



## Some new and interesting hyphomycetes from Siwalik region of Punjab

Rajeev Sharma<sup>1</sup> and I. B. Prasher<sup>2\*</sup>

<sup>1</sup>Department of Biology, DAV College, Hoshiarpur

<sup>2</sup>Department of Botany, Mycology and Plant Pathology Laboratory,  
Panjab University, Chandigarh 160014, India

\*Corresponding author: chromista@yahoo.co.in

| Received: 01 April 2018 | Accepted: 25 April 2018 |

### ABSTRACT

Three hyphomycetous fungi viz. *Arthrinium saccharicola*, *Bahusandhika indica* and *Dictyoarthrinium sacchari* have been reported from Siwalik region of Punjab.

**Key words:** Taxonomy, Punjab, Hyphomycetes.

### INTRODUCTION

During a survey for anamorphic fungi from Siwalik region of Punjab, three species of hyphomycetous fungi viz. *Arthrinium saccharicola*, *Bahusandhika indica* and *Dictyoarthrinium sacchari* have been reported, which constitutes a new reports for study area.

### MATERIAL AND METHODS

The specimens were collected from different localities of Siwalik region of Punjab in ziplock plastic bags and taken to the laboratory. The specimens were mounted in 4%KOH, Lactophenol and Cotton blue 0.01% in lactophenol (Kirk *et al.* 2008). The specimens were studied microscopically under Matrix stereo trinocular microscope (VL-Z60) and transmission microscope (VRS-2f) for macroscopic and microscopic characters. All the measurements were taken with the help of Pro MED software. The specimens were deposited in the herbarium of Botany Department, Panjab University, Chandigarh, India (PAN).

### RESULTS AND DISCUSSION

*Arthrinium saccharicola* F. Stevens, in Johnston & Stevenson, J. Dept. Agric. Porto Rico 1(4): 223 (1917)

Fig. 1

Colonies pulvinate, dark brown to black in colour on natural substrate. Mycelium immersed. Stroma none. Setae and hyphopodia absent. Conidiophores hyaline, macronematous, mononematous, simple, erect or bent, with transverse septa occurring as a dark bands at intervals about 5.1–7.5  $\mu$ m and 1.5–2.5  $\mu$ m wide. Conidia aseptate, crowded together, sessile, arising laterally from the cells of conidiophore or from its apex, lenticular, pale brown in color when mature, hyaline when young, 4.9–8.1  $\times$  2.5–4.1  $\mu$ m.

**Collection examined:** India, Punjab, Hosiarpur, Village Chack Sadhu, on *Murraya* sp., 9 July 2013, Rajeev Sharma, PAN (35101).

**Remarks:** The genus *Arthrinium* was established by Kunze (Schmidt and Kunze 1817) with *A. caricicola* as type species. The above described species has been earlier reported from Bilaspur district of Himachal Pradesh (Prasher and Verma 2015). So this species is being reported for the first time from Punjab.

*Bahusandhika indica* (Subram.) Subram. J. Indian bot. Soc. 35: 469, 1956

= *Polydesmus indicus* Subram., 1954. J. Indian bot. Soc. 33: 33.

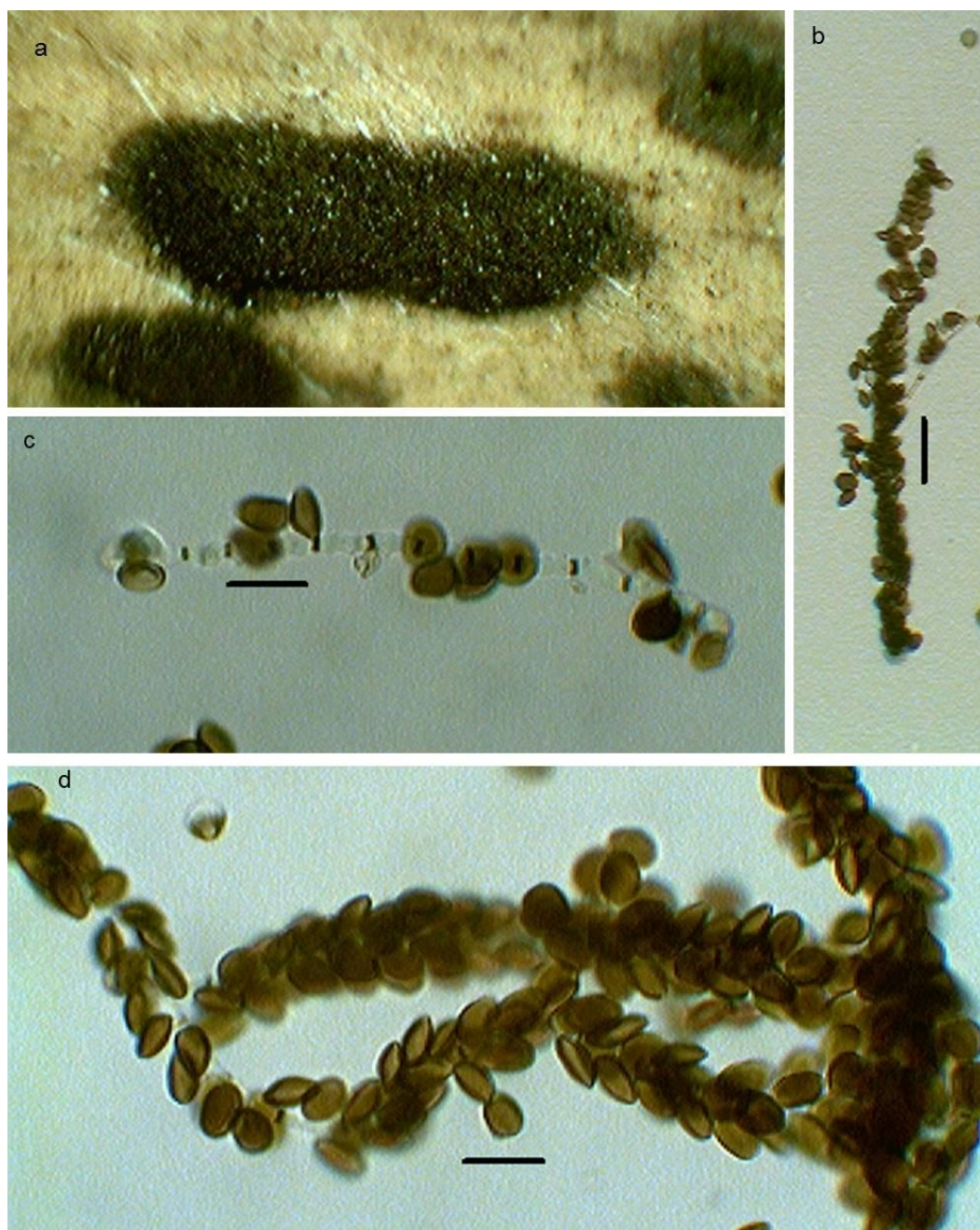
Fig. 2

Colonies black in colour, effuse, powdery. Hyphae brown, branched, septate. Conidiophores septate, short, mostly simple, subhyaline to pale brown,

thin-walled, often torulose, up to 4  $\mu\text{m}$  broad. Conidia dark brown,  $9.8\text{--}18 \times 5\text{--}7 \mu\text{m}$ , 1–3 septate and rarely 4 and 5 septate, thick-walled, faintly verrucose, acrogenous, produced acropetally in unbranched or branched chains from the tip of the conidiophores, connected with each other by an isthmus,  $8.2\text{--}20 \times 5\text{--}8 \mu\text{m}$ ; isthmus small, narrow, pale brown, 1-celled, produced singly from any part of apical or other cells of each conidium, or often up to 4 from the apical cell of conidium, resulting in branched chains of conidia.

**Collection examined:** India, Punjab, Hoshiarpur, Village Mahangrowal, on *Prosopis juliflora*, 1 September 2013, Rajeev Sharma, PAN (35103).

**Remarks:** The above described species has been earlier reported from (Dharamshala) Kangra district of Himachal Pradesh, Jabalpur (M. P.), Poona, Kerala and Panhala (Prasher and Verma 2012; Bilgrami *et al.* 1991 & Jamaluddin *et al.* 2004). So it constitutes a new record for study area.



**Fig. 1. *Arthrinium saccharicola*.** a) Colony on natural substrate. b–d) Conidia attached to conidiophores. Bars b = 20  $\mu\text{m}$ ; c, d = 10  $\mu\text{m}$ .





**Fig. 2.** *Bahusandhika indica*. a, b) Conidiophores. c–e) Chain of conidia with isthmus (Separating cell). Bars a–e = 10  $\mu$ m.

***Dictyoarthrinium sacchari* (J.A. Stev.)**

Damon, Bull. Torrey bot. Club 80: 164 (1953)

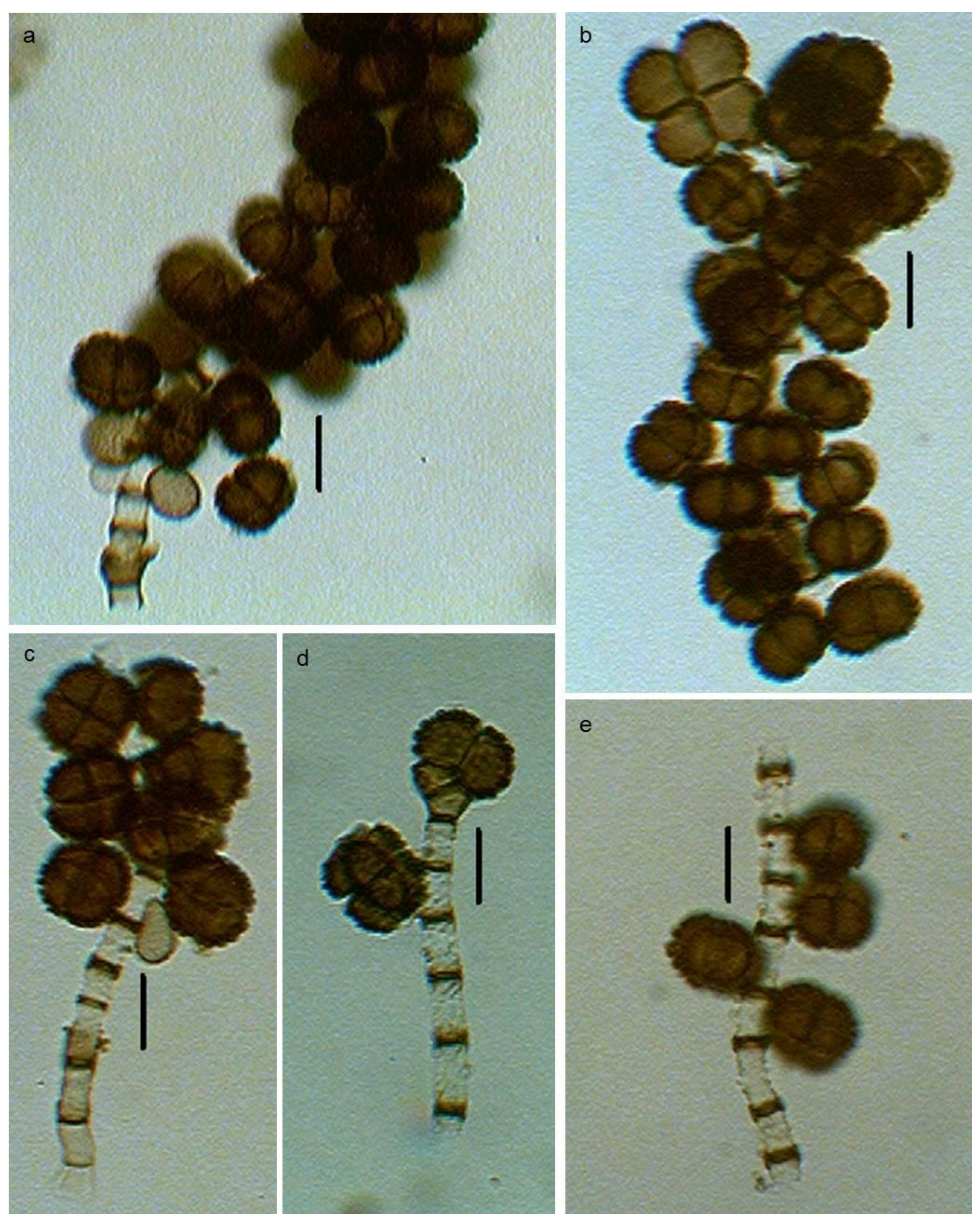
=*Tetracoccusporium sacchari* J.A. Stev., in Johnston & Stevenson, *J. Dept. Agric. Porto Rico* 1: 225 (1917) **Fig. 3**

Colonies compact, black, up to 2 mm. diameter. Mycelium superficial. Stroma none. Setae and hyphopodia absent. Conidiophores macronematous, arising usually singly from conidiophore mother cell, cylindrical, colourless to pale brown except for the thick brown or dark brown transverse septa, smooth, straight or flexuous, narrow, up to 90  $\mu$ m long, 4.1–5.5  $\mu$ m thick. Conidiophore mother cells

3.4–4.5  $\times$  2.1–4.6  $\mu$ m. Conidia square, spherical or subspherical, flattened in one plane, cruciately septate, solitary, dry, septate, 4-celled, mid to dark brown, verruculose, 9.1–15.1  $\mu$ m in face view.

**Collection examined:** India, Punjab, Hoshiarpur, Village Dada, on *Bauhinia* sp., 12 August 2013, Rajeev Sharma, PAN (35102).

**Remarks:** The above described species has been reported on *Dendrocalamus strictus* from (Bhawarna) Kangra district and on *Pinus wallichiana* from Solan district of Himachal Pradesh (Bilgrami *et al.* 1991; Jamaluddin *et al.* 2004 & Prasher and Singh 2015). So, it constitutes a new record for Punjab.



**Fig. 3.** *Dictyoarthrinium sacchari*. a–e) Conidiophore with attached conidia. Bars a–e = 10  $\mu$ m.

#### ACKNOWLEDGEMENTS

The authors are thankful to Chairperson Department of Botany Panjab University Chandigarh and DAV College Hoshiarpur for providing infrastructural and laboratory facilities.

#### REFERENCES

- Bilgrami KS, Jamaluddin S, Rizwi MA. 1991. Fungi of India List and References. Today and tomorrow's Printers & Publishers, New Delhi, India.
- Jamaluddin, Goswami MG, Ojha BM. 2004. Fungi of India 1989-2001. Scientific Publishers, Jodhpur, India.
- Kirk PM, Cannon PF, Minter DW, Stalpers JA. 2008. Dictionary of the Fungi. 10<sup>th</sup> ed. CAB International, Wallingford, UK.
- Prasher IB, Singh G. 2015. New and interesting hyphomycetes from North-Western Himalayas. Kavaka 44: 83-86.
- Prasher IB, Verma RK. 2012. Two Hyphomycetes New To Himalayas. Pl Sc Feed 2(8): 122-124.
- Prasher IB, Verma RK. 2015. Hyphomycetes from Himachal Pradesh, India. J New Biol Rep 4(1): 70-75.
- Schmidt JC, Kunze G. 1817. Mykologische Hefte. Vossische Buchhandlung, Leipzig 1: 1-109.