New records of *Chaetomium* and *Chaetomium*-like species (*Ascomycota*, *Chaetomiaceae*) on *Syagrus coronata* from the Raso da Catarina Ecological Station (ESEC), Caatinga, Bahia, Brazil

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ABSTRACT—Studies on the mycobiota associated with the plants of family *Arecaceae* are scarce in Brazil, especially in semiarid ecosystems within the Caatinga domain, which comprises unique biodiversity. During field expeditions to the Raso da Catarina Ecological Station, we found six new records of *Chaetomium* and *Chaetomium*-like species for the Caatinga domain in the State of Bahia. These fungi were colonizing vegetative and reproductive structures of *Syagrus coronata* (Mart.) Becc., a palm tree endemic to the Caatinga and particularly important for animals and people from this region. We present morphological descriptions, illustrations, comments, and distribution maps for the fungal species associated with *S. coronata*.

KEY-WORDS—*Arecaceae*, biodiversity, fungi, licuri, semiarid, taxonomy

Introduction

Chaetomium Kunze is a genus of *Ascomycota* placed in the order *Sordariales*, *Chaetomiaceae*, originally described by Gustav Kunze (1817). Members of this group are widely distributed worldwide with saprobic or parasitic species. These fungi can generally be found in manure, dead leaves, paper, bird feathers, seeds, plant residues, herbivore dung and soil particles (von Arx & al. 1986). Additionally, some species are reported to cause human infections as important inhalant allergens, which contributes to the development of rhinitis and asthma symptoms due to the production of mycotoxins (Koch & Haneke 1965; Abbott & al. 1995; Barron & al. 2003; Gonianakis & al. 2005; Apetrei & al. 2009; Polizzi & al. 2009; Mason & al. 2010; Andersen & al. 2011; Miller & McMullin 2014).

Chaetomium is commonly characterized by superficial ascomata adhering to the substrate by rhizoidal hyphae and generally covered by coiled hairs or bristles, mainly at their apices and surrounding the ostiole. The asci are unitunicate, pedicellate, clavate, fusiform, obovate or cylindrical, and generally evanescent. The ascospores are aseptate, brown, tan-colored to olive-green at maturity, with one or two germ pores (von Arx & al. 1986; Rodríguez & al. 2002). Over 400 species of *Chaetomium* have been described, with *C. globosum* Kunze as the type species (von Arx & al. 1986; Soytong & Quimio 1989). Since then, this genus's taxonomy has been studied, discussed, and revised by various authors, with several species being synonymized or transferred to other genera.

Recently, Wang & al. (2016a) published a new taxonomic and phylogenetic review for *Chaetomiaceae* based on molecular analyzes of the rpb2, tub2, ITS, and LSU genes. In their results, the genus was restricted to species morphologically similar to *C. globosum*. The remaining species of *Chaetomium* were transferred to

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new monophyletic genera in *Chaetomiaceae*, such as *Ovatospora*, *Amesia*, *Collariella*, *Dichotomopilus* and *Arcopilus*.

Fröhlich & Hyde (2000) described *Chaetomium globosum* as the first ascomycete known to decompose leaves of *Cocos nucifera* L., in Argentina in 1817. Nonetheless, in Brazil the knowledge on the fungal diversity in caatinga palm trees is still scarce.

The Raso da Catarina Ecological Station (ESEC) is a fully protected conservation unit was created in 1984 by decree no. 89.268/84 and comprises 99,772 hectares of caatinga vegetation, of which a considerable portion is still well-preserved. The creation of the ESEC aimed to protect the portions of the biome and its endangered species, ending wild animal trafficking, and providing environmental education (ICMBio 2020). However, the ESEC is surrounded by several communities, which impact this conservation unit by deforestation, fires, cattle, and palm tree cutting, especially the species *Syagrus coronata* (Mart.) Becc.

Syagrus coronata, the licuri palm, is a palm tree endemic to the semiarid region of Northeastern Brazil, with areas of occurrence in the States of Alagoas, Bahia, Pernambuco, northern Minas Gerais and Sergipe in areas of caatinga vegetation and transition zones between restinga and cerrado vegetation (Drumond 2007).

Studies on the mycodiversity associated with licuri palms reveal the extreme biological importance of this plant for these organisms due to the high number of species found, including new records and species (Vitória & al. 2016a, 2020; Rocha & Vitória 2020).

This study presents the records of *Chaetomium* and *Chaetomium*-like species on *S. coronata* (licuri palm) in the caatinga biome from the Raso da Catarina Ecological Station (ESEC). We present identification keys, taxonomic descriptions, geographic distribution data and illustrations.

Materials and methods

Study area

The research was carried out at the Raso da Catarina Ecological Station (ESEC), one of the six conservation units for the Raso da Catarina Ecoregion. The ESEC is located in northeastern Bahia, in the municipalities of Paulo Afonso, Rodelas and Jeremoabo, at 9,5522–9,9050°S 38,7333–39,4867°W, 473 km north from Salvador, the capital of the state (Fig.1).

Collection, morphological characterization and identification

Intact leaves, bracts, inflorescences, fruits, and sections of the aerial trunk of *S. coronata* were collected. Leaf litter surrounding those palms was also collected in order to study the associated mycobiota. Plant materials were cut into fragments of 10 to 20 cm long using pruning shears and a machete to facilitate handling and transport. All samples had their surfaces disinfected with 70% ethanol and 2% sodium hydrochloride, and were subsequently placed into plastic trays lined with moist paper towels. The trays were opened every two days and sprayed with distilled water to maintain the samples moisture. After seven days at room temperature and under a natural lighting regime, the material was examined to evaluate fungal growth.

The plant material was examined under a stereomicroscope. Structural fragments of visible fungi were removed using a thin needle (i.e., insulin injection type), mounted on slides, and stained with lactophenol cotton blue. The structures were inspected using a Zeiss Primo Star microscope, recorded using a Samsung 8.0 megapixel digital camera attached, and measured using a 40× objective with a micrometric scale (using a 2.5× µm correction).

Fungal species identifications were based on reproductive morphological characters and using specialized literature (Udagawa 1960; Ames 1961, 1963; von Arx & al 1986) and the taxonomic classification of species followed the online databases Index Fungorum (www.indexfungorum.org). The specimens identified were deposited in the Padre Camille Torrend Herbarium (URM) at the Mycology Department of Universidade Federal de Pernambuco (UFPE). Information concerning the records and species distributions for Brazil (and globally) were accessed using species Link (http://www.splink.org.br/index?lang=pt) and Farr & Rossman Fungal Databases (http://nt.arsgrin.gov/fungaldatabases/fungushost-/fungushost.cfm databanks).

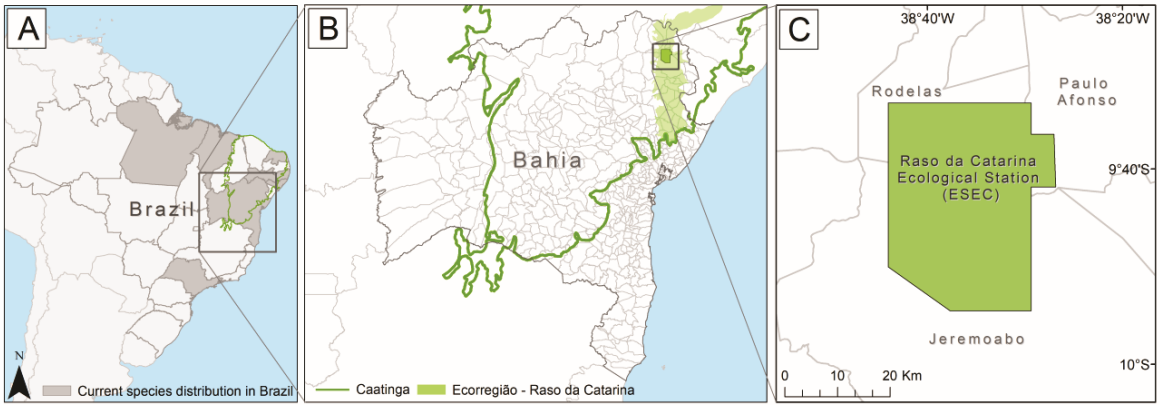

FIGURE. 1. A. Current species of *Chaetomium* and *Chaetomium*-like distribution in Brazil in grey. B. Caatinga domain and the location of the Raso da Catarina Ecoregion in the State of Bahia. C. Raso da Catarina Ecological Station (ESEC) in green.

Results

Six species of *Chaetomium* and *Chaetomium*-like genera were identified on vegetative and reproductive structures of *Syagrus coronata*. An identification key to these species is provided, followed by descriptions, illustrations, and short commentaries for each species.

Key to the *Chaetomium* and *Chaetomium*-like species on *Syagrus coronata*

1. Terminal hairs of two types ..... ***Dichotomopilus funicola***
1. Terminal hairs of a single type **2**

2. Terminal hairs dichotomously ramified ..... ***Dichotomopilus indicum***
2. Terminal hairs not ramified **3**

3. Terminal hairs undulate to coiled **4**
3. Terminal hairs arched to twisted **5**

4. Terminal hairs undulate to slightly coiled, forming loose loops ..... ***Chaetomium globosum***
4. Terminal hairs strongly coiled towards the apex, completing 6–8 loops .. ***Chaetomium convolutum***

5. Hairs greenish-yellow ..... ***Chaetomium trilaterale***
5. Hairs rusty-red ..... ***Arcopilus cupreus***

Taxonomy

Arcopilus cupreus (L.M. Ames) X.Wei Wang & Samson, Stud. Mycol. 84: 217 (2016) FIG. 2A–F

DESCRIPTION: Perithecia superficial, grouped to isolated, adhering to the substrate by brown, olive-green to reddish-brown rhizoids; 75–125 × 75–132.5 µm, ovoid to subglobose, blackish. Peridium membranaceous, fragile, pseudoparenchymatous. Terminal hairs initially straight and arched, becoming coiled toward the apex, completing 2–4 loops, reddish under stereomicroscope, brown olive-green to reddish-brown under optical microscope, septate, under optical microscope, 3–5 µm diam., narrowing toward the apex, with less intense coloring. Lateral hairs 3.5–4.5 µm diam., numerous, smooth, septate, flexuous, brown, olive-green to reddish-brown. Asci 30–37.5 × 8.75–10 µm, 8-spored, clavate, unitunicate, evanescent. Ascospores 10–12 × 5–6.25 µm, reniform, non-equilateral, hyaline when young, becoming brown to olive-green at maturity, smooth, unicellular, with an inconspicuous germ pore.

MATERIAL EXAMINED: BRAZIL, BAHIA: Paulo Afonso, ESEC, 9.8047°S 38.4885°W, on the rachis of *S. coronata* in the leaf litter (licuri), 07-X-2014. Fortes, N.G.S. (URM 91167, MICOLAB UNEB VIII 0094).

ECOLOGY & DISTRIBUTION: *Arcopilus cupreus* was found in the soil or on decomposing plant material. Occurs in the American continent in Brazil, Panama, and the USA (State of Illinois), and in Southeast Asia in the Malay Peninsula and Thailand (Farr & Rossman 2020; speciesLink 2020).

COMMENTS: *Arcopilus cupreus* can be easily identified due the rust-red color of its hairs and ascospore reniform with a germinative pore. In Brazil, the same morphology has been documented in *Helianthus annuus* L. (*Asteraceae*) and *Saccharum officinarum* L. (*Poaceae*) for the State of Pernambuco, in the root of *Vernonia discolor* (Spreng.) Less. (*Asteraceae*) in the State of São Paulo, and soil samples in the State of Alagoas. This is the first record of this species for the State of Bahia.

Chaetomium convolutum Chivers, Proc. Amer. Acad. Arts 48: 85 (1912) FIG. 2G–O

DESCRIPTION: Perithecia superficial, grouped to isolated, attached to the substrate by brown to olive-green rhizoids; 262.5–345 × 225–305 µm, ovoid to subglobose, black. Peridium membranaceous, fragile, pseudoparenchymatous. Terminal hairs initially straight, becoming coiled, completing 3–6 loops, yellow to golden-brown under stereomicroscope, dark-brown to black under optical microscope, 4.5–5.5 µm diam., verrucose, narrowing towards the apex, with less intense coloring. Lateral hairs 3.5–4 µm diam., numerous, smooth, septate, flexuous, brown olive-green to blackish. Asci 30–32.5 × 12.5–15 µm, 8-spored, unitunicate, pedicellate, clavate, evanescent. Ascospores 8.5–10.5 × 7–8 µm, ovoid to limoniform, bi-apiculate, hyaline when young, becoming brown to olive-green at maturity, unicellular, smooth, with a germinative pore.

MATERIAL EXAMINED: BRAZIL, BAHIA: Paulo Afonso, ESEC, 9.6683°S 38.4645°W, on the fruits of *S. coronata* in the leaf litter (licuri), 10-VI-2014. Fortes, N.G.S. (URM 91166, MICOLAB UNEB VIII 0050).

ECOLOGY & DISTRIBUTION: *Chaetomium convolutum* was recorded in herbivore dung and rhizosphere of cultivated muskmelons (*Cucumis melo* L.). Occurs in the Americas (Argentina, Brazil, and USA), Europe

(Germany, Russia, Sweden, Spain, and the UK), the Middle East (Egypt and Israel), Africa (Kenya), and in Asia (Pakistan, India, and Taiwan) (Farr & Rossman 2020; speciesLink 2020).

COMMENTS: *Chaetomium convolutum* is characterized by exceptionally long, brown to golden terminal hairs of a single type, becoming strongly coiled towards the apex, forming loose and sparse arcs, completing 6–8 loops. The Latin etymology for *convolutum* refers to the coiled or bent cylindrical form of the terminal hairs. It was first recorded for Brazil by Coutinho & al. (2007) at the rhizosphere of cultivated muskmelons and later by Melo & al. (2020) in goat dung, both in the State of Pernambuco. Our collections represent the first record for the State of Bahia.

Chaetomium globosum Kunze & Schmidt, Mykol. Hefte 1: 16 (1817) FIG. 3A–I

DESCRIPTION: Perithecia superficial, grouped to isolated, adhering to the substrate by rhizoids brown olive-green; 237.5–280 × 180–250 µm, ovoid to subglobose, blackish, ostiolated. Peridium membranaceous, fragile, pseudoparenchymatous. Terminal hairs coiled, completing 5–7 loops, gray under stereomicroscope, dark-brown to black under optical microscope, 4–4.5 µm diam., narrowing towards the apex, lighter in color. Lateral hairs 4.5–5.5 µm diam., numerous, smooth, septate, flexuous, brown to olive-green to black. Asci 40–50 × 10.5–13.5 µm, 8-spored, unitunicate, clavate, evanescent. Ascospores 10–11.5 × 7.5–8.5 µm (n = 20), ovoid to limoniform, hyaline when young, becoming brown to olive-green at maturity, unicellular, smooth, with a single germinative pore.

> MATERIAL EXAMINED: BRAZIL, BAHIA: Paulo Afonso, ESEC, 9.6683°S 38.4645°W, on the fruits of *S. coronata* in the leaf litter (licuri), 10-VI-2014. Fortes, N.G.S. (URM 91169, MICOLAB UNEB VIII 0046).

ECOLOGY & DISTRIBUTION: *Chaetomium globosum* was recorded in the soil, over plants, and dung samples of various herbivores. It is considered a cosmopolitan species (Farr & Rossman 2020; speciesLink 2020).

COMMENTS: *Chaetomium globosum* can be easily recognized by the globose to subglobose ascomata, entirely covered by undulating to arched hairs, and large limoniform ascospores (>10 μm), lightly apiculate. In Brazil, it was previously recorded by Melo & al. (2020) in herbivore dung in Recife, State of Pernambuco. Additional records for the States of Maranhão, Pará, and Alagoas are present in the literature. Our collections represent the first record of this species for the State of Bahia.

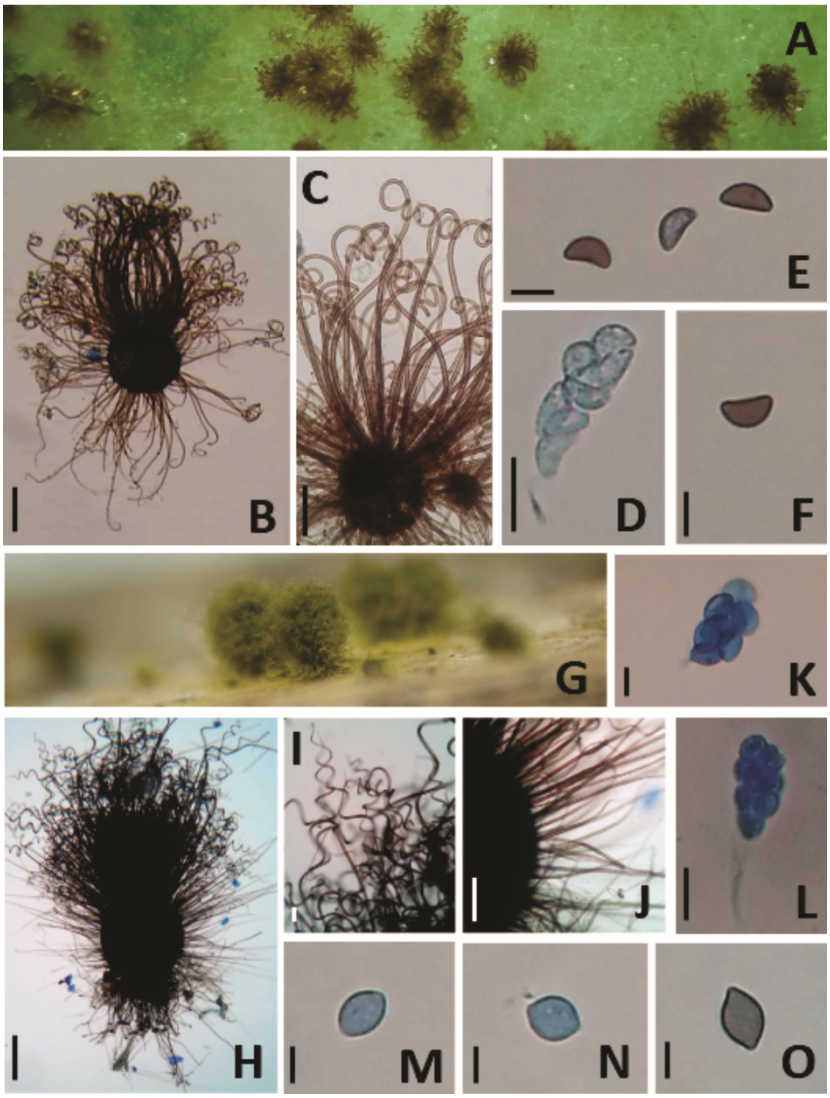

Figure. 2. ***Arcopilus cupreus***. A. Habit; B. Ascomata; C. Terminal hairs; D. Ascus; E, F. Ascospores. ***Chaetomium convolutum***. G. Habit; H. Ascomata; I. Terminal hairs; J. Lateral hairs; K, L. Asci; M–O. Ascospores. Scale bars: B = 80 µm; C = 60 µm; D, K, L = 15 µm; E, F, I = 10 µm; H = 100 µm; J = 50 µm; M–O = 5 µm.

Chaetomium trilaterale Chivers, Proc. Amer. Acad. Arts 48: 87 (1912) Fig. 3J–P

DESCRIPTION: Perithecia superficial, grouped to isolated, adhering to the substrate by rhizoids, brown to olive-green; 82.5–112.5 × 80–112.5 µm (n = 5), ovoid to subglobose, black, ostiolated. Peridium membranaceous, fragile, pseudoparenchymatous. Terminal hairs curved to coiled, septate, completing 3–4 loops, appearing greenish-yellow under stereomicroscope, appearing olive-green to black under optical microscope, 4–4.5 µm diam., narrowing toward the apex, becoming lighter in color. Lateral hairs 3–3.5 µm diam., numerous, smooth, septate, flexuous, brown to olive-green to black. Asci 30–32.5 × 11.5–15 µm, 8-spored, unitunicate, clavate, evanescent. Ascospores 8–9 × 5–6.5 µm (n = 20), ellipsoid, non-equilateral, hyaline when young, becoming brown to olive-green at maturity, unicellular, smooth, with a single germinative pore.

MATERIAL EXAMINED: BRAZIL, BAHIA: Paulo Afonso, ESEC, 9,5337°S 38.4875°W, on the bracts of *S. coronata* in the leaf litter (licuri), 21-X-2014. Fortes, N.G.S. (URM 91143, MICOLAB UNEB VIII 0043).

ECOLOGY & DISTRIBUTION: *Chaetomium trilaterale* can be found in the soil and decomposing plants. Occurs in the Americas in Brazil and United States, in Europe in England and Poland, and in Asia in Japan and Malaysia (Farr & Rossman 2020; Flora do Brasil 2020; species Link 2020).

COMMENTS: *Chaetomium trilaterale* is characterized by its globose to subglobose perithecia, small (<200 µm long), with terminal hairs arched and incurvate, usually forming three loops near the apex, becoming progressively narrower, and cymbiform ascospores. The epithet refers to the trilateral shape of the spore. Our collections represent the first record of this species for the State of Bahia.

Dichotomopilus funicola (Cooke) X.Wei Wang & Samson, Stud. Mycol. 84:189 (2016) Fig. 4A–I

DESCRIPTION: Perithecia superficial, grouped to isolated, adhering to substrate by rhizoids brown to olive-green, 180–205 × 170–202.5 µm (n = 3), ovoid to subglobose, black, ostiolated. Peridium membranaceous, fragile, pseudoparenchymatous. Terminal hairs of two types, one type straight, dark-brown to black under stereomicroscope, dark-brown under optical microscope, subtly verrucose, 6.5–7.5 µm diam., extending for 315–532.5 µm in relation to the ascomata, the second initially straight, dividing dichotomously at apex, dark-brown to black under stereomicroscope, dark-brown under optical microscope, subtly verrucose, 5–6.5 µm diam. Lateral hairs 3.5–4.5 µm diam., numerous, septate, flexuous, dark-brown. Asci not observed. Ascospores 5.5–6 × 5–5.5 µm, subglobose to limoniform, hyaline when young, becoming brown to olive-green at maturity, unicellular, smooth, with a germinative pore.

MATERIAL EXAMINED: BRAZIL, BAHIA: Paulo Afonso, ESEC, 9.8047°S 38.4885°W, on the rachis of *S. coronata* in the leaf litter (licuri), 07-V-2014. Fortes, N.G.S. (URM 91168, MICOLAB UNEB VIII 0048).

ECOLOGY & DISTRIBUTION: *Dichotomopilus funicola* can be found in the soil, herbivore dung and decomposing plant material. Occurs in the Americas (Brazil, Canada, Guyana, and the US), Europe (England, Poland, and Spain), Africa (Ethiopia and Tanzania), and Asia (China, Malaysia, Pakistan, Papua New Guinea, and the Philippines) (Farr & Rossman 2020; speciesLink 2020).

COMMENTS: *Dichotomopilus funicola* can be easily recognized by its dimorphic terminal hairs: (1) long, silky, not forming tufts, usually branching near its apex; and (2) dichotomously branched, short, forming loose tufts. In Brazil, there are records for the States of Pernambuco and Rio Grande do Norte. Our collections represent the first record of this species for the State of Bahia.

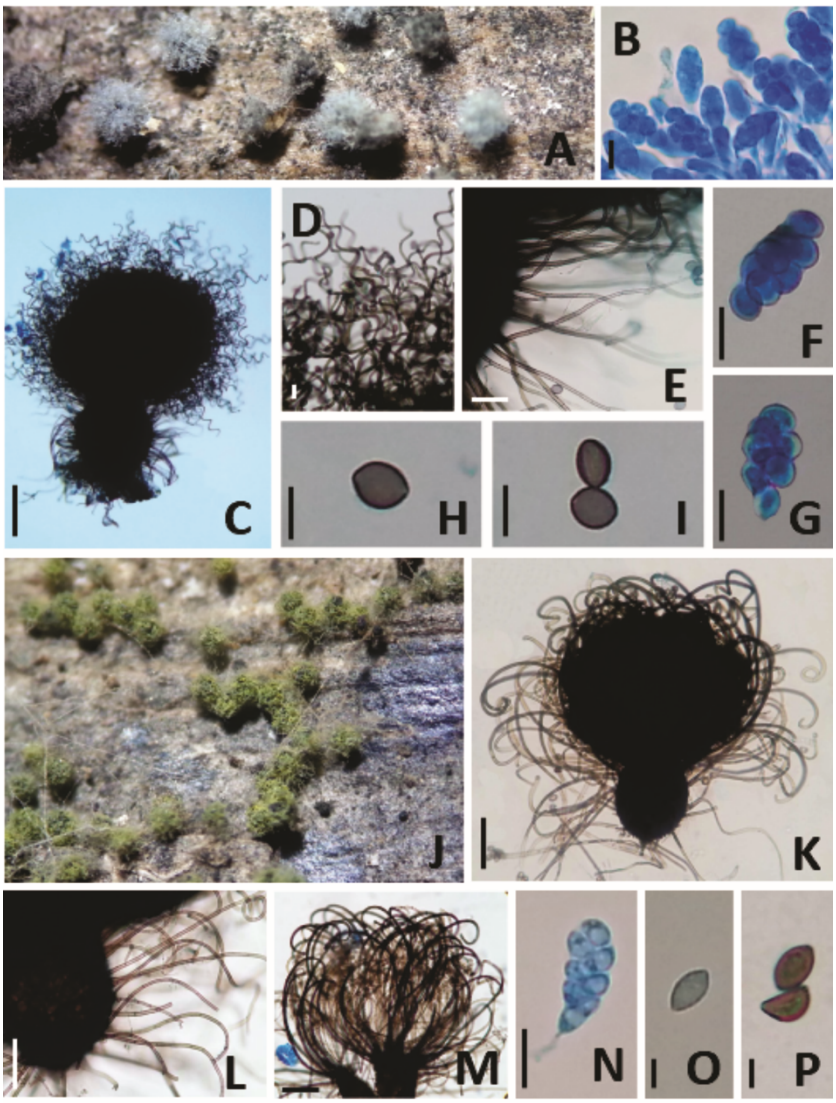

FIGURE. 3. ***Chaetomium globosum***: A. Habit; B. Ascomata; C. Terminal hairs; D. Lateral hairs; E–G. Asci; H, I. Ascospores. ***Chaetomium trilaterale***: J. Habit; K. Ascomata; L. Lateral hairs; M. Terminal hairs; N. Asci; O, P. Ascospores. Scale bars: B = 70 µm; C = 50 µm; D = 30 µm; E–G = 20 µm; H–I = 10 µm; K = 75 µm; L, M = 40 µm; N = 15 µm; O, P = 5 µm.

Dichotomopilus indicus (Corda) X.Wei Wang & Samson, Stud. Mycol. 84:189 (2016) Fig. 4J–N

DESCRIPTION: Perithecia superficial, grouped to isolated, black, adhering to the substrate by brown to olive-green rhizoids, 120–155 × 137.5–180 µm, ovoid to subglobose, ostiolated. Peridium membranaceous, fragile, pseudoparenchymatous. Terminal hairs initially straight, splitting dichotomously at their ends, dark-brown to black under stereomicroscope, dark-brown under optical microscope, subtly verrucose, 4.5–5 µm diam. Lateral hairs 3.5–4.5 µm diam., infrequent, brown to olive-green to black. Asci not observed. Ascospores 6.5–7.5 × 4.5–5.5 µm, subglobose to limoniform, hyaline when young, becoming brown to olive-green when mature, smooth, unicellular, with a single germinative pore.

MATERIAL EXAMINED: BRAZIL, BAHIA: Paulo Afonso, ESEC, 9.8047°S 38.4885°W, on the rachis of *S. coronata* in the leaf litter (licuri), 07-V-2014. Fortes, N.G.S. (URM 91170).

ECOLOGY & DISTRIBUTION: *Dichotomopilus indicus* can be found in the soil, animal feces, or associated with decomposing plants. Occurs in the Americas (Argentina, Brazil, Canada, Panama, and the US), Europe (England, Germany, and Poland), Africa (Kenya), and Asia (India and Japan) (Farr & Rossman 2020; speciesLink 2020).

COMMENTS: *Dichotomopilus indicus* is similar to *D. funicola* but can be distinguished from the first by the dimorphic terminal hairs (silky and dichotomously branched). On the other hand, *D. indicum* presents only terminally dichotomously-branched hairs, forming sharp angles. In Brazil, there are records of this species for the States of Pará and Pernambuco. Our collections represent the first record of this species for the State of Bahia.

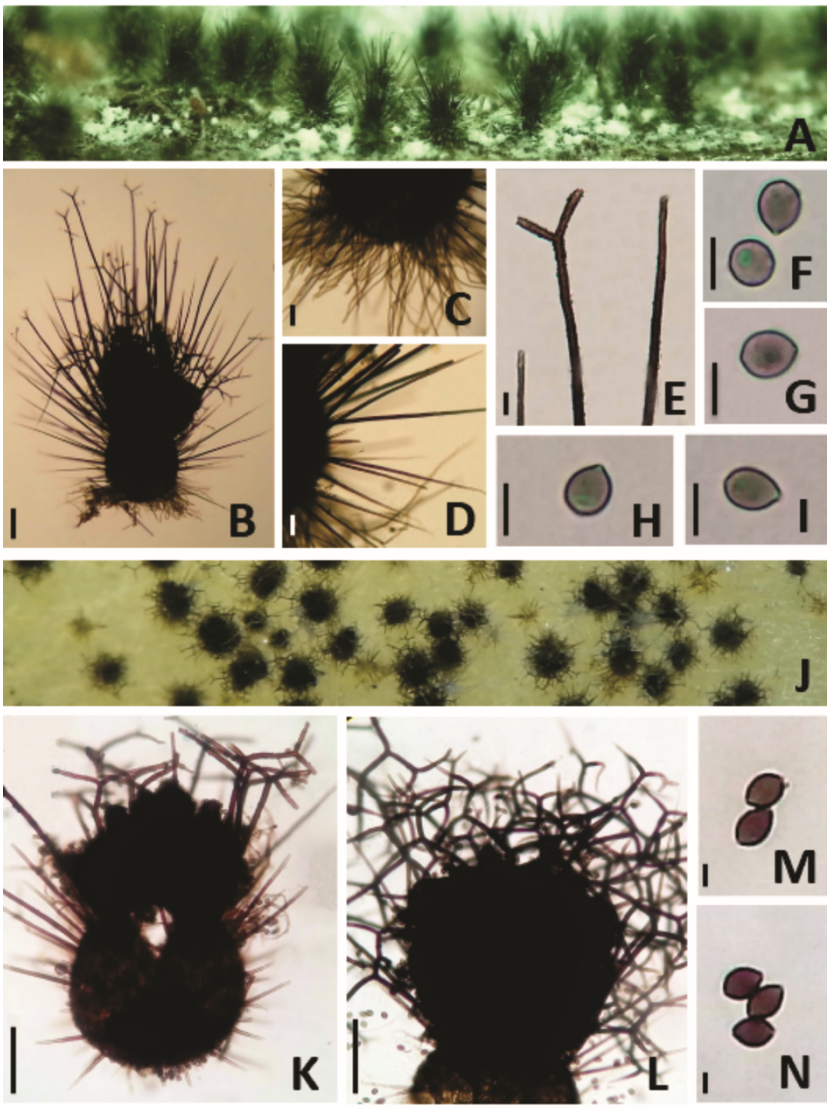

FIGURE. 4. ***Dichotomopilus funicola***: A. Habit; B. Ascomata; C. Rhizoids; D. Lateral hairs; E. Terminal hairs; F–I. Ascospores. ***Dichotomopilus indicum***: J. Habit; K. Ascomata; L. Terminal hairs; M, N. Ascospores. Scale bars: B = 60 µm; C–E = 15 µm; F–I = 5 µm; K = 75 µm; L = 45 µm; M, N = 7.5 µm.

Discussion

We present new records of *Acropilus cupreus*, *Chaetomium convolutum*, *C. globosum*, *C. trilaterale*, *Dichotomopilus funicola,* and *D. indicum* for the caatinga domain in the State of Bahia. They were reported for the first time colonizing plant substrates. Most *Chaetomiaceae* have worldwide distribution, occurring in different ecosystems, in a wide range of environmental and climatic zones, since they can colonize a wide variety of substrates (von Arx & al. 1986). They are well known as coprophilous fungi, being found in seeds, soil, and living plant tissues (Abdel-Azeem 2003; Somrithipol 2004; Somrithipol & al. 2004). Furthermore, species from this group can degrade cellulose and other organic matter, acting as antagonists against fungal plant pathogens (Soytong & al. 2001).

In Brazil, there are few records on groups of fungi and their biogeographic distribution, reinforcing the importance of this research, not only for the knowledge of the occurrence of representatives of *Chaetomiaceae* in the caatinga biome, but also for the suggestion of studies on other *Ascomycota* fungi and their stages evolutionary.

Species similar to *C. globosum* (type species) constitute a monophyletic group named *Chaetomium* s.str. Other species in distinct lineages (*Chaetomium*-like) were transferred to new genera such as *Amesia*, *Arcopilus*, *Collariella*, *Dichotomopilus,* and *Ovatospora*. The taxonomic revision proposed for *Chaetomiaceae* by Wang & al. (2016b) was based on isolates submitted to DNA sequence analyses, using sequence data from the internal transcribed spacer (ITS), 28S large subunit (LSU), second largest subunit partial RNA polymerase II (RPB2) and β-tubulin (TUB2), modified the generic concept of *Chaetomium*.

The genus *Arcopilus* was proposed to accommodate species similar to *Chaetomium*, mainly characterized by superficial, subglobose to ovate, ostiolated ascoma, with arched hairs in the apical region, with curved to coiled apices, with the flexural or apical sides curved. Asci are clavate, evanescent and brown, ascospores are unilateral, fusiform, navicular, reniform, semilunate or limoniform, with one or two apical germinative pores. This genus currently comprises eight accepted species (Wang & al. 2016a; Raza & al. 2019; Sousa & al. 2020). Based on the descriptions of Ames (1961) and von Arx & al (1986), the specimen examined was identified as *A. cupreus* due to the similarities with the original description (≡ *C. cupreum*).

Dichotomopilus was proposed to accommodate the monophyletic lineage with dichotomously branched terminals, but that can also present setose terminals (Wang & al. 2016a). The genus is characterized by superficial, spherical, ellipsoid or ovate, ostiolated ascoma, with arrow-shaped terminal hairs, branched, often ornamented, lateral hairs unbranched bristles, tapering towards the apex, clavate to ovoid, pedicellate, asci evanescent, fasciculate, brown, ovate, bilaterally flattened, attenuated at one or both ends, with apical or slightly subapical germination pores. According to von Arx & al. (1986), two type-species were accepted: (1) *C. indicum* described for types with dichotomously branched ascoma hairs; and (2) *C. funicola* described for both types: in the form of non-branched setose hairs and dichotomously branched terminals. Currently, the genus is typified by *Dichotomopilus indicus*, with 12 names listed in Index Fungorum (2020).

Studies on the association of microfungi with palm trees in Northeastern Brazil are limited. However, research on *Ascomycota* species that colonize palm trees has been carried out in the caatinga domain by Vitória and collaborators (Souza & al. 2008; Vitória & al. 2008, 2011a,b, 2012a,b, 2013, 2014, 2016a,b, 2019a,b, 2020; Santos & al. 2016, 2019, 2020a,b; Santos & Vitória 2017; Barbosa & Vitória 2019; Fortes & al. 2020; Rocha & Vitória 2020; Secunda & Vitória 2020).

The palm tree *S. coronata* (licuri) represents a new botanical host for all of the fungal species recorded in the present study. The host has shown relevant biological importance due to the high number of species found, including new records and taxa (Vitória & al. 2016a, 2020; Rocha & Vitória 2020).

The licuri palm represents a particular socioeconomic and cultural relevance for the traditional peoples and communities of the semiarid region who depend on its products and derivatives for their livelihoods. It is also vital to the native fauna, especially as food to the Lear's macaw (*Anodorhynchus leari* Bonaparte, 1856), a bird endemic to the Raso da Catarina Ecoregion and threatened with extinction (Rocha 2005).

Despite licuri not being an endangered species, it is observed that groves are under threat due to deforestation, fires, and exploitation in an extractive way, leading to a rapid decrease of this plant species (Aroucha & Aroucha 2013). In view of this, the importance of preservation and sustainable use of licuri is emphasized, as there is still a lack of studies in the literature on the potential of fungal species that use this plant as a site for development and reproduction. Therefore, new research aimed at inventorying the mycological diversity in the caatinga biome is essential, in order to expand data on the richness and distribution of species in semi-arid regions, in order to evaluate and propose conservation strategies.

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