PLATES AND EXPLANATIONS

PLATE 1

FIGS. A–I. *Ascobolus immersus:* Figs. A, B. median section through young fruit-body × 160 (from *van Brummelen 1963*); Fig. C. id. × 125; Fig. D. id. × 100 (from *van Brummelen 1445*); Fig. E. ripe fruit-body with single ascus × 125 (culture from *van Brummelen 652*); Fig. F. ripe ascus × 100; Fig. G. upper part of ripe ascus × 250; Fig. H. ripe ascospores with slightly coloured mucilage × 400; Fig. I. tip of ripe ascus × 500.

PLATE 1

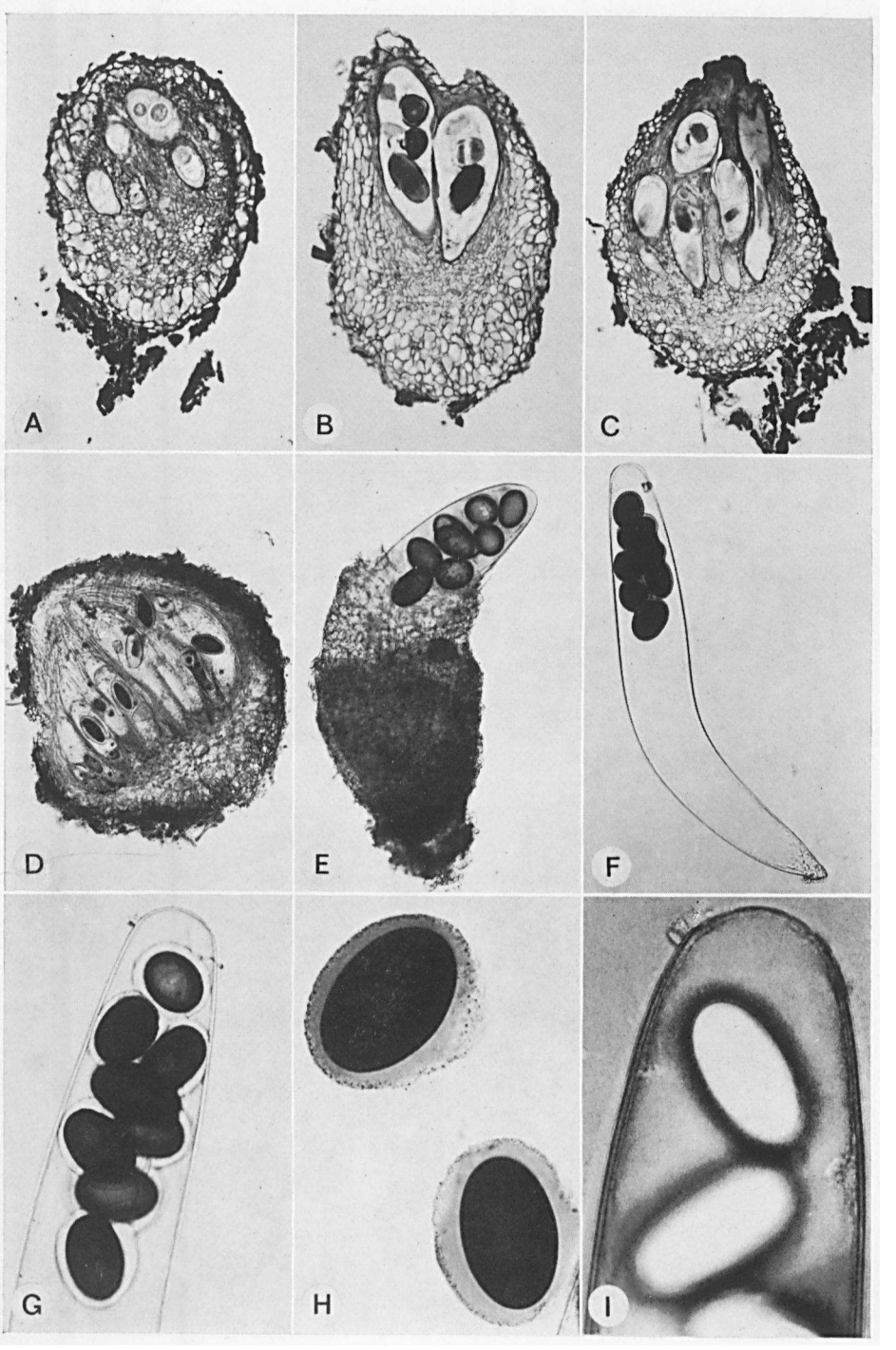

PLATE 2

FIGS. A–D. *Ascobolus immersus:* Fig. A. operculum of ripe ascus (stained with Congo red) × 800; Fig. B. detail of wall of ripe ascus in optical section (stained with Congo red) × 1600; Fig. C. id. with essential details indicated by dotted lines, place of dehiscence of operculum indicated by arrow; Fig. D. habit of ripe fruit-bodies × 25 (from *van Brummelen 1445*).

FIGS. E, F. *Ascobolus bistisii* (from type): Fig. E. group of ascopspores × 320; Fig. F. detail of episporium of ascospore × 1000.

FIGS. G, H. *Ascobolus stictoideus:* Fig. G. median section through young fruit-body × 150; Fig. H. ascospores × 630 (from *Thaxter*, FH-A3109).

FIG. I. *Ascobolus degluptus*, ascospores × 500.

PLATE 2

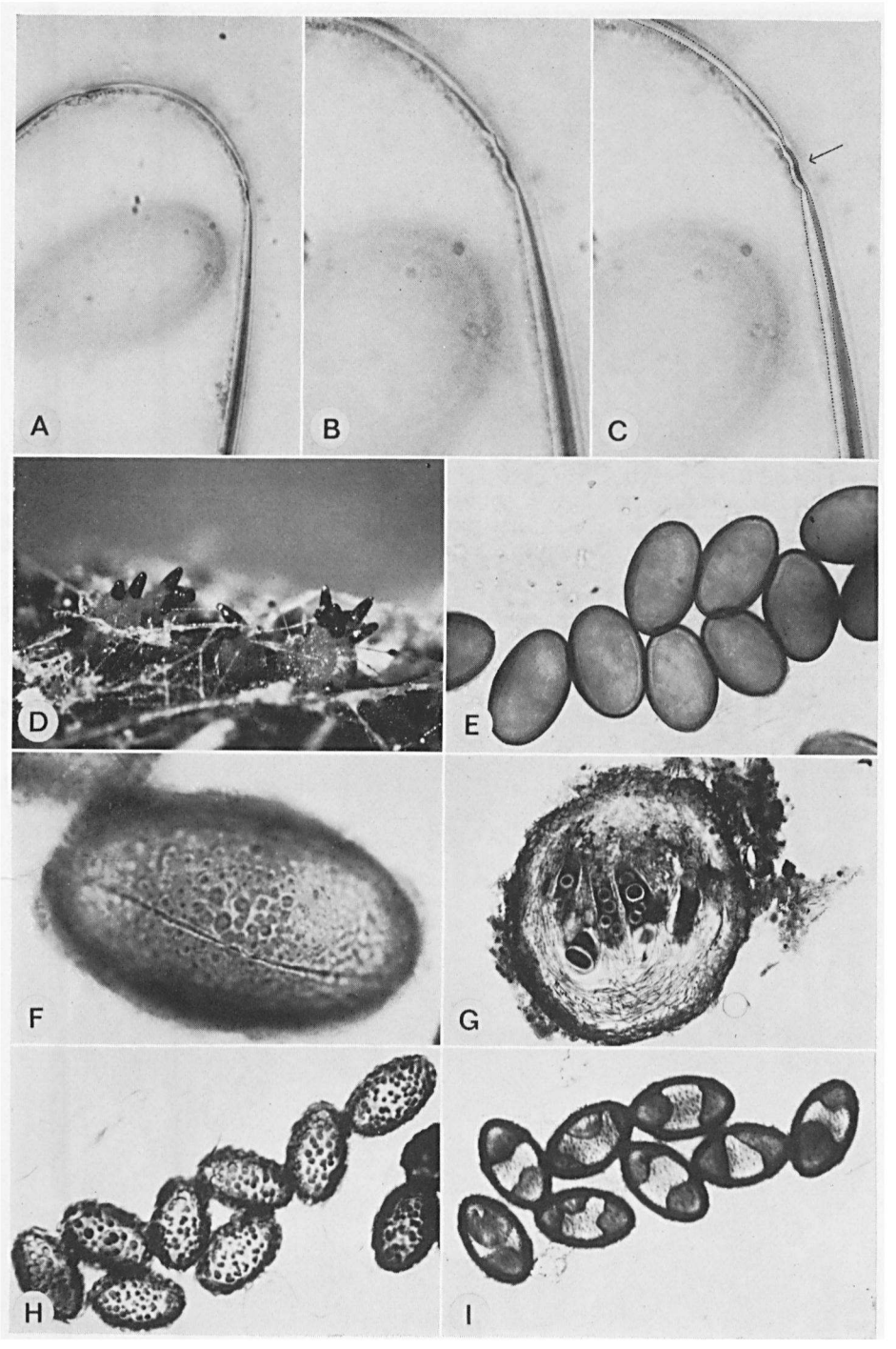

PLATE 3

FIG. A. *Ascobolus degluptus*, ripe ascospores with girdles of mucilage × 800.

FIGS. B–D. *Ascobolus amoenus:* Fig. B. fruit-body in transmitted light × 100 (from type of *A. americanus*); Fig. C. detail of median section near base of fruit-body × 500 (from *Seaver*, NY-A1246); Fig. D. detail of median section in upper part of fruit-body × 500 (from *Seaver*, NY-A1246).

FIG. E. *Ascobolus elegans*, ripe fruit-body in transmitted light × 80 (from Rehm, Ascom. 211, E).

FIG. F. *Ascobolus mancus*, three ripe fruit-bodies in transmitted light × 80 (from type).

FIGS. G, H. *Ascobolus hawaiiensis* (from type): Fig G. fruit-body in transmitted light × 160; Fig. H. ascospores × 1000.

FIG. I. *Ascobolus siamensis*, median section through ripe fruit-body, with ascogonium visible near base × 100 (from *van Brummelen 1776*).

PLATE 3

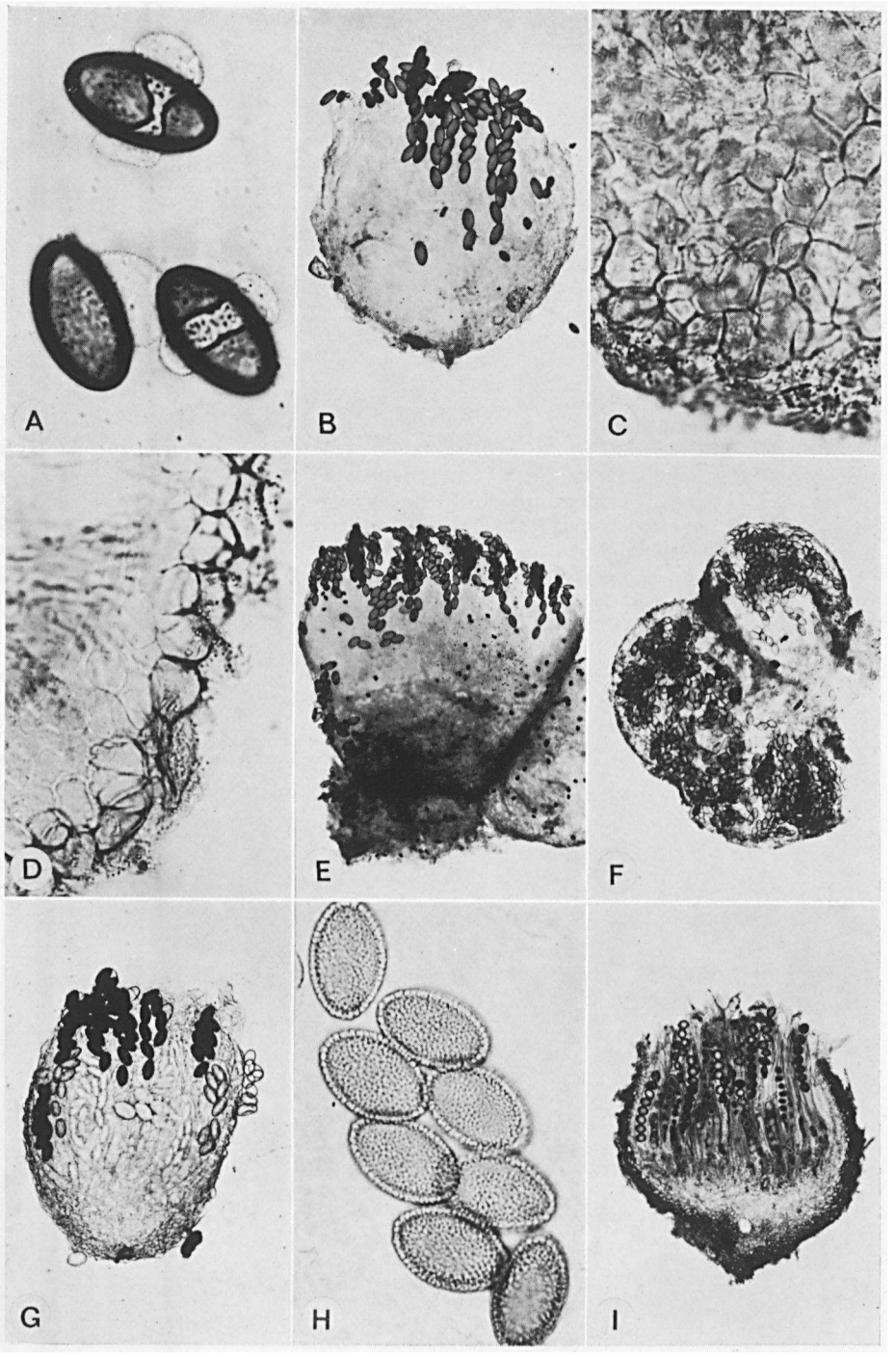

PLATE 4

FIGS. A–G. *Ascobolus siamensis* (from *van Brummelen 1776*): Fig. A. detail of median section near base of fruit-body × 200; Fig. B. detail of median section in upper part of fruit-body × 320; Fig. C. median section through ripe fruit-body × 100; Fig. D. almost ripe ascus × 700; Fig. E. ripe ascus and ascus which discharged its contents × 320; Fig. F. ripe ascus with anisospory (3 normal spores together with 5 smaller spores without pigment) × 800; Fig. G. ripe ascospores × 800.

FIG. H. *Ascobolus brassicae*, ascospores × 630 (from type of *A. hyperboreus*, H-A2746).

FIG. I. *Ascobolus nodulosporus*, ascospores × 500 (from type).

PLATE 4

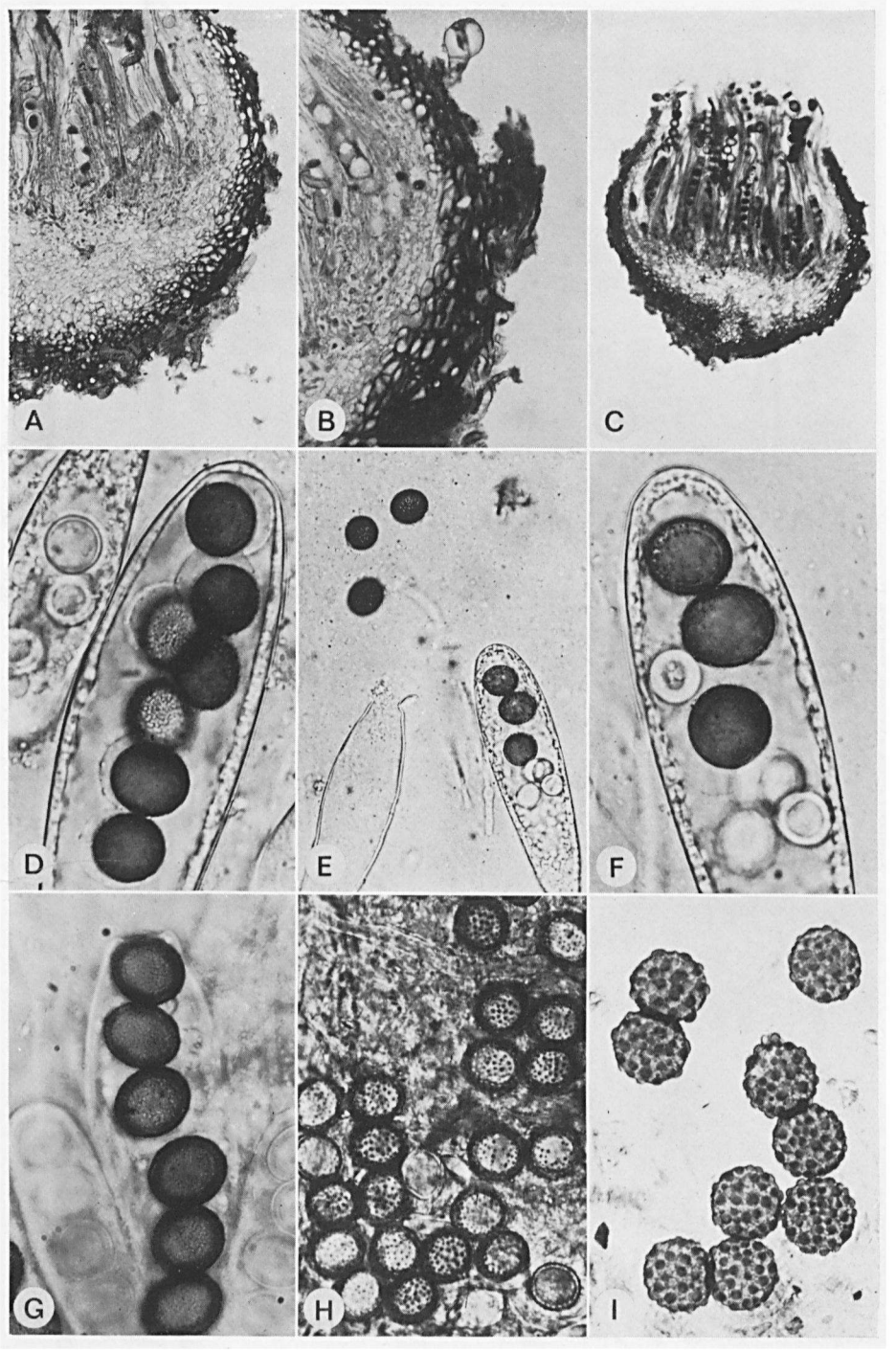

PLATE 5

FIG. A. *Ascobolus siamensis*, median section through 'twin fruit-body' × 125 (from *van Brummelen 1776*).

FIG. B. *Ascobolus boudieri*, slightly squeezed fruit-body in transmitted light × 80 (from *Boudier*, PC-A2198).

FIGS. C, D. *Ascobolus brassicae* (from *Harper* 1. I. 1962, L): Fig. C. habit of fruit-bodies × 20; Fig. D. median section though ripe fruit-body × 80.

FIG. E. *Ascobolus nodulosporus*, median section through ripe fruit-body × 100 (from type).

FIGS. F–I. *Ascobolus albidus:* Fig. F. habit of fruit-bodies × 12.5 (from *van Brummelen 1443*); Fig. G. median section through ripe fruit-body × 160 (from *van Brummelen 1964*); Fig. H immature asci and paraphyses with subglobular elements × 160; Fig. I. detail of paraphyses with subglobular elements × 400.

PLATE 5

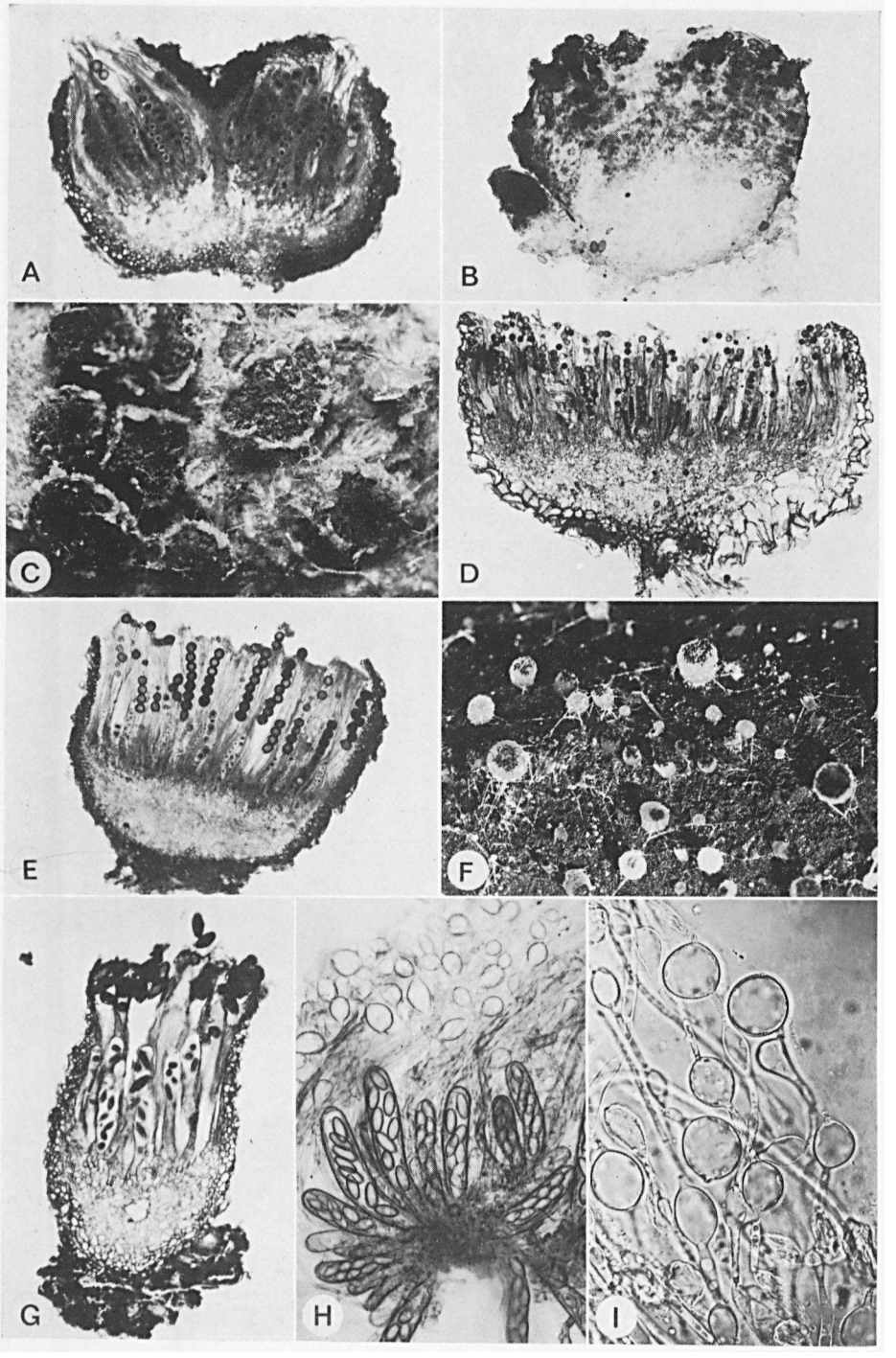

PLATE 6

FIGS. A–D. *Ascobolus albidus:* Fig. A. young ascus with still unpigmented spores, with unilateral mucilaginous appendages × 400; Figs. B, C. asci with anisospory × 500; Fig. D. ripe ascus with 8 normal spores.

FIGS. E–I. *Ascobolus furfuraceus:* Fig. E. median section through fruit-body in prohymenial phase × 160; Fig. F. median section through fruit-body in early mesohymenial phase × 200; Fig. G. median section through fruit-body in telohymenial phase × 50; Fig. H. median section through ripe fruit-body with hymenium interrupted by sterile excipular tissue × 40; Fig. I. detail of interrupted hymenium × 160.

PLATE 6

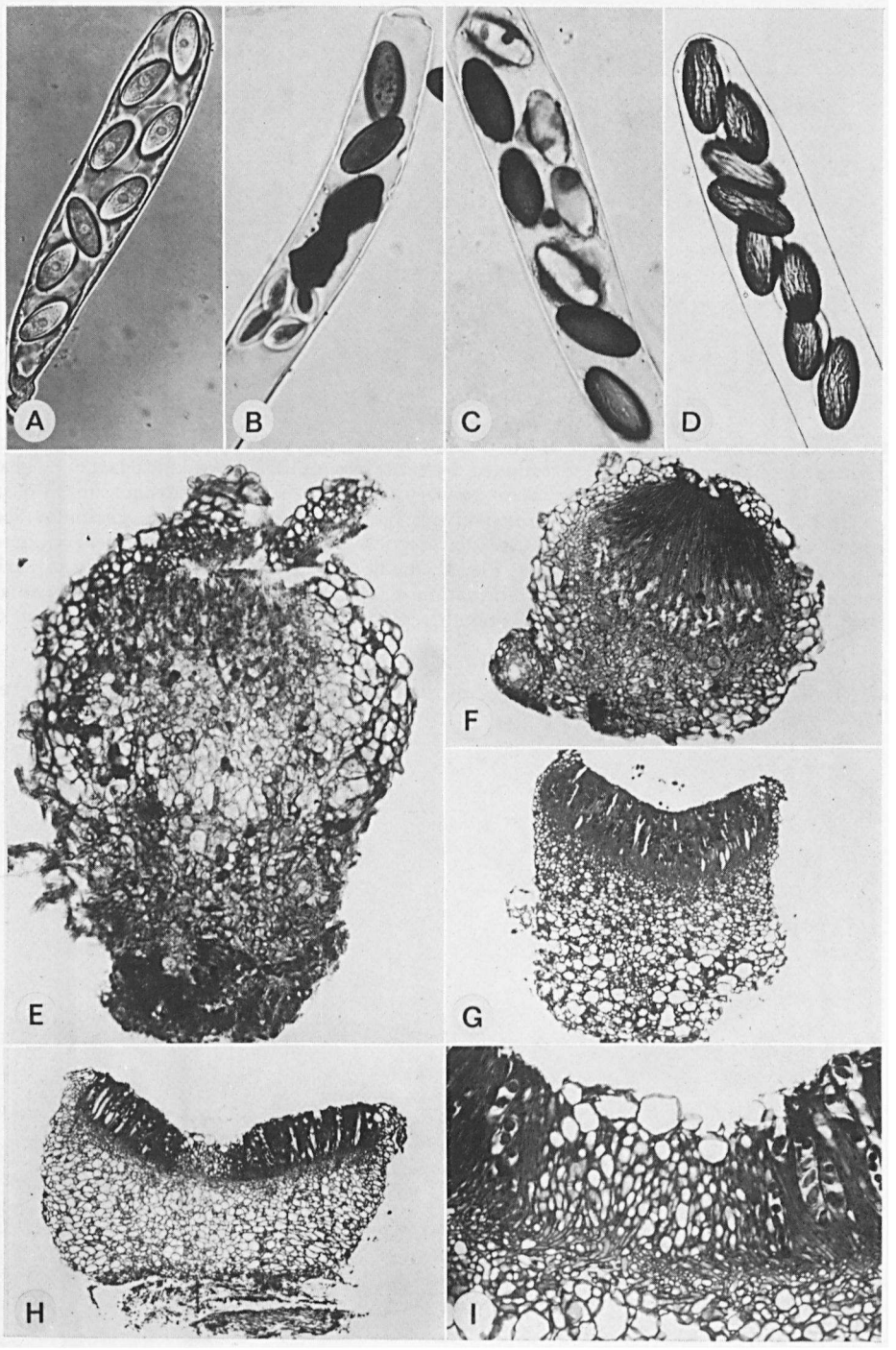

PLATE 7

FIGS. A–F. *Ascobolus furfuraceus:* Fig. A. median section through fruit-body in early archihymenial phase, ascogonium surrounded by some pseudoparenchymatous layers × 500; Fig. B. id. with incipient differentiation between flesh and excipulum, ascogonium in basal part; Fig. C. median section of fruit-body in late mesohymenial phase, excipular roof opening near the top × 125; Fig. D. median section of fruit-body in prohymenial phase, outside coarsely furfuraceous × 100; Fig. E. median section through fruit-body in early mesohymenial phase, with incipient formation of croziers × 125; Fig. F. part of median section through ripe fruit-body with smooth receptacle × 100 (form C; from *Jackson & Cain*, TRTC 34706).

FIG. G. *Ascobolus roseopurpurascens*, part of median section through ripe fruit-body × 125 (from type).

PLATE 7

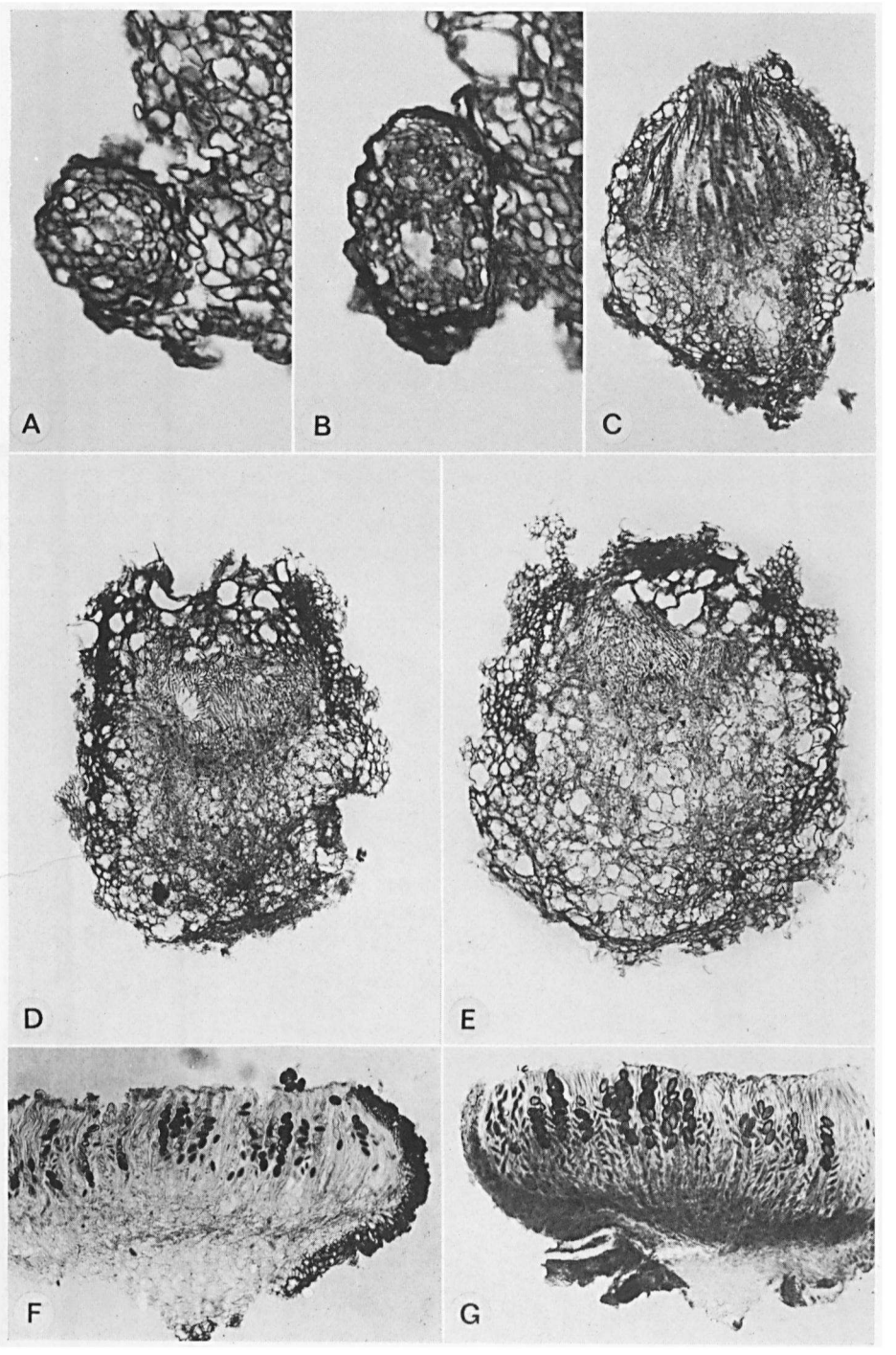

PLATE 8

FIGS. A–B. *Ascobolus crenulatus:* Fig. A. part of median section through ripe fruit-body × 125 (from *van Brummelen 684*); Fig. B (top row). id. × 200 (from type); Fig. B (second row). ascospores × 1000 (from type).

FIGS. C–E. *Ascobolus michaudii* (from type): Fig. C. median section through ripe fruit-body × 32; Fig. D. id. detail of part × 125; Fig. E. ascospores with anisospory × 630.

FIG. F. *Ascobolus minutus*, ascospores × 630 (from type).

FIG. G. *Ascobolus carletonii*, median section through young fruit-body × 125 (from type).

PLATE 8

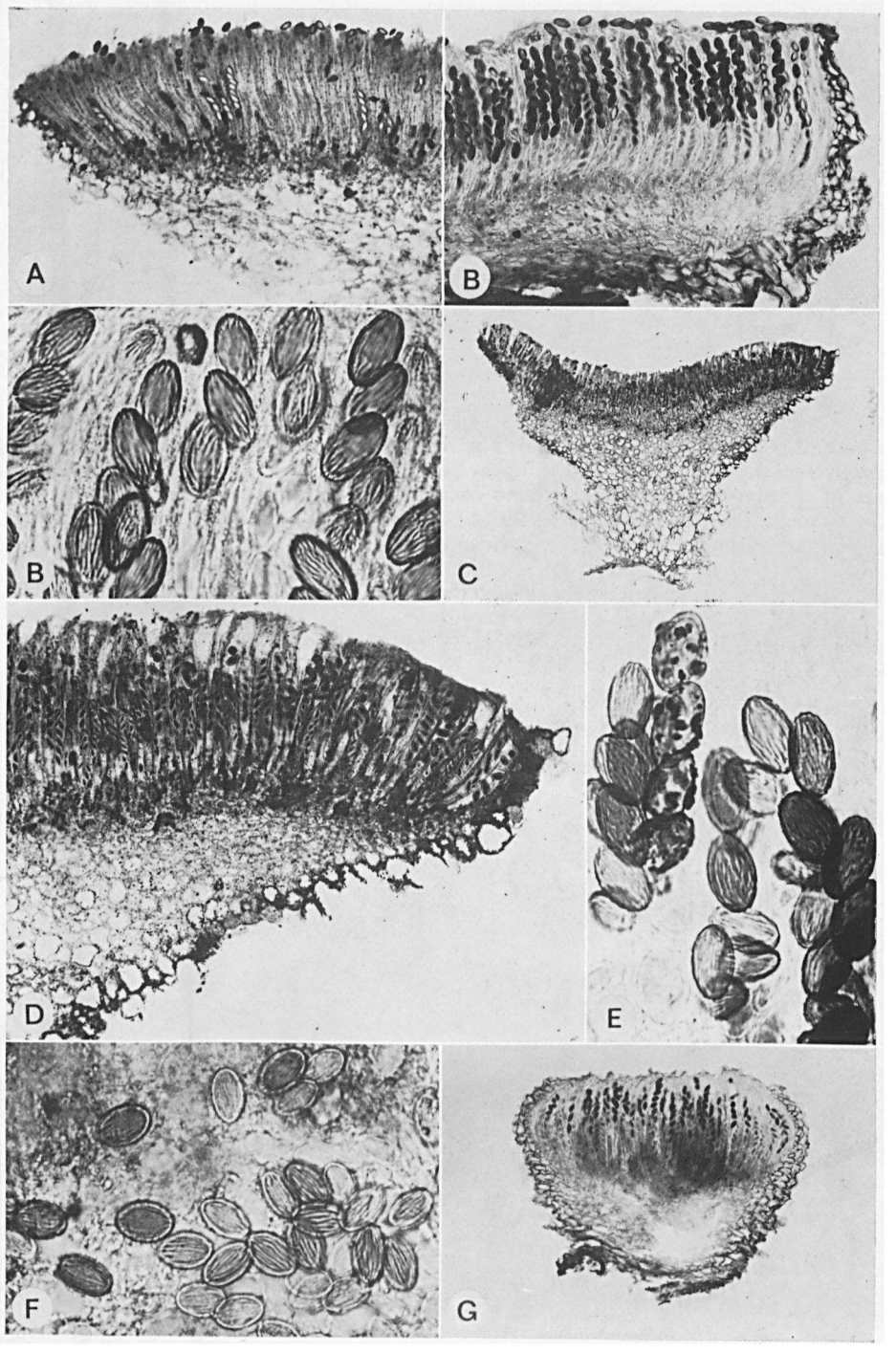

PLATE 9

FIGS. A–F. *Ascobolus lineolatus* (from type): Fig. A. median section through fruit-body in mid-mesohymenial phase × 100; Fig. B. upper part of ascus with ripe spores × 800; Fig. C. part of median section through young fruit-body, with excentric ascogonium × 200; Fig. D. median section through ripe fruit-body × 40; Fig. E. id. with detail of excipular margin and hymenium × 200; Fig. F. ascospores × 1000.

FIG. G. *Ascobolus crosslandii*, ascospores × 630 (from type).

FIGS. H, I. *Ascobolus cainii* (from type): Fig. H. part of median section through ripe fruit-body × 200; Fig. I. ascospores × 1000.

PLATE 9

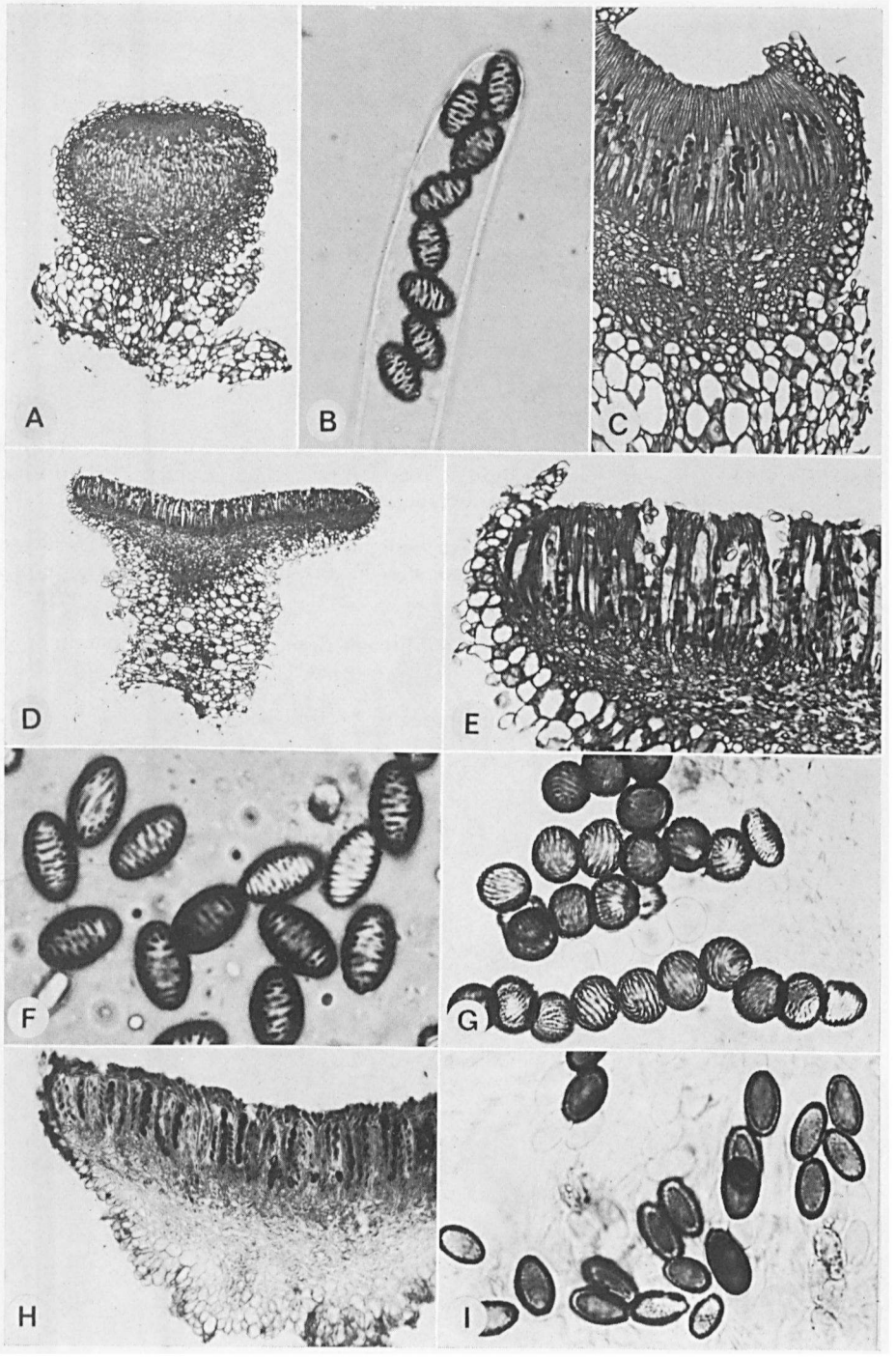

PLATE 10

FIGS. A–D. *Ascobolus lignatilis:* Fig. A. median section through ripe fruit-body × 32 (from type); Fig. C. id. with detail near margin × 100; Fig. B. median section of ripe fruit-body × 32 (from type of *A. marchalii*); Fig. D. ascospores × 2000 (from type of *A. lignatilis*).

FIGS. E, F, H. *Ascobolus epimyces:* Fig. H. median section through fruit-body × 100 (from type); Fig. E. id. with detail near margin × 320; Fig. F. ascospores × 630 (from type of *A. lignatilis* var. *fagisedus*, PR 149852).

FIG. G. *Ascobolus cainii*, detail of median section through ripe fruit-body near margin × 320 (from type).

FIG. I. *Ascobolus costantinii*, median section through ripe fruit-body × 80 (from type of *A. schweersii*).

PLATE 10

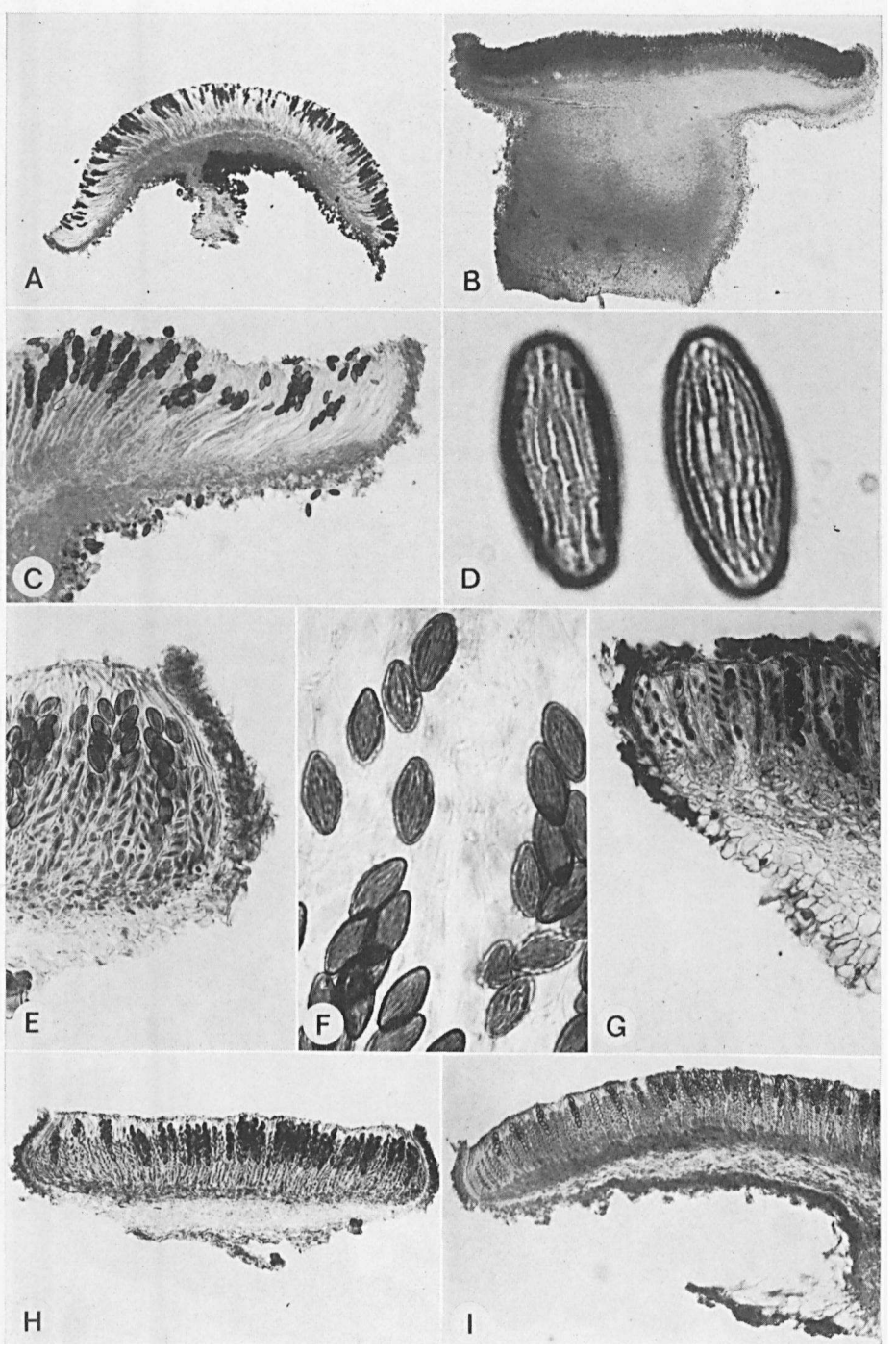

PLATE 11

FIGS. A, B. *Ascobolus costantinii* (from type of *A. schweersii*): Fig. A. median section through ripe fruit-body, detail near margin × 320; Fig. B. id. detail of hymenium.

FIGS. C, D. *Ascobolus singeri* (from type): Fig. D. part of median section through ripe fruit-body × 80; Fig. C. id. detail of receptacle half-way between margin and base × 400.

FIGS. E, F. *Ascobolus denudatus:* Fig. E. ascospores × 800 (from type of *A. angulisporus*); Fig. F. part of median section through ripe fruit-body × 100 (from type of *A. immarginatus*).

FIG. G. *Ascobolus viridis*, ascospores × 630 (from *Mouton*, BR-A328).

FIG. H. *Ascobolus behnitziensis*, ascospores × 1000 (optical sections at different levels of the episporium result in different views of the pattern of ornamentation; from type).

PLATE 11

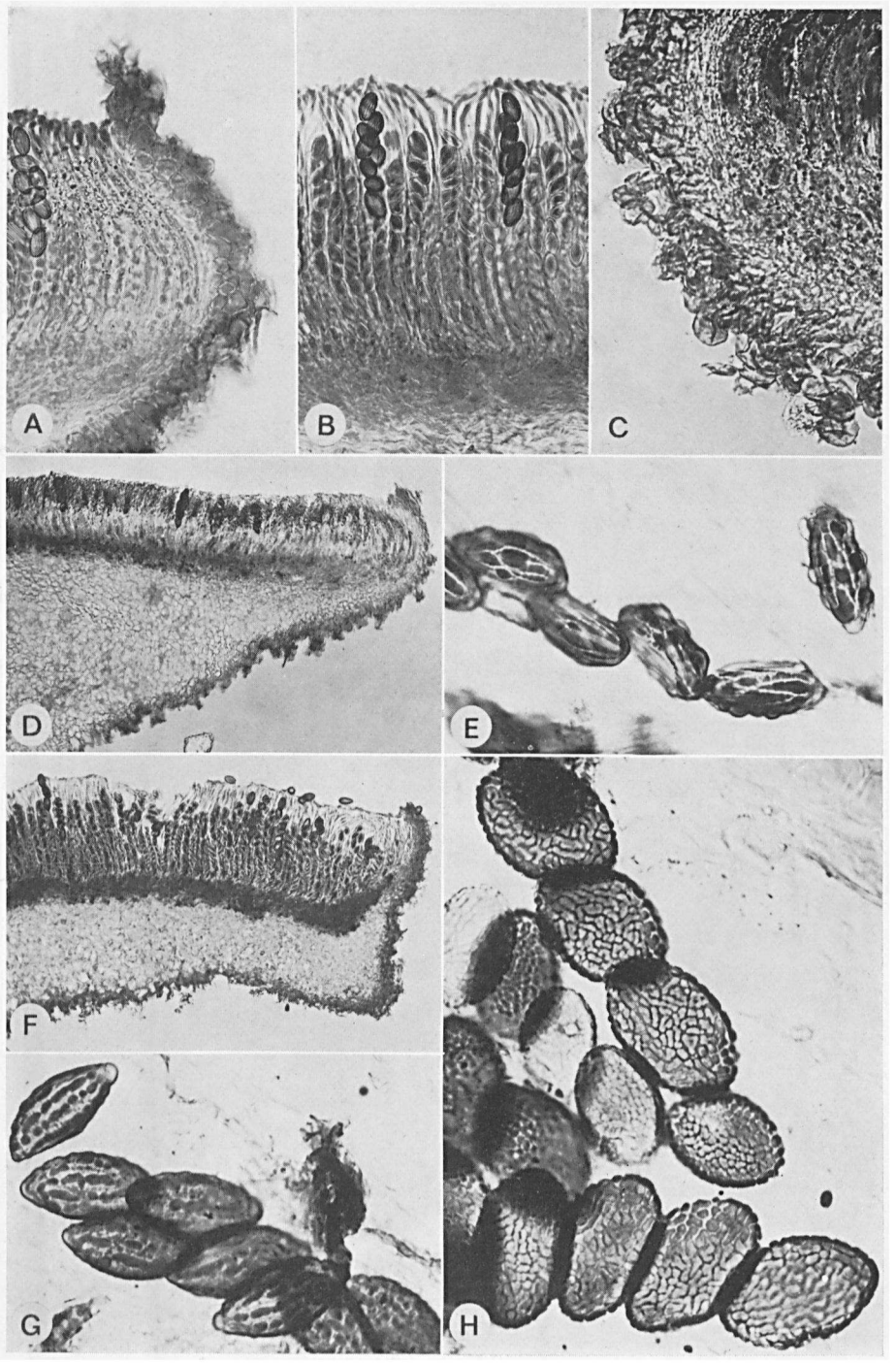

PLATE 12

FIGS. A, C. *Ascobolus archeri* (from type): Fig. A. part of median section through fruit-body × 125; Fig. C. ascospores × 1000.

FIGS. B, D. *Ascobolus carbonarius* (from type): Fig. B. part of median section through ripe fruit-body × 100; Fig. D. ascospores × 630.

FIGS. E, H. *Ascobolus xylophilus* (from "cotype"): Fig. E. ascospores × 630; Fig. H. part of median section through ripe fruit-body × 125).

FIGS. F, G. *Ascobolus subglobosus* (from type): Fig. F. ascospores × 800; Fig. G. part of median section through fruit-body × 80.

PLATE 12

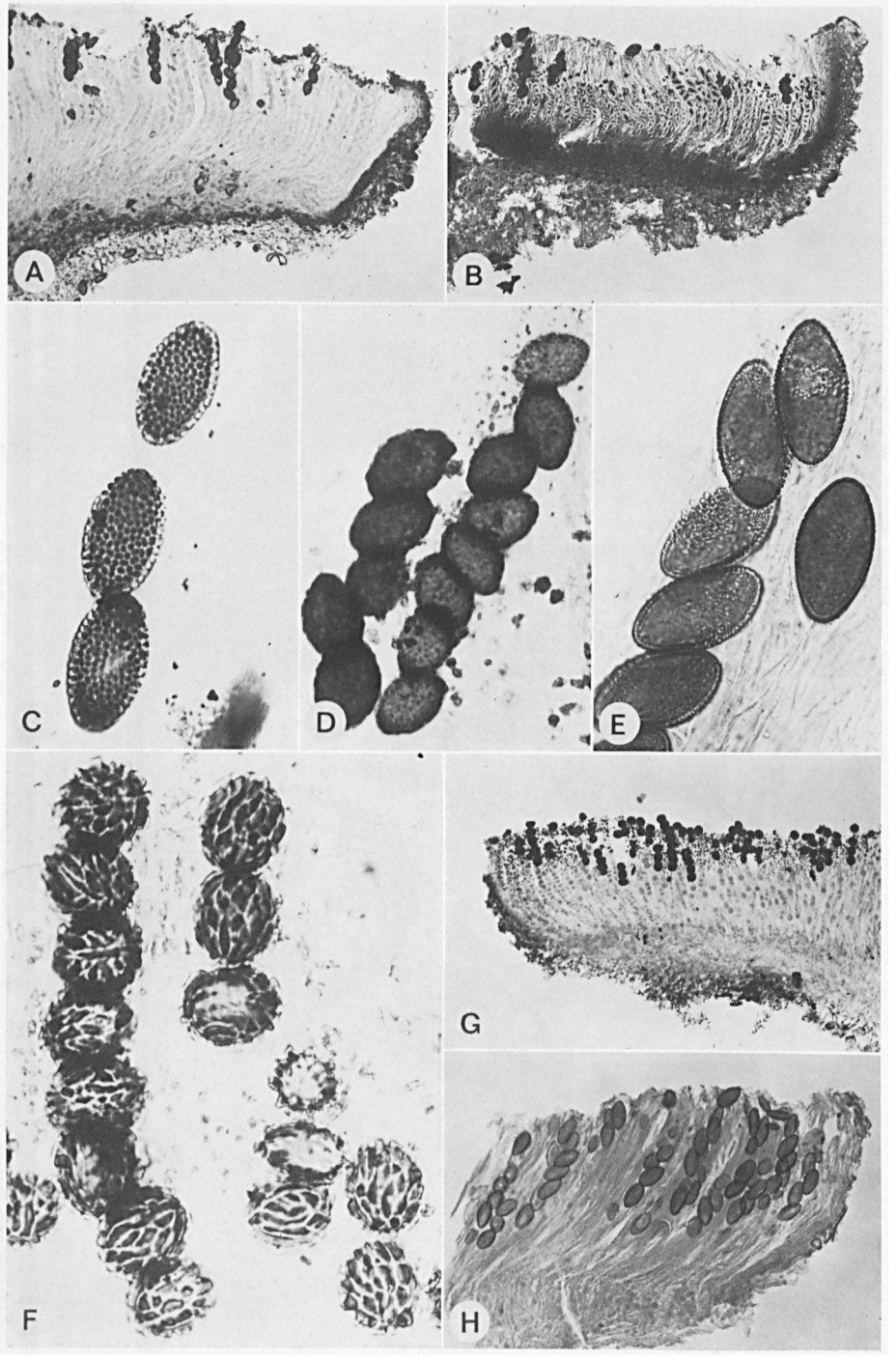

PLATE 13

FIGS. A–C. *Ascobolus reticulatus* (from type): Fig. A. median section through ripe fruit-body × 125; Fig. B. id. detail of excipulum × 320; Fig. C. id. showing ripe ascospores.

FIGS. D, E. *Ascobolus scatigenus:* Fig. D. ascospores × 1250 (from type of *A. scatigenus*); Fig. E. part of median section through fruit-body × 80 (from part of type of *A. leiocarpus*, K-A1947).

FIG. F. *Ascobolus aglaosporus*, median section through ripe fruit-body × 100 (from *Cain*, TRTC 24287).

FIGS. G, H. *Ascobolus castaneus* (from type): Fig. G. part of median section through fruit-body × 100; Fig. H. id. detail near base, with pigment visible in some of the excipular cells × 320.

PLATE 13

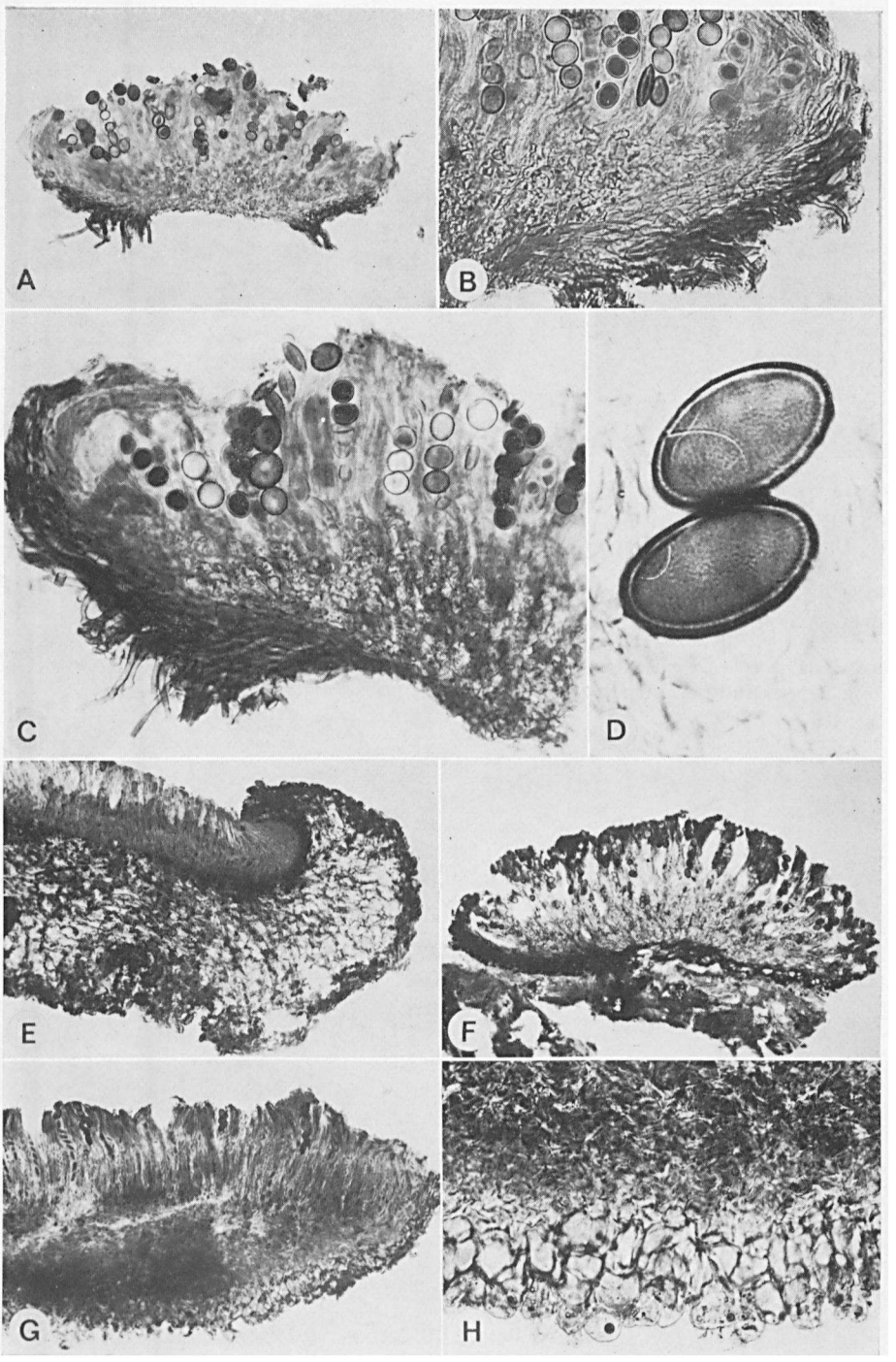

PLATE 14

FIG. A. *Saccobolus saccoboloides*, ascospores, partly regularly arranged × 500 (from type).

FIGS. B, C. *Saccobolus glaber:* Fig. B. spore-cluster × 800; Fig. C. ripe asci × 400.

FIG. D. *Saccobolus truncatus*, spore-clusters × 400 (from type).

FIGS. E–G. *Saccobolus portoricensis* (from type): Fig. E. spore-clusters × 500; Fig. F. ripe fruit-body in transmitted light × 80; Fig. G. id. × 125.

FIGS. H, I. *Saccobolus minimus:* Fig. H. habit of fruit-bodies × 25 (from *van Brummelen 1789*); Fig. I. asci and paraphyses × 400 (from *van Brummelen 1783*).

PLATE 14

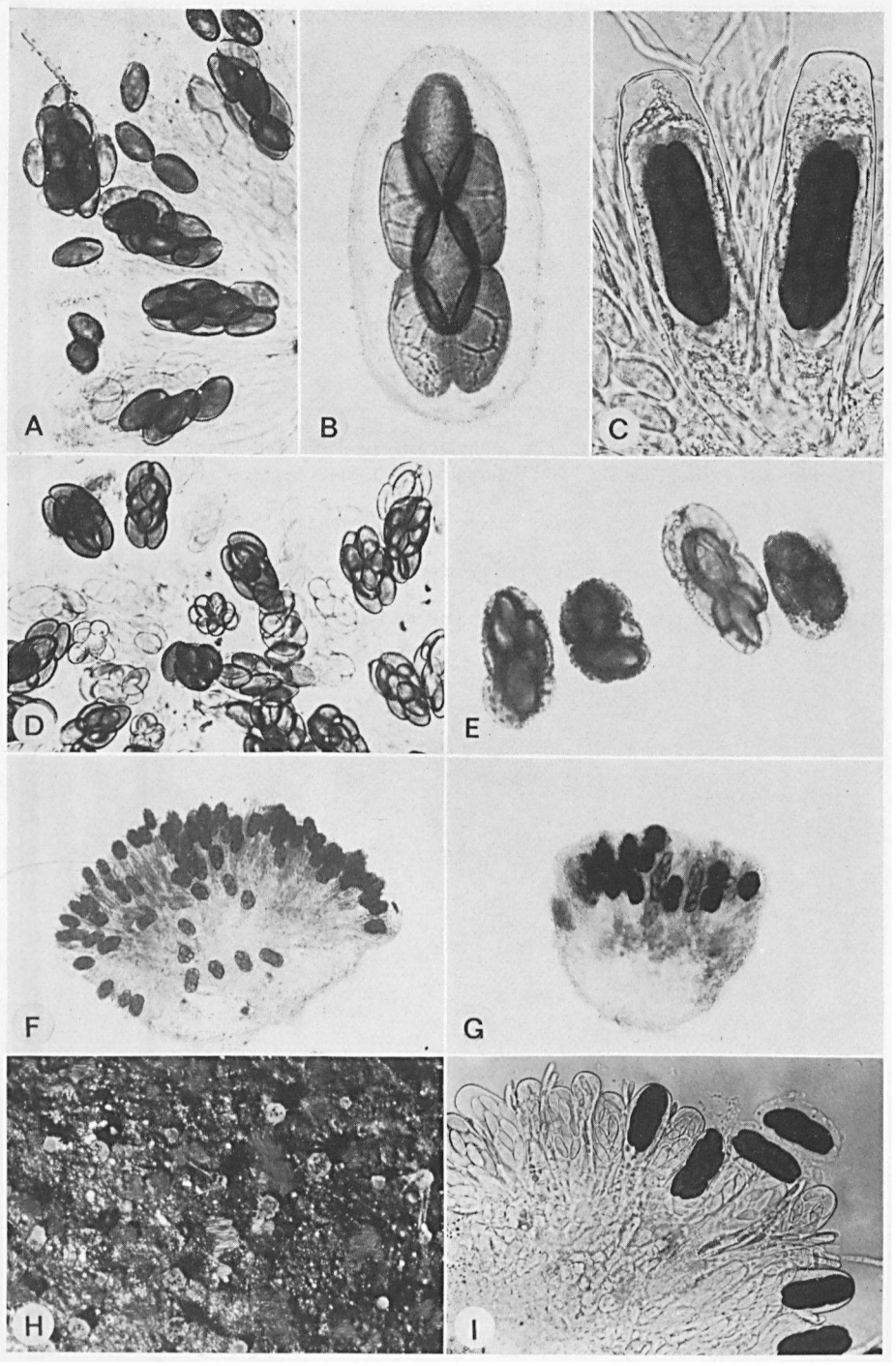

PLATE 15

FIGS. A, B. *Saccobolus minimus:* Fig. A. spore-clusters surrounded by mucilage × 800 (from *van Brummelen 1783*); Fig. B. spore-clusters × 1250 (from type).

FIG. C. *Saccobolus quadrisporus*, spore- clusters × 630 (from type).

FIGS. D, E. *Saccobolus thaxteri* (from type): Fig. D. spore-clusters × 320; Fig. E. id. in detail × 500.

FIG. F. *Saccobolus obscurus*, fruit-body in transmitted light × 125 (from type).

PLATE 15

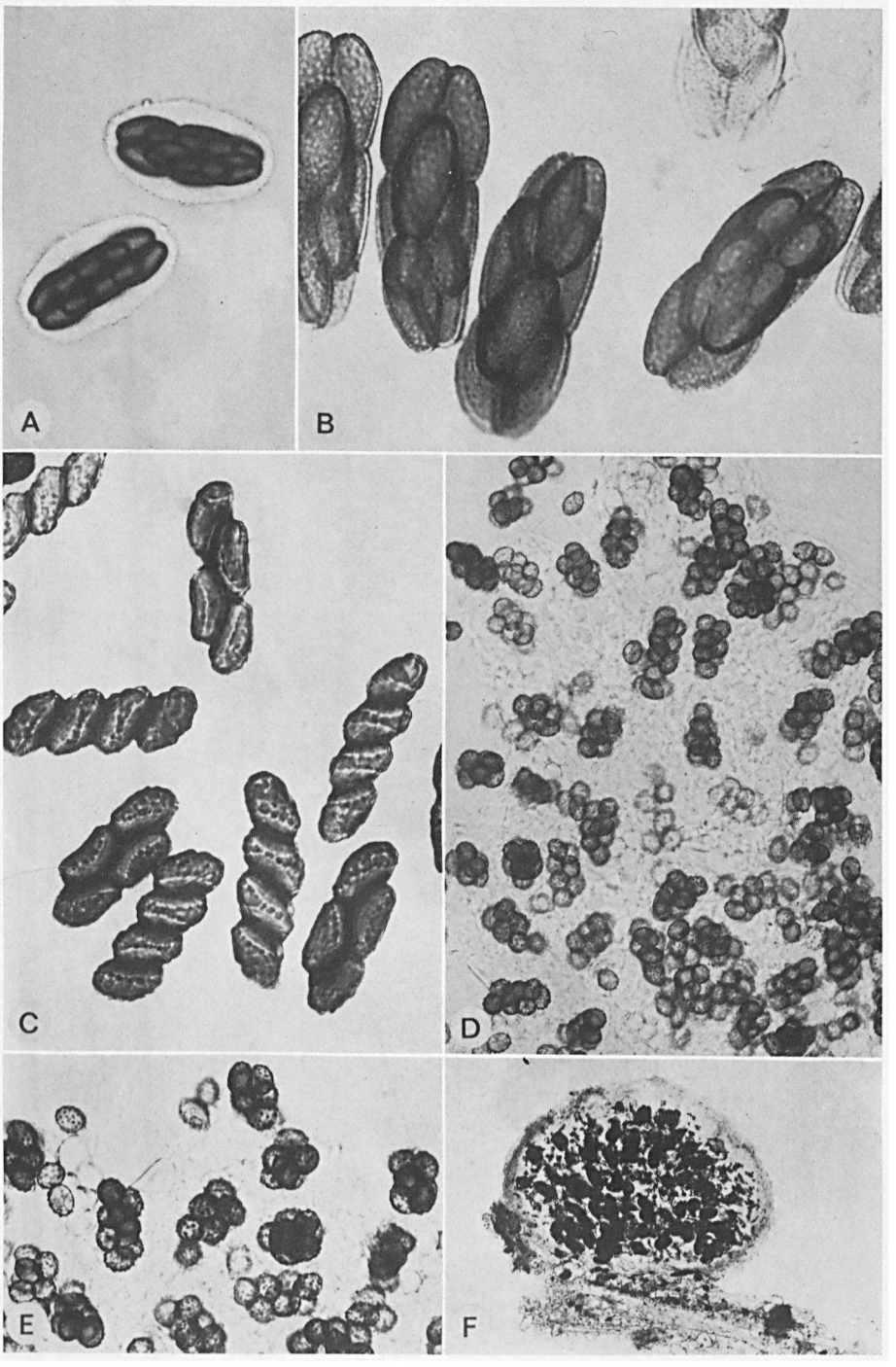

PLATE 16

FIG. A. *Saccobolus geminatus*, spore-clusters and pairs of spores × 630 (from type).

FIG. B. *Saccobolus dilutellus*, spore-clusters × 630 (from type).

FIGS. C, D. *Saccobolus globuliferellus:* Fig. C. spore-clusters × 500 (from *Cain*, NY-A1206); Fig. D. id. in detail × 1000 (from type).

FIG. E. '*Ascobolus brunneus*' Cooke, fruit-body in transmitted light × 80 (from Cooke, F. Brit. exs. 286, E.).

FIGS. F, G. *Saccobolus infestans*, spore-clusters × 800 (from type).

FIG. H. *Saccobolus verrucisporus*, fruit-body with ripe ascospores in transmitted light × 250 (from type).

PLATE 16

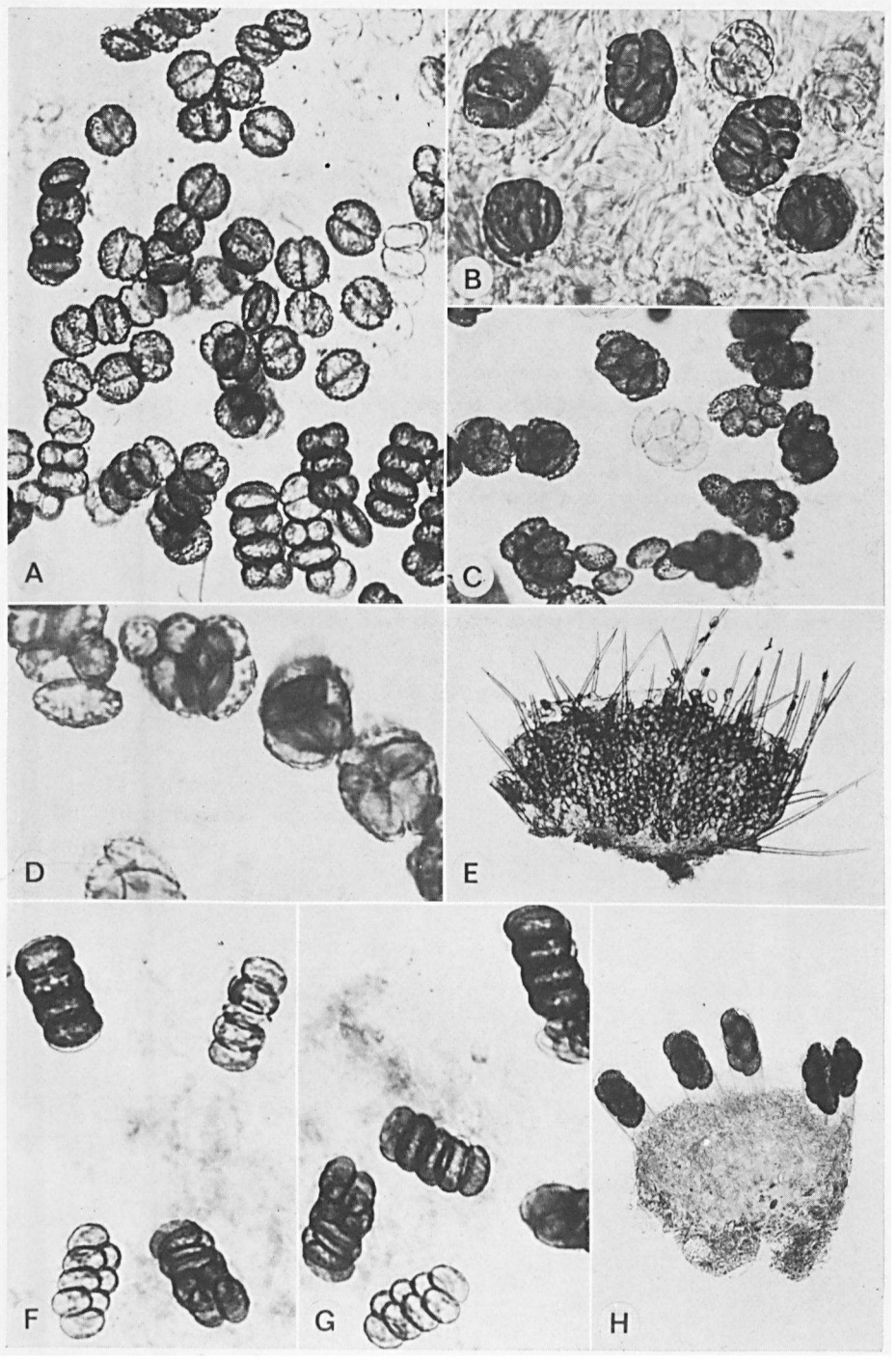

PLATE 17

Scheme of the developmental types in Ascobolaceae. The gametophytic system in black, the sporophytic system in red.