CYTOLOGICAL STUDY OF BASIDIOSPORE OF *PUCCINIA RUELLIAE* (BERK. & BR.) LAGERH.

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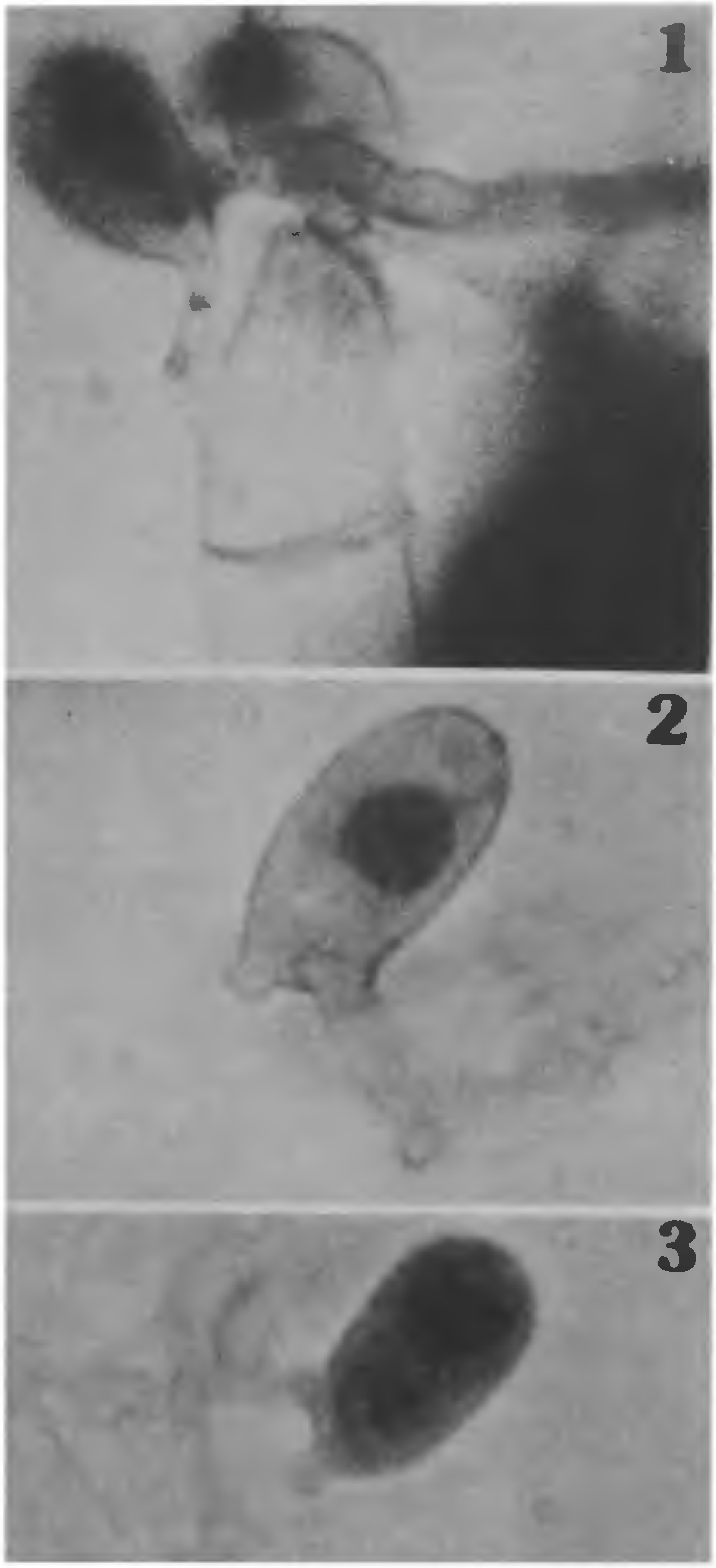
TELIOSPORES of *Puccinia ruelliae* (Berk. and Br.) Lagerh. were reported to produce basidium and basidiospore in tap-water[1]. Development of infection structure by its uredospores[2] and nuclear behaviour during infection structure development[3] have also been studied. This paper presents results of a cytological study of basidiospore of *P. ruelliae*.

Teliospores were scraped from freshly collected leaves of *Ruellia prostrata* Lamk. and allowed to germinate in tap-water on glass slides at 20°C following De and Roy[1]. Teliospores germinated and produced basidiospores within 48 h. The water on the slides was allowed to dry and the teliospores showing development of basidium and basidiospores were fixed in a mixture of equal parts of propionic acid and ethyl alcohol for 24 h. The slides were then washed in 70% alcohol for 5 min, transferred to alcoholic-HCl-carmine stain solution for 24 h at 60°C, rinsed in 70% alcohol and mounted in 45% propionic acid[3].

The teliospores produced 4-celled basidium and each cell developed a basidiospore on a sterigma. Basidiospores were hyaline, thin-walled, smooth, uninucleate, $14.0\text{–}17.5 \times 5.0\text{–}7.0\ \mu m$, with broad apiculus. The nucleus within the basidiospore of *P. ruelliae* was beaded, spherical and large, up to $2.0\ \mu m$ in diameter. No nucleolus was observed. The basidiospores germinated *in situ* producing a single germ tube, and germination took place before the spores were discharged (figure 1) or delayed until after discharge. All the germinating spores observed were uninucleate even after formation of a long germ tube (figures 1–3).

Singh[4] showed formation of binucleate basidiospore of *P. ruelliae* as a result of a mitotic division. Mims[5] recorded uninucleate, binucleate and quadrinucleate basidiospores in *Gymnosporangium juniperi-virginianae* Schw., which inspired me to verify Singh's[4] observation. I observed 1217 basidiospores of *P. ruelliae* but none of them was binucleate or quadrinucleate. Mitosis did not occur in any spore since all the germinating spores observed were uninucleate even after formation of a long germ tube. The present observation thus contradicts that of Singh[4].



Figures 1–3. Germinated uninucleate basidiospores of *Puccinia ruelliae* (Berk. and Br.) Lagerh. 1, before discharge; 2 and 3, after discharge.

From a study based on a large number of rust fungi, Anikster[6] concluded that binucleate basidiospores are the general rule in them. This opinion of Anikster[6] is not applicable to *P. ruellae* because the present study reveals that its basidiospores are not binucleate but uninucleate. However, the nucleus within the basidiospores of *P. ruelliae* was beaded and the beaded appearance was probably due to its heterochromatic nature.

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SOME NEW REPORTS ON KERATINOPHILIC FUNGI

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THE isolation of keratinophilic fungi and related dermatophytes by the hair baiting method has revealed their occurrence in the soil of various habitats of India and other locations[1-5]. Reports on the occurrence of keratinophilic fungi in stress habitats such as house dust are few. The present study provides information on the occurrence of keratinophilic fungi in house dust in India for the first time. The keratinophilic fungi and dermatophytes were isolated by hair baiting method[6,7] and cultures were maintained on Sabouraud's dextrose agar at 30±2°C. Some of the fungi were also deposited at ITCC, New Delhi; IMI, Kew; and UAMH, Alberta.

Of the 91 house dust samples collected from 13 sites of Kanpur, India, 84.3% samples yielded 35 taxa, listed below in decreasing occurrence (%): *Chrysosporium carmichaeli* (100), *Chrysosporium farinicola* (100), *Myceliophthora* anamorph of *Corynascus novoguineensis* (100), *Chrysosporium tropicum* (100), *Arthroderma flavescens* (62.1), *Chrysosporium tuberculatum* (29.2), *Aphanoascus* species (19.5), *Chrysosporium* species (15.4), *Trichophyton flavescens* (14.4), *Chrysosporium keratinophilum* (14.2), *Chrysosporium merdarium* (14.2), *Chrysosporium queenslandicum* (14.2), *Microsporum* species (11.1), *Microsporum fulvum* (11.1), *Microsporum gypseum* (11.1), *Trichophyton vanbreuseghemii* (9.7), *Arthroderma gertleri* (7.3), *Arthroderma teereus* (7.3), *Chrysosporium crassitunicatum* (7.0), *Chrysosporium sulphureum* (4.8), *Chrysosporum indicum* (2.5), *Chrysosporium pannicola* (2.5), *Chrysosporium lucknowense* (2.4), *Myceliophthora* anamorph of *Arthroderma tuberculatum* (2.4), *Myxotrichum* (2.4), *Onygena* (2.4), *Ctenomyces serratus* (2.2), *Chrysosporium evolceanui* (1.0), *Acremonium obclavatum* (1.0).

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EPIDERMAL SURFACE PATTERNS OF ACHENE IN *ELEOCHARIS* R. BR. (CYPERACEAE)

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IN the Cyperaceae, scanning electron microscopic studies of achene surfaces provide criteria useful for the delimitation of taxa at various levels[1,2]. A perusal of the literature reveals that no work has been done on achene micromorphology in the genus *Eleocharis*. The present work was on *E. acutangula*. (Roxb.) Schult, *E. atropurpurea* (Retz.) Presl., *E. congesta* D. Don., *E. dulcis* (Burm. f.) Henschel, *E. palustris* (L.) R. & S. and *E. retroflexa* (Poir) Urb.

The genus *Eleocharis* of the tribe Cypereae (subfamily Cyperioideae, family Cyperaceae) inc-