



A. Habit on branch; B. Ascomata viewed through a hand lens; C. Healthy ascoma and ascoma colonized by *Tremella juniperina* P. Karst. viewed through a hand lens; D. Part of two fused ascomata viewed with a dissecting microscope; E. Ascoma in vertical transverse section; F. Asci, ascospores and paraphyses.

**Colpoma juniperi** (P. Karst.) Dennis, *Kew Bulletin* 1957: 401, 1957 [publ. 1958].

*Phacidium pini* f. *juniperi* P. Karst., *Fungi Fenniae* no. 339, 1866 [nom. nud.].

*Phacidium juniperi* P. Karst., *Notiser ur Sällskapetets pro Fauna et Flora Fennica Förhandlingar* 11: 257, 1870 [nom. nud.].

*Coccomyces juniperi* P. Karst., *Bidrag, till Kännedom om Finlands Natur och Folk* 19: 254, 1871.

*Cliothris juniperi* (P. Karst.) Rehm, *Kryptogamen-Flora von Deutschland, Oesterreich und der Schweiz* 1: 102, 1888.

*Pragmoparopsis juniperi* (P. Karst.) Höhn., *Annales Mycologici* 15: 320, 1917.

*Colpoma juniperinum* Rehm, *Ascomyceten* No. 272, [year not noted]. [*Colpoma juniperinum* Cooke & Peck is an earlier homonym].

*Godronia juniperi* Rostr., *Meddelelser om Grønland, Kjøbenhavn* 3: 611, 1891.

*Zone lines*: not observed. *Conidiomata*: not observed. *Ascomata*. *Habit*: on both living and dead twigs and branches; colonies composed of scattered or clustered individual ascomata. *External appearance*: circular, elliptical or irregular when viewed from above; at first closed and entirely covered by a thin layer of twig epidermis which tends to remain in place; gradually raising the surface of the twig; later opening by 1–3 transverse, radial or irregular splits in the covering layer which then folds back in humid conditions revealing the pale grey or fawn coloured disc and producing a circular to irregular outline 1–2 mm diam. *In mid-point vertical transverse section*: located beneath the twig cuticle and degraded, collapsed and tanned epidermal

cells; upper wall 40–80 µm thick, composed of more-or-less globose cells 5–7 µm diam. with pigmented walls forming a *textura globulosa* or *angularis*, thicker nearer the split, where there is a clearly-defined interior layer several cells thick (which is less pigmented and even colourless at its innermost surface), gradually becoming thinner, but remaining black towards the edge of the ascoma, not obviously lined with pale lip cells at the split; the lower wall 10–40 µm thick, composed of similar but rather poorly-defined cells and extending to the edge of the ascoma; exciple arising directly from and intergrading with the lower wall, composed of cells forming a poorly-defined *textura angularis*, up to about 70 µm deep, pigmented lower down and becoming colourless higher up; subhymenium intergrading with, and scarcely distinguishable from the exciple; tanned plant tissues abundant above and beneath the ascoma. *Asci*: arising from croziers, maturing sequentially, clavate, with a rather pointed apex, 75–120 × 7.5–9 µm, uniformly thin-walled, with only one wall layer visible, not bluing in iodine, with no obvious pre-formed apical opening mechanism, opening by a narrow apical hole, 8-spored, the ascospores lying more-or-less parallel with the long axis of the ascus, sometimes helically curved towards the top. *Ascospores*: colourless, thin-walled, smooth, filiform, almost straight, aseptate, 40–50 × 1–2 µm, enveloped in a mucous sheath about 1 µm thick which is sometimes slightly thicker and of a different consistency at the spore apex when viewed with phase contrast. *Paraphyses*: colourless, aseptate or septate, thin-walled, smooth, filiform, often branched, markedly curled or coiled (but not swollen) at the apex, longer than the asci, enveloped in a mucous sheath.

**HOSTS:** *Juniperus communis* (bark, twig), *J. communis* subsp. *nana* (twig), *J. nana* [= *J. communis* subsp. *nana*] (twig), *J. sibirica* (twig), *Juniperus* sp. (twig).

**DISEASE:** *Colpoma juniperi* is found on living and dead branches, typically on old bushes or trees in undisturbed natural forest, but also on long-established dwarf bushes at higher altitudes. Unlike branches on other plants inhabited by other species of *Colpoma*, those of *Juniperus* bearing *C. juniperi* are not noticeably brittle. It is usually found only on the lower part of the tree or bush, mostly near the centre of the tree.

**GEOGRAPHICAL DISTRIBUTION:** Austria, Estonia, Finland, former Czechoslovakia [*fide* Holm & Holm, 1977], Greenland [*fide* Holm & Holm, 1977], Iceland [*fide* Holm & Holm, 1977], Italy, Norway, Poland, Sweden, Switzerland, UK (Scotland), Ukraine. The fungus may also exist in the USA (New York) [*fide* Holm & Holm, 1977], but this could be *Coccomyces petersii* incorrectly identified. *Colpoma juniperi* is common in northern Scandinavia, becoming rarer further south, and appears to be absent from Denmark [*fide* Holm & Holm, 1977]. Altitude records exist up to 1850m (Ukraine), 870m (Norway) and 760m (Scotland).

**PHYSIOLOGIC SPECIALIZATION:** None reported.

**TRANSMISSION:** By air-borne ascospores in humid conditions; ascomata containing ascospores have been observed from May to July; ascomata which no longer contain ascospores have been observed in September.

**NOTES:** Information about hosts, substrata and geographical distribution is based largely on 98 records in the author's computerized database at IMI. Sherwood (60, 1319) provided short notes on how this species [as *Coccomyces juniperi*] differs from similar fungi on *Juniperus* in North America. Torkelsen (1978) pointed out that *C. juniperi* is colonized as a saprobe or, possibly as a parasite, by the basidiomycete jelly fungus *Tremella juniperina* P. Karst.: the easiest way to find *C. juniperi* is to search during or shortly after rain, when any *Tremella* on colonized ascomata is most conspicuous, and when the pale gray open disks of healthy ascomata are most easily seen. *Colpoma juniperi*, a European species, can be distinguished from the North American *Coccomyces petersii* (Berk. & M.A. Curtis) Sherwood, also on twigs of *Juniperus*, by its consistently larger ascomata, thicker covering layer, and smaller ascospores. Sherwood (60, 1319) has correctly pointed out that this fungus is not synonymous with *Colpoma crispum* (Pers.) Sacc., typically an inhabitant of brittle dead attached twigs of *Picea* spp.

**LITERATURE:** Holm & Holm, *Symbolae Botanicae Upsalienses* 21 (3): 1–70, 1977 [esp. pages 23–24]; Sherwood, *Occasional Papers of the Farlow Herbarium of Cryptogamic Botany* 15: 1–120, 1980 [esp. pages 60–62]; Torkelsen, *Botaniska Notiser* 131: 435–438, 1978.

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