Brief notes on three gasteroid fungi in the Andean Patagonia

Rugolo, Maximiliano; Francisco Kuhar
Centro de Investigación y Extensión Forestal Andino Patagónico (CIEFAP), C.C. 14, (9200) Esquel, Chubut, Argentina. Corresponding author: franciscokuhar@gmail.com

Recibido: 23/02/14 – Aceptado: 05/06/14

Abstract — Rugolo Maximiliano; Francisco Kuhar. 2014. “Brief notes on three gasteroid fungi in the Andean Patagonia”. Lilloa 51 (1). In reviewing the entire collection of the genus Geastrum of the BAFC herbarium, two samples were found containing unidentified specimens from Patagonia, one from Los Alerces National Park (Argentina, Chubut) and the other one from Mallín Ahogado (Argentina, Río Negro). Both were determined as Geastrum triplex, resulting in the first record of the species in this region. In addition, the finding of a specimen of Geastrum pectinatum in Lago Puelo (Argentina, Chubut) and one of Tulostoma brumale in Esquel (Argentina, Chubut) are reported as the first records of those species in Patagonia. SEM images of spores are provided.

Keywords: Geastrum, G. pectinatum, G. triplex, Tulostoma, T. brumale.


Palabras clave: Geastrum, G. pectinatum, G. triplex, Tulostoma, T. brumale.

The Andean Patagonian weather is humid and cold, with snowfalls concentrated during the winter, and rain and frost throughout the year. Both deciduous and evergreen trees compose the region. Dominant tree species include Nothofagus antarctica (G. Forst.) Oerst., N. pumilio (Poepp. & Endl.) Krasser, and Austrocedrus chilensis (D. Don) Pic. Serm. & Bizzarri. The analyzed material was collected by M. Rajchenberg, F. Kuhar and M. Rugolo and deposited in the BAFC herbarium. Capillitial threads and spores were mounted and observed under the light microscope (LM) and scanning electron microscope (SEM EDS INCA ENERGY, Oxford Instruments Scanning electron microscope with Field Emission Gun (FEG) Zeiss DSM 982 GEMINI secondary electrons detector in-lens). The keys used to identify our materials are those published by Wright (1987), Sunhede (1989), Soto and Wright (2000). The present work provides notes on new cites of gasteroid fungi in order to contribute to the knowledge of the Argentinean mycobiota. Since our materials agree with the cited descriptions, we briefly discuss only what concerns our findings.

TAXONOMY


Description.— Sunhede (1989)


Note.— All basidiomes are devoid of the fleshy pseudoparenchymatous layer, which
remains only as fragments of the characteristic collar surrounding the endoperidial body. Nevertheless the remaining features allow a precise determination following Sunhede (1989). Zamora et al. (2013) proposed the use of non-traditional characters such as macrochemical spot tests and rhizomorphal anatomy for a precise delimitation of this species, but this type of information is no longer available in our materials. This species has recently shown to be polyphyletic by Kasuya et al. (2012) by a molecular analysis which included Argentinian material collected in the central and northern Argentina. The results suggest that those collections (nested in the «clade 3») are more closely related to G. triplex sensu stricto than European specimens are. Molecular analyses of Patagonian material are needed in order to verify their position. G. triplex has been recorded by Soto and Wright (2000) and Wright and Albertó (2006) in the province of Buenos Aires and by Hernandez Caffot et al. (2013) in the province of Córdoba. This is the first record of G. triplex in the Argentinean Patagonia.


Description.— Sunhede (1989)

Studied material.— ARGENTINA. Prov. Chubut, Dpto. Cushamen, Lago Puelo, 42° 5' 36,798"S 71° 38' 1,9386"O, 150m, 19-X-2013, Maximiliano Rugolo 52328 (BAFC).

Note.— Sunhede (1989) indicates that in Northern Europe G. pectinatum can mainly
be considered a "coniferous wood species", mostly growing under *Picea abies* (L.) H. Karst., *Pinus sylvestris* L. or *Juniperus communis* L. Our collection consists of one well-preserved mature basidiome found on *Austrocedrus chilensis* litter, although Soto and Wright (2000) reported some collections of this species growing under *Eucalyptus* spp. stands in the Province of Buenos Aires. This species has been also recorded in the province of Buenos Aires by Spegazzini in 1955, as *Geaster* sp. (Soto and Wright, 2000) and by Spegazzini (1927 as *Geaster striatus*), Dominguez de Toledo (1989, 1993) and Hernandez Caffot et al. (2013) in Córdoba. This is the first record of *G. pectinatum* in the Argentinean Patagonia.

*Tulostoma brumale* Pers., Neues Mag. Bot. 1: 86. 1794. Fig. 1C; 2C

*Description.*— Wright (1987)

*Studied material.*— ARGENTINA. Prov. Chubut, Dpto. Futaleufú, Esquel, 42º 54’ 25.9812’S 71º 18’ 17.802’O, 563m, 30-VII-2013, Maximiliano Rugolo 52329 (BAFC).

*Note.*— This species may be somewhat difficult to separate from a "constellation whose species are sometimes very difficult to identify" (Wright, 1987). Although the exoperidium is quite washed away in our exemplars, the correlation of some characters allows a precise determination: the slightly elevated tubular mouth surrounded by a darkened peristome, the thick-walled capillitial threads abruptly swollen at the stirrup-looking septa, and the fructification time in winter, to which this species owes its name. The cristalline matter described by Wright (1987) as generally covering the capillitial threads was only observed in only one basidiome. SEM images of the spores undoubtedly confirm the identification. *T. brumale* has already been cited in the province of Buenos Aires by Wright (1987) who regarded it as probably introduced from Europe. This would explain the fact that our finding in an urbanized area is the first record in the Argentinean Patagonia.

**ACKNOWLEDGEMENTS**

We thank Gustavo Guajardo for kindly proofreading our English manuscript. This work was supported by CONICET.

**REFERENCES**


