

Some species of the genus *Diatrype* from the Czech Republic preserved in PRM, BRNM and KRAM

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This paper is a preliminary note on fungi from the genus *Diatrype* collected in the Czech Republic: *Diatrype bullata*, *D. disciformis*, *D. decorticata*, *D. flavovirens*, *D. stigma*, *D. subaffixa* var. *rappazii* and *D. undulata*. Two species, *D. undulata* and *D. subaffixa*, have so far not been reported from the Czech Republic. The most interesting appeared to be a collection of *Diatrype* from *Loranthus europaeus* temporarily included in *Diatrype disciformis*.

Key words: *Diatrype*, distribution, taxonomy, Bohemia, Moravia.

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Příspěvek pojednává o druzích *Diatrype bullata*, *D. decorticata*, *D. disciformis*, *D. flavovirens*, *D. stigma*, *D. subaffixa* var. *rappazii*, *D. undulata* nalezených v České republice. Pro srovnání byl též studován materiál některých druhů z jiných substrátů a z Polska a jiných zemí. Dva druhy, *D. undulata* a *D. subaffixa* nebyly z České republiky dosud udávány. Zajímavý sběr *Diatrype* na větvičkách *Loranthus europaeus* je dočasně zahrnutý pod *Diatrype disciformis*.

INTRODUCTION

Fungi of the genus *Diatrype* inhabit mostly senescent branches and twigs of trees and shrubs. Species such as *Diatrype disciformis*, *Diatrype bullata* and *Diatrype flavovirens* are very common and easy for identification. Fungi earlier referable to *Diatrype stigma* are difficult to separate. Rappaz (1987) split *Diatrype stigma* into several species, such as *Diatrype decorticata*, *Diatrype undulata* and *Diatrype stigma* sensu stricto. Chlebicki (1995) distinguished another taxon from this group, *Diatrype subaffixa* var. *rappazii*, differing from the others species by strongly undulating stromata and distinctly larger ascospores.

Fungi from the genus *Diatrype* were for the first time reported from the Czech Republic by Opiz (1823, 1852, 1855), Peyl (1857a, 1857b, 1858), Veselsky (1856, 1859) and Niessl (1865). Veselsky (1859) and Niessl (1865) noted *Sphaeria undulata* (*Diatrype undulata*) on *Corylus avellana*. However, the specialised fungus *Diatrype undulata* occurs only on *Betula* spp. (Rappaz 1987a). It is not

clear which species Veselsky and Niessl collected, possibly it was *D. decorticata*. Veselsky (1859) found fungus *Sphaeria stigma* Hoffm. b. *decorticata* DC., which at present is classified as *Diatrype decorticata*. Further localities of some species of this genus were reported by Petrak (1920, 1923, 1927, 1940), Svrček (1959, 1990, 2001), Svrček and Kubička (1964, 1971), Podlahová (1973), Prášil and Réblová (1998), Réblová and Prášil (1999). The majority of data referred to as *Diatrype stigma* are mostly incorrect. *Diatrype disciformis*, *D. flavovirens* and *D. stigma* have been cultured (Prášil et al. 1973) and then screened for antibiotic activity (Prášil and Šašek 1977), but no activity has been found in these species.

I followed Rappaz (1987b) in the use of terms of stromata morphology. Especially meaning of such terms as ectostroma and entostroma should be explained. Ectostroma is an upper, homogenous part of stroma which can produce conidiomata and conidia. Sometimes such conidial stromata can be visible together with adult teleomorph stromata (see Chlebicki and Krzyżanowska 1995, Fig. 7). Entostroma can produce perithecia and ascospores. It is heterogenous part of stroma, lying below the ectostroma and is composed of two layers (Prášil 1984). The upper layer is homogenous, composed of mycelium, but the lower one is heterogenous, composed of mycelium and host plant tissue (Fig. 1).

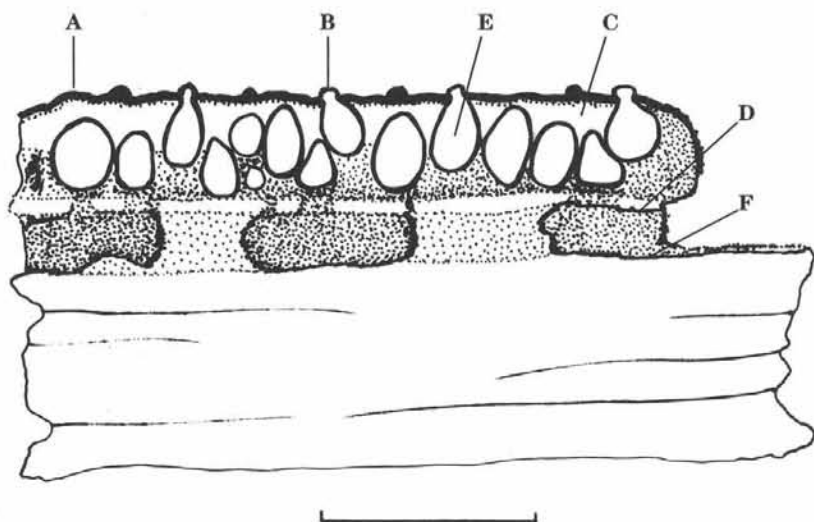


Fig. 1. Morphology of *Diatrype* stroma: A - ectostroma, B - ostioles, C - upper, homogenous entostroma, D - lower, heterogenous entostroma, E - perithecia, F - dorsal zone. Scale bar = 1000 μ m.

METHODS

Surface of stromata as well as ostioles were observed under Nikon SMZ 1500 stereomicroscope. Dried material was prepared in water and studied under a Labophot 2 light microscope with an oil immersion lens. Host plants were identified on the basis of Schweingruber's Anatomy of European woods (Schweingruber 1990). Descriptions of fungi are based on material deposited in the herbaria PRM in Prague and BRNM in Brno. Fungi collected by the author are deposited in KRAM F (Kraków, Poland).

RESULTS AND DISCUSSION

Diatrype bullata (Hoffm.: Fr.) Fr., Summa Veg. Scand. 2: 385, 1849.

Syn.: *Sphaeria bullata* Hoffm.: Fr., *Sphaeria placenta* Tode, *Diatrype macounii* Ellis et Everh.

Description. Stromata erumpent through the bark, mostly circular or slightly elongate, sometimes confluent and then irregular, brownish-grey, surface \pm pulvinate, sides surrounded (Fig. 2A), stromata 4–7 mm diam., 0.5–0.7 mm high, perithecia pyriform, in a single layer, ectostroma black, entostroma creamy white, black stromatic zone (dorsal zone) extending down to the wood (Fig. 3A), ostioles slightly erumpent, hemispherical, three- to four-sulcate, black, asci spindle shaped 20–34 \times 5–6 μ m p. sp., pedicel 50–80 μ m long, apical apparatus I+, ascospores allantoid, subolivaceous 5–7 \times 1.1–1.3 μ m.

Comments. Known mostly from various species of the genus *Salix* and rarely on *Populus*. In the Czech Republic it has been collected on such host plants as *Salix aurita*, *Salix caprea*, *Salix cinerea*, *Salix fragilis*, *Salix pentandra*, *Salix viminalis* and *Salix* spp. J. Peyl collected it in 1852 but wrongly identified it as *Sphaeria depressa* Bolton (Opiz 1855), which is a synonym of *Diatrype disciformis*. Petrak (1923) noted it on *Salix caprea* in Šternberk (Moravia). It is a very common species on willows, reported by various authors.

Material studied. **Bohemia:** Western Bohemia: Šumava Mts., forest near Černé jezero (lake), on dead twigs of *Salix caprea*, 29 October 2004, coll.: A. Chlebicki and M. Suková, KRAM F 54767; Western Bohemia: Javornická hornatina, Zuklín near Strašín, 900 m elev., on dead twig of *Salix caprea*, 3 October 1997, coll.: M. Svrček, PRM 891815; Western Bohemia: Javornická hornatina, Nahořánky near Strašín, Hrbeček, on dead twig of *Salix fragilis*, 29 November 1997, coll.: M. Svrček, PRM 891739; Central Bohemia: Hřebený Mts., Řevnice, in valley of 'Babský potok' (stream), on dead twigs of *Salix caprea*, 12 April 1959, coll.: M. Svrček, PRM 516007; Central Bohemia: Hřebený Mts., Dobřichovice, on dead twigs of *Salix caprea*, 20 June 1995, coll.: M. Svrček, PRM 887845; Central Bohemia: Prag-Hetzinsel (Praha-Štvanice), in *Salice* (on twig of *Salix* sp.), no date, coll.: A. C. I. Corda, (as *Sphaeria disciformis* Hoffm.) PRM 800164; Central Bohemia: Neratovice, on dead twig of *Salix* sp., 29 September 1953, coll.: Z. Pouzar, PRM 669897; Central Bohemia: circa 1.5 km NNW of Lysá nad Labem,

'Hrabanovská černava' nature reserve, on twigs of *Salix* sp., 10 April 2004, coll.: M. Suková and A. Chlebickí, PRM 901977; Central Bohemia: Kačín (Kačina castle near Kutná Hora), 1853, coll.: J. Peyl, PRM 669893, 823830; Central Bohemia, Kačina (Kačina castle near Kutná Hora), 1852, coll.: J. Peyl, PRM 669905; Central Bohemia: Kačina castle near Kutná Hora, 1854, coll.: J. Peyl, PRM 799763, 799765, 813235, 813307, 823947 (as *Sphaeria ballota* Ehrh.); Central Bohemia: Neuhof (Nové Dvory near Kutná Hora) on dead twig of *Salix* sp., 1853, coll.: Weselský (F. Veselsky), PRM 669908, 799764; Eastern Bohemia: 'Hříva' near Skuhrov, Česká Třebová, on dead twig of *Salix caprea*, 8 August 1983, coll.: F. Kotlaba, ident.: Z. Pouzar, PRM 831637; Southern Bohemia: Vrábsko near Čimelice, 'Mandelíkovská' forest, on dead twigs of *Salix caprea*, 6 August 1964, coll.: M. Svrček, PRM 613311; Southern Bohemia: Čimelice, in 'Chlum' forest (Rakovický vrch), on dead twigs of *Salix caprea*, 6 August 1969, coll.: M. Svrček, PRM 684659; Southern Bohemia: Jetětice near Milevsko, valley of Jetětický potok (stream), on dead twigs of *Salix* cf. *caprea*, 6 April 1969, coll.: M. Svrček, PRM 684259; Southern Bohemia: Putim near Písek, old willow tree, on dead twig of *Salix* cf. *viminalis*, 16 October 1979, coll.: J. Kubička, ident.: Z. Pouzar, PRM 822274; Southern Bohemia: 'Soběslavská blata' peat-bog, named 'U Rozhledny' near Vlastiboř, on dead twigs of *Salix aurita*, 15 July 1954, coll.: Z. Pouzar, PRM 713569; Southern Bohemia: in 'Soběslavská (Borkovická) blata' peat-bog, eastern part of 'Komárovský chobot' near Soběslav, on dead twigs of *Salix cinerea*, 22 June 2001, coll.: F. Kotlaba, ident.: Z. Pouzar, PRM 895051; Southern Bohemia: Smržov near Lomnice nad Lužnicí, 'Dvořiště' pond, on dead twigs of *Salix caprea*, 12 July 1962, coll.: M. Svrček, ident.: M. Svrček, PRM 567908; Southern Bohemia: Třeboň, Prameniště u Jindřů, on *Salix* sp., 7 September 1971, coll. and ident.: J. Kubička, PRM 842443; Southern Bohemia: Třeboň, "Mokré louky", on *Salix pentandra*, 10 July 1979, coll.: J. Kubička, ident.: M. Svrček, PRM 824453; Southern Bohemia: Třeboň, 'Mokré louky', on *Salix cinerea*, 11 August 1979, coll.: J. Kubička, ident.: M. Svrček, PRM 824452; Southern Bohemia: Třeboň, 'Stupský rybník' pond in Prales, on dead twig of *Salix* sp., 7 December 1957, coll.: J. Kubička and M. Svrček, ident.: M. Svrček, PRM 867007; Southern Bohemia: Třeboň, Zámecký revír, wet forest named 'Spálená borkovina', on dead twigs of *Salix aurita*, 7 December 1957, coll.: J. Kubička and M. Svrček, ident.: M. Svrček, PRM 879210.

Moravia: Weisskirchen (Hranice): Hrabůvka, on dead twig of *Salix caprea*, 18 April 1912, coll.: F. Petrak, PRM 669894, BRNM 04258/39; Mycotheca carpatica No. 225; West-Beskids: Ufer der Unt. Bečva bei Rož...? (bank of Dolní Bečva near Rožnov pod Radhoštěm), September 1922, coll.: F. Petrak, PRM 481528; Hostýnské kopce Mts., in the forest on southern slope of Mt. Ožinák, elev. c. 600 m, on dead twigs of *Salix caprea*, 13 September 1958, coll.: H. Zavřel, PRM 614302; Vsetínské vrchy Mts., Mt. Cáb, under Cábská road, on dead twigs of *Salix* sp., 20 January 1951, coll.: Z. Pouzar, ident. M. Svrček, PRM 716996; Kamenice near Turovice, on dead twig of *Salix cinerea*, 5 March 1939, coll.: H. Zavřel, BRNM 127766; Arboretum Křtiny near Blansko, on dead twigs of *Salix* sp., 8 November 1983, coll.: A. Vágner, BRNM 0457465, 289316; Jelení skok, c. 1.5 km E of Vranov near Brno, on dead twig of *Salix caprea*, 16 May 1985, coll.: A. Vágner, BRNM 0457464; Moravský kras, Ochoz near Brno, Říčky valley, Lysá hora, on dead twig of *Salix caprea*, 14 April 2001, coll.: A. Vágner, BRNM 665303; Coufava, 1 km NE of Útěchov near Brno, on dead twig of *Salix caprea*, 12 August 1984, coll.: A. Vágner, BRNM 457463; Útěchov near Brno, on dead twig of *Salix caprea*, 27 April 2001, coll.: A. Vágner, BRNM 667726.

Other collections: Slovakia: Liptovské Tatry Mts., Zverovka near Zuberec, on dead twig of *Salix* sp., 28 June 1949, coll.: A. Příhoda, PRM 607436; Slovakia: Západné Tatry (Western Tatra Mts.), Pribylina, near Hrdovo, on dead twig of *Salix caprea*, 30 August 2003, coll.: A. Vágner, BRNM 686471; Slovakia: Západné Tatry (Western Tatra Mts.), Pribylina, near Tábor, on dead twig of *Salix caprea*, 28 August 2003, coll.: A. Vágner, BRNM 686436; Slovakia: Tatranská Lomnica, on dead twig of *Salix caprea*, 27 February 1923, coll.: E. Baudyš, BRNM 120012, 335732; Slovakia: Velká Fatra Mts., Rojkov, Rojkovské rašeliníště (peat bog), on dead twig of *Salix* sp., 30 August 2002, coll.: A. Vágner, BRNM 670898; Slovakia: Eperjes (Prešov), on dead twig of *Salix* sp., 1855, coll.: F. Veselsky, PRM 669900; Poland: near Przemysł in Galicia (Poland), on dead twigs of *Salix* sp. May 1912, coll.: A. K. Klain, PRM 669910.

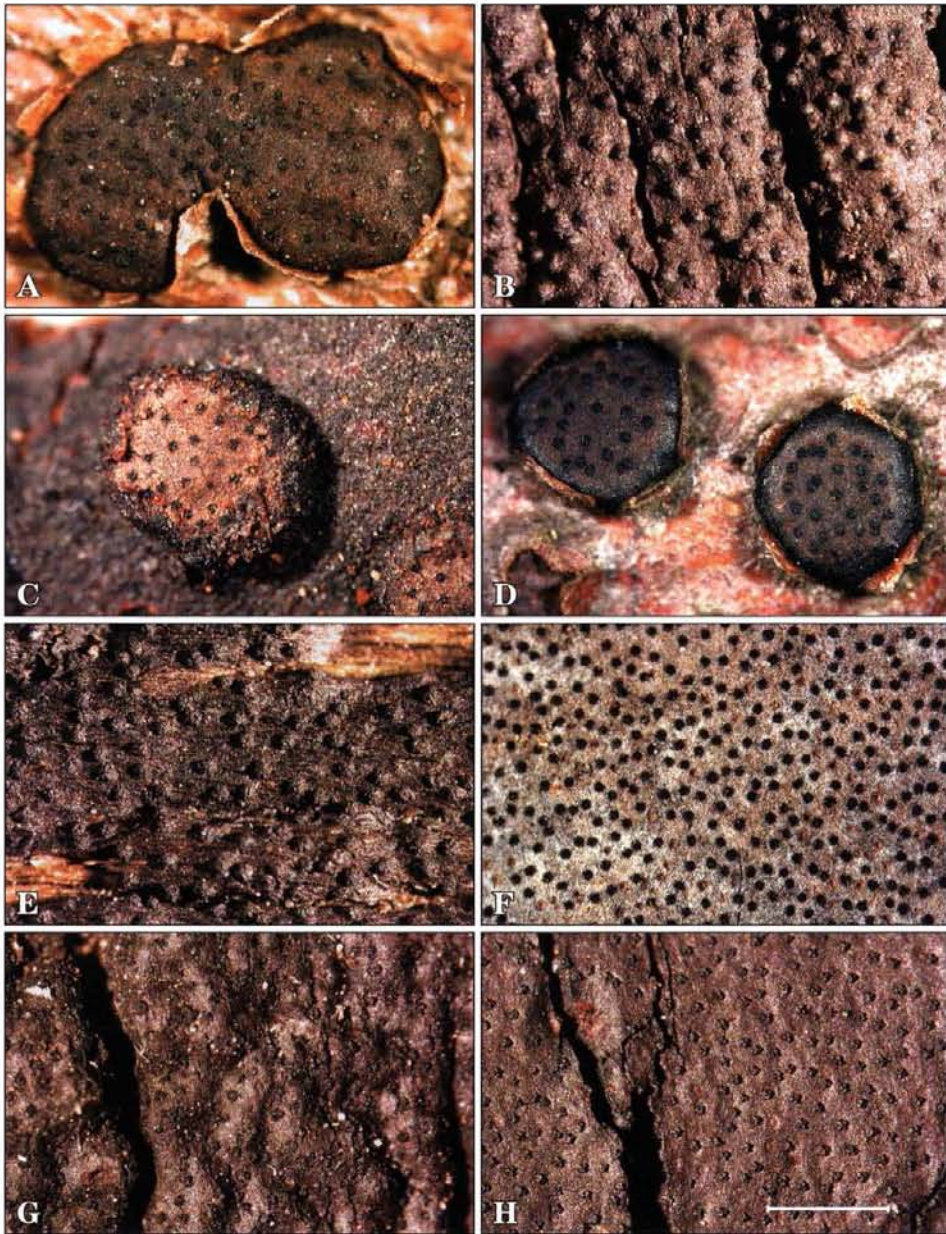


Fig. 2. Surface of stromata. A – *Diatrype bullata* on *Salix caprea* KRAM F 54757; B – *Diatrype decorticata* on *Acer platanooides* PRM 889795; C – *Diatrype disciformis* on *Loranthus europaeus* BRNM 120421; D – *Diatrype disciformis* on *Fagus sylvatica* KRAM F 54765; E – *Diatrype flavovirens* on *Salix* sp. KRAM F 54766; F – *Diatrype stigma* on *Quercus* sp. PRM 642525; G – *Diatrype subaffixa* var. *rappazii* on *Carpinus betulus* PRM 801567; H – *Diatrype undulata* on *Betula* sp. PRM 614421. Scale bar = 1000 μ m.

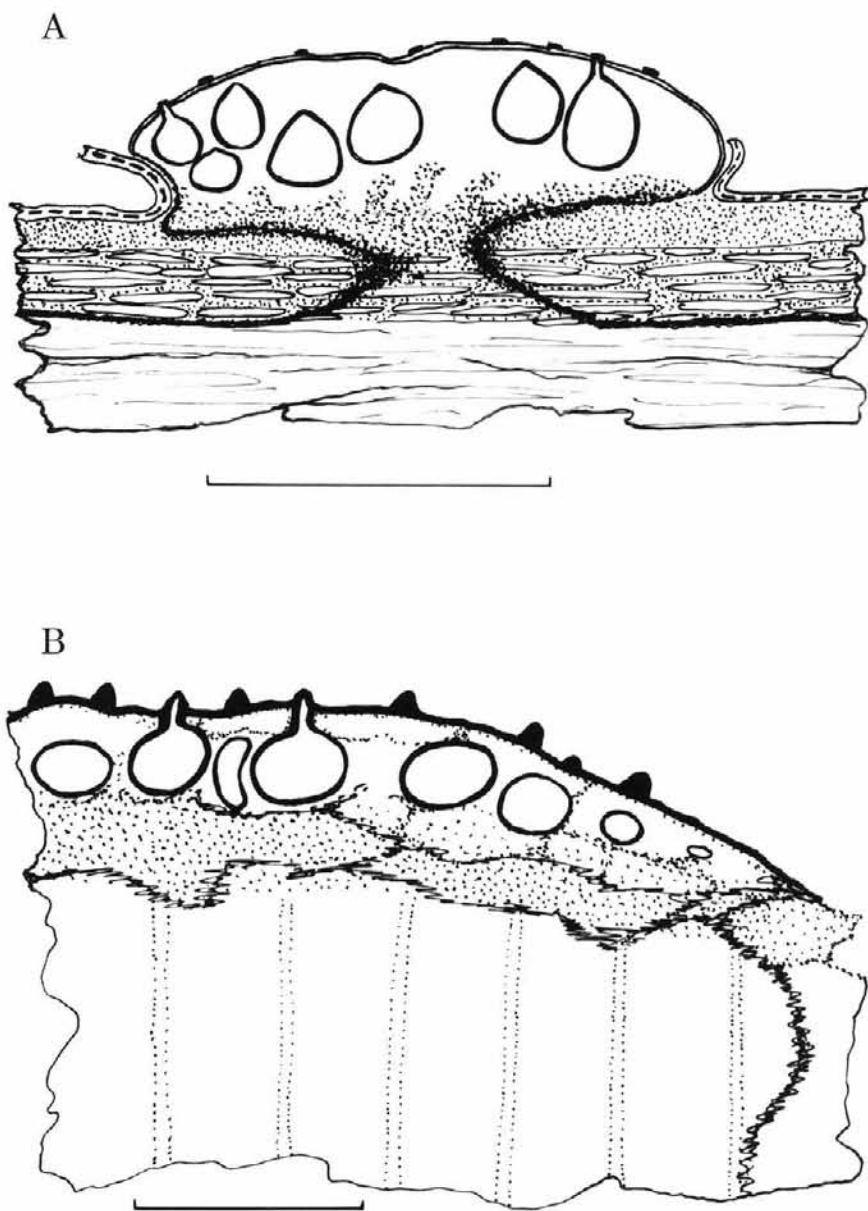


Fig. 3. Section of stroma. A - *Diatrype bullata*, B - *Diatrype decorticata*. Scale bar = 1000 μ m.

Diatrype decorticata (Pers.) F. Rappaz, *Mycologia Helvetica* 2: 398, 1987.

Syn.: *Sphaeria stigma* Hoffm. var. *decorticata* Pers.: Fr. as 'β *Sphaeria decorticata*', *Stromatosphaeria decorticata* (Pers.) Grev.

Description. Stromata reddish-brown to brownish-black, widely effused with deep transverse fissures (Fig. 2B), slightly erumpent, 2–3 mm high, margin mostly low, surfaces of stroma flat, perithecia oval, in one or two layers, ectostroma black, endostroma creamy white, black stromatic zone (dorsal zone) extending down to the wood, ostioles ± prominent, discoid or cruciform (Fig. 3B), asci 20–40 µm with pedicel up to 70 µm long, apical apparatus I+, ascospores allantoid 7–9(10) x 1.2–1.5 µm.

Comments. This species frequently occurs on *Fagus sylvatica*. I saw only one collection of *Diatrype stigma* noted on *Fagus sylvatica* in Poland! (KRAM F 41 732). Prášil et al. (1973) cultured a specimen of *Diatrype stigma* found on *Fagus sylvatica*. In fact it is *D. decorticata*. Also the size of the obtained conidia (15–20 x 1–1.5 µm) is typical of the anamorph of *D. decorticata*. The species was collected also on *Acer pseudoplatanus*, *Acer platanoides*, *Acer* sp., *Corylus avellana*, *Carpinus betulus*, *Cornus sanguinea* and *Prunus spinosa*. Possibly only Veselsky (1859) correctly identified this fungus as *Sphaeria stigma* Hoffm. b. *decorticata* DC. Peyl's collection from Kačina castle, named *Sphaeria stigma decorticata* De Cand. possess only some young ascospores (on *Alnus* sp., PRM 801564). A further collection (PRM 801567), named *Sphaeria stigma* var. b. *decorticata* DC., on *Carpinus betulus* belongs to *D. subaffixa* var. *rappazii* Chleb.

Material studied. **Bohemia:** Northern Bohemia, České středohoří Mts., SE of Milešov, S slope of Ostrý hill, forest (*Fagus*, *Quercus*, *Fraxinus*, less frequent *Betula*), 440–470 m elev., on dead twigs of *Carpinus betulus*, 25 May 2005, coll.: M. Suková, KRAM F 54919; Western Bohemia: Císařský Les, Mt. 'Lazurová hora' near Chodová Planá, on dead twig of *Salix caprea*, 30 July 1949, coll.: M. Svrček (as *D. stigma*), PRM 670064; Western Bohemia: Javornická hornatina, Nahořánky near Strašín, on hill 737 m above sea level, on dead twigs of *Corylus avellana*, 22 October 1997, coll.: M. Svrček (as *D. stigma*), PRM 891804; Central Bohemia: Křivoklát, on dead twig, lying on the forest floor in the forest near Prostřední potok brook near Tejšov (Týřov), on *Corylus avellana*, 18 July 1912, coll.: F. Maloch (as *D. stigma*), PRM 670046; Central Bohemia, Tuchonín (near Chyňava), on dead twig of *Fagus sylvatica*, 21 May 1927, coll.: A. Hilitzer (as *D. stigma*), PRM 670039; Central Bohemia, Český kras, NNE of Srbsko, Doutnáč hill, on dead branch of *Carpinus betulus*, 16 April 2005, coll.: A. Chlebicki, KRAM F 54846; Central Bohemia, Český kras, NNE of Srbsko, Doutnáč hill, on dead twig of *Corylus avellana*, 16 April 2005, coll.: A. Chlebicki, KRAM F 54848; Central Bohemia, Český kras, NNE of Srbsko, Doutnáč hill, on dead twig of *Fagus sylvatica*, 16 April 2005, coll.: A. Chlebicki, KRAM F 54847; Central Bohemia: Loděnice, on dead twigs of *Acer* sp., 20 April 1927, coll.: A. Hilitzer (as *D. stigma*), (the same collection includes true *D. stigma* on *Cornus sanguinea*!), PRM 670038; Central Bohemia: Praha-Radotín, on dead twig of *Corylus avellana*, 13 April 1927, coll.: A. Hilitzer (as *D. stigma*), it also includes *Eutypa* sp. on a decorticated twig! PRM 670041; Central Bohemia: Závist near Zbraslav, Mt. Hradiště, 369 m elev., on dead twigs of *Acer platanoides*, 3 October 1996, coll.: M. Svrček (as *D. stigma*), PRM 889795; Southern Bohemia: Třeboň, 'Prameniště u Jindřů', on dead twigs of *Prunus spinosa*, 30 March 1959, coll.: J. Kubička, ident.: M. Svrček (as *D. stigma*), PRM 613841.

Moravia: Hrubá Voda near Olomouc, on dead twigs of *Corylus avellana* (as *Tilia* sp.), 13 April 1910, coll.: R. Picbauer (as *D. stigma*), BRNM 120001; Mähr. Weisskirchen (Hranice), Welka (Velká), on dead twig of *Prunus spinosa*, 29 October 1911, coll.: F. Petrak (as *D. stigma*), PRM 670035, 670023, 670019, BRNM 04268/39; Surroundings of Brno, Adamsthal (Adamov), on dead twigs (*Fagus sylvatica*), 25 March, 1862, coll.: J. Kalmus (as *D. stigma*), PRM 670054; Village Ochoz near Brno, on dead twigs of *Corylus avellana*, 6 April 1924, coll.: R. Picbauer (as *D. stigma*), BRNM 134887; Zlobice forest, Kuřim near Brno, on dead twig of *Corylus avellana*, 15 April 1952, coll.: F. Šmarda (as *D. stigma*) BRNM 695288; Bílé Karpaty Mts., Mt. Javorina, primeval forest, on dead twig of *Acer pseudoplatanus*, 23 August 1962, coll.: M. Svrček (as *D. stigma*), PRM 568125.

Diatrype disciformis (Hoffm.: Fr.) Fr., Summa Veg. Scand. 2: 385, 1849.

Syn.: *Sphaeria disciformis* Hoffm.: Fr., *Stromatosphaeria disciformis* (Hoffm.: Fr.) Grev., *Variolaria punctata* Bull., *Sphaeria depressa* Bolton, *Sphaeria grisea* DC, *Diatrype rimosa* Fuckel

Description. Stromata circular, very rarely confluent, flat surface brownish-violet-grey (Fig. 2D), side distinctly darker, 1.2–3 mm diam., 0.5–0.6 mm high, perithecia ovoid, in one or two layers, ectostroma black, endostroma creamy white, black stromatic zone (dorsal zone) extending down to the wood (Fig. 4B), ostioles discoid, only slightly protruding the crust, flat, three- to five-sulcate, asci 22–35 x 5–7 µm p. sp., pedicel up to 80 µm long, apical apparatus I+, ascospores allantoid, 5–8 x 1.2–1.3 µm.

Comments. This species has been noted mostly on *Fagus sylvatica*, rarely on such host plants as *Acer pseudoplatanus*, *Acer platanooides*, *Carpinus betulus*, *Crataegus* sp., *Corylus avellana* and *Ribes grossularia* (Petrak 1940, Prášil et al. 1973). Podlahová (1973) noted this fungus on *Alnus viridis*. Závřel found it on twigs of *Loranthus europaeus*. This collection differs from typical *Diatrype disciformis* by the mostly elliptical shape of the stromata similar to those of *Diatrype bullata* (Fig. 2C, Fig. 4A), its light brown surface, smaller diameter of ostioles and slightly bigger ascospores 7–9(10) x 1.2–1.8 µm. *Loranthus europaeus* grows in the Czech Republic mostly on various species of *Quercus* (*Q. robur*, *Q. petraea*, *Q. pubescens*, *Q. rubra*, *Q. cerris*) in warm forests situated along big rivers. Very rarely this plant was noted on *Carpinus betulus*, *Prunus spinosa*, *Acer campestre*, *Castanea sativa*, *Fagus* sp., *Tilia americana* (*T. alba*) and *Acer campestre*. The accidental occurrence of *Loranthus europaeus* on *Fagus sylvatica* is noteworthy.

The jump of the true *Diatrype disciformis* for which *Fagus sylvatica* is the primary host to *Loranthus* is hardly acceptable. The fungus noted on *Loranthus europaeus* probably belongs to another species or a distinct variety of *Diatrype disciformis*. However this collection is old and cannot be used for cultures on MAA. Fresh and living specimens are necessary to establish the taxonomic status of this fungus.

D. disciformis was collected for the first time in Czechia by W. Siegmund in 1848 and later by Opiz (1852) as *Sphaeria disciformis* Hoffm. Petrak (1923a) noted it on *Fagus sylvatica* in Šternberk (Moravia). It is the most common species of *Diatrype* especially on *Fagus sylvatica*, collected by various authors.

Material studied. **Bohemia:** Northern Bohemia: Zinnwald (Cínovec near Dubí, Krušné hory Mts.), on dead twig of *Fagus sylvatica*, autumn 1872, coll.: Thümen, PRM 669934; Northern Bohemia: Reichenberg (Liberec), 1848, coll.: W. Siegmund, PRM 800163; Northern Bohemia: Jizerské hory Mts., Ferdinandov near Hejnice, valley of 'Velký Štolpich' river, on dead twig of *Acer platanoides*, 3 February 1966, coll.: M. Svrček, PRM 622560; Northern Bohemia: Turnov, 'Farářství' forest, distr. Turnov, on dead branch of *Fagus sylvatica*, 26 March 1940, coll.: H. Schmidt, PRM 521993; Northern Bohemia: Turnov, park, on dead branch of *Fagus sylvatica*, 20 May 1945, coll.: J. Herink, ident. M. Svrček, PRM 669944, 669927, 669928; Northern Bohemia, České středohoří Mts., SE of Milešov, S slope of Ostrý hill, forest (*Fagus*, *Quercus*, *Fraxinus*, less frequently *Betula*), alt. 440–470 m, on dead twig of *Fagus sylvatica*, coll.: M. Suková, KRAM F 54922; Western Bohemia: Herštýn (ruin Nový Herštejn near Kdyně, see Hilitzer 1925: 154, 182), on dead branch of *Fagus sylvatica*, 14 July 1919, coll.: A. Hilitzer, PRM 669957; Central Bohemia, Tuchonín (near Chyňava), on dead twig of *Fagus sylvatica*, 21 May 1927, coll.: A. Hilitzer, PRM 669973; Central Bohemia, Krušná Hora near Beroun, on twigs of *Fagus sylvatica*, 24 April 1927, coll.: A. Hilitzer, PRM 669958; Central Bohemia, Český kras, NNE of Srbsko, Doutnác hill, on dead twig of *Fagus sylvatica*, 16 April 2005, coll.: A. Chlebicki, KRAM F 54849; Central Bohemia: Dobříšské Hřebený (Hřebený Mts.), on dead twig of *Fagus sylvatica*, 20 March 1927, coll.: A. Hilitzer (as *D. stigma*), PRM 670047; Central Bohemia: Dobříšské Hřebený (Hřebený Mts.), on dead twig of *Fagus sylvatica*, 20 March 1927, coll.: A. Hilitzer, PRM 669963; Central Bohemia: Brdské Hřebený Mts., Řevnice, valley of 'Babský potok' stream, on dead twig of *Fagus sylvatica*, 12 April 1959, coll.: M. Svrček, PRM 516012; Central Bohemia: Hřebený Mts., Dobřichovice, on twigs of *Sorbus aucuparia*!, 20 June 1955, coll.: M. Svrček, PRM 887849; Central Bohemia: Praha – Divoká Šárka, 'Purkrabský les' forest, on dead twigs of *Fagus sylvatica*, 2 and 13 June 1993, coll.: M. Svrček, PRM 879777; Central Bohemia: Praha-Kosoř (gorge), on dead twig of *Crataegus* sp., 19 April 1959, coll.: M. Svrček, PRM 516029; Central Bohemia: Stř. Skalice (Stříbrná Skalice), on dead twig of *Fagus sylvatica*, 3 April 1965, coll.: A. Příhoda, PRM 607021; Central Bohemia: Studený vrch hill near Stříbrná Skalice, on dead twig of *Fagus sylvatica*, 11 November 1952, coll.: Z. Pouzar, PRM 669920; Central Bohemia, Studený vrch hill near Stříbrná Skalice, 'Ve Studeném' nature reserve c. 1.5 km ESE of the village of Samechov, on dead twigs of *Fagus sylvatica*, 1 May 2005, coll.: A. Chlebicki, KRAM F 54859; Central Bohemia, Studený vrch hill near Stříbrná Skalice, 'Ve Studeném' nature reserve c. 1.5 km ESE of the village of Samechov, on dead twig of *Acer* sp., 1 May 2005, coll.: A. Chlebicki, KRAM F 54858; Central Bohemia: Louňovice (Louňovice pod Blaníkem), on dead twig of *Fagus sylvatica*, 13 September 1969, coll.: M. Svrček, PRM 684520; Eastern Bohemia: Krkonoše Mts. between the hotels Patejdlova bouda and Davidovy boudy, on dead twig of *Fagus sylvatica*, 17 June 1955, coll.: V. Skalický, ident.: M. Svrček, PRM 879703; Eastern Bohemia: Broumovské stěny, inter montes Lopota et Bílá skála apud Božanov (sylva no. 334 b–c), on dead twig of *Fagus sylvatica*, 3 October 1972, coll.: Z. Pouzar, PRM 814492; Eastern Bohemia: Peklo near Nové Město nad Metují, on dead twig of *Corylus avellana*, 19 July 1956, coll.: B. Hofman (young stromata), PRM 607063, published (Hofman 1959); Eastern Bohemia: Peklo near Nové Město nad Metují, on dead twig of *Carpinus betulus*, 7 July 1956, coll.: B. Hofman, PRM 607111, published (Hofman 1959); Eastern Bohemia, Orlické hory Mts., Deštná, in 'Bukačka' beech forest, on dead twig of *Fagus sylvatica*, 29 October 1969, coll.: M. Svrček, PRM 684519; Southern Bohemia: Šumava Mts., 'Boubínský prales' forest near Horní Vltavice, on twigs of *Fagus sylvatica*, 3 November 1973, coll.: J. Kubička, PRM 877629; Southern Bohemia: Šumava Mts., Huť (Kubova Hut') near Boubín, on twigs of *Fagus sylvatica*, 9 September 1933, coll.: A. Hilitzer, PRM 823769; Southern Bohemia: Šumava Mts. (Gabreta), near Lukenská road (E of Mt. Boubín), on branch of *Fagus sylvatica*, 16 September 1950, coll.: Z. Pouzar, PRM 669917; Southern Bohemia: Šumava Mts., forest near Plešné jezero (lake), on dead twigs of *Fagus sylvatica*, 27 October 2004, coll.: A. Chlebicki & M. Suková, KRAM F 54765; Southern

Bohemia, Čertova Stěna (Čertova stěna near Vyšší Brod), 3 September 1921, coll.: A. Hilitzer, PRM 669971; Southern Bohemia, Mt. Todeňská hora, above Todeň near Trhové Sviny, on dead twig of *Fagus sylvatica*, 28 October 1965, coll.: M. Svrček and J. Kubička, PRM 610222.

Moravia: Rychlebské hory Mts., near waterfall of Stříbrný stream near Nýznerov, beech forest, on dead twig of *Fagus sylvatica*, 16 July 1964, coll.: K. Kříž, PRM 685554; Rychlebské hory Mts., Horní Lipová, valley of Hornolipský stream, on dead twig of *Fagus sylvatica*, 20 July 1962, coll.: K. Kříž, ident. M. Svrček, BRNM 695283; Rychlebské hory Mts., Lázně Jeseník, on dead twig of *Fagus sylvatica*, 9 August 1962, coll.: K. Kříž, BRNM 695282; Velké Vrbno near Staré Město, on dead twigs of *Fagus sylvatica*, 8 August 1919, coll.: E. Baudyš, BRNM 335734; Freiwaldau (= Frývaldov = now Jeseník), Reihwiesen (= Rejvíz, National Nature Reserve), on dead twigs of *Fagus sylvatica*, May 1913, coll.: J. Hruby, BRNM 04264/39; Hrubý Jeseník Mts., Mt. Keprník, on dead twig of *Fagus sylvatica*, 15 July 1911, coll.: R. Picbauer, BRNM 119991; Hochgesenke (Hrubý Jeseník Mts.): Rother Berg (Červená hora), on dead twig of *Fagus sylvatica*, March 1911, coll.: J. Hruby, BRNM 04266/39; Hrubý Jeseník Mts. (valley of Hučivá Desná river) on branch of *Sorbus aucuparia*, 20 October 1948, coll.: A. Příhoda, as '(*Diatrype*)', the host is probably *Fagus sylvatica*, the surface of the stromata was covered by a mycophilous fungus similar to *Immotia*, PRM 670065; Hrubý Jeseník Mts., Winkelsdorf (Kouty nad Desnou), on dead branch of *Fagus sylvatica*, September 1912, coll.: F. Schenk, BRNM 695293; Hrubý Jeseník Mts., Winkelsdorf (Kouty), on dead twig of *Fagus sylvatica*, 1912, coll.: R. Picbauer, BRNM 119992, 119988; Hrubý Jeseník Mts., near Kouty nad Desnou, on dead twig of *Fagus sylvatica*, 20 October 1948, coll.: A. Příhoda, PRM 669967; Hrubý Jeseník Mts., Teplice, on dead twig of *Fagus sylvatica*, no date, coll.: R. Picbauer, BRNM 119993; Schönberg (= Šumperk), Bürgerwald (Mt. Pod skalami), on dead branch of *Fagus sylvatica*, 5 January 1883, coll.: J. Paul, BRNM 05778/33; Olomouc, Hrubá Voda, on dead twig of *Fagus sylvatica*, 13 April 1910, coll.: R. Picbauer, BRNM 119989; Weisskirchen (Hranice): Hrabůvka, on dead twig of *Fagus sylvatica*, 18 April 1912, coll.: F. Petrak, PRM 669955, BRNM 04269/39; Weisskirchen (Hranice): Hrabůvka, on dead twigs of *Fagus sylvatica*, 18 April 1912, coll.: F. Petrak, PRM 669951; Štramberk, Kotouč hill, on dead twigs of *Fagus sylvatica*, 26 July 1952, coll.: F. Šmarda, BRNM 695284; 'Beskiden' mountains, Mt. Javorník, August, coll.: F. Matouschek, PRM 669969; Rožnov pod Radhoštěm, Hutisko, on dead twig of *Fagus sylvatica*, 25 June 1926, coll.: R. Picbauer, BRNM 119996; Bystřicko (Bystřice pod Hostýnem), Dřevohostický forest, on dead twigs of *Loranthus europaeus*, 13 March 1948, coll.: H. Zavřel, BRNM 120421; Carpathians, Mt. Hostýn, on dead twig of *Fagus sylvatica*, October 1938, coll.: H. Zavřel, BRNM 125985; Hostýnské kopce Mts., bank of Liškárna stream, on dead twigs of *Fagus sylvatica*, 5 August 1937, coll.: H. Zavřel, BRNM 125986; Hostýnské kopce Mts., in the forest W of slope of Hostýn, c. 500 m elev., on dead branch of *Fagus sylvatica* (as *Betula pendula*), 2 April 1956, coll.: H. Zavřel, ident. M. Svrček, PRM 617035; Rajnochovice near Bystřice pod Hostýnem in Košovy valley, on dead twig of *Fagus sylvatica*, 13 June 1957, coll.: Kříž, BRNM 305654; Vsetínské vrchy Mts., Cáb Mt., below Cábská road, on dead branch of *Fagus* sp., 27 January 1951, coll.: Z. Pouzar, PRM 669915; Třebíč, on dead twig of *Fagus sylvatica*, 18 September 1907, coll.: R. Dvořák, BRNM 119990; Brno (bei Adamsthal - Adamov), on dead twigs of *Fagus sylvatica*, 25 March 1862, coll.: J. Kalmus, PRM 800148; Malá Baba near Brno-Řečkovice, on dead twig of *Fagus sylvatica*, no date, coll.: A. Vágner, BRNM 645286; Kroměříž, on dead twig of *Fagus sylvatica*, no date, coll.: H. Zavřel, BRNM 695285; Chřiby Mts., Buchlov, on dead twig of *Fagus sylvatica*, 23 August 1962, coll.: M. Svrček, PRM 568281; Braitava reserve, Vranov n. Dyjí near Znojmo, on dead twig of *Fagus sylvatica*, 12 October 1994, coll.: A. Vágner, BRNM 590503; Pavlov near Velké Meziříčí - 'Křiky', on dead twig of *Fagus sylvatica*, 29 July 1913, coll.: R. Picbauer, BRNM 119994; Bílé Karpaty Mts., primeval forest 'Javorina', on dead branch of *Acer pseudoplatanus*, 23 August 1962, coll.: M. Svrček, PRM 568140; Bílé Karpaty Mts, Vlára pass near the village of Sidonie, on dead branch of *Fagus sylvatica*, 29 June 1922, coll.: R. Picbauer, BRNM 119995; Vratíkov, on dead twig of *Corylus avellana*, 5 May 1999, coll.: A. Vágner, BRNM 642777.

Other collections: Germany: Malý Falkenstein (Kleiner Falkenstein) near Bayerisch-Eisenstein in the Bayerischer Wald Mts., see Hilitzer (1925): 82-174, on dead twig of *Fagus sylvatica*, 14 September 1926, coll.: A. Hilitzer, PRM 669968; Bohemia: no data, coll.: Greger, PRM 669929; ident....Lof...., no

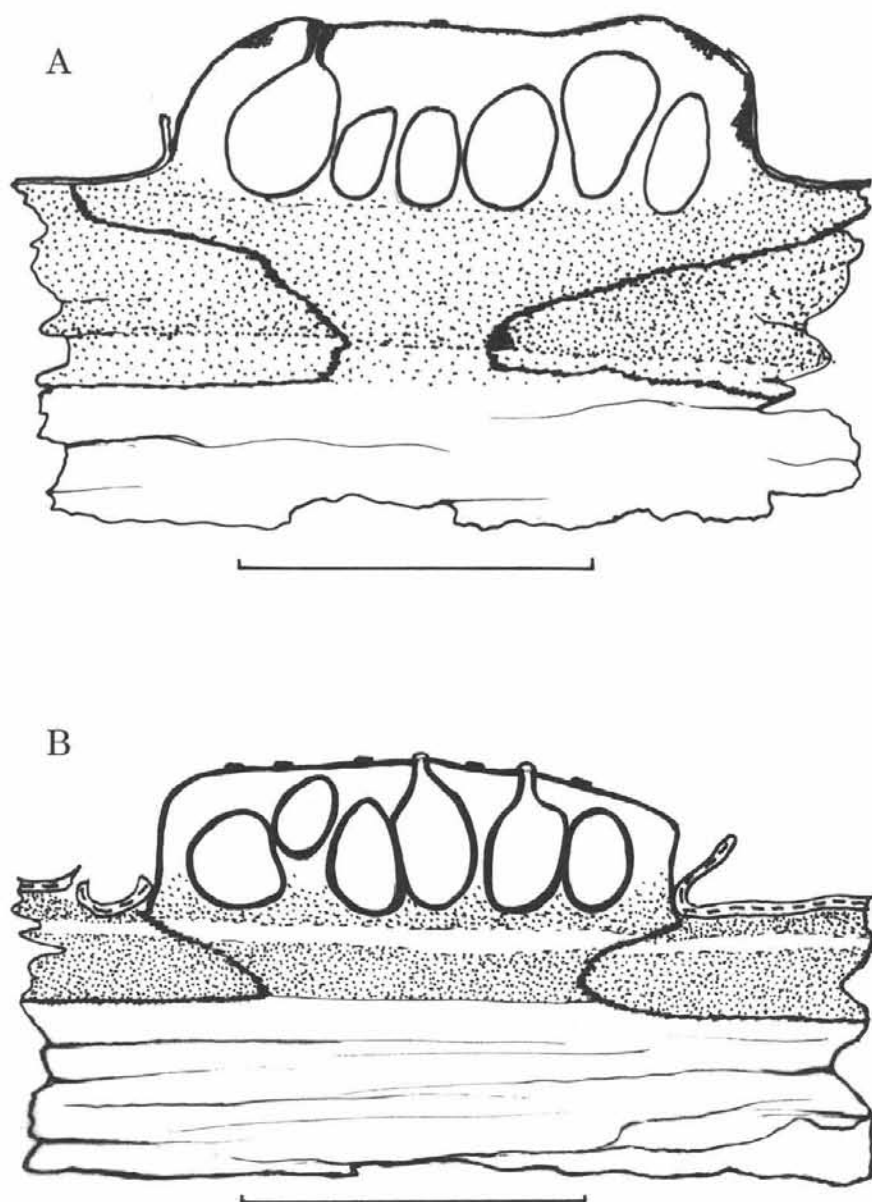


Fig. 4. Section of stroma. A - *Diatrype disciformis* on *Loranthus europaeus*, B - *Diatrype disciformis* on *Fagus sylvatica*. Scale bar = 1000 μ m.

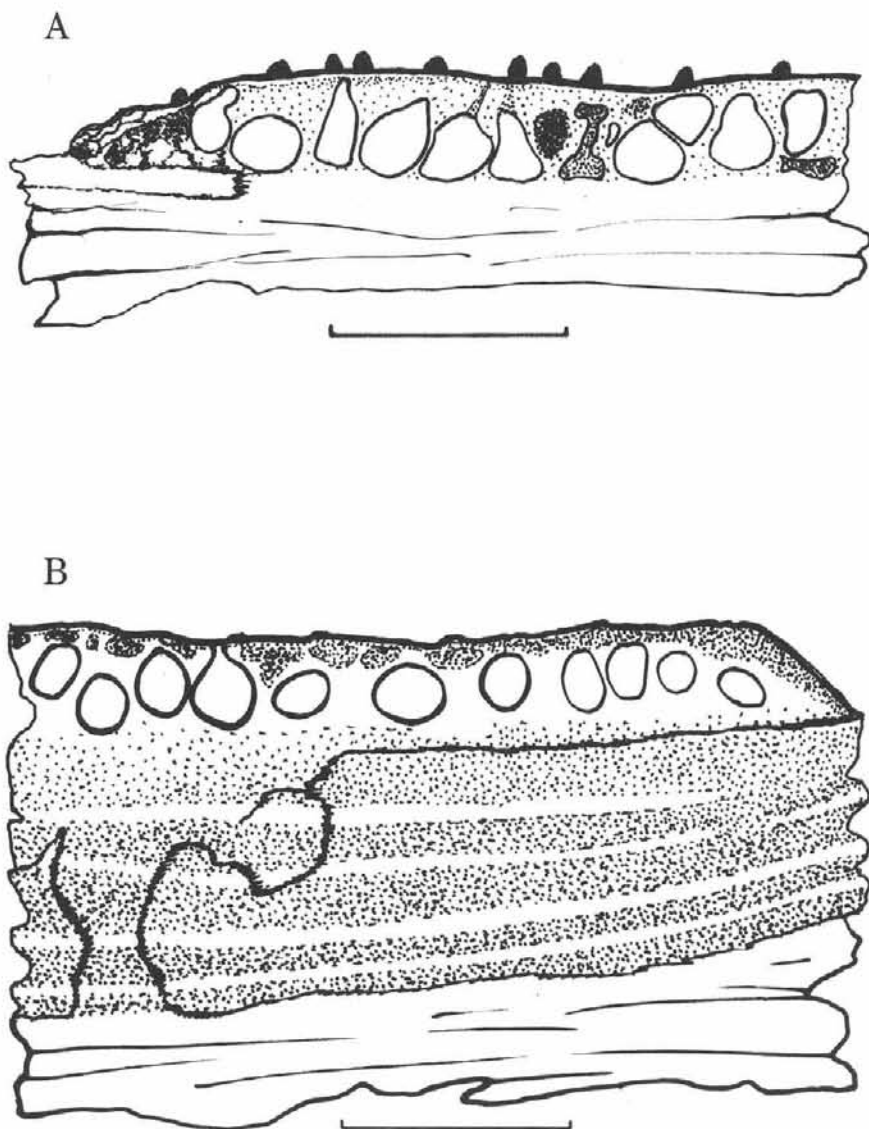


Fig. 5. Section of stroma. A - *Diatrype flavovirens*, B - *Diatrype stigma*. Scale bar = 1000 μ m.

date, coll.: Opiz, PRM 669933; Czech Republic: Javorníky, on dead twig of *Fagus sylvatica*, 19 August 1921, coll.: A. Hilitzer, PRM 669962; Czech Republic: Mt. Žákova hora, Hoštánka, deciduous forest, on dead twigs of *Fagus sylvatica*, 26 May 1957, coll.: O. Lázníčka, ident. F. Kotlaba, PRM 669925; Czech Republic? Poland?: Sudetes (as Sudet.), no data, PRM 669932; Slovakia: Pukanec, under Tatiar hill, on dead twig of *Fagus sylvatica*, 5 August 1897, coll.: S. Kupčok, PRM 669923.

Diatrype flavovirens (Pers.: Fr.) Fr., *Summa Veg. Scand.* 2: 385, 1849.

Syn.: *Sphaeria flavovirescens* Hoffm., *Sphaeria flavovirens* Pers.: Fr., *Eutypa flavovirens* (Pers.: Fr.) Tul. et C. Tul.

Description. Stromata widely effused on naked wood, eutypoid as well as diatrypoid, often composed of longitudinal lobes parallel to the direction of wood vessels, sometimes irregular, frequently confluent, erumpent, surface covered by thin layer of dead wood, brownish-grey (Fig. 2E, Fig. 5A), 0.6 mm high, perithecia ovoid in a single layer, ectostroma black, endostroma olive-green, delimited by black stromatic zone in the wood, ostioles prominent, conical, three- to four-sulcate or cruciform, asci 34–46 x 6–8 µm p. sp., pedicel up to 90 µm long, ascospores 7–9 x 1.4–2.0 µm.

Comments. It is species intermediate between the genera *Eutypa* and *Diatrype* with very variable stromata, eutypoid as well as diatrypoid (Rappaz 1987b). It is the only *Diatrype* species in which the stroma surface is covered by a thin layer of wood. Known from various species of trees and shrubs. Niessl (1865) noted it on *Quercus* sp. and *Prunus avium*. Bäumler (1897) recorded the fungus on *Quercus cerris* in Bratislava (Slovakia). Podlahová (1972, 1973) reported host plants such as *Alnus viridis*, *Crataegus*, *Malus*, *Pyrus*, *Prunus*, *Sorbus* and *Ribes alpinum* (this last collection from Slovakia). Petrak (1927) reported it from *Alnus glutinosa* in Šternberk (Moravia). Svrček (2001) mentioned as further host plant species *Corylus avellana*, *Fagus sylvatica*, *Fraxinus excelsior* and *Rosa canina*.

Material studied. **Bohemia:** Northern Bohemia: České středohoří Mts., western part of Mt. 'Kletečná' near Velemín, on dead branch of *Aesculus hippocastanum* (in forest), 20 July 1956, coll.: M. Svrček, PRM 617863; Northern Bohemia: České středohoří Mts., on Mt. 'Hora' near Lipá, on dead branch of *Betula* sp., 19 July 1956, coll.: M. Svrček, PRM 617862; Northern Bohemia: České středohoří Mts., in the village of Pálec near Milešov, on dead twig of *Corylus avellana*, 19 July 1956, coll.: M. Svrček, PRM 617861; Western Bohemia: Šipín, valley of Úterský potok (stream), on dead twig of *Quercus* sp., 16 July 1966, coll.: M. Svrček, PRM 624944; Western Bohemia: Šumava Mts., bank of Černé jezero (lake), on dead twigs of *Salix* sp., 29 October 2004, coll.: A. Chlebicki and M. Suková, KRAM F 54766; Western Bohemia: Javornická hornatina, Strašín, Zábrdí valley, on dead twig of *Alnus glutinosa*, 22 October 1997, coll.: M. Svrček, PRM 891807; Central Bohemia: Hostomice pod Brdy, valley of Chumava river, on decorticated twig of *Betula pendula* (as *B. alba*), 23 April 1954, coll.: M. Svrček (including stromata of *Diatrype undulata* on the same twig), PRM 890135; Central Bohemia: Srbsko, Doutnác hill, on dead twig of *Carpinus betulus*, 6 May 1967, coll.: M. Svrček, PRM 890332; Central Bohemia: Srbsko, 'Velká hora' hill, on decorticated branch of *Acer pseudoplatanus*, 30 March 1958, coll.: M. Svrček, PRM 614441; Central Bohemia: Hodov near Úvaly, valley of Výmola river, 2 November 1969, coll.: M. Svrček, PRM 684522; Central Bohemia: Jevany, on dead branch of *Fagus sylvatica*, 9 Novem-

ber 1947, coll.: M. Svrček, PRM 685557; Central Bohemia: Struhařov near Mnichovice, on dead twig of *Prunus spinosa*, 29 October 1960, coll.: M. Svrček, PRM 879234; Southern Bohemia: Čimelice, forest near the pond Nerestec, on dead twig of *Quercus* sp., 27 July 1964, coll.: M. Svrček, PRM 613330; Southern Bohemia: Laziště near Čimelice, forest near 'Březinka', on dead branch of *Fraxinus excelsior*, 21 August 1966, coll.: M. Svrček, PRM 625903; Southern Bohemia: Laziště near Čimelice, pond 'Tisíčky', on dead twig of *Prunus spinosa*, 8 August 1964, coll.: M. Svrček, PRM 613333; Southern Bohemia: Laziště near Čimelice, bank of pond 'Tisíčky', in the forest, on dead twigs of *Ulmus scabra*, 8 August 1964, coll.: M. Svrček, (with an old stroma of *Diatrype undulata*) PRM 613332; Southern Bohemia: Buda near Čimelice, top of Mt. Velký Kosatín, on decorticated branch of *Carpinus betulus*, 23 August 1964, coll.: M. Svrček, (including *Diatrype undulata* on the same branch), PRM 613331; Southern Bohemia: Hradiště near Kaplice (distr. Č. Krumlov), forest near road, on decorticated branch of *Quercus robur*, 26 June 1971, coll. and ident.: R. Podlahová, PRM 731851; Southern Bohemia: Třeboň, Prameniště 'U Jindří' (spring), on dead twig of *Salix* sp., 16 May 1962, coll.: M. Svrček, PRM 560467; Southern Bohemia: Velký Chuchelec near Kaplice, 'Kůzlův dvůr', on dead branch of *Alnus viridis*, 4 November 1969, coll.: R. Podlahová, PRM 715890, 715891; Southern Bohemia: Novohradské hory Mts., 'Žofinský prales' primeval forest, on dead twig of *Fagus sylvatica*, 13 May 1966, coll.: M. Svrček and J. Kubička, ident. M. Svrček, PRM 622573; Southern Bohemia: 'Žofinský prales' primeval forest in Novohradské hory Mts., on dead twig of *Fagus sylvatica*, 3 September 1970, coll.: M. Svrček, PRM 716059.

Moravia: Weisskirchen (Hranice): Welka (Velká), on dead twigs of *Prunus spinosa*, 29 October 1911, coll.: F. Petrak, PRM 675913; Weisskirchen (Hranice), on dead branch of a deciduous tree, September 1931, coll.: F. Petrak, PRM 675910; Vevří, on dead twig of *Ulmus* sp., 18 May 1969, coll.: M. Svrček, PRM 684262.

Diatrype stigma (Hoffm.: Fr.) Fr., *Summa Veg. Scand.* 2: 385, 1849.

Syn.: *Sphaeria stigma* Hoffm.: Fr., *Stromatosphaeria stigma* (Hoffm.: Fr.) Grev.

Description. Stromata widely effused, brownish-grey, covered sometimes by white remains of conidial ectostroma (Fig. 2F), 0.5 mm high, with nearly flat surfaces, perithecia ovoid, in a single layer, ectostroma black, endostroma creamy white, black stromatic zone (dorsal zone) extending down to the wood (Fig. 5B), similar the genus *Diaporthe*, ostioles discoid, flat, four- to five-sulcate, asci 32-50 x 4-6 µm, ascospores allantoid 8-11 x 1.6-2.7 µm.

Comments. Known mostly from various species of the genus *Quercus* as well as various *Rosaceae* and *Betulaceae* (Rappaz 1987b). In the Czech Republic it has been collected on such host plants as *Quercus robur*, *Quercus rubra*, *Quercus* sp., *Acer pseudoplatanus*, *Acer* sp., *Salix fragilis*, *Prunus spinosa*, *Sorbus torminalis*, *Sorbus aucuparia*, *Crataegus oxyacantha*, *Crataegus* sp., *Cornus sanguinea*, *Juglans regia* and a single collection on *Fagus sylvatica*. Probably it was collected for the first time in territory of Czech Republic by Niessl (1865). He mentioned *Fagus*, *Carpinus* and *Prunus* spp. as hosts. Of these *Prunus* can be inhabited by the true *Diatrype stigma*. Petrak (1927) noted it on *Crataegus oxyacantha*. Other plants - *Betula pendula* and *Fagus sylvatica* - are hosts of *Diatrype undulata* and *Diatrype decorticata*. It is a very common species.

Hoffman's description (Hoffman 1787) of *Sphaeria stigma* avoids a host name – *in ramis arborum emortuis*. Also the shape of the ostioles (flat as well as prominent) did not allow a definite decision on the species (*Diatrype stigma* or *Diatrype undulata*). The contour of the stroma in his drawing (Tab. II, fig. 2) indicates rather *Diatrype undulata* than true *D. stigma* (see Fig. 7). Rappaz (1987a) typified *D. stigma* and selected a neotype from Persoon's collections (L-Pers, 90 OH 910269-940) gathered on *Crataegus* sp. (*Crataegus oxyacantha*).

Material studied. **Bohemia:** Northern Bohemia: České středohoří Mts., village Pálec near Milešov, on dead twig of *Sorbus aucuparia*, 19 July 1956, coll.: M. Svrček (as *D. stigma*), ostioles typical as in *D. stigma*, PRM 617853; Northern Bohemia: České středohoří Mts., Mt. 'Ostrý' near Milešov, on dead twigs of *Quercus* sp., 22 July 1956, coll.: M. Svrček (as *D. stigma*), PRM 617854; Northern Bohemia: České středohoří Mts., Mt. 'Kletečná' near Velemín, on dead twig of *Quercus* sp., 20 July 1956, coll.: M. Svrček (as *D. stigma*), PRM 617855; Northern Bohemia, České středohoří Mts., SE of Milešov, S slope of Ostrý hill, forest (*Fagus*, *Quercus*, *Fraxinus*, less frequently *Betula*), alt. 440–470 m, on dead twigs of *Sorbus torminalis*, coll.: M. Suková KRAM F 54921; Western Bohemia: Javornická hornatina, Nahořánky near Strašín, Hrbeček, on twig of *Salix fragilis*, 29 November 1997, coll.: M. Svrček, ostioles 3–4 sulcate, nearly flat or slightly erumpent, stroma with similar cracks as in *D. decorticata*, PRM 891735; Central Bohemia: Zdice, forest in valley near Mt. 'Vraní skála', on dead twig of *Rosa* sp., coll.: M. Svrček (as *D. stigma*), ostioles typical as in *D. stigma*, PRM 614420; Central Bohemia: Zdice, Mt. 'Vraní skála', on dead twig of *Sorbus aucuparia*, 24 April 1927, coll.: A. Hilitzer (as *D. stigma*), ostioles typical of *D. stigma*, PRM 670043; Central Bohemia: Hostomice pod Brdy, 'Provazec' hill, on dead twig of *Quercus* sp., 22 April 1954, coll.: M. Svrček (as *D. stigma*), PRM 890175; Central Bohemia: Loděnice, on dead twigs of *Cornus sanguinea*, 20 April 1927, coll.: A. Hilitzer (as *D. stigma*), in the same collection also *D. decorticata* on *Acer* sp. was found! PRM 670038; Central Bohemia: Hlásná Třebáň, on dead twigs of *Crataegus oxyacantha*, 16 July 1944, coll.: M. Svrček (as *D. stigma*), ostioles typical of *D. stigma*, PRM 670030; Central Bohemia: Hlásná Třebáň, 'Políčko' forest, on dead twig of *Crataegus* sp., 20 April 1958, coll.: M. Svrček (as *D. stigma*), PRM 614419; Central Bohemia: Hřebený Mts., Řevnice, valley of 'Babský potok' stream, on dead twig of *Fagus sylvatica*, 12 April 1959, coll.: M. Svrček (as *D. stigma*), ostioles are typical for *D. stigma*, surface flat, margin distinctly visible, PRM 516005; Central Bohemia: (Praha –) Horní Chabry, on dead twig of *Juglans regia*, November 1956, coll.: J. Pachmanová (as *D. stigma*), PRM 522365; Central Bohemia: Praha, Dolní Šárka, protected area 'Duchoňská', on dead branches of *Sorbus torminalis*, 25 May 1993, coll.: M. Svrček (as *D. stigma*), it possesses slightly erumpent ostioles, not typical of *D. stigma*, PRM 879771; Central Bohemia: Praha, Divoká Šárka, in warm oak forest, on twigs of *Quercus robur*, 20 May 1995, coll.: M. Svrček (as *D. stigma*), PRM 887872; Central Bohemia: Praha, Divoká Šárka, on dead twig of *Acer pseudoplatanus*, 2 June 1993, coll.: M. Svrček (as *D. stigma*), PRM 879742; Central Bohemia: Praha, between Velká Chuchle and Radotín, on dead twig of *Prunus spinosa*, 19 January 1958, coll.: M. Svrček (as *D. stigma*), PRM 614418; Central Bohemia: Praha, Radotínské údolí valley, on dead twig of *Quercus robur*, 7 April 1951, coll. and ident.: A. Příhoda (as *D. stigma*), PRM 606277; Central Bohemia: Praha-Kosoř (gorge), on dead twig of *Crataegus* sp., 19 April 1959, coll.: M. Svrček, it is a single twig with stromata of *D. stigma* and *D. disciformis*! PRM 516021; Central Bohemia: Praha, Krčský forest, on dead twig of *Quercus* sp., 25 November 1945, coll. and ident.: M. Svrček, (as *D. stigma*), PRM 670044; Central Bohemia: Černínovsko reserve near Neratovice, on dead branch of *Fraxinus excelsior*, 24 October 2004, coll.: A. Chlebicki, KRAM F 54778; Central Bohemia: Černínovsko reserve near Neratovice, on dead branch of *Quercus rubra*, 24 October 2004, coll.: A. Chlebicki, KRAM F 54779; Central Bohemia: Kersko (SE of Lysá nad Labem), on dead twig of *Quercus* sp., 19 September 1924, coll.: A. Hilitzer (as *D. stigma*), PRM 670042; Central Bohemia: Libický luh reserve near Velký Osek, on dead branch of *Quercus* sp., 23 October 2004, coll.: A. Chlebicki, KRAM F 54777; Central Bohemia: Libický luh near Velký Osek, on dead branch of *Carpinus betulus*, 23 October 2004, coll.: A. Chlebicki, KRAM F 54780;

Central Bohemia: Veltrubský luh reserve near Velký Osek, on dead branch of *Carpinus betulus*, 23 October 2004, coll.: A. Chlebicki, KRAM F 54781; Central Bohemia: Kačina castle near Kutná Hora, on dead twig of *Sorbus aucuparia*, 1856, coll.: J. Peyl, PRM 801563; Central Bohemia, ENE of Benešov, village of Zálesí near Teplýšovice, on dead twig of *Quercus* sp., 1 May 2005, coll.: A. Chlebicki, KRAM F 54862; Central Bohemia: Blaník, on dead twig of *Acer* sp., 7 August 1935, coll.: A. Hilitzer (as *D. stigma*), PRM 820464; Central Bohemia: Milín near Příbram, on dead twigs of *Quercus* sp., coll.: M. Svrček (as *D. stigma*), PRM 672831; Central Bohemia: forest NE of Struhařov, on dead twigs of *Quercus robur*, 5 June 2005, coll.: A. Chlebicki, KRAM F 54965; Southern Bohemia: Čimelice, forest 'Chlum' (Rakovický vrch), on dead twigs of *Quercus* sp., 6 August 1969, coll.: M. Svrček (as *D. stigma*), PRM 684660; Southern Bohemia: Lazišť near Čimelice, 'Březinka' forest, on dead twig of *Quercus rubra*, 13 August 1966, coll. and ident.: M. Svrček (as *D. stigma*), PRM 625887; Southern Bohemia: Třeboň, 'Branské douby' oak forest, on dead twig of *Quercus* sp., 6 December 1957, coll.: J. Kubička and M. Svrček, ident. M. Svrček (as *D. stigma*), PRM 867047; Southern Bohemia: Chlum u Třeboň, Dračice valley, on dead twig of *Quercus* sp., 27 August 1932, coll.: A. Hilitzer (as *D. stigma*), PRM 820849; Southern Bohemia: Třeboň, 'Stará řeka' reserve, in the beech forest, 431 m elev., on dead branch of *Quercus rubra*, 28 November 1959, coll.: J. Kubička, ident. M. Svrček (as *D. stigma*), PRM 518858; Southern Bohemia: Třeboň, pond 'Opatovický rybník', on dead twig of *Quercus* sp., 16 May 1962, coll.: M. Svrček (as *D. stigma*), PRM 560468.

Moravia: Weidenau (Vidnava), on dead twig of *Corylus avellana* [as *Quercus* sp. – auf morschem Eichenästchen im Pfarrwald (Farský les)], June 1911, coll.: J. Hruby, BRNM 042753/39; Weisskirchen (Hranice): Welka (Velká), on dead twigs of *Crataegus oxyacantha*, 5 February 1913, coll.: F. Petrak, BRNM 04271/39; Bystřicko (Bystřice pod Hostýnem), Dřevohostický forest, on dead twigs of *Salix fragilis*, 11 May 1941, coll.: H. Zavřel, BRNM 125988; Sudice near Náměš nad Oslavou, Českomoravská vrchovina, on dead branch of *Quercus rubra*, 26 August 1998, coll.: A. Vágner, ident. Z. Pouzar, BRNM 642525; Moravský Krumlov, near Rokytná river, on dead twig of *Crataegus oxyacantha*, 15 March 1928, coll.: R. Picbauer (as *D. stigma*), BRNM 120007; Ivaň, Dolní Mušovský luh, on dead twig of *Quercus* sp., 29 June 2001, coll.: A. Vágner, BRNM 666761; Theinwald forest (Boří les near Lednice), on lying twig of *Quercus* sp., June–September 1912, coll.: H. Zimmermann, (as *D. stigma*), PRM 670018; 1.5 km SW of Cahnov Reserve, near Lanžhot (district Břeclav), on dead twig of *Crataegus* sp., 4 August 1994, coll.: A. Vágner, BRNM 590628; Čejkovice near Hodonín, Kapansko forest, on dead twig of *Fraxinus excelsior*, 5 December 1954, coll.: F. Šmarda, ident. M. Svrček, BRNM 695290; Luhačovice, on dead twig of *Quercus* sp., 15 January 1970, coll.: M. Svrček (as *D. stigma*), PRM 711840.

Other collections: Slovakia: Eperjes (Prešov), ex herb. Peyl, on dead twigs of *Quercus* sp. (as *D. stigma*), no collector named (probably F. Veselsky), PRM 670024.

Diatrype subaffixa (Schwein.) Cooke var. *rappazii* Chleb., Sydowia 47: 24, 1995.

Description. Stromata widely effused, but narrower than in *D. decorticata* and *D. stigma*, brownish grey, strongly undulate and raised (Fig. 2G), divided into irregular lobes, margin distinct, steep, up to 1 mm high, perithecia ovoid in one or two layers, ectostroma black, endostroma creamy white, black stromatic zone (dorsal zone) extending down to the wood (Fig. 6A), ostioles prominent, conical, three- to four-sulcate, asci 30–40 x 5–6 µm, ascospores allantoid, sometimes with slightly budding apex 8.2–10.6(–11) x 1.5–2.4 µm.

Comments. Known from *Carpinus betulus*, *Acer platanooides* and *Sambucus nigra* in Poland (Chlebicki and Krzyżanowska 1995). Generally, stromata of the Czech collections are not so strongly undulate as those from Poland. The spores of collection PRM 607072 are 8–9 x 2–2.4 µm, the ostioles circular

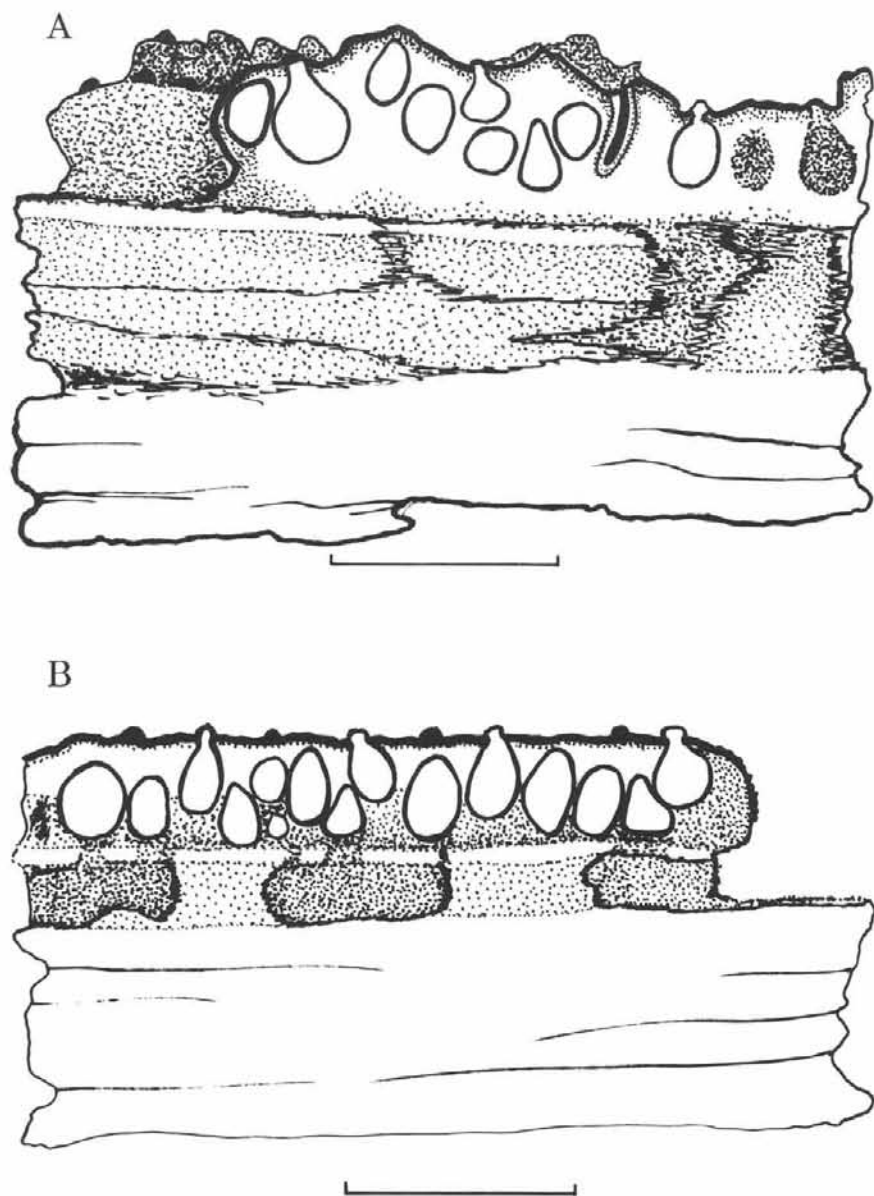


Fig. 6. Section of stroma. A - *Diatrype subaffixa* var. *rappazii*, B - *Diatrype undulata*. Scale bar = 1000 μ m.

Fig. 2.

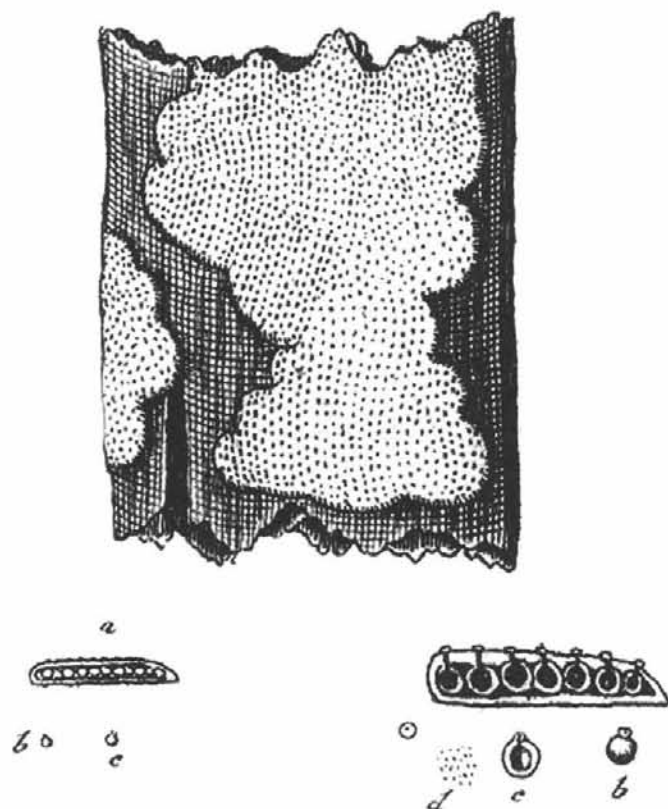


Fig. 7. Hoffman's drawing of *Sphaeria stigma* (Hoffman 1787, Tab. II, fig. 2).

and low, similar to *D. stigma* but three-sulcate, surface slightly undulate, margin steep. It is a young specimen with not distinctly protruding ostioles. Another specimen collected by Peyl on *Corylus avellana* possesses spores $9-11 \times 1.5-1.8(-2) \mu\text{m}$ and typical, prominent ostioles (PRM 801626) just as specimens collected on *Carpinus betulus* and *Acer pseudoplatanus* (PRM 801567, 801562). Specimens collected on *Carpinus betulus* and *Carpinus orientalis* are sometimes hard to identify (Rappaz 1987b). Such specimens were noted in Bulgaria (PRM 841829), former Yugoslavia (PRM 814314), Austria (KRAM F 54771) and Poland (KRAM F 40998).

Material studied. **Bohemia:** Central Bohemia: Srbsko, valley near Dounáč, on dead branch of *Carpinus betulus*, 6 May 1967, coll.: M. Svrček (as *D. stigma*), PRM 890354; Central Bohemia, Český kras, NNE of Srbsko, Dounáč hill, on dead twig of *Carpinus betulus*, 16 April 2005, coll.: A. Chlebicki, KRAM F 54851; Central Bohemia: Károvské údolí valley near Zbraslav, on dead twig of *Carpinus betulus*, 2 April 1944, coll.: M. Svrček (as *D. stigma*), PRM 670036; Eastern Bohemia: Peklo near Nové Město nad Metují, on dead twig of *Carpinus betulus*, 17 November 1956, coll.: B. Hofman (as *D. stigma*), PRM 607072, published as *D. stigma* (Hofman 1959); **Moravia:** Brno, Bobrava, on dead twig of *Rosa* sp., June 1923, coll.: J. Hruby (as *D. stigma*), BRNM 04272/39.

Other collections: Loc.?, in ligno et subcort. on dead partially decorticated branch of *Corylus avellana*, 27 September 1856, no collector named, PRM 801626; Loc.?, on dead twig of *Carpinus betulus*, 14 May 1859, no collector named, (as *Sphaeria stigma* var. b. *decorticata* DC.) PRM 801567; Loc.?, on dead branch of *Acer pseudoplatanus*, no date and collector (as *Sphaeria stigma* var. *decorticata*), PRM 801562; SE Bulgaria: Eminska planina Mts., valley of Vlas river near Slančev Briag, on dead branch of *Carpinus orientalis*, 20 August 1982, coll.: F. Kotlaba, ident.: Z. Pouzar (as *D. stigma*), PRM 841834; Yugoslavia: Sutomore, 'macchia' community, on dead twig of *Carpinus* sp., 10 June 1977, coll.: S. Šebek, ident.: Z. Pouzar (as *D. stigma*), ostioles flat as in *D. stigma*, margin of stromata distinct, PRM 814314.

Diatrype undulata (Pers.: Fr.) Fr., Summa Veg. Scand. 2: 385, 1849.

Syn.: *Sphaeria undulata* Pers.: Fr., *Stictosphaeria undulata* (Pers.: Fr.) Fuckel

Description. Stromata mostly widely effused, strongly raised and divided into irregular lobes, with steep margin, brownish grey, up to 0.8 mm high, surface flat (Fig. 2H), perithecia ovoid in a single layer, ectostroma black, endostroma creamy white, black stromatic zone (dorsal zone) extending down to the wood (Fig. 6B), ostioles prominent, conical, three- to four-sulcate, asci 23–40 x 4–5 µm p. sp. (pars sporifera), pedicell up to 60 µm, ascospores allantoid 6–8.4 x 1.2–1.5 µm.

Comments. Known from various species of the genus *Betula* (Rappaz 1987b). It was noted in the Czech Republic on *Betula pendula* and *Betula* sp. It was possibly the first time collected by Opiz (1855) in Prague on *Betula* sp. and wrongly identified as *Sphaeria stigma*. Peyl collected a fungus identified by him as *Sphaeria undulata* Pers. (PRM 813309, on decorticated wood of *Acer* sp.), but it is in fact *Eutypa* sp., possibly *Eutypa lejoplaca* (Fr.: Fr.) Fuckel. Also another collection of *Sphaeria undulata* made by Peyl on *Corylus avellana* was composed of two other species: *Diatrype subaffixa* and *Eutypa* sp. (PRM 801626). Petrak (1920) published this species (as *Diatrype stigma*) on *Betula pendula* from Konradsgrün (Kunrátov near Chleb, Western Bohemia).

Material studied. **Bohemia:** Northern Bohemia: Herbarium Marschner (no 110), on dead twig of *Betula pendula* (as "*Betula verruc.*") near Althehrenberg (Staré Křečany near Šluknov), 27 May 1944, coll.: G. Marschner, ident. G. Feumich (as *D. stigma*), PRM 725340; Northern Bohemia: Hely, near Kyjov close to Krásná Lípa, on dead twig of *Betula* sp., 20 August 1960, coll.: M. Svrček (as *D. stigma*), PRM 620115; Northern Bohemia, České středohoří Mts., SE of Milešov, S slope of Ostrý hill, forest (*Fagus*, *Quercus*, *Fraxinus*, less frequent *Betula*), alt. 440–470 m, on dead branches of *Betula* sp., 25 May 2005, coll.: L. Edrová, ident. M. Suková, KRAM F 54920; Northern Bohemia, České středohoří Mts., Oparenské údolí (valley of Milešovský brook) between Velemín and Oparno, on dead branch of *Betula*

sp., 3 May 2005, coll.: M. Suková, KRAM F 54923; Western Bohemia: Javornická hornatina, Strašín, Zábrdí valley, on twigs of *Betula pendula*, 2 October 1997, coll.: M. Svrček (as *D. stigma*), PRM 891761; Central Bohemia: Hostomice pod Brdy, valley of the Chumava river, on dead twigs of *Betula pendula* (as *Betula alba*), 23 April 1954, coll.: M. Svrček (as *D. stigma*), PRM 890134; Central Bohemia: Hostomice pod Brdy, 'Provazec' hill, on dead branches of *Betula pendula* (as *B. alba*), 22 April 1954, coll.: M. Svrček (as *D. stigma*), PRM 890180; Central Bohemia, Čelákovice, pine forest, on dead twig of *Betula pendula*, 27 March 2005, coll.: A. Chlebicki, KRAM F 54786; Southern Bohemia: Jiříkovo údolí near Šalmanovice, on dead twigs of *Betula* sp., 18 May 1965, coll. and ident.: M. Svrček (as *D. stigma*), PRM 604074; Southern Bohemia: pond Vydýmač (near Lomnice n. Luž.), on twig of *Betula* sp., 25 August 1942, coll.: K. Kavina (as *D. stigma*), PRM 670021; Southern Bohemia: Nová Ves nad Lužnicí near Třeboň, on dead twig of *Betula* sp., 11 June 1959, coll.: J. Kubička, ident. M. Svrček (as *D. stigma*), on the same twig also *Peniophora incarnata* is present, PRM 617701; Southern Bohemia: Třeboň, 'U Jindrů', on dead twig of *Betula* sp., 31 August 1958, coll.: J. Kubička, ident. M. Svrček (as *D. stigma*), PRM 614421; Southern Bohemia: Třeboň, wet alder forest 'U Jindrů', on dead twigs of *Betula pendula*, 27 October 1958, coll.: M. Svrček (as *D. stigma*), PRM 890227.

Moravia: Weidenau (Vidnava), on dead twig of *Betula* sp., 1911, coll.: J. Hruby, (as *D. stigma*), BRNM 04269/39; Třebíč, near Kotkovice, on dead twigs of *Betula* sp. (as *Fagus sylvatica*), August 1910, coll.: R. Picbauer, BRNM 120000; Čejkovice, on dead twig of *Betula pendula*, 27 May 1985, coll.: M. Svrček, BRNM 695691; Vel. Meziříčí, near Netín, on dead twig of *Betula pendula* (as *Betula verrucosa*), July 1913, coll.: R. Picbauer (as *D. stigma*), BRNM 120008; Vel. Meziříčí near Netín, on dead twig of *Betula pendula*, July 1911, coll.: R. Picbauer (as *D. stigma*), BRNM 119999.

Key to the *Diatrype* species from the Czech Republic

1. Stroma circular in outline 2
1. Stroma irregular in outline 3
2. Stroma circular, darker from the side, surface flat, ascospores 5–8 x 1.2–1.3 µm, mostly on *Fagus* *D. disciformis*
2. Stromata elliptical in outline, surface pulvinate, ascospores 7–9 x 1.2–1.8 µm '*D. disciformis*' on *Loranthus europaeus*
2. Stromata mostly circular or elongate, sometimes confluent, sides rounded, surface pulvinate, ascospores 5–7 x 1.1–1.3 µm, on *Salix* spp. *D. bullata*
3. Ascospores 8–11 µm 4
3. Ascospores smaller 5
4. Stromata nearly flat with low margin, surface covered by white remains of conidial ectostroma, ostioles disk-shaped, indistinctly 4–6-sulcate, ascospores 8–11 x 1.6–2.7 µm, on a wide range of hosts *D. stigma*
4. Stromata mostly strongly undulated, raised, with distinctly marked margin, ostioles cone shaped, three- to four-sulcate, ascospores 8–11 x 1.5–2.4 µm, on *Carpinus betulus* *D. subaffixa* var. *rappazii*
4. Stromata partly eutypoid, entostroma olive green *D. flavovirens*

5. Margin of stromata distinct, sinuate in contour, surface flat, ostioles cone-shaped, erumpent, ascospores 6–8 x 1.2–1.5 µm, on *Betula* spp. *D. undulata*
5. Margin of stromata low, stromata wide-spreading with deep transverse fissures, ostioles cone-shaped, erumpent or flat, ascospores 7–9 x 1.2–1.5 µm, mostly on *Fagus sylvatica*, but also on *Acer*, *Corylus*, *Carpinus*, *Prunus* ... *D. decorticata*

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