

## Dematiaceous Hyphomycetes inhabiting forest debris in Hungary I.

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**Abstract:** Lignicolous and some other Dematiaceous Hyphomycetes have been studied using the methods of direct examination and damp-chamber incubation. A list of 47 species, some of which are common, belonging to 38 genera is given. Some of the rare lignicolous Hyphomycetes are also recorded, 10 of them being new to Hungary.

Dematiaceous Hyphomycetes occurring on various organic debris such as rotting wood, fallen leaves, herbaceous plants have been examined by numerous mycologists for many years; i.e. ELLIS (1971, 1976), MATSUSHIMA (1971, 1975), KENDRICK and CARMICHAEL (1980). Numerous papers were published by SUTTON, PIROZYNSKY, HUGHES, TUBAKI, GAMS, HOLUBOVÁ-JECHOVÁ, MORGAN-JONES etc.

Dematiaceous Hyphomycetes, mainly lignicolous Hyphomycetes, are rather incompletely known in Hungary. No comprehensive work dealing with this fungus group has been published in Hungary, but sporadic data can be found in several papers. These data are usually reported in papers concerned with the whole fungus flora of given area. Lignicolous and some other saprophytic Hyphomycetes data can be found in the following publications: MOESZ (1941, 1942), of which the latter one is a beautifully illustrated work presenting the fungus flora of Budapest and its environs; L. HOLLÓS examined the fungi of two Hungarian towns (Kecskemét and Szekszárd) and their country-side (1913, 1933). Numerous papers were published about the fungi of the Mecsek Mts and Villányi Mts. by A. VASS and S. TÓTH. A short paper was published on the fungi of the Ócsa Nature Conservation Area (GÖNCZÖL & RÉVAY 1981), and one paper has been prepared on the fungi of the Kiskunság National Park (GÖNCZÖL & RÉVAY 1983, in manuscript). V. HOLUBOVÁ-JECHOVÁ, while attending the Seventh European Mycological Congress held in Hungary in September 1978, made some collecting excursions and collected some lignicolous and other saprophytic Hyphomycetes, and duly reported these data (HOLUBOVÁ-JECHOVÁ 1979).

In my previous paper attention has been focused on the leaf substrate of the Hyphomycetes inhabiting forest litter (GÖNCZÖL & RÉVAY 1983). Although together with the litter-leaf samples woody components of the forest litter were also collected, only Ascomycetous data have been reported so far (RÉVAY 1984).

This paper presents some data of lignicolous Hyphomycetes of the dead components of the woody litter. The material of the species enumerated below was collected by the author and her colleague, J. GÖNCZÖL. The examined material is deposited in the Mycological Herbarium of the Hungarian Natural History of Museum in Budapest.

### MATERIAL AND METHOD

The collecting sites are in the Börzsöny Mts along the mountain stream Morgó-patak, the

slopes of the mounts Morgó-hegy, Fekete-hegy, Kelemen-hegy. The further sites are in the Bükk Mts, along some mountain streams; Odor-patak, Oldalvölgyi-patak, Hosszúvölgyi-patak, Garadna-patak.

The collected material was of various states of decomposition, mainly decorticated highly decayed twigs were collected. Decaying twigs and branches were picked up at random from the litter and brought to the laboratory. The majority of the samples were examined immediately in the laboratory. Beside direct examination, a great part of the collected material was examined after incubation under moist condition in petri-dishes.

#### ENUMERATION OF SPECIES

Acrogenospora sphaerocephala (Berk. et Br.) M.B. Ellis (Pl.I. Fig. 1.). Conidiophores 140-350  $\mu\text{m}$  long, 7-11  $\mu\text{m}$  thick at the base, 4-5  $\mu\text{m}$  at the apex. Conidia subglobose, 24-28 x 21-24  $\mu\text{m}$ . Conidia are smaller than mentioned by ELLIS (1971) and fit closely with that of MAT-SUSHIMA (1975). Not uncommon in Hungary. - Found on decaying twigs, near the stream Odor-patak, Bükk Mts 29.5.1984.; near Rejtek in the Bükk Mts, 12.10.1984.

Alysidium resiniae (Fr.) M.B. Ellis (Pl.I. Fig. 2.). Conidiophores variable in length and in thickness. Conidia dark brown, single or in chains, subglobose 7-10  $\mu\text{m}$  diam., or ellipsoidal 11-18 x 7-12  $\mu\text{m}$ , nonseptate. Only very few data are known of this fungus in Hungary. - Found on dead branches, Verőcmaros, Börzsöny Mts, 15.6.1984.

Bactrodesmium spilomeum (Berk. et Br.) Mason et Hughes. Sporodochia dark brown, punctiform. Conidiophores fasciculate, subhyaline, up to 90  $\mu\text{m}$  long, 1.5-3  $\mu\text{m}$  thick. Conidia pale brown, 28-44 x 9-12  $\mu\text{m}$ , 3-5 (usually 4) septate, ellipsoidal or clavate. This species is reported from England and Czechoslovakia, where it occurs very rarely. (HOLUBOVÁ-JECHOVÁ 1972). Not uncommon species in Hungary. - Found on rotten twigs of Quercus sp., Morgó-hegy, Börzsöny Mts, 15.6.1984.

Brachysporium nigrum (Link) Hughes. Conidiophores dark-brown, 120-200 x 4-5  $\mu\text{m}$ . Conidia 3-septate, 17-19 x 8-10  $\mu\text{m}$ , two middle cells dark brown, basal and apical cells hyaline or subhyaline, basal cell with small pedicel. This is a very common species in Hungary. It has been observed on numerous occasions with abundant sporulation in several samples of various woody-litter. - Found on rotten wood, near the stream Morgó-patak in the Börzsöny Mts, 5.4.1984., 14.9.1984.; Odor-hegy, Bükk Mts, 20.5.1984.; near Rejtek, Bükk Mts, 11.10.1984.

Cacumisporium capitulatum (Corda) Hughes. Conidiophores 200-300 x 5-7  $\mu\text{m}$ . Conidia 3-septate, two middle cells darker than others, 15-20 x 4-5  $\mu\text{m}$ . A common species in Hungary. - Found on rotten wood, Gál-hegy, Börzsöny Mts, 16.7.1981.

Camposporium japonicum Ichinoe. Conidia 50-70 x 6, 5-7  $\mu\text{m}$  with a 25-30  $\mu\text{m}$  long three- or four-radiate projection. Previously this fungus had been found sporulating only on decaying leaf-skeletons, in submerged or in terrestrial habitat. (GÖNCZÖL&RÉVAY 1983). It has not been found on dead twigs previously in Hungary. - Found on small twigs of Fagus silvatica, near the stream Oldalvölgyi-patak, Bükk Mts, 19.4.1984.

Camposporium pellucidum (Grove) Hughes. Conidia cylindrical-fusiform, 60-95 x 5-6  $\mu\text{m}$ , usually with an apical projection of variable length. This is a well-known Hyphomycetes inhabiting leaf litter. During our observations on forest litter, we found this fungus several times in various biotopes. (GÖNCZÖL&RÉVAY 1983). Although it is a common species on leaf-skeletons, it had not been found previously on dead wood in Hungary. - Found on decaying twigs of Alnus glutinosa, near Verőcmaros, Börzsöny Mts, 5.4.1984.

Chloridium claviforme (Preuss) W.Gams et Hol.-Jech. Conidiophores 40-70 x 3-3,5  $\mu\text{m}$ , dark-brown, proliferating. Conidia 2-3 x 1,5-2  $\mu\text{m}$  in slimy heads. According to literature data it is reported to be a common species on dead wood, but very few Hungarian findings are known so far. - Found on dead branch of Fagus silvatica, near Hármaskút, Bükk Mts, 5.6.1982.

Chloridium virescens (Pers. ex Pers.) W.Gams et Hol.-Jech. var. chlamydosporum (van Beyma) W.Gams et Hol.-Jech. Conidiophores 100-120 x 3-3,5  $\mu\text{m}$  mid-brown, but towards the swollen tip becoming hyaline. Conidia ellipsoidal, subhyaline 2-4 x 1-2  $\mu\text{m}$  aggregated in slimy heads. It is an uncommon species, only a few Hungarian data are known. - Found on dead branch of Carpinus betulus, Morgó-hegy, Börzsöny Mts, 9.3.1984.

Cordana crassa Tóth (Pl.I. Fig.3.). Conidiophores simple, dark brown, paler towards the apex, up to 250  $\mu\text{m}$  long, 5-8  $\mu\text{m}$  wide. Conidia 1-septate, obpyriform, 24-27 x 9-13  $\mu\text{m}$ , basal cell dark brown, apical cell pale olivaceous brown. This species was described by Tóth from dead



branches of *Fagus silvatica* (TÓTH 1975a) and the species of *Cordana boothii* Ellis (ELLIS 1976) is undoubtedly identical with Tóth's species. It has been found on two occasions in Hungary since its first collection. - Found on dead twigs of *Alnus glutinosa*, near the stream Morgó-patak, Börzsöny Mts, 14.9.1984.

*Cordana pauciseptata* Preuss. Conidiophores simple, dark brown, 120-190 x 4-7 µm, with short denticles on its tip. Conidia dark brown, 8-11.5 x 4-6.4 µm, with 1 very dark and thick septum. This is a very common species on the wood and the bark of deciduous trees and conifers. It has also been sometimes found on animal dung. - Found on dead branches of *Fagus silvatica*, in the valley Hór-völgy near Oszla, Bükk Mts, 2.6.1982; Odor-hegy, Bükk Mts, 29.6.1984.

*Corynespora proliferata* Loerakker. Colonies on natural substrate effuse, bright, velvety. Conidiophores solitary, erect, straight, mid-brown, 90-120 µm long, 7-10 µm wide. Conidia obclavate pale or dark brown, up to 18-pseudoseptate, 80-500 x 8-12 µm. It is a rare species, had not been found previously in Hungary. - Found on dead branches of *Fagus silvatica*, in the valley Ablakoskő-völgy, Bükk Mts, 4.6.1982.

*Cryptocoryneum condensatum* (Wallr.) Mason et Hughes (Pl.I, Fig. 4.). Sporodochia pulvinate, dark brown. Conidiophores not seen. Conidia consisting of 5-10 arms which 40-90 µm long and 4-5 µm thick, with 10-15 septa. Not uncommon. - Found on dead branches of *Fraxinus* sp., Gál-hegy, Börzsöny Mts, 5.1.1982., Morgó-hegy in the Börzsöny Mts, 9.3.1984.

*Cylindrotrichum oligospermum* (Corda) Bonord. Conidiophores up to 80 µm long, 3-4 µm wide, dark brown sterile setae among the conidiophores up to 400-500 µm long. Conidia cylindrical, 1-septate, hyaline, 11-16 x 3-3.5 µm. The conidia are somewhat smaller than those reported by Ellis (1971). Not uncommon on various forest debris. - Found on dead twigs of *Quercus* sp., near the stream Morgó-patak, Börzsöny Mts, 9.2.1984., 14.9.1984.

*Dendryphion nanum* (C.G.Nees ex S.F.Gray) Hughes. Stromata partly superficial, partly, immersed. Conidiophores singly or in groups, branched at the apex, 80-250 x 10-11 µm, mid-brown. Conidia solitary or in chains, obclavate to cylindrical, with rounded apex and truncated base with a dark scar, 5-11-septate, 40-90 x 11-12 µm, brown, basal and apical cells subhyaline, smooth or verruculose. Not a common species in Hungary. - Found on dead stems of *Melampyrum* sp., Morgó-hegy, Börzsöny Mts, 8.4.1981.

*Dendryphiopsis atra* (Corda) Hughes (Pl. III, Fig. 2.). Conidiophores up to 400 µm long, 6-9 µm thick, dark brown. Conidia olivaceous brown, 3-5-septate, 30-70 x 10-14 µm. This is a common species in Hungary. - Found on dead branches of *Quercus* sp., near the stream Morgó-patak, Börzsöny Mts, 14.9.1983., 9.3.1984.; on dead twigs of *Fagus silvatica*, Odor-hegy, Bükk Mts., 18.4.1984.

*Dictyosporium elegans* Corda (Pl.II, Fig.4.). Colonies dark brown, granular. Conidia flattened in one plane, consisting of 4-6 arms, 27-52 x 20-28 µm, cells 6-7 µm thick, reddish brown. ELLIS (1971) gives a greater size of the conidia, i.e. 50-80 x 24-31 µm, cells 4-9 µm thick. It is not a common species. - Found on dead wood, near the stream Morgó-patak, Börzsöny Mts. 15.6.1984.; Odor-hegy, Bükk Mts, 29.5.1984.

*Dictyosporium toruloides* (Corda) Guéguen. Colonies dark blackish-brown, granular. Conidia flattened in one plane, brown, consisting of 6-8 arms which unequal in length. Conidia 33-46 x 22-33 µm, cells 5-6.5 µm thick. According to literature data it is a common species on various forest debris, but in Hungary only a few data are known. - Found on dead wood, Odor-hegy, Bükk Mts, 29.5.1984.

*Endophragmia glanduliformis* (Höhnelt) M.B.Ellis (Pl.II, Fig.3.). Conidia simple, acrogenous, ellipsoidal, 2-septate, upper cell dark brown, middle cell paler and basal one subhyaline, 12-15 x 9-10 µm. It is a rare species in Hungary. - Found on dead twigs of *Alnus glutinosa*, Morgó-hegy, Börzsöny Mts, 5.4.1984.

*Endophragmiella collapsa* (Sutton) Hughes (Pl.II, Fig.2.). Conidiophores mostly in groups of 2-5, erect, rarely with a lateral branch, straight or irregularly bent, 30-130 µm long, 4-5 µm thick just above the base, golden brown but subhyaline near the apex. Conidia solitary, 2-septate, obovoid or more or less ellipsoidal, the two distal cells mid-brown, thick-walled and often collapsed, measuring 14.5-17 x 6-8 µm. It is a rare species, had not been found previously in Hungary. Previously reported only from Canada. Found on decaying twigs of *Alnus glutinosa*, near the stream Morgó-patak, Börzsöny Mts, 9.2.1984.

*Endophragmiella ontariensis* Hughes (Pl.II, Fig.1.). Conidiophores usually in groups, erect, sometimes branched, straight, up to 200 µm long and 5-6 µm wide, dark brown, paler towards the apex. Conidia solitary, obovoid, 2-septate, basal cell paler than the two upper ones, 15-22 x 7-10 µm. This species had not been found previously in Hungary, formerly reported only from Canada



(HUGHES 1978). - Found on dead twigs of Alnus glutinosa, near the stream Morgó-patak, Börzsöny Mts, 9.2.1984.

Exosporium tiliae Link ex Schlecht. Colonies discrete, dark brown. Stromata erumpent, 200-500  $\mu\text{m}$  diam. Conidiophores dark brown, 40-120 x 10-12  $\mu\text{m}$ . Conidia straight or curved, obclavate, dark brown, 5-10 (15)-pseudoseptate, 80-150 x 10-16  $\mu\text{m}$ . Not a common species in Hungary. - Found on branches of Tilia cordata, Gálhegy, Börzsöny Mts, 2.6.1981., 1.7.1981., 9.10.1981.

Gonytrichum caesium Nees ex Pers. Perfect state: Melanopsammella inaequalis (Grove) Höhnelt Colonies grey, later becoming blackish brown, Conidiophores 300-450 x 2-3  $\mu\text{m}$ , dark brown, branched, branches anastomosing. Conidia ellipsoidal, hyaline, 2-3 x 1-1.5  $\mu\text{m}$ . This is a fairly common species on dead wood. - Found on dead wood, Morgó-hegy, Börzsöny Mts, 14.9.1984.; Odor-hegy, Bükk Mts, 10.10.1984.

Graphium calicioides (Fr.) Cooke et Masee (Pl.III. Fig.4.). Synnemata black, up to 1.5-2 mm long and 100  $\mu\text{m}$  wide, individual threads 1.5-2  $\mu\text{m}$  thick, pale brown. Conidia ellipsoidal or obovoid, pale brown, 2.5-3 x 1.5  $\mu\text{m}$ . It is common on rotten wood. - Found on dead wood, Királyrét, near the stream Nagy-Vasfazék-patak, Börzsöny Mts, 9.9.1981.

Helicosporium vegetum C.G.Nees. Perfect state: Tubeufia cerea (Berk et Curt.) Booth Colonies hairy, greenish yellow. Conidiophores dark brown, unbranched, 180-250 x 3-4  $\mu\text{m}$ , Conidia hyaline, 12-20  $\mu\text{m}$  diam., helically coiled 2-3 times in one plane. This is a common fungus on various forest debris lying on the ground. - Found on dead branch of Quercus sp., near the stream Morgó-patak, Börzsöny Mts, 9.2.1984., 9.3.1984.

Helminthosporium velutinum Link. Conidiophores dark brown, up to 900-1000  $\mu\text{m}$  long, 15-20  $\mu\text{m}$  wide. Conidia straight or flexuous, obclavate, pale brown or subhyaline, 5-15-pseudoseptate, 40-100 x 14-18  $\mu\text{m}$ . Only few data are known for this fungus in Hungary, but it is not uncommon in Europe. - Found on dead branches of Quercus sp., Gálhegy, Börzsöny Mts, 7.9.1981.; on dead branches of Robinia pseudacacia, Kelemen-hegy, Börzsöny Mts, 8.9.1981.

Menispora caesia Preuss. Perfect state: Chaetosphaeria pulviscula (Curr.) Booth. Colonies grey or brown, velvety. Setae straight, unbranched, brown, 300-500 x 3-5  $\mu\text{m}$ . Conidiophores brown, branched, 200-300 x 2.5-4  $\mu\text{m}$ . Conidia curved, hyaline, cylindrical or fusiform, 13-20 x 3-4  $\mu\text{m}$ . Not uncommon on rotten wood. - On dead wood, Verőcsemaros, Börzsöny Mts., 15.6.1984.; Odor-hegy, Bükk Mts, 11.10.1984.

Neta patuxentica Shearer et Crane. Colonies discrete, about 0.5 mm diam., consisting of a loose, black net with whitish spore mass in its centre. Conidia hyaline, 1-septate, curved, 13-15 x 4-5  $\mu\text{m}$ . This fungus was first reported in Hungary on dung (TÓTH 1975b). Later it has been found several times on moderately decayed leaves (Quercus spp.) (GÖNCZÖL&RÉVAY 1983). On one occasion it was found on dead wood. - On dead wood, Morgó-hegy, Börzsöny Mts, 9.3.1984.

Paradendryphiopsis cambrensis M.B.Ellis (Pl.III. Fig. 3.). Conidiophores 130-300 x 6.4-8  $\mu\text{m}$ , brown, branched towards the apex. Conidia catenate, 3-septate, the two middle cells brown, and two outer subhyaline or pale brown, 30-40 x 9-12  $\mu\text{m}$ . This fungus had not been found previously in Hungary. - Found on dead branches of Quercus sp., Morgó-hegy, Börzsöny Mts, 5.4.1984.

Periconia cookei Mason et M.B.Ellis. Conidiophores dark brown, 400-500 x 14-24  $\mu\text{m}$ . Conidia globose, verrucose, brown, 14-16  $\mu\text{m}$  diam. Very common on dead herbaceous stems and on decaying wood. - Found on dead twigs of Corylus avellana, Kelemen-hegy near Kóspallag, Börzsöny Mts, 2.6.1981.; on dead stems of Urtica dioica, Verőcsemaros, Börzsöny Mts, 8.4.1981., 7.9.1981.

Phaeoisaria clavulata (Grove) Mason et Hughes. Synnemata 250-420 x 12-18  $\mu\text{m}$ , individual threads 1.2-1.5  $\mu\text{m}$  thick. Conidia 1-2  $\mu\text{m}$  diam., globose or ovoid. Uncommon in Hungary. - Found on dead wood, Morgó-hegy, Börzsöny Mts, 5.4.1984.

Pleurophragmium acutum (Grove) M.B.Ellis. Conidiophores solitary or in groups, straight or flexuous, branched, 25-50 x 2-3  $\mu\text{m}$ . Conidia fusiform, nonseptate, 7-8 x 2-2.5  $\mu\text{m}$ , hyaline. This is an uncommon species in Hungary. - Found on dead wood, Morgó-hegy, Börzsöny Mts, 9.2.1984.

Pleurotheciopsis bramleyi Sutton. Conidiophores 200-300 x 5-6.5  $\mu\text{m}$ , straight or somewhat flexuous, dark brown, paler towards the apex. Conidiogenous cell polyblastic, usually with conspicuous cylindrical flat-topped denticles. Conidia 18-25 x 4-6  $\mu\text{m}$ , hyaline, catenate, truncated at both ends, 3-septate, sometimes the two inner cells of the conidia conspicuously thick-walled and pale brown. Our observations show that this fungus appears fairly frequently on small twigs in wet conditions. This fungus had hitherto been unknown from Hungary. - Found on dead twigs, near the stream Morgó-patak, Börzsöny Mts, 9.3.1984., 5.4.1984., 14.9.1984.; near the stream Oldalvölgyi-patak, Bükk Mts, 29.5.1984.; Zala County near Bak, 20.6.1983.

Pleurothecium recurvatum (Morgan) Höhnelt (Pl.III. Fig. 1.). Conidiophores singly, dark brown, subhyaline at the apex, 200-300 x 4-5  $\mu\text{m}$ , 6-8  $\mu\text{m}$  at the base. Conidia borne upon blunt teeth, and



remaining in moist heads. Conidia hyaline, 3-septate, ellipsoidal, 16-20 x 4-6  $\mu\text{m}$ . This is an uncommon species in Hungary. - Found on dead wood, Morgó-hegy, Börzsöny Mts, 15.6.1984.

Pseudospiropes simplex (Kunze ex Pers.) M.B.Ellis (Pl.IV. Fig.3.). Conidiophores dark brown, 180-250 x 7-8  $\mu\text{m}$ . Conidia pale yellowish-green, 5-7 pseudoseptate, 38-45 x 11-13  $\mu\text{m}$ , 2-3  $\mu\text{m}$  wide at the scar. Only a few data are known from Hungary. - Found on dead branch of Carpinus betulus, Odor-hegy, Bükk Mts, 25.4.1984.

Pseudospiropes subuliferus (Corda) M.B.Ellis. Conidiophores 200-500 x 6-10  $\mu\text{m}$ , dark brown, paler towards the apex, with small dark scars. Conidia cylindrical or clavate, 1-4, mostly 3-septate, subhyaline, 15-24 x 3-5  $\mu\text{m}$ . Only some sporadic data are known from Hungary. - Found on dead branches of Salix sp., Kóspallag, Börzsöny Mts, 7.9.1981.; on dead wood, near the stream Oldalvölgyi-patak, Bükk Mts, 19.4.1984.

Septotrullula bacilligera Höhnelt. Sporodochia pulvinate, olivaceous brown, 800-1500  $\mu\text{m}$  diam. Conidiophores 10-28 x 2-3  $\mu\text{m}$ , crowded, unbranched, subhyaline or olivaceous. Conidia catenate, cylindrical with truncated ends, pale yellowish-green, 15-25 x 2-2.5  $\mu\text{m}$ , 1-3-septate. Common on dead branches of various deciduous trees. - Found on dead branches of Quercus sp. and Alnus glutinosa, Morgó-hegy, Börzsöny Mts, 9.2.1984.; on dead wood, near the stream Oldalvölgyi-patak, Bükk Mts, 19.4.1984.; on dead branches of Fagus sylvatica, Odor-hegy, Bükk Mts, 11.10.1984.

Spadicoides grovei M.B.Ellis. Conidiophores dark brown, unbranched, 300-400 x 2.5-4  $\mu\text{m}$ . Conidia solitary, obovoid, dark brown with thick, black bands at the septa, 2-3 septate, 22-25 x 10-12  $\mu\text{m}$ . Not uncommon in Hungary. - Found on dead branches of Fagus sylvatica, near Bánkut, Bükk Mts, 12.6.1982.

Sporidesmium altum (Preuss) M.B.Ellis. Conidiophores dark brown, 120-200 x 4-5  $\mu\text{m}$ . Conidia straight or curved, obpyriform, conico-truncated, mid-brown, apical 1 or 2 cells subhyaline, 5-6-septate, 40-53 x 12-14  $\mu\text{m}$ . It is not a common species in Hungary. - Found on dead wood, Odor-hegy, Bükk Mts, 12.10.1984.

Sporidesmium cookei (Hughes) M.B.Ellis (Pl.IV. Fig.5.). Conidiophores dark brown, paler towards the apex, 80-200 x 3-4  $\mu\text{m}$ . Conidia obturbinate, conico-truncate, 3-septate, two basal cells dark brown and two apical ones much more paler, 18-25 x 8-10  $\mu\text{m}$ , 1-1.5  $\mu\text{m}$  near the apex. The conidia in our material are more pointed than those illustrated by ELLIS (1971). It is not a common species, had not been reported previously from Hungary. - Found on very small twigs of Alnus glutinosa, Morgó-hegy, Börzsöny Mts, 5.4.1984.

Sporidesmium folliculatum (Corda) Mason et Hughes (Pl.IV. Fig.4.). Conidiophores dark brown, sometimes conico-truncated at the apex, 32-80 x 5-6  $\mu\text{m}$ . Conidia cylindrical, rounded at the apex, conico-truncated at the base, dark-brown, 6-11-pseudoseptate, 44-75 x 8-10  $\mu\text{m}$ . Common on dead wood. - Found on dead branches of Carpinus betulus, Morgó-hegy, Börzsöny Mts, 25.11.1983.; on dead wood, Odor-hegy, Bükk Mts, 29.5.1984.

Sporidesmium leptosporum (Sacc. et Roum.) Hughes. Conidiophores mid- or dark brown, solitary, sometimes in small groups, 40-100 x 3-4  $\mu\text{m}$ . Conidia obclavate, pale yellowish-brown, 50-70 x 6-7  $\mu\text{m}$ , 3-3.5  $\mu\text{m}$  wide at the truncate end, 10-15-pseudoseptate. Not a common species in Hungary. - Found on dead wood, near Verőcémáros, Börzsöny Mts, 15.6.1984.

Stachybotrys atra Corda. Conidiophores olivaceous or dark brown, sometimes covered with granules, branched, 80-100 x 3-5  $\mu\text{m}$ . Conidia ellipsoidal or subglobose, verrucose, dark brown, 8-11.5 x 5-10  $\mu\text{m}$ . Very common on various decaying forest debris. - Found on dead wood, near Verőcémáros, Börzsöny Mts, 8.4.1981.

Taeniolella alta (Ehrehn. ex Pers.) Hughes (Pl.IV. Fig.1.). Conidiophores solitary or in small groups, usually unbranched, dark brown, 30-150 x 9-11  $\mu\text{m}$ . Conidia catenate, mostly 1-5-septate, cylindrical, straight or curved, olivaceous brown, 22-45 x 8-10  $\mu\text{m}$ . It is an uncommon species, had not been previously reported from Hungary. - Found on dead twigs of Alnus glutinosa, Morgó-hegy, Börzsöny Mts, 15.6.1984., 14.9.1984.

Torula herbarum (Pers.) Link ex S.F.Gray. Colonies variable in size, black, velvety. Conidiophores brown, 2-5  $\mu\text{m}$  thick. Conidia straight or curved, mostly 4-5-septate, pale brown, 20-30 x 5-6  $\mu\text{m}$ . Very common on dead herbaceous stems, leaves and on dead wood. - Found on dead stems of Melampyrum sp., Morgó-hegy, Börzsöny Mts, 8.4.1981.; on dead wood and dead leaves, Gálhegy, Börzsöny Mts, 7.9.1981.

Trimmatostroma salicis Corda. Sporodochia pulvinate, blackish brown. Conidia curved often branched, up to 10-13 transverse and 1-2 longitudinal or oblique septa, mid-brown, 14-30 x 6-7  $\mu\text{m}$ . - Found on dead branches of Salix sp., Kelemen-hegy near Kóspallag, Börzsöny Mts, 8.5.1981.; Fekete-hegy, Börzsöny Mts, 12.8.1981.

Vargamyces aquaticus (Dudka) Tóth (Pl.IV. Fig.2.). Conidia large, fusiform, dark brown,



80-160 x 15-20 µm. This fungus was commonly found on various decaying leaves collected from forest litter, from submerged or dry conditions. Usually abundant sporulation was observed, not only on decaying leaves but on dead branches of various deciduous trees and conifers as well. It is also a well known species in Hungary from foam and water samples. It was found throughout the year. For its distribution in Hungary, see TÓTH (1979). - Found on dead twigs of *Alnus glutinosa*, near the stream Hosszúvölgyi-patak, Bükk Mts, 18.4.1984.; on dead wood, near the stream Odor-patak, Oldalvölgyi-patak, Bükk Mts, 19.4.1984.; near the stream Morgó-patak, Börzsöny Mts, 14.9.1984.

In this paper 78 records of 47 fungus species belonging to 38 genera are listed. This account is the first result of studies carried out on Hyphomycetes growing on decaying wood in Hungary. Of the enumerated species, the following are new to Hungary:

*Corynespora proliferata* Loerakker  
*Endophragmia glanduliformis* (Höhnelt) M.B.Ellis  
*Endophragmiella collapsa* (Sutton) Hughes  
*Endophragmiella ontariensis* Hughes  
*Paradendryphiopsis cambrensis* M.B.Ellis  
*Phaeoisaria clavulata* (Grove) Mason et Hughes  
*Pleurotheciopsis bramleyi* Sutton  
*Sporidesmium cookei* (Hughes) M.B.Ellis  
*Sporidesmium leptosporum* (Sacc. et Roum.) Hughes  
*Taeniolella alta* (Ehrenb. ex Pers.) Hughes

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Plate I.

- Fig. 1. *Acrogenospora sphaerocephala* (Berk. & Br.) M.B. Ellis - conidiophore with conidium, X 450.  
Fig. 2. *Alysidium resinae* (Fr.) M.B. Ellis - conidiophores with branched chains of conidia, X 300.  
Fig. 3. *Cordana crassa* Tóth - conidiophore with attached conidia X 1000.  
Fig. 4. *Cryptocoryneum condensatum* (Wallr.) Mason et Hughes - free conidia, X 450.

Plate II.

- Fig. 1. *Endophragmiella ontariensis* Hughes - conidiophores with conidia, X 900.  
Fig. 2. *Endophragmiella collapsa* (Sutton) Hughes - conidiophores with conidia, X 1000.  
Fig. 3. *Endophragma glanduliformis* (Höhnelt) M.B. Ellis - conidiophores with conidia, X 800.  
Fig. 4. *Dictyosporium elegans* Corda - conidia, X 750.

Plate III.

- Fig. 1. *Pleurothecium recurvatum* (Morgan) Höhnelt - conidiophore with conidia, X 1000.  
Fig. 2. *Dendryphiopsis atra* (Corda) Hughes - conidiophores with conidia, X 800.  
Fig. 3. *Paradendryphiopsis cambrensis* M.B. Ellis - conidiophore with detached conidia, X 750.  
Fig. 4. *Graphium calicioides* (Fr.) Cooke et Masee - apical part of the synnemata, X 700.

Plate IV.

- Fig. 1. *Taeniolella alta* (Ehrenb. ex Pers.) Hughes - conidiophores with chains of conidia, X 400.  
Fig. 2. *Vargamyces aquaticus* (Dudka) Tóth - conidia, X 400.  
Fig. 3. *Pseudospiropes simplex* (Kunze ex Pers.) M.B. Ellis - conidia, X 1000.  
Fig. 4. *Sporidesmium folliculatum* (Corda) Mason et Hughes - conidia, X 750.  
Fig. 5. *Sporidesmium cooki* (Hughes) M.B. Ellis - conidia, X 1500.

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Plate I.

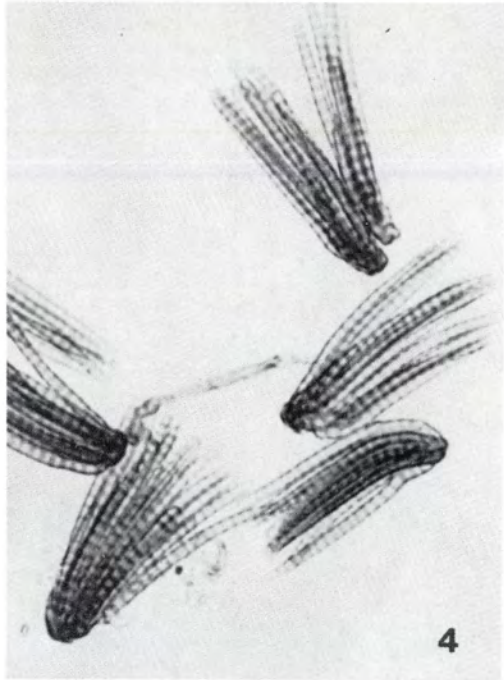
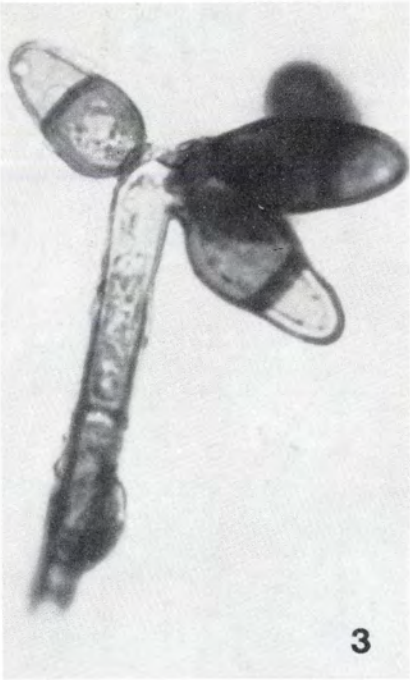
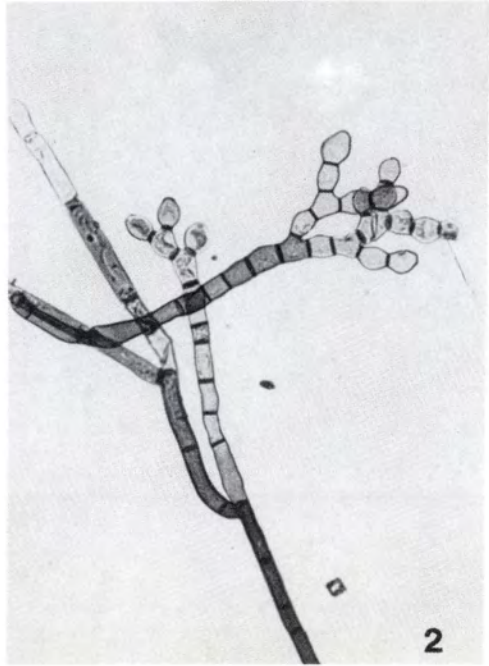




Plate II.

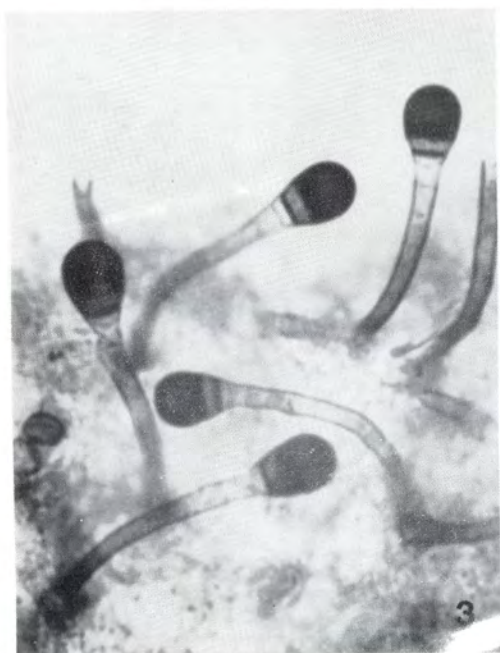
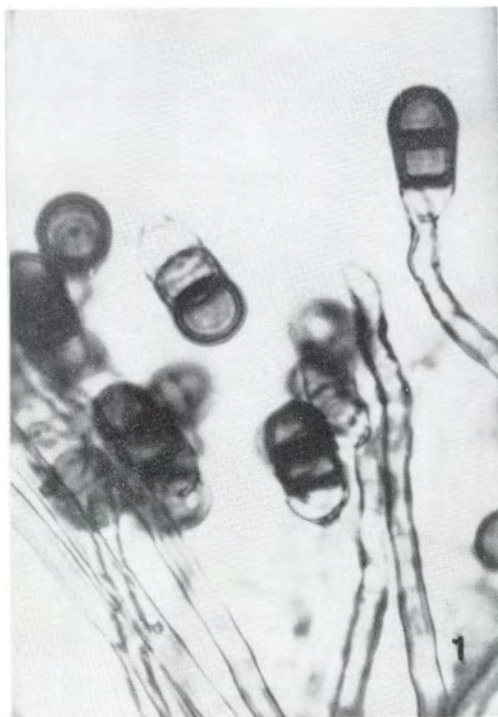


Plate III.

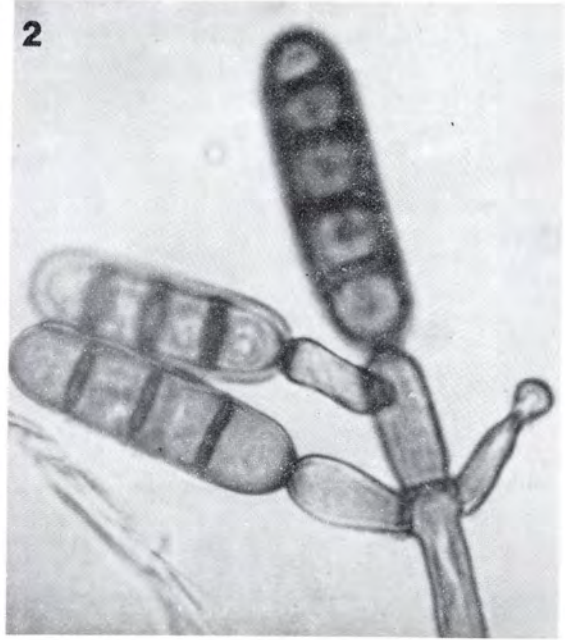
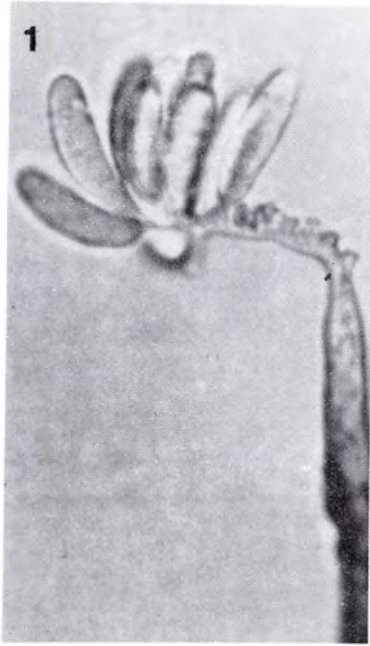




Plate IV.

