

Contributions to the gasteromycet-flora of Iran

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Abstract

Ten species of Gasteromycetes are recorded from Iran six of which are new to the country bringing the total number of species known up to twenty-six. A check-list of these is given.

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مقاله‌ای درباره پوشش گاسترومیست‌های Gasteromycetes ایران

از: فین - اگیل اکبلاد

خلاصه

ده گونه گاسترومیست از ایران گزارش شده که گونه آن جدید و مجموعاً "تعداد گونه های شناخته شده را به بیش از ۲۶ نوع میرساند. لیست تطبیقی آنها بشرح ذیل است.

Introduction

The present study is based on collections made in 1974 and in the spring of 1975 by Professor Per Wendelbo and his co-workers at the Ariamehr Botanical Garden of Tehran, Iran.

The Gasteromycetes of Iran known up to now include 14 species reported by ECKBLAD (1970) and in addition 6 species, only reported by KHABIRI (1958). Unfortunately KHABIRI's paper had been overlooked by the present author when preparing the earlier report. In all then 20 species have been reported from Iran up to now (see checklist).

As was indicated previously (ECKBLAD 1970) our knowledge of the Gasteromycetes of the Near and Middle East is very scanty. The dry climate and varying habitats indicate, however, that a large number of species may be found when the right habitats are studied. The present collections indeed demonstrate this. In 12 collections there are 6 species new to the country.

Specimens of all collections are deposited in the herbarium of the Ariamehr Botanical Garden, Tehran (TARI), while a few duplicates of some species are kept by the author.

Enumeration of species

Bovista plumbea PERS. ex PERS. – Tehran: Elburz Mts., Tovchal, south side in a meadow, 3000 m, Sept. 6, 1974, P. WENDELBO & G. COBHAM 14484 A. Gilan: Sefid Rud valley, west of Rustamabad, above the microwave station, in meadow, 1800 m, Oct. 21 1974, P. WENDELBO & A. SHIRDELPUR 14867 A.

Strangely enough, this common species has been reported only once from Iran (KHABIRI 1958), but without locality. It is well known from most of the surrounding countries, as Afghanistan, Pakistan, Iraq, Turkey in Asia (cp. ECKBLAD 1970).

Clathrus ruber MICH. ex PERS. Syn.: *C. cancellatus* TOURNEF. ex FR. Pl. I. – Mazandaran: SE of Andarvar, about 15 km E of Noushahr, in *Buxus* – forest, 70 m, Aug. 30 1974, P. WENDELBO & M. ASSADI 14577. The species was seen, but not collected in the same province near Rud-

khaneh Lavij SE of Nosratabad.

This species has earlier been reported from Iran by ESFANDIARI (1946).

Geastrum recolligens (WOODW. ex SOW.) DESV. Syn.: *G. mammosum* CHEV., *G. corollinum* BATSCH ex HOLLÓS. – Gorgan: Mohammad Reza Shah National Park, south of Tang-e Gol, in dense forest, 1300 m, Aug. 1 1974, P. WENDELBO & G. COBHAM 14374 A.

The species is new to Iran. Previously only one species of this genus, *G. minimum*, had been reported from the country (ECKBLAD 1970). Although *G. recolligens* is a species occurring in sand dunes, it may also be found in forest.

Lycoperdon molle PERS. – Gorgan: Mohammad Reza Shah National Park, in forest above Tang-e Gol, SE. of Ab Shar, 800 m, July 29 1974, P. WENDELBO & G. COBHAM 14276 A.

New to Iran. Strangely enough only one species of the genus *Lycoperdon* was previously known to the country. *L. molle* is recognized by the purplish brown gleba, the coarsely verrucose spores and the numerous fallen pedicels.

Lycoperdon perlatum PERS. – Gorgan: Mohammad Reza Shah National Park, in dense forest South of Tang-e Gol, 1000 m, July 30 1974, P. WENDELBO & G. COBHAM 14335 A.

Also this very common species is new to Iran. While it has been reported from Pakistan (SULTAN AHMAD 1952) and Asian Turkey (PILÁT 1937) it is so far unknown from Iraq and Afghanistan (ECKBLAD 1970).

Lycoperdon pyriforme PERS. – Gilan: Sefid Rud valley, west of Rustamabad, below the microwave station, on stumps of *Fagus orientalis*, 1500 m, Oct. 24 1974, P. WENDELBO & A. SHIRDELPUR 14862 A.

Previously this species was reported from Iran by KHABIRI (1958) but without locality. It was reported from Pakistan by SULTAN AHMAD

Pl. 1 (opposite page) *Clathrus ruber*.
Mazandaran: near Andarvar. Photo P.W.



(1941), but seems so far to be absent from Afghanistan, Iraq, and Asian Turkey (ECKBLAD 1970).

Podaxis pistillaris (L. ex PERS.) FR. – Tehran: Kavir Protected Region, SE of Siah Kuh, on sand dunes, 900 m, April 26 1974, P. WENDELBO & G. COBHAM 10906 A. New to Iran. Previously this xerophyte was known from a number of places in Iraq and Afghanistan and in a number of other countries of the Near and Middle East (ECKBLAD 1970).

Trichaster melanocephalus CZERN. Syn.: *Geastrum melanocephalum* (CZERN.) STANEK – Gorgan: Mohammad Reza Shah National Park, in dense forest south of Tang-e Gol, 1800 m, Aug. 1 1974, P. WENDELBO & G. COBHAM 14390 A. This very typical fungus is new to Iran. While it seems to be absent from some of the nearest neighbouring countries (Afghanistan, Pakistan, Iraq – ECKBLAD 1970), it was reported from the Armenian SSR (SOSIN & MELIK-CHACATRJAN 1959) and the Turkmenian SSR (KALYMBETOV 1956). Furthermore, it is recorded from the Crimea (ZEROVA 1962), the Kazakstan SSR (SVARCMAN 1959), the Angren basin of the Uzbekistan SSR (PANFILOVA & GAPONENKO 1963), and the Kirgizian SSR (DUMASOVA 1958). It seems to be typical of comparatively dry, deciduous forests, and it is most frequent in Central Europe.

Tulostoma brumale PERS. Syn.: *T. mammosum* FR. – Mazandaran: Just west of Mahmudabad on sand dunes with annuals and mosses, ÷ 20 m, March 12 1975, P. WENDELBO & A. SHIRDEL-PUR 15246.

The present material is very rich and seems to be quite typical to me. This species was collected in the same province by Professor WENDELBO in 1959 (ECKBLAD 1970). A number of species of this difficult genus has been reported from the Near East, and the same species may have been reported under different names. *T. brumale* has, however, been reported at least from the Turkmenian SSR. (KALYMBETOV 1956), the Crimea (ZEROVA 1962), and the Kazakstan SSR (SVARCMAN 1959).

Vascellum pratense (PERS.) KREISEL – Gilan: Sefid Rud valley, west of Rustamabad, above the microwave station, in meadows, 1800 m, Oct. 21 1974, P. WENDELBO & A. SHIRDELPOUR 14867A.

New to Iran. A single specimen was found among several specimens of *Bovista plumbea*. *V. pratense* has so far not been recorded from Afghanistan and Iraq (ECKBLAD 1970). It has been recorded, however, from Pakistan (SULTAN AHMAD 1952, very common), the Alatau region of the Kirgizian SSR (KALYMBETOV 1969), and the Angren basin of the Uzbekistan SSR (PANFILOVA & GAPONENKO 1963), mostly as *Lycoperdon hyemale* VITT. Like *Bovista plumbea* it is nitrophilous and follows pasture areas (KREISEL 1962).

Check-list of Iranian Gasteromycetes

References to all previously published records known to me are given. Names used in these publications deviating from those accepted here are cited as synonyms. Species reported as new to Iran in this paper are marked by an asterisk.

Abstoma reticulatum G.H. CUNN. (ECKBLAD 1970).

Astraeus hygrometricus (PERS.) MORG. Syn.: *Geaster hygrometricus* PERS. (KHABIRI 1958, ECKBLAD 1970).

Bovista plumbea PERS. ex PERS. (KHABIRI 1958).

Calvatia cyathiformis (BOSC) MORG. (ECKBLAD 1970).

Calvatiella lioui C.H. CHOW (ECKBLAD 1970).

Clathrus ruber MICH. ex PERS. Syn.: *C. cancellatus* TOURNEF. (ESFANDIARI 1946).

Cyathus olla PERS. (PETRAK & ESFANDIARI 1941, ESFANDIARI 1946).

Cyathus striatus PERS. (RABENHORST 1871).

Disciseda bovista (KLOTZSCH) P.HENN. (ECKBLAD 1970)

Disciseda calva (MORAVEC) MORAVEC (ECKBLAD 1970).

Geastrum minimum SCHW. (ECKBLAD 1970).
 **Geastrum recolligens* (WOODW. ex SOW.) DESV.
Langermannia pachyderma (PECK) ROSTK. Syn.:
Calvatia pachyderma (PECK) MORG. (PETRAK
 1939).
 **Lycoperdon molle* PERS.
 **Lycoperdon perlatum* PERS.
Lycoperdon pyriforme PERS. (KHABIRI 1958).
Montagnea arenaria (DC.) ZELLER Syn.: *M. haus-*
sknechtii RABENH., *Montagnites radiosus*
 (PALL.) HOLLOS (RABENHORST 1871; PETRAK
 1939, 1949).
Myriostoma coliforme (DICKS. ex PERS.) CORDA
 (ECKBLAD 1970).
Phallus impudicus PERS. Syn.: *Ithyophallus im-*
puudicus L. ex FR. (KHABIRI 1958).
 **Podaxis pistillaris* (L. ex PERS.) FR.
Scleroderma citrinum PERS. Syn.: *S. aurantium*
 PERS. (KHABIRI 1958).
Scleroderma verrucosum PERS. (KHABIRI 1958).
 **Trichaster melanocephalus* CZERN.
Tulostoma brumale PERS. (ECKBLAD 1970).
Tulostoma xerophilum LONG (ECKBLAD 1970).
 **Vascellum pratense* (PERS.) KREISEL.

Phytogeographical comments

As was mentioned in a previous paper (ECKBLAD 1970): "So far a forest element seems to be nearly totally lacking in that no species of *Lycoperdon* and Phallaceae and almost no species of Clathraceae and Nidulariaceae have been found..." In the case of Iran this was explained by the "scarcity of forest in those areas of Iran studied up to now."

The present collections, mostly made in the Caspian forests in the north of Iran, indeed confirm this view, and at the same time explain the high percentage of species new to Iran.

Even so, compared with the surrounding countries, there must be a still much higher number of Gasteromycetes to be found in Iran, both in forested areas and in open, dry or semi-dry habitats. Furthermore, no hypogaeous Gasteromycetes has as yet been discovered. Of these, very probably a

high number of species may be found in the forest area when sought.

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