

GEOLOGICAL
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CANADA

DEPARTMENT OF MINES
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PAPER 66-30

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Illustrations of Canadian Fossils
DEVONIAN SPORES OF
EASTERN AND NORTHERN CANADA

(Report, 2 figures, 29 plates)

D. C. McGregor and B. Owens



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ABSTRACT

This report is the twelfth in the Paper series of the Geological Survey of Canada under the general title "Illustrations of Canadian Fossils". It illustrates assemblages of miospores from Devonian rocks of Gaspé Peninsula, southern Ontario, southern District of Mackenzie, and the Parry Islands. Nine assemblages are shown, ranging in age from Gedinnian to Famennian. Each plate is accompanied by provisional taxonomic identifications and a brief statement of geographic and stratigraphic provenance of the fossils. Most of the fossils have not been figured previously.

Illustrations of Canadian Fossils

DEVONIAN SPORES OF EASTERN AND NORTHERN CANADA

INTRODUCTION

This report is the twelfth in a series designed primarily to present illustrations of fossils from Canadian rocks. Like one of the preceding reports in the series (McGregor, 1965), it illustrates miospores, which for the most part are below 200 microns in size. This report is intended to provide illustrations of spore assemblages, which may be useful to students and professional palynologists for laboratory reference, until such time as the fossils can be systematically described and evaluated. It is not intended as a substitute for thorough systematic documentation, or for accurate taxonomic determinations based on examination of numerous specimens and comparisons with type material.

Most of the fossils shown here have not been previously figured or described. They are identified provisionally, by reference to descriptions and illustrations in the published literature, except in the few instances in which type specimens were readily accessible for comparison. No attempt has been made to bring the nomenclature up to date.

The fossils have been extracted by the writers from Devonian rocks of two widely separated regions of Canada (see Figs. 1 and 2). The assemblages are arranged in ascending stratigraphic order, and the stratigraphic and geographic provenance of the rock enclosing each assemblage is given in the legends accompanying the plates. With the exception of those from the Kettle Point Formation (Plates XXVIII and XXIX) which were obtained from drill core, all of the spores were derived from surface samples collected by officers of the Geological Survey of Canada. Additional geologic data may be obtained in the publications referred to in the plate descriptions.

In the descriptions of the plates, the prefix "cf." implies that the spore is similar to the taxon named, but probably should not be assigned to it; "?" preceding the generic name indicates tentative identification with the genus, whereas "?" preceding the specific name indicates that although generic assignment is made with confidence, identification with the species is tentative. Where identification is very uncertain or the specimen probably represents a new species, the word "unidentified" is used.

The slides have been deposited in the GSC type collections in Ottawa. Numbers following figure descriptions on the plates are GSC fossil plant type numbers. All figures are shown at magnifications of X500, except where otherwise stated. Plates IX to XXI and the legends accompanying them were contributed by B. Owens, now with the Geological Survey of Great Britain, who was with the Geological Survey of Canada in 1964 and 1965 while in receipt of a National Research Council of Canada post-doctorate fellowship. Plates I - VIII and XXII - XXIX and the remainder of the text were contributed by D.C. McGregor.

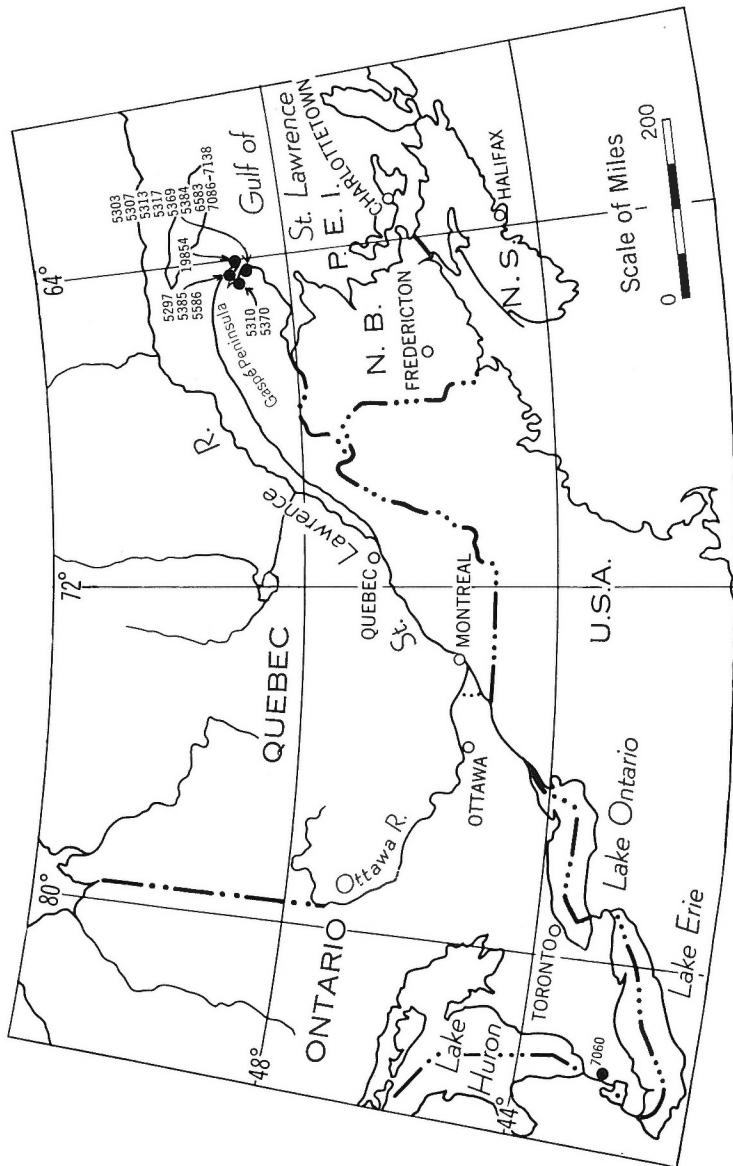


Figure 1. Index of spore localities, Eastern Canada.



Figure 2. Index of spore localities, Northern Canada.

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PLATE I

LOWER DEVONIAN

Upper Gedinnian

Cape Bon Ami Formation, eastern Gaspé Peninsula, Quebec. Type section, stratigraphically in middle of Forillon Member, north side Forillon Peninsula, Cape Rosier Cove. GSC loc. 19854. Collected by L.M. Cumming, 1951.

References: Cumming, 1959, p. 22; Boucot et al., 1964, p. 87.

- Figure 1. Punctatisporites sp. 15103
Figure 2. ?Reticulates sp. 15104
Figure 3. Emphanisporites cf. E. rotatus McGregor, 1961, p. 3. 15105
Figure 4. Retusotriletes sp., laterally compressed. 15106
Figure 5. Anaplanisporites sp. 15107
Figure 6. ?Cyclogranisporites sp. 15108
Figure 7. ?Stenozonotriletes sp. 15109
Figures 8, 9. Brochotriletes sp. 15110
Figure 10. ?Cyclogranisporites sp. 15111

Siegenian

Grand Grève Formation, eastern Gaspé Peninsula, Quebec. Type section, lower part of Shiphead Member, Cape Gaspé, shore cliff below lighthouse, from bed with ?Taenioocrada dubia Kr. and Wld., about 20 feet stratigraphically below prominent bentonite band. GSC Plant Loc. 5571. Collected by D.C. McGregor, 1960.

References: Cumming, 1959, p. 23; Boucot et al., 1964, p. 85; Burk, 1964, p. 461.

- Figure 11. Apiculatasporites sp. 15112
Figures 12, 13. Anaplanisporites sp. 15113
Figure 14. Apiculatasporites sp. 15114
Figure 15. ?Punctatisporites sp., ?with adhering tapetal material. 15115
Figure 16. Planisporites sp. 15116
Figure 17. Stenozonotriletes sp. 15117
Figure 18. Granulatisporites sp. 15118
Figure 19. cf. Stenozonotriletes insessus Allen, 1965, p. 711. 15119
Figure 20. Granulatisporites sp. 15120
Figure 21. Unidentified. 15121
Figure 22. Apiculatasporites sp. 15122
Figure 23. Rubinella sp. 15123
Figures 24, 25. Verrucosisporites sp. 15124
Figure 26. ?Emphanisporites sp. 15125
Figure 27. Emphanisporites cf. E. rotatus McGregor, 1961, p. 3. 15126
Figure 28. Brochotriletes cf. B. foveolatus Naumova, 1953, p. 58. 15127
Figure 29. Chelinospora sp., laterally compressed. 15128
Figure 30. Unidentified. 15129
Figure 31. Emphanisporites cf. E. rotatus McGregor, 1961, p. 3. 15130
Figure 32. Reticulatisporites sp. 15131
Figure 33. Dibolisporites sp. 15132
Figure 34. Verrucosisporites sp. 15133
Figure 35. cf. Camptozonotriletes aliquantus Allen, 1965, p. 720. 15134
Figure 36. Unidentified. 15135

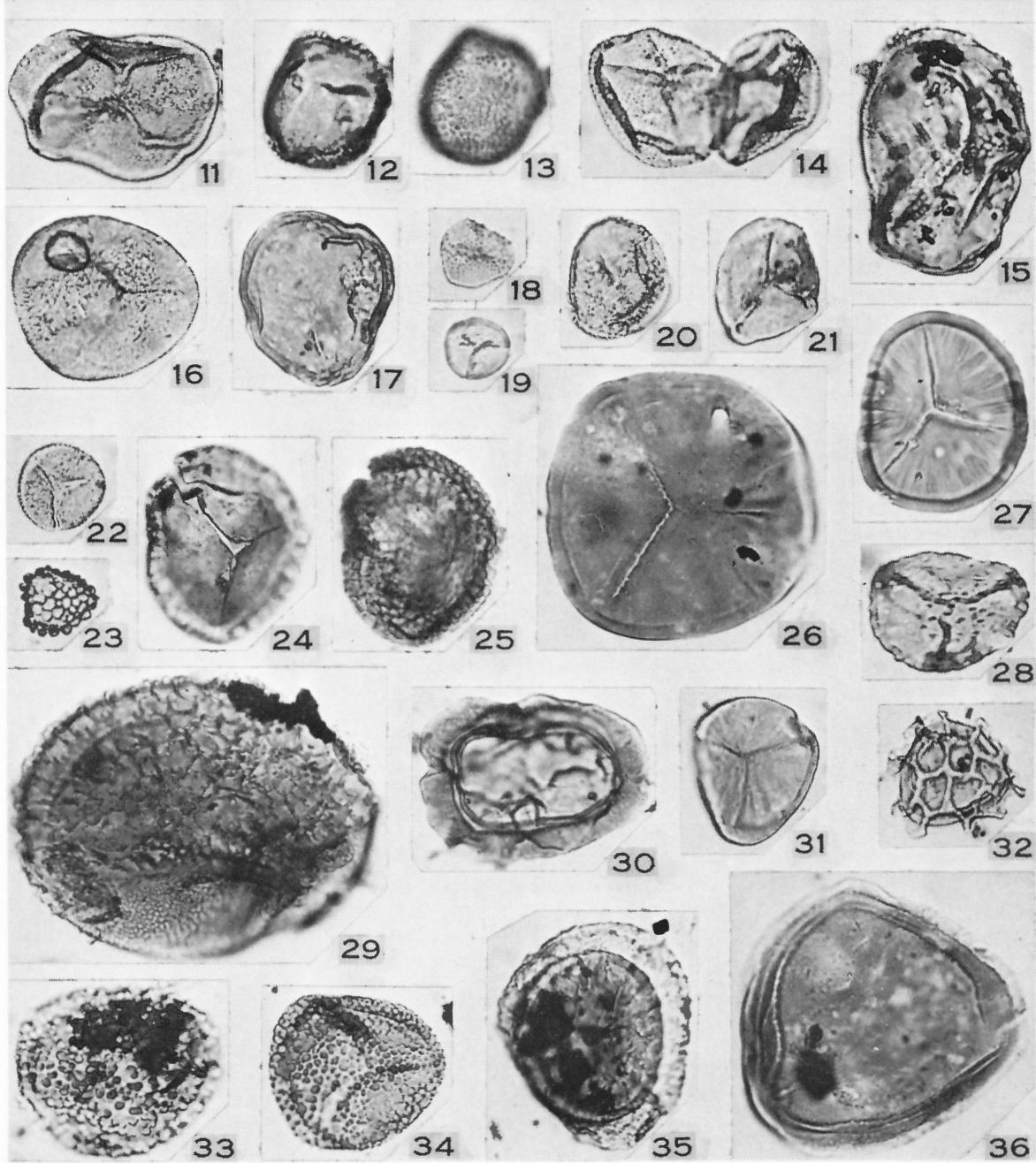
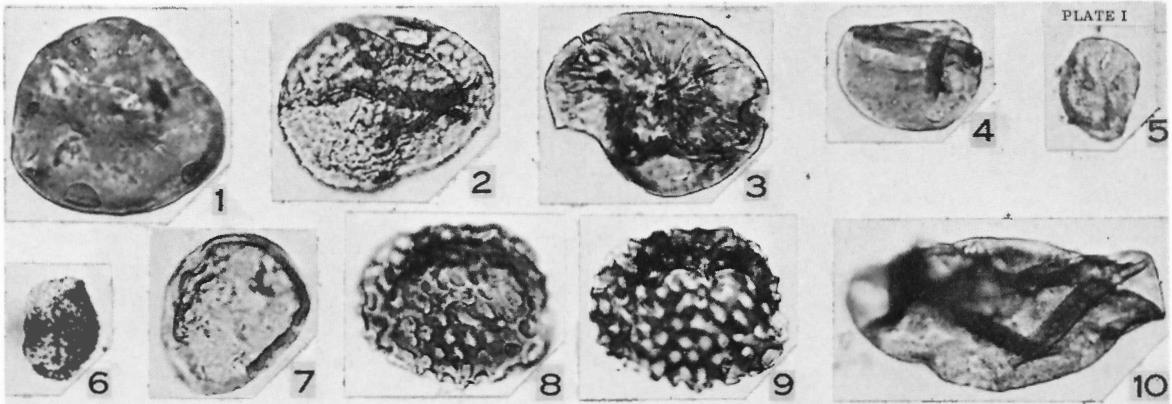


PLATE II
LOWER DEVONIAN

Emsian

Battery Point Formation, lower part, eastern Gaspé Peninsula, Quebec. GSC Plant Locs. 5317, 5384, 6583, and 7086 to 7102, south side of Gaspé Bay, shore section from Anse à-Brillant to Bois Brûlé Brook. GSC Plant Loc. 5313, south side Gaspé Bay, shore cliff 1/2 mile southeast of Tar Point. GSC Plant Locs. 5297, 5385, 5586, north side Gaspé Bay, shore cliffs between Peninsula Gaspé and Laurencelle Road. Collector, D.C. McGregor, 1959, 1960, 1962, 1964. References: McGerrigle, 1950; Boucot and Cumming, 1953; Boucot, 1960, p. 132.

- Figures 1-3. Deltoidospora spp. 15136-15138. Loc. 7087.
- Figures 4, 5. Retusotriletes simplex Naumova, 1953, p. 29. 15139, 15140. Locs. 7102 and 7095.
- Figure 6. Retusotriletes sp. 15141. Loc. 5384.
- Figures 7, 17, 18, 19. Cyclogranisporites sp. Ornamented outer wall partly removed. Specimens which have lost the ornamented outer wall are Calamospora. 15142-15144. Locs. 7097 and 7102.
- Figure 8. Asterocalamotriletes sp. 15146. Loc. 6583.
- Figure 9. ?Stenozonotriletes sp. 15147. Loc. 5297.
- Figures 10, 11. Retusotriletes sp. 15148. Loc. 7099.
- Figures 12, 13. Anaplanisporites sp. 15149. Loc. 7093.
- Figures 14, 15. Anaplanisporites sp. 15150, 15151. Loc. 6583.
- Figure 16. Retusotriletes sp. 15064. Loc. 6583.
- Figures 20, 22. Verrucosporites sp. 15145, 15152. Locs. 7093, 7095.
- Figure 21. Cyclogranisporites sp. 15153. Loc. 7089.
- Figure 23. Apiculatasporites sp. 15154. Loc. 7093.
- Figure 24. Apiculataporites sp. 15155. Loc. 6583.
- Figure 25. Verrucosporites sp. 15156. Loc. 7095.
- Figure 26. Unidentified. 15066. Loc. 5313.
- Figure 27. Planisporites sp. 15158. Loc. 7090.
- Figure 28. Anapiculataporites sp. 15159. Loc. 7102.
- Figure 29. Anaplanisporites sp. 15160. Loc. 7091.
- Figure 30. cf. Procoronaspora sp. 15161. Loc. 7093.
- Figures 31, 32. Unidentified. 15162, 15163. Locs. 7088, 6583.
- Figure 33. cf. Trileites langi Richardson, 1965, p. 562. 15164. Loc. 5384.
- Figure 34. Verrucosporites sp. 15165. Loc. 5384.

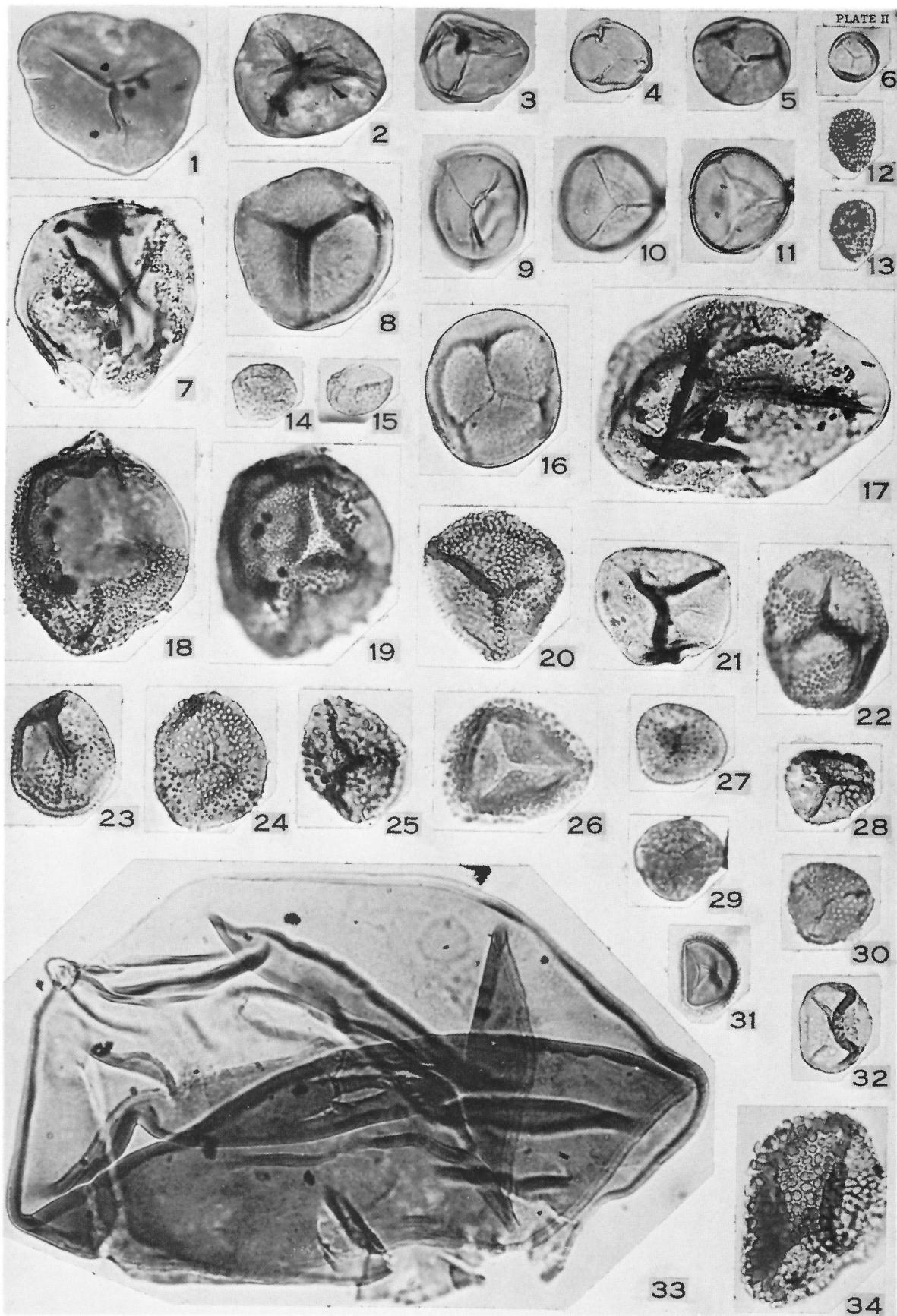


PLATE III

LOWER DEVONIAN

Emsian

Battery Point Formation, lower part (continued).

- Figure 1. Retusotriletes sp. 15166. Loc. 5384.
- Figure 2. Unidentified. 15167. Loc. 7093.
- Figure 3. Camptotriletes sp. 15168. Loc. 7087.
- Figure 4. Apiculatisporis sp. 15169. Loc. 7092.
- Figure 5. Pustulatisporites sp. 15170. Loc. 6583.
- Figure 6. Cyclogranisporites sp. See Plate II, Figures 7 and 17-19.
15171. Loc. 7094.
- Figure 7. Unidentified. 15172. Loc. 7086.
- Figure 8. Acanthotriletes sp. 15173. Loc. 7102.
- Figures 9, 10. Acinosporites sp. 15182, 15174. Locs. 5586, 7097.
- Figure 11. ?Corystisporites. 15175. Loc. 7094.
- Figure 12. cf. Archaeotriletes setigerus Kedo, 1955, p. 25. 15176.
Loc. 7093.
- Figure 13. Dictyotriletes sp. 15177. Loc. 7094.
- Figures 14, 15. Convolutispora sp. 15178. Loc. 6583.
- Figures 16, 17. cf. Clivosispora sp. 15179. Loc. 7087.
- Figure 18. Reticulatisporites sp. cf. Dictyotriletes minor Naumova in
Allen, 1965, p. 706. 15180. Loc. 6583.

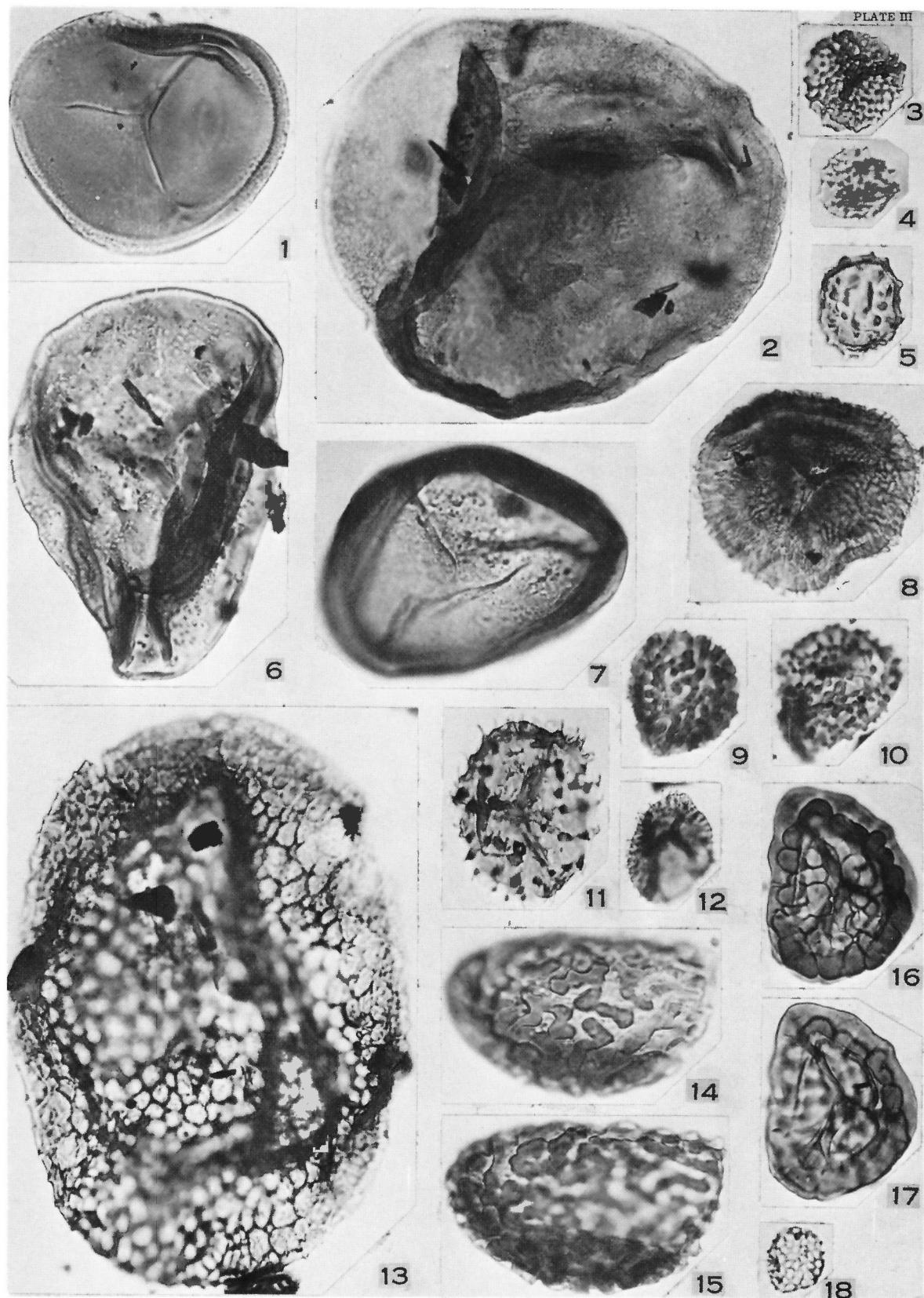


PLATE IV
LOWER DEVONIAN

Emsian

Battery Point Formation, lower part (continued).

Figures 1, 2. Dictyotriletes sp. 15181. Loc. 5297.

Figure 3. cf. Reticulatisporites emsiensis Allen, 1965, p. 705.
15067. Loc. 6583.

Figures 4, 6, 9. Dictyotriletes spp. 15183 - 15185. Locs. 7087, 7093.

Figures 5, 8. Brochotriletes spp. 15186, 15187. Locs. 5586, 5317.

Figure 7. Reticulatisporites sp., sensu Potonié and Kremp, 1955,
p. 111. 15188. Loc. 7097.

Figure 10. Emphanisporites sp. 15065. Loc. 7094.

Figure 11. Emphanisporites neglectus Vigran, 1964, p. 10. 15190.
Loc. 5384.

Figure 12. Emphanisporites rotatus McGregor, 1961, p. 3. 15191.
Loc. 7099.

Figure 13. Kraeuselisporites sp. 15192. Loc. 5385.

Figures 14, 19. Unidentified. 15193. Loc. 5297.

Figure 15. Retusotriletes actinomorphus Chibrikova, 1962, p. 404.
15194. Loc. 7091.

Figures 16, 17. Emphanisporites erraticus (Eisenack) McGregor, 1961, p. 4.
15195. Loc. 7094.

Figure 18. Samarisporites sp. 15196. Loc. 7093.

Figures 20, 21. Unidentified. 15197. Loc. 5384.

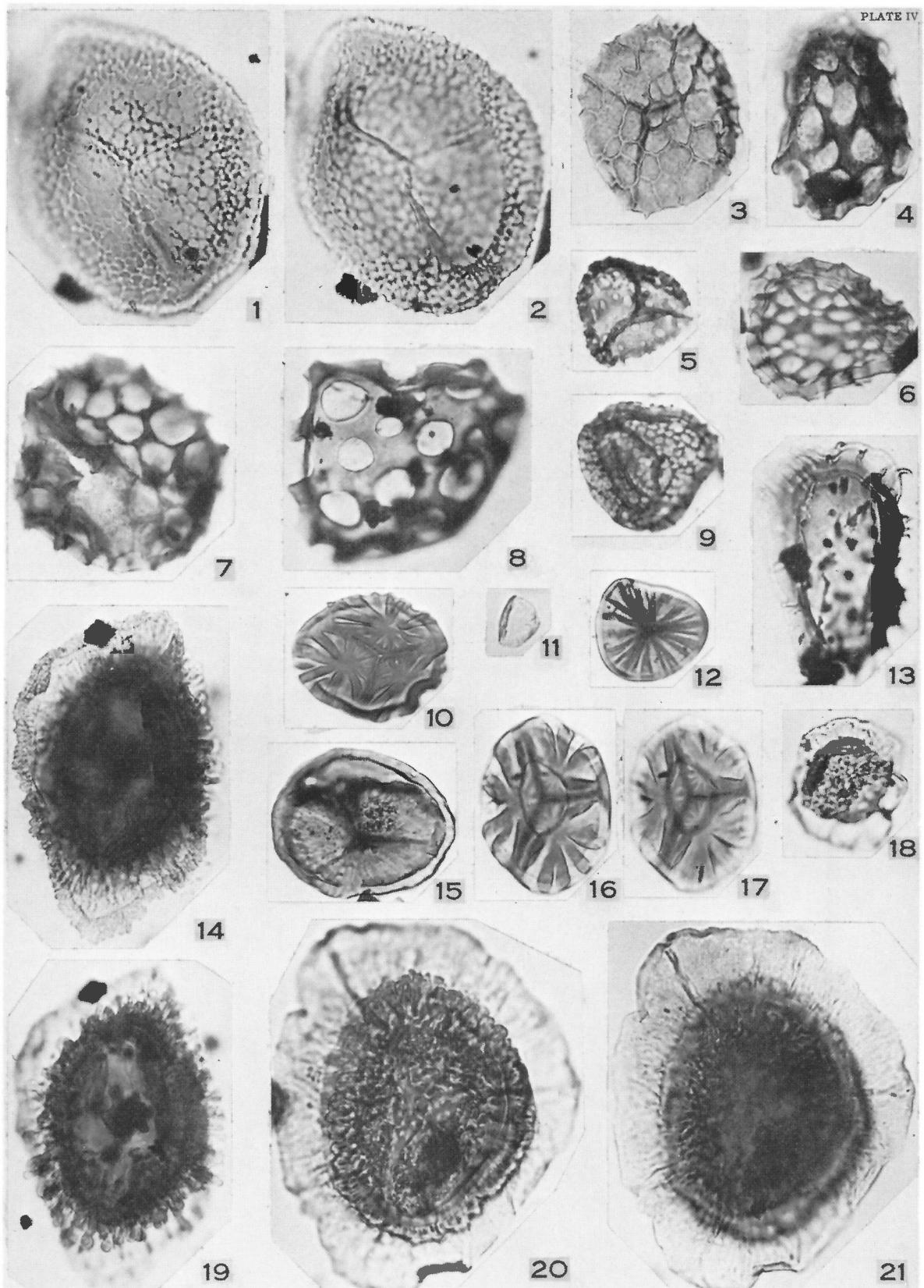


PLATE V

LOWER (AND EARLY MIDDLE?) DEVONIAN

Emsian (to early Eifelian?)

Battery Point Formation, upper part, and Malbaie Formation, eastern Gaspé Peninsula, Quebec.
Battery Point Formation: GSC Plant Locs. 5307, 5369, and 7108 to 7126, south side Gaspé Bay, shore section from Bois Brûlé Brook to Pointe Jaune; Loc. 5303, south side Gaspé Bay 1 mile southeast of Douglastown; Loc. 5310, north side Southwest Arm, halfway between Gaspé bridge and Cape O'Hara; Loc. 5370, south side Gaspé Bay, 1/2 mile southeast of Sandy Beach spit. Malbaie Formation, Locs. 7132 and 7138, south side Gaspé Bay, shore section between Pointe Jaune and Whale Head. Collector, D.C. McGregor, 1959 and 1964.

References: Alcock, 1935; McGerrigle, 1950.

- Figure 1. Punctatisporites sp. 15198. Loc. 7114.
- Figure 2. Retusotriletes sp. 15199. Loc. 7124.
- Figure 3. Apiculiretusispora sp. 15200. Loc. 7132.
- Figure 4. Phyllotheconotriletes rotundus Strel, 1964, p. 4. 15251. Loc. 7126.
- Figure 5. Cyclogranisporites sp. 15252. Loc. 7132.
- Figure 6. Apiculatasporites sp. 15253. Loc. 7108.
- Figure 7. Dibolisporites sp. 15254. Loc. 7116.
- Figure 8. Verrucosisporites sp. 15255. Loc. 7115.
- Figure 9. ?Archaeozonotriletes tortuosus Chibrikova, 1962, p. 419. 15256. Loc. 7123.
- Figure 10. Dibolisporites echinaceus (Eisenack) Richardson, 1965, p. 568. 15257. Loc. 7126.
- Figures 11, 12. Dibolisporites cf. D. echinaceus (Eisenack) Richardson. Figure 12, X1000. 15258. Loc. 7116.
- Figure 13. Perotrilites sp. Outer wall bears minute coni. 15259. Loc. 5307.
- Figure 14. cf. Dibolisporites sp. Sculptural elements only occasionally biform. 15260. Loc. 7132.
- Figure 15. Cyclogranisporites sp. See Plate II, Figures 7, 17-19. 15261. Loc. 5370.
- Figure 16. cf. Geminospora svalbardiae (Vigran) Allen, 1965, p. 696. 15262. Loc. 7124.
- Figure 17. Unidentified. 15263. Loc. 7126.
- Figure 18. Verrucosisporites sp. 15264. Loc. 7124.
- Figure 19. Anaplanisporites sp. 15265. Loc. 7126.

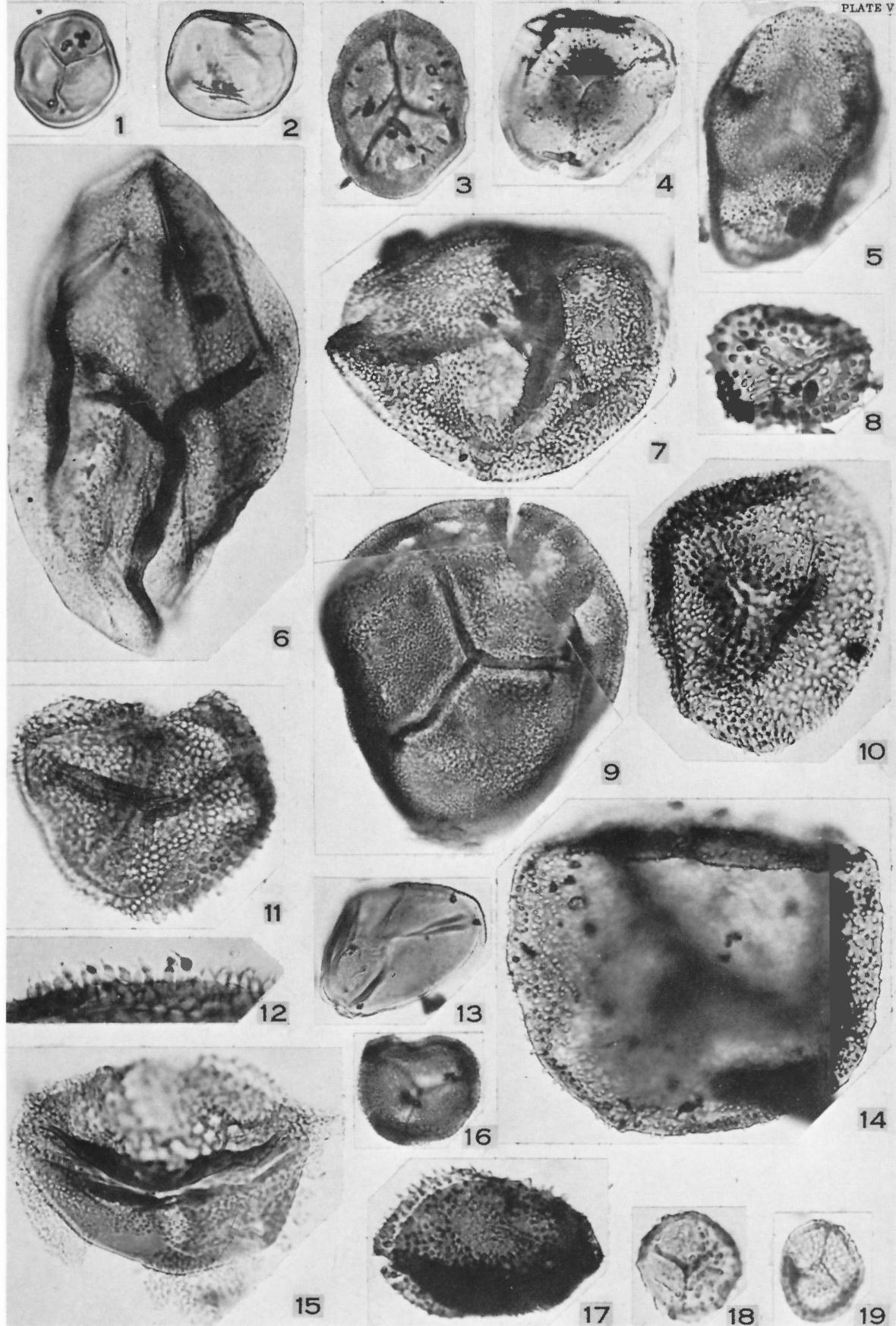


PLATE VI

LOWER (AND EARLY MIDDLE?) DEVONIAN

Emsian (to early Eifelian?)

Battery Point Formation (upper part) and Malbaie Formation (continued).

- Figure 1. Dibolisporites echinaceus (Eisenack) Richardson, 1965,
p. 568. 15266. Loc. 7132.
- Figure 2. Verrucosporites sp. 15267. Loc. 7116.
- Figures 3, 4. Unidentified. 15268. Loc. 7126.
- Figure 5. Emphanisporites robustus McGregor, 1961, p. 4. 15269.
Loc. 7126.
- Figure 6. Emphanisporites annulatus McGregor, 1961, p. 3. 15270.
Loc. 5310.
- Figure 7. Unidentified. 15271. Loc. 7116.
- Figure 8. Auroraspora minuta Richardson, 1965, p. 586. 15272.
Loc. 7131.
- Figure 9. Samarisporites hesperus Allen, 1965, p. 715. 15273.
Loc. 7132.
- Figure 10. Unidentified. 15274. Loc. 5369.

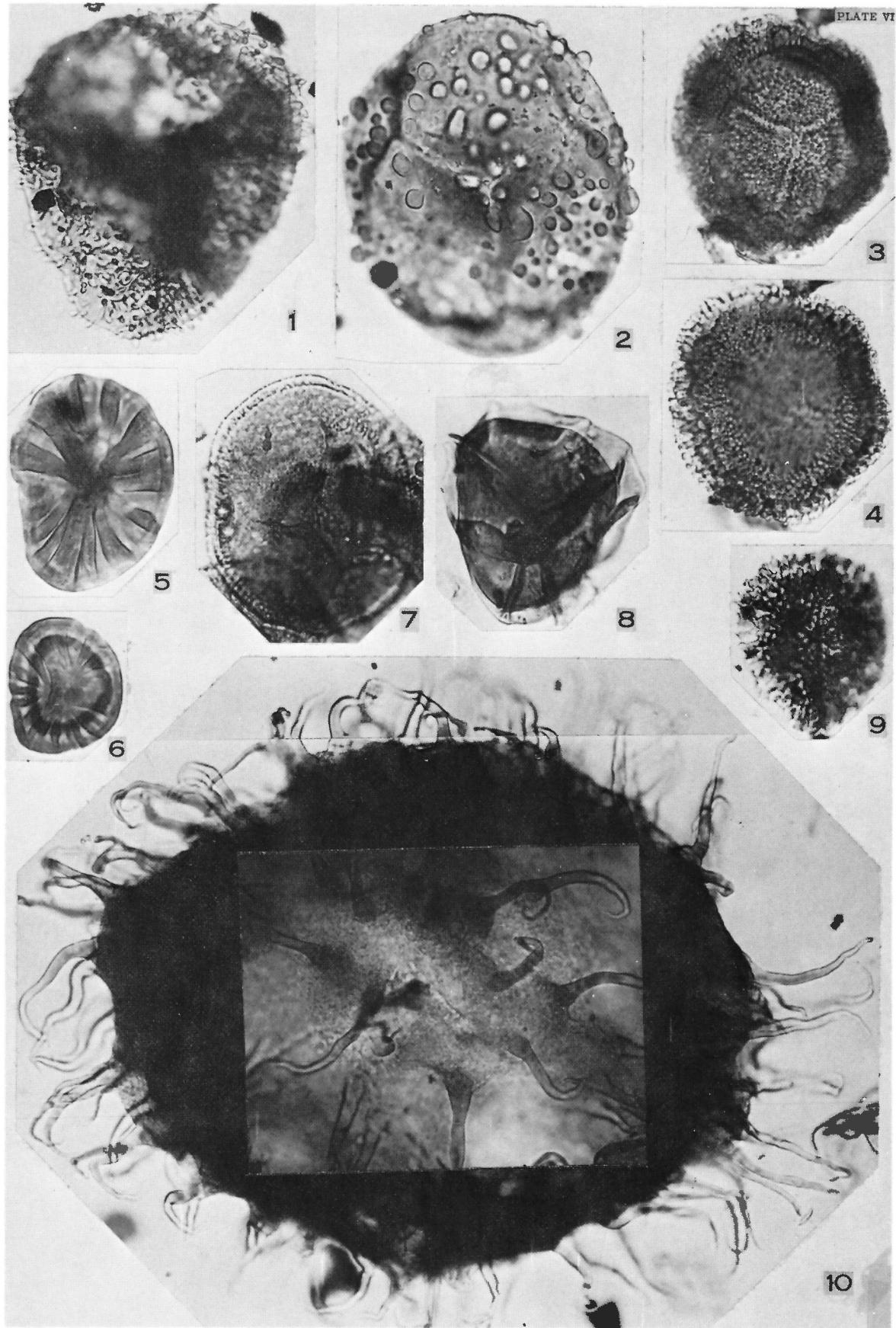


PLATE VII

LOWER (AND EARLY MIDDLE?) DEVONIAN

Emsian (to early Eifelian?)

Battery Point Formation (upper part) and Malbaie Formation (continued).

- Figure 1. ?Corystisporites multispinosus Richardson, 1965, p. 570.
 15275. Loc. 7124.
- Figures 2, 3. Rhabdosporites langi (Eisenack) Richardson, 1960, p. 54.
 Figure 3, X1000. 15276. Loc. 7138.
- Figure 4. ?Hymenozonotriletes longus Arkhangelskaya, 1963, p. 27.
 15277. Loc. 5303.
- Figure 5. ?Spinozonotriletes cf. naumovii (Kedo) Richardson, 1965,
 p. 583. 15278. Loc. 7132.
- Figure 6. Samarisporites cf. S. megaformis Richardson, 1965, p. 582.
 15279. Loc. 7126.
- Figure 7. Calyptosporites velatus (Eisenack) Richardson, 1962, p. 192.
 15280. Loc. 7126.

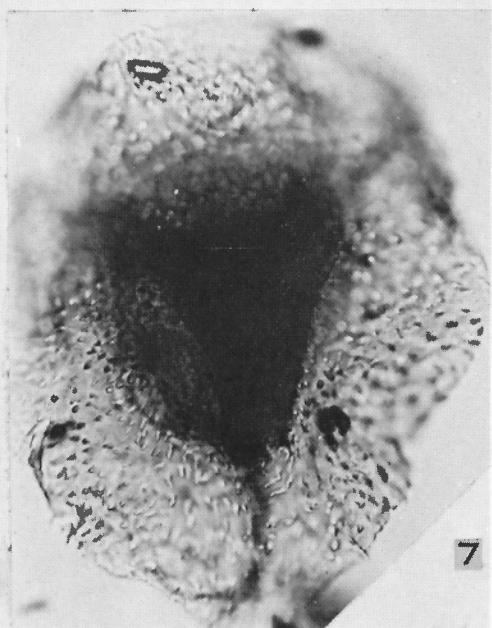
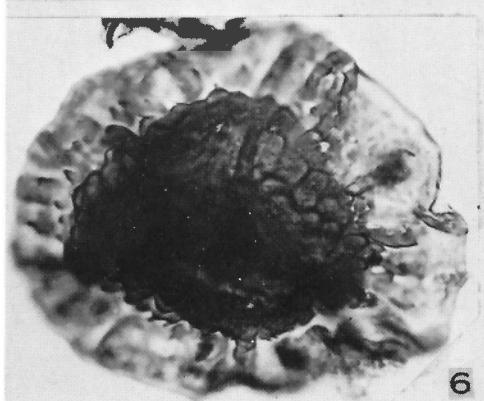
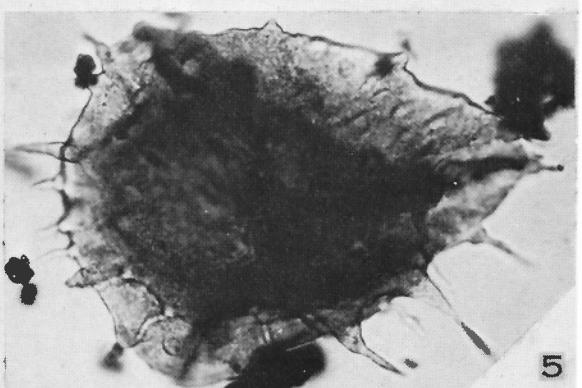
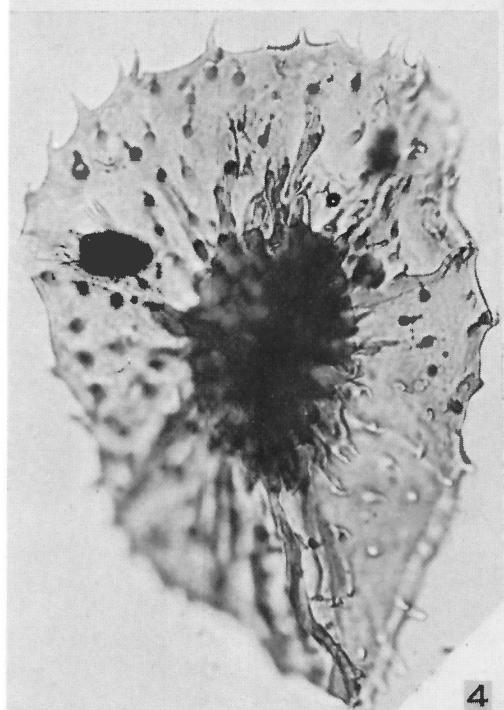
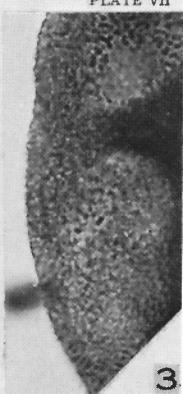
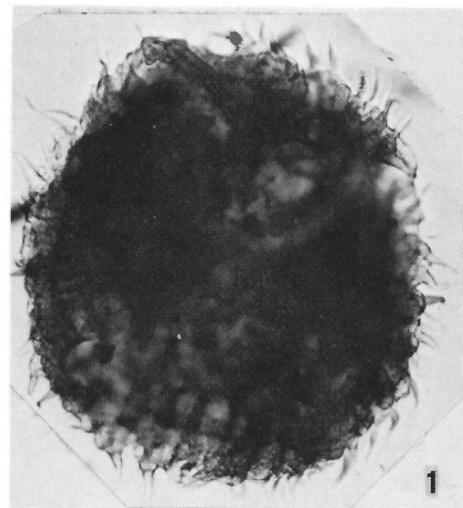


PLATE VIII

LOWER (AND EARLY MIDDLE?) DEVONIAN

Emsian (to early Eifelian?)

Battery Point Formation (upper part) and Malbaie Formation (continued).

Figure 1. Ancyrospora ancyrea (Eisenack) Richardson, 1962, p. 176.
15281. Loc. 7126.

Figure 2. Ancyrospora sp. 15282. Loc. 7115.

Figure 3. Ancyrospora ?grandispinosa Richardson, 1960, p. 55.
15283. Loc. 7132.

Figure 4. Ancyrospora cf. A. grandispinosa Richardson. 15284.
Loc. 7132.

Figure 5. Ancyrospora sp. 15285. Loc. 5307.

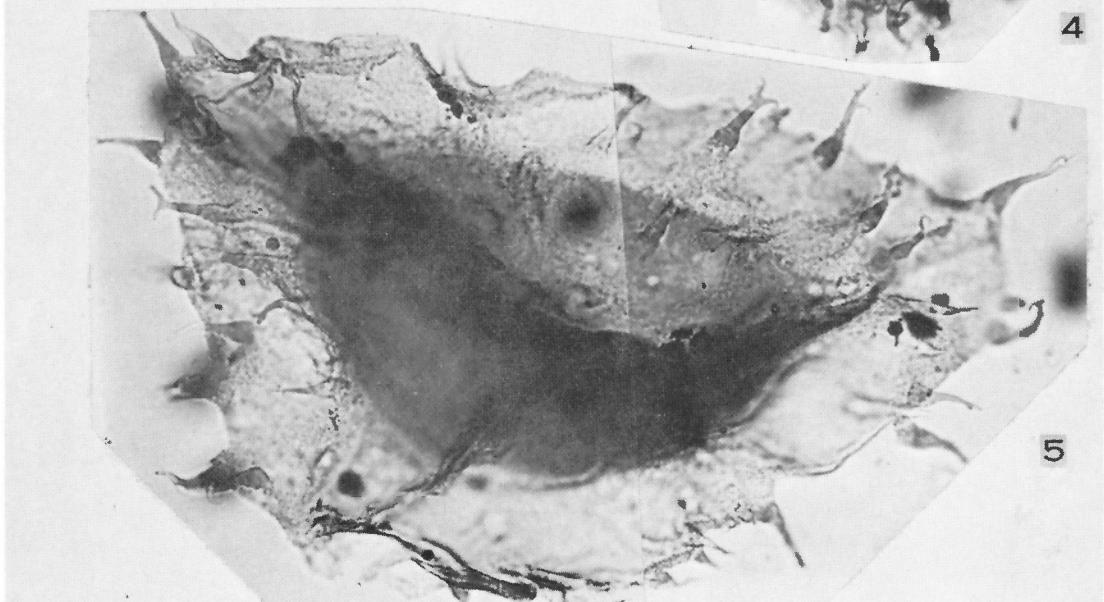
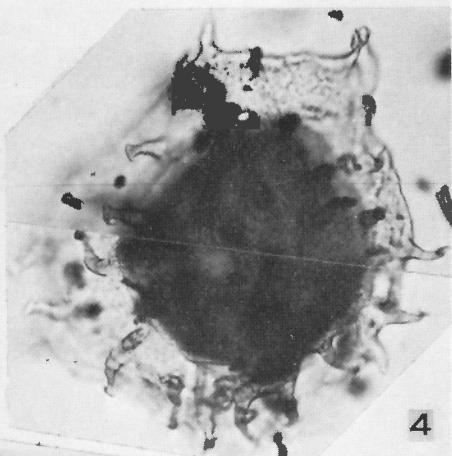
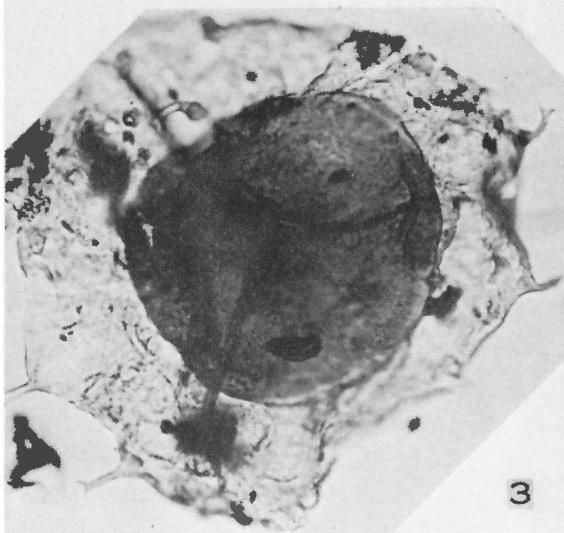
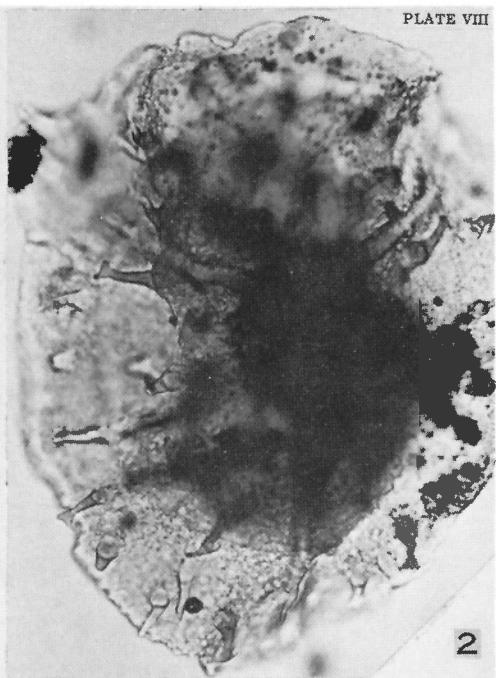
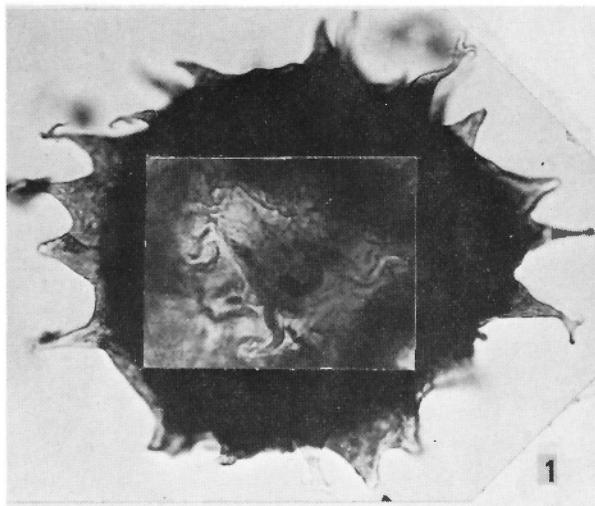


PLATE IX

MIDDLE DEVONIAN

Probably Givetian

Weatherall Formation, lower member, Melville Island, N.W.T. South limb of Robertson Point anticline, 8 miles northeast of Beverley Inlet. GSC Plant Loc. 7557 and 7560. Collected by E.T. Tozer, 1958.
Reference: Tozer and Thorsteinsson, 1964, pp. 73-74, Loc. 33.

- Figure 1. Acanthotriletes multisetus Luber var. major Richardson, 1965, p. 566. 15286. Loc. 7560.
- Figure 2. Retusotriletes sp. 15287. Loc. 7560.
- Figure 3. Retusotriletes sp. 15288. Loc. 7560.
- Figure 4. Retusotriletes sp. 15289. Loc. 7560.
- Figure 5. Camarozonotriletes sp. cf. C. breviculus Ishchenko, 1958, p. 91. 15290. Loc. 7560.
- Figure 6. ?Perotrilites sp. 15291. Loc. 7557.
- Figure 7. Hystricosporites sp. 15292. Loc. 7560.
- Figure 8. Hystricosporites sp. 15293. Loc. 7557.

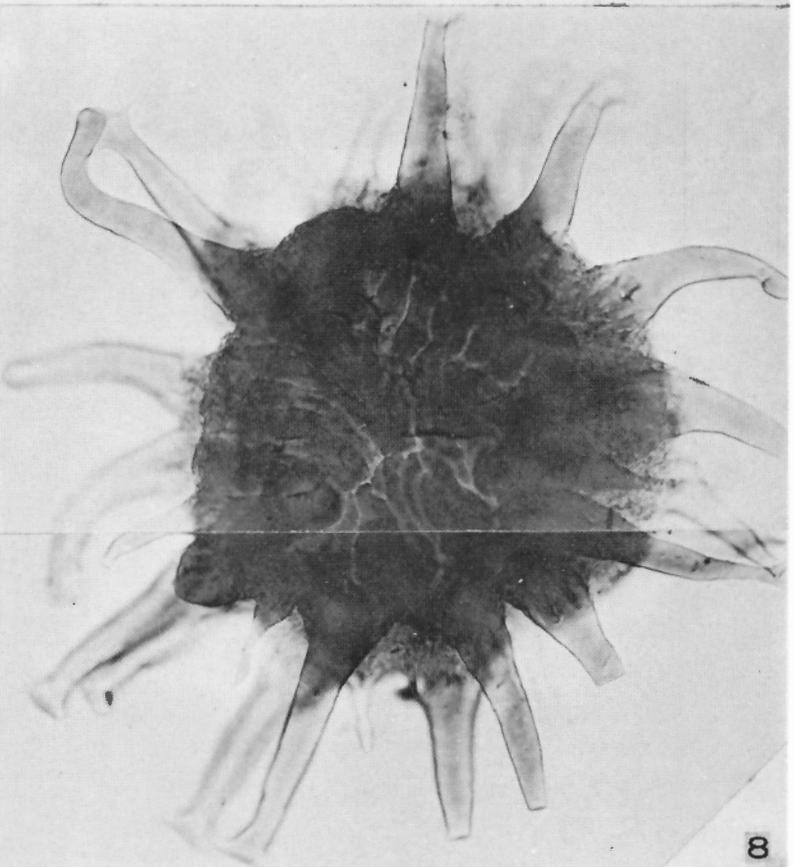
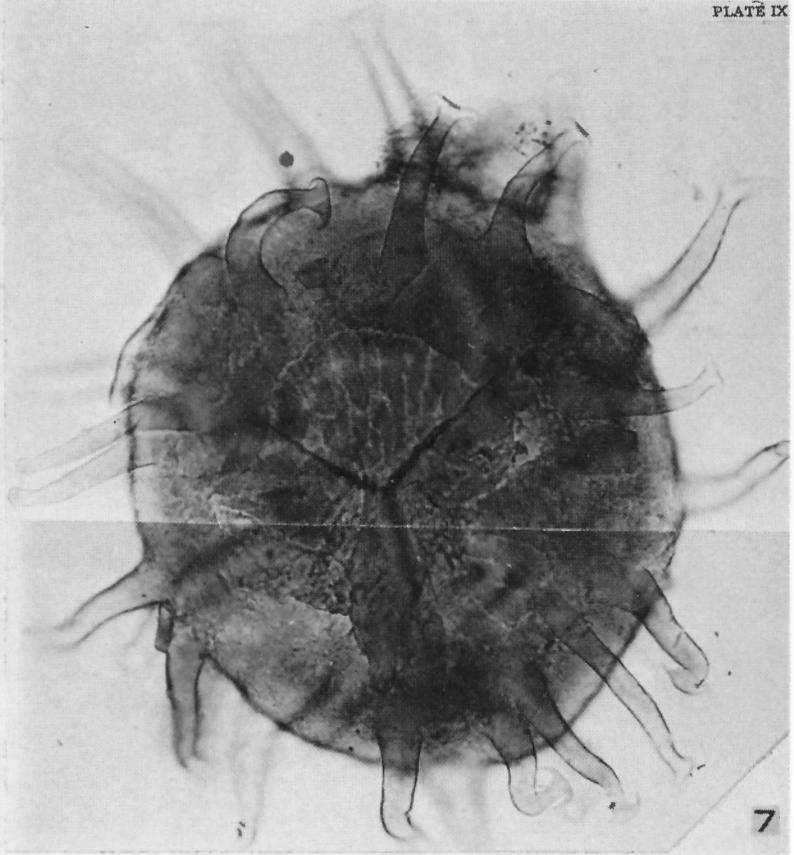
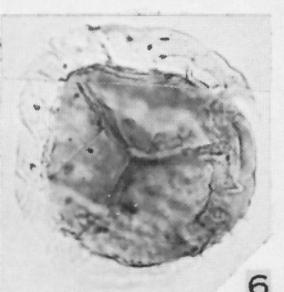
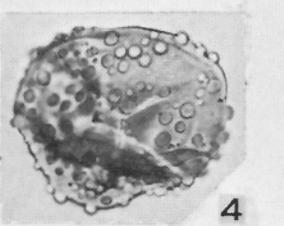
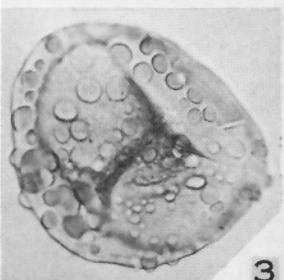
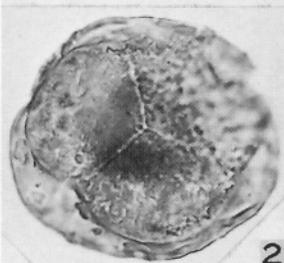
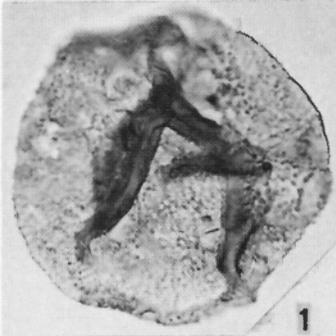


PLATE X

MIDDLE DEVONIAN

Probably Givetian

Weatherall Formation, lower member, GSC Plant Locs. 7557 and 7560
(continued).

- Figure 1. Hymenozonotriletes sp. 15294. Loc. 7560.
- Figure 2. Rhabdosporites langi Richardson, 1960, p. 54. 15295.
Loc. 7557.
- Figures 3, 4. Hymenozonotriletes breviradius Chibrikova, 1962, p. 431.
15296. Loc. 7557.
- Figure 5. Rhabdosporites langi Richardson. 15297. Loc. 7560.
- Figure 6. Hymenozonotriletes sp. cf. H. melanidus Naumova in Kedo,
1955, p. 28. 15298. Loc. 7557.

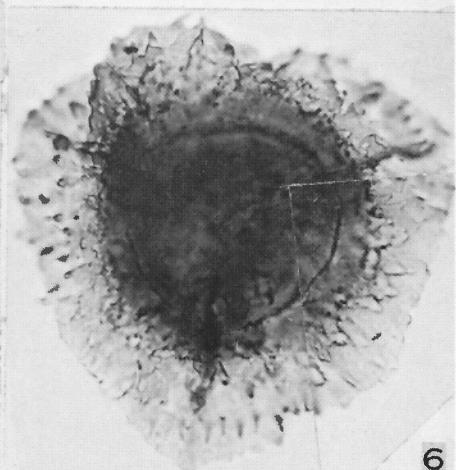
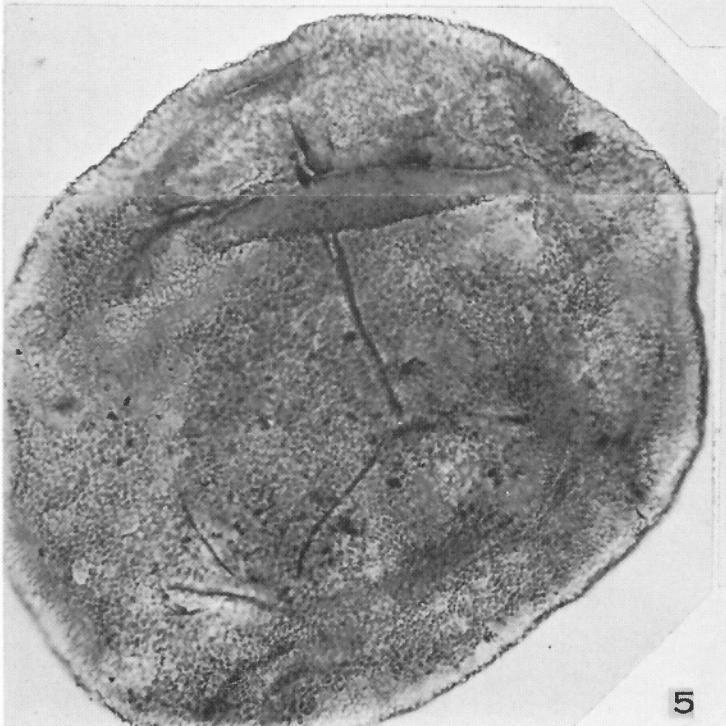
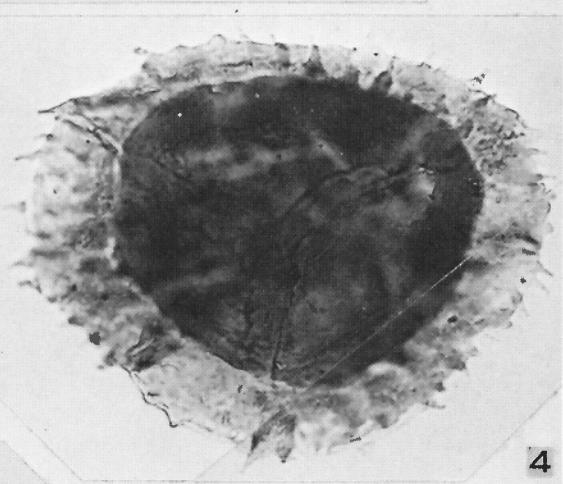
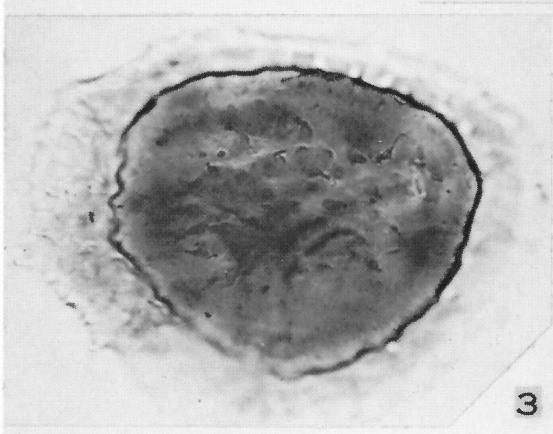
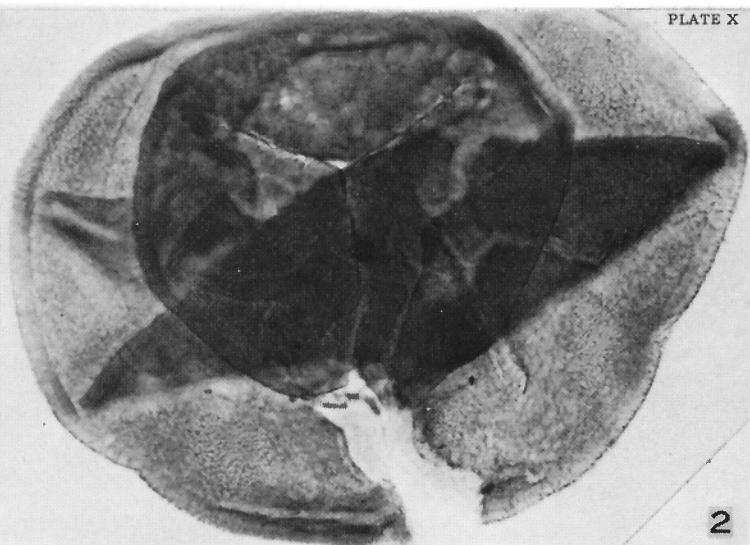
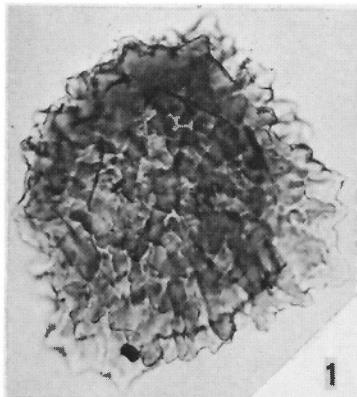


PLATE XI

MIDDLE DEVONIAN

Probably Givetian

Weatherall Formation, lower member, GSC Plant Locs. 7557 and 7560
(continued).

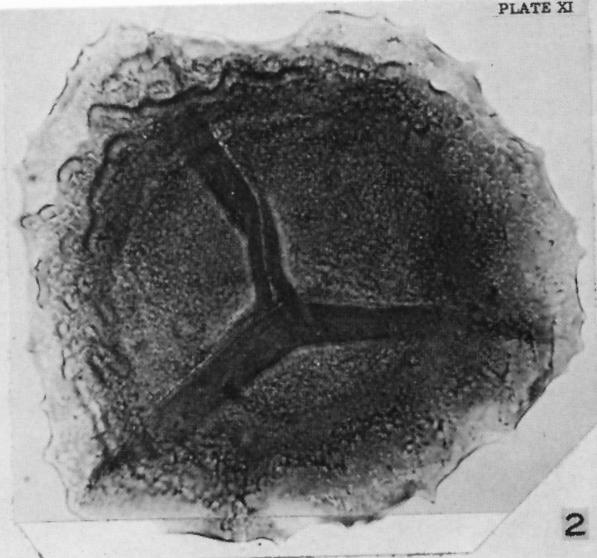
Figure 1. Calyptosporites velatus Richardson, 1960, p. 52. 15299.
Loc. 7557.

Figure 2. Hymenozonotriletes sp. 15300. Loc. 7557.

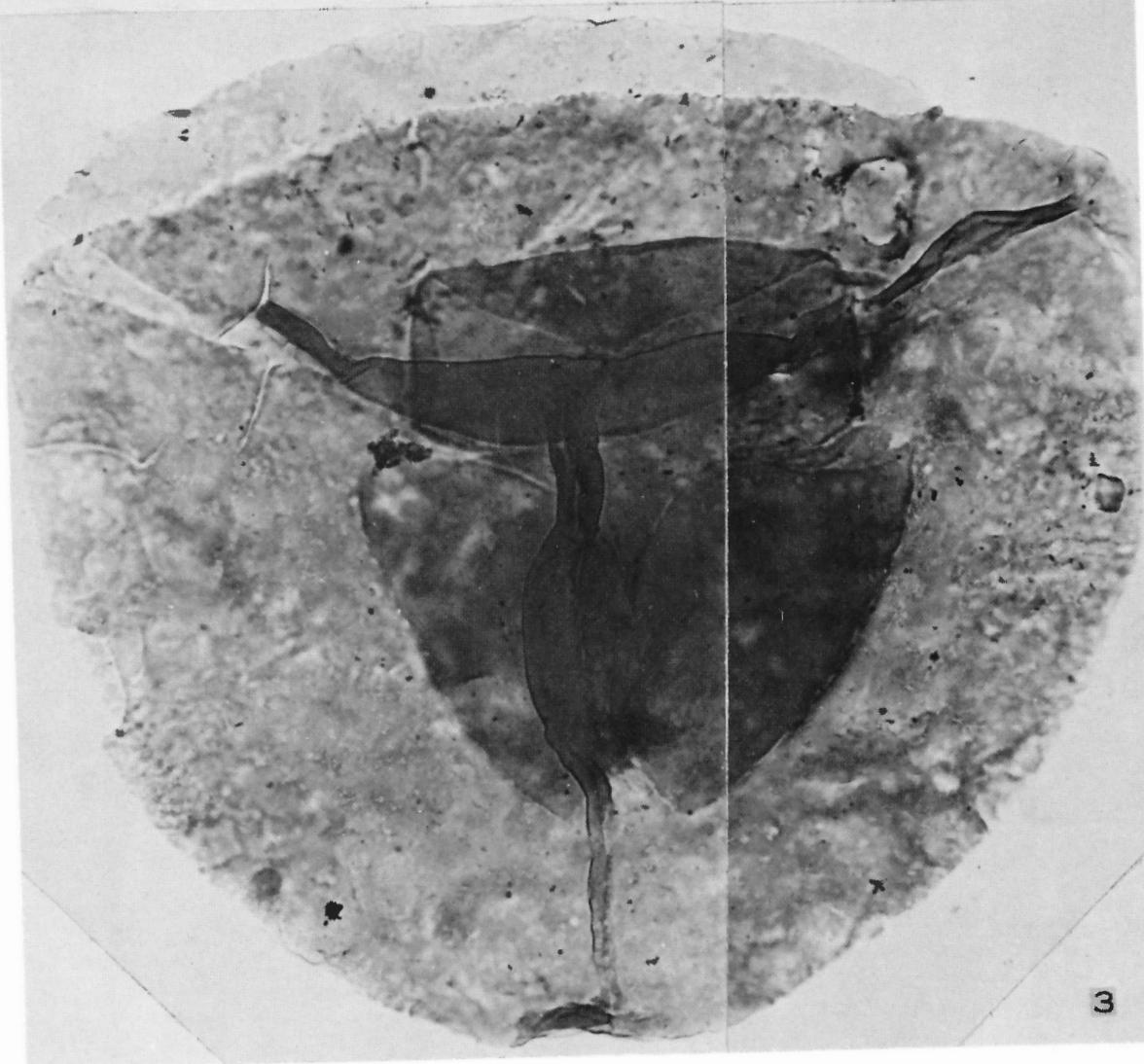
Figure 3. Auroraspora macromanifestus (Hacquebard) Richardson,
1960, p. 50. 15301. Loc. 7557.



1



2



3

PLATE XII

MIDDLE DEVONIAN

Probably Givetian

Weatherall Formation, lower member, GSC Plant Locs. 7557 and 7560
(continued).

Figure 1. Calyptosporites velatus Richardson, 1960, p. 52. 15302.
Loc. 7557.

Figures 2, 3. Hymenozonotriletes sp. 15303. Loc. 7560.

Figures 4, 5. Hymenozonotriletes sp. cf. H. tichomirovii Naumova var.
devious Chibrikova, 1959, p. 76. 15304. Loc. 7557.

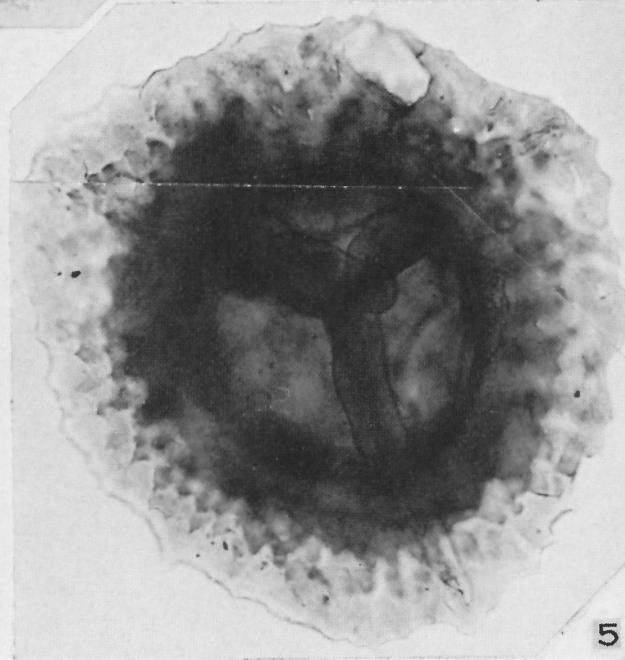
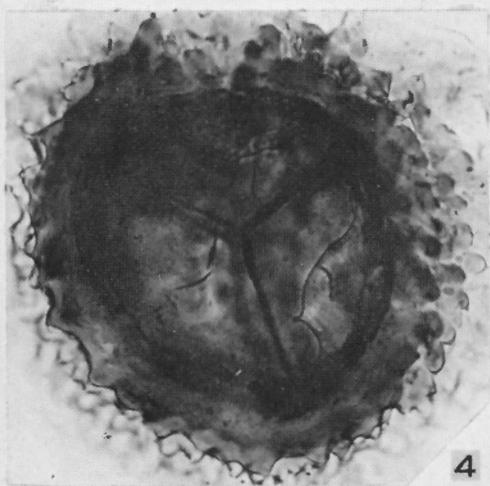
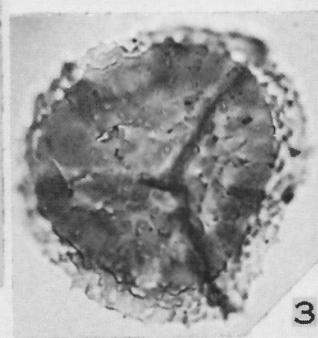
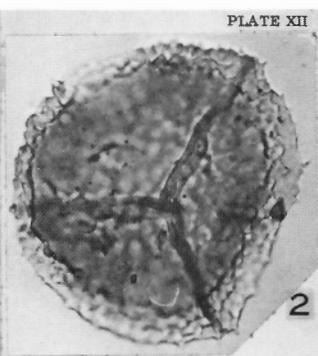
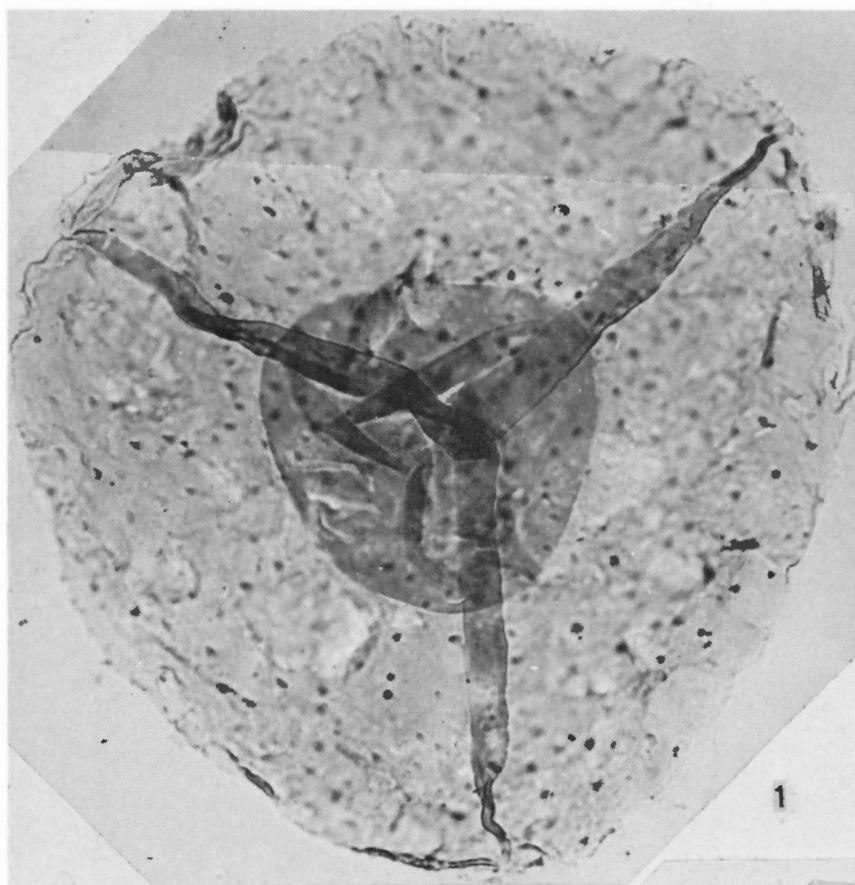


PLATE XIII
MIDDLE DEVONIAN
Probably Givetian

Weatherall Formation, lower member, GSC Plant Locs. 7557 and 7560
(continued).

Figures 1, 2. Calyptosporites sp. 15305. Loc. 7557.

Figure 3. Grandispora sp. 15306. Loc. 7557.

Figures 4, 5. Grandispora sp. 15307. Loc. 7557.

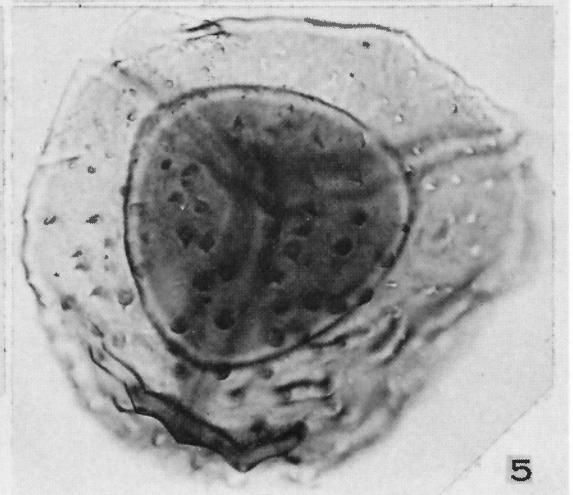
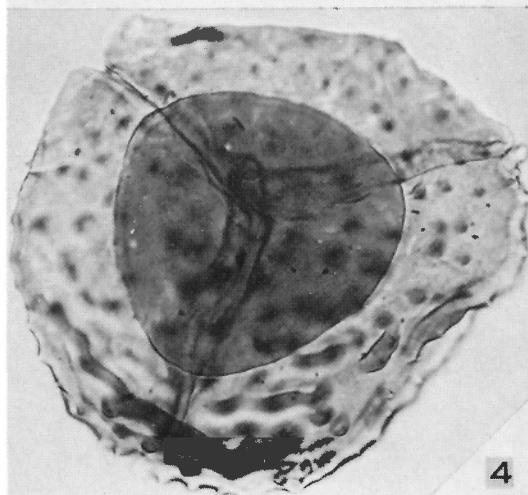
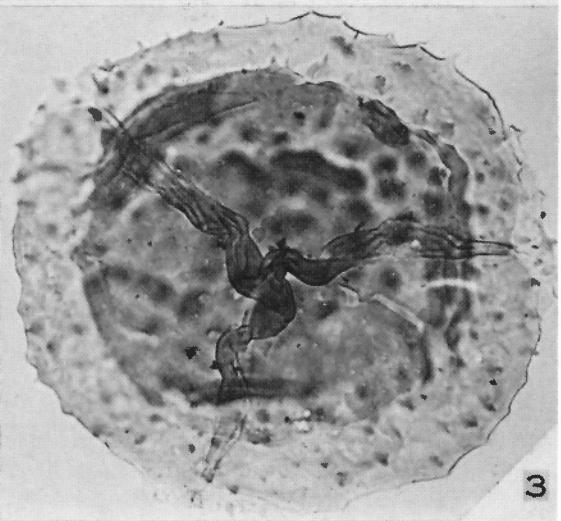


PLATE XIV

MIDDLE DEVONIAN

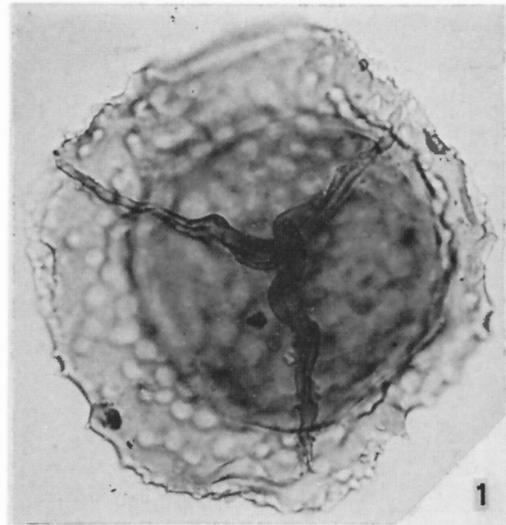
Probably Givetian

Weatherall Formation, lower member, GSC Plant Locs. 7557 and 7560
(continued).

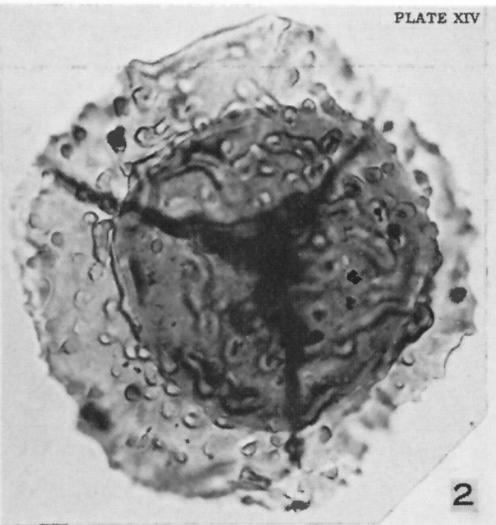
Figures 1, 2. Grandispora sp. 15308. Loc. 7557.

Figures 3, 4. Hymenozonotriletes sp. 15309. Loc. 7557.

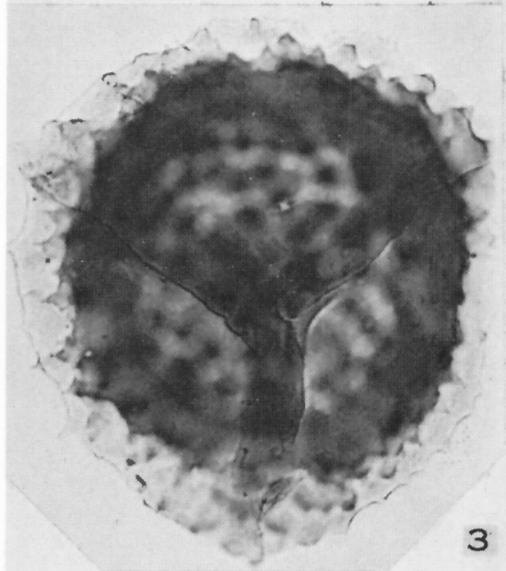
Figures 5, 6. Hymenozonotriletes cf. H. rigidispinus Naumova, 1953,
p. 39. 15310. Loc. 7557.



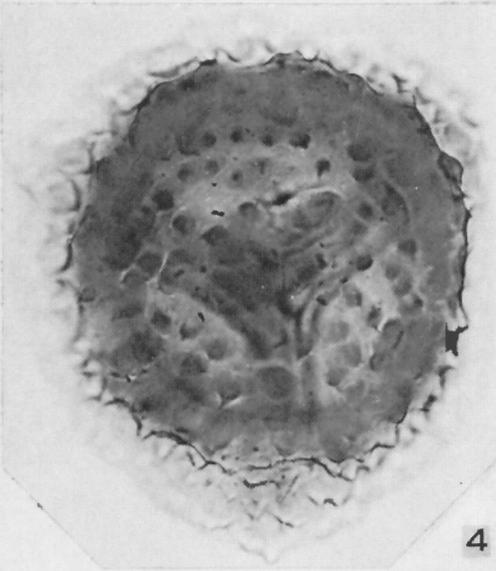
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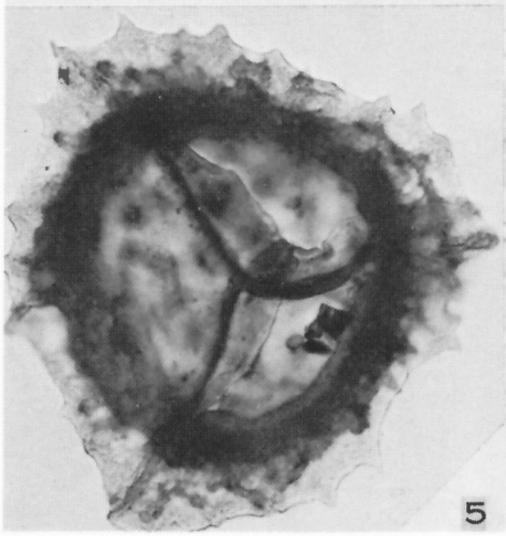
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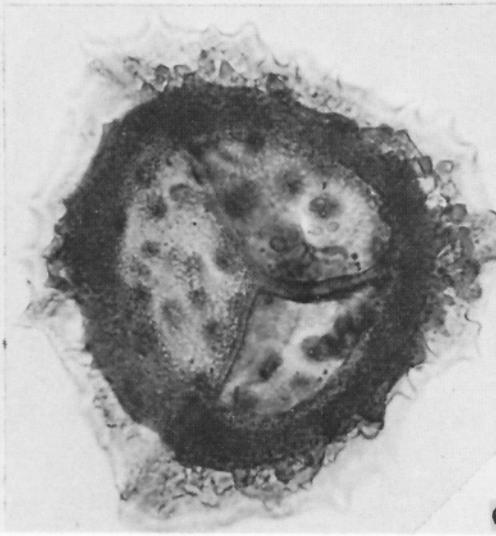
3



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5



6

PLATE XV

UPPER DEVONIAN

Frasnian

Griper Bay Formation, Melville Island, N.W.T. South limb of Robertson Point anticline, 8 miles northeast of Beverley Inlet, from one-foot coal seam 558 feet above base of formation, 1835 feet below early Famennian fauna. GSC Plant Loc. 7559. Collected by E.T. Tozer, 1958.
References: Tozer and Thorsteinsson, 1964, p. 84; Kerr et al. 1965, p. 417.

Figures 1, 2. Retusotriletes cf. R. distinctus Richardson, 1965, p. 565.
15311

Figure 3. Foveosporites cf. F. insculptus Playford, 1962, p. 601.
15312

Figures 4, 5. Acinosporites sp. 15313

Figure 6. Retusotriletes cf. R. oblitteratus Chibrikova, 1962, p. 399.
15314

Figures 7, 10. ?Geminospora sp. 15315

Figures 8, 9. cf. Lycospora magnifica McGregor, 1960, p. 35. 15316

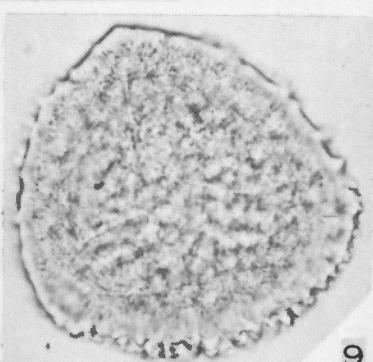
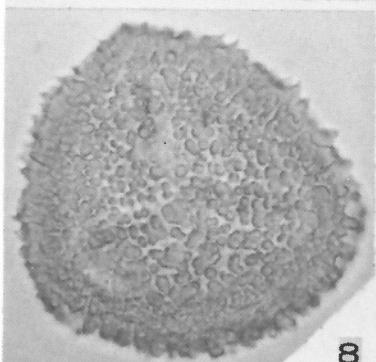
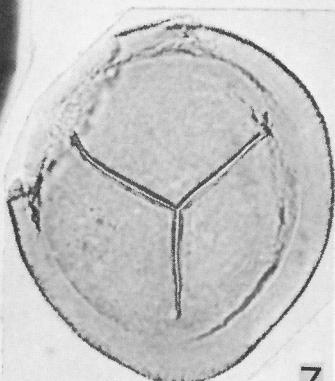
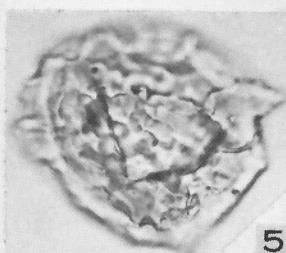
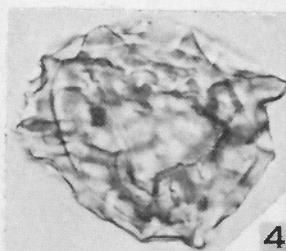
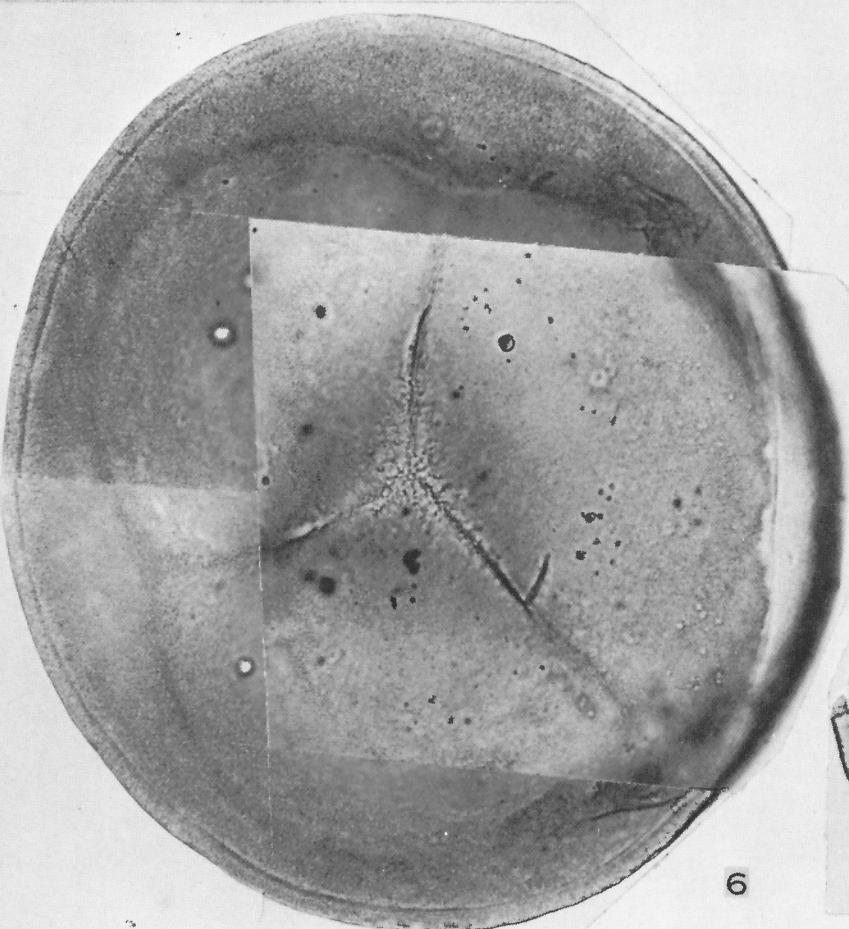
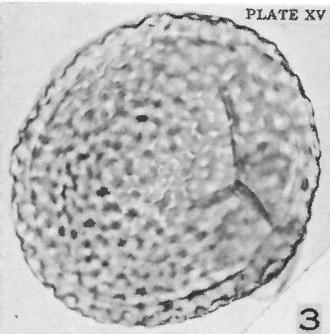
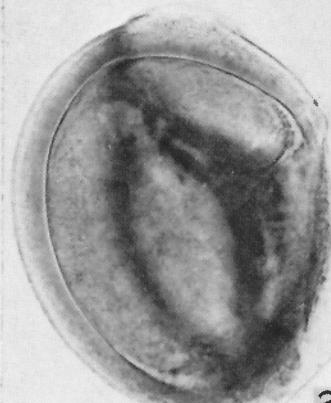
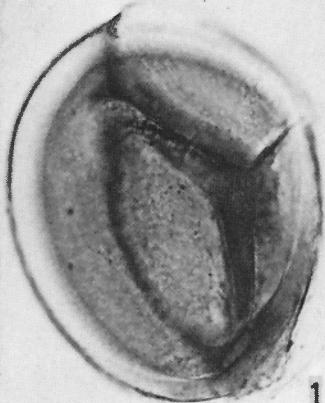


PLATE XVI

UPPER DEVONIAN

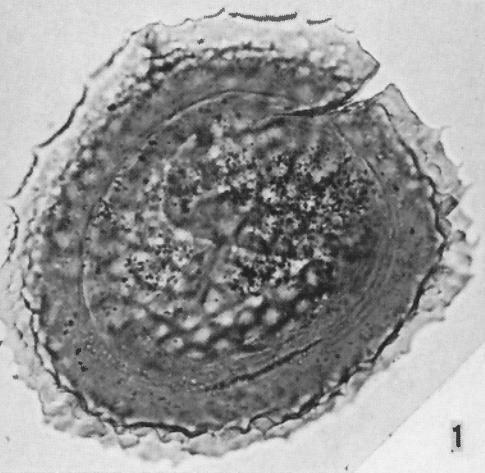
Frasnian

Griper Bay Formation, GSC Plant Loc. 7559 (continued).

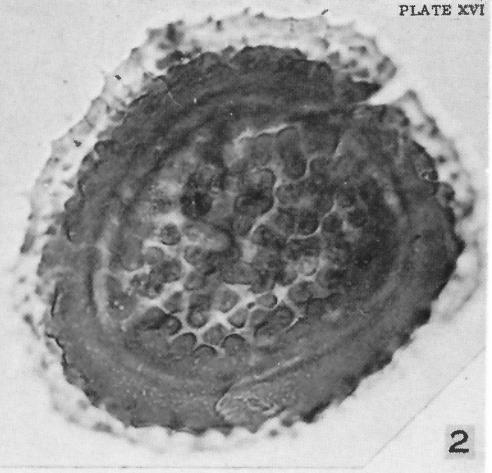
Figures 1, 2. Densosporites devonicus Richardson, 1960, p. 57. 15317

Figures 3, 4. Archaeozonotriletes cf. A. optivus var. vorobjevensis
Chibrikova, 1962, p. 430. 15318

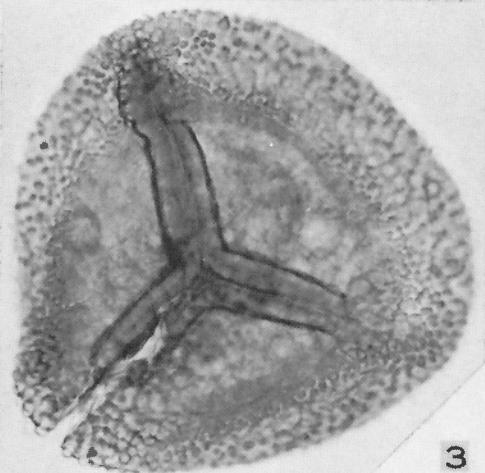
Figures 5, 6. Archaeozonotriletes optivus var. vorobjevensis Chibrikova.
15319



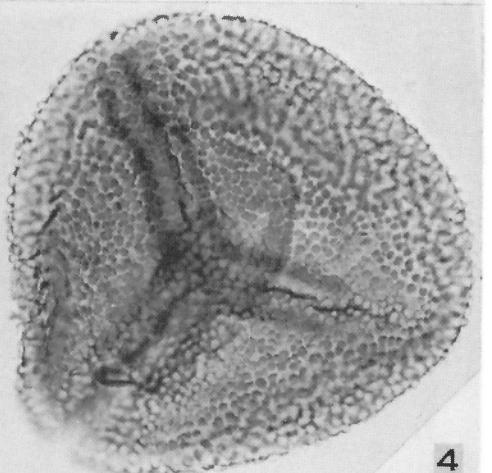
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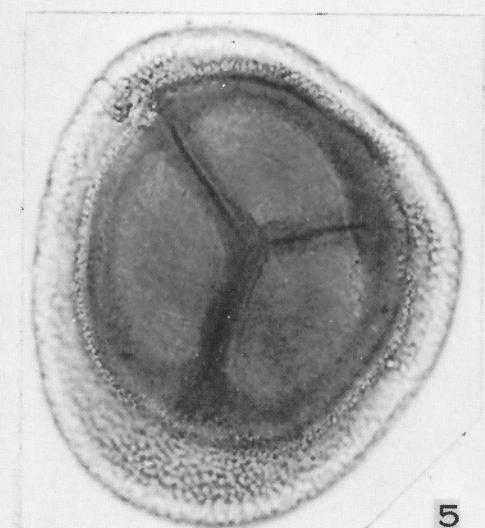
2



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PLATE XVII
UPPER DEVONIAN
Frasnian

Griper Bay Formation, GSC Plant Loc. 7559 (continued).

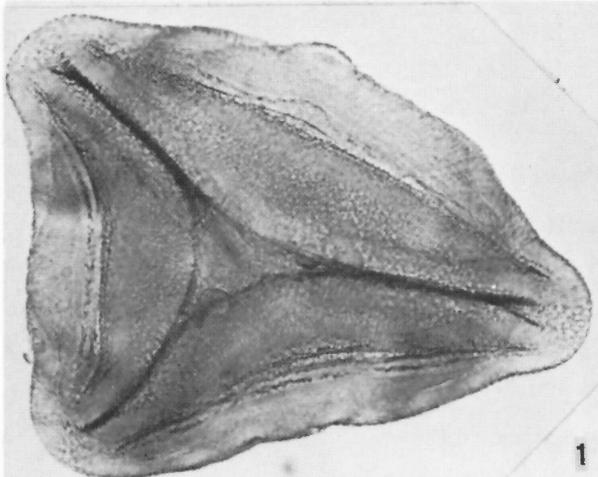
Figure 1. Unidentified. 15320

Figure 2. Archaeozonotriletes sp. 15321

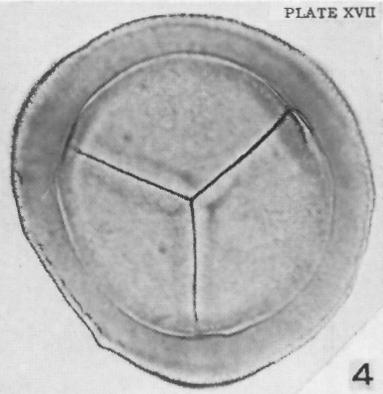
Figure 3. ?Archaeozonotriletes sp. 15322

Figures 4, 5. Archaeozonotriletes antaxios Chibrikova, 1962, p. 412.
15323

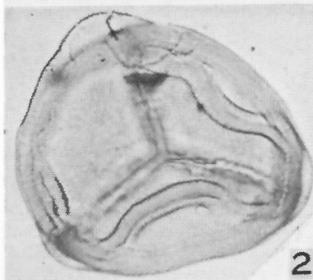
Figure 6. Archaeozonotriletes optivus Chibrikova, 1959, p. 60. 15324



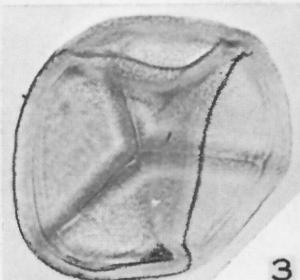
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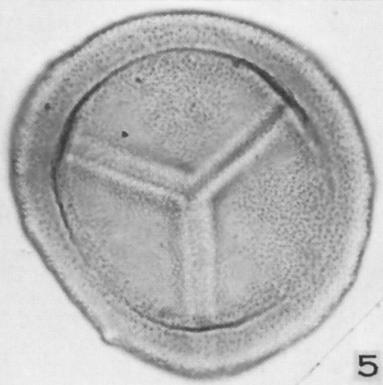
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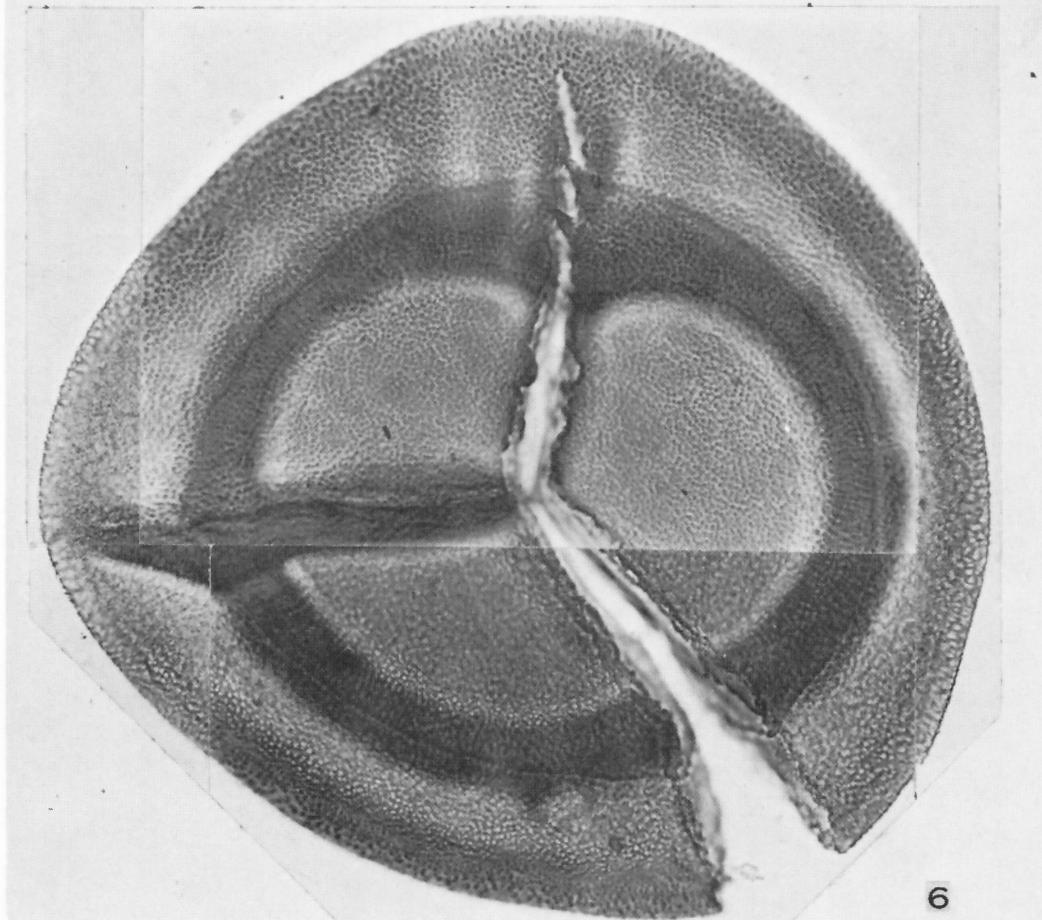
2



3



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PLATE XVIII

UPPER DEVONIAN

Frasnian

Griper Bay Formation, GSC Plant Loc. 7559 (continued).

Figures 1, 2. ?Archaeoperisaccus sp. 15325

Figure 3. ?Archaeoperisaccus sp. 15326

Figures 4, 5. Archaeoperisaccus cf. A. timanicus Pashkevich, 1964,
p. 126. 15327

Figure 6. ?Archaeoperisaccus sp. 15328

Figure 7. ?Archaeoperisaccus sp. 15329

Figure 8. Spinozonotriletes sp. 15330

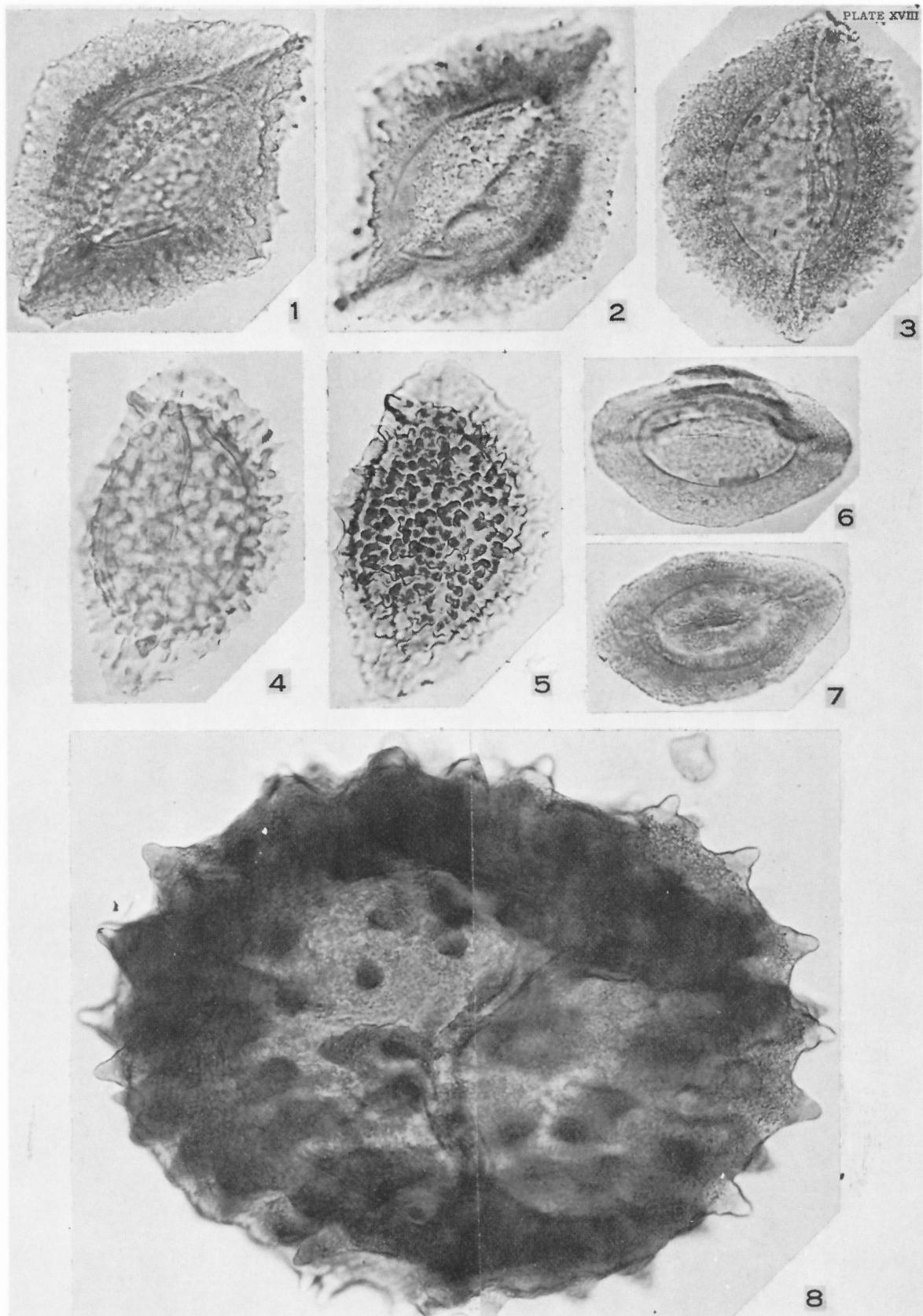


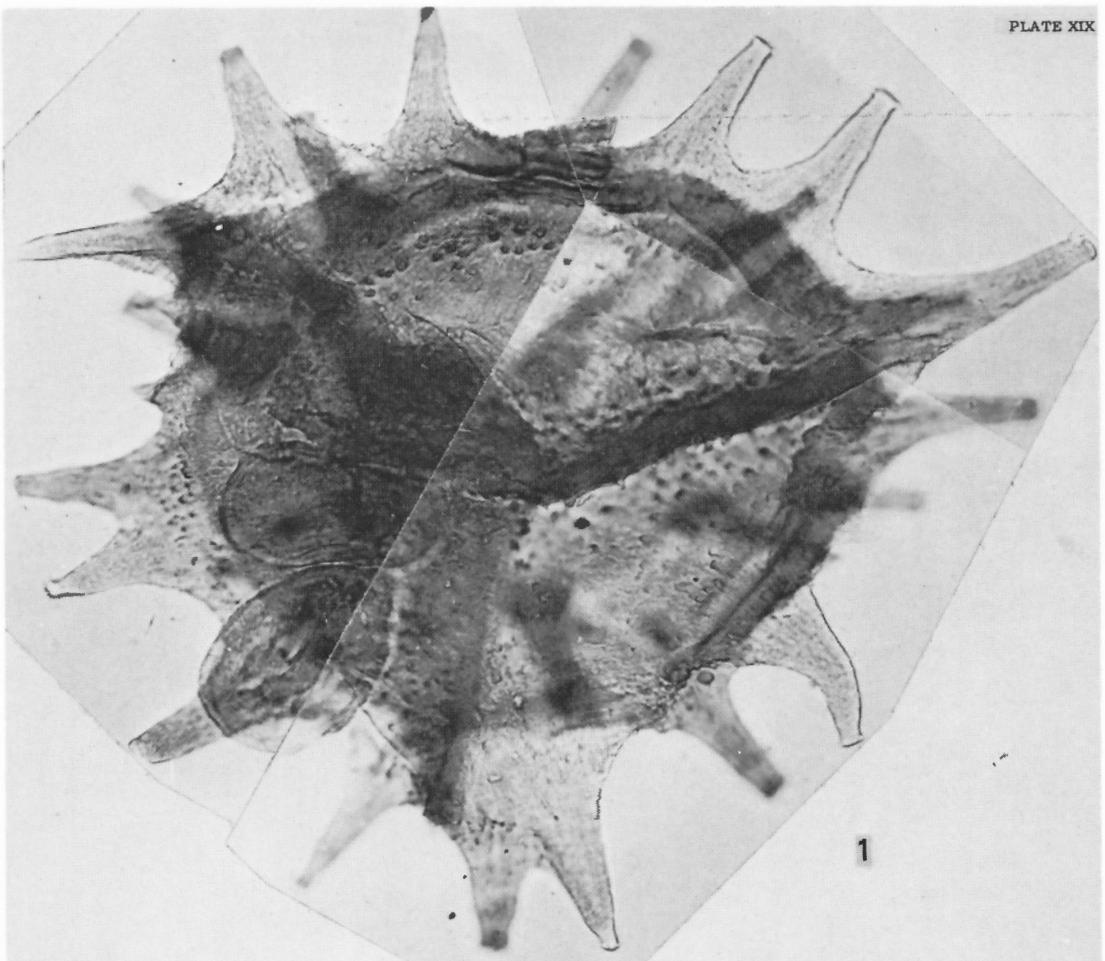
PLATE XIX

UPPER DEVONIAN

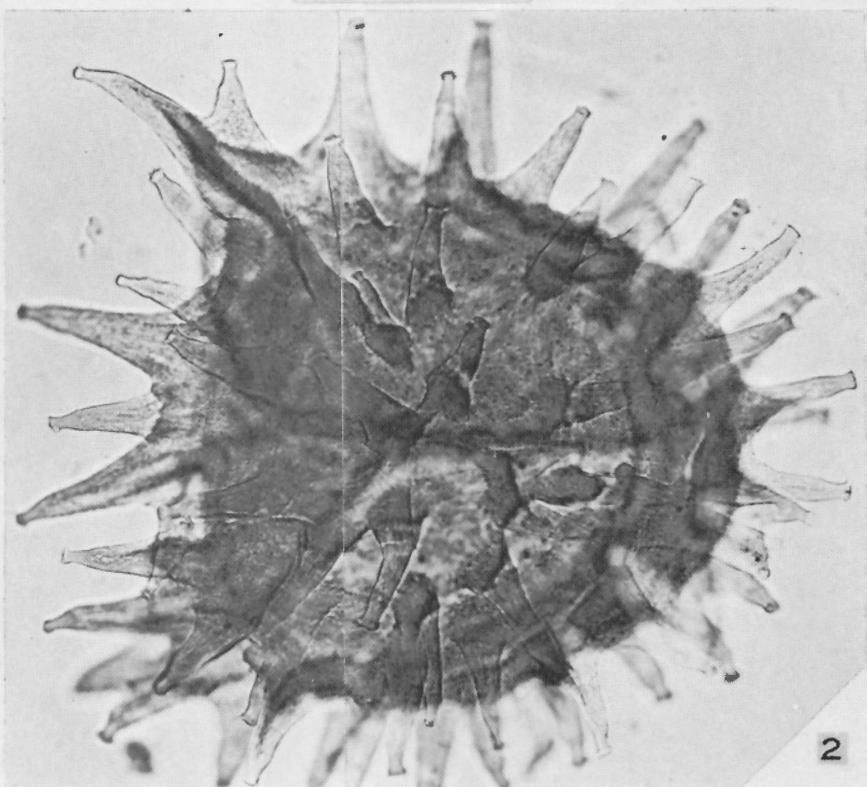
Frasnian

Griper Bay Formation, GSC Plant Loc. 7559 (continued).

Figures 1, 2. Ancyrospora spp. 15331, 15332



1



2

PLATE XX

UPPER DEVONIAN

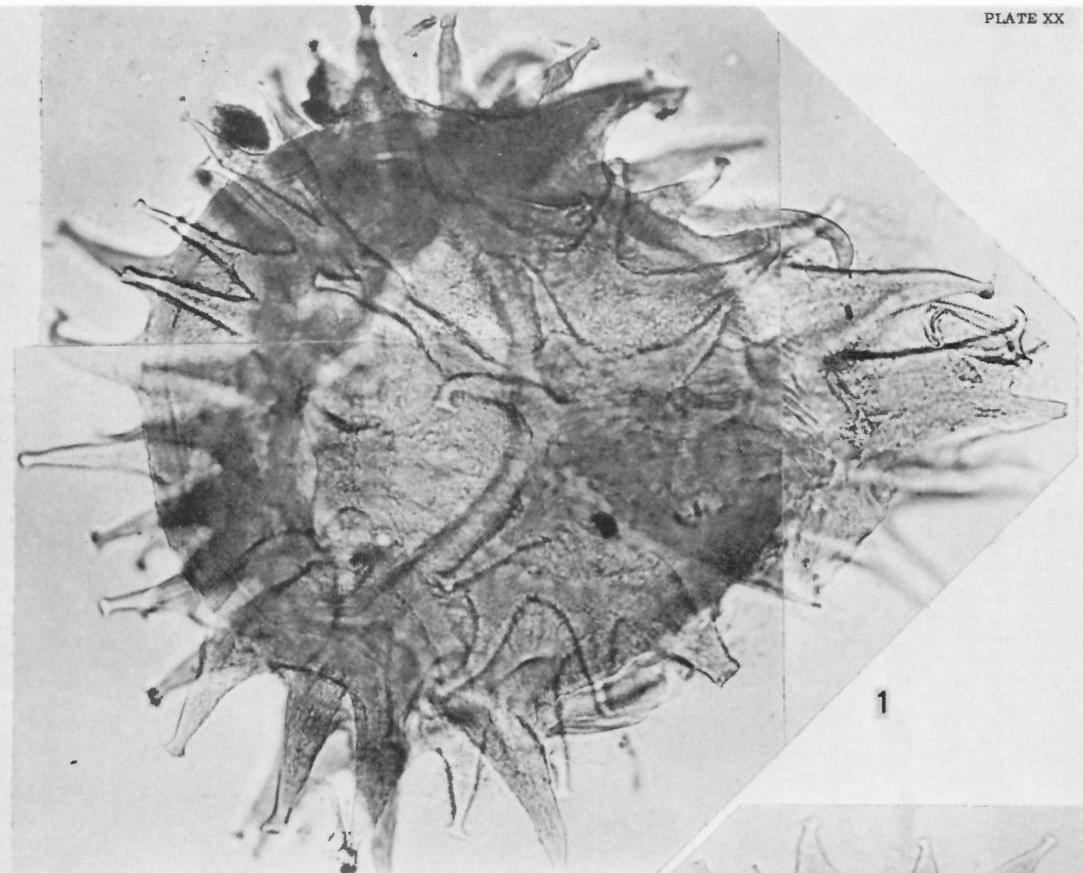
Frasnian

Griper Bay Formation, GSC Plant Loc. 7559 (continued).

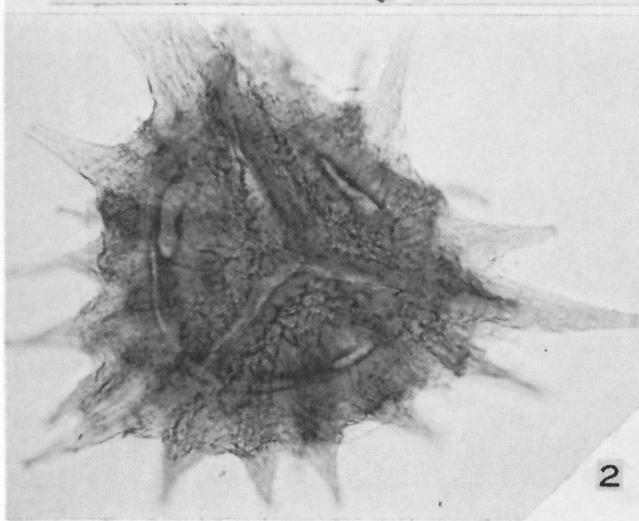
Figure 1. Ancyrospora sp. 15333

Figures 2, 3. Ancyrospora sp. 15334

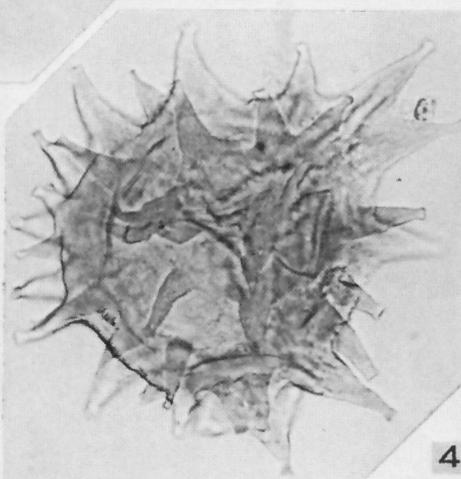
Figures 4, 5. Ancyrospora sp. 15335



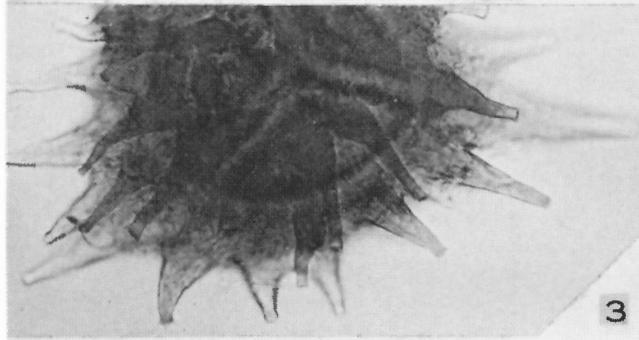
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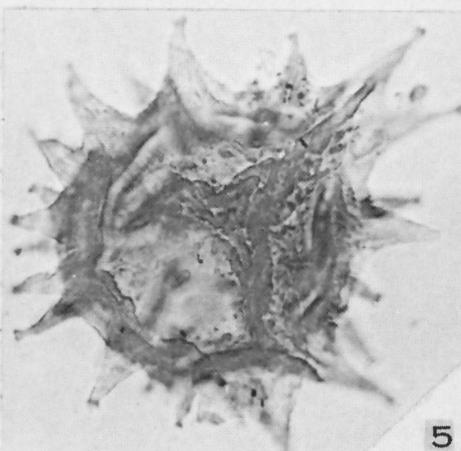
2



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5

PLATE XXI

UPPER DEVONIAN

Frasnian

Griper Bay Formation, GSC Plant Loc. 7559 (continued).

Figures 1, 2. Hystricosporites sp. 15336

Figures 3, 4. Hystricosporites sp. 15337

Figures 5, 6. Hystricosporites spp. 15338, 15339

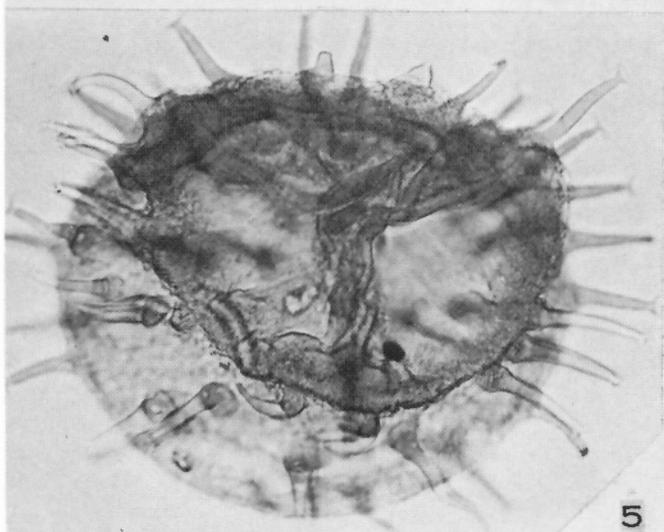
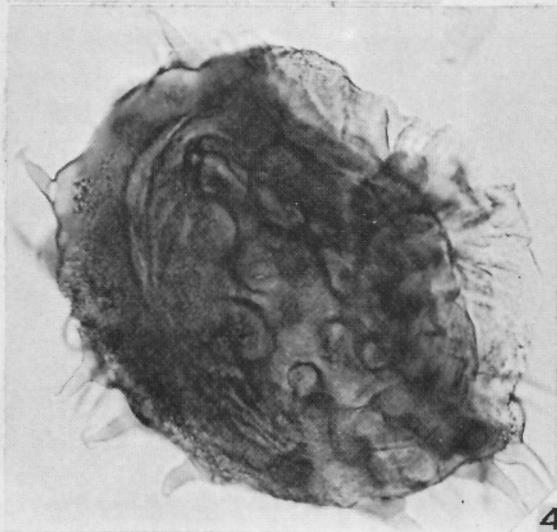
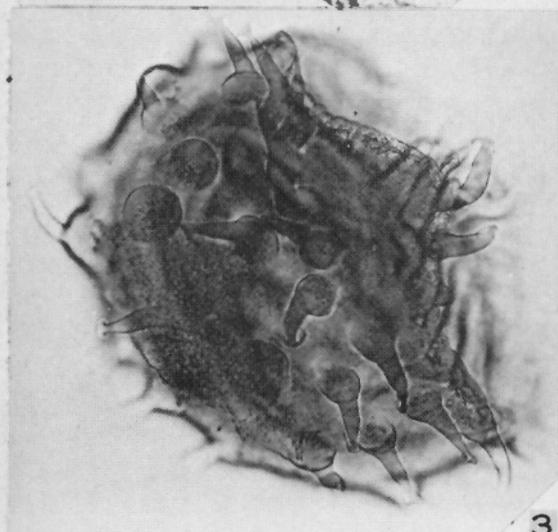
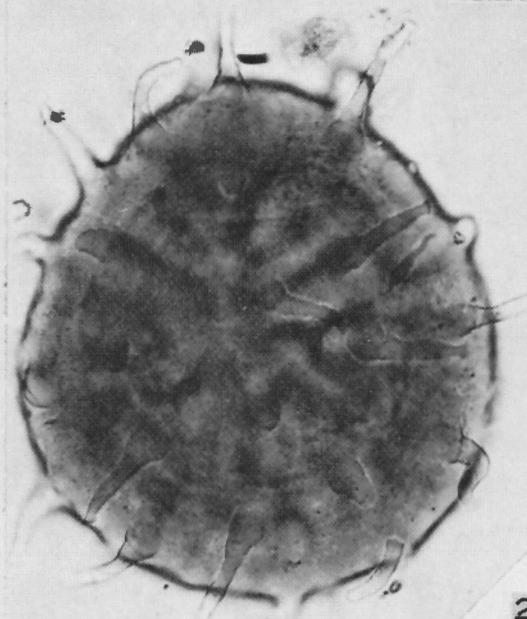
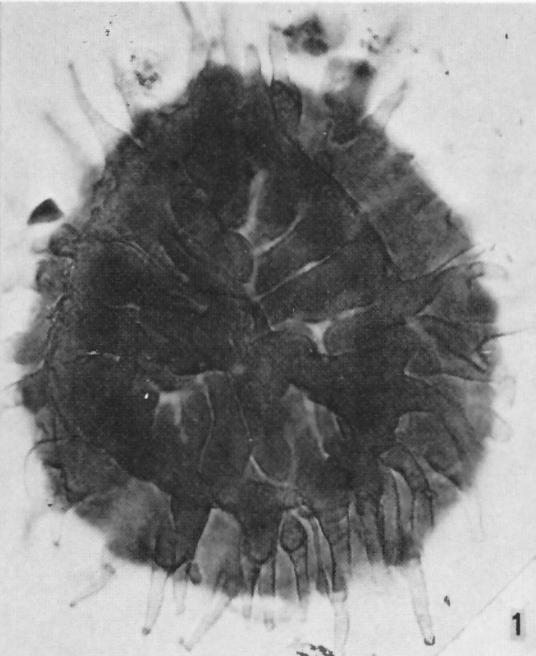


PLATE XXII

UPPER DEVONIAN

Middle Frasnian

Albertensis Zone

Hay River Formation, Escarpment Member. Left bank of Hay River at base of Louise Falls, N.W.T. GSC Loc. 30425. Collected by D.J. McLaren, 1957.

Reference: Belyea and McLaren, 1962, pp. 3, 16.

Figures 1, 2. Punctatisporites spp. 15340, 15341

Figure 3. Calamospora cf. C. microrugosa (Ibrahim) S.W. & B. in Balme, 1962, p. 6. 15342

Figure 4. Calamospora atava (Naumova) McGregor, 1964, p. 6. 15343

Figure 5. Phyllothecontriletes sp. 15344

Figures 6, 9. Stenozonotriletes laevigatus Naumova, 1953, p. 70. 15345, 15346

Figure 7. Punctatisporites sp. 15347

Figure 8. ?Stenozonotriletes sp. 15348

Figure 10. Phyllothecontriletes sp. 15349

Figure 11. Camarozonotriletes sp. 15350

Figure 12. Apiculatasporites sp. 15351

Figures 13, 14. Convolutispora sp. 15352

Figure 15. ?Foveosporites insculptus Playford, 1962, p. 601. 15353

Figure 16. ?Punctatisporites parivermiculatus Playford, 1962, p. 577. 15354

Figures 17, 18. Convolutispora sp. 15355

Figures 19, 20. ?Dictyotriletes sp. 15356

Figures 21, 22. Convolutispora spp. 15357, 15358

Figure 23. ?Convolutispora sp. 15359

Figures 24, 25. Klukisporites sp. 15360

Figure 26. Dictyotriletes sp. 15361

Figures 27, 28; Unidentified. 15362-15364
29, 30;
31, 32.

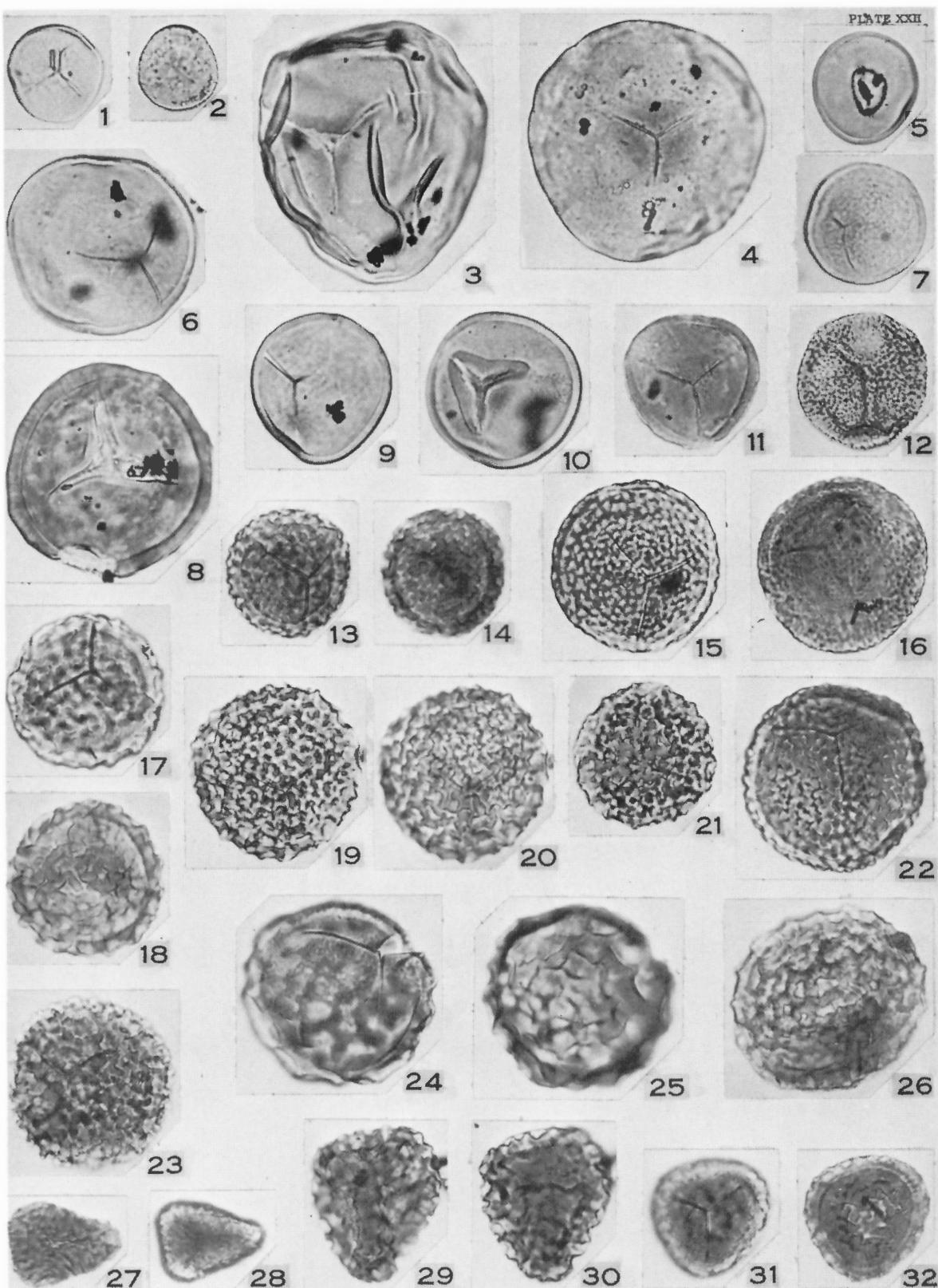


PLATE XXIII
UPPER DEVONIAN
Middle Frasnian
Albertensis Zone

Hay River Formation, Escarpment Member, GSC Loc. 30425 (continued).

Figures 1, 2; 3; Unidentified. 15365-15367
4, 5.

Figures 6, 7. ?Verrucosporites sp. 15368

Figure 8. cf. Verrucosporites sp. in Balme and Hassell, 1962,
p. 9. 15369

Figure 9. Lophozonotriletes sp. 15370

Figure 10. Lophozonotriletes macrogrumosus Kedo, 1957a, p. 33.
15371

Figure 11. Stenozonotriletes tersus (Waltz) Naumova in Kedo, 1957a,
p. 32. 15372

Figure 12. Lophozonotriletes sp. 15373

Figure 13. cf. Archaeozonotriletes famenensis var. gracilis Kedo,
1963, p. 72. 15374

Figure 14. Geminospora svalbardiae (Vigran) Allen, 1965, p. 696,
Pl. 94, Figure 12. 15375.

Figure 15. ?Geminospora sp. 15376

Figure 16. cf. Retusotriletes greggsii McGregor, 1964, p. 8. 15377

Figure 17. ?Archaeozonotriletes plicatus Naum. in litt. in Chibrikova,
1959, p. 64. 15378

Figures 18, 20, 24. cf. Archaeozonotriletes micromanifestus Naumova, 1953,
p. 31. 15379-15381

Figure 19. ?Geminospora sp. 15382

Figure 21. ?Geminospora lemurata Balme, 1962, p. 5. See Pl. XXIV,
Figures 2 and 3. 15383

Figures 22, 23. Unidentified. 15384

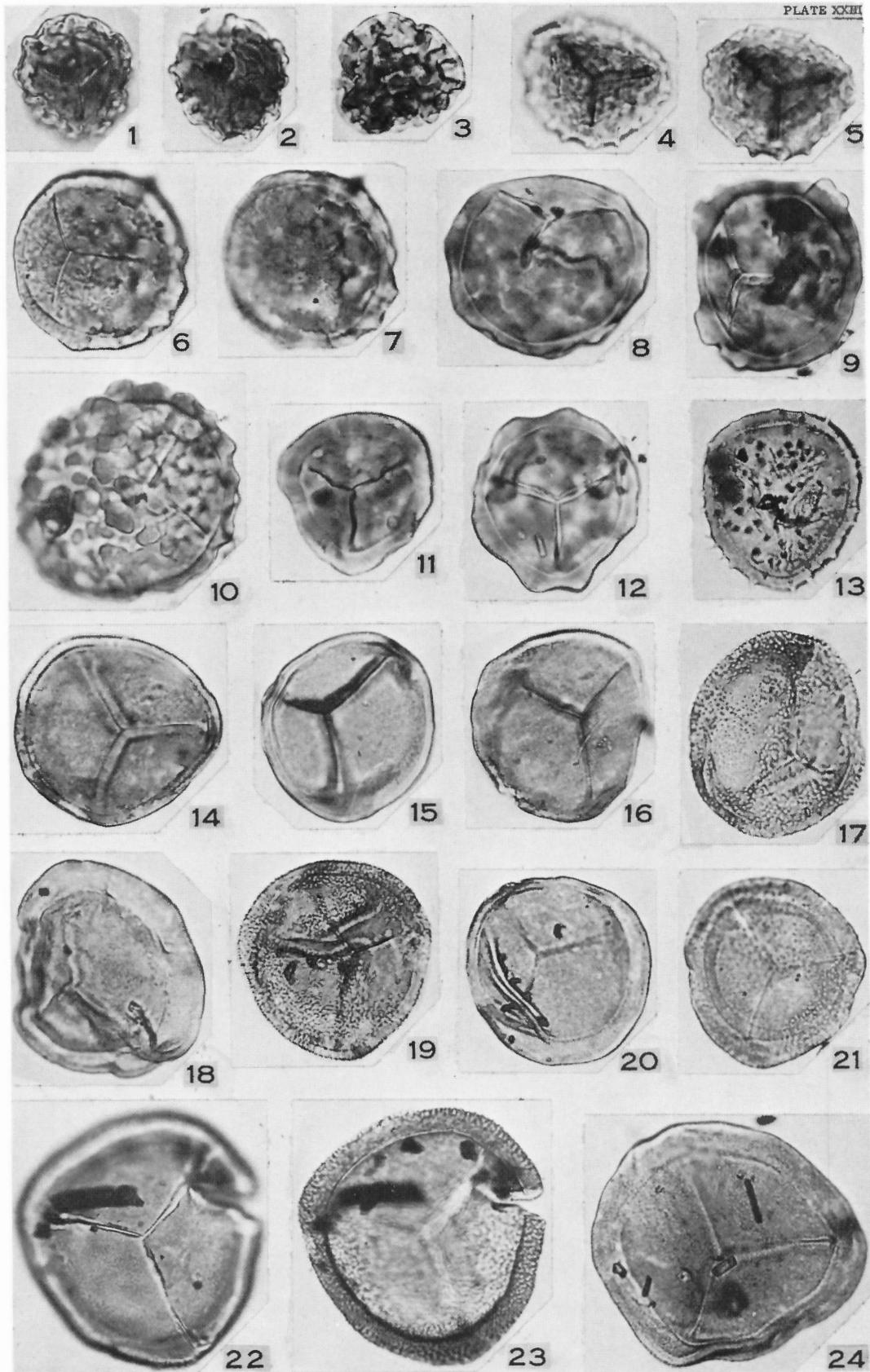


PLATE XXIV

UPPER DEVONIAN

Middle Frasnian

Albertensis Zone

Hay River Formation, Escarpment Member, GSC Loc. 30425 (continued).

Figure 1. ?Geminospora sp. 15386

Figures 2, 3. Unidentified. See Plate XXIII, Figure 21. 15387, 15393

Figure 4. Archaeozonotriletes micromanifestus var. minor Naumova, 1953, p. 32. 15388

Figures 5, 6. Unidentified. 15389

Figure 7. ?Archaeozonotriletes macromanifestus Naumova, 1953, p. 31. 15390

Figures 8, 9; 12. cf. Ancyrospora simplex Guennel, 1963, p. 257. 15391, 15394

Figures 10, 11. Unidentified. 15392

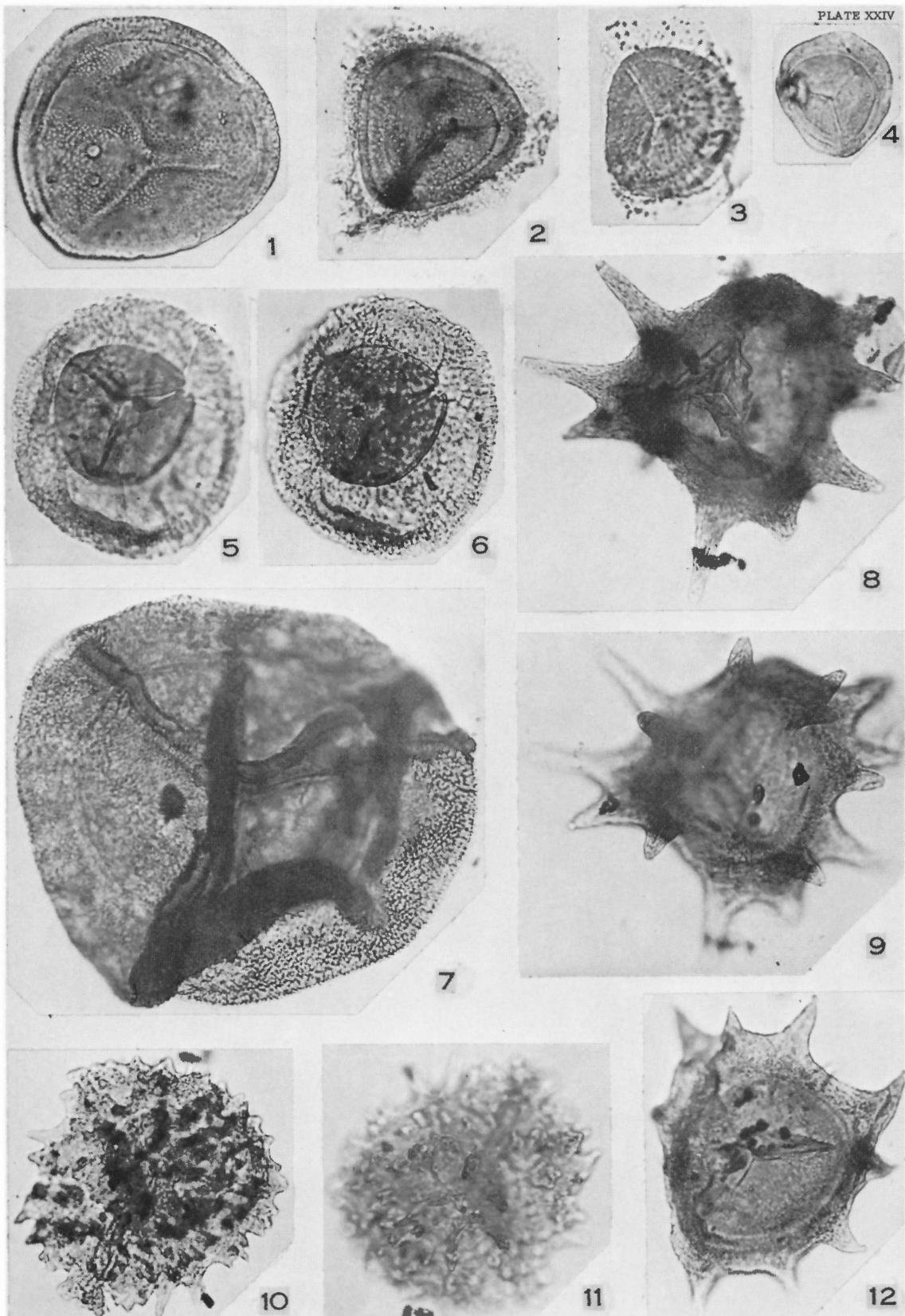


PLATE XXV

UPPER DEVONIAN

Middle Frasnian

Albertensis Zone

Hay River Formation, Escarpment Member, GSC Loc. 30425 (continued).

Figures 1, 2. Hystricosporites sp. 15395

Figures 3, 4. Hystricosporites porcatus (Winslow) Allen, 1965, p. 699.
15396

Figure 5. Perotrilites sp. 15397

Figures 6, 7, 8. Archaeoperisaccus spp. 15398-15400

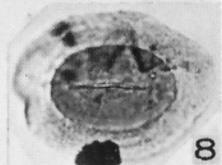
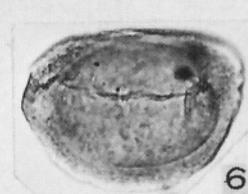
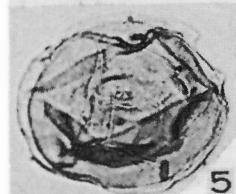
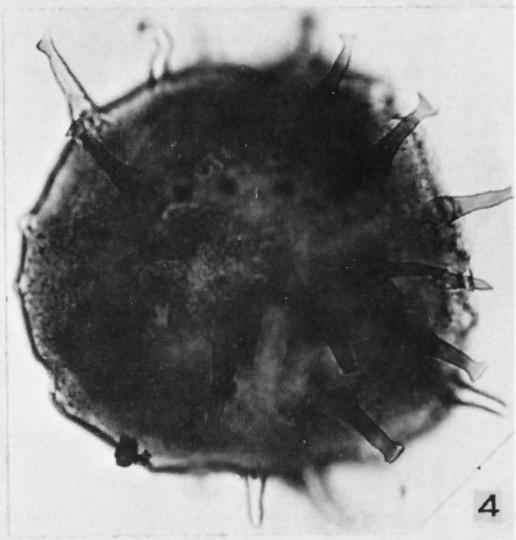
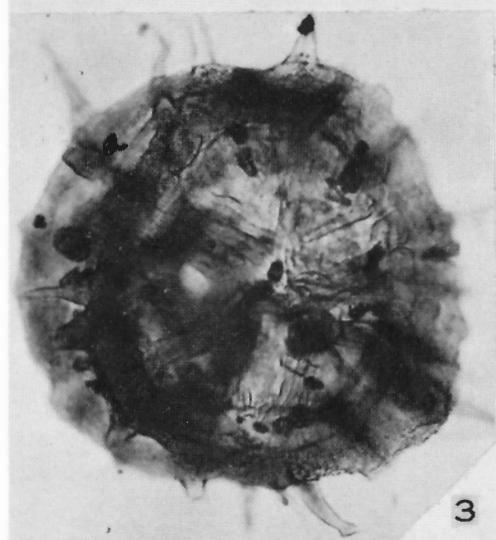
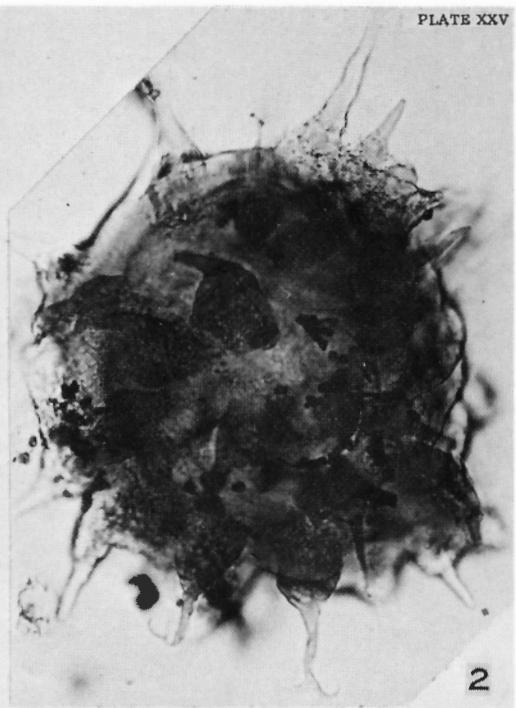
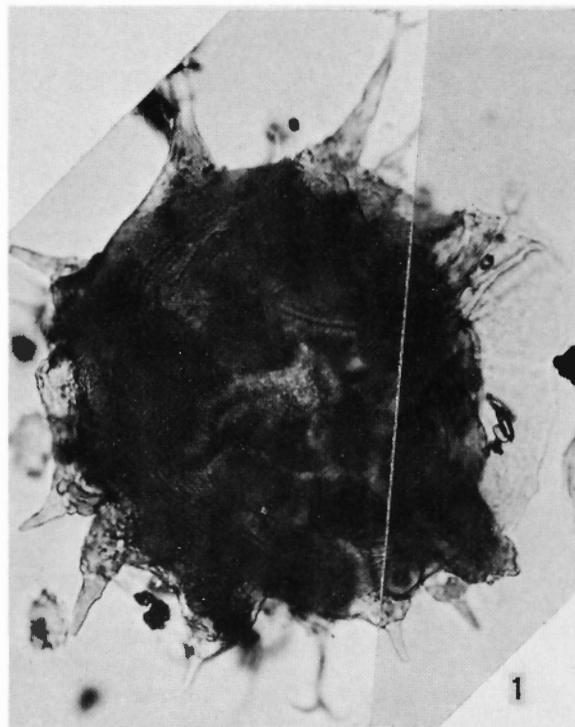


PLATE XXVI

UPPER DEVONIAN

Early to mid Famenian

Griper Bay Formation, Member B. Northeastern Bathurst Island, N.W.T., in stream valley west of Sergeant Point, two miles from shore, 1,300 feet above base of formation. GSC Loc. 59040. Collected by J.W. Kerr, 1963.

Reference: Kerr et al., 1965.

- Figure 1. Retusotrilites sp. 15401
- Figure 2. Retusotrilites cf. R. pychovii Naumova, 1953, p. 88. 13594
- Figures 3, 4. Cyclogranisporites spp. 15402, 13585
- Figure 5. Acanthotrilites denticulatus Naumova, 1953, p. 106. 15403
- Figure 6. Unidentified. 13587
- Figure 7. Deltoidospora sp. 15405
- Figures 8, 9. ?Stenozonotrilites spp. 15406, 15407
- Figures 10, 11. Pustulatisporites sp. 15408, 15409
- Figure 12. Anaplanisporites sp. 15404
- Figure 13. Stenozonotrilites sp. 15410
- Figure 14. Unidentified. 15411
- Figure 15. ?Stenozonotrilites sp. 15412
- Figure 16. Pustulatisporites sp. 15413
- Figure 17. Unidentified. 15414
- Figure 18. Verrucosporites sp. 15415
- Figures 19, 20. Con verrucosporites sp. 15416
- Figures 21, 23. Unidentified. 15417, 15418
- Figure 22. Lophozonotrilites curvatus Naumova, 1953, p. 77. 15419
- Figure 24. ?Lophozonotrilites dentatus Hughes and Playford, 1961, p. 36. 13974
- Figure 25. ?Archaeozonotrilites literatus (Waltz) Naumova in litt. in Kedo, 1963, p. 75. 13596
- Figure 26. cf. Hymenozonotrilites asperitus Kedo, 1963, p. 61. 13590
- Figures 27, 28. Lophozonotrilites curvatus Naumova 1953, p. 77. 15420
- Figures 29, 30. Lophozonotrilites sp. 15421
- Figure 31. cf. Lophozonotrilites rarituberculatus (Luber) Kedo, 1957a, p. 33. 13973
- Figures 32, 33. Lophozonotrilites lebedianensis Naumova, 1953, p. 119. 15422
- Figure 34. Lophozonotrilites sp. 13588
- Figure 35. Lophozonotrilites dentatus Hughes and Playford, 1961, p. 36. 15423
- Figure 36. Archaeozonotrilites variabilis Naumova, 1953, p. 30. 15424
- Figure 37. ?Archaeozonotrilites notatus Naumova, 1953, p. 84. 13598
- Figure 38. ?Lophozonotrilites rarituberculatus Naumova, 1953, p. 76, non (Luber) Kedo, 1957, p. 33. 15425
- Figures 39, 40. Unidentified. 15426
- Figures 41, 42. Stenozonotrilites simplex Naumova, 1953, p. 36. 15427, 15428

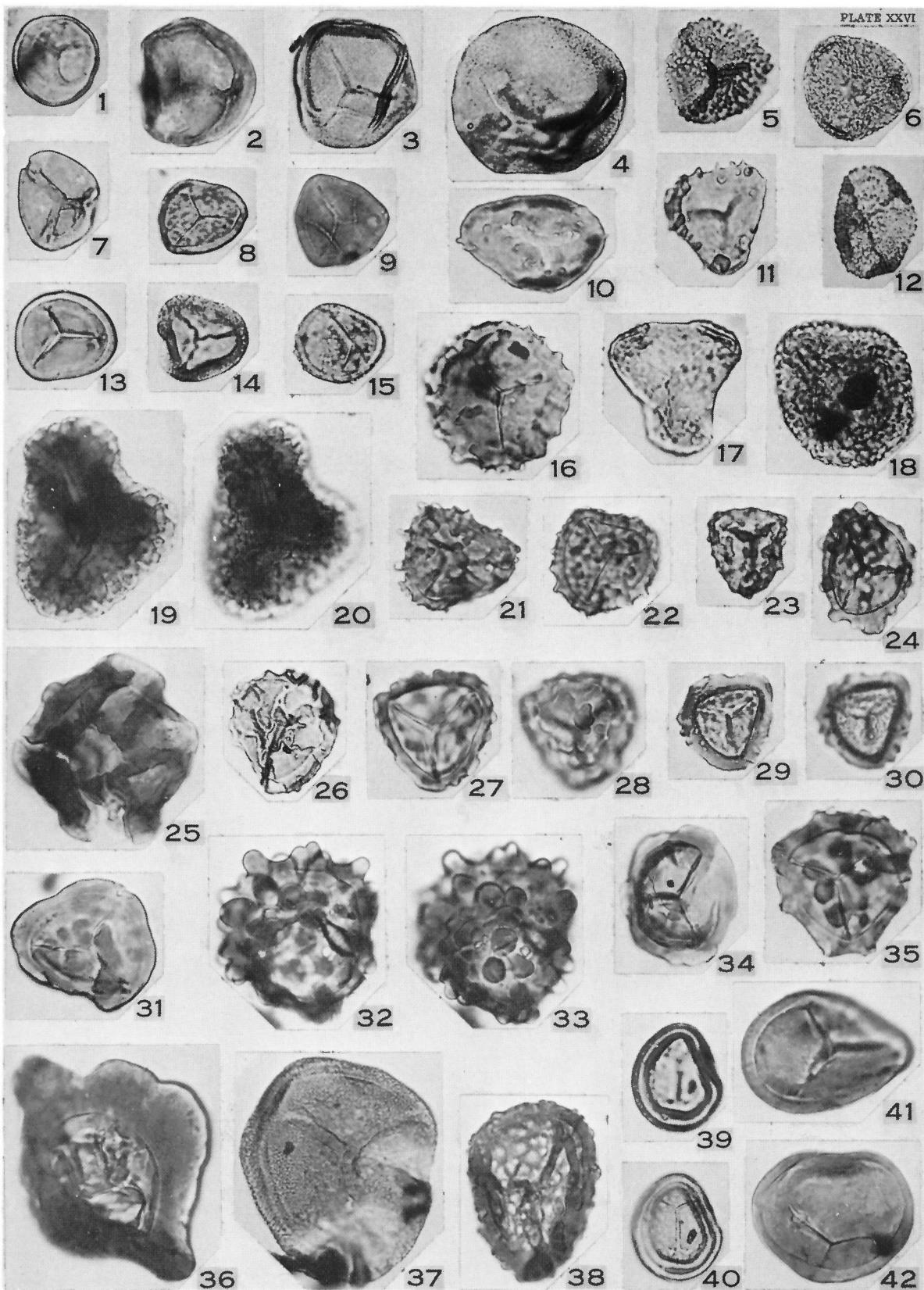


PLATE XXVII

UPPER DEVONIAN

Early to mid Farnennian

Griper Bay Formation, Member B, GSC Loc. 59040 (continued).

- Figure 1. ?Foveosporites pertusus Vigran, 1964, p. 18. 15429
- Figure 2. ?Lophozonotriletes grandis var. minor Naumova, 1953, p. 102. 15430
- Figure 3. Diaphanospora perplexa Balme and Hassell, 1962, p. 22. 15431
- Figure 4. Perotrilites sp. 15432
- Figure 5. Diaphanospora riciniata Balme and Hassell, 1962, p. 22. 15433
- Figures 6, 7; Lophozonotriletes cristifer (Luber) Kedo, 1957a, p. 32.
8. 15434, 15435
- Figures 9, 10. Unidentified. 15436, 15437
- Figures 11, 12. cf. Archaeozonotriletes famenensis Naumova, 1953, p. 117. 15438
- Figures 13, 14. Hymenozonotriletes parvimmammatus (Naumova) Kedo, 1957a, p. 23. 15439, 15440
- Figures 15, 16. cf. Archaeozonotriletes gracilis Kedo, 1957a, p. 29. 15441
- Figures 17, 18. ?Hymenozonotriletes semilucensis (Naumova) Kedo, 1957a, p. 25. 15442
- Figures 19, 20, Unidentified. 15443-15445
23.
- Figures 21, 22. Unidentified. 15446
- Figures 24, 27. Grandispora sp. 15447
- Figure 25. ?Archaeozonotriletes subnotatus Chibrikova, 1959, p. 63. 15448
- Figure 26. ?Con verrucosisporites. 15449

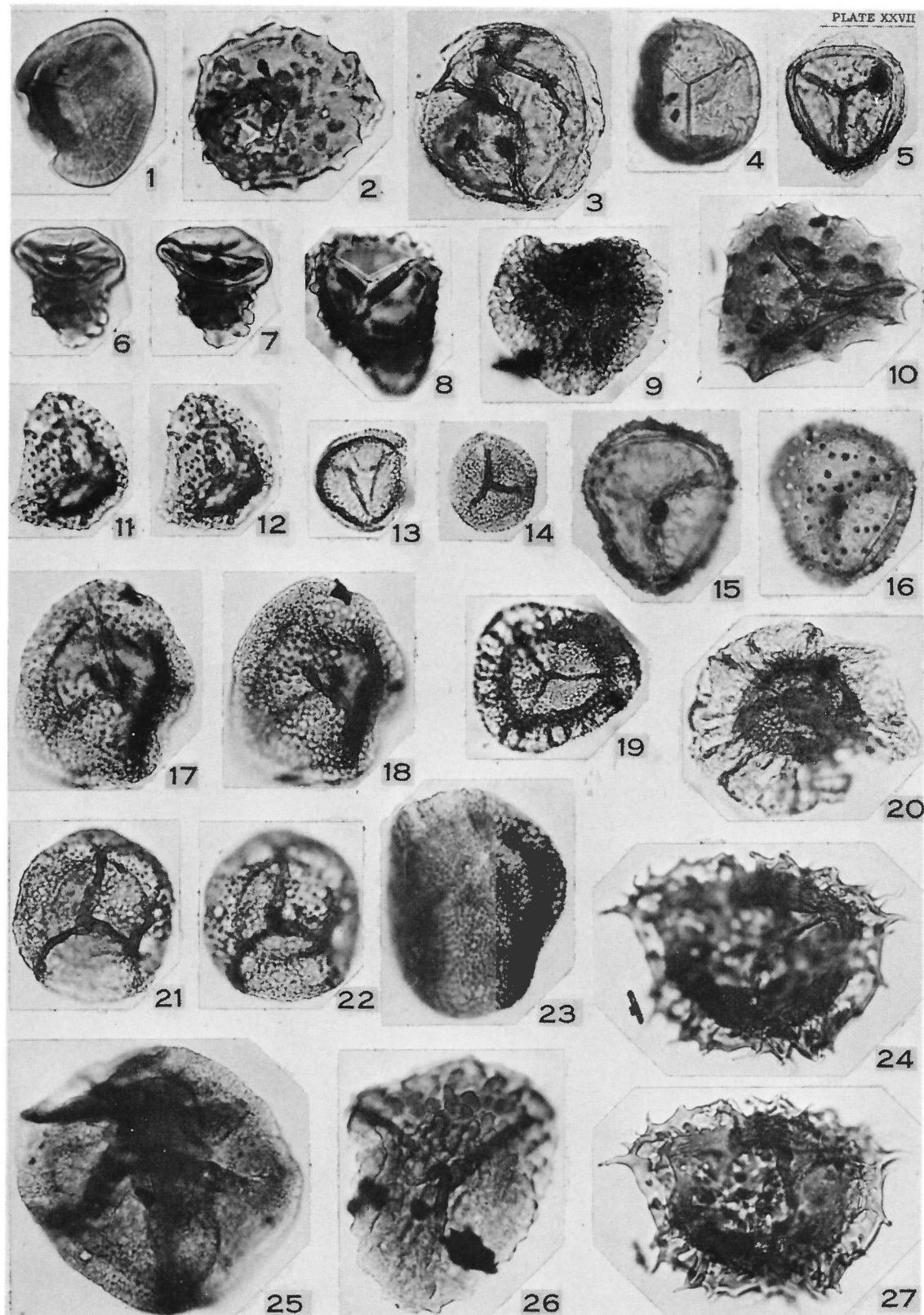


PLATE XXVIII

UPPER DEVONIAN

Late Famennian

Kettle Point Formation, Courtright bore-hole, in village of Courtright, Lambton County, Ontario, at 295-299 feet, immediately below contact with Port Lambton Formation. GSC Plant Loc. 7060. Collected by B.V. Sanford, 1962.

References: Sanford and Brady, 1955, p. 7; Winder, 1965.

- Figure 1. Retusotriletes cf. R. pychovii Naumova, 1953, p. 88. 15450
Figure 2. ?Retusotriletes sp. 15451
Figure 3. Retusotriletes sp. 15452
Figure 4. Emphanisporites cf. E. rotatus McGregor, 1961, p. 3. 15453
Figure 5. ?Retusotriletes sp. 15454
Figure 6. Cyclogranisporites sp. 15455
Figure 7. ?Punctatisporites sp. 15456
Figure 8. ?Lophotriletes evlanensis Naumova, 1953, p. 56. 15457
Figure 9. Stenozonotriletes simplex Naumova, 1953, p. 36. 15458
Figure 10. Verrucosporites sp. 15459
Figures 11, 12. Convolutispora sp. 15460, 15461
Figure 13. ?Lophozonotriletes lebedianensis Naumova, 1953, p. 132. 15462
Figure 14. Lophozonotriletes sp. 15463
Figure 15. Verrucosporites congestus Playford, 1964, p. 13. 15464
Figure 16. Lophotriletes salebrosus var. famenensis Naumova, 1953, p. 109. 15465
Figures 17, 18. Unidentified. 15466
Figure 19. Convolutispora sp. 15467
Figure 20. Lophozonotriletes cristifer (Luber) Kedo, 1957a, p. 32. 15468
Figures 21, 22. Unidentified. 15469, 15470
Figure 23. ?Grandispora sp. 15471
Figure 24. ?Hymenozonotriletes varius var. minor Naumova, 1953, p. 125. 15472
Figure 25. ?Perotrilites sp. 15473
Figures 26, 27. ?Reticulatiosporites fimbriatus var. spathulatus Winslow, 1962, p. 59. 15474

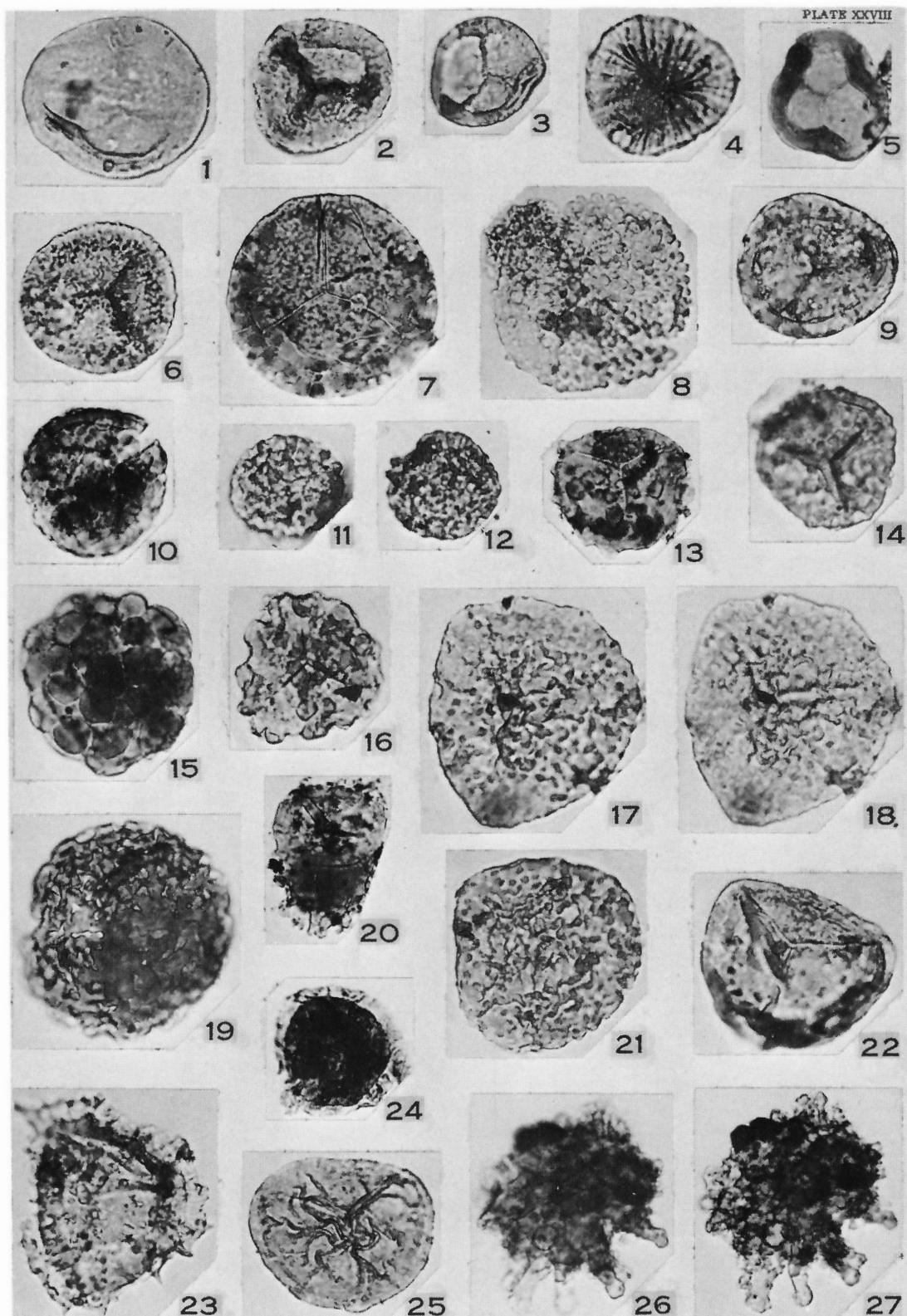


PLATE XXIX
UPPER DEVONIAN

Late Famennian

Kettle Point Formation, GSC Plant Loc. 7060 (continued).

Figures 1, 2; Hymenozonotriletes pusillites Kedo, 1957b, p. 22.
3, 4. 15475, 15476

Figure 5. Unidentified. 15477

Figures 6, 7, Hymenozonotriletes lepidophytus Kedo, 1957a, p. 24.
8. 15478-15480

Figure 9. cf. Hymenozonotriletes pusillites Kedo. 15481

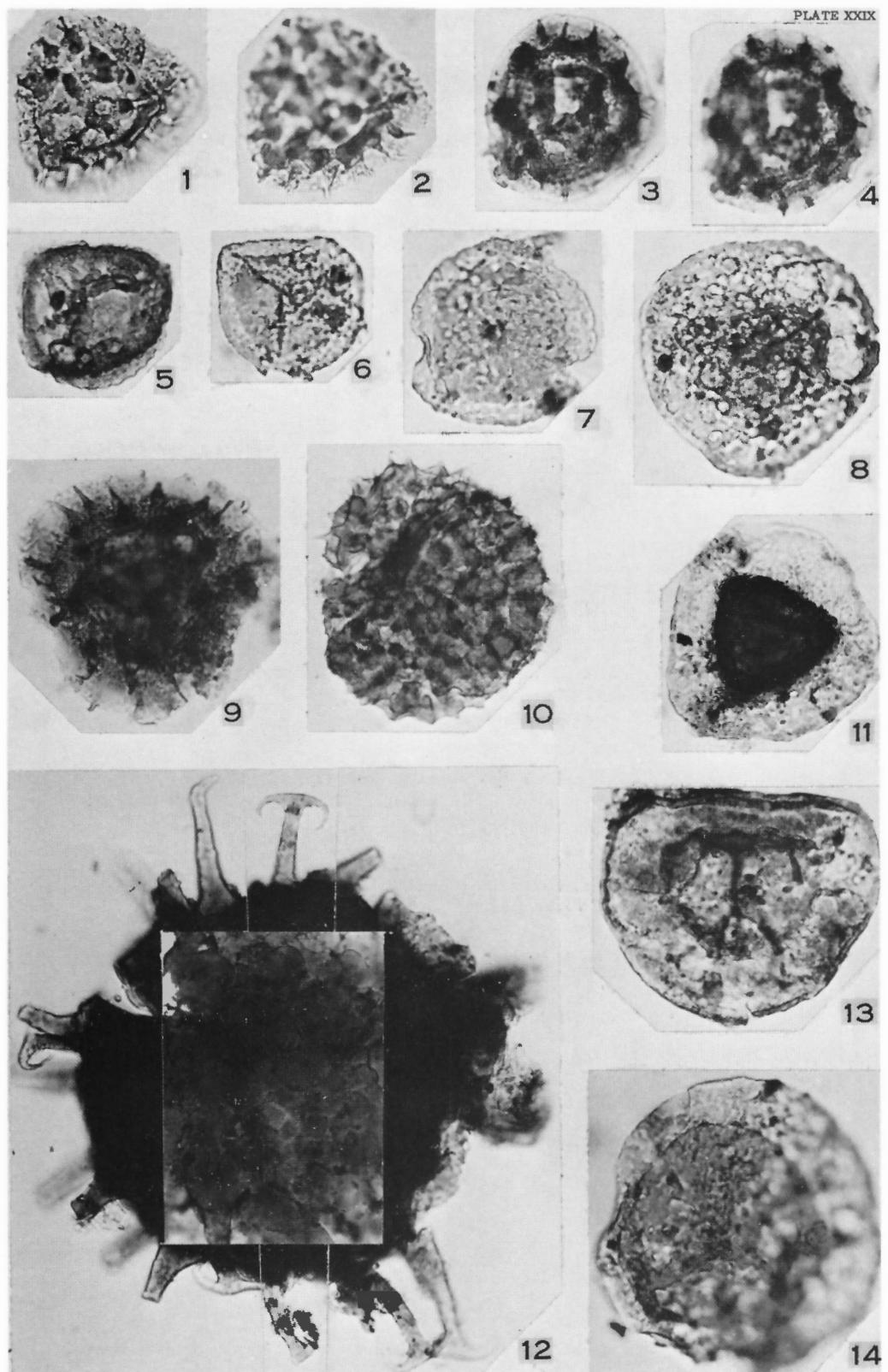
Figures 10, 11. Unidentified. 15482, 15486

Figure 12. Hystricosporites sp. 15483

Figure 13. Unidentified. 15484

Figure 14. ?Aculeisporites sp. 15485

PLATE XXIX



Illustrations of Canadian Fossils

The following Geological Survey Papers have already been issued under this general title:

Devonian of Western Canada

Invertebrates - D. J. McLaren and A. W. Norris
Plants - D. C. McGregor GSC Paper 62-4
GSC Paper 62-4

Cambrian, Ordovician and Silurian of the Western Cordillera

- B. S. Norford
GSC Paper 62-14

Triassic of Western and Arctic Canada

- E. T. Tozer
GSC Paper 62-19

Jurassic of Western and Arctic Canada

- H. Frebold
GSC Paper 63-4

Early Lower Cretaceous (Berriasian and Valanginian) of the Canadian Western Cordillera, B.C.

- J. A. Jeletzky
GSC Paper 64-6

Lower Cretaceous marine index fossils of the Sedimentary basin of Western and Arctic Canada

- J. A. Jeletzky
GSC Paper 64-11

Triassic, Jurassic, and Lower Cretaceous spores and pollen of Arctic Canada

- D. C. McGregor
GSC Paper 64-55

Lower Cretaceous floras of Western Canada

- W. A. Bell
GSC Paper 65-5

Upper Cretaceous and Paleocene Plants of Western Canada

- W. A. Bell
GSC Paper 65-35

Silurian Faunas of Ontario

- T. E. Bolton
GSC Paper 66-5

Carboniferous plants of Eastern Canada

- W. A. Bell
GSC Paper 66-11