

Coprotiella venezuelensis, A NEW RECORD OF CLEISTOTHECIA GENUS OF THE ASCOMYCETES IN THE WORLD

Coprotiella venezuelensis, Un Nuevo Registro de Género con Cleistotecio de los Ascomycetes en el Mundo

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ABSTRACT

A new record, *Coprotiella venezuelensis* was isolate on rhinoceros dung collected at south park Maracaibo zoo in Zulia State, Venezuela. The genus is compared with *Coprotus* and *C. gongylospora* having ascospores possessing De Bary bubbles.

Key words: Cleistothecia, De Bary bubbles, rhinoceros dung, asci.

RESUMEN

Un nuevo registro, *Coprotiella venezuelensis*, fue aislado en heces de rinocerontes, colectados en el Parque Sur Zoológico en el estado Zulia, Venezuela. El género es comparado con *Coprotus* y *C. gongylospora* presentando ascósporas con burbujas de Bary.

Palabras clave: Cleistotecio, burbujas de Bary, heces de rinoceronte, ascas.

INTRODUCTION

This genus is characterized by possessing black coloured cleistothecia; broadly clavate asci, and hyaline smooth, thin walled ascospores possessing De Bary bubbles since no other cleistothecia genus is known with this characteristics, the genus represents, the first report of *Coprotiella venezuelensis* Delgado, Urdaneta and Piñeiro in the world [5].

Malloch and Cain [2, 13] erected two genera, *Cleistothelebolus* and *Lasiobolidium*, which were considered as the respective cleistothecial counterparts of the Discomycetes *Thele-*

bolus Tode ex Fr. and *Lasiobolus* Sacc. both *Cleistothelebolus* and *Lasiobolidium* Sacc. were placed along with *Eoterfezia* Atkinson, *Microeurotium* Ghatak, *Orbicula* Cooke and *Xeromyces* Fraser in the Eoterfeziaceae [9].

The objective of this paper was to present a description and introduction of a new specie from rhinoceros dung for the world.

MATERIALS AND METHODS

Procedures for collecting sample and culturing *Coprotiella* spp. were similar to those described by Bell, Delgado and Richarson [1, 4, 14].

During a study of coprophilous fungi on rhinoceros (*Rhinoceros simun*) in August 2002, at Maracaibo zoo South Park in Maracaibo, Venezuela, dung were collected from 180 animals to determine the apperance of coprophilous fungi. The sample dung was procceed of domestic and wild animal such as: rhinoceros (*Rhinoceros simun*), dove (*Columba livia*), dog (*Canis familiaris*), rat (*Rattus norvegicus*), cat (*Felis catus*), frog (*Bufo bufo*), hen (*Gallus domesticus*), tiger (*Panthera tigris*), deer (*Cervus elaphus*), pig (*Sus scrofa*), horse (*Equus caballus*), lion (*Felis leo*), turkey (*Meleagris gallopavo*), cow (*Bos taurus*), duck (*Oxyura jamaicensis*), donkey (*Aquus* spp.) and others [4, 7].

In the five rhinoceros dung samples were identified *C. venezuelensis* fungus. The sample dung that appeared to be relatively recent and unweathered were collected, in one day intermittently of the period mentioned before, into clean receptacles and usually set to incubate within a day or four collections. If samples could not be incubated shortly after collection they were gently air-dried stored in paper envelopes until incubation [1, 4, 7, 14] after 10-14 days yielded numerous cleistothecias. Procedures for collection and inducing ascomal forma-

tions in the sample rhinoceros dungs were similar to those described by others authors [1, 5, 14].

In the laboratory, each dung was placed in a moist chamber if the dung is very dry on collection it should be moistened. But if made to wet, fungal growth was inhibited at room temperature 24-26°C [6, 7, 14].

The fruiting bodies were removed and mounted in water and studied with a Leitz light microscope from Germany with automatic camera MPS 45/51 of Wild Heerbrugg from Germany. All measurements (10-25 replicates) and photos of the various ascospores were made. Attempts to obtain the fungus in pure culture were unsuccessful. The Venezuelan material has been accessioned in the herbarium of the Plant Sanitary Department, Faculty de Agronomy, University of Zulia, Maracaibo, Venezuela (HERZU-1061).

After the fungus was isolated on the plate of potato-dextrose-agar (PDA) and V-8 juice agar at room temperature the observation on media, for its growth, it doesn't determined its conidial state.

RESULTS AND DISCUSSION

Cleistothecia dispersa vel gregaria, non ostiolata, obpyriformae, subglobosa vel globosa 150-275 μm in diametro crassa, primum hyalina, deinde cremea vel flavida, glabra, peridium membranaceum, pseudoparenchymatosum, textura angulari vel textura globulosa in uno strato compositum, cellulis 4-12 x 2.5-5 μm . Asci unitunicati iodo non caerulescentes, octospori, 25-33 x 12-18 μm subglobosi vel late clavati, basin versus in stipitem brevem contracti. Ascosporae unicellulares, subglobosae, 5.16 x 3.87 μm , hyalinae, leves, tenuitunicatae, plerumque bullulas conspicuas exhibentes, sine foramina vel fissure germinationis, vagina gelatinosa nulla, FIG. 1, conidia incogita.

Upon examination under microscopy it was observed to be plectomycetes characterized by the production of cleistothecia scattered or gregarious, nonstromatic, obpyriforme, globose to subglobose, 150-275 μm in diameter, hyaline at first, becoming creamy or yellowish, glabrous peridium membranaceous pseudoparenchymatosum, consisting of texture angularis to globulose, with cells measuring 4-12 x 2.5-5 μm .

The asci is unitunicate non-amyloid, broadly clavate, 8 spored, 25-33 x 12-18 μm , short stipitate, evanescent. The ascospores are one celled, subglobose 5.16 x 3.87 μm , smooth, hyaline, thin walled, at maturity usually possessing a conspicuous de Bary bubble; gelatinous sheath absent, FIG. 1. The conidial state unknown.

Based on the observations, *Coprotiella* is similar in many ways to *Coprotus* Korf [10]. According to Jeng and Korf [9], the ascocarps are likewise lightly coloured, the peridium is composed of texture globulosa to angularis like the excipulum in species of *Coprotus* and the ascospores at maturity are hyaline

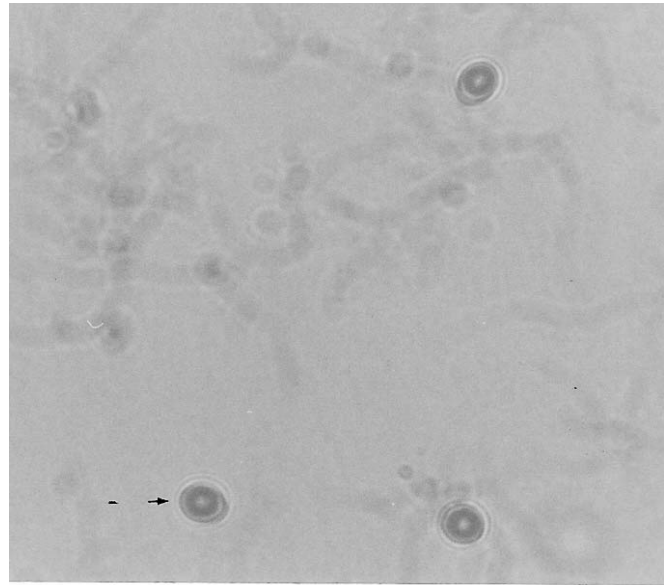


FIGURE 1. *Coprotiella venezuelensis*. MATURE ASCOSPORE, SHOWING THE DE BARY BUBBLES.100X./
Coprotiella Venezuelensis. ASCOSPORA MADURA, MOSTRANDO LAS BURBUJAS DE BARY.100X.

with a conspicuous de Bary bubble. In the case *Coprotiella* differs from *Coprotus* in possessing cleistothecia which remain closed at all stages of development and asci which are subglobose to clavate an probably irregularly disposed *Coprotiella* is also similar to *Cleistothelebolus* Malloch et Cain and *Lasiobolidium* Malloch et Cain but differs primarily from both genera in having ascospores possessing de Bary bubbles. It has been accepted by a number of workers [11, 12, 13] that closely related ostiolate and cleistothecial genera are better accommodated in one rather than in separate families as originally suggested by Cain [3].

Coprotus and *Coprotiella* would belong in one family. In his concept of the Pezizales Korf [10] placed those operculate discomycetes that are fimicolous with ascocarps reduced in size and complexity, possessing non-amyloid, with smooth, hyaline ascospores in the Pyrenomataceae tribe Theleboleae while Eckblad [8] would treat this taxon at the family level. We are following Korf and placing *Cleistothelebolus*, *Coprotiella* and *Lasiobolidium* along with their discomycetous counterparts in the tribe Theleboleae [5, 9, 10].

CONCLUSIONS

A new species for the world *Coprotiella venezuelensis* is described here, in accordance with this study. The presents authors have in several cases found cleistocarpus to be reliable as a generic character only, and *Coprotiella* is for this and other reasons placed in the Pyrenomataceae tribe Theleboleae. Because of its thin walled ascospores possessing de Bary bubbles since no other cleistotheciae genus is known with this characteristics.

ACKNOWLEDGMENT

This study was carried out with the assistance of research grants in aid of research furnished by CONDES N° CC-0709-06, University of Zulia, Venezuela.

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