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NOTE

***Puccinia duthiei* Ellis & Tracy: A New Host Record on *Chryso Pogon velutinus* from India**

Suhas Kundlik Kamble

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Puccinia duthiei Ellis & Tracy: a new host record on *Chrysopogon velutinus* from India

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Dicaeoma duthiei (Ellis & Tracy) Sydow [as '*duthiae*'], *Annls mycol.* 20(3/4):117 (1922)

Uredo duthiei (Ellis & Tracy) Pardo-Card. [as '*duthiae*'], *Revista, Facultad Nacional de Agronomia Medellin* 56(2): 2080 (2003)

Chrysopogon (Trin.) belongs to (Family Poaceae) and is represented by 23 species in India (Sunil et al. 2017). Rust disease is caused by pathogenic fungi of the order Pucciniales, which comprises about 168 genera and approximately 7,000 species of rusts (Mohanan 2010). An attempt has been made to establish new host record of rust fungus, *Puccinia duthiei* (Ellis and Tracy, 1897) on *Chrysopogon velutinus* (Hook.f.) Bor from India.

The rust infected leaves of *C. velutinus* were collected on January 2018, from Surali Ghat in Karad Tehsil of Satara District, (MS) India, situated at altitude of about 710m. It is geographically located at 17.738°N & 74.462°E. The leaves with early, mature and late stages of disease were examined and symptoms were noted (Image 1 a & b).

A number of tiny, elevated, globulous to elongated, elliptic, dark brown to yellowish-brown powdery rust pustules were noticed on lower surface of leaves. Later on, these pustules converted in to blackish color at maturity (Image 1c). With the help of razor, several thin transverse sections passing through pustule were cut

and taken on the glass slide. The sections were stained with cotton blue, mounted in lacto phenol and observed under digital microscope (Olympus CX211ledfs1). Microphotographs of different morphological features were taken using the software Magvision equipped with MIPS-3 MP Camera. With the help of fine needle, scrape mount slides of urediniospores and teliospores were prepared and dimensions of the same were measured by software with an inbuilt tool in the system at different magnifications viz., 10, 40 and 100 X (Image 1. d) & by using mm and μm scale under digital microscope.

A voucher specimen was deposited in Ajrekar Mycological Herbarium (AMH), MACS' Agharkar Research Institute, Pune, India under the accession number (AMH-10144).

***Puccinia duthiei* Ellis & Tracy, 1897**

Dicaeoma duthiei (Ellis & Tracy) Sydow [as '*duthiae*'], *Annls mycol.* 20(3/4):117 (1922)

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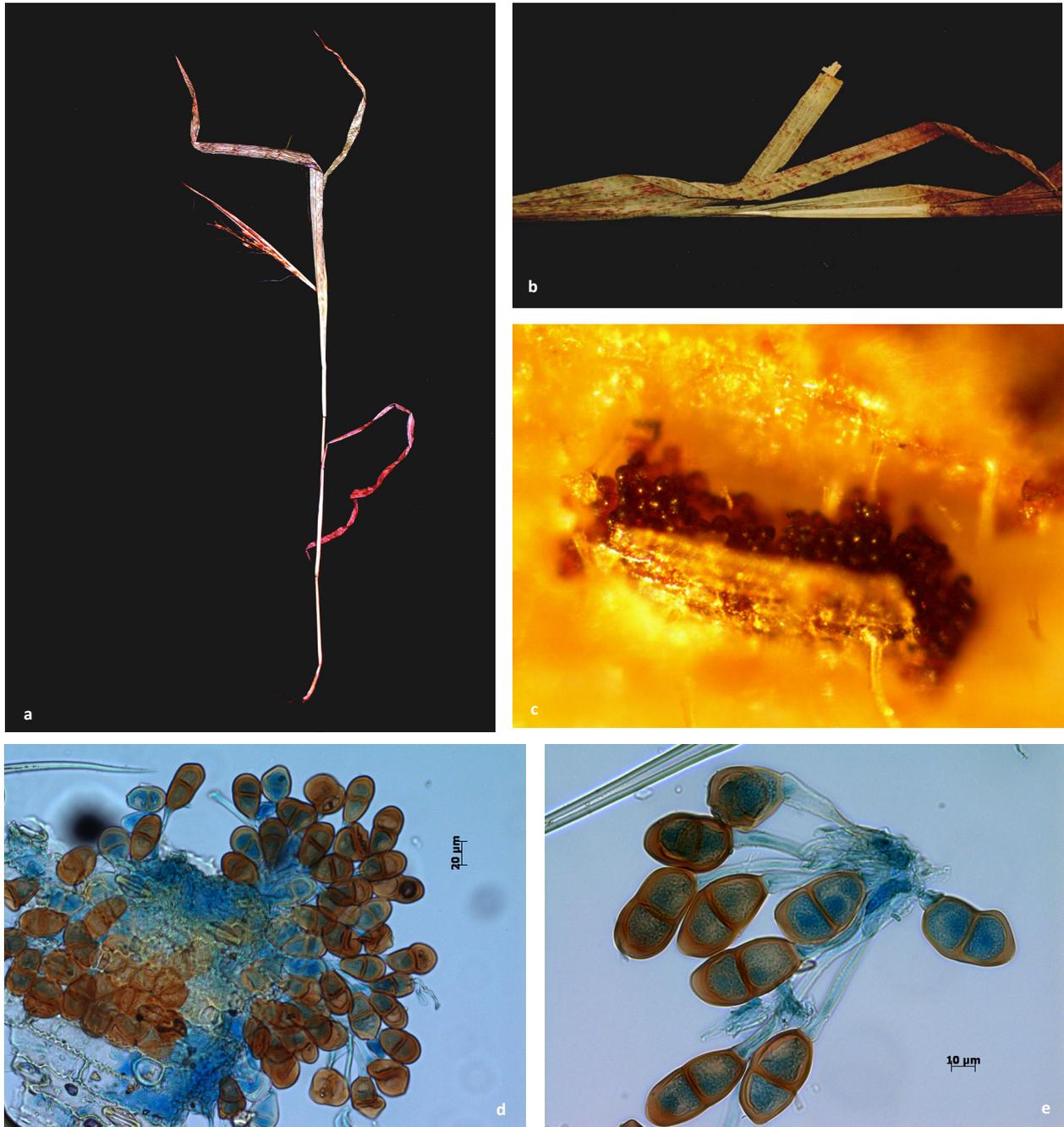


Image 1. *Puccinia duthiei*: a—rust infected plant | b—rust pustules on leaves | c—enlarged view of rust pustule | d—section passing through rust pustule (showing numerous stalked teliospores) | e—stalked septate teliospores in higher magnification. Scale d=20µm, e=10µm.

***Puccinia duthiei* Ellis & Tracy**

Rust pustules (infection spots) are rounded to elliptic, elongated, hypophyllous, dark brown to yellowish-brown, about 0.16–0.67 mm. *Urediniospores*- oval, echinulate, yellowish to brown, darker at apex, unicelled, 24.76–35.32 x 15.96–24.16 µm, wall- dark brown between 1.3–2.35 µm thick, germ pores, 4–6. *Teliospores*- unicelled to bicelled, broadly ellipsoidal,

dark yellow to yellowish-brown, constricted near septa, up to 24.18–48.34 x 24.54– 28.30 µm, thick walled 2.56– 7.94 µm. Teliospore stalk gradually increasing towards length, hyaline to light olivaceous, aseptate, smooth walled, up to 97.71–114 x 5–6.75 µm.

Material examined: On living leaves of *Chrysopogon velutinus* (Hook.f.) Bor (Poaceae), Karad, Satara (MS) India, January 2018, Type Duthie, on *Andropogon*

pertusus (=Bothriochloa *pertusa* (L.) A. Camus), Saharanpur, India (NY; isotype PUR).

Discussion: *P. chrysopogi* (Barclay, 1889) was reported on *Chrysopogon echinulatus* (Steud.) W. Wats. and *C. gryllus* (L.) Trin. from India by Cummins (1971). *P. chrysopogi* was recently listed in fungal flora of Swat District in Pakistan (Usman et al. 2016). *Puccinia duthiei* (Ellis & Tracy, 1897) was reported new to India on *Dichanthium foveolatum* by Pawar et al. (2018). The crucial review of literature indicates that, there are previous evidences about incidence of *P. duthiei* in India on another host. Therefore, it confirms new host record of *P. duthiae* on *Chrysopogon velutinus* from India.

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