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Research Paper

Studies in rust fungi VIII

Anjali Rajendra Patil [1], Bhaurav Tukaram Dangat [2]*, Mansaram Sukdeo Patil [2]

[1] *Department of Botany, Rajaram College, Kolhapur, Maharashtra, India*
[2] *Department of Botany, Shivaji University, Kolhapur- 416 004, Maharashtra, India*
**Corresponding author E-mail: schndangat@gmail.com*

Abstract

Two rust fungi *Puccinia iphigeniae* sp. nov. collected on *Iphigenia pallida* Baker (Liliaceae) and *Uromyces euphorbiae* Cooke and Peck var. *euphorbiicola* (Tranz.) Arthur on the leaves of *Euphorbia thymifolia* L. and *E. chemaesyce* L. have been described in the present article. *Puccinia iphigeniae* sp. nov. is a new species and *Uromyces euphorbiae* Cooke and Peck var. *euphorbiicola* (Tranz.) Arthur is a nomenclatural change.

Keywords: *Rust, Puccinia, Uredinales, Uromyces.*

1. Introduction

Present paper is a continuation of study of the rust fungi from South Western parts of Maharashtra State (M .S. Patil 1975, 1977, 1991; Anjali Patil & M.S. Patil 2004 & 2005; Anjali Patil & C. R. Patil 2009; Anjali Patil, et al.2011).Western Ghats with very good vegetation and favorable climatic conditions harbors many interesting fungi, especially rusts & smuts. During routine collection we found two interesting rust fungi, which were collected and bring to laboratory. After critical examination of fresh collections by routine methods in the laboratory, they were identified using recent literature & deposited in National Fungal Culture Collection of India, ARI, Pune, and Maharashtra State, India.

Puccinia iphigeniae sp. nov., Plate I, Fig. a-e.

Pycnia & aecia not seen; infection foliicolus, pustulate; pustules hypophyllous, scattered, separate but closely disposed, minute brown, sub-epidermal, round innate, 50-60 x 125-150µm; Uredinia separate, cinnamomun brown, paraphysate; urediniospores pedicillate, 15-20 x 20-25 µm, obovoid, ellipsoid or round, rarely thin-walled, 2-3 µm, sparsely echinulate/verrucose or smooth, germ pores 4, bi-zonnate, confined to upper & lower side, faint brown; teliospores 2-celled, pedicillate, golden-brown, 12.5-20 x 30-50 µm, clavate-obovoid, attenuated at the apex, beaked or sometimes flat, smooth walled, constricted at the septum; wall 2.5-3.0 µm, thick laterally, thickened at the apex upto 5 µm; pedicels short, persistent, hyaline, thin walled, short, 5 -11.5 x 35-45 µm.

Habit

On the living leaves of *Iphigenia pallida* Baker (Family-Liliaceae), at Kas, District Satara, Maharashtra State, 7th Oct. 2012, Anjali R. Patil , National Fungal Culture Collection of India (NFCCI), ARI, Pune, Maharashtra State, India AMH no. 9566.

Remarks

About 12 genera of Family Liliaceae are known from Maharashtra state. Genus *Iphigenia* is represented by 4 species (Sharma et.al.1996). A survey of literature shows that there is no report of rust on *Iphigenia* Kunth. In the present collection only uredinia and telia have been observed and it is hemiform. On the basis of morphology of teliospores and urediniospores and a distinct host genus *Iphigenia*, a new species has been proposed to accommodate the present collection as *Puccinia iphigeniae* sp.nov.

Uromyces euphorbiae Cooke and Peck var. *euphorbiicola* (2)
= *U. proeminens* (DC.) Pass. var. *euphorbicola* (Tranz) Arthur, Manual of Rusts USA and Canada, p. 309, 1934.
= *U. ephorbiae* Cke. And Peck. J. Mycol. and Pl. Pathol. 34 (3):830, 2004.

Habit:

On the living leaves of *Euphorbia thymifolia* L. and *E. chemaaesyce* L. (Fam.-Euphorbiaceae) Shivaji University Campus, Kolhapur, Maharashtra State, 21st Aug.1996 & 14th Dec.1999, Anjali R. Patil, HCIO Nos. 43221 and 43220 respectively.

Remarks:

This rust produces systematic infections with obsolete aecia and produce hypertrophy and witch's broom. It shows wide geographical distribution in four continents viz. America, Australia, Africa and Europe on more than 18 species of the host genus *Euphorbia* showing progressive reduction in the spore state from macrocyclic (0, 1, II, III) to only teliospores (III) observed in Africa.

Arthur (1934) recognized four varieties on the host basis. According to Jorstad (1956) the rust is a compound species, embracing slightly different forms, all on the members of *Euphorbia*. The urediniospores show 3 germ pores equatorially arranged and both teliospores and urediniospores are ornamented. Accordingly, Zdenck & Urban (1950) raised new combitions viz. *U. euphorbiae* (Lee and Peck var. *euphorbiicola* (Tranz.) Z. Urban for the Cuban material on *Euphorbia* species. The same variety was collected on the two species of *Euphorbia* during the present work. This rust was previously published by the author as *U. euphorbiae* Lee and Peck, now reduced to a variety.

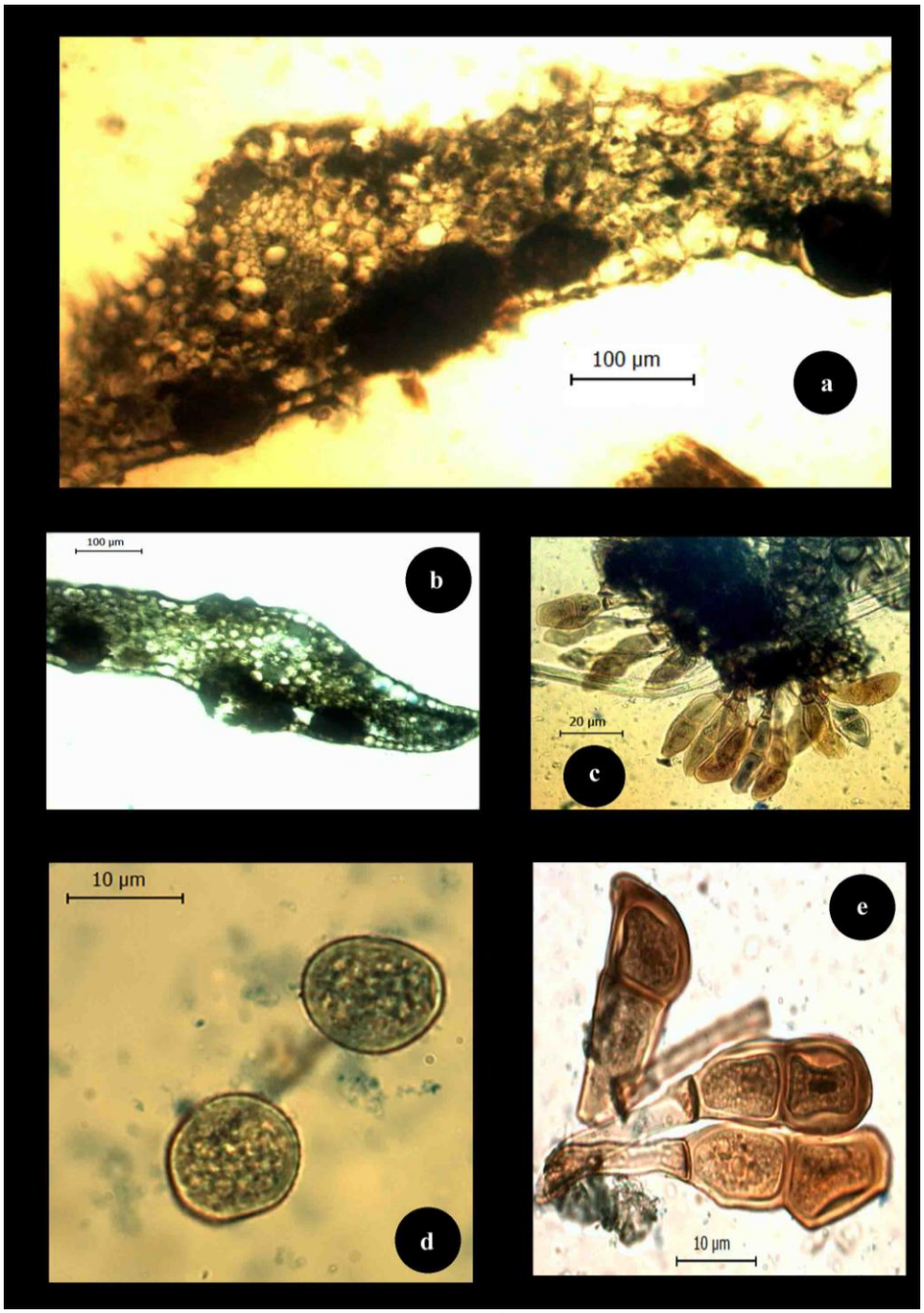

Plate I: *Puccinia iphigeniae* sp. nov. on *Iphigenia pallida* Baker: a and b - T.S. of leaf showing hypophyllous sori; c- Telial Sorus; d- Uredinospores; e – Teleutospores

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