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Lichens from dry central Brazil:
a checklist of lichenized fungi
from Distrito Federal and Goiás

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Lichens from dry central Brazil: a checklist of lichenized fungi from Distrito Federal and Goiás

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ABSTRACT

KEY WORDS
Brazil,
Cerrado,
biodiversity,
lichenized fungi,
checklist,
new records.

A checklist is presented listing the 191 lichen species currently known from the Brazilian state of Goiás, and 120 lichen species currently known from the Brazilian state of Distrito Federal. As many as 113 species are new reports to the state of Goiás, 49 are new reports from Distrito Federal and one, *Chapsa perdissuta* Sipman & Lücking, is new to Brazil. The new records are based on identifications of material from our own field trips in this dry Cerrado region. The area, about the size of Germany, is one of the last large regions on Earth from which no comprehensive lists of lichens were ever published.

RÉSUMÉ

MOTS CLÉS
Brésil,
Cerrado,
biodiversité,
champignons lichénisés,
liste de contrôle,
signalements nouveaux.

Lichens du Brésil central aride : liste des champignons lichénisés du « Distrito Federal » et du Goiás.

Une liste des 191 espèces de lichens connues de l'état brésilien du Goiás et des 120 espèces connues de l'état du « Distrito Federal » est présentée. Pas moins de 113 espèces sont nouvelles pour l'état du Goiás et 49 pour celui du « Distrito Federal ». L'une de ces espèces, *Chapsa perdissuta* Sipman & Lücking, est nouvelle pour le Brésil. Les nouvelles identifications sont basées sur nos propres collectes menées dans la région sèche du Cerrado. Cette région, de la taille de l'Allemagne, est l'une des plus étendues pour lesquelles aucun inventaire extensif des lichens n'avait auparavant été publié.

INTRODUCTION

Lichens are an important part of the biodiversity of tropical areas. However, the exploration of this diversity in Brazil has only started in earnest in this century. Very little lichen research has so far been carried out in the very central part of Brazil, made up by the state of Goiás and the Distrito Federal, and all work conducted there can still be regarded as pioneer work. The natural vegetation of this area is Cerrado, an evergreen vegetation with wet and dry season (Hueck 1972). The Distrito Federal is an enclave within the state of Goiás and accommodates the capital, Brasília, built in the last century. Until 1960, this area was almost all natural Cerrado vegetation. With a surface area of 350 000 km², the state of Goiás is similar in size to Germany, Finland or Poland, and much larger than the British Isles.

Given this comparison in size, the known lichen biota of this area is much poorer than that of Germany or the British Isles, with over 2000 species each. In Goiás state (GO), only 77 lichen species have been reported, mainly in monographs of Parmeliaceae, such as *Hypotrachyna* (Vain.) Hale (Sipman *et al.* 2009), *Pseudoparmelia* Lynge (Elix & Nash 1998), and *Xanthoparmelia* (Vain.) Hale (Nash *et al.* 1995). In the Distrito Federal (DF), only 71 lichen species were known, mainly reported by Mistry (1998). No exhaustive lists within this area has been made before. Here, we provide such a list, mostly based on identifications by the second author. The results of the identifications of our collections served to assemble a baseline checklist of the lichens of this region.

MATERIAL AND METHODS

In 2019, the first author collected lichens in the Parque Nacional de Brasília (DF) and in the Parque Nacional das Emas (GO), near Mineiros. The second author visited the Parque Nacional das Emas in April 2022, near Chapada do Céu. Specimens were observed in Campo Grande with an Olympus SZX7 with an attached Nikon Coolpix 995. Hand-made sections of ascomata and thallus were studied in water, 5% KOH and/or Lugol's reagent (1% I₂) after pre-treatment with KOH. Microscopic observations were made using an Olympus BX50 with Nomarski interference contrast and an attached Nikon Coolpix 995. Chemical spot reactions were applied where needed. The majority of the specimens are preserved in ISE herbarium and received an ISE herbarium number, which is cited after the report, and a few (those with Aptroot collecting numbers) are preserved in CGMS herbarium.

RESULTS AND DISCUSSION

The lichen biota from Goiás and Distrito Federal is typical to that found in other Cerrado regions. See e.g. Schumm & Aptroot (2023) for a selection of lichens found in the Cerrado regions in the Mato Grosso do Sul state. Several of the species reported below are illustrated and described there too. All in all, 191 species are now known from Goiás, and

120 species from Distrito Federal. Here, we report 49 additional species to Distrito Federal, based on collections made by the first author. As many as 113 species are first reports for Goiás state, based on collections by the first and second authors, and one species is new to Brazil.

THE SPECIES IN DISTRÍTO FEDERAL

Allographa acharii (Fée) Lücking & Kalb

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 52734. New to Distrito Federal.

Amandinea extenuata (Müll.Arg.) Marbach

PREVIOUS REPORT. — Mistry (1998).

Bapalmuia confusa Kalb & Lücking

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 53245. New to Distrito Federal.

Bathelium madreporiforme (Eschw.) Trevis.

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 53042. New to Distrito Federal.

Brigantiaea leucoxantha (Spreng.) R.Sant. & Hafellner

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 52529. New to Distrito Federal.

Bulbothrix apophysata (Hale & Kurok.) Hale

PREVIOUS REPORT. — Mistry (1998).

Bulbothrix bulbochaeta (Hale) Hale

PREVIOUS REPORT. — Mistry (1998).

Bulbothrix coronata (Fée) Hale

PREVIOUS REPORT. — Mistry (1998).

Bulbothrix fungicola (Lynge) Hale

PREVIOUS REPORT. — Mistry (1998).

Bulbothrix hypocraea (Vain.) Hale

PREVIOUS REPORT. — Mistry (1998).

Bulbothrix isidiza (Nyl.) Hale

PREVIOUS REPORT. — Mistry (1998).

Bulbothrix linteolocarpa Marcelli

PREVIOUS REPORT. — Mistry (1998).

Bulbothrix sensibilis (B.Stein & Zahlbr.) Hale

PREVIOUS REPORT. — Mistry (1998).

Bulbothrix silicisrea Marcelli & Benatti

PREVIOUS REPORT. — Benatti (2012).

Bulbothrix suffixa (Stirt.) Hale

PREVIOUS REPORT. — Mistry (1998).

Bulbothrix tabacina (Mont. & Bosch) Hale

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 53336. New to Distrito Federal.

Byssoloma subdiscordans (Nyl.) P.James

PREVIOUS REPORT. — Lücking (2008).

Canoparmelia caroliniana (Nyl.) Elix & Hale

PREVIOUS REPORT. — Mistry (1998).

Canoparmelia texana (Tuck.) Elix & Hale

PREVIOUS REPORT. — Mistry (1998).

Chapsa discoides (Fr.) Lücking

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva s.n. New to Distrito Federal.

Chrysothrix candelaris (L.) J.R.Laundon

PREVIOUS REPORT. — Mistry (1998).

Cladonia curta Ahti & Marcelli

PREVIOUS REPORT. — Ahti (2000).

Cladonia didyma (Fée) Vain.

PREVIOUS REPORT. — Ahti (2000).

Cladonia furcata (Huds.) Schrad.

PREVIOUS REPORT. — Ahti (2000).

Cladonia megaphylla Ahti & Marcelli

PREVIOUS REPORT. — Ahti (2000).

Cladonia ochrochlora Flörke

PREVIOUS REPORT. — Mistry (1998).

Cladonia pityrophylla Nyl.

PREVIOUS REPORT. — Ahti (2000).

Cladonia prancei Ahti

PREVIOUS REPORT. — Ahti (2000).

Cladonia ramulosa (With.) J.R.Laundon

PREVIOUS REPORT. — Mistry (1998).

Cladonia subradiata (Vain.) Sandstede

PREVIOUS REPORT. — Ahti (2000).

Cladonia testaceopallens Vain.

PREVIOUS REPORT. — Ahti (2000).

Coccocarpia domingensis Vain.

PREVIOUS REPORT. — Mistry (1998).

Coccocarpia erythrocardia (Müll.Arg.) L.Arvidss.

PREVIOUS REPORT. — Mistry (1998).

Coccocarpia erythroxyli
(Spreng.) Swinscow & Krog

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 53794. New to Distrito Federal.

Coccocarpia imbricascens Nyl.

PREVIOUS REPORT. — Mistry (1998).

Coccocarpia stellata Tuck.

PREVIOUS REPORT. — Mistry (1998).

Constrictolumina cinchonae
(Ach.) Lücking, M.P.Nelsen & Aptroot

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 53392. New to Distrito Federal.

Crespoa carneopruinata
(Zahlbr.) Lendemer & B.P.Hodk.

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 53768. New to Distrito Federal.

Crespoa crozalsiana
(B.de Lesd.) Lendemer & B.P.Hodk.

PREVIOUS REPORT. — Mistry (1998).

Crypthonia albida (Fée) Frisch & G.Thor

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 53302. New to Distrito Federal.

Dirinaria picta (Sw.) Clem. & Shear

PREVIOUS REPORT. — Mistry (1998).

Fissurina dumastii Fée

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 53291. New to Distrito Federal.

Fissurina pseudostromatica Lücking & Rivas Plata

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 52762. New to Distrito Federal.

Flavoparmelia subamplexa (Hale) Hale

PREVIOUS REPORT. — Mistry (1998).

Glyphis cicatricosa Ach.

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 52677. New to Distrito Federal.

Graphis pernambucoradians M.Cáceres & Lücking

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 52726. New to Distrito Federal.

Graphis tenella Ach.

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 52777. New to Distrito Federal.

Hafellia curatellae (Malme) Marbach

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 52996. New to Distrito Federal.

Hafellia fraudans (Starbäck) Pusswald

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 53000. New to Distrito Federal.

Heterodermia comosa (Eschw.) Follmann & Redon

PREVIOUS REPORT. — Souza *et al.* (2022).

Heterodermia diademata (Taylor) D.D.Awasthi

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 53284. New to Distrito Federal.

Heterodermia obscurata (Nyl.) Trevis.

PREVIOUS REPORT. — Mistry (1998).

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 53413.

Heterodermia propagulifera (Vain.) Dey

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 52673. New to Distrito Federal.

Heterodermia speciosa (Wulf.) Trevis.

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 53388. New to Distrito Federal.

Heterodermia tremulans (Müll.Arg.) Culb.

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 53201. New to Distrito Federal.

Heterodermia vulgaris (Vain.) Follm. & Redón

PREVIOUS REPORT. — Souza *et al.* (2022).

Hypotrachyna degelii (Hale) Hale

PREVIOUS REPORT. — Mistry (1998).

Hypotrachyna ducalis (Jatta) Hale

PREVIOUS REPORT. — Mistry (1998).

Hypotrachyna horrescens (Taylor) Krog & Swinscow

PREVIOUS REPORT. — Mistry (1998).

Hypotrachyna imbricatula (Zahlbr.) Hale

PREVIOUS REPORT. — Sipman *et al.* (2009).

Hypotrachyna jamesii (Hale) Krog & Swinscow

PREVIOUS REPORT. — Mistry (1998).

Hypotrachyna minarum (Vain.) Krog & Swinscow

PREVIOUS REPORT. — Mistry (1998).

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 53290.

Hypotrachyna novella (Vain.) Hale

PREVIOUS REPORT. — Mistry (1998).

Hypotrachyna silvatica (Lynge) Hale

PREVIOUS REPORT. — Mistry (1998).

Hypotrachyna subaffinis (Zahlbr.) Hale

PREVIOUS REPORT. — Mistry (1998).

Hypotrachyna subfaticens (Kurok.) Swinscow & Krog

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 53162. New to Distrito Federal.

Hypotrachyna subformosana

Hale ex Elix, T.H.Nash & Sipman

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 53261. New to Distrito Federal.

Hypotrachyna velloziae (Vain.) Hale

PREVIOUS REPORT. — Mistry (1998).

Lecanora argentata (Ach.) Malme

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 53223. New to Distrito Federal.

Lecanora flavidomarginata B.de Lesd.

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 52539. New to Distrito Federal.

Lecanora leproplaca Zahlbr.

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 52876. New to Distrito Federal.

Lecanora leprosa Fée

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 53674. New to Distrito Federal.

Lecanora myriocarpoides Vain.

PREVIOUS REPORT. — Mistry (1998).

Leptra tropica (Vain.) Lendemer & R.C.Harris

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 52505. New to Distrito Federal.

Leptogium marginellum (Sw.) S.Gray

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 53804. New to Distrito Federal.

Leptogium phyllocarpon (Pers.) Nyl.

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 53784. New to Distrito Federal.

Lithothelium obtectum (Müll.Arg.) Aptroot

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 53363. New to Distrito Federal.

Lopezaria versicolor (Fée) Kalb & Hafellner

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 53147. New to Distrito Federal.

Malmidea fuscella (Müll.Arg.) Kalb & Lücking

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 52897. New to Distrito Federal.

Malmidea vinosa (Eschw.) Kalb, Rivas Plata & Lumbsch

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 52947. New to Distrito Federal.

Megalospora tuberculosa (Fée) Sipman

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 52952. New to Distrito Federal.

Megalotremis pustulata Aptroot

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 53142. New to Distrito Federal.

Neoprotoparmelia multifer
(Nyl.) Garima Singh, Lumbsch & I.Schmitt

PREVIOUS REPORT. — Mistry (1998).

Neoprotoparmelia pseudomultifer
L.A.Santos, Lücking & Aptroot

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 53005. New to Distrito Federal.

Nigrovothelium inspersotropicum Aptroot & Diederich

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 53419. New to Distrito Federal.

Normandina pulchella (Borrer) Nyl.

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 53063. New to Distrito Federal.

Ocellularia polydiscus Redinger

PREVIOUS REPORT. — Frisch & Kalb (2006).

Ochrolechia africana Vain.

PREVIOUS REPORT. — Mistry (1998).

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 53313.

Opegrapha astraea Tuck.

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 52698. New to Distrito Federal.

Parmelinella amazonica
(Nyl.) A.S.Rodrigues, A.P.Lorenz & Canêz

PREVIOUS REPORT. — Mistry (1998).

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 53586.

Parmelinella versiformis (Kremp.) Marcelli

PREVIOUS REPORT. — Mistry (1998).

Parmelinella wallichiana (Taylor) Elix & Hale

PREVIOUS REPORT. — Mistry (1998).

Parmotrema dilatatum (Vain.) Hale

PREVIOUS REPORT. — Mistry (1998).

Parmotrema gardneri (C.W.Dodge) Serus.

PREVIOUS REPORT. — Mistry (1998).

Parmotrema mellissii (C.W.Dodge) Hale

PREVIOUS REPORT. — Mistry (1998).

Parmotrema nylanderii (Lynge) Hale

PREVIOUS REPORT. — Mistry (1998).

Parmotrema reticulatum (Taylor) M.Choisy

PREVIOUS REPORT. — Mistry (1998).

Parmotrema subcaperatum (Kurokawa) Hale

PREVIOUS REPORT. — Mistry (1998).

Parmotrema subsidiosum (Müll.Arg.) Hale

PREVIOUS REPORT. — Mistry (1998).

Parmotrema subsumptum (Nyl.) Hale

PREVIOUS REPORT. — Mistry (1998).

Parmotrema tinctorum (Nyl.) Hale

PREVIOUS REPORT. — Mistry (1998).

Pertusaria elizabethae A.W.Archer & Elix

PREVIOUS REPORT. — Archer & Elix (2014).

Pertusaria lichexanthofarinosa Aptroot & M.Cáceres

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 52964. New to Distrito Federal.

Phaeographis brasiliensis
(A.Massal.) Kalb & Matthes-Leicht

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 52846. New to Distrito Federal.

Phlyctis brasiliensis Nyl.

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 52862. New to Distrito Federal.

Physcia atrostriata Moberg

PREVIOUS REPORT. — Mistry (1998).

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 53269.

Porina nucula Ach.

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 53231. New to Distrito Federal.

Pseudobogoriella subfallens
(Müll.Arg.) Lücking, R.Miranda & Aptroot

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 53209. New to Distrito Federal.

Pyrenula acutalis R.C.Harris

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 52975. New to Distrito Federal.

Pyrenula mamillana (Ach.) Trevis.

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 53060. New to Distrito Federal.

Pyrenula quassiicola (Fée) Fée

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 52803. New to Distrito Federal.

Pyxine daedalea Krog & R.Sant.

PREVIOUS REPORT. — Mistry (1998).

Pyxine physciiformis (Malme) Imsh.

PREVIOUS REPORT. — Mistry (1998).

Pyxine pungens Zahlbr.

PREVIOUS REPORT. — Mistry (1998).

Pyxine rhodesiaca Vain. ex Lynge

PREVIOUS REPORT. — Jungbluth & Marcelli (2011).

Pyxine subcinerea Stirt.

PREVIOUS REPORT. — Mistry (1998).

Ramalina gracilis (Pers.) Nyl.

PREVIOUS REPORT. — Kashiwadani & Kalb (1993).

Ramboldia russula (Ach.) Kalb, Lumbsch & Elix

PREVIOUS REPORT. — Mistry (1998).

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 53599.

Synarthonia sarcographoides

Aptroot, A.A.Menezes, E.L.Lima & M.Cáceres

NEW REPORT. — Parque Nacional de Brasília, on bark, leg. J.A.R. Silva, ISE 52665. New to Distrito Federal.

Usnea cristatula Motyka

PREVIOUS REPORT. — Gerlach *et al.* (2017).

THE SPECIES IN GOIÁS

Acanthotrema brasilianum (Hale) Frisch

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 53824. New to Goiás.

Allographa acharii (Fée) Lücking & Kalb

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 52740. New to Goiás.

Allographa sauroidea (Leight.) Lücking & Kalb

PREVIOUS REPORT. — Staiger (2002).

Amandinea endachbroa (Malme) Marbach

PREVIOUS REPORT. — Marbach (2000).

Amandinea melaxanthella (Nyl.) Marbach

PREVIOUS REPORT. — Marbach (2000).

Arthonia parantillarum Aptroot

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 53498. New to Goiás.

Astrothelium aeneum (Eschw.) Aptroot & Lücking

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. A. Aptroot *s.n.* New to Goiás.

Astrothelium macrocarpum (Fée) Aptroot & Lücking

PREVIOUS REPORT. — Müller (1895).

Astrothelium pblyctaena (Fée) Aptroot & Lücking

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. A. Aptroot *s.n.* New to Goiás.

Baculifera intermedioides Marbach

PREVIOUS REPORT. — Marbach (2000).

Baculifera pseudomicromera Marbach

PREVIOUS REPORT. — Marbach (2000).

Bathelium madreporiforme (Eschw.) Trevis.

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 52860. New to Goiás.

Buellia rubroreagens A.Nordin

PREVIOUS REPORT. — Nordin (2000).

Bulbothrix apophysata (Hale & Kurok.) Hale

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. A. Aptroot 85592. New to Goiás.

Bulbothrix coronata (Fée) Hale

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 53762. New to Goiás.

Bulbothrix fungicola (Lynge) Hale

PREVIOUS REPORT. — Marcelli (1993).

Bulbothrix goebelii (Zenker) Hale

PREVIOUS REPORT. — Benatti & Elix (2012).

Bulbothrix regnelliana Jungbluth, Marcelli & Elix

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 53757. New to Goiás.

Bulbothrix subcoronata (Müll.Arg.) Hale

PREVIOUS REPORT. — Hale (1976).

Bulbothrix subdissecta (Nyl.) Hale

PREVIOUS REPORT. — Benatti & Elix (2012).

Bulbothrix tabacina (Mont. & Bosch) Hale

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 53779. New to Goiás.

Bulbothrix viatica Spielmann & Marcelli

PREVIOUS REPORT. — Spielmann & Marcelli (2008).

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. *A. Aptroot s.n.*

Byssoloma leucoblepharum (Nyl.) Vain.

PREVIOUS REPORT. — Kalb & Vězda (1990).

Byssoloma rubrireagens Kalb & Vězda

PREVIOUS REPORT. — Kalb & Vězda (1990).

Byssoloma subdiscordans (Nyl.) P. James

PREVIOUS REPORT. — Kalb & Vězda (1990).

Calicium salicinum Pers.

PREVIOUS REPORT. — Tibell (1996).

Calopadia chacoensis (Malme) Kalb & Vězda

PREVIOUS REPORT. — Kalb & Vězda (1987).

Calopadia foliicola (Fée) Vězda

PREVIOUS REPORT. — Kalb & Vězda (1987).

Caloplaca granularis (Müll.Arg.) Zahlbr.

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. *A. Aptroot s.n.* New to Goiás.

Candelaria concolor (Dicks.) Stein

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. *A. Aptroot s.n.* New to Goiás.

Canoparmelia caroliniana (Nyl.) Elix & Hale

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 53767. New to Goiás.

Canoparmelia texana (Tuck.) Elix & Hale

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. *A. Aptroot s.n.* New to Goiás.

Chapsa discoides (Fr.) Lücking

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 53091. New to Goiás.

Chapsa perdissuta Sipman & Lücking

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 52626. New to Brazil.

Chrysothrix xanthina (Vain.) Kalb

NEW REPORT. — Chapada do Céu & Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 53271. New to Goiás.

Cladia aggregata (Sw.) Nyl.

PREVIOUS REPORT. — Ahti (2000).

Cladonia marcellii Ahti & S. Stenroos

PREVIOUS REPORT. — Ahti (2000).

Cladonia penicillata (Vain.) Ahti & Marcelli

PREVIOUS REPORT. — Ahti (2000).

Cladonia subsquamosa Kremp.

PREVIOUS REPORT. — Ahti (2000).

Cladonia verticillaris (Raddi) Fr.

PREVIOUS REPORT. — Ahti (2000).

Constrictolumina cinchonae
(Ach.) Lücking, M.P. Nelsen & Aptroot

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 53292. New to Goiás.

Cratiria obscurior (Stirt.) Marbach & Kalb

PREVIOUS REPORT. — Marbach (2000).

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. *A. Aptroot s.n.*

Crespoa crozalsiana (Lesdain) Lendemer & B.P.Hodk.

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. A. Aptroot *s.n.* New to Goiás.

Cresponea proximata (Nyl.) Egea & Torrente

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 52643. New to Goiás.

Cryptothecia malmei Redinger

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 53091. New to Goiás.

Dichosporidium nigrocinctum (Ehrenb.) G.Thor

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 53385. New to Goiás.

Diorygma hieroglyphicum (Pers.) Staiger & Kalb

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 53368. New to Goiás.

Diorygma poitaei (Fée) Kalb, Staiger & Elix

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. A. Aptroot *s.n.*; Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 52714. New to Goiás.

Dirinaria aegialita (Afzelius) Moore

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. A. Aptroot *s.n.* New to Goiás.

Dirinaria consimilis (Stirt.) D.D.Awasthi

PREVIOUS REPORT. — Kalb (2009).

Dirinaria picta (Sw.) Clem. & Shear

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. A. Aptroot *s.n.* New to Goiás.

Dirinaria sekikaica Elix

PREVIOUS REPORT. — Kalb (2009).

Dyplolabia afzelii (Ach.) A.Massal.

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 53485. New to Goiás.

Enterographa kalbii Sparrius

PREVIOUS REPORT. — Sparrius (2004).

Eschatogonia dissecta Timdal & R.Sant.

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 53396. New to Goiás.

Fissurina dumastii Fée

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 52655. New to Goiás.

Fissurina pseudostromatica Lücking & Rivas Plata

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. A. Aptroot *s.n.*; Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 52766. New to Goiás.

Gassicurtia catasema (Tuck.) Marbach

PREVIOUS REPORT. — Marbach (2000).

Gassicurtia coccinoides Marbach

PREVIOUS REPORT. — Marbach (2000).

Glyphis cicatricosa Ach.

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. A. Aptroot *s.n.*; Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 52604. New to Goiás.

Glyphis scyphulifera (Ach.) Staiger

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. A. Aptroot *s.n.* New to Goiás.

Graphis conferta Zenker

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 62829. New to Goiás.

Graphis pernambucoradians M.Cáceres & Lücking

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 52810. New to Goiás.

Gyalideopsis confluens Kalb & Vězda

PREVIOUS REPORT. — Kalb & Vězda (1988).

Gyalideopsis lambinonii Vězda

PREVIOUS REPORT. — Kalb & Vězda (1988).

Gyalideopsis vainioi Kalb & Vězda

PREVIOUS REPORT. — Kalb & Vězda (1988).

Haematomma flexuosum Hillm.

PREVIOUS REPORT. — Staiger & Kalb (1995).

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. *A. Aptroot s.n.*; Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 53533.

Hafellia curatellae (Malme) Marbach

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 52870. New to Goiás.

Hafellia fraudans (Starbäck) Pusswald

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. *J.A.R. Silva s.n.* New to Goiás.

Heterodermia caneziae M.F.Souza & Aptroot

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. *A. Aptroot 85595*. New to Goiás.

Heterodermia casarettiana (A.Massal.) Trevis.

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. *A. Aptroot 85590*. New to Goiás.

Heterodermia comosa (Eschw.) Follmann & Redón

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. *A. Aptroot 85586*. New to Goiás.

Heterodermia dendritica (Pers.) Poelt

PREVIOUS REPORT. — Souza *et al.* (2022).

Heterodermia diademata (Taylor) D.D.Awasthi

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. *A. Aptroot 85588*. New to Goiás.

Heterodermia flabellata (Fée) Awasthi

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. *A. Aptroot 85583*. New to Goiás.

Heterodermia hypoleuca (Muhl.) Trevis.

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. *A. Aptroot s.n.* New to Goiás.

Heterodermia japonica (Sâto) Swinscow & Krog

PREVIOUS REPORT. — Souza *et al.* (2022).

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. *A. Aptroot 85591*.

Heterodermia lutescens (Kurok.) Follm.

PREVIOUS REPORT. — Souza *et al.* (2022).

Heterodermia obscurata (Nyl.) Trevis.

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. *A. Aptroot 85589*. New to Goiás.

Heterodermia podocarpa (Bél.) D.D.Awasthi

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. *A. Aptroot 85593*. New to Goiás.

Hyperphyscia adglutinata
(Flörke) H.Mayrhofer & Poelt

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. *A. Aptroot s.n.* New to Goiás.

Hyperphyscia granulata (Poelt) Moberg

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. *A. Aptroot s.n.* New to Goiás.

Hypotrachyna brasiliiana (Nyl.) Hale

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 53286. New to Goiás.

Hypotrachyna cerradensis Sipman, Elix & T.H.Nash

PREVIOUS REPORT. — Sipman *et al.* (2009).

Hypotrachyna degelii (Hale) Hale

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 53823. New to Goiás.

Hypotrachyna dentella (Hale & Kurok.) Hale

PREVIOUS REPORT. — Sipman *et al.* (2009).

Hypotrachyna divaricatica Elix & T.H.Nash

PREVIOUS REPORT. — Sipman *et al.* (2009).

Hypotrachyna flavida (Zahlbr.) Hale

PREVIOUS REPORT. — Sipman *et al.* (2009).

Hypotrachyna goiasii Elix & T.H.Nash

PREVIOUS REPORT. — Sipman *et al.* (2009).

Hypotrachyna horrescens (Taylor) Krog & Swinscow

PREVIOUS REPORT. — Marcelli (1993).

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. *A. Aptroot s.n.*

Hypotrachyna microblasta (Vain.) Hale

PREVIOUS REPORT. — Sipman *et al.* (2009).

Hypotrachyna minarum (Vain.) Krog

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. *A. Aptroot s.n.*; Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 53175. New to Goiás.

Hypotrachyna palmarum (Lyngé) Hale

PREVIOUS REPORT. — Sipman *et al.* (2009).

Hypotrachyna salreducens Elix, T.H.Nash & Sipman

PREVIOUS REPORT. — Sipman *et al.* (2009).

Julella vitrispora (Cooke & Harkn.) M.E.Barr

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 52980. New to Goiás.

Lecanora caesiorubella Ach.

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. *A. Aptroot s.n.* New to Goiás.

Lecanora coronulans Nyl.

PREVIOUS REPORT. — Lumbsch *et al.* (1996).

Lecanora flavidofusca Müll.Arg.

PREVIOUS REPORT. — Guderley (1999).

Lecanora flavidomarginata B.de Lesd.

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 52930. New to Goiás.

Lecanora fluoroxylina Aptroot & M.F.Souza

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on wood, leg. *A. Aptroot s.n.* New to Goiás.

Lecanora helva Stizenb.

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. *A. Aptroot s.n.* New to Goiás.

Lecanora hypocrocina Nyl.

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 53667. New to Goiás.

Lecanora leprosa Fée

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. *A. Aptroot s.n.* New to Goiás.

Lecanora subimmergens Vain.

PREVIOUS REPORT. — Guderley (1999).

Lecanora tropica Zahlbr.

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. *A. Aptroot s.n.* New to Goiás.

Lepra tropica (Vain.) Lendemer & R.C.Harris

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 52938. New to Goiás.

Leptogium isidiosellum (Riddle) Sierk

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. *A. Aptroot s.n.* New to Goiás.

Letrouitia subvulpina (Nyl.) Hafellner

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 52625. New to Goiás.

Malmidea amazonica

(Redinger) Kalb, Rivas Plata & Lumbsch

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 52844. New to Goiás.

Malmidea aurigera

(Ach.) Kalb, Rivas Plata & Lumbsch

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 53012. New to Goiás.

Malmidea vinosa

(Eschw.) Kalb, Rivas Plata & Lumbsch

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 53055. New to Goiás.

Mycocalicium albonigrum (Nyl.) Tibell

PREVIOUS REPORT. — Tibell (1996).

Mycoporum compositum (A.Massal.) R.C.HarrisNEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. A. Aptroot *s.n.* New to Goiás.*Myriostigma xanthominiatum* Aptroot & M.F.Souza

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 52719. New to Goiás.

Neoprotoparmelia capitata

(Lendemer) Garima Singh, Lumbsch & I.Schmitt

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 52761. New to Goiás.

Neoprotoparmelia pseudomultifera

L.A.Santos, Lücking & Aptroot

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 52948. New to Goiás.

Neoprotoparmelia sexdecimspora

L.A.Santos, M.Cáceres & Aptroot

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. A. Aptroot *s.n.* New to Goiás.*Nigrothelium inspersotropicum*

Aptroot & Diederich

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. A. Aptroot *s.n.* New to Goiás.*Ocellularia polydiscus* Redinger

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 52633. New to Goiás.

Ochrolechia africana Vain.

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 53170. New to Goiás.

Pallidogramme chapadana

(Redinger) Staiger, Kalb & Lücking

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 52907. New to Goiás.

Parmelinella amazonica

(Nyl.) A.S.Rodrigues, A.P.Lorenz & Canêz

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 53827. New to Goiás.

Parmelinella mutata (Vain.) Benatti

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 53793. New to Goiás.

Parmotrema asperum Marcelli, Benatti & Elix

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. A. Aptroot 85582. New to Goiás.

Parmotrema breviciliatum (Hale) Hale

PREVIOUS REPORT. — Moreira de Barros & Xavier Filho (1972).

Parmotrema clavuliferum (Räs.) StreimannNEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. A. Aptroot *s.n.* New to Goiás.*Parmotrema macrocarpum* (Pers.) HaleNEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. A. Aptroot *s.n.* New to Goiás.*Parmotrema melanochaetum* (Kurok.) O.Blanco *et al.*NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. A. Aptroot *s.n.* New to Goiás.*Parmotrema mesotropum* (Müll.Arg.) HaleNEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. A. Aptroot *s.n.* New to Goiás.

Parmotrema neotropicum (Kurok.) Hale

PREVIOUS REPORT. — Marcelli & Benatti (2008).

Parmotrema reticulatum (Taylor) M.Choisy

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. *A. Aptroot s.n.* New to Goiás.

Parmotrema sancti-angeli (Lyngé) Hale

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. *A. Aptroot s.n.* New to Goiás.

Parmotrema tinctorum (Nyl.) Hale

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. *A. Aptroot s.n.* New to Goiás.

Pertusaria flavens Nyl.

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. *A. Aptroot s.n.* New to Goiás.

Phaeographis brasiliensis
(A.Massal.) Kalb & Matthes-Leicht

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. *A. Aptroot s.n.* New to Goiás.

Phaeographis inconspicua (Fée) Müll.Arg.

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 53279. New to Goiás.

Phyllopsora gossypina
(Sw.) Kistenich, Timdal, Bendiksby & S.Ekman

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 53384. New to Goiás.

Phyllopsora ochroxantha (Nyl.) Zahlbr.

PREVIOUS REPORT. — Brako (1991).

Phyllopsora pyxinoides
(Nyl.) Kistenich, Timdal, Bendiksby & S.Ekman

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 53771. New to Goiás.

Physcia alba (Fée) Müll.Arg.

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. *A. Aptroot s.n.* New to Goiás.

Physcia krogiae Moberg

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. *A. Aptroot s.n.* New to Goiás.

Physcia solediosa (Vain.) Lyngé

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. *A. Aptroot s.n.* New to Goiás.

Piccolia conspersa (Fée) Hafellner

PREVIOUS REPORT. — Hafellner (1995).

Platygramme caesiopruinosa (Fée) Fée

PREVIOUS REPORT. — Staiger (2002).

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 52906.

Porina internigrans (Nyl.) Müll.Arg.

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 52927. New to Goiás.

Porina mastoidea (Ach.) Müll.Arg.

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 53074. New to Goiás.

Pseudobogoriella subfallens
(Müll.Arg.) Lücking, R.Miranda & Aptroot

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 53297. New to Goiás.

Pseudoparmelia arida (Lyngé) Elix & T.H.Nash

PREVIOUS REPORT. — Elix & Nash (1998).

Pseudoparmelia buckiana Elix & T.H.Nash

PREVIOUS REPORT. — Elix & Nash (1998).

Pseudoparmelia chapadensis (Lyngé) Hale

PREVIOUS REPORT. — Elix & Nash (1998).

Pseudoparmelia harrisiana Elix & T.H.Nash

PREVIOUS REPORT. — Elix & Nash (1998).

Pseudoparmelia kalbiana Elix & T.H.Nash

PREVIOUS REPORT. — Elix & Nash (1998).

Pseudoparmelia regnellii (Lynge) Elix & T.H.Nash

PREVIOUS REPORT. — Elix & Nash (1998).

Pyrenula acutalis R.C.Harris

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 53047. New to Goiás.

Pyrenula aspistea (Afzel. ex Ach.) Ach.

PREVIOUS REPORT. — Müller (1884).

Pyrenula inframamillana Aptroot & M.Cáceres

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 53099. New to Goiás.

Pyrenula mamillana (Ach.) Trevis.

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 52621. New to Goiás.

Pyrenula quassiicola (Fée) Fée

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva *s.n.* New to Goiás.

Pyrenula subducta (Nyl.) Müll.Arg.

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. A. Aptroot *s.n.* New to Goiás.

Pyxine berteriana (Fée) Imsh.

PREVIOUS REPORT. — Kalb (1987).

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. A. Aptroot *s.n.*

Pyxine coralligera Malme

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. A. Aptroot 85585. New to Goiás.

Pyxine eschweileri (Tuck.) Vain.

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. A. Aptroot *s.n.* New to Goiás.

Pyxine katendei Swinscow & Krog

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. A. Aptroot 85587. New to Goiás.

Pyxine schechingeri Kalb

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. A. Aptroot *s.n.* New to Goiás.

Pyxine subcinerea Stirt.

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. A. Aptroot *s.n.* New to Goiás.

Ramalina celastri (Spreng.) Krog & Swinscow

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. A. Aptroot *s.n.* New to Goiás.

Ramboldia russula (Ach.) Kalb, Lumbsch & Elix

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. A. Aptroot *s.n.*; Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 53601. New to Goiás.

Remototrachyna consimilis
(Vain.) Flakus, Kukwa & Sipman

PREVIOUS REPORT. — Sipman *et al.* (2009).

Remototrachyna costaricensis
(Nyl.) Divakar & A.Crespo

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. A. Aptroot 85596. New to Goiás.

Rinodina guianensis Aptroot

PREVIOUS REPORT. — Giralt *et al.* (2009).

Sagenidiopsis undulata
(Fée) Egea, Tehler, Torrente & Sipman

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 52552. New to Goiás.

Stigmatochroma kryptoviolascens Marbach

PREVIOUS REPORT. — Marbach (2000).

Synarthonia xanthographoide

Aptroot, A.A.Menezes, E.L.Lima & M.Cáceres

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 53316. New to Goiás.

Tephromela alectoronica Kalb

NEW REPORT. — Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 53734. New to Goiás.

Tricharia subplana Kalb & Vězda

PREVIOUS REPORT. — Kalb & Vězda (1988).

Trypethelium eluteriae Spreng.

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. A. Aptroot *s.n.*; Mineiros, Parque Nacional das Emas, on bark, leg. J.A.R. Silva, ISE 53030. New to Goiás.

Trypethelium subeluteriae Makhija & Patw.

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. A. Aptroot *s.n.* New to Goiás.

Tylophoron moderatum Nyl.

PREVIOUS REPORT. — Tibell (1996).

Usnea dasaea Stirt.

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. A. Aptroot *s.n.* New to Goiás.

Usnea firma Motyka

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. A. Aptroot 85584. New to Goiás.

Usnea laevis (Eschw.) Nyl.

PREVIOUS REPORT. — Motyka (1936-1938).

Usnea mexicana Vain.

PREVIOUS REPORT. — Truong *et al.* (2013).

Usnea subparvula A.Gerlach & P.Clerc

NEW REPORT. — Chapada do Céu, Parque Nacional das Emas, on bark, leg. A. Aptroot *s.n.* New to Goiás.

Xanthoparmelia crystallicola

(Kalb & Hale) T.H.Nash & Elix

PREVIOUS REPORT. — Nash *et al.* (1995).

Xanthoparmelia echinocarpica T.H.Nash & Elix

PREVIOUS REPORT. — Nash *et al.* (1995).

Xanthoparmelia hypopsila (Müll.Arg.) Hale

PREVIOUS REPORT. — Nash *et al.* (1995).

Xanthoparmelia hypostictica T.H.Nash & Elix

PREVIOUS REPORT. — Nash *et al.* (1995).

Xanthoparmelia neopropagulooides Hale

PREVIOUS REPORT. — Nash *et al.* (1995).

Xanthoparmelia subplittii Hale

PREVIOUS REPORT. — Nash *et al.* (1995).

Xanthoparmelia substenophylloides Hale

PREVIOUS REPORT. — Nash *et al.* (1995).

Xanthoparmelia succedans Elix & J.Johnst.

PREVIOUS REPORT. — Nash *et al.* (1995).

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