phylla the formation of roots and shoot buds can be chemically controlled.

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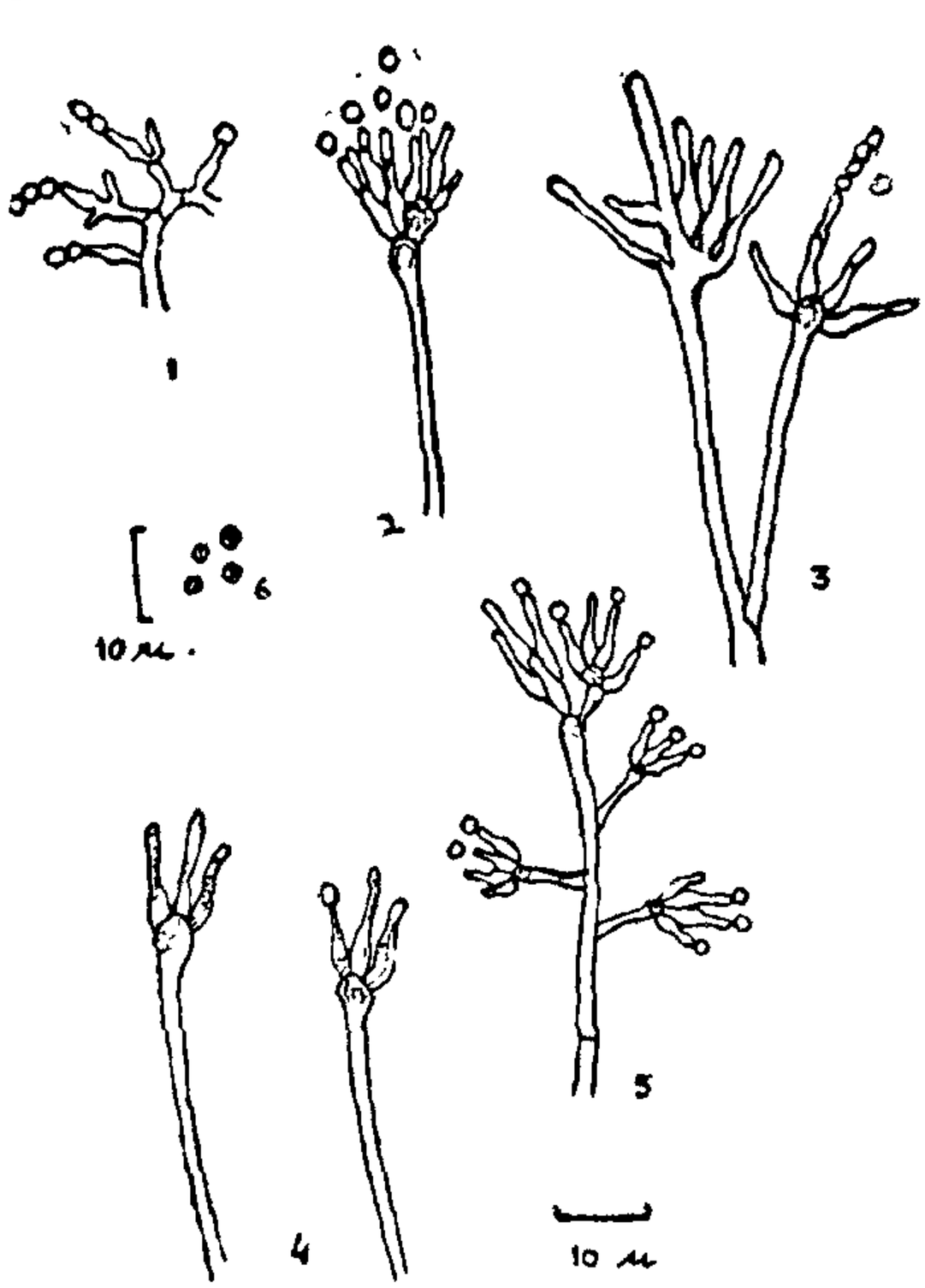
A NEW VARIETY OF *ASPERGILLUS SYDOWII*

A NEW variety of *Aspergillus sydowii* (Bain and Sart). Thom. & Church[1] has been described here as *A. sydowii* var. *agraii* Sharma *et* Sharma var. nov., isolated from leather material. Its characters were studied on Czapeks dox agar, P.D.A. and Nutrient agar media at 28° ± 1° C.



FIGS. 1–6. *A. sydowii* vat. *agraii* Sharma et Sharma var. nov.

Aspergillus sydowii var, *agraii* Sharma *et* Sharma var. nov.: (Plate A)

Coloniae levis, fusce caeruleum cum albus margo, caesius ad fusce ganus, medius canus cum fuscus ruber sudare, diffusilis lucidus fulvus pigmentum, in opposito fulvus, vetus coloniae maius oliva brunneae ad hebes ruber, hyphis sterilibus, septasis, hyalinis, fertilibus, erectis. Capitalis fragmentus similis Penicillium cum fulgere metulae. Conidiophoros longis × 2·0–2·5 µm, hyalinis, levis, vesicula redegere globosis ad sub globosis usque 6·0–14·5 × 8·7 µm; sterigmatibus primariis 2·8–3·5 × 2·9 µm, secundaria 3·8–11·4 × 3·0 µm, conidiis globosis, levis, hyalinis 3·0–5·8 µm diam.

In deteriorem Indus aluta litamus corium in loco Agra, U.P., India, die September 1976 *a*, K. D. Sharma *et* O. P. Sharma, typus positus in C.M.I., Kew, England, IMI 209134.

This new variety is morphologically distinct from typical species of *A. sydowii* in having very blue appearance and various shade of blue and greyness, diffusible bright yellow pigment in medium, presence of deep red exudate, heads are fragmentary and like Penicillium, metulae directly borne on mycelium. There is marked reduction of vesicle to the extent that it has completely disappeared in large number of heads. Sterigmata directly borne on the round tip of conidiophores. It also differs in measurements.

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UTILIZATION OF NITROGENOUS COMPOUNDS BY *POLYPORUS HIRSUTUS*

FUNGI possess a varied type of nutrition, unlike the autotrophs. Among them the behaviour of wood-rot fungi, which are capable of breaking down carbohydrates and lignin, is singularly different from that of the other fungi. Since there appears to be no information regarding the nutritional requirements of wood-

rot fungi from India, an attempt has been made in the present investigation to assess the utilization of nitrogen by *Polyporus hirsutus* Fr. Culture No. 715, a white-rot fungus.

Table I

Growth of Polyporus hirsutus *on different nitrogen sources*

Nigrogen source	Dry weight of mycelium* in mg.	Final pH
Peptone	282	5·3
Casein hydrolysate	138	5·5
Arginine	138	4·8
Ammonium oxalate	89	5·3
Ammonium carbonate	89	3·5
B-alanine	79	5·2
Ammonium hydrogen carbonate	71	5·2
Magnesium nitrate	71	6·0
Urea	67	6·2
Aspergine	64	4·3
Potassium nitrate	62	6·0
Sodium nitrate	55	4·9
Without nitrogen	41	6·0

*** Average of 3 replicates.**

The fungus was cultured on Czapek–Dox medium containing 2% sucrose to which nitrogenous compounds (Table I) were added in amounts yielding 0·33% nitrogen, except peptone and casein hydrolysate which were added @ 2 gm per litre. The pH of the medium was adjusted to 5·0 and 50 ml of the medium, dispensed in 250 ml Erlenmeyer flasks, was sterilized at 15 lb pressure for 20 minutes and these were seeded with 2 mm discs of one week old pure culture of *P. hirsutus*. After 15 days in the dark at 30° C, the mycelial mat was collected from each of these and the dry weight of each determined. Three replicates (6 nos.) were maintained for each treatment. The pH of the culture filtrates was also recorded. The data are presented in Table I. The analysis of variance (F. test)[1] was employed to determine any significant difference in the utilization of different nitrogenous compounds (Table II).

Although the growth of the fungus was maximum with peptone as the source of organic nitrogen, casein hydrolysate and arginine also supported good growth. Casein hydrolysate was reported as good nitrogen source for *Polyporus versicolor*[2]. Growth was moderate with alanine and was poor with those of aspergine and urea. The growth of two-thirds of 281 species of wood-destroying fungi was shown to be poor on aspergine in the absence of vitamins in the medium[3]. It is reported that aspergine serves as a good source of nitrogen for *P. versicolor* when the medium was supplemented with thiamine[2].

Table II

Analysis of variance showing the growth of Polyporus hirsutus *in different nitrogenous compounds*

Source of variation	Sum of Sq.	d.f.	Mean Sq.
Substrate	1,41,000	12	1,175
Residual	1,442	26	25
Total	1,42,442	38	—

F = 47
Table value at 5% = 2·15
Table value at 1% = 2·96

Among inorganic nitrogen sources, ammonium nitrogen was better utilised than nitrate nitrogen as also reported in *P. betulinus*, *Fomes pini ola* and *Polystictus versicolor*[4]. Growth was moderate on ammonium oxalate, ammonium carbonate and ammonium hydrogen carbonate. Nitrates of sodium, potassium and magnesium supported poor growth. Sodium nitrate as poor source of nitrogen was also reported by Levi *et al.*[2].

From the F. test it is evident that even at 1% level there is significant difference in the utilization of nitrogen.

The results indicate that the growth response of the *fungus is superior in the case of the organic compounds* and ammonium nitrogen.

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