

**191. On a New Species of *Cordyceps* parasitic
on *Elaphomyces* in Japan.**

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In 1929 the writer prepared a paper entitled "On the Fungus-inhabiting *Cordyceps* and *Elaphomyces* in Japan,"¹⁾ in which he reported three species of *Cordyceps* and three species of *Elaphomyces*, viz., *Cordyceps capitata* (Holmsk.) Link, *C. Umemurai* Imai, *C. jezoensis* Imai, *Elaphomyces japonicus* Lloyd, *E. Miyabeanus* Imai and *E. nop-porensis* Imai.

When the writer made a botanical excursion to Mt. Kurodake in the Province of Ishikari in September 1934, he collected another species of *Cordyceps* parasitic on the fructification of a species of *Elaphomyces*. These two fungi were carefully studied by the writer who has concluded that both are species new to science. The present paper is intended to report on these interesting species.

Cordyceps intermedia Imai, sp. nov.

Stromatibus solitariis, raro subcaespitosis, simplicibus, 7-9 cm. alt. ; clavula ovoideo-agariciformi, 6-12 mm. in diam., e peritheciis confertissimis subellipsoideis leniter prominentibus scabra, adulto badio-nigra, sicco nigrescente ; stipite cylindraco, subaequali, saepe longitudinaliter canaliculato, 2-4 mm. crasso, olivaceo, sursum squamuloso, deorsum flavo, basi in radices crassas brevesque diviso ; ascis cylindracois, longissimis, circa 10 μ crassis ; sporidiis filiformibus, longissimis, demum in articulos subellipsoideos subcuboideosve, 3-7.5 \times 2-3 μ , secedentibus, luteo-hyalinis.

Hab. parasitica in *Elaphomycete subvariegato*, in silvis Coniferarum. Prov. Ishikari, Mt. Kurodake. Sept.

Nom. Jap. *Ézo-tampotaké*.

The fungus in question is an intermediate form between *C. capitata* and *C. ophioglossoides*, and is closely allied to *C. capitata* in the charac-

1) In Transactions of the Sapporo Natural History Society, Vol. XI, pt. 1, pp. 31-37, 1929.

ter of the head, but it is easily distinguishable from the latter by the stipe dividing at the base into cottony and short belt-like rhizoids, adhering on the surface of the host-fructification, as well as by the shorter spores in which it rather resembles *C. ophioglossoides*. The stipe of this fungus is usually more slender than that of *C. capitata*. From *C. ophioglossoides* and *C. jezoensis*, this new species is easily distinguishable by the shape of the head as well as by the shorter flat rhizoids. The spores of this fungus are usually longer than those of *C. ophioglossoides*.

Elaphomyces subvariegatus Imai, sp. nov.

Mycelio purpureo-atro, copioso, facile separabili, terrena; ascomate globoso vel depresso-globoso, non rugoso, 1.5–3 cm. in diam., juniore vel recente ochraceo, sicco fulvescente, cortice sub lente subcitrino, non bene differentiato a peridio, verrucis minutis, 350–600 μ latitudine base, 300–500 μ altitudine, 3–6-gonis, apicibus acutis vel leniter obtusis; peridio circa 1 mm. crasso, brunneo-rubenti, sub lente lineis labyrinthis brunneis reticulatim variegato; gleba initio albo-filamentosa, dein fumoso-avellanea, demum atro-brunnescente furfurascenteque; ascis 4–8-sporis; sporis globosis, atro-brunneis, 12.5–22.5 μ in diam., echinatis, episporis 1.5–2.5 μ crassis.

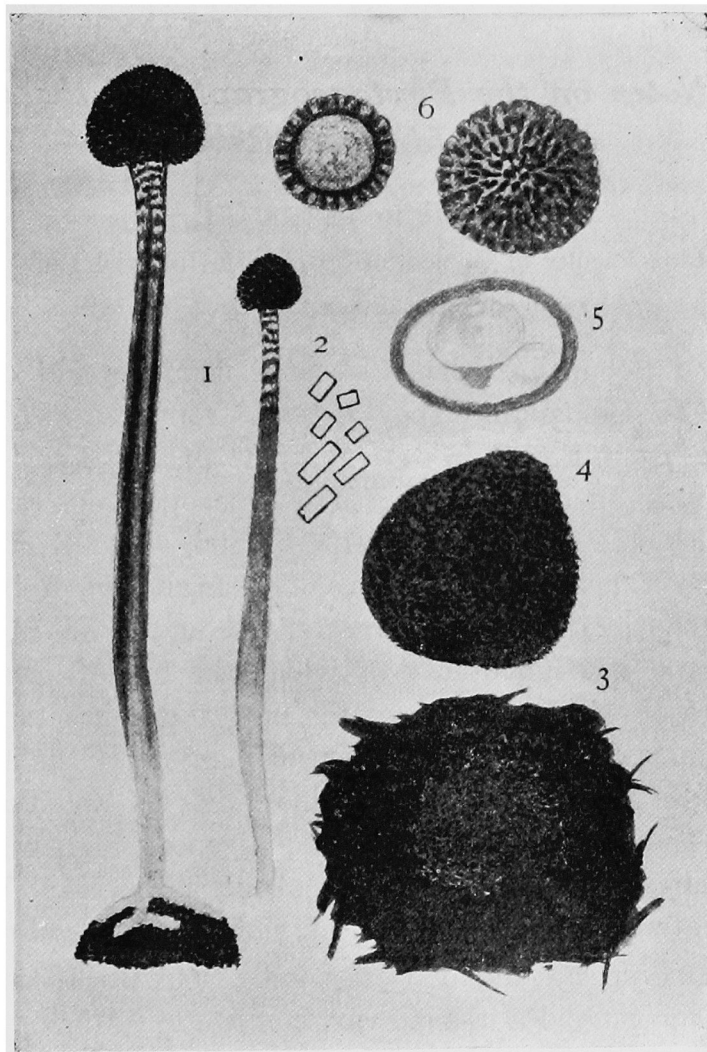
Hab. ad terram in silvis Coniferarum (*Picea Glehnii* Mast.). Prov. Ishikari, Mt. Kurodake. Sept.

Nom. Jap. *Ézo-kitsuchidango*.

The fungus under consideration is closely allied to *E. variegatus* Vitt. from which it is distinguished by the smaller warts on the surface of fructification and the thinner peridium which is less than 2 mm. in thickness. The spores of this fungus measure 18 to 20 μ in a majority of cases.

The present fungus forms ectendotrophic mycorrhiza on the roots of *Picea Glehnii* Mast.

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- Fig. 1. *Cordyceps intermedia* Imai, natural size.
Fig. 2. do, spores, \times ca. 660.
Fig. 3. *Elaphomyces subvariegatus* Imai, showing the mycelial crust, natural size.
Fig. 4. do, natural size.
Fig. 5. do, section of fructification.
Fig. 6. do, spores, \times ca. 800.