

CONTRIBUTIONS TO THE LICHEN FLORA OF WESTERN INDIA-III

P. G. PATWARDHAN AND PRAKASH BADHE

Maharashtra Association for the Cultivation of Science, Poona

ABSTRACT

This paper is third* in the series and gives an account of four species each of the family Graphidaceae and Lecideaceae.

Four species of Graphidaceae viz. 1. *Graphina oblecta*, 2. *Graphis scripta*, 3. *Glyphis cicatricosa*, 4. *Phaeographina caesiopruinosa* and four species of Lecideaceae viz. 1. *Lecidea granifera*, 2. *Bacidia fuscobubella*, 3. *Bombyliospora domingensis* and 4. *Lopadium leucoxanthoides* are described.

DESCRIPTION OF SPECIES

Graphina oblecta (Nyl.) Müll.-Arg. (Fig. 1)

Corticolous: Thallus smooth, continuous.

Apothecia in densely intricated clusters, concolorous with the thallus, immersed, slender, curved, usually branched and always covered upto the apex by a thalline margin, disc narrow, exciple greenish grey to white, with a narrow slit, labia convergent, non-striate, smooth; hymenium hyaline, $153-180\ \mu$ thick; asci cylindro-clavate, 1 or 2 spored, mostly 1 spored; $120-150 \times 36-47\ \mu$ in size; ascospores oblong, hyaline, muriform; $117-126 \times 30-38\ \mu$ in size.

Reactions: K+yellow-red; C-; KC-yellow colour of K; P+yellow.

Localities: Matheran, PGP (No. 77), 1970; Bhimashankar, PDB & PGP (No. 138), 1970; Khandala, PDB & PGP (No. 149), 1971.

Graphis scripta (L.) Ach. (Fig. 2)

Corticolous: Thallus continuous, smooth to slightly roughened.

Apothecia sessile, sunken, flexuose, branched, 2-4 mm long, 0.1-0.2 mm wide, covered by thalline margin, exciple black, partially closed, labia convergent, with 1-2 dark carbonised striae, disc very narrow; hymenium $90-126\ \mu$ high; asci simple, cylindro-clavate, 8-spored; $90-99 \times 12-18\ \mu$; ascospores oblong-linear, hyaline, 6-10 celled; $25-30 \times 9-11\ \mu$ in size.

Reactions: K+yellow-red; C+red; KC-red colour of K; P+yellow.

Localities: Canacona (Goa), PDB & PGP (No. 154), 1970.

Glyphis cicatricosa Ach. (Fig. 3)

Corticolous: Thallus thin, effuse, greenish grey or brownish, indeterminate; stroma distinct, globose to

elliptical, 2-3 mm in diam., 0.2-0.5 mm thick, dark black, carbonaceous.

Apothecia radiate or irregularly branched, 0.2-0.35 mm wide, branches obtuse at ends, immersed in stroma, disc pale brown, plane to slightly concave, exciple black, closed; hymenium colourless, $96-136\ \mu$ thick, hypothecium dark brown to black; asci simple, 8-spored, cylindrical; $90-98 \times 18-24\ \mu$ in size; ascospores oblong-linear to elliptical, hyaline, 7-9 celled, biseriata, $27-33 \times 7-9\ \mu$ in size.

Reactions: K-; C-; KC-; P-.

Localities: Canacona (Goa), PDB & PGP (No. 128), 1970.

Phaeographina caesiopruinosa (Fée) Müll.-Arg. (Fig. 4)

Corticolous: Thallus smooth, continuous, determinate or sometimes indeterminate, pale brown.

Apothecia large, boat-shaped, elongated to almost globose, emergent, mostly unbranched but sometimes branched, 1-4 mm long, 0.9-1.5 mm wide, with prominent elevated thalline margin, disc flat and broad, exciple black, mostly carbonised below but rarely dimidiate; asci cylindrical to clavate; $264-304 \times 48-72\ \mu$ in size; ascospores oblong, olivaceous to grey, muriform, mostly biseriata; $80-120 \times 24-32\ \mu$ in size.

Reactions: K+orange red; C-; KC-; P-.

Localities: Castlerock-Anamod, PGP & PDB (No. 95), 1970.

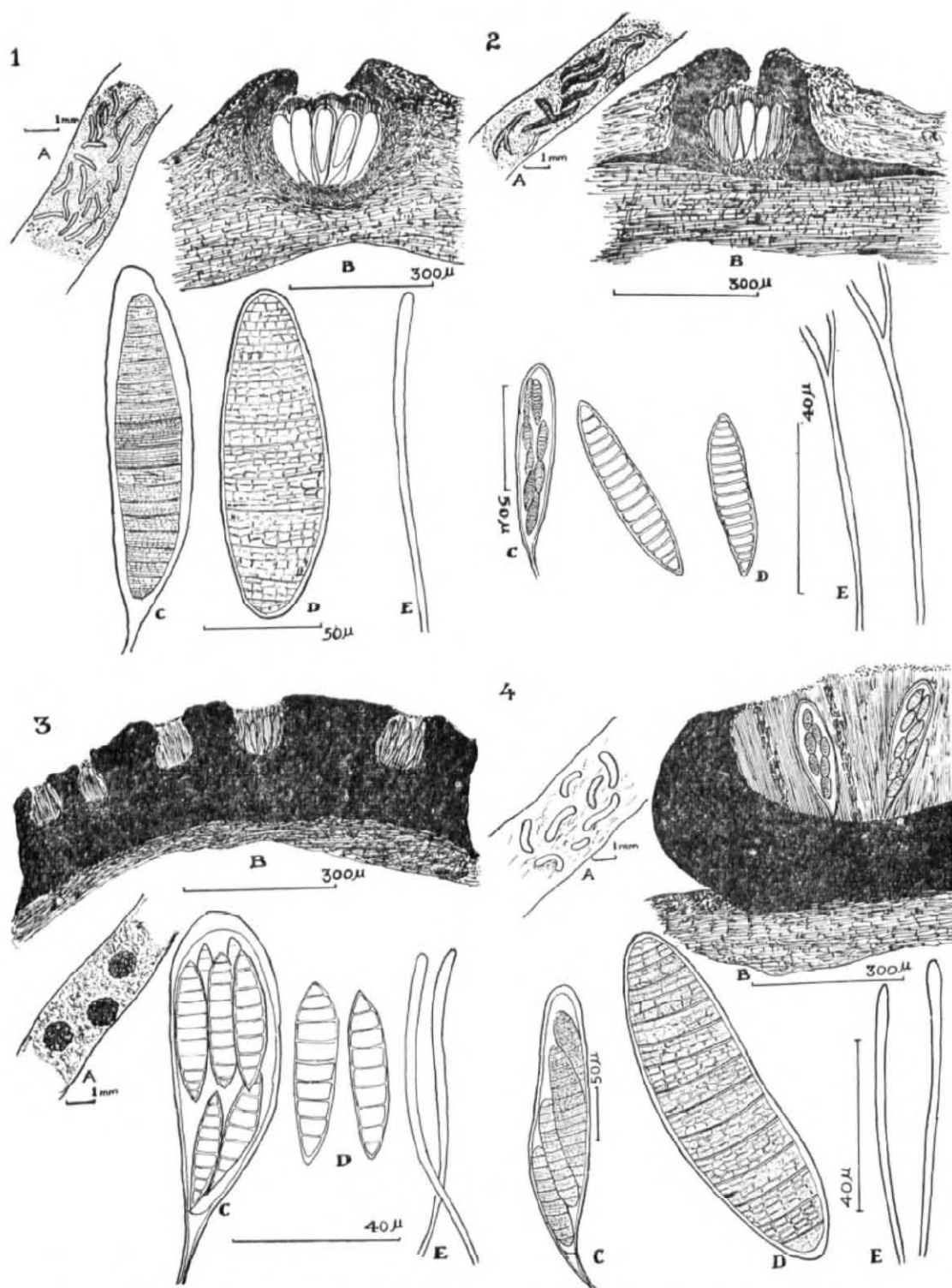
Lecidea granifera (Ach.) Vain. (Fig. 5)

Corticolous: Thallus smooth, pale green in colour, determinate, 2-5 cm in size.

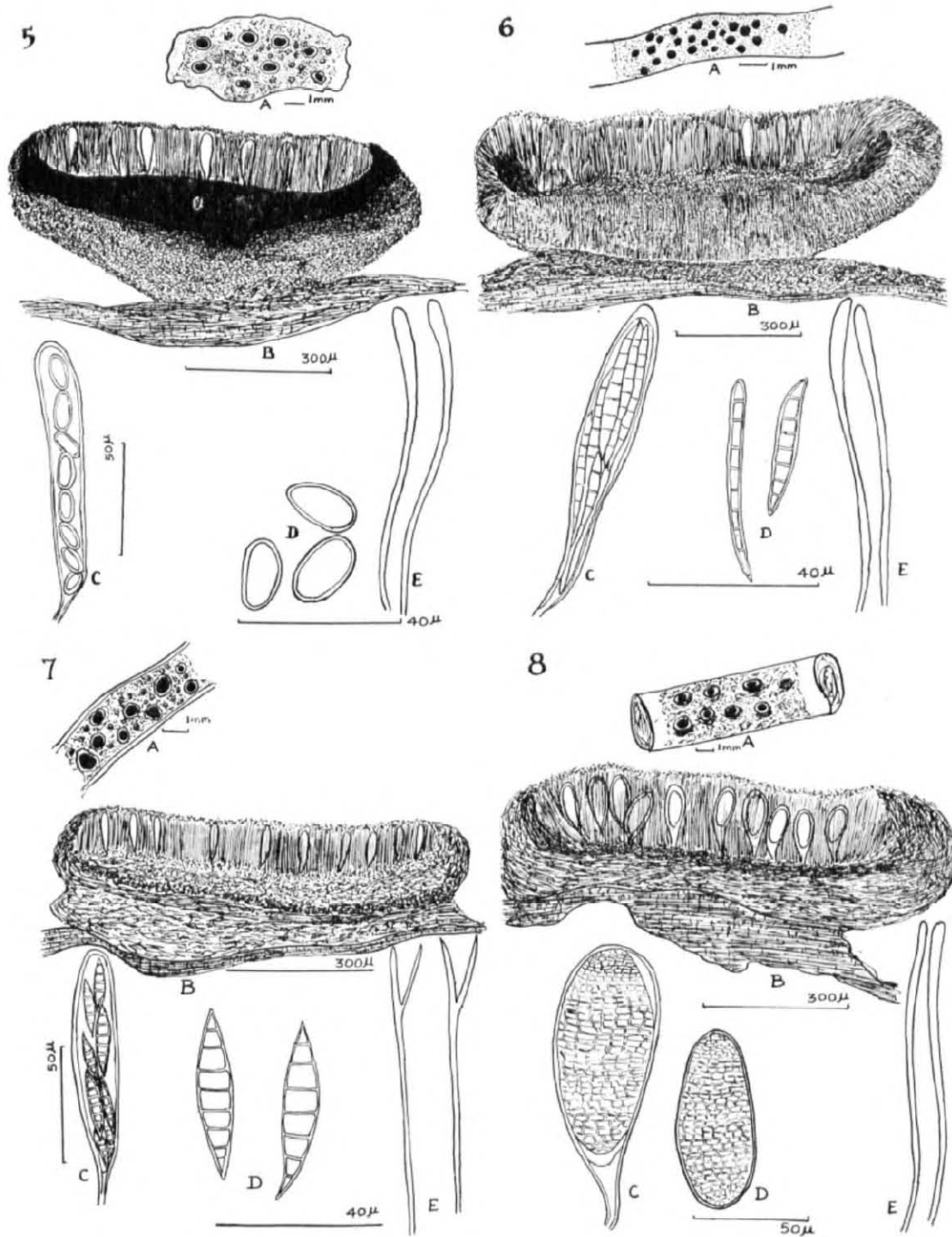
Apothecia scattered, dark black, adnate, lecideine, with pale green proper margin, disc flat and black in colour, 0.9-1.5 mm in diam.; hymenium hyaline, $112-184\ \mu$ thick; hypothecium brown to black, $136-$

*1. "Contributions to the Lichen Flora of Western India-I" J. Univ. Poona, Sci. & Tech. Sect. (in Press)

2. "Contributions to the Lichen Flora of Western India-II" 'The Botanique', Nagpur (in Press)



Figs. 1-4 : 1. *Graphina oblecta* (Nyl.) Müll. & Arg. 2. *Graphis scripta* (L.) Ach. 3. *Graphis cicatricosa* Ach.
4. *Phaeographina caesiopruinosa* (Fée) Müll. & Arg.
A. Habit. B. V. S. or T. S. of an apothecium. C. Ascus. D. Ascospores. E. Paraphyses.



Figs. 5-8 : 5. *Lecidea granifera* (Ach.) Vain. 6. *Bacidia fuscobellula* (Hoffm.) Bausch. 7. *Bombyliospora domingensis* (Pers.) Zahlbr. 8. *Lopadium leucoxanthoides* (Vain.) Zahlbr.
A. Habit. B. V. S. or T. S. of an apothecium. C. Ascus. D. Ascospores. E. Paraphyses.

176 μ thick and studded with oxalate crystals; asci simple, clavate, 8-spored; 90-101 $\times$ 18-27 μ in size; ascospores one-celled, oval to subglobose, hyaline, mostly uniseriate; 18-24 $\times$ 10-14 μ .

Reactions: K+yellow; C-; KC-yellow colour of K; P-.

Localities: Castlerock—Anamod, PDB & PGP (No. 117), 1970.

Bacidia fuscorubella (Hoffm.) Bausch. (Fig. 6)

Corticolous: Thallus smooth to slightly roughened, olivaceous to pale green in colour, determinate.

Apothecia erumpent, orange red to dark brown in colour, proper margin pale brown, entire, disc flat or slightly concave, brown, 0.8-1.0 mm in diam.; hymenium light yellow, 80-120 μ thick; hypothecium pale brown, 88-136 μ thick; asci simple, cylindrical to clavate; 54-90 $\times$ 9.0-16.2 μ in size; ascospores acicular, 9-10 celled, straight; 51-63 $\times$ 1.8-3.6 μ in size.

Reactions: K+brick red; C-; KC-red of K; P-.

Localities: Castlerock—Anamod, PDB & PGP (No. 105), 1970.

Bombyliospora domingensis (Pers.) Zahlbr. (Fig. 7)

Corticolous: Thallus green, warty, determinate, 3-6 cm in size.

Apothecia scattered, brown in colour, with entire, yellow, proper margin, 1.0-1.5 mm in diam., disc flat or slightly concave; hymenium yellowish brown, 120-144 μ thick; hypothecium yellow to pale brown, 120-208 μ thick; asci simple, cylindro-clavate, 8-spored, 90-99 $\times$ 16-21 μ in size; ascospores olivaceous, fusiform, 7-10 celled; 28-33 $\times$ 9-12.5 μ in size.

Reactions: K+brick red; C+red; KC-red colour of K; P+red.

Localities: Allapalli-Chandrapur, PDB (No. 145), 1970.

Lopadium leucoxanthoides (Vain.) Zahlbr. (Fig. 8)

Corticolous: Thallus light green in colour, determinate, 3-4 cm in size, smooth to slightly roughened.

Apothecia erumpent, brown in colour, with brick red entire proper margin, disc plane to slightly concave, 1.0-1.8 mm in diam.; hymenium yellow, K+purple violet, margin (exciple) K+blue violet; hypothecium yellow, 80-120 μ thick; asci simple, one spored, clavate; 81-119 $\times$ 28-32.5 μ in size; ascospores globular to ovate, hyaline, muriform, 79-84.5 $\times$ 25-27 μ in size.

Reactions: K+yellow; C-; KC-yellow colour of K; P-.

Localities: Castlerock—Anamod, PDB & PGP (No. 111), 1970.

ACKNOWLEDGEMENTS

The authors are grateful to Prof. M. N. Kamat for his keen interest; Dr. D. D. Awasthi, Lucknow University, Lucknow, for confirming the identifications and to the Director, M.A.C.S., for laboratory and library facilities.

REFERENCES

- AWASTHI, D. D. Catalogue of the Lichens from India, Nepal, Pakistan and Ceylon. *Beihefte zur Nova Hedwigia* 17:137, 1965.
- WIRTH, M. AND M. E. HALE JR. The Lichen Family Graphidiaceae in Mexico. *Contrib. U. S. Natl. Herb.* 36:63-119, 1963.
- SMITH, A. L. A Monograph of the British Lichens, Part I, (II Edition), *Brit. Mus. nat. Hist.*, 1894.
- A Monograph of the British Lichens Part II, *Brit. Mus. nat. Hist.*, 1911.