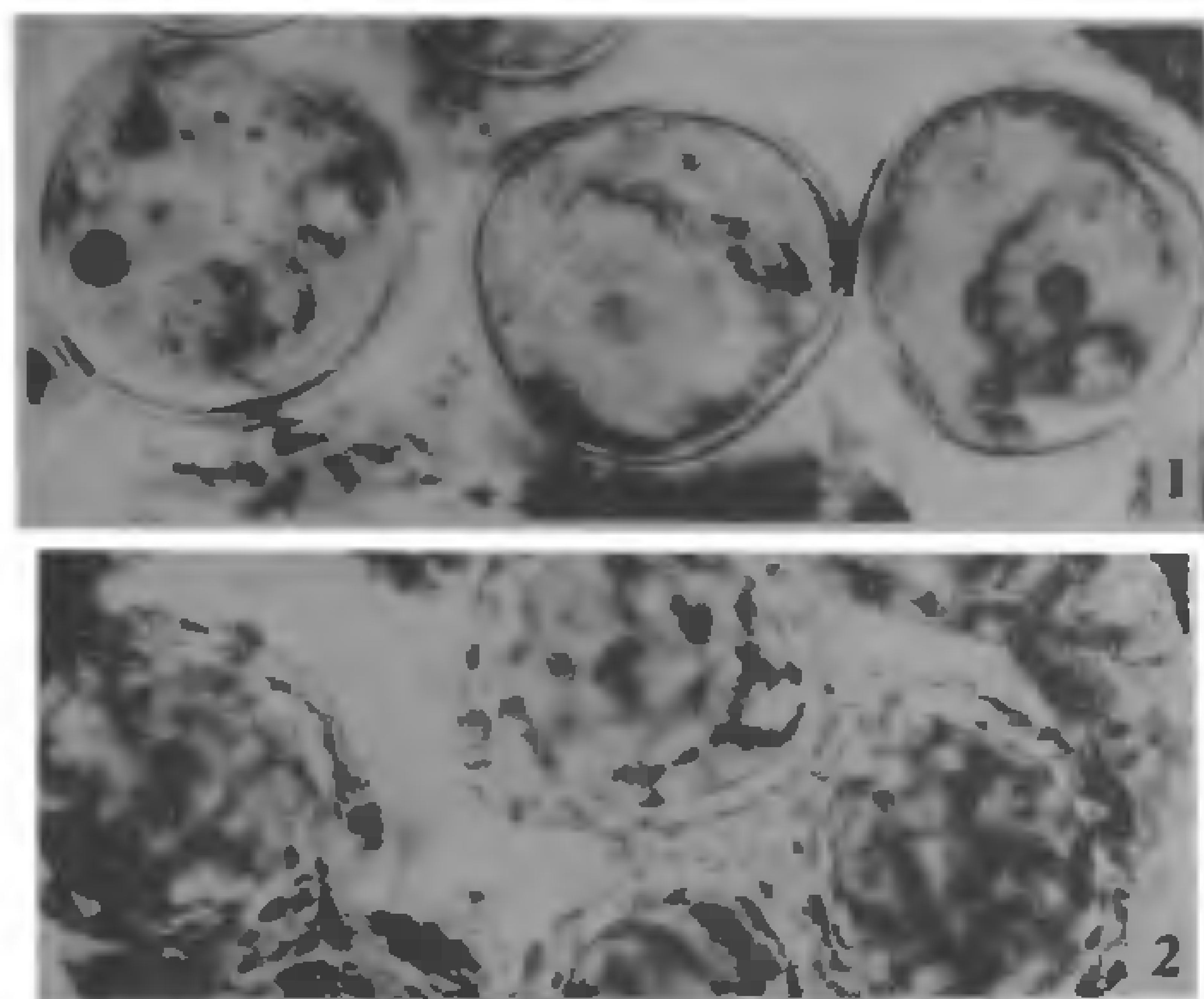

Figures 1 and 2. Nucleus of the microspores stained black by acetic acid-iron alum-haematoxylin. **1.** in *Oryza sativa* L. sp. *indica* (× 850), **2.** in *Vigna umbellata* (× 800).

BOD incubator maintained at 10 + 1°, until use. The anthers from fresh and cold-treated panicles were squashed in a drop of acetic acid-iron alum-haematoxylin stain. This was obtained by dissolving chloral hydrate (40%, wt./vol.) in a stock solution which was prepared by mixing 4 g haematoxylin and 1 g iron alum in 100 ml of 45% acetic acid[11].

Nucleus appeared deep grey to black coloured against colourless cytoplasm. Uninucleate (figure 1) as well as binucleate microspores were distinct. Using the same stain, microspore nucleus of rice bean (*Vigna umbellata*) was also seen clearly despite the presence of ornamentation of the wall (figure 2). However, when acetocarmine was employed microspore nuclei were neither visible in rice nor in rice bean even though various concentrations were used.

Iron alum has been widely used as a mordant in chromosome studies[12]. In the present study it is presumably adsorbed onto the nuclear material on which haematin gets deposited thus staining the nucleus distinctly. Haematin, after ferric mordanting, is known to possess a strong tendency to accumulate around densely stained material.

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AMANITA FLAVOFLOCCOSA—AN ADDITION TO INDIAN AGARIC FLORA

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AMANITA FLAVOFLOCCOSA was originally described from Japan by Nagasawa and Hongo[1]. This is a very common species occurring in and around Madras and has been collected on several occasions by us. A description of the fungus is given below and this is the first report of this species outside Japan. The colour terminology used is that of Kornerup and Wanscher[2].

Amanita flavofloccosa Nagasawa and Hongo in Trans. Mycol. Soc. Japan 25: 367 (1984), (figure 1a–d).

Pileus 3.5–11 cm in diam., conical becoming planoconvex; surface light yellow (4A5), orange (6B6)

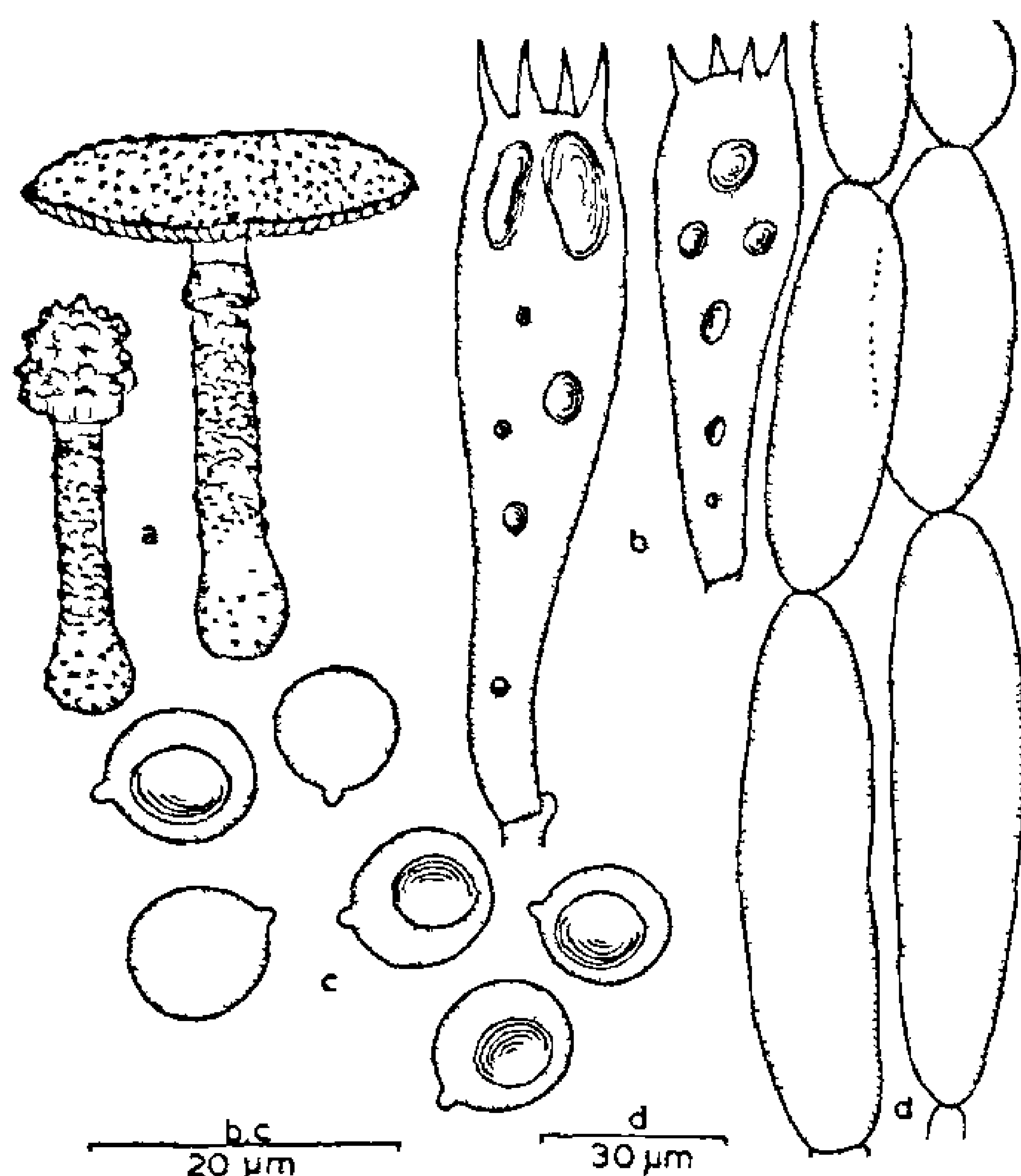

Figure 1a–d. a. Habit (× 1/4); **b.** basidia; **c.** basidiospores; **d.** elements of the pileus scale.

with age, floccose squamulose, dry; margin non-striate, often incised and with detachable floccons. Lamellae free, white to pastel yellow (3A4), broad, crowded, with lamellulae of 3 lengths. Stipe central, 8–20 × 0.7–2 cm, cylindrical with clavate base, solid, concolorous with pileus surface, floccose squamulose beneath the annulus, glabrous above; annulus superior, hanging, almost persistant. Spore print white. Basidiospores globose to subglobose, 8–10 × 8–9 μm, Q = 1–1.1, hyaline, amyloid, thin-walled, with refractive guttules. Basidia clavate, 30–50 × 10–13 μm, often with basal clamps, tetrasporic; sterigmata 3–5 μm long. Cystidia absent. Gill trama bilateral, hyphae 2–8 μm in diameter. Context 0.5–1 cm thick, white, hyphae 3–15 μm in diameter. Pileus surface an epicutis, hyphae 3–10 μm in diameter. Velar squamules consisting of broad elongate, fusoid, detersile elements, 75–200 × 10–27 μm, pigmented.

On ground, gregarious, in Maduravoyal Field Laboratory, University of Madras, Tamil Nadu, 8-8-1983, Herb. MUBL No.2927.

On ground, in group, A.C. College Campus, Tamil Nadu, 13-10-1986, Herb. MUBL No. 2928.

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ELECTROPHORETIC STUDIES ON SEED PROTEIN PROFILES OF DIPLOID AND AUTO-TETRAPLOID GREEN-GRAM (*VIGNA RADIATA* (L.) WILCZEK)

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SEED protein electrophoresis is now used as an additional tool for assessing the species relationships and for supplementing the evidence obtained through comparative morphology, breeding experiments and cytogenetic analysis of interspecific hybrids[1]. In various groups of plants the seed protein profile obtained by electrophoresis is highly stable and species specific. Electrophoretic studies on different species of legume seeds indicate that relative proportion of different storage proteins varied considerably in different species[2]. Hitherto there have been no studies on the seed protein electrophoretic patterns of diploid and tetraploid cultivars of *Vigna radiata* and the present paper describes the same.

The tetraploid used in the present study was obtained from 0.3% colchicine-treated population of green-gram cultivar Pusa 105. Seed proteins were extracted in 2 ml of 0.5% SDS and 1 mM Tris (1:1) and incubated for 30 min at 70°C. This mixture was used as protein sample. Electrophoresis was performed according to the method of Weber and Osborn[3]. The gels were stained with 0.125% Coomassie brilliant blue (R 250) and destained with 7% acetic acid. The migration velocity of an electrophoretic band is expressed as R_f value. The gels were scanned on a gel scanner (Schimadzu-UV 240) at 630 nm.

The diploid and tetraploid showed bands with an R_f of 0.8, 1.3, 1.8, 2.7, 2.9, 3.1, 3.5, 3.6, 4.3, 4.7, 5, 5.3, 5.5, 5.7 and 6.1. In general both the diploid and tetraploid exhibited similar banding pattern (similarity index value = 92.86)[4] except a distinct band