

## A new Species of *Blakeslea* from India.

M. Das Mehrotra \*).

With Plate X—XI.

Previously, two genera, viz., *Choanephora* and *Blakeslea* were recognized in the family *Choanephoraceae*. The genus *Blakeslea* was later suggested to be reduced to *Choanephora* by Sinha (1940). He noticed monosporous sporangiola in *Blakeslea trispora*. From this, he concluded that the monosporous sporangiola of *B. trispora*, were identical with the conidia of *Chonanephora*. He suggested that the principal difference between *Blakeslea* and *Choanephora* was not of generic significance and, therefore, *Blakeslea* must be considered as a synonym of *Choanephora*. Poitras (1955), studied various species of the genus *Choanephora* and conclusively confirmed Sinha's contention. Another species of *Blakeslea*, viz., *B. circinans* was described by Naganishi and Kawakami from Japan (1955). This was later changed to *Choanephora circinans* by Hesselstine and Benjamin (1957). I personally feel that from the practical standpoint it is difficult to reduce the genus *Blakeslea* to *Choanephora*, because in none of the species of *Choanephora* few-spored sporangiola are developed on the sporangioliferous heads as in *Blakeslea trispora*. This distinguishable character should be taken into account. The validity of this genus is further proved by the present isolate which also develops few-spored sporangiola like *B. trispora*. Besides, it develops reduced sporangia which lack columellae in most of the cases. These reduced sporangia are produced on the circinate sporangio-phores. The present isolate is apparently a *Blakeslea*, but differs from *B. trispora* in the following characters.

1. The presence of septate sporangiophores; septa are oblique.
2. The presence of sterile sporangiophores. In some cases even irregular hyphae arise from some of the vesicles and form clusters on the sporangiophores.
3. Profuse sporulation.
4. Mostly, sporangiola on sporangioliferous heads have more than three spores. Generally, the number varies from 5—10.
5. Sporangiola are produced on long stalks unlike short sterigmata of *B. trispora*.
6. The presence of characteristic irregular sporangiospores.

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\*) c/o Bharat Singh Kapoor, 907, Kalyani Devi, Allahabad, U. P. India.

7. The presence of appendages on the entire surface of a number of sporangiospores.

The family *Choanephoraceae* is characterized by the presence of non-septate sporangiophores. The present isolate develops typical septate sporangiophores and thus differs from all the recognized species of the genus *Choanephora*. The second character of this isolate is to develop sterile sporangiophores. Some of these sterile sporangiophores at their tips, are converted into a mass of hyphae arising from the vesicles. In some other cases, both sterile hyphae and sporangia are developed on the same head. In some of the fertile sporangiophores, few hyphae with chlamydospores arise from the vesicles. The third character of the isolate is to develop sporangia which normally contain 5–10 spores. Besides, these sporangia are produced on long stalks. The fourth character of the isolate is to produce characteristic irregular sporangiospores. Such irregular spores are not described in *B. trispora*. The fifth character is the presence of appendages on the entire surface of a number of sporangiospores. In this character the present isolate resembles *C. heterospora* (Mehrotra and Mehrotra, 1961), in which the presence of innumerable appendages has been described in the larger sporangiospores.

Taking all the above facts into consideration, it appears that this isolate is one hitherto unknown. It is described as a new species of *Blakeslea* and named after Prof. R. N. Tandon.

The following media were employed in the present investigation.

1. Potato Dextrose Agar Medium: Potato, 200 gm; dextrose, 20 gm; agar agar, 20 gm; dist. water, 1000 ml.

2. Synthetic Mucor agar Medium: Dextrose, 40 gm; asparagine, 2 gm;  $MgSO_4 \cdot 7H_2O$ , 0.25 gm;  $KH_2PO_4$ , 0.5 gm; thiamine hydrochloride, 0.5 mg; agar agar, 20 gm; dist. water, 1000 ml.

3. Blakeslee's Medium: Dry malt extract, 20 gm; dextrose, 20 gm; peptone, 1 gm; agar agar, 20 gm; dist. water, 1000 ml.

***Blakeslea tandonii***. Mehrotra, sp. nov.

Caespites primum hyalini, postea flavidi, creberrime crescentes; mycelium aereum profuse evolutum; hyphae septatae, irregulariter ramosae; sporangiophora ex hyphis superficialibus orta, nec ramosa, septata, hyalina, in capitulis sporangioliferis sporangiolis paucisporis praedita; sporangia globosa vel ovoidea, longe pedicellata; 5–10 sporis ornata, primum hyalina, postea brunneo-nigrescentia, usque ad 40  $\mu$  diam. metientia; pariete hyalino, levi, postea irregulariter dissumpente; sporangiosporae irregulares, 5–30  $\times$  5–8.5  $\mu$ , lenissime striolatae, pallidae, postice saepe appendicula brevi, hyalina, filiformi auctae, interdum etiam utrinque vel in tota superficie ciliis numerosis praeditae; sporangia reducta usque ad 50  $\mu$  diam. metientia, brunneo-nigrescentia, columellis globosis piriformibusve praedita vel etiam sine columellis; zygosporae ignotae.

Colony colourless when young, becoming yellowish on aging, growing rapidly; aerial mycelium profusely developed; hyphae septate, branching irregularly; sporangiophores bearing few-spored sporangia on the sporangioliferous heads, arising from surface hyphae, unbranched, septate, hyaline; sporangia spherical to oval, normally with 5–10 spores, borne on long stalks, at first colourless later brownish black, reaching a diameter of 40  $\mu$ , wall colourless smooth, breaking into pieces; sporangiospores irregular, 5.0–30  $\times$  5.0–18.5  $\mu$ , finely striate, light coloured, few with a hyaline structure at one end, appendaged mostly at either end and several provided with innumerable appendages at several points on the surface; sporangiophores of the reduced sporangia arising from surface hyphae, hyaline, unbranched, septate; reduced sporangia reaching a diameter of 50  $\mu$ , brownish black, columellate or non-columellate; columellae globose to pyriform; zygospores not seen.

Isolated from a soil sample obtained from Dr. S. S. Khanna who collected it from a garden, January, 1963, at Nainital. Type: culture and slides are with the author. They will be deposited at NURD, Peoria, Illinois, U. S. A.

#### Acknowledgements.

The author is indebted to Dr. S. S. Khanna, assistant professor in Government Degree College, Nainital for obtaining the soil sample and to Dr. F. Petrak for the Latin diagnosis. He is also grateful to Dr. C. W. Hesseltine whose valuable work on the family *Choanephoraceae* inspired him to work on these fungi.

#### Literature cited.

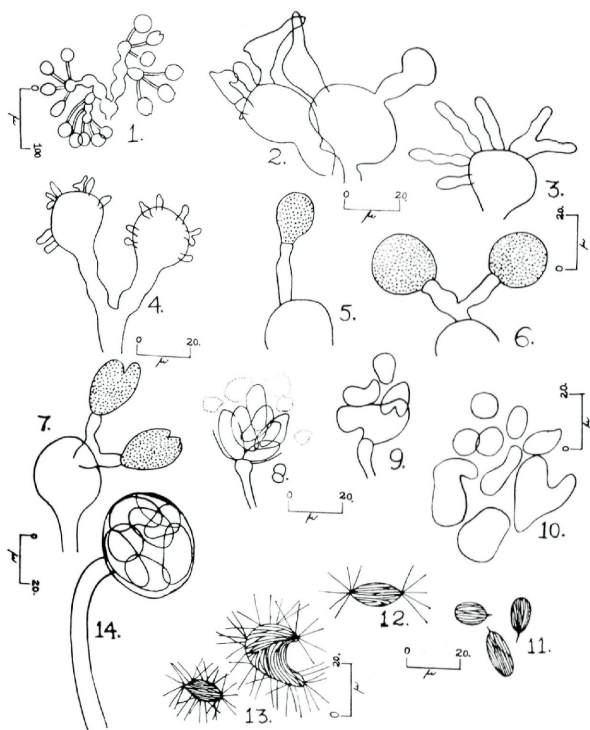
- Hesseltine, C. W., and C. R. Benjamin. 1957. Notes on the *Choanephoraceae*. Mycologia. XLIX: 723–733.  
 Mehrotra, B. S., and M. D. Mehrotra. 1961. A new species of *Choanephora* from India. Mycologia. LIII: 464–470.  
 Naganishi, H., and N. Kawakami. 1955. On *Blakeslea* Thaxter in Japan. (II) *Bl. circinans* sp. nov. Bull. Fac. Eng. Hiroshima Univ., 4: 183–187.  
 Poitras, A. W. 1955. Observations on asexual reproductive structures of the *Choanephoraceae*. Mycologia. 47: 702–713.  
 Sinha, A. 1940. A wet rot of leaves of *Colocasia antiquorum* due to secondary infection by *Choanephora cucurbitarum* Thaxter and *Choanephora trispora* Thaxter sp. (*Blakeslea trispora* Thaxter). Proc. Indian Acad. Sci. B. 11: 167–176.

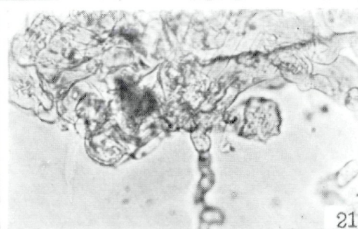
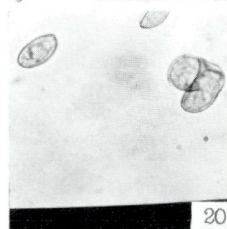
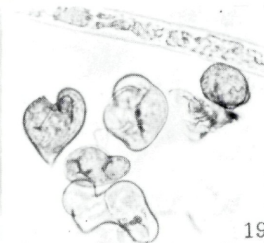
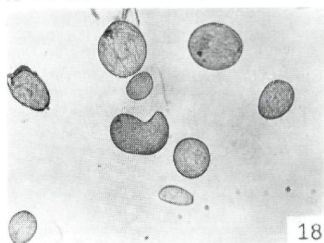
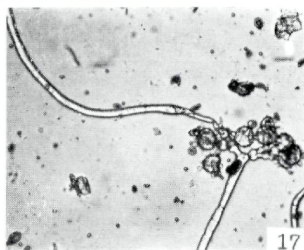
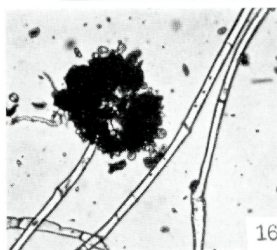
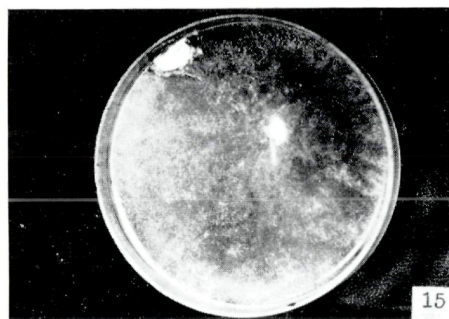
#### Explanation of plates X–XI.

Plate X. 1–14. *Blakeslea tandonii*. 1. A part of the sporangioliferous head showing attachment of sporangia. 2. A part of the sporangioliferous head showing irregular growths on the vesicles. 3. A vesicle showing elongated beaded structures. 4. Vesicles showing sterigmata like outgrowths. 5. A young sporangium with its long stalk. 6. A vesicle showing two young sporangia borne on long stalks. 7. Two matured sporangia borne on long stalks arising

from the vesicle. 8. A breaking sporangiolium with the spores and the pieces of its wall. 9. A part of the wall of the sporangiolium and three sporangiospores. 10. A number of sporangiospores with different shape and size. 11. Three sporangiospores with a hyaline structure at one end of each. 12. A sporangiospore showing striation and appendages at either end. 13. Two sporangiospores showing appendages at several points on the surface. A reduced sporangium on the circinate sporangiophore. Note the absence of columella.

Plate XI. 15—21. *Blakeslea tandonii*. 15. Photograph showing the growth on SMA. 16. Photomicrograph showing septate sporangiophores.  $\times 65$ . 17. Photomicrograph showing a hypha arising from one of the vesicles,  $\times 65$ . 18. Some of the sporangiospores showing appendages at several points on the surface,  $\times 550$ . 19—20. Photomicrographs showing irregular sporangiospores. 21. Photomicrograph showing a sterile sporangiophore with cluster of hyphae at its tip,  $\times 200$ .







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