

penicillia was calculated as above in comparison to control.

In all these cases, it was observed that the nature of volatiles produced by penicillia were fungistatic to all the test fungi varying in the degree of their activity. Figs. 1, 2 and 3 show the values of the per cent inhibition of test fungi in terms of spore germination, culture growth and mycelial weight caused by the volatiles produced by penicillia.

In the case of the fungistatic spectra on spore germination, *P. expansum* caused an average 50% inhibition of test fungi. The other fungi, i.e., *P. janthinellum*, *P. canescens*, *P. duclauxi* and *P. granulatum* caused an average 35%, 32.5%, 32% and 29% inhibition of test fungi respectively. In the case of fungistatic spectra on culture growth, *P. janthinellum* caused an average 27.1% inhibition of test fungi. The other fungi, i.e., *P. expansum*, *P. duclauxi*, *P. granulatum* and *P. canescens* caused an average 26.6%, 25.3%, 25.1% and 23.6% inhibition of test fungi respectively. The fungistatic effect on mycelial weight reveals an average 39% inhibition caused by *P. expansum*. The other fungi, i.e., *P. janthinellum*, *P. duclauxi*, *P. canescens* and *P. granulatum* caused an average 35.1%, 27.3%, 27.2% and 11.6% inhibition of test fungi respectively.

The species of *Penicillium* which occupy a ubiquitous and abundant occurrence in the natural environments and which are well known for the effective production of non-volatile antibiotics are also reported through these studies to be producing substantial amounts of volatile inhibitors which can play a significant role in the phenomenon of fungistasis. Many of the non-volatile antibiotics of penicillia including that of the well-known 'wonder drug' penicillin, which are isolated in quantities are now occupying a significant place in medical sciences in combating the ever-increasing diseases caused by microbes. Hence, in the same way, there is a great possibility of exploiting the volatile inhibitors of these organisms for the good of man in many possible ways. The field is now open to isolate and identify the volatile compounds produced by penicillia.

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#### A NEW SPECIES OF *PHOLIOTA* FROM INDIA

DURING the survey of Mushrooms from South West India, a species of *Pholiota* was collected from Mahabaleshwar plateau—a place 120 km from Poona, which on detailed characterization was found to belong to a new specific taxon on account of the reasons discussed below. It is, therefore, proposed to accommodate the present specimen under a new species of *Pholiota*, viz., *mahabaleshwarensis* and is described below along with its Latin diagnosis.

*Pholiota MAHABALESHWARENSIS* sp. nov. Sathe and Deshpande (Figs. 1 and 2)

HABIT : Pholiotoid.

PILEUS : 2.4–3.7 cm diam. in fresh; pale luteus to orange saffron; darker at centre becoming olive-grey at maturity; convex becoming plane with age; margin entire, inflexed when young; fleshy; non-hygrophanous; pileal veil absent; pileal surface non-viscid, glabrous; an epicutis of thin parallel repent hyphae with clamp connections, mixed with incrustated hyphae, incrustations weakly dextrinoid in Melzer; hyphae 5.72–8.58  $\mu$ m broad; pileal hairs absent; pileocystidia absent; context 1–2 mm thick, pale luteous, confluent with stipe.

LAMELLAE : adnexed; unequal with 3 sets of lamellulae; pale luteus to amber; becoming dark amber with maturity; fleshy; 2–3 per mm; 3–4 mm broad; more or less ventricose; thickness 133.2  $\mu$ m at base, 55.5  $\mu$ m at apex; margin entire; non-separable from pileus; hymenophoral trama homiomeric; regular, monomitic with thin walled generative



FIG. 1. Habit Photograph (a) upper view; (b) lower view. (Marker = 2 cm).

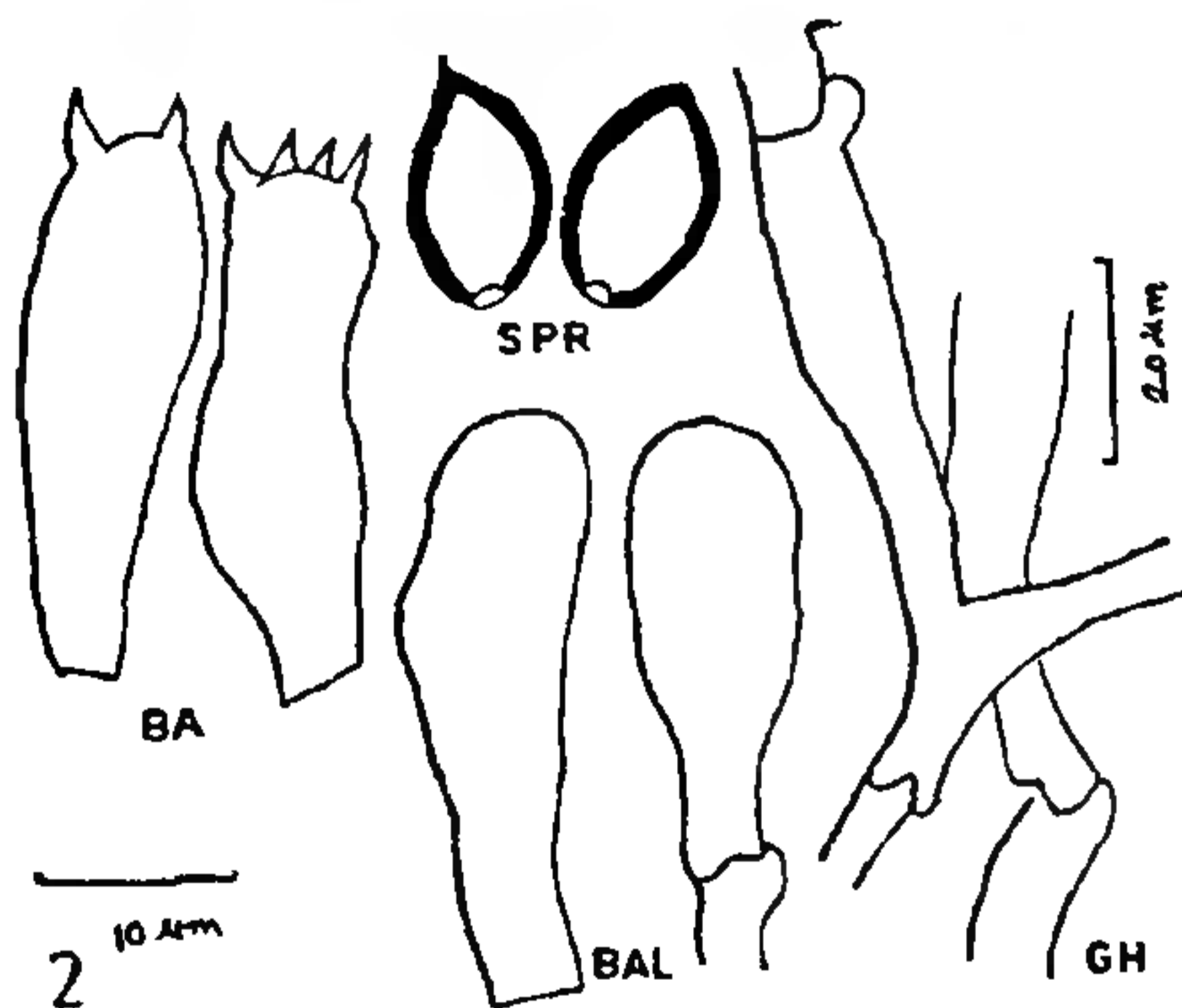


FIG. 2. GH: Generative hyphae; BAL: Basidioles; BA: Basidia; SPR: Spores.

hyphae, hyphae pale luteus coloured with septal clamp connections,  $6.25-8.58 \mu\text{m}$  broad; inamyloid in Melzer; lamellar surface: euhymenial, subhymenium not distinguished, pleurocystidia of any kind absent; lamellar edge: sterile with ch.

**BASIDIA**:  $20-30 \times 8.75-13.75 \mu\text{m}$ ; bi to tetrasporic; cylindric; with yellowish granular contents; old collapsed empty basidia intermixed with numerous basidioles;  $19.75-20 \times 10 \mu\text{m}$ ; basal septa with clamp connections.

**BASIDIOSPORES**:  $(11.25-13) \times 6.8 (-8.25) \mu\text{m}$ ; luteus in  $10\%$  KOH; broadly ellipsoidal ( $Q = 1.77$ ); with broad truncate germ pore

and lateral apicule; wall: smooth, upto  $1.25 \mu\text{m}$  thick; dextrinoid in Melzer; weakly cyanophilic. **STIPE**:  $2.7-4.5 \text{ cm}$  long,  $0.5-1 \text{ cm}$  in diam.; central, cylindrical with slightly bulbous base; pale luteous, darker below; exannulate; stuffed to hollow; surface almost glabrous, few caulocystidia present, clavate shaped, hyaline; stipe hyphae  $5-7.5 \mu\text{m}$  broad, hyaline to pale luteous, clamped; volva absent; base associated with white mycelium.

**LOCALITY**: Mahabaleshwar—120 km away from Pune, S.W. India.

**HOLOTYPE**: M-145. AMH No. 4393.

**LATIN DIAGNOSIS**:

*Pholiota mahabalesharensis*. Sp. nov. Sathe and Deshpande.

Species novum proposita a speciebus ceteris consecutione *Flammula* (Sensu Singer<sup>1</sup>) bene distincta in characteres sequentes (1) Magnioribus sporae, (2) Habitatio tropico, (3) Consorte Pteridio aquilina.

**HOLOTYPE**: M-145. AMH No. 4395.

Habitato solo consorte Pteridio aquilina in Mahabaleshwara in parte reginis Indae austro occidentali.

The present species is accommodated in the subgenus *Flammula* (Fr. ex Fr.) Sing. section *Flammula* sensu Singer (1975), due to the total absence of the pleurocystidia of any kind, the dextrinoid spore reaction in Melzer, ex-annulate stipe and naked pileus. It, however, significantly differs from other species in the section on account of smaller pilea and stipe dimensions, larger spore range and its association with the fern *Pteridium aquilinum*, along with its tropical habitat.

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### IS THERE ANY LETHAL GENE IN THE TIGER OF REWA?

INDIA is the homeland of white tigers. All the white tigers housed in the zoos of Delhi, Calcutta, Bristol and Washington DC are descendants of one white male, Mohan, captured in 1951 from the forests of Rewa, Madhya Pradesh. Mohan was mated to a