in distilled water for two hours, immersed in boiling water for thirty minutes and then dried in an oven at 100° C. It was observed that this treatment results in cessation of browning, suggesting thereby that certain enzymatic reactions are responsible for this characteristic.

Tyrosinase activity and subsequent polymerisation of quinones to melanin is known to be responsible for the browning of various biological materials.[4,5] To study the role of tyrosinase, doughs of Mexican varieties were prepared in 0·1% sodium diethyl dithiocarbamate which acts as a chelating agent for copper. Observations after 6–8 hours showed that doughs retain their original colour. This suggests the possible involvement of tyrosinase activity in darkening reaction.

Addition of various substrates, *viz.*, L-tyrosine, phenol, catechol and DL-dihydroxy phenylalanine results in darkening of the doughs of Mexican varieties within 30 minutes while the dough of Indian varieties remained creamish in colour.

For assay of tyrosinase activity, colorimetric method of Horowitz *et al.*[6] was followed using DL-dihydroxy phenylalanine as substrate. Increase in O.D. per mg. protein is given in Table I. Tyrosinase activity is high in the Mexican varieties as compared to that of Indian wheats studied. Subsequently, tyrosinase activity was determined in the various milling fractions so as to locate the enzyme. The study shows that major amount of the enzyme activity is detectable in the bran. The other two fractions, *viz.*, shorts and white flour show little or no activity (Table I).

TABLE I

Tyrosinase activity (Change in O.D./mg. protein) in whole meal and various milling fractions of Mexican and Indian wheat varieties. DL-DOPA was used as a substrate[6]

Varieties	Tyrosinase activity			
	Whole meal	Bran	Shorts	White flour
Lerma rojo ..	0·10	0·35	0·02	0·00
Sonalika ..	0·10	0·40	0·01	0·02
Sonora'64 ..	0·12	0·36	0·01	0·01
Pb. C 273 ..	0·02	0·12	0·01	0·02
Pb. C 281 ..	0·03	0·13	0·00	0·02
Pb. C 591 ..	0·02	0·16	0·01	0·00

From the above findings one can conclude that tyrosinase activity and subsequent formation of melanin are responsible for the darkening of the whole wheat meal dough of Mexican varieties.

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A NEW SPECIES OF *CLADOSPORIUM* FROM THE SAND DUNES OF WESTERN RAJASTHAN, INDIA

THE rhizosphere microflora of ten different plants which were found all the year round on the sand dunes of Masuria, Jodhpur, was studied. The rhizosphere fungal flora associated with the plants was determined at regular intervals of one month. The fungi were isolated by the soil dilution and plate count method.[11] During these studies colonies of *Cladosporium* were isolated from the rhizosphere region of *Acacia nilotica* (Linn.) Del. sub. sps. *indica* (Benth.) Brenan. The conidial morphology of the isolate was compared with all the known species of *Cladosporium*. The culture was sent to C.M.I., Kew, where it was examined by Dr. Ellis, but it could not be assigned to any specific position. Dr. Ellis wrote "This *Cladosporium* is quite new to our herbarium and may well be an undescribed species".

The present isolate shows a pronounced difference from all other species of *Cladosporium* in its conidial morphology. The conidia of the present isolate are usually three- to four-celled, rarely they are one-to two-celled. The size and shape of the conidia are also quite different from all the known species of the genus (Saccardo,[9] Dale,[6] Waksman,[12] Abbot,[1] Bisby *et al.*,[3] Chaudhuri,[5] Galloway,[8] Subramanian[10] and Arya and Panwar[2]). The isolate is, therefore, being designated as *Cladosporium acaciæ* sp. nov.

Cladosporium acaciæ SP. NOV.

Colonies black-green, growth fluffy; hyphæ hyaline or light-brown, profusely branched, septate, 3 to 13 μ wide, chlamydospores frequently formed; conidiophores erect, light-brown, septate, 16 to 47 μ long; conidia 1–4-celled, pale-yellow to light-brown, ovoid to elliptical with constrictions at the point of septation, borne terminally or laterally in chains; conidia one-celled $11 \times 4\,\mu$; conidia 2-celled $15 \times 5\,\mu$; conidia 3-celled $17 \times 6\,\mu$; conidia 4-celled $23 \times 7\,\mu$ (Figs. 1 and 2).

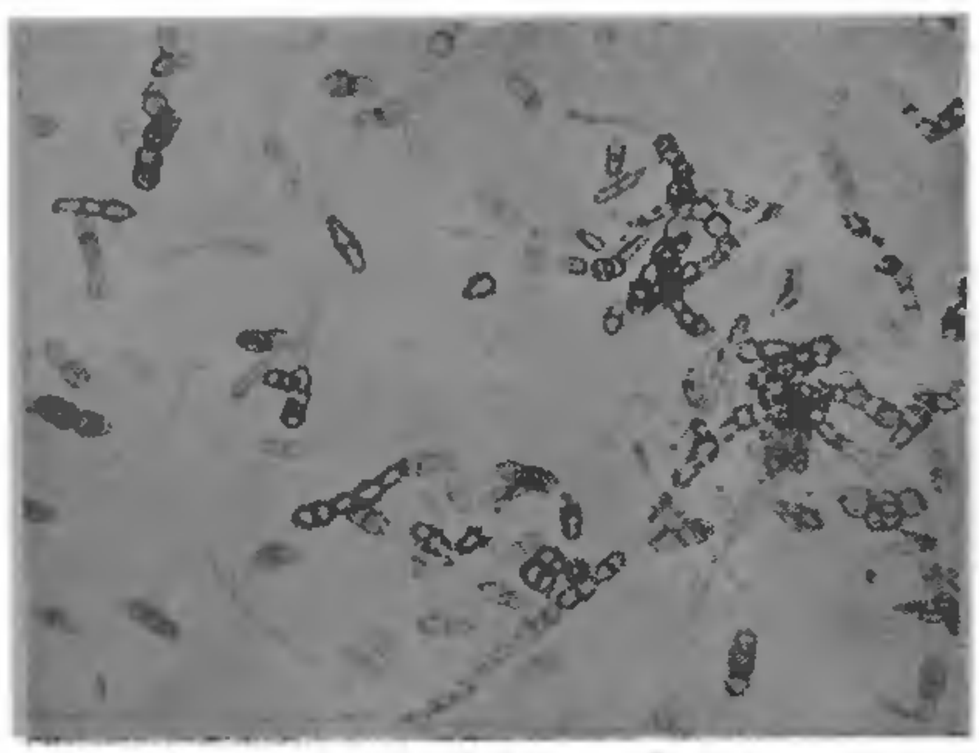

FIG. 1. Photomicrograph showing conidia, × 300.

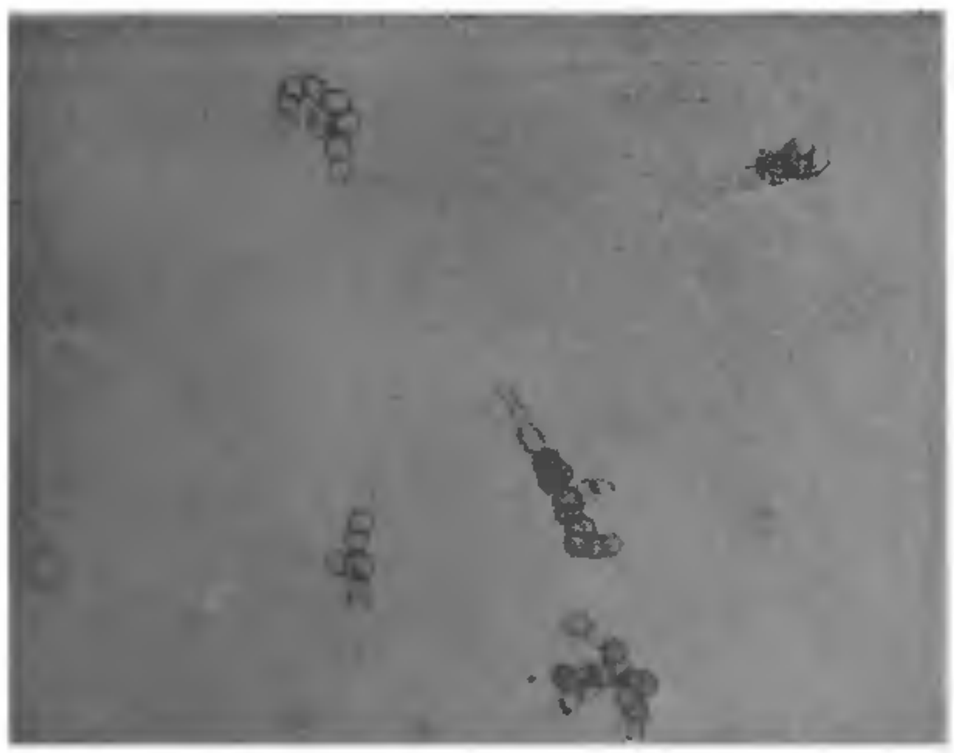

FIG. 2. Photomicrograph showing chlamydospores, × 300.

Culture deposited in C.M.I., Kew. Culture No. IMI 104172. Collected from rhizosphere region of *Acacia nilotica* (Linn.) Del. sub. sps. *indica* (Benth.) Brenan. Coll.: K.S., J.M.L. No. 16.

Cladosporium acaciæ SP. NOV.

Coloniæ atro-virides, floccosæ, hyphæ hyalinæ vel pallide brunneæ frequenter ramosæ septatæ, 3–13 μ crassæ, chlamydosporas crebras efformantes; conidiophoræ erectæ, pallide brunneæ, septatæ, 16–47 μ longæ; conidia 1–4-cellularia, pallide lutea vel pallide brunnea, ovoidea vel elliptica, ad septas constricta, ex apice vel latere conidiopholurum orta, unicellularia $11 \times 4\,\mu$, bicellularia $15 \times 5\,\mu$, tricellularia $17 \times 6\,\mu$, quadricellularia $23 \times 7\,\mu$.

Cultura apud Institutum Mycologicum Respublicæ kewensem (C.M.I.) deposita sub numero IMI 104172.

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CHROMOSOME NUMBER IN OAK FEEDING TASAR SILKWORM, *ANTHERAEA ROYLEI* MOORE

THE chromosome numbers of the sericigenous members of the genus *Antheræa* have mostly been elucidated leaving behind a few indigenous species. *Antheræa roylei* Mr., the Indian Oak feeding tasar species, is one of them which produces brilliant silvery silk fibre of finer denier. A recent work has revealed that this species when crossed with its Chinese counterpart (*A. pernyi* G.M.) produced fertile hybrid (Jolly *et al.*, 1969). The chromosome number of *A. pernyi* as worked out by *Kawaguchi (1933–34 *a*) is $n = 49$. A study was, therefore, required to understand the chromosome number of *A. roylei*.

The stock of *Antheræa roylei* is being maintained at Ramsu (Jammu) at an altitude of about 5,000 feet. Testes of male larvæ, 8th day after the fourth moult, were fixed in 1 : 3