Koichiro MIURA*: **Notes on filamentous fungi from Japan** (§ 5—§ 6)**

三浦宏一郎*: 日本産の糸状菌類 (§ 5—§ 6)**

§ 5. **Ingoldia speciosa** Miura, sp. nov. (Moniliales) (Fig. 1).

Mycelium hyalinum, septatum, ramosum. Conidiophora singula, simplicia, hyalina. Conidia solitaria, terminalia, hyalina, ex uno primario axe (A: 1), duobus secundariis axibus (A: 2 et 4) et uno tertiario axe (A: 3) consistentia; axe primario plerumque 6-8-cellulato, 58-90 μ longo, basi 3.2-5.4 μ lato, semi-circulatim curvato, ad apicem versus gradatim attenuato; axibus secundariis et tertiariis plerumque 5-7-cellulatis, 47-80 μ longis, 2.8-4.7 μ latis, basi constrictis.

Fungus ex conidiis in spumis fluminis, Sugadaira, Nagano, inventis obtentus (September 30, 1968, Miura no. 1018—type in TNS).

It is well-known that the water current plays an important part in the dispersal of fungal spores, and that the spores travelling in water are often trapped in the scum floating on the surface of streams or ponds. In 1963, I found that the scum of a small stream in Sugadaira, Nagano Pref. yielded a rich stream-spora[1]. The fungus described here is one of the fungi which were isolated in pure cultures from scum-samples taken from the stream.

This fungus grew fairly rapidly on malt agar (MA) and yeast extract glucose agar (YGA). But conidium formation did not take place on these solid media. Even when strips of these colonies were submerged in water, it remained sterile. Conidiophores and conidia, however, were produced, when a slice of the colony grown on LCA[2] was placed in water. These conidia agreed well with those found in the scum-samples. Although I do not know the habitat of this fungus in the natural world, I think this is an aquatic fungus. The mycelial hyphae were hyaline, branched, septate and 1.0-5.5 μ wide. The conidiophores were scattered, hyaline, short and unbranched, bearing conidia singly and terminally. The conidia were hya-

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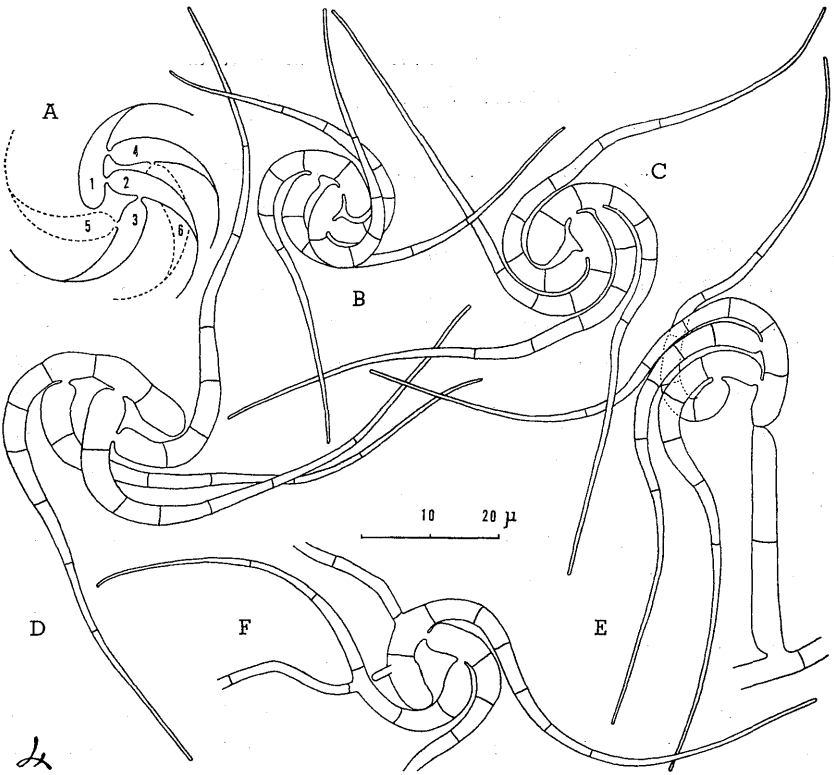

Fig. 1. *Ingoldia speciosa*. A. Schematic diagram of the conidium. B-D. Mature conidia. E. Conidiophore bearing a nearly mature conidium. F. Germination of conidium.

line, branched and multicellular, each consisting of a primary branch, two secondary branches and a tertiary branch (branch 1-4 in Fig. 1, A). The primary branch was strongly curved in one plane, 6-8-(-9-) celled, 58-90 μ long and 3.2-5.4 μ wide near the base, gradually tapering to about 0.5 μ at the tip. The secondary branches were attached to the concave side of the basal cell and the second cell, or of the second cell and the third cell, of the primary branch and curved strongly toward the base of the primary branch. The tertiary branch arose from the concave side of the basal cell of the lower secondary branch and was curved in the same manner as the secondary branches. These lateral branches were very similar to the pri-

mary branch in shape and lay in the same plane as the curved primary branch. They were (4–) 5–7-celled, 47–80 μ long and 2.8–4.7 μ wide near the base, each connected to its parent branch through an isthmus. In some cases, the tertiary branch or both the lower secondary branch and the tertiary branch were curved toward the apex of the primary branch. Conidia consisting of three branches (branch 1–3 in Fig. 1, A) were rarely observed. Very rarely, conidia with five or six branches were also seen.

As this fungus was capricious in sporulation, I could not observe all the steps taken in the development of conidium. From the view point of morphology of conidiophores and conidia, however, this fungus is no doubt congeneric with *Ingoldia craginiformis* Petersen, the type species of the genus *Ingoldia*[8]. Up to the present time, two species have been added to this genus: *I. tricapillata* Ingold[4] and *I. entomobryoides* Boerema et v. Arx[5]. The fungus described here is more similar to *I. craginiformis*. But it is clearly distinguished from the type species in form and size of conidia.

	I. speciosa	*I. craginiformis* (Petersen, 1962)
Primary branch	58–90 × 3.2–5.4 μ	35–50 × 5–8 μ
	6–8-(–9-) celled	4–5-celled
Lateral branch	47–80 × 2.8–4.7 μ	32–40 × 4.5–6 μ (sec. br.)
		20–27 × 4–5.5 μ (tert. br.)
	(4–) 5–7-celled	

§ 6. **Lemonniera centrosphaera** Marvanová (Moniliales) (Fig. 2).

The genus *Lemonniera* was established by De Wildeman in 1894 on the basis of *L. aquatica*[6]. Up to the present time, four additional species have been reported: *L. cornuta* Ranzoni[7], *L. terrestris* Tubaki[8], *L. filiformis* Petersen[9] and *L. centrosphaera* Marvanová[10]. Ingold described *L. brachycladia*[11]. But, as pointed out by Nilsson[12], it seems to be synonymous with *L. terrestris*. This genus is characterized by hyaline, pluriseptate, tetra-radiate phialoconidia which are usually formed under the surface of water. The conidia start their development as blown-out ends of phialides. And, from the spherical spore-primordia, four divergent arms develop more or less simultaneously. During the development of conidia, they are not

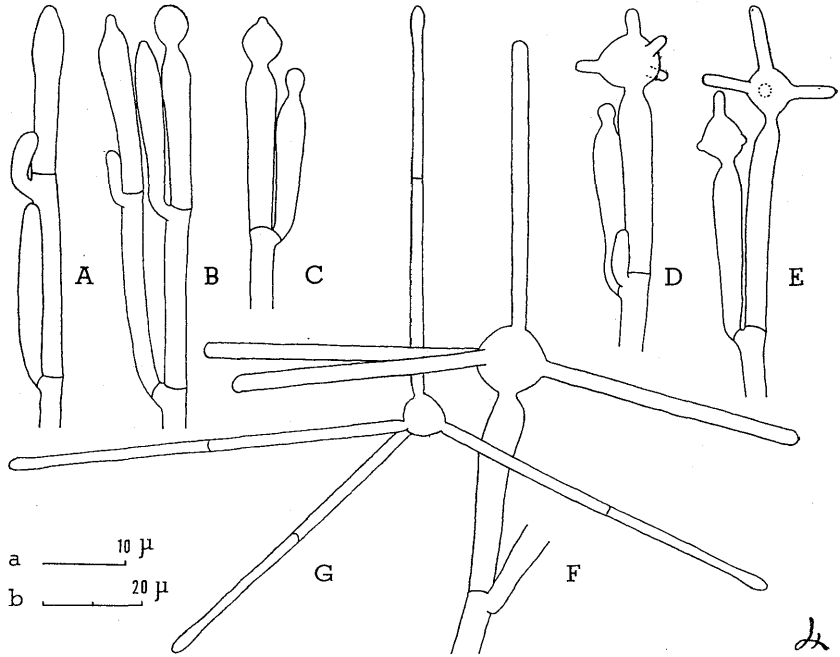

Fig. 2. *Lemonniera centrosphaera*. A. Young conidiophore. B-F. Conidia at different stages of development. G. Mature conidium. (Scale b for G.)

separated by septa from their parent phialides. When fully grown, the conidia are separated by the septa from the phialides. After the liberation of conidia, they become pluri-septate.

L. centrosphaera was originally described by Marvanová from Czechoslovakia in 1968. But, the floating conidia apparently belonging to this species had been found by Ingold in the foam of streams in England[13]. I found the same fungus growing on submerged decaying leaves in a small stream in Kirizumi, Gumma Pref. in November 1968 (Miura, no. 1028). This is the first record of the fungus in Japan and the fourth species of the genus recorded from our country[1)8)14)].

This fungus grew well on YGA. Formation of conidia failed to occur in Petri-dish cultures. But, when a strip of the colony was immersed in water, many conidiophores and conidia developed. The mycelial hyphae

were hyaline, branched, septate and 1.4–3.4 μ wide. The conidiophores were simple or branched near upper ends, 60–300 μ high and 2.3–3.4 μ wide. Each branch bore (1–) 2–3 phialides terminally. The phialides were cylindrical to clavate and 15–32×2.8–4.1 μ in size, producing conidia in basipetal succession. Each conidium consisted of a central globule and four (rarely five) divergent arms of equal length, one of which was in line with the long axis of its parent phialide. The central globules of conidia were 6.7–8.6 μ across. The divergent arms were filamentous, slightly expanded at free ends, 1–3 times septate, 60–82 μ long and 1.7–2.7 μ wide at the middle portion.

The divergent arms of conidia of my materials were a little shorter and narrower than those of European materials. I think these differences may be due to a strain difference.

My hearty thanks are due to Dr. Y. Kobayasi for correcting the Latin diagnosis and to Mrs. M. Y. Kudo for assistance in isolating the fungi.

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次の2種の菌類を本邦菌類フロラに加える。1) は新種，2) は原記載以後初めての記録である。1) *Ingoldia speciosa* Miura (水生菌，不完全菌類)，2) *Lemonniera centrosphaera* Marvanová (水生菌，不完全菌類)。