend, ziemlich tief eingesenkt, nur mit den kurz bleibenden, zylindrischen, ziemlich dicken Mündungen die Epidermis durchbohrend, aber nur wenig vorragend, rundlich, von dünnhautigem, schwarzbraunem, parenchymatischem Gewebe, 150-300 µ im Durchmesser. Aszi keulig spindelförmig, beidending verjüngt, sitzend, achtsporig, 45-50 x 9-11 µ. Sporen länglich oder länglich spindelförmig, beidendig stumpf abgerundet, mit 3 Öltropfen, in der Mitte mit einer zarten Querwand, schwach eingeschnürt, gerade oder etwas ungleichseitig, 10-13 x 3-4 µ.

The description seems to be of a form of D. Arctii on Psoralea. Phomopsis Psoraleae Bub. is given as the imperfect stage.

Host: Psoralea bituminosa.
Distribution: Bosnia.


Sporidia biseriate, elliptic but slightly constricted in the middle and slightly acuminate at each end, uniseptate, greenish; perithecia imperfect.

No host given.
Distribution: England.
**SPECIES NOT SEEN**


Périthecës globuleux, épars dans un stroma cortical, limite de noir, 250-260 mm. diam., couverts par l'épiderme noirci; ostiole érum- pant, punctiforme. Asques cylindriques-claviformes, 60-70 × 7-8, subsessiles, 8-spores; spores 2-sériées, hyalines, ellipsoides-fusoides, 1-septées, contractées, obtuses, 4-guttulées, 12-15 × 4-4.5.

Diffère du *D. spissa* par les ostioles moins exserts, ainsi que par les asques et les spores un peu plus grands.

From the description this may be *D. eres* with rather large spores and asci.

Host: *Tecoma radicans*.

Distribution: Belgium.


Még szébb alakot találtam körtefaagon, melyen a csörök tojásdad aljból keskenyednek, mereven felállnak, majd nem háromszor hosszab- bak, mint a tok átmérőjéjel's csúcsaikon gyengédén dagadtak. Eltér a kössmétei alaktól azzal is, hogy a fészkek között itt-ott egyszerű peritheciumok is állnak. Tömlői orsóalakuak, faj változatnak tekin- thető, de gyűjteményemben mint új faj van *D. pyri* n. sp. név alatt.

(53 rajz.)

The plate referred to in this paragraph shows a valsoid stromatic cluster of perithecia with ostioles somewhat swollen at the base, an eight-spored clavate ascus and spores which are three-septate, which would exclude this species from the genus Diaporthë.

Host: *Pirus communis*.

Distribution: Hungary.


Stroma late per ramulos corticatos excurrens, lignum immutatum v. vix cinerascentum relinquens, linea stromaticà, saepe aegre visi- bili, circumscriptum; perithecia inordinate sparsa, globulosa (250-300) ligno totaliter immersa, ostiolo parvulo corticem perforante ac non v. vix prominulo, atro, levi, carbonaceo donata; asci fusoidei (50-60 × 10-12), octospori, aparaphysati; spores distichae, ellipticae, utrinque obtuse rotundatae (15-16 × 5-6), medio 1-septato- constrictae, loculis grosse 2-guttulatis, hyalinae.
This again appears to be \textit{D. eres} with broad spores. It is possible such a species exists in the southern hemisphere; or this greater breadth may be the result of incorrect measurements.

Host: \textit{Lucumia nereifolia}.
Distribution: Argentina.


Stroma noir, étalé, de grandeur variable, ne noircissant pas l'écorce. Péritèches noirs, petits, globuleux, épars à ostiole allongé, érumpent à travers l'écorce où il apparaît comme un point. Thèques oblongues, octospores, long. 60–65, larg. 8. Sporidies distiques, sufusiformes, obtusiuscules, droites, hyalines, à 4 goutellettes, long. 16–18, larg. 3.

Host: \textit{Raphanus Raphanistrum}.
Distribution: France.


Perithecia in ligno nigrefacto nidulantia et series longitudinales efformantia, globosa, atra, $\frac{1}{4}$ mm. circiter lata; ostiolo elongato, curvato, atro nitido, laevi, vel noduloso squamoso, apice marginato, papillatoque, 1 mm. et ultra aequante.

Asci lanceolati, sessiles, 8-spori. Long. 45–50, lat. 8.
Sporidia disticha, oblongo-lanceolata, hyalina, 4-guttata. Long. 16, lat. 4.

Par ses ostioles longuement rostrés, cette espèce rappelle le \textit{Diaporthe oncostoma} Duby, qui vient sur \textit{Robinia Pseudoacacia}.

May be \textit{D. medusaea}, to judge from description and figures.

Host: \textit{Coronilla minima}.
Distribution: France.


Euporthe; peritheciis ligno, extus nigrefacto intus subimmutato, omnino infossis minutissimis inpermibus, ascis sporisque minoribus.

Obs. Ramuli infecti, corticati v. decorticati, maculas atterimas eroso-repandos praebentes; perithecia ligno totaliter immersa globu-
losa (100-150 μ diam.) tenuissime membranacea pallide fuliginea, ostiolo vix papillato matricis superficiem attingente donata; asci subfusoidi (50 x 8-9 μ), cite decidui subdiffuentes octospori aparaphysati; spora distichae elliptico-subfusoidae utrinque rotundatae (14-15 x 5 μ), medio 1-septatae leniter constrictulae, grosse 4-guttulatae hyalinae, loculis aequalibus.

Appears to belong to the *D. Arctii* group, but the spores are broad.

Host: *Ricinus communis.*
Distribution: Argentina.


Euoprtbe; peritheciis lenticularibus hinc inde laxe gregariis insculpto-prominulis brevissime rostelatis, ascis sporisque majoribus.

Obs. Matrix immutata v. vix vage pallide infuscata; perithecia quandoque subseriata quandoque irregulariter laxae gregaria lingo insculpta, superne non v. vix prominula, epidermide velata, lenticularia (120-150 μ diam.) membranacea, ostiolo carbonaceo parce exerto arma; asci e fusioide subclavulati (65-90 x 14-18 μ) octospori aparaphysati; spora subfusoidae distichae saepius leniter subcurvulae, utrinqueobrusiusculae (20-30 x 5-7 μ), medio 1-septatae non v. vix constrictae, loculis subaequalibus grosse 1-guttulatis hyalinis.

Host: *Saccharum officinarum.*
Distribution: Argentina.


Euoprtbe; ligno corticato dealbatoque nigro-limitato innata, pe-rithecia mediocribus membranaceis subseriatis, ostiolo carbonaceo tenuiusculo longe exerto, ascis fluentibus oblanceolatis, sporis elliptico-biconicis mediocribus.

Obs. Rami infecti extus fere immutati sed in ramulis corticis ostioliis tenuibus nigris breviter setuliformibus constipato-seriatis ornati; perithecia tantum sub sectione perspicua, ligno dealbato linea stromatica angusta nigra sinuosa limitato imersa-globosa (200-250 μ diam.) membranacea sordide fusco-lutescentia, in ostiolo prae-longo (0.5-2 mm. long.) gracili carbonaceo longo exerto producta; asci utrimque acuminati (50 x 8 μ) octospori; spora oblique distichae
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utrimque subacutiusculae hyalinae, loculis aequilongis, saepius bi-guttulatis.

Probably a form of D. medusaea.

Host: Atriplex pamparum.

Distribution: Argentina.


Stromate obsoletus; peritheciis epidermide translucida tectis, globoso-depressis, nigris \( \frac{3}{2} \) mill. d., ostiole brevissimo obtuso perforante; ascis fusoidibus sessilibus aparaphysatis, 55–60 \( \times \) 12 \( \mu \), octosporis apice minuto 2-loveolatis; sporidiis distichis v. oblique monostichis fusoidis, inaequilateralibus, 1-septatis, leniter constrictis, 15–18 \( \times \) 5 \( \mu \), 4-dein 2-guttulatis, hyalinis, utrinque appendicula brevi acuta hyalina ornatis.

Quum stroma sit indistinctum, ad Gnomoniae genus mutat, cui fructificatione quoque accedit; at et cum Diaporihe salicella et D. spina affinitas manifesta.

Apparently very similar to Cryptodiaporthe salicina.

Host: Salix vitellina.

Distribution: Belgium.


Stromate caules late ambiente, at superficie vix manifesto, intra lignum vero zona nigra tortuosa excurrente circumscripto; peritheciis gregariis, globosis, \( \frac{4}{7} \) mill. diam., in cortece nidulantibus v. basi ligno insculptis, ostiolis epidermide nonnihil excendentibus; ascis oblongo-fusoidibus, 45 \( \times \) 7–8, utrinque obtusiusculis, aparaphysatis, octosporis; sporidiis inordinate distichis, oblongis, 10 \( \times \) 4–5, constricto-1-septatis, utrinque subacutis, 4-guttulatis, hyalinis, strato mucosa initio ob-volutis.

Host: Humulus Lupulus.

Distribution: Italy.

Conidial connections


Conidia given as 5–6 \( \times \) 2–3 \( \mu \); "basidia" twice as long.

DIAPORTHE SARMENTICOLA Sacc.

The species listed under this name in Sacc., Syll. 12: 190, is D. sarmenticia.
SPECIES NOT SEEN


Peritheciis gregariis, minutis, globoso-depressis, 300 micr. diam., membranaceis, nigris, intus griseis, cortice fere immutato nidulantibus, ostiolis conico-cylindraceis perforantibus breviter que emergentibus; ascis fusoides 48 x 8 aparaphysatis; sporidiis octonis fusiformibus, utrinque brevissime apiculatis, 13–15 x 3–4, 4-guttulatis, hyalinis.

A Diaporthe discordi, D. discrepante et D. maculosa satis diversa. Linea stromatica atra per lignum varie excurrat.

Probably a form of D. Arctii.

Host: Polygonum sechalinensis.

Distribution: France.


Euporthe; stromate latissime effuso extus nigra, intus nigrolimitato, peritheciis sparsis ostiolo vix papillatis, ascis fusoido-subclavulatis, sporis cylindraceo-fusoides minoribus.

Obs. Stromata ramos fere totos occupantia ejusdemque superficiem nigrificantia, linea nigra per lignum excurrere limitata; perithecia ligno immersa globulosa (200–250 μ diam.) molliuscula, ostiolo carbonaceo vix papillato, non v. stromate vix exertulo ornata; ascis e fusideo clavulati antice rotundati ac crassiusculi tunicati (minutissime intus bifoveolati) octospori aparaphysati; sporae oblique distichae cylindraceae v. subfusoides utrimque obtusiusculae rotundatae (10–12 μ long. x 3–4 μ crass.) medio-1-septatae non v. vix subconstrictae, loculis minute biguttulati, hyalinae.

This would be a form of D. Arctii except for rather small spores.

Host: Senecio brasiliensis.

Distribution: Argentina.


I. Status spermagonicus: spermagoniis globoso-depressis in cortice exterioire nidulantibus, pulpa atra foetis; spermatiis ellipsoido-oblongis, 6 x 3, hyalinis, 2-guttulatis, sterigmatibus filiformibus, 22 x 1, hamatis fulcis.

II. Status ascophorus: stromate ramos late ambiente per lignum immutatum tortuose et profunde excurrente, nigrolimitato; perithe-
ciis discretis, globosis, $\frac{1}{4}-\frac{1}{4}$ mill. diam., in cortice interiore immutato nidulantibus et fibris corticalibus saepe velatis, nucleo fuscescente foetis, ostiolis brevibus, cylindraceo-conoidcis, obtusis, epidermideum non decoloratam et leviter pustulatim elevatam vix perforantibus; ascis oblongo-fusoideis, 70 × 7-8, 8 sporis; sporidiis distichis v. oblique monostichis oblongo-fusoideis 16–18 × 5–6, utrinque obtuse acuminatis, constricto-tenuiter 1-septatis, 4-guttulatis, hyalinis.

Obs. "D. resecanti" Nitr. affinis, differt praecipe peritheciis majoribus et spermatiis minoribus. Undoubtedly a form of D. eres as is D. resecans. Differences in size of perithecia and conidia are not sufficient to separate species in this group.

Host: *Wisteria chinensis*.
Distribution: Italy.

Conidial connections

Saccardo gives the conidia of this species as 7–10 × 3 μ and the "basidia" as curved, filiform, and 20–24 × 1 μ.

**Diaporthes silvestris** Sacc. & Berl., Misc. Myc. 2: 27. 1885.

Peritheciis laxe gregariis, ligno semi-infossis et epidermio tectis. Linea angusta, endoxyla, atra hinc inde circumscriptis globulosis, $\frac{1}{2}$ mill. d. ostiolis vix emergentibus; ascis tereti-fusoideis 45–50 × 6–8; sporidiis octonis, distichis v. oblique monostichis, fusoideis, constricto-1-septatis, 14–15 × 5, 4-guttatis, hyalinis, utrinque initio minute hyalino-apiculatis.

Host: *Vitis vinifera*.
Distribution: Italy.


**Euporthe**; peritheciis ligno immersis, plagulas intus subdealbarbas extus nigrefactas saepius corticatas incolentibus, ascis sporisque submediocribus.

Obs. Ramuli infecti plagulas difformes saepius arcte corticatas nigro-variolosas sub peridermio nigrefactas intus albescentes, linea nigra tenui stromatica per lignum excurrente limitatatas ostendentia; perithecia in ligno plagularum immersa subglobosa (100–200 μ diam.) superne prominula atque cortice adnatula eamque ostiolo subro-
Species not seen

Stellato carbonaceo perforantia, membranacea olivacea; asci subfusoides (40–60 × 8–12 μ) decidui octospori ap paraphysati; sporaellipticae utrinque obtusiusculae (14–16 × 3–6 μ), medio 1-septata, grosse 4-guttulatae hyalinae, loculis aequalibus v. infero vix minore.

Host: Solanum verbascifolium.
Distribution: Argentina.


Status ascophorus: Stromate ramos corticatos late ambiente coloreque nigro et cinereo in ficiente, linea nigra intra lignum excurrente limitato; peritheciis gregariis, globulosis, ½ mill. diam., cortice nidulantibus, ostiolis peridermium parum excedentibus obtusiusculis; ascis fusoides, 50–60 × 8–10, ap paraphysatis, 8-sporis; sporidiis distichis v. oblique monostichis, fusoides, 12–15 × 5–6, constricto-1-septatis, 4-guttulatis, hyalinis.

Near D. Arctii except for somewhat broader spores.

Host: Sophora japonica.
Distribution: Italy.

Conidial connections

Alpha conidia 8–10 × 3.5–4 μ; "sterigmata" (beta conidia?) 25 × 0.5 μ.


Stroma late effusum, ambiens, totum immersum, diatrypeum, corticis interioris superficiem nigricans, ligni substratim non mutans, sed linea nigra limitata. Perithecia minuta, sparsa in cortice interiori, depresso globosa, ostiolo crasso, brevi vix erumpente. Asci lanceolati, sessiles, 8-spori, 52–60 micr. longi, 8–10 micr. lati; sporaellaxe distichae, oblongae, obtusiusculae, rectae, medio septate, sed vix constrictae, 4-cellulares vel demum 3-septate, hyalinae, 10–12 micr. longae, 3–4 micr. latae.

Spermagonia sparsa, sub peridermium immutato in corticis superficie nidulantia, minuta, ellipsodeo-globoso, ostiolo papillaformi, spermaticis oblongis, plerunque rectis, 2–4 guttulatis, hyalinis, 12–15 micr. longis, 4–5 micr. latis.

Host: Glycine violacea.
Distribution: Portugal.
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Euorthe, peritheciis ligno infuscato corticatove immersis sparsis vix rostellato-ostiolatis, ascis sporisque mediocribus.

Obs. Ramuli infecti quandoque immutati et corticati quandoque infuscati; perithecia ligno omnino imersa subglobosa (150 μ diam.) tenui-membranacea, ostiolo carbonaceo minute rostellato armata; ascis e clavulato subfusoides (60 × 8-10 μ) decidui octospori aparaphysati; sporae distichae ellipticae utrinque obtusiusculae (16 × 5 μ), medio r-septatae non v. vix constrictae hyalinae, loculis minute 2-guttulatis, infero saepius nonnihil minore.

Host: Sphaeralcea patagonica.

Distribution: Argentina.


Stromate obsoleto nullove; peritheciis dense gregariis, corticolis, globulosis, ½ mill. diam., ostiolis breve excedentibus, rostellatis; ascis fusoidis, utrinque obtusiusculis, 40-45 × 7-8, aparaphysatis, octosporis; sporidiis distichis v. oblique monostichis, fusoidis curvulis, 10-11 × 3.5, medio constrictis, utrinque obtusiusculis, 4-guttulatis, hyalinis.

Host: Catalpa syringifolia.

Distribution: Italy.

Conidial connections


Conidia fusoid, 6-8 × 2.5 μ.

Chorostate (Diaporthe) suspecta Sacc., Ann. Myc. 11: 15. 1913.

Stromatibus gregariis, subcutaneis, leviter postulatim prominulis, disculo tantum erumpentibus, subcircularibus, 1-2 mm. diam. intus flavidulo-olivaceis; peritheciis irregulariter circinantibus, globosis in quoque stromate paucis, 4-8, 0.5 mm. diam. nigris, collis oblique convergentibus in ostiolo punctiformia desintibus; ascis elongato-fusoidis, subsessilibus, sursum obtuse tenuatis, apophysatis, octosporis, 90-100 × 10-12, apice bifoveolatis; sporidiis oblique monostichis, breviter fusoidis, 16 × 6-6.5, initio continuis, dein constricto r-septatis, biguttulatis, hyalinis.

Ab affinis Chor. decipiente, Chor. mucosa etc. satis distincta.
From the description and the relationships given this seems to be a Melanconis near *M. hyperopia* (see *D. hyperopia*, p. 254).

Host: *Fagus sylvatica*.
Distribution: Lotharingia.


Euporthe, peritheciis hinc inde laxe gregariis matrice sordide infuscata immersis vix rostellato-ostiolatis, ascis sporisque submediocribus.

Obs. Caules infecti saepius maculas indeterminatas repandoellipticas sublongitudinales ostendentes; perithecia minuta globolosa (90-110 μ diam.) ligno totaliter infossa tenui membranacea ostiolo carbonaceo non v. brevissime exerto armata; asci e fusioide clavulati (50-55 × 7-9 μ) mox decidui aparaophysati octospori; sporae distichae e subcylindraceo fusioideae utrinque obtusiusculae (14-16 × 4 μ), medio 1-septatae leniter constrictae hyalinae, loculis aequalibus grosse biguttulatis.

Apparently a form of *D. Arctii*.

Host: *Tagetes minuta*.
Distribution: Argentina.

**Diaporthae Tagetesos** Hara, Bot. Mag., Tokyo, **27**:251. 1913.

Description in Japanese.

**Diaporthae Talae** Speg., Anal. Mus. nac. Buenos Aires, **6** (Ser. 2, 3) : 271. 1899.

Euporthe; peritiheciis ligno corticato Decoricitatoe extus infuscato intus linea uigra notato immersis majusculis; ascis clavulatis; sporis majoribus ellipsoideis ad septum non v. vix constrictis.

Obs. Stromata quandoque minuta quandoque fere totos ramos corticatos v. decoricitatos ambientia, extus matricem infuscantia v. nigrificantia, intus linea sordida fusca tortuosa limitata; perithecia cortice v. ligno immersa globosa (600-700 μ diam.) fuscella ostiolo minuto carbonaceo lignum v. corticem perforante ac superficiem stromatis attingente sed non exerto donata; asci e fusoide-clavulati (100-120 μ long. × 16-20 μ crass.) octospori aparaophysati; sporae recte v. oblique distichae ellipsoideae utrinque obtusae (20-22 μ
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long. × 10–12 μ crass.) medio i-septatae non v. vix subconstrictae, loculis saepe grosse i-guttulatis hyalinae. Species pulchellum quandoque ad Euporthem quandoque ad Tetrastagam vergens.

Seems to be a characteristic species near D. columbiensis.

Host: Celtis tala.
Distribution: Argentina.


Perithecis gregariis, cortice immutato immersis, globosis, perexiguus, vix 250 micr. diam., ostiolo minutissimo perforante, vix extante; ascis fusoides a paraphysatis, octosporis; sporidiis distichis, fusoides, saepe curvulis, 10 x 2.5, obsolete guttulatis, hyalinis utrinque obtusiusculis.

Linea nigra stromatica endoxyla forma di-distincta.

Host: Tamaricis anglica.
Distribution: France.

DIAPORTHE TAXI Oud. & Dest., Rev. d. champ. dans les Pays-Bas, II: 251. 1897.

Stromes distribués irrégulièrement, perforant le péderme en y laissant des trous circulaires, mais ne suivant pas cette couche dans sa chute, reposant sur la couche fibreuse, mesurant 1 mm. de travers, orbiculaires, déprimés, noirs. Au centre des stromes se trouve un disque, moins large et plus pâle, servant de ceinture à l’ensemble des cols peu nombreux et à peine prominents. Les endroits découverts après la chute des stromes se signalent par une ligne circulaire noire, à la circonférence de taches pâlles. Périthèces au nombre de 3 à 5 dans la même strome très petits membraneux. Asques cylindriques, arrondis au sommet, amincis vers la base, à peine pédoncillés, longs de 116 μ à l’état non encore mûr, se gonflant à la présence de l’eau et enfin crevant et disparaissant dans la liquide environnante. Point de paraphyses. Spores monostiques, incolores, elliptiques, biloculaires, arrondies à l’extrémité antérieure, et amincies, voire même pointues à l’extrémité postérieure, cloisonnées au milieu, 18–21 x 9 μ, munies d’une gouttelette dans chacun des compartiments.

Host: Taxus baccata.
Distribution: Holland.
SPECIES NOT SEEN

**DIAPORTHE TAXICOLA** Sacc. & Syd., Syll. 16: 493. 1902.


Perithecien zu 3-5 im sehr wenig entwickelten Stroma, in dem unveränderten Rindenparenchym nistend, kuglig, schwärzlich, mit den kurzen Hälsern zusammenziehend und in stromalosem, etwa 0.3 mm breiten, aus dem kugligen Mündungen gebildeten Bündel die nicht veränderte Epidermis durchbohrend und nur wenig überragend; über mehrern Stromata ist die Epidermis abgefallen unter Zurücklassen eines rundlichen Loches. Asci cylindrisch, oben abgerundet, unten etwas verschmälert, zuweilen in der Mitte breiter, 52-62/8-10 μ, 8sporig, nicht von Paraphysen begleitet. Sporen zweihlig, 2zellig, in der Regel schwachkeulig, die obere Zelle etwas breiter, etwas eingeschnürt, beidendig abgerundet, hyalin, mit 2 Oeltröpfchen in jeder Zelle, 13-15/4-4.5 μ.

Differirt in manchen Punkten wesentlich von Diaporthe Taxi Oud. & Destree.

The description is that of Feltgen, who first described this species as *Diaporthe sp.*, the species name being given by Saccardo and Sydow. The unequally two-celled clavate spores suggest that this may be an Apioporthe.

**Host:** *Taxus baccata.*

**Distribution:** Luxemburg.


Name given to *D. interrupta* Niessl, which is preoccupied by *D. interrupta* (Mont.) Sacc, by Saccardo. See *D. interrupta* Niessl for description.


Stroma sub epiderme immutata et scedente, corticem caulium fuligineo late inquinans. Perithecia cortici infossa, sparsa vel gregaria et matricem inflantia, globosa, 1-3 mm. lata; ostiolis nunc papillatis nunc elongatis, cylindraceis, curvulis et fasciculatim erumpentibus.

Asci lanceolati, sessiles, 8-spori. Long. 45-50; lat. 7.

Sporidia lanceolata, medio constricta et subtule septata, subdisticha, 4-guttata, hyalina. Long. 12; lat. 3-4.

Appears to be a form of *D. eres* or *D. medusaea.*
THE GENUS DIAPORTHE

Host: *Pistacia Terebinthus*.
Distribution: France.


Euporthe?, peritheciis parenchymate infossis parvis ostiolis rostellatis carbonaceis armatis; ascis cylindraceis non deciduis; sporis elliptico-didymis monostichis hyalinis.

Obs. Maculae nullae; perithecia matrice profundusculae infossa globulosa (200-226 μ dm.) membranaceo-coriacella, contextu vix pelliculo atro donata, ostiolo carbonaceo nigro e cylindraceo conoideo plus minusve exsertulo coronata; ascis eximie cylindraceae antice obtusangle rotundati subcrassiusculaeque tunicati posticé attenuati modiceque pedicellati (180-200 × 15-16 μ) non decidui nec diffluentes, aporaphysati; sporiæ semper rectæ monostichoæ ellipticoæ utrinque late rotundatae (20 × 12 μ), medio i-septatae hyalinae, loculis aequalibus subglobose eguttulatis.

Species anomala, habitu externo typico sed ascis cylindraceis, non caducis sporarumque loculis subglobosis eguttulatis desciscens.

A doubtful Diaporthe.

Host: *Tillandsia Durantii*.
Distribution: Argentina.


Peritheciis corticolis, in acervulos valseos conico-discoideos, regulares, arcte aggregatis, globosis, atris ¾ mill. d., stromate albido ligneo exceptis circuloque nigro eximie circumscriptis, ostiolis in conum atrum obtusiusculum parum extans coalescentibus; ascis cylindraceis brevi stipitatis, apice lumine coarctato, rotundatis, p. sporif. 96-110 × 9-11, octosporis; sporidiis monostichis ellipticis utrinque subrotundatis, constricto-i-septatis, 18-22 × 7-9, biguttatis granulosisve hyalinis.

Ob sporidia elliptica et ascos teretes ad *D. fibrosam* nutat.

Host: *Platanus orientalis*.
Distribution: France.


Stroma ramos late ambiens per lignum leniter infuscatum vel immutatum, sinuose excurrens, nigro-limitatum; perithecia in cor-
tice vel ligno nidulantia, confertissime gregaria, globosa, \( \frac{1}{4} - \frac{1}{3} \) mill. diam.; ostiola brevia, cylindracea, superficiem epidermidis sub-immutatae attingentia, nondum exerta; asci fusiodeo-clavati \((45 \times 8-10)\), octospori, aparaphysati; sporidia disticha, oblonga, medio 1-septato-constricta, utrinque obtusiuscule rotundata \((12-14 \times 4-5)\), quadriguttulata, hyalina.

Seems to be *D. eres* with rather broad spores.

**Host:** *Bauhinia aculeata* (*B. grandiflora*).

**Distribution:** Argentina.

**Diaporthe Tupae** Speg., *Fungi Chilenses*, 64. 1910.

Euaporthe; perithecia ligno denudato infossa, gregaria, elypeo stromatico determinato aterrimo tecta, globulosa minuta, breviter papillato-ostiolata; asci fluxiles subfusoidei; sporae biconicae hyalinae parvae.

Obs. Los tallos infectados caracen, por lo general, de epidermis y presentan aquí y allá manchas negras de bordes definidos irregularmente elipticas \((3-15 \text{ mm long.} \times 2-7 \text{ mm lat.})\) longitundinales, algo convexas y casi granujientas; los peritecios agrupados ó esparcidos, viven emplantados en la madera, debajo de las manchas negras descriptas; son globosos \((90-100 \mu \text{ diam.})\) membranaceos, provistos de un corto ostiolo carbonaceo que á veces sobresale algo de la mancha estromática; los ascos son flotantes, sin parafises, fusiformes ó ligeramente clavulados \((50-55 \times 10-12 \mu)\) con 8 esporas; las esporas son biconicas, incoloras, redondeadas en ambos extremos \((12-14 \times 4 \mu)\) con un tabique y una estrangulación muy marcada que las dividen en dos células de igual longitud, con dos grandes núcleos cada una.

**Host:** *Lobelia Tupa*.

**Distribution:** Chile.

**Diaporthe valparadysiensis** Speg., *Fungi Chilenses*, 64. 1910.

Tetrastaga: perithecia hinc inde parce gregaria v. sparsa, cortice subimmutato immersa, subglobosa minuta vix papillato-ostiolata; asci non fluxiles, e fusiodeo-subclavulati, breviter pedicellati, aparaphysati; sporae subcylindraceae v. leniter subbiconicae utrinque obtusae medio 1-septato-constrictae hyalinae.

Obs. Las ramas afectadas no muestran modificaciones notables y sólo unos pequeñosísimos puntos negros esparcidos, que son los ápices de los ostioli; los peritecios se hallan escondidos en el epesor de la corteza, entre globosos y lenticulares \((180-200 \mu \text{ diam.})\) parduzcos
THE GENUS DIAPORTHE

membranáceos; los ascos son ligeramente clavulados con ápice muy obtuso y de membrana engrosada, adelgazados en la base en un pedicelo bastante corto (70 x 8 μ), sin parafises, con 8 esporas; las esporas son casi cilíndricas y muy ligeramente bicónicas, obtusas en ambos extremos (14-15 x 4 μ) con un tabique y ligera estrangulación que las dividen en dos células de igual longitud, cada una de las cuales posee dos grandes núcleos.

Esta especie, por la estructura de sus ascos, se aparta algo del tipo del género.

Probably D. eres.

Host: Lithraea caustica.

Distribution: Chile.


Stromate ramulos corticatos hinc inde ambiente et varie marmorante, linea stromatica endoxyla nulla; peritheciis corticenidulantibus, globulosis, ½ mill. diam., ostiolo papillato periderrnum vix excedente; ascis fusoides, a paraphysatis, octosporis; sporidiis distichis, oblongis, 13-17 x 3, constricto-1-septatis, curvulis, 4-guttulatis, hyalinis.

Host: Olea europaea.

Distribution: Italy.


Stromate late effuso, caules late ambiente, nigro, immerso; perithecis exiguis, globosis vel plus minusve depressis ½ mm. diam.; ostiolis longissime exertis, cylindricis, apice capitellato-papillato, medio saepe torulosus epidermidem immutatum superantibus; ascis subcylindraceis, 40-50 x 8-10 micr., 8-sporis, membrana tenuissima ornatis; sporidiis distichis vel sub-distichis, ellipsoides, 10-12 x 3-4 micr., 1-septatis, ad septum leniter constrictis; 4-guttulatis, guttulis interioris majoribus, hyalinis. Spermatis 5 x 2 micr., oblongis, saepe inaequilateralibus, 2-guttulatis, hyalinis.

Obs. Quandoque ostiolo sunt parum exserta.

Appears to be the same as D. Arctii, except for the torulose ostioles, which seem, from his figures, to be abnormal.

Distribution: Italy.

Conidial connections

Phomopsis Verbenae (Tassi) Trav.?
**SPECIES NOT SEEN**

**Diaporthe Vogliniana** Sacc. & Trott., Syll. 22: 378. 1913.


_Pseudostromatibus numerosis, non gregariis, ambitu circulari v. elliptico, planatis, 1-1.5 mm. latis, peridermio diu tectis, dein erumpentibus; peritheciis in quoque acervulo plerumque 6-8 circinatibus, globosis v. ovatis 200-400 μ latis, ostiolis convergentibus, brevibus, non exercatis; ascis cylindraceis basi breviter attenuato-subpedicellatis, aperaphyatis, 90-120 × 10-12 μ, octosporis sporidiis subdistichis oblongo-fusoideis, constricto-biseptatis, 22-24 × 5 μ, utrinque obtusis, rectis v. curvulis 4-guttulatis, hyalinis._

_Status pycnidicus; sporulis ellipsoideis v. ovoideis, hyalinis, 3 × 1.5 v. 5-6 × 1.5._

_Ob sporidia 2-septata a typo generis deflectit._

_Description taken from Saccardo. Not a Diaporthe if the report of biseptate spores is correct._

**Host:** _Populus canadensis._

**Distribution:** Italy.


This species is preceded by _D. Winteri_ Kze. and has been placed under _D. Drymidis_ Sacc. & Syd. in Syll. 14: 550 (see _D. Drymidis_ for description, p. 291).


_Euporthe, matrice late atrata, peritheciis infossis densiusculcis gregariis minutis vix rostellato-ostiolatis, ascis sporidiis submediocribus._

_Obs. Perithecia irregulariter dispersa v. obscure subseriata ligno baseos caulium omnino infossa eumque extus nigrificantis intus non mutans, minuta (160-130 μ diam.) membranacea ostiolo carbonaceo non v. vix exerto gaudentia; asci fusioidei (50-60 × 8-9 μ) max decidui aperaphyati octospori; sporae e fusioidei subcylindraceae utrinque acutiusculae subrotundatae (14-16 × 4 μ) rectae v. lenissime subcurvulae, medio 1-septatae non v. vix constrictae hyalinae, loculis æqualibus subgrosse biguttulatis._

_Near D. Arctii._

**Host:** _Xanthium spinosum._

**Distribution:** Argentina.
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Euporthe: stromate late matricis superficiem atro-inquinate, peritheciis laxe gregariis ligno dealbato linea nigra circumscripto immersis, ostiolis vix exertis, ascis fusoidis, sporis mediocribus ellipticis 1-septato-constrictis 4-guttulatis.

Obs. Stroma latissime et saepe per totum matricem effusum, linea nigra per lignum dealbatum profunde excurrente limitatum; perithecia inordinate gregaria ligno immersa globulosa (200 μ diam.) tenui-membranacea, ostiolo brevi crassiusculo carbonaceo superficiem matricis perforante non vix exerto donata; asci fusoides (50-55 μ long. × 7-8 μ crass.) octospori; sporae hyalinae elliptico-cylindraceae utrimque obtusae (12-13 μ long. × 3.5-4 μ crass.) medio 1-septato-constrictae, loculis aequilongis subcoarctatulis grosse biguttulatis.

Apparently *D. Arctii*.

Host: *Xanthium strumarium*.

Distribution: Argentina.

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Euporthe; dense gregaria, peritheciis minutis sublongiuscule ostioliis; ascis clavulatis; sporis ê cylindraceo ellipticis minutis grosse 4-guttulatis hyalinis.

Obs. Ramuli, adhuc epidermide vestiti, dense minuteque pustulosi; perithecia ligno immersa (150 μ diam.) tenuiier membranacea contextu indistincto fuscidulo, nucleo mucoso hyalino farcta, ostiola tenui carbonaceo corticem perforante epidermide lacerata cincto coronata; asci max diffuentes (35-40 × 8 μ) octospori a paraphysati; sporae oblique distichae medio unisepatae leniter constrictae utrinque obtusae (10-11 × 3-4 μ) hyalinae.

Appears to be form of *D. eres*.

Host: *Ilex paraguayensis*.

Distribution: Argentina.

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Stromate late extenso e corticis substantia non mutata formato neque linea nigra limitato; peritheciis sparsi v. subaggregatis, cortice nidulantibus lignoque adnatis, minutissimis, diam. ½ mm. ca sphaeroideis, subdepressis, atris, ostiolis brevissimis epidermidem parum
subvelatum vix excedentibus; ascis oblongo-fusoideis, 26–30 x 7–8, 8 sporis; sporidiis distichis pro genere minimis, 6 x 3–3.5, oblongo-ellipsoideis, medio non constrictis, hyalinis, 2-guttulatis.

This is very probably *Apioporthe vepris*.

**Host:** *Rubus fruticosus*.

**Distribution:** Italy.


Euporthe; perithecis densisuscule stromate in superficie nigro immersis minutis, ostiolis carbonaceis brevis parce exertis donatis, ascis subfusoideis, sporis fusideo-linearibus pro ratione majusculis.

Obs. Stromata late vageque effusa saepe totum culnum ambientia, extus fusco-nigrescentia intus sordide fuscacentia v. linea nigra limitata; perithecia hinc inde laxe gregaria matrice immersa non v. vix prominula, globulosa (200–300 μ diam.) ostiolo carbonaceo subcylindraceo plus minusve crasso atque elongato saepius breviter exerto donata; ascis fusodei-clavulati (65–70 μ long. x 9–10 μ crass.) octospori aparaphysati; sporae cylindraceo-subfusciformes rectae v. vix curvulae utrimque obtusiusculae (18–20 μ long. x 4 μ crass.) medio 1-septatae non v. vix constrictae, loculis in juventute grosse 2-guttulatis dein eguttulatis hyalinae. Species pulchella cum *D. Kellermanniana* Wint. non comparanda.

Larger throughout than the other species on *Zea*.

**Host:** *Zea Mays*.

**Distribution:** Argentina.


Euporthe; perithecia submajuscula matrici leniter infuscata infossa submajuscula eximie rostellato-ostiolata; asci et sporae submediocres.

Obs. Matrix late vageque infuscata; perithecia omnino immersa v. vix prominula globulosa (200–250 μ diam.) membranaceocoriacella, ostiolo subcylindraceo atro carbonaceo recto v. flexuoso longiusculo (0.5–2 mm. long.) armata; ascis e fusodeo clavulati (45–50 x 9–10 μ) mox decidui aparaphysati octospori; sporae distichae elliptico-elongatae utrimque obtusiusculae (13–15 x 4–5 μ), medio 1-
septatae leniter constrictae hyalinae, loculis 2-guttulatis infero saepius leniter minore.

The elongated ostioles and spore measurements suggest that this may be a form of *D. medusea*, which is widely distributed on many hosts in the northern hemisphere. A careful comparison of these South American species should yield interesting data on the distribution of this and related species.

Host: *Zizyphus vulgaris* (petioles).
Distribution: Argentina.
INDEX OF GENERA AND SPECIES

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