

OPEN ACCESS



All articles published in the Journal of Threatened Taxa are registered under Creative Commons Attribution 4.0 International License unless otherwise mentioned. JoTT allows unrestricted use of articles in any medium, reproduction and distribution by providing adequate credit to the authors and the source of publication.



Journal of Threatened Taxa

The international journal of conservation and taxonomy

www.threatenedtaxa.org

ISSN 0974-7907 (Online) | ISSN 0974-7893 (Print)

NOTE

NOTES ON THREE NEW RECORDS OF FOLIICOLOUS LICHENS FROM KARNATAKA WESTERN GHATS, INDIA

S. Shravan Kumar & Y.L. Krishnamurthy

26 June 2016 | Vol. 8 | No. 6 | Pp. 8950–8952
10.11609/jott.2036.8.6.8950-8952



For Focus, Scope, Aims, Policies and Guidelines visit http://threatenedtaxa.org/About_JoTT.asp

For Article Submission Guidelines visit http://threatenedtaxa.org/Submission_Guidelines.asp

For Policies against Scientific Misconduct visit http://threatenedtaxa.org/JoTT_Policy_against_Scientific_Misconduct.asp

For reprints contact <info@threatenedtaxa.org>

Partner



Publisher/Host





ISSN 0974-7907 (Online)
ISSN 0974-7893 (Print)

OPEN ACCESS



Foliicolous lichens study in Asia is not exhaustive as of neotropics (Thor et al. 2000; Lücking 2008; Awasthi 2010; Singh & Pinokiyo 2014). Being a paleotropical country India provides a favorable habitat for the foliicolous lichens especially in the Western Ghats and the eastern Himalayan regions. Although the lichenological studies in India started in the early 18th century (Fries 1825), the first monograph of foliicolous lichens was published in 1952 by Santesson. After that only a few people worked on this group in India (Sinha & Singh 1987; Singh et al. 2004; Pinokiyo et al. 2006; Awasthi 2010; Singh & Pinokiyo 2003, 2014). Singh et al. (2004) classified the Western Ghats as the region with the highest endemic lichens. Exhaustive collection and detailed enumeration reports of foliicolous lichens has not been done in this region. During the recent field survey in the Western Ghats, India, we collected many foliicolous lichen including several new records. In this paper we present some of the new reports of the foliicolous lichens from the areas of Western Ghats in Karnataka.

Materials and Methods

Foliicolous lichen specimens were collected randomly from different localities of the Western Ghats. Leaves of the phorophytes reaching a height of up to three meters were considered for sampling and fallen leaves were also collected. The leaf samples containing lichens were collected in a paper cover. A stereo microscope, Carl Zeiss Stemi 2000C, was used for morphological studies

NOTES ON THREE NEW RECORDS OF FOLIICOLOUS LICHENS FROM KARNATAKA WESTERN GHATS, INDIA

S. Shraavan Kumar¹ & Y.L. Krishnamurthy²

^{1,2}Department of Post Graduate Studies and Research in Applied Botany, Jnanasahyadri, Kuvempu University, Shankaraghatta, Shivamogga, Karnataka 577451, India

¹k.shraavanakumar@yahoo.com, ²murthy_ylk@yahoo.co.in (corresponding author)

and a compound microscope, Carl Zeiss Primo Star, was used for studying the anatomy of thalli and fruiting bodies. Anatomical characteristics were observed on hand cut sections mounted in water and 10% KOH (K), all measurements were taken in water. Photographs were taken using an AxioCamERC5s camera and the images were analyzed using Axio Vision LE (AxioVs40 V 4.8.2.0) software. The hemiamyloid reaction of the ascus was studied in Lugol's solution (0.2% I and 0.6% KI) after pretreatment with KOH. Standard manuals (Santesson 1952; Awasthi 1991; Lücking 1991, 1992, 2008) were used for the identification of species. Voucher specimens were deposited in the herbarium of the Department of Applied Botany, Kuvempu University, Jnanasahyadri, Karnataka, India.

Taxonomic treatment of the new records from the Western Ghats

Bapalmuia palmularis (Müll. Arg.) Sérus. (Pilocarpaceae)
Nord. J. Bot. 13: 451, 1993. = *Bacidia palmularis* (Müll. Arg.) Zahlbr., Cat. Lich. Univers. 4: 231, 1926.

DOI: <http://dx.doi.org/10.11609/jott.2036.8.6.8950-8952>

Editor: R.K. Verma, Tropical Forest Research Institute, Jabalpur, India.

Date of publication: 26 June 2016 (online & print)

Manuscript details: Ms # 2036 | Received 10 December 2015 | Final received 23 June 2016 | Finally accepted 24 June 2016

Citation: Kumar, S.S. & Y.L. Krishnamurthy (2016). Notes on three new records of foliicolous lichens from Karnataka Western Ghats, India. *Journal of Threatened Taxa* 8(6): 8950–8952; <http://dx.doi.org/10.11609/jott.2036.8.6.8950-8952>

Copyright: © Kumar & Krishnamurthy 2016. Creative Commons Attribution 4.0 International License. JoTT allows unrestricted use of this article in any medium, reproduction and distribution by providing adequate credit to the authors and the source of publication.

Funding: DST-Government of India (DST. F.No. SERB/SO/PS-78/2010).

Conflict of Interest: The authors declare no competing interests.

Acknowledgements: We are thankful to the Department of Science and Technology, Government of India, New Delhi for providing financial support (DST. F.No. SERB/SO/PS-78/2010). We thank Dr. Robert Lücking for helping in species identification with valuable suggestions. We are grateful to Prof. Dalip K. Upreti and Dr. Sanjeeva Nayaka, CSIR- National Botanical Research Institute, Lucknow for their kind support. We are also thankful to Karnataka Forest Department, Bengaluru for their kind permission to access the forest. The authors are also thankful to the Kuvempu University, India for providing the necessary facilities to carry out our research work.



भारत सरकार
विज्ञान और प्रौद्योगिकी मंत्रालय
विज्ञान और प्रौद्योगिकी विभाग
GOVERNMENT OF INDIA
Ministry of Science and Technology
Department of Science and Technology
Technology Bhavan, New Mehrauli Road
New Delhi - 110016

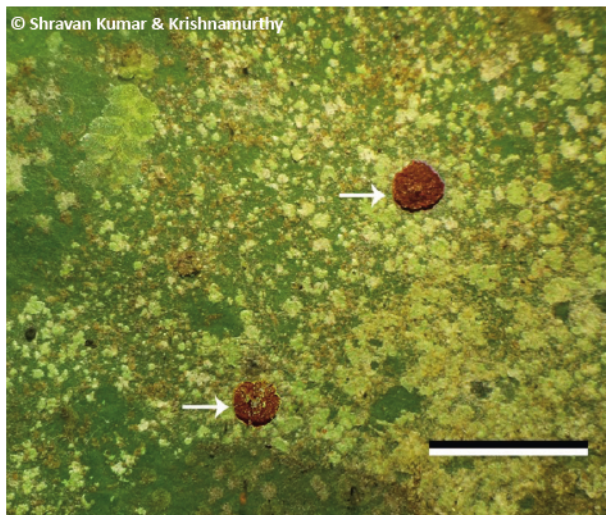


Image 1. *Bapalmuia palmularis*

Thallus smooth, effuse, ecorticate, thin, 3–6 mm across; photobiont - a species of chlorococcaceae; 5–7 μm diam. Ascomata-apothecia, sessile, evanescent; excipulum prosoplectenchymatous. Asci 8-spored; ascospores hyaline, acicular-filiform with obtuse ends, 20–35 – septate, 70–120 x 1.5–2.5 μm long.

Specimens examined: India: 5742, 04.xii.2013, Karnataka: Chikkamagaluru District: Chandra-Drona Parvatha: shola forest on the way to Mullaiahnagiri Peak, 13°23'25"N & 75°42'59"E, 1693m, epiphyllous on *Memecylon malabaricum* (C. B. Clarke.) Cogn., coll. Shraavan Kumar S. & Y.L. Krishnamurthy (Image 1).

Remarks: The genus is characterized by elongated dichotomously branched lobes of the thallus with black bordered margins.

Ecology and Distribution: The genus *Bapalmuia* (*Sérus*), comprises 17 species, which are distributed in the pan-tropical region of the world. In India only one species (*B. palmularis*) is reported from Arunachal Pradesh, Tamil Nadu, West Bengal. In the present survey it is collected from Karnataka and Tamil Nadu. It usually grows in shady places on the leaves of the small shrubs.

***Byssoloma leucoblepharum* (Nyl.) Vain.** (Pilocarpaceae)

Dansk Bot. Ark. 4: 23, 1926. = *Pilocarpon leucoblepharum* (Nyl.) Vain., Acta Soc. Fauna Fl. Fenn. 7(2): 89, 1890. = *Lecidea leucoblephara* Nyl., Anns Sci. Nat., Bot., sér. 4 19: 337, 1863.

Thallus epiphyllous, greenish-grey, smooth, continuous, 12–30 mm across. Photobiont a species of Chlorococcaceae, 5–8 μm diam. Apothecia scattered, adnate-sessile, 0.3–0.6 mm diam., 100–150 μm diam. high; disk brown, epruinose, slightly convex; margin

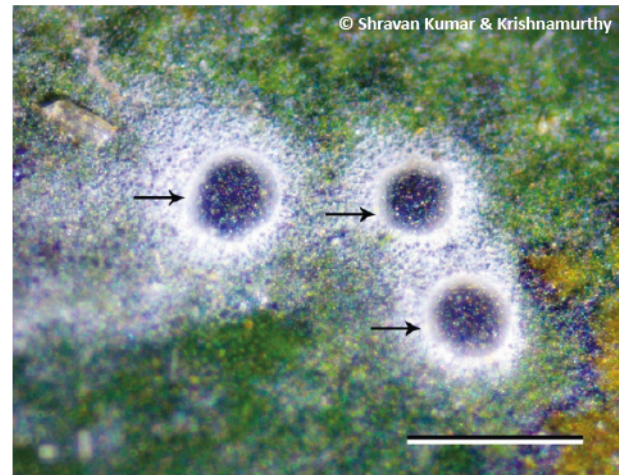


Image 2. *Byssoloma leucoblepharum*

white, thin, arachnoid. Excipulum spreading laterally on the surface of the thallus, K-. Paraphyses simple-sparingly branched. Asci 8-spored, clavate, 35–45 x 10–16 μm . Ascospores hyaline, obliquely arranged, 3-septate, sometimes young ones 1–2-septate, slightly constricted at septa, obtuse at ends, bacillary-oblong, 8–18 x 2–4 μm .

Specimens examined: 5681, 15.iii.2013, India: Karnataka: Chikkamagaluru District: Moodigere: Tea plantation, 13°48'52"N & 74°57'55"E, 602m, epiphyllous on *Camellia sinensis* (L.) Kuntze, coll. Shraavan Kumar S. & Y.L. Krishnamurthy (Image 2).

Remarks: The species can easily be distinguished from the other species of the genus by the presence of blackish hypothallus. It usually grows on the leaves of tea bushes.

Ecology and Distribution: The genus *Byssoloma* Vain., is represented by 41 foliicolous species in the world of which five are reported from India (Singh & Pinokiyo 2014). It usually grows on the leaves of tea bushes and other dicotyledonous shrubs in tropical and subtropical areas. It has a pantropical distribution. In India it is reported from Arunachal Pradesh, Manipur, Meghalaya, Nagaland, Tamil Nadu and West Bengal. In the present study it is collected from Karnataka.

***Gyalectidium filicinum* Müll. Arg.** (Gomphillaceae)

Flora 64: 101, 1881. = *Ectolechia filicina* (Müll. Arg.) Vain. J. Bot. 34: 206, 1896. = *Sporopodium filicinum* (Müll. Arg.) Zahlbr. Cat. Lich. Univers. 2: 679, 1924.

Thallus crustaceous, whitish-green, continuous, effuse, finely verrucose due to incrustation with calcium oxalate crystals, sometimes with hyphophores, 1–8 mm

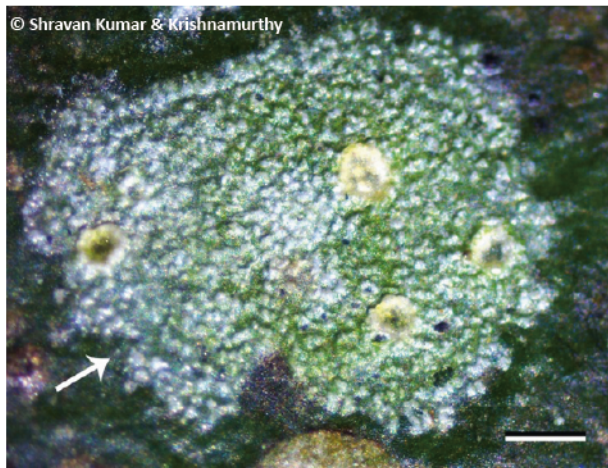


Image 3. *Gyalectidium filicinum*

across; verrucae white, 0.02–0.05 mm diam. Hypothallus absent. Photobiont - a species of Chlorococcaceae; rounded, 8–12 μm diam., cells in one to several layers, rounded, irregularly arranged. Apothecia immersed but open, circular-rarely lobate, 0.2–0.3 mm diam., greenish-white; asci 1-spored; ascospores hyaline, muriform, oblong-ellipsoid, 22–38 x 9–16 (–20) μm . Conidiomata - hyphophores, with well-developed scales, pale yellowish-white, broadly squamiform, with acute lateral projections, 0.3–0.6 mm long, 0.3–0.4 mm broad; conidia produced in moniliform chains; pycnidia not seen.

Remarks: Peculiar greenish-grey disc with abundant epithelial algae is the key characters which differentiate *G. filicinum* from all other species of the genus. This species has wide ecological amplitude and found in exposed conditions in evergreen forests at lower elevations.

Ecology and Distribution: It grows on the leaves of *Hopea parviflora* and *Psychotria nigra* observed during the early winter season in shola forest. It has pantropical-

subtropical distribution. In India it is reported from Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tamil Nadu and West Bengal. The present paper describes it from Karnataka.

Specimens examined: 5524, 18.xi.2011, India: Karnataka: Shivamogga District: evergreen forest, on the way to Kodachadri Hill, 14°56'59"N & 74°35'11"E, 864 m, epiphyllous on *Persea macrantha*, coll. Shravan Kumar S. & Y.L. Krishnamurthy (Image 3).

References

- Awasthi, D.D. (1991). A key to the microlichens of India, Nepal and Sri Lanka. *Bibliotheca lichenologica* 40: vii+337pp.
- Awasthi, D.D. (2010). *Foliicolous Lichens of the World: A Review*. Indian Journal of Forestry Additional Series III. Bishen Singh Mahendra Pal Singh Publications, India, vii+113pp.
- Fries, E.M. (1825). *Systema Orbis Vegetabilis*. Primas lineas novae constructio Periclitatur Pars I. Plantae homonemaeae. Etyptographia Academica, Lundae, vii+374pp.
- Lücking, R. (1991). Neue Arten foliikoler Flechten aus Costa Rica, Zentral Amerika. *Nova Hedwigia* 52(3–4): 267–304.
- Lücking, R. (1992). Foliicolous lichens: A contribution to the knowledge of the lichen flora of Costa Rica, Central America. *Beihefte zur Nova Hedwigia* 104: 1–179.
- Lücking, R. (2008). Foliicolous lichenized fungi. *Flora Neotropica Monograph* 103: 1–187.
- Pinokiyo, A., K.P. Singh & J.S. Singh (2006). Leaf colonizing lichens: their diversity, ecology and future prospects. *Current Science* 90(4): 509–518.
- Santesson, R. (1952). Foliicolous lichens - I. A revision of the taxonomy of the obligately foliicolous lichenized fungi. *Symbolae Botanicae Upsalienses* 12(1): 1–590.
- Singh, K.P. & A. Pinokiyo (2003). Foliicolous lichens and their diversity in north-east India. *Proceedings of the National Academy of Sciences* 73B(II): 117–186.
- Singh, K.P. & A. Pinokiyo (2014). *Foliicolous lichens of India*. Indian Journal of Forestry additional series - IV. Bishen Singh Mahendra Pal Singh Publications, India, v+335pp.
- Singh, K.P., G.P. Sinha & P. Bajarbarua (2004). Endemic lichens of India. *Geophytology* 33(1/2): 1–16.
- Sinha, G.P. & K.P. Singh (1987). Foliicolous lichens from Nagaland, India. *Geophytology* 17(2): 174–185.
- Thor, G., R. Lücking & T. Matsumoto (2000). The foliicolous lichens of Japan. *Symbolae Botanicae Upsalienses* 32: 1–72.





OPEN ACCESS



All articles published in the Journal of Threatened Taxa are registered under Creative Commons Attribution 4.0 International License unless otherwise mentioned. JoTT allows unrestricted use of articles in any medium, reproduction and distribution by providing adequate credit to the authors and the source of publication.

ISSN 0974-7907 (Online); ISSN 0974-7893 (Print)

June 2016 | Vol. 8 | No. 6 | Pages: 8849–8952

Date of Publication: 26 June 2016 (Online & Print)

DOI: 10.11609/jott.2016.8.6.8849-8952

www.threatenedtaxa.org

Articles

Low genetic diversity in *Clarias macrocephalus* Günther, 1864 (Siluriformes: Clariidae) populations in the Philippines and its implications for conservation and management

-- Marc Timothy C. Tan, Joycelyn C. Jumawan & Jonas P. Quilang, Pp. 8849–8859

On the reproductive ecology of *Suaeda maritima*, *S. monoica* and *S. nudiflora* (Chenopodiaceae)

-- A.J. Solomon Raju & Rajendra Kumar, Pp. 8860–8876

Communications

The Nilgiri Tahr (Mammalia: Cetartiodactyla: Bovidae: *Nilgiritragus hylocrius* Ogilby, 1838) in the Agastyamalai range, Western Ghats, India: population status and threats

-- Ponniah Hopeland, Jean-Philippe Puyravaud & Priya Davidar, Pp. 8877–8882

All that glitters is not gold: A projected distribution of the endemic Indian Golden Gecko *Calodactylodes aureus* (Reptilia: Squamata: Gekkonidae) indicates a major range shrinkage due to future climate change

-- Aditya Srinivasulu & Chelmala Srinivasulu, Pp. 8883–8892

Description of a new species of *Umairia* Hayat (Hymenoptera: Aphelinidae) with additional distribution records of aphelinids from India

-- Sagadai Manickavasagam, Chakaravarthy Menakadevi & Mani Ayyamperumal, Pp. 8893–8897

Egg parasitoids from the subfamily Scelioninae (Hymenoptera: Platygasteridae) in irrigated rice ecosystems across varied elevational ranges in southern India

-- M. Shweta & K. Rajmohana, Pp. 8898–8904

Short Communications

Perch height and the hunting success of the Indian Eagle Owl *Bubo bengalensis* (Franklin) (Aves: Strigiformes: Strigidae) targeting anuran prey

-- Eric Ramanujam, Pp. 8905–8908

A checklist of avifauna from Malgaon-Bagayat and Malvan towns of Sindhudurg District, Maharashtra, India

-- Mayura Khot, Pp. 8909–8918

Rediscovery of *Penicillium paradoxum* (Ascomycete: Aspergillaceae) from Maharashtra, India

-- Kunhiraman C. Rajeshkumar, Sayali D. Marathe, Sneha S. Lad, Deepak K. Maurya, Sanjay K. Singh & Santosh V. Swami, Pp. 8919–8922

Notes

A first record of the Lined Wrasse *Anampses lineatus* Randall, 1972 (Perciformes: Labridae) in the Gulf of Mannar, Tamil Nadu, India

-- S. Prakash & T.T. Ajith Kumar, Pp. 8923–8926

A report of False Tibetan Cupid *Tongeia pseudozuthus* Huang, 2001 (Lepidoptera: Lycaenidae) from the Upper Dibang Valley, Arunachal Pradesh - An addition to the Indian butterfly fauna

-- Seena N. Karimbunkara, Rajkamal Goswami & Purnendu Roy, Pp. 8927–8929

Recent sightings of Kaiser-I-Hind *Teinopalpus imperialis* Hope, 1843 (Lepidoptera: Teinopalpani) from Manipur, India

-- Baleshwar Soibam, Pp. 8930–8933

On the occurrence of *Theobaldius(?) tristis* (Blanford, 1869) (Caenogastropoda: Cyclophoridae) in the northern Western Ghats, Maharashtra, India

-- Amrut R. Bhosale, Tejas S. Patil, Rupesh B. Yadav & Dipak V. Muley, Pp. 8934–8937

Are exotics *Amyntas alexandri* (Beddard, 1900) and *Metaphire peguana* (Rosa, 1890) (Clitellata: Oligochaeta: Megascolecidae) a threat to native earthworms in Kerala, India?

-- S. Prasanth Narayanan, S. Sathrumithra, Dinu Kuriakose, G. Christopher, A.P. Thomas & J.M. Julka, Pp. 8938–8942

New phytogeographically noteworthy plant records from Uttarakhand, western Himalaya, India

-- Amit Kumar, Bhupendra Singh Adhikari & Gopal Singh Rawat, Pp. 8943–8947

***Aira* (Poaceae): a new generic record for Nicobar Islands, India**

-- Kumar Vinod Chhotupuri Gosavi, Arun Nivrutti Chandore & Mayur Yashwant Kamble, Pp. 8948–8949

Notes on three new records of foliicolous lichens from Karnataka Western Ghats, India

-- S. Shravan Kumar & Y.L. Krishnamurthy, Pp. 8950–8952