

however, that statements concerning paraphyses in the literature of the 19th century are often wrong. – Judging from the characters in peridium and centrum I consider this fungus to be very closely related to *Valsa*.

Valsa Fr. sensu latiori

Stroma subepidermal, in the bark (never in the wood), represented by a rounded, sublentiform, black zone; or obsolete, only present in the disc. Young stromata produce conidia of the *Cytospora*-type: Minute, allantoid conidia produced in compound, lobate cavities beneath the lifted peridermis. – Asci small, loosening, 2–4–8-spored or polysporous. – Spores allantoid, perfectly hyaline.

Valsa sensu latissimo NITSCHKE (1870) included several groups of *Xylariaceae*, tribus *Diatrypeae*. The present concept of the genus includes the Nitschkean groups *Euvalsa* A. *Monostichae*, *Euvalsa* B. *Circinatae*, *Leucostoma*, and *Valsella*.

This genus constitutes one of the most intricate problems in the taxonomy of Pyrenomycetes:

1) It appears from the discussions of some species below that it is hardly possible to maintain NITSCHKE's distinction between *Monostichae*, *Circinatae*, and *Leucostoma*. – 2) *Valsella* (with polysporous asci) is considered by PETRAK (1923:227) to be composed of polysporous states of *Leucostoma* spp.; this record is doubtful, but not actually disproved; thus, it contributes to the general confusion. – 3) The spore-size is very variable within each species; and the differences in spore-size between the species is not very significant. This means that the spore-size is of very little use in definition of species. – 4) The size of the perithecia and their number in the stroma seem to be variable characters. – 5) Some species are distinctly host-specific or with a narrow range of host-plants belonging to the same family, e. g. *Valsa germanica* on *Salix* and *Populus*. Others seem to be ubiquitous (e. g. *Valsa ambiens*); it is remarkable that even the rather host-specific species seem to be widely variable.

As a conclusion: The taxonomy of *Valsa* cannot possibly be solved by herbarium-studies – not even approximately. We need large series of cultur experiments for solution of the problems. – *Valsa germanica* probably is a good species; all other binomials are applied tentatively.

Key to the species:

A. No black stromatic zones (*Eu-Valsa* sensu stricto)

1. Ostioles separately erumpent outside the disc;
 - on *Salicaceae* *V. germanica* p. 223
1. Ostioles collectively erumpent in the disc. 2
2. Spores 3 μ thick or more. 3
2. Spores definitely below 3 μ in thickness 5
3. Spores 5–6(–8) μ thick; disc whitish; on *Salix*. *V. salicina* p. 224
3. Spores generally less than 5 μ thick; disc dirt-grey. 4
4. On *Fagus* cp. *Valsa pustulata*
and *V. turgida* p. 225
4. In general. cp. *V. ambiens* p. 224
5. On Conifers; spores often less than 2 μ thick 6
5. On dicotyledonous trees and shrubs 7
6. On *Abies*; spores up to 12 μ long. *V. friesii* p. 225

6. On *Pinus* or *Larix*; spores 7–9 μ long..... *V. pini* p. 226
 7. On *Rosales*..... 8
 7. On *Populus*..... cp. *V. cfr. sordida*
 p. 226
 7. On *Betula*..... cp. *V. cfr. coenobitica*
 p. 227
 7. On *Corylus*..... cp. *V. fuckelii* p. 227
 8. On *Rosaceae*..... cp. *V. ceratophora*
 p. 228
 8. On *Crataegus*..... cp. *V. hoffmannii*
 p. 228
- B. Black stroma-zones \pm developed (*Leucostoma* sensu lato)
1. On Conifers..... 2
 1. On dicotyledonous trees and shrubs..... 4
 2. Asci polysporous..... *V. rostrupiana* p. 229
 2. Asci 8-spored..... 3
 3. Spores 5–7 μ long..... *V. kunzei* p. 229
 3. Spores 11–14 μ long..... *V. cfr. curreyi* p. 230
 4. On *Salicaceae*..... 5
 4. On *Cupuliferae*..... 6
 4. On *Rosales*..... 7
 4. On *Frangula*..... 9
 5. Asci 8-spored (cp. also *V. translucens*)..... *V. nivea* p. 230
 5. Asci polysporous..... *V. salicis* p. 231
 6. Stroma-zone \pm diffuse; on *Quercus*..... *V. cfr. intermedia*
 p. 231
 6. Stroma well-defined, lentiform; on *Fagus*..... cp. *V. auerswaldii*
 p. 233
 7. On *Prunus*; no dorsal zone of the stroma..... *V. cincta* p. 232
 7. On *Sorbus*; stroma-zone closed..... 8
 8. Asci 28–33 μ long..... *V. leucostoma* p. 232
 8. Asci 50–65 μ long..... *V. massariana* p. 233
 9. 2–8 perithecia in each stroma; disc white..... *V. auerswaldii* p. 233
 9. 10–60 perithecia in a stroma; disc filled by the black
 ostioles..... *V. frangulae* p. 234

Valsa germanica NKE.

Str. consisting of a circular, greyish or whitish disc, 300–400 μ diam.; structure indistinct, powdery, with a few thin-walled, inflated cells. – **P.** 400–600 μ diam., subcircinate around the disc, with which they have no visible connection except the arrangement; ost. separately erumpent, subcircinate at a distance of 1–1½ mm. from the disc, wavy, 80–90 μ thick at base, –200 μ at top. – **Perid.** 15–18 μ thick, text. prism., cells 6–9 \times 3–5 μ , dark olive-grey; in ost. text. porr.-intr., the intricate character probably in connection with the remarkably wavy shape of the neck, cells 3–4 μ thick, grey; porus –50 μ wide at top. – **A.** 40–45 \times 8–9 μ ,

8-spored, occasionally 4-spored by frustration of 4 spores, clavate, tapering below, comparatively thick-walled, lumen truncate to distinctly concave at the top. – **Sp.** ca. $12-17 \times \text{ca. } 3 \mu$, sausage-shaped.

On dead twigs of *Salix* and *Populus*, Oct.–Jan. – S.: Geel Skov (O.R., on *Populus*, sub nom. *V. nivea*). – J.: Kolding (A.M., on *Salix* and *Populus*). – The specimen mentioned by LIND (1913) is not present in the herbarium.

A most characteristic species. The only Danish fungus with a similar type of stroma is *Diaporthe tessella*, which occurs on *Salix* too. – Already NITSCHKE noticed the thick ascus-wall of this species.

Valsa salicina (PERS. ex FR.) FR.

Syn. vide WINTER 1887

Str. only seen as a small ($300-400 \mu$), circular, whitish-grey disc, which penetrates the slightly conically lifted peridermis; structure indistinct, powdery. – **P.** 2–8 in a stroma, $350-400 \mu$ diam., lying rather closely beneath the peridermis; ost. $80-90 \mu$ thick in the bark to 150μ in the disc, rather short. – **Perid.** very thin and soft, $13-15 \mu$ thick, text. prism., cells $9-12 \times 3-5 \mu$, cell-walls wavy, dark olive-greyish; in ost. text. (prism.-)porr., cells $5-6 \mu$ thick, more light-coloured; porus -80μ wide, with long and remarkably thin (less than 1μ) periphyses. – **A.** $50-60 \times 7-9 \mu$, oblong, almost sessile, generally 4-spored; lumen truncate above. – **Sp.** $16-22(-32) \times 5-6(-8) \mu$, sausage-shaped to oblong-oval, hyaline, with a thick, distinct epispore.

On dead twigs of *Salix* spp., common.

Valsa ambiens (PERS. ex FR.) FR. Fig. 89

Syn. vide WINTER 1887

Str. only visible as a dark dirt-greyish, conical-cylindrical body, which lifts the peridermis rather steeply and forms the disc; structure a rather dense text. intr.-porr., cells $3-5 \mu$ thick. – **P.** 4–12 or more in a stroma, $400-500 \mu$ diam., scattered or circinate in the bark; ost. \pm long, $80-90 \mu$ thick, at the top -200μ thick, collectively erumpent, \pm filling the disc. – **Perid.** ca. 20μ thick, text. prism., cells remarkably small, $3-5 \times 2-3 \mu$, in the upper part larger, olive-brown; in ost. text. porr., cells ca. 3μ thick, dark olive; porus in the upper part $60-70 \mu$ wide, filled with long periphyses. – **A.** $50-60 \times 8-10 \mu$, clavate, 8-spored; sessile, lumen truncate-concave. – **Sp.** $14-18 \times 2\frac{1}{2}-4 \mu$.

Common on dead branches and twigs of many frondose trees, autumn-spring.

According to NITSCHKE, the asci range from $40-88 \times 8-16 \mu$, the spores from $16-36 \times 3-8 \mu$, the larger ones being from 4-spored asci; POUL LARSEN found on *Carpinus betulus* a few 2-spored asci with spores $15-18 \times 9-10 \mu$.

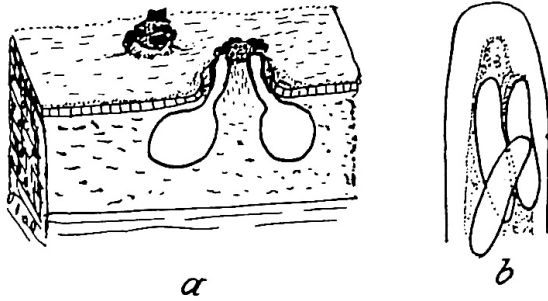


Fig. 89. *Valsa ambiens*. – a) Stromata. – b) Ascus-top, $\times 1400$.

The material here described grows on *Pyrus malus* (S.: Sorø, April (W.S.)). Most of the material found in the herbarium of B.M. is indeterminable, so I have no opportunity of giving a thorough description of this variable species; this must be left for a monographic work on the genus.

?*Valsa pustulata* AUERSW. in NKE.
and ?*Valsa turgida* AUERSW.

It has been impossible for me to decide, on the basis of the Danish specimens, whether *Valsa pustulata* is a synonym to *V. ambiens* or a distinct species; some specimens show a rather small-spored *V. ambiens*; one showing a strongly pustulate *Valsa* sp. on bark of thicker branches of *Fagus* is more deviating. The perithecia are $700\text{--}900\ \mu$ diam., up to 15–20 in a stroma, densely monostichous; ostiola at top $130\text{--}140\ \mu$ thick, distinctly circinate in the brown disc; peridial cells $20\text{--}30\ \mu$ large; sp. $12\text{--}16 \times 3\ \mu$. It probably represents *V. turgida* AUERSW. (cp. NITSCHKE 1870, p. 211–212); it can hardly be identical with *V. ambiens*, especially the difference in the peridial cells is too large; neither is it possible to identify it categorically with *V. pustulata*. This group within the genus *Valsa* needs a further study.

Valsa dolosa (FR.) NKE.

A specimen on *Salix* sp. only deviating from *V. ambiens* by larger peridial cells ($8\text{--}12\ \mu$ long) is found in B. M. under this name (S.: Ruderhegn, April (O.R.)). It may be identical with *V. dolosa*, which however does not seem to show definite differences from *V. ambiens*; NITSCHKE (l. c.) says about both *V. dolosa* and *V. ambiens*, that they differ from *V. salicina* by a larger stroma, a larger disc, and by more coarse ostiola.

Valsa friesii (DUBY) FUCK.

Str. only seen as a greyish, cylindrical body surrounding the ostiola and forming the disc; structure indistinct, powdery; in this tissue is seen a *Cytospora*, con. $3\text{--}4 \times 1\ \mu$. – **P.** $300\text{--}500\ \mu$ diam., depressed-spheric, 5–12 rather closely together in a stroma, immersed in the bark; ost. wavy,

collectively erumpent, generally completely filling the disc, 30–40 μ thick in the bark, at the top swollen to a thickness of 150–180 μ . – **Perid.** 18–22 μ thick, at the base of ost. somewhat thicker, text. prism. appl., cells 6–12(–20) \times 3–5 μ , olive-brownish, more light-coloured towards the centrum; in ost. text. porr., cells 3–4 μ thick, olive-grey; porus 12–20 μ wide, periphysate. – **A.** 32–40 \times 5–7 μ , clavate, sessile, without a distinct apical structure. – **Sp.** 6–12 \times 1 $\frac{1}{2}$ –2 $\frac{1}{2}$ μ , slightly attenuating towards the ends.

On dead branches and twigs of *Abies pectinata*, March–May. – S.: Geel Skov (J.L.). – F.: Tange Skov (E.R.).

The two specimens examined by me represent the same species; but the Funen-material is determined to *V. abietis* by E. ROSTRUP. The Sealand-material shows the *Cytospora abietis* on leaves of the host, but here are also *Cytospora*-pycnidia with identical conidia in the perithecial stromata.

Valsa pini (ALB. & SCHW.) FR.

Syn. vide WINTER 1887

Str. slightly prominent; stromatic tissue almost absent. – **P.** 5–12 in a stroma, 400–500 μ diam., monostichous (-subdistichous): ost. 40–50 μ thick at base, –200 μ thick at top, densely collectively erumpent on a small, circular disc, which is completely filled by them; the peridermis generally lies closely to the disc, occasionally with a few small lobes round the disc. – **Perid.** 20–30 μ thick, text. prism. appl., cells 9–18 \times 4–8 μ , olive-brown; in ost. text. porr. div., cells 4–6 μ thick, dark brown; porus ca. 30 μ wide, filled with evanescent periphyses. – **A.** 27–30 \times 5–6 μ , slenderly clavate. – **Sp.** 7–9 \times 1 $\frac{1}{2}$ –2 μ , subcylindric, curved.

On dead twigs of *Pinus strobus*, Febr. – S.: Geel Skov (O.R.).

This fungus agrees fairly well with NITSCHKE's description of *V. pini*; the main differences are in the macroscopical characters, as the stromata of our fungus are smaller, less prominent and contain a smaller number of perithecia. These differences do not seem to me to be of so great importance, that they should prevent the determination to *V. pini*.

A specimen collected at Silkeborg (Dec. 1953) on recently dead stems, 7–9 cm. thick, of *Larix* curiously enough corresponds better to the description of *V. pini*. It has somewhat smaller perithecia—250–300 μ diam.—occurring 8–60 together in the densely scattered stromata; the peridium is thinner—12–15 μ —and with rather light-coloured cells except at the very periphery. The stromata measure up to 1.5 mm. diam., the discs 250–750 μ .

Valsa cfr. **sordida** NKE.

Str. small, ca. 1.5 mm. diam.; disc truncate-conical, ca. 150 μ diam. at the circular, erumpent apex, light grey, of an indistinct pulverulent

structure. — **P.** 5–8 in a stroma, circinate, small, 300–400 μ diam., flattened; ost. in the present (mature!) specimen not reaching the surface, 60–70 μ thick, light brown. — **Perid.** 15–20 μ thick, olive-greyish, very small-celled, cells 3–5 μ diam., angular, rather thin-walled; in the ost. a similar, slightly longer-celled structure; porus indefinite in width, filled with 2–3 μ thick periphyses. — **A.** 50–60 \times ca. 7 μ , oblong, conspicuously contracted below. — **Sp.** rather thick, parabolically rounded at the ends, 10–12 \times 2.5–4 μ , slightly curved.

On a dead twig of *Populus canescens*, Oct. — F.: Staurby Skov (O.R., in R.V.A.C.).

Differs from *V. sordida* NKE. by less developed ostioles and by the thicker spores. The shape of the asci is like that of *V. germanica* NKE. — The "cleistocarp" character of the perithecia is hardly normal.

Valsa cfr. **coenobitica** (DE NOT.) CES. & DE NOT.

Str. ca. 2 mm. diam., rather superficial (peridermis gibbous by the perithecia round the disc), containing 5–15 perithecia. Disc roundish, 200–400 μ diam., pulvinate, greyish or pale wood-colour, somewhat shining in the centre, whitish and pulverulent towards the edge; free portion of ostioles ca. 120 μ diam., black, perforated, erumpent along the edge of the disc, never in the central cushion, very short and inconspicuous. Tissue of the disc grey, a very dense text. intr., cells 3–4 μ thick, subhyaline. — **P.** 500–600 μ diam., strongly depressed, circinate; ost. ca. 120 μ thick i. e. not incrassated at the apex. — **Perid.** 25–35 μ thick, the outer 12–15 μ dark olive-brown, composed of two layers of angular cells, 8–13 μ long, 6–10 μ thick; the major inner part composed of hyaline, strongly flattened cells. — **A.** 40–50 \times 6–8 μ . — **Sp.** 10–13 \times ca. 2.5 μ , somewhat attenuating towards the ends, almost straight, with two small terminal oil-drops.

On a twig of *Betula*, Sept. = S.: Geel Skov (O.R., in R.V.A.C.).

Valsa coenobitica is described with monostichous, not circinate, perithecia and elongated necks. Nevertheless—as the arrangement of the perithecia does not seem to be a very good character, cp. *V. fuckelii*—I prefer to list it (with doubt) under the name *Valsa coenobitica*.

?**Valsa fuckelii** NKE.

Str. slightly prominent, present as a roundish, greyish brown disc, 600–800 μ diam., surrounded by the addressed to slightly lobate peridermis; text. intr., cells grey, 4–5 μ thick. — **P.** 10–15 in a stroma, sub-circinate, lying rather closely beneath the peridermis, 500–800 μ diam., depressed-spheric, occasionally a little angular; ost. 60–70 μ thick at

base, -200μ at top, wavy. – **Perid.** $15-20\mu$ thick, text. prism., cells $10-22 \times 5-8\mu$, olive-grey; in ost. text. porr., cells $2\frac{1}{2}-3\mu$ thick, rather light olive-yellowish; porus at top ca. 40μ wide, filled with rather thick (2μ) periphyses. – **A.** $40-50 \times 6-7\mu$, clavate, lumen somewhat truncate at top. – **Sp.** $9-12 \times$ ca. $2\frac{1}{2}\mu$, oblong-cylindric, straight or slightly curved.

On dead twigs of *Corylus avellana*, Oct. – J.: Rindsholm (J.L.). – The two Selandian collections mentioned by J. LIND (1913) are not present in the herbarium. A specimen collected in Geel Skov (S.) (O.R. 12. ii. 1892, in R.V.A.C.) is exactly like the specimen from Jutland.

This fungus, of which our material is very beautiful, does not fit exactly to NITSCHKE's description; the main difference is the well developed disc, which refers it to the group *Circinatae*, whereas NITSCHKE placed it in *Monostichae*; but as NITSCHKE apparently has seen his *V. fuckelii* only once, it may be supposed that his material has been less well developed. – The microscopical characters, especially the spores, agree perfectly.

Valsa ceratophora TUL.

Str. scattered, ca. 2 mm. diam., subcircular, in the present form (on *Rubus idaeus*) breaking the peridermis in a longitudinal fissure, conically prominent; stromatic substance among the ostiola greyish brown, of an indistinct, powdery structure, with a few distinct, rounded, greyish cells, $8-12\mu$ diam. – **P.** ca. 10 in a stroma, monostichous, irregularly angular, though generally not touching one another, $200-400\mu$ diam.; ost. $100-130\mu$ thick, at top -200μ , wavy in the stroma, \pm elongated and diverging beyond the disc, which is totally filled by them. – **Perid.** $10-15\mu$ thick, text. prism., cells $7-10 \times 4-5\mu$, light olive-greyish; in ost. text. porr., cells ca. 4μ thick, olive-brown; porus very narrow, $13-16\mu$ wide, periphysate. – **A.** $30-40 \times$ ca. 5μ , clavate, sessile, thin-walled. – **Sp.** $7-10 \times 1\frac{1}{2}-2\mu$, oblong-cylindric, not much curved.

On dead twigs of *Rosa* spp. and of *Rubus idaeus*, Nov.–March. – J.: Several localities in and around Kolding (P.L.).

J. LIND's two collections in the herbarium under this name on *Prunus spinosa* show *Eutypella prunastri*.

Valsa hoffmanni NKE.

Str. conical-pulvinate, on the bark beneath the peridermis; base circular or oval, ca. 1.5 mm. diam.; stromatic substance lighter-coloured inside, especially in the upper portion of the stroma, darker outside than the unattacked bark. – **P.** 6–12 in a stroma, densely crowded, angular by mutual pressure, $200-400\mu$ diam., largest by a small number of perithecia in a stroma; ostioles densely collectively erumpent in the very small disc

which stands near the level of the broken peridermis. – **A.** sessile, slenderly clavate, thin-walled, $37\text{--}42 \times 5\text{--}6 \mu$, 8-spored. – **Sp.** \pm irregularly 2-seriate, $8\text{--}11 \times 2\text{--}2.5 \mu$, cylindrical, slightly curved.

On dead branches of *Crataegus oxyacantha*, Dec. – J.: Seest Østerskov near Kolding (P.L.; no material left).

Valsa rostrupiana n. comb.

Syn. *Diatrypella abietis* E. ROSTR. in LIND 1913

Valsella abietis (ROSTR.) MUNK 1953a

Valsella rostrupiana MUNK 1953

Str. hardly 1 mm. diam., 0.6–0.8 mm. high, in the upper part of the thick bark, pustulate, lifting the firmly adhering peridermis a little, from a flattened base rounded-conical, with a small, white disc, ca. $\frac{1}{2}$ mm. diam.; stroma surrounded by a thin ($15\text{--}20 \mu$), dark zone, beginning at the edge of the disc. Stromatic structure text. glob.–prism., cells $5\text{--}10 \mu$ diam., hyaline in the whitish interior and in the disc, rather light olive-greenish in the dark zone. – **P.** 10–15 in a stroma, $250\text{--}300 \mu$ diam., densely crowded, subcircinate, rounded-conical with an almost flat base, lying closely to the bottom of the stroma; ost. ca. 70μ thick below, 140μ above, hardly projecting. – **Perid.** $14\text{--}18 \mu$ thick, text. prism. appl., cells $9\text{--}14 \times$ ca. 3μ in the outer, light greenish half, still more flattened in the hyaline inner half, thin-walled; in ost. text. porr., cells ca. 3μ thick, light greenish; porus very narrow, $16\text{--}20 \mu$ wide, filled with short periphyses, $2\text{--}3 \mu$ thick. – **A.** sessile, filling the perithecium, $40\text{--}50 \times 4\text{--}7 \mu$, cylindrical-clavate, thin-walled, polysporous; no paraphyses seen. – **Sp.** ca. $5 \times$ hardly 1μ , cylindrical or almost so, almost straight, perfectly hyaline, with 2–3 indistinct oil-drops.

Only found once: J.: Hornsnes near Silkeborg, 1.7.1906 (E.R.). (Exsicc.: SYDOW, Pyr. no. 38). – Very fine material of this pretty little fungus.

Valsa kunzei FR.

Str. 0.75–1.5 mm. diam., subcircular, flattened at base, immersed in the bark, rather prominent, breaking the peridermis in a lobate, often transversal fissure, and erumpent with a dark greyish-brown disc, $500\text{--}700 \mu$ diam.; the delimitation of the stroma is, at least in the upper part, given as a black zone, which is especially distinct in being, as a rule, free of the surrounding host tissue, often visible in the peridermal fissure. – **P.** 8–20 in a stroma, $300\text{--}400 \mu$ diam., angular by mutual pressure, densely crowded in the stroma, the peripheral perithecia even sometimes arranged in two layers; ost. $100\text{--}130 \mu$ thick, generally just

penetrating the disc, occasionally slightly prominent beyond it. – **Perid.** 20–30 μ thick, thicker near the base of the ostiolum, text. prism. appl., cells 8–13 \times 2–4 μ , olive-brown; in ost. text. porr., cells 3–4 μ thick; porus very narrow, ca. 13–15 μ wide, periphysate. – **A.** slenderly clavate, sessile, 25–30 \times ca. 4 μ . – **Sp.** 5–7 \times ca. 1½ μ , subcylindric, slightly curved.

On dead, 2 cm. thick branches of *Larix europaea*, ultimo Dec. – J.: Kolding (A.M.).

V. kunzei is recorded on *Abies pectinata*; but as the present fungus in every character examined by me, except the partly distichous arrangement of the perithecia, agrees perfectly with the description of НИТСЧКЕ, I do not hesitate in identifying the fungus with *V. kunzei*. The other *Valsa* spp. on *Larix* described here are totally different.

Valsa cfr. *curreyi* NKE.

Str. pustulate, circular, somewhat prominent, 1–2 mm. diam., with a greyish, circular disc, which is surrounded by small, free lobes of the broken peridermis; the basal delimitation of the stroma is a thick, black zone; the interior of the stroma has a rather light brownish-grey colour, very different from the fulvous colour of the bark. – **P.** 6–12 in a stroma, circinate arranged round a central conidial locule, which is rather small, not much larger than the perithecia, with an irregular outline; p. 250–300 μ diam., subspheric; ost. 120–130 μ thick, at the very top 160–200 μ thick, generally regularly curved to almost straight, collectively erumpent, mainly in the edge of the disc, but also in the central part of it. – **Perid.** 20–24 μ thick, text. prism. appl., cell-walls light-coloured, not quite distinct, except in the peripheral cells, which are rounded, small, 4–5 \times 3–4 μ , brown; in ost. text. porr., cells 3–5 μ thick, greyish brown; porus 30–40 μ wide, strongly periphysate. – **A.** ca. 40 \times 5–7 μ , clavate, sessile. – **Sp.** 11–14 \times ca. 3 μ , curved to almost straight, distinctly tapering towards the ends. – **Conidia** 4–5 \times 1 μ , cylindric, curved.

On dead twigs of *Larix europaea*, Oct. – S.: Øverød (E.R.).

The microscopical characters of this fungus agree fairly well with those of *V. curreyi* NKE., but the plain, small ostiola and especially the strong *Leucostoma*-like development of the stroma and differentiation of the entostromatic tissue make it undesirable to refer it to *V. curreyi*.

Valsa nivea (PERS. ex FR.) DE NOT.

Str. ca. 1 mm. diam., circular, truncate-conical, a little prominent; disc almost pure white, 300–350 μ diam., closely surrounded by the firmly adhering peridermis; black zone continuous, with a short lateral “wing”;

structure an irregular text. intr.-glob., most cells 4–6 μ thick, a few ones inflated, globose, 12–15 μ diam.; entostromatic tissue macroscopically well differentiated, looser, but with the same characters, cells light brown to hyaline. – **P.** 3–10 in a stroma, ca. 250 μ diam.; ost. 50–60 μ thick, just penetrating the disc, scattered. – **Perid.** 10–12 μ thick, text. prism. appl., cells 10–14 \times 3–4 μ , rather dark olive; in ost. text. porr., cells ca. 3 μ thick, olive-brown; porus ca. 30 μ wide, periphysate. – **A.** 40–60 \times 8–10 μ , 4–8-spored. – **Sp.** (12–)14–17(–19) \times (2½–)3–4 μ , the thickest ones attenuating towards the ends.

On dead twigs of *Populus* spp., apparently not rare.

Valsa salicis (FUCK.)

Syn. vide WINTER 1887

Str. circular, 1 mm. or a little more in diam., strongly prominent, most convex at the edge, limited by a continuous black zone, which is 20–40 μ thick, with a narrow lateral, subperidermal wing; black zone text.-glob., cells 4–8 μ diam., thick-walled, very dark brown; entostromatic tissue brown, of a loose text. intr., cells 3–8 μ thick, light brown; disc 200–500 μ diam., circular to transversally oval, entirely filled by the ostiola. – **P.** 5–12 in a stroma, separated from one another, depressed-spheric, 300–350 μ diam.; ost. ca. 50 μ thick at base, 100–120 μ thick at top, almost straight to slightly curved. – **Perid.** exceptionally thin, 7–8 μ , text. prism. appl., cells 10–16 \times 2–4 μ , dark olive-brown; in ost. text. prism.-porr., cells 3–4 μ thick, light olive-yellow; porus 15 μ at base to 40 μ at top wide, sparsely clad with thin periphyses. – **A.** 40–55 p. sp. \times 6–9 μ , cylindric-oblong, almost sessile, thin-walled, polysporous. – **Sp.** 5–8 \times 1–1½ μ , sausage-shaped.

On twigs of *Salix*, Dec.–Jan. – J.: Egaa (*Salix aurita*, P.L.). Kolding (A.M.).

Valsa cfr. **intermedia** NKE.

Str. in the bark, ca. 2 mm. diam., circular; disc subcylindric, 700–900 μ broad at the apex; the rest of the stroma forms part of a flattened, sub-hemispheric body with a flat base. Disc dark brown, almost filled up with the ostioles. The surface of the stroma beneath the peridermis is covered by a blackish brown zone which extends, \pm diffusely, along the surface of the bark beneath the loosened peridermis; ventral zone absent. Tissue of black zone indistinct, like the other stroma-tissue mixed with host-tissue. – **P.** 10–16 in a stroma, monostichous, 400–450 μ diam.; ost. ca. 150 μ thick at the apex. – **Perid.** ca. 20 μ thick, cells 8–20 \times 2–4 μ ,

i. e. strongly flattened, olive-greenish, rather thin-walled; in the ost. a rather loose, light brown text. porr. with $4-5\ \mu$ thick cells. – **A.** $40-45 \times 5-7\ \mu$, oblong-clavate, 8-spored. – **Sp.** $10-12 \times 1.5-2.5\ \mu$, curved.

On branches and twigs of *Quercus*, Jan. – J.: Horbylunde (collected several times in various localities of the forest) (A.M.).

This fungus may be identical with *V. intermedia* NKE. which is, however, described with somewhat larger spores ($10-16 \times 2-3(-4)\ \mu$). To be sure, NITSCHKE (1870: 199) intended to indicate an intermediate position between *Eu-Valsa* A. *Monostichae* and *B. Circinatae* by the epithet "intermedia"; the present fungus is rather intermediate between subg. *Eu-Valsa*, *Monostichae* and subg. *Leucostoma*. – The present species has demonstrated to me that *Leucostoma* ought to be included in the genus *Valsa*.

Valsa cincta (FR.) FR.

Str. in the bark, circular, ca. 2 mm. diam., conical with a slightly rounded base, prominent, lifting the peridermis and erumpent by a small, transverse, not lobate fissure. Disc dirt-grey, subelliptic, with marginally erumpent, black ostioles at the level of the disc. Black zone basal, dish-shaped, just reaching the peridermis at the periphery of the stroma, without a lateral wing (the stroma is firmly attached to the inner bark, not to the peridermis), $60-80\ \mu$ thick, composed of a very dense text. intr. with $4-6\ \mu$ thick, black, very thick-walled cells. Tissue of disc a loose web of thin-walled, olive-grey cells of the same size. – **P.** 6–10 in a stroma, circinate, large, $750-900\ \mu$ diam.; ost. ca. $170\ \mu$ thick at the apex. – **Perid.** $20-25\ \mu$ thick, cells $6-8 \times 4-6\ \mu$, very dark-coloured, moderately thick-walled; in the ost. a light brown text. porr. of $4-5\ \mu$ thick cells; porus $25-30\ \mu$ wide, richly lined with rather coarse periphyses. – **A.** $50-55 \times 8-10\ \mu$, oblong, short-stipitate, 8-spored. – **Sp.** $8-11 \times 2-3.5\ \mu$, almost straight.

On branches of *Prunus cerasifera* killed 4 years ago, March. – J.: Silkeborg (my garden at Ørnsøvej 78) (A.M.).

In the literature the spores of *V. cincta* are described to be longer than in the present specimen.

Valsa leucostoma (PERS. ex FR.) FR.

Syn. Valsa persoonii NKE.

Str. ca. 1 mm. diam. or a little more, subcircular, flattened at base, rounded-conical towards the top, strongly prominent; black zone beginning at the edge of the $400-500\ \mu$ broad, white disc, $40-50\ \mu$ thick, text. intr., cells $5-8\ \mu$ thick, blackish brown; entostromatic tissue a more loose text. intr., with almost hyaline cells of the same dimensions, mixed

with remnants of the substratum, macroscopically well differentiated, light dirt-grey. – **P.** ca. 10 in each stroma, generally circinate, 300–400 μ diam., ost. 70–80 μ thick, slightly thicker at the top, just penetrating the disc, here not so strictly circinate as the perithecia below. – **Perid.** 12–15 μ thick, text. prism. appl., cells 12–15 \times 4–5 μ , rather dark brown; in ost. text. porr., cells ca. 3 μ thick, light olive-brown; porus 25–30 μ wide, filled with distinct periphyses. – **A.** 28–33 \times 5–6 μ , cylindrical-clavate, lumen slightly truncate at the top, generally 4-spored. – **Sp.** 2-seriate, 10–16 \times 2–3½ μ , seen with all combinations of length and thickness, cylindric, curved, the thickest spores attenuating at the ends.

On dead thin twigs of *Sorbus aucuparia*, Sept. – S.: Geel Skov (O.R.).

This fungus differs from the typical *V. leucostoma* by the smaller stromata, maybe on account of the thin twigs of the substratum, and especially by the mainly 4-spored, smaller asci and the larger spores. Its relation to the typical *V. leucostoma* should be more thoroughly investigated.

Valsa massariana DE NOT.

Str. 2–3 mm. diam., flattened at base, delimited by an unbroken zone, strongly differentiated, interior light grey, surrounding bark fulvous brown; disc when young light, when mature dark grey-brown. – **P.** ca. 8 in a stroma, circinate, 500–700 μ diam., angular by mutual pressure; ost. circinate, thick (160–180 μ). – **Perid.** ca. 30 μ thick or more, text. prism. appl., cells 15–25 μ long, olive-greenish; in ost. text. porr., cells ca. 3 μ thick, olive-grey; porus very wide, 70–90 μ . – **A.** 50–65 \times 8–11 μ , slenderly clavate-subcylindric, 8-spored; an apparently structureless apical thickening makes the lumen of the ascus truncate-concave at the top. – **Sp.** 10–18(–25) \times 3–4 μ , sausage-shaped. – Pycnidia strongly branched, with a single wide central opening; con. 5–7 \times 1 μ .

On dead branches of *Sorbus americana*, Febr.–March. – S.: Copenhagen, Botanical Garden. (Ø.W.).

The Danish material is very sparse, but beautifully developed. – The spore-measures do not agree perfectly with those given by НИТСИЧКЕ; only a few spores in our specimen reach 20 μ in length.

Valsa auerswaldii NKE.

Str. small, circular, ca. 1 mm. diam., only prominent with the small, circular, whitish disc; just below the disc is seen a faint blackening of a very limited area; the main black zone has the shape of a low dish with a flat edge, which extends a few hundred μ outwards beneath the peridermis, attenuating from 60–70 μ in thickness to ca. 20 μ ; this edge

makes the stroma stick firmly to the peridermis; tissue of black zone: a dense text. intr., cells $5-7\mu$ thick, dark brown; tissue of entostroma: text. intr. with remnants of the substratum, cells $4-5\mu$ thick, almost hyaline. – **P.** 2–8 in a stroma, ca. 250μ diam.; ost. ca. 80μ thick in the stroma, -160μ thick at top. – **Perid.** $20-25(-30)\mu$ thick, text. prism. appl., cells $8-14 \times 4-6\mu$, light olive-yellowish; in ost. text. porr., cells ca. 4μ thick, of the same colour; porus ca. 30μ wide, distinctly periphysate. – **A.** $40-52 \times 8-10\mu$, 4–8-spored. – **Sp.** $12-14(-20) \times 2-3(-4)\mu$ (the large measures for spores from 4-spored asci), cylindrical, curved.

On dead branches of *Frangula alnus*, rather common. – On *Fagus* too; S.: Geel Skov (O.R.).

The form on *Fagus* differs from that on *Frangula* in having a continuous black zone with lateral wings and by a thinner and darker peridium. It probably ought to be classified as an autonomous species.

Valsa frangulae n. sp. Fig. 90

Species sectionis *Leucostomatis* in genere *Valsa*. – Zona obscura stromatis dorsale. Peritheciis densissime stipatis, 10–60 in utroque stromate; ostiolis discum stromatis omnino occupantibus. – Ascis $25-30 \times c. 5\mu$. – Ascosporis $7-11 \times 1.5-2\mu$.

Str. ca. 2 mm. diam., circular, seated on the wood, pulvinate from a flattened base, covered with a dense, dark brown zone of indistinct structure; the zone occasionally extends beyond the periphery of the stroma-cushion; below the stroma a faint blackening of the surface of the wood. Disc $200-700\mu$ diam., subcircular, prominent, rupturing the peridermis by a simple perforation or (larger discs) by an irregular, strongly lobate fissure; the disc is completely filled up by the ostioles. Stromatic substance strongly differentiated, light grey, largely composed of fungal tissue, cells $4-6\mu$ thick, subsodiametric to somewhat elongated. – **P.** 10–60 in a stroma, $200-300\mu$ diam., densely crowded in the basal part of the stroma; ost. $600-700\mu$ long, $60-70\mu$ thick; free portion of ost. $90-100\mu$ thick, generally short, hardly longer than thick, occasionally 2–3 times longer than the thickness, black, hemispheric, umbilicate at the top. – **Perid.** $8-10\mu$ thick, cells $8-10\mu$ long, $2-3\mu$ thick, thin-walled, greenish grey; in the ost. text. porr. (-intr.), cells $2-3\mu$ thick, light brown, darker towards the porus; porus $12-16\mu$ wide, periphyses short, ca. 2μ thick at the base, tapering into an acute point. – **A.** $25-30 \times ca. 5\mu$, oblong, easily dissolving, with a minute, slightly refractive body near the apex. – **Sp.** sub-2-seriate, $7-11 \times 1.5-2\mu$, allantoid, hyaline.

Abundant on a dead twig of *Frangula alnus*, Jan. – J.: Lysbro Skov at Silkeborg (A.M.).

Described from the fresh specimen.

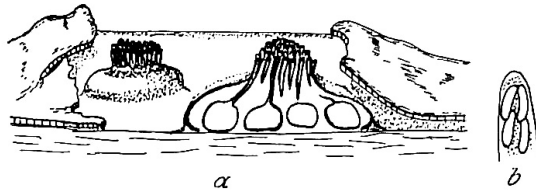


Fig. 90. *Valsa frangulae*. – a) Stromata. – b) Ascus-top, $\times 1400$.

Melanconis TUL.

Distinctly stromatic; blackened zones absent or very slightly developed; the stroma-tissue is most conspicuous in the upper portion of the stroma, i. e. the tissue which produces conidia before the development of the perithecia. Ostioles collectively erumpent in the disc which is formed by the early differentiated tissue mentioned above. Asci oblong-cylindric or slenderly clavate, tardily loosening; apical structure obsolete or atypical; paraphyses generally distinct, but often agglutinating. Spores 2-celled, hyaline or almost so, in most species appendiculate at the ends.

The genus *Melanconis* is hardly a natural one, as it has already been pointed out by WEHMEYER (1941). This fact admitted, I still prefer to maintain the genus *Melanconiella* for the species with dark-coloured spores.

Key to the species:

- | | |
|--|----------------------------------|
| 1. On <i>Betula</i> | <i>M. stilbostoma</i> p. 235 |
| 1. On <i>Alnus</i> | 2 |
| 1. On <i>Corylaceae</i> | 3 |
| 2. Spores $20-24 \times 6-8 \mu$ | <i>M. alni</i> p. 236 |
| 2. Spores $35-52 \times 8-10 \mu$ | <i>M. thelebola</i> p. 236 |
| 2. Spores $27-37 \times 11-14 \mu$ | <i>M. aucta</i> p. 237 |
| 3. On <i>Corylus</i> | <i>M. flavovirens</i> p. 238 |
| 3. On <i>Carpinus</i> | <i>M. chrysostroma</i>
p. 239 |

Melanconis stilbostoma (FR.) TUL.

Syn. vide WINTER 1887

Str. subcircular, 2–3 mm. diam., without blackened zones, not much differentiated in the basal part, in the upper part strongly developed, forming a whitish column around the ostiola and a whitish disc; tissue a loose text. intr., cells $4-7 \mu$ thick; the conidial fructification (*Melanconium betulinum* KUNZE) occurs round the whitish substance of the young stromata; single conidia are often seen in ripe stromata. The stroma is strongly prominent, almost semiglobate, on thin twigs, more immersed on thicker branches. – P. $400-600 \mu$ diam., depressed-spheric, 5–15 together in a circinate arrangement in the bark; ost. $100-120 \mu$ thick 200μ or more at the top, collectively erumpent along the edge of the