



Gyromitra infula, first report of genus *Gyromitra* in Iran

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Gyromitra Fr. is a widespread genus of apothecial ascomycetous fungi with 18 species. The genus had previously been grouped in *Rhiziniaceae* and *Helvellaceae* families. Analysis of the rDNA showed *Gyromitra* is related to the genera *Discina*, *Hydnotrya* and *Pseudorhizina* and the genus was transferred to the Discinaceae (O'Donnell *et al.* 1997, Methven *et al.* 2013).

In the framework of identifying of larger ascomycetous fungi of Iran, specimens of genus *Gyromitra*, collected from Mazandaran province, were identified as *G. infula* (Schaeff.) Quél. (van Nooren and Moreau 2009 a,b; Abbott and Currah, 1997), as a new report for genus *Gyromitra* in Iran.

Morphological characteristics of specimens are as follows: Ascocarp is a stipitate apothecium with 3-8 cm high and 3-6 cm broad, cup-shaped when young, but soon becoming irregular, lobate (with two or occasionally three to four lobes) or saddle-shape. Upper surface more or less glabrous, wavy to irregularly bumpy, margin curved toward the stipe and eventually becomes fused to it. Cap yellowish-brown to orange brown, with black line or spots in curved margin; context, thin, brittle. Odor and taste not distinctive. Stipe is 2-6 cm high, 1-2.5 cm thick, equal to enlarged at the base, with a longitudinal deep fold, and surface glabrous to pruinose. The base is often covered with whitish mycelium in dark background, pinkish to tinged lilac with darker zones in base (Fig 1).

Asci are cylindrical, 8-spored, and 200-300 x 10-20 µm diameter. Ascospores are 17-20 x 7-9 µm, narrowly ellipsoid; with two large oil droplets,

smooth, hyaline, thin-walled. Paraphyses are 6-10 µm wide, and capitate with a swollen head (Fig 1).

The saddle shaped ascocarp with two or more prominent lobes and color of ascocarp are specific characteristics for differentiation of *G. infula* from other *Gyromitra* species. *Gyromitra infula* is a poisonous fungus, due to its toxic constituent's gyromitrin, that then turns into toxic compounds monomethylhydrazine.

Specimens examined: Mazandaran: Noor, Chamestan, on wood, 100 m, 13.10.2010, Asef and Torabi (IRAN 15672 F), Mazandaran: Pool to Baladeh, on woody soil 10.09.2009, Asef and Torabi (IRAN 15673 F), Mazandaran: Noshahr, Kheiroudkenar, on wood, 05.10.2011, Jafarpur (IRAN 15674 F).

REFERENCES

- Abbott SP, Currah RS. 1997. The Helvellaceae: systematic revision and occurrence in northern and northwestern North America. *Mycotaxon* 62, 1–125.
- Methven AS, Zelski SE, Miller AN. 2013. A molecular phylogenetic assessment of the genus *Gyromitra* in North America. *Mycologia* 105(5), 1306-1314.
- Van Nooren N, Moreau P. 2009a. Essai taxinomique sur le genre *Gyromitra* Fr. *sensu lato* (Pezizales). 1. Introduction et systematique (in French). *Ascomycete.org* 1 (1), 3–6.
- Van Nooren N, Moreau P. 2009b. Essai taxinomique sur le genre *Gyromitra* Fr. *sensu lato* (Pezizales). 2. Le genre *Gyromitra* Fr., sous-genre *Gyromitra* (in French). *Ascomycete.org* 1 (1): 7–14.
- O'Donnell K, Cigelnik E, Weber NS, Trappe JM. 1997. Phylogenetic relationships among ascomycetous tuffles and the true and false morels inferred from 18S and 28S ribosomal DNA sequence analysis. *Mycologia* 89 (1), 48–65.

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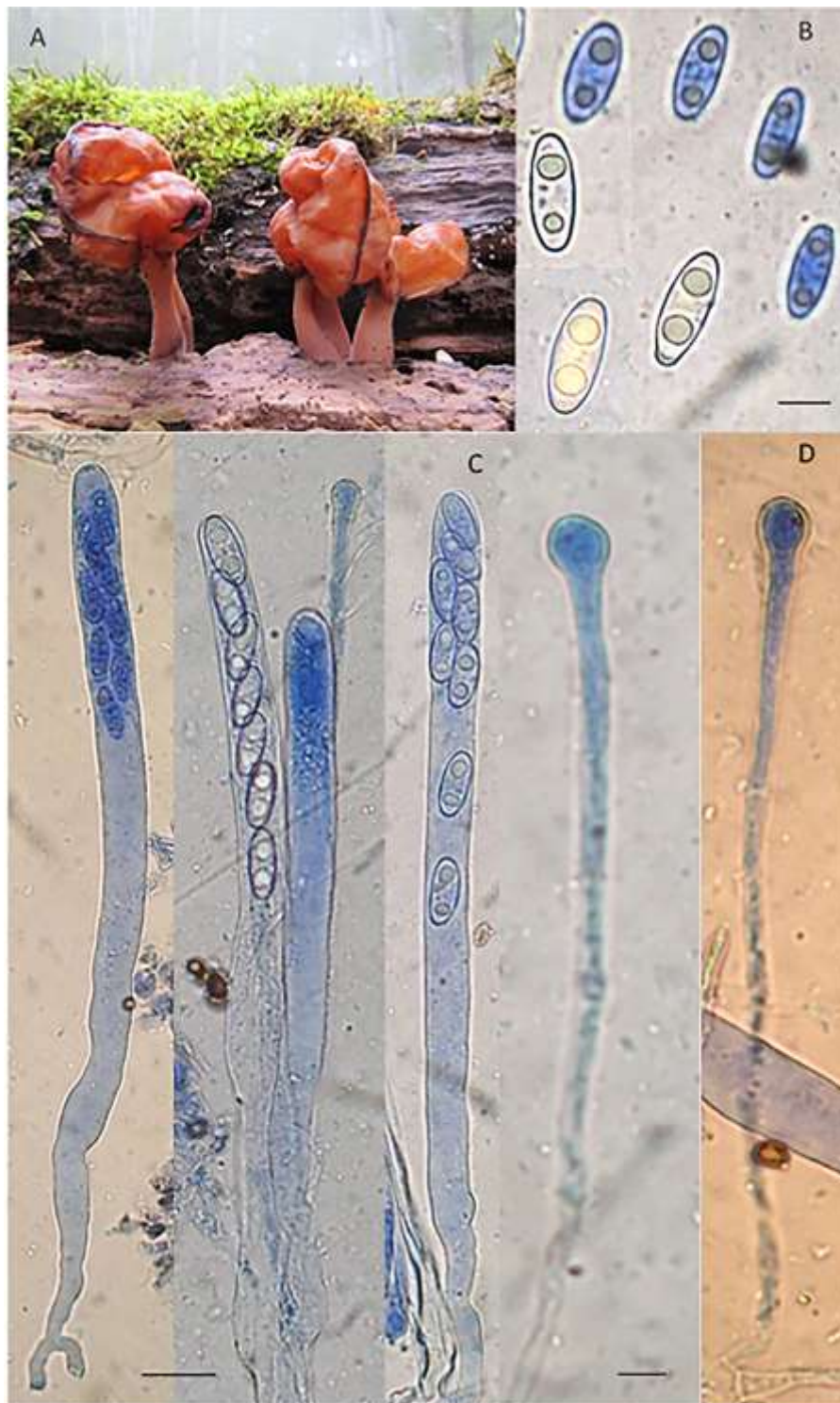


Fig. 1. *Gyromitra infula*: A. Ascocarps, B. Spores (Bar = 10 μ m), C. Immature and mature asci (Bar = 20 μ m), D. Paraphyses (Bar = 10 μ m).

