

EXPLANATION OF PLATES.

PLATE VII.

	Page
<i>Endothyra baileyi</i>	1201
1. Section, after Brady. Magnified.	
<i>Enallophyllum grabau</i>	1206
2. Side view of specimen showing point of attachment. Natural size. Paynter's Hill. Indiana University collection.	
2a. Diagonal section of a specimen showing the tabulated central part. Enlarged.	
2b. Side view of specimen showing surface features. Enlarged.	
2c. Calyx of 2b, showing fossula, uniting septa, broken tabulum in the calyx and the cardinal septum.	
2d. Cross section of 2a, well below the calyx, showing unusually large tabulated zone and fossula at the left side. Enlarged.	
2a-d. Are from Lanesville. Collection of G. K. Greene.	
<i>Zaphrentis cassedayi</i>	1203
3. Calyx, after Milne-Edwards and Haime. Enlarged.	
3a, 3b. Two side views, after Milne-Edwards and Haime. 3a, enlarged. Spergen Hill.	
<i>Zaphrentis compressa</i>	1204
4. Lateral view, showing compressed sides of base. After Milne-Edwards and Haime.	
4a. Lateral view, showing the broad side of a rather curved specimen. From Spergen Hill. Indiana University collection.	
4b. View of the broad side of a straight specimen from Paynter's Hill. Indiana University collection.	
4c. Calyx, after Milne-Edwards and Haime.	
4d. Another view of 4b, showing the amount of compression.	
<i>Cystelasma rugosum</i>	1210
5. Lateral view of specimen from Paynter's Hill. Natural size.	
5a. Calyx of another specimen from same locality.	
5b. Calyx of 5. Both specimens in Indiana University collection.	
<i>Bordenia zaphrentiformis</i>	1205
6, 6c. Side view of specimen.	
6a. Calyx of the same specimen.	
6b. Calyx of another individual. All from Spergen Hill. Natural size. Indiana University collection.	
<i>Pentremites conoideus perlongus</i>	1263
7. Lateral view. After Rowley. $\times\frac{1}{2}$.	
<i>Pentremites conoideus amplus</i>	1263
8-8c. Views of this variety. From Rowley. $\times\frac{1}{2}$.	

Plate VII.

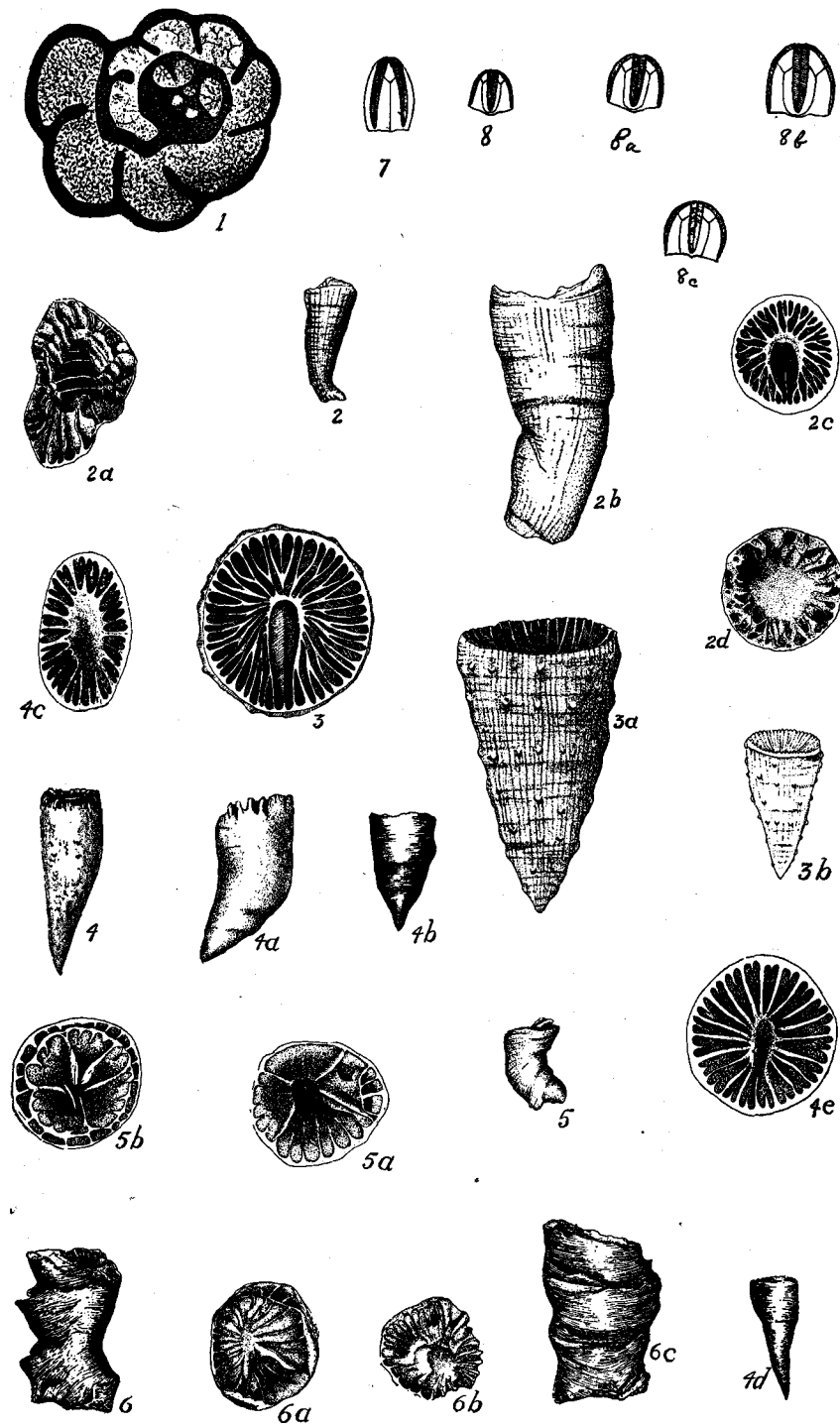


PLATE VIII.

	Page
<i>Cystelasma tabulatum</i>	1210
1. Side view of broken type, showing habit of growth.	
1a. Nearly same view with outside broken away.	
1b. Top view of the same, showing nature of septa and tabulae.	
1c. Calyx of another specimen. Both from Spergen Hill. Enlarged.	
Indiana University collection.	
<i>Cystelasma septatum</i>	1209
2, 2a, 2b. Three side views of a specimen. Natural size. Spergen Hill.	
Indiana University collection.	
2c. Specimen showing a tendency to develop minor septa along one side.	
Natural size. Lanesville. Collection of G. K. Greene.	
2d. Side view of specimen with outer wall removed, showing cysts and the	
persistence of the primary septa. Enlarged. Spergen Hill, Indiana University	
collection.	
<i>Cystelasma lanesvillensis</i>	1208
3. Lateral view of a specimen, showing one mode of attachment.	
3a. Top view of the same specimen.	
3b. Young individuals attached to a Bryozoan. Enlarged.	
3c, 3d. Lateral view of two specimens, showing the cysts. All natural	
size. From Lanesville. Collection of G. K. Greene.	
<i>Paleacis cuneiformis</i>	1218
4. Side view of specimen. After Meek and Worthen.	
4a-c. Side and edge views of three specimens. From Milne-Edwards and	
Haime. Spergen Hill.	
4d-g. Outlines showing variations in form. Specimens from Spergen Hill	
and Paynter's Hill. Natural size. Indiana University collection.	
<i>Amplexus blairi</i>	1202
5. Lateral view, side broken away. Natural size. From Edwardsville.	
Collection of G. K. Greene.	

Plate VIII.

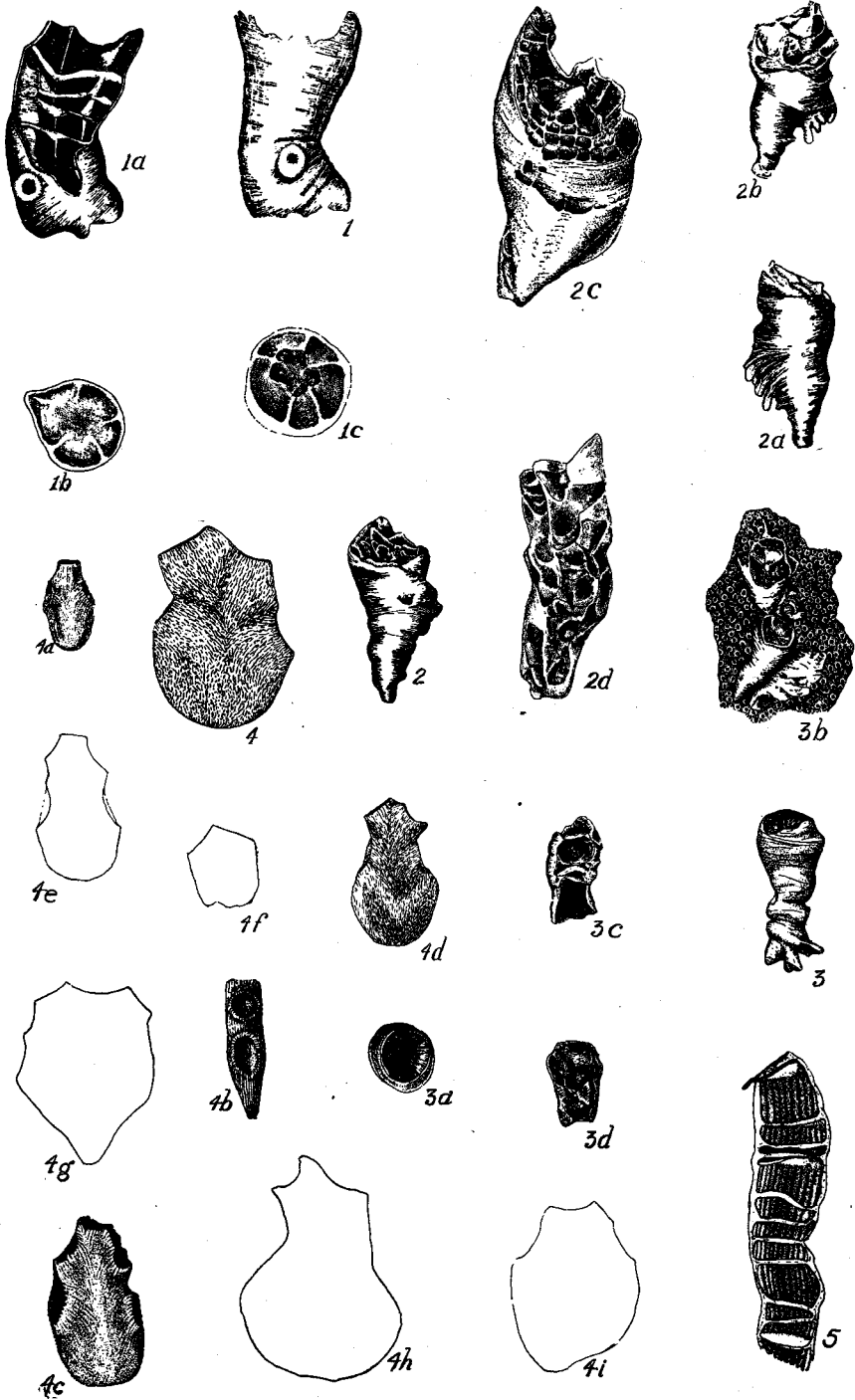


PLATE IX.

	Page
<i>Syringopora monroense</i>	1211
1. A lax young base.	
2. Base of another colony which had begun upward growth. Both natural size. From Bloomington quarries. Indiana University collection.	

Plate IX.

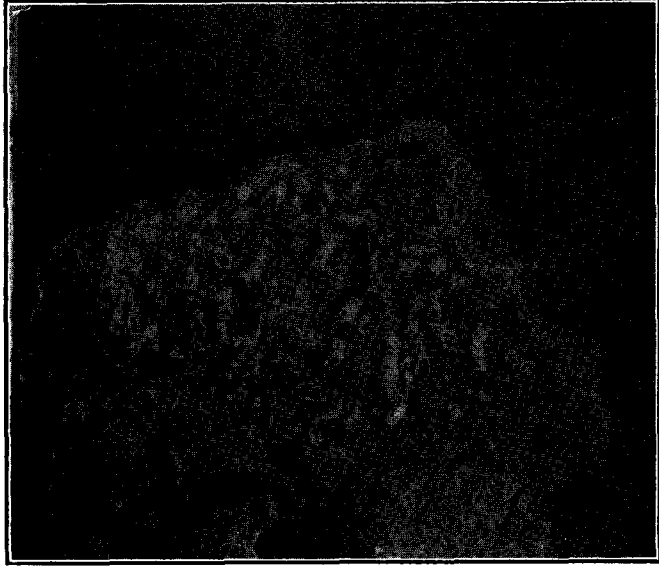


PLATE X.

	Page
<i>Syringopora monroense</i>	1211
1. Top view of a specimen, showing umbelliferous habit and the nearly circular openings of the tubes.	
2. Side view of type specimen, showing umbelliferous habit, relation of the tubes and manner of budding above the base. Both natural size. From the Bloomington quarries. Indiana University collection.	

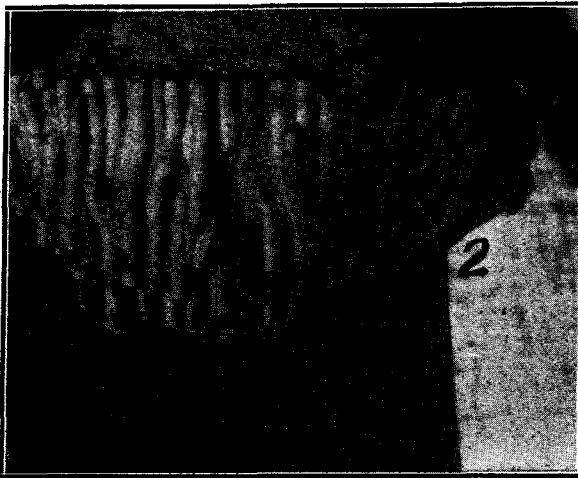
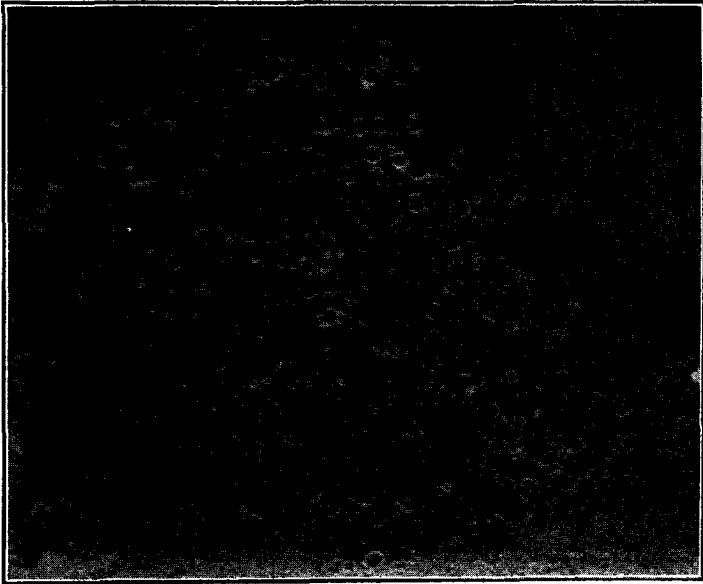


PLATE XI.

	Page
<i>Zaphrentis clinatus</i>	1204
1-1c. Sides and calices of two different individuals. After Greene. From Edwardsville. Greene collection.	
<i>Cyathazonia venustum</i>	1202
2. Lateral view of specimen, showing portion of calyx and columella.	
2a. View of calyx, somewhat imperfect, of the same specimen. From Paynter's Hill. Indiana University collection.	
<i>Cystelasma lanesvillensis</i>	1208
3-3b. Views of three small, slender specimens. Natural size. From Lanesville. Collection of G. K. Greene.	
<i>Protopora cystoides</i>	1216
4, 4a. Section and lateral views of two specimens identified by and belonging to G. K. Greene. Natural size. From Lanesville.	
4b-d. Three figures redrawn from Greene. Lanesville.	
<i>Ceratopora agglomerata</i>	1214
5-5a. Views of specimens redrawn from Cont. Ind. Pal. Lanesville.	
<i>Monilopora beecheri</i>	1212
6. View of a specimen from Bedford. Free. <i>Otronia</i> tube partly visible on right side a little below the top. Bedford.	
6a. Enlargement of the surface of the same to show details of markings. From Bedford. Indiana University collection.	
<i>Syringopora monroense</i>	1211
7. Single tube of type specimen, showing buds.	
7a. Section of the tube of another individual, showing sparse tabulation.	
7b. Section of another tube of the same individual, showing crowded tabulae.	
7c. Section of crooked tube, showing thickening of the wall of the lower part of the tube. Same specimen as the two previous.	
7d. Section of another tube of the same individual, showing a slight tendency to form cysts.	
7e. Cross sections of tubes of another colony, showing the thickening of the tubes and parts of concave tabulae cut through. Enlarged.	
7f. A bunch of tubes on the type specimen, showing method of budding sometimes seen above the base. All from Bloomington. Indiana University collection.	
<i>Michelinia indianensis</i>	1217
8. Lateral view of type. Natural size.	
8a. Enlargement of inner part of tubule, showing mural pores and scale-like tabulae. Enlarged. From Lanesville. Collection of G. K. Greene.	

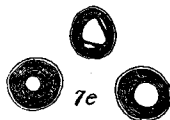
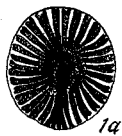
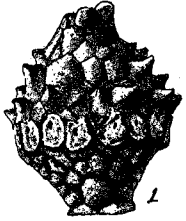


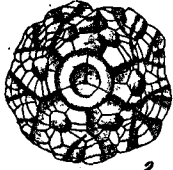
PLATE XII.

	Page
<i>Batocrinus irregularis</i>	1244
1. Posterior view, after Wachsmuth and Springer.	
1a. Lateral view.	
<i>Batocrinus salemensis</i>	1245
2. Basal view, after Miller and Gurley.	
2a. Summit view, after Miller and Gurley.	
2b. Posterior view, after Miller and Gurley.	
<i>Dizygocrinus euconus</i>	1252
3. Showing postero-lateral ray and anal interradials. After Wachsmuth and Springer.	
3a. Dorsal aspect of the same specimen.	
<i>Dizygocrinus whitei</i>	1252
4. Side view, after Miller.	
4a. Basal view, after Miller.	
<i>Dizygocrinus decoris</i>	1253
5, 5a. Side and basal views. After Miller.	
<i>Batocrinus icosadactylus</i>	1243
6. Lateral view. After Wachsmuth and Springer.	
6a. Basal aspect. After Wachsmuth and Springer.	
6b. Portion of anal tube. After Wachsmuth and Springer.	
<i>Batocrinus sacculus</i>	1246
7-7b. Posterior, basal and top views respectively. After Miller and Gurley.	
<i>Batocrinus calyculus</i>	1247
8, 9, 10. Basal parts of calices of crinoids from Spergen Hill.	

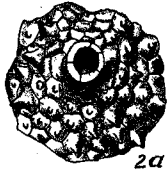
Plate XII.



1



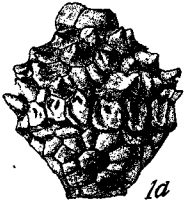
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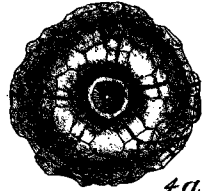
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3a



2b



4a



5



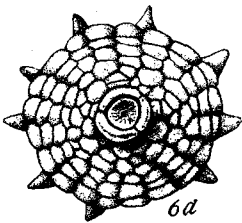
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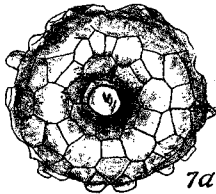
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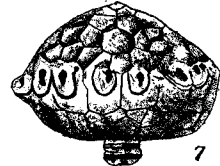
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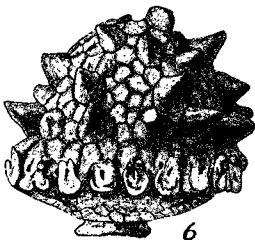
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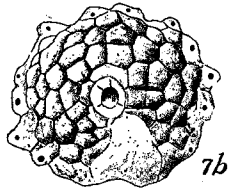
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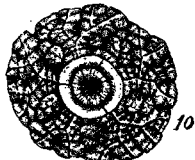
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7b



8



10



9

PLATE XIII.

	Page
<i>Platycrinus coryphaeus</i>	1256
1. Posterior view. Natural size.	
1a. Anterior view, same specimen. Natural size. From Paynter's Hill. Specimen in American Museum.	
<i>Platycrinus bonoensis</i>	1255
2. Lateral view of a specimen having six arms to the ray. After Wachsmuth and Springer.	
3.	
4. Enlargement to show surface detail of Plate XII, Fig. 8.	
<i>Dichocrinus striatus</i>	1258
5. Small specimen from Harrodsburg. Enlarged. May be young of this species.	
5a. Calyx base of same individual.	
5b. Portion of calyx from Paynter's Hill. A somewhat larger specimen.	
<i>Forbesiocrinus sp.</i>	
6, 6a, 6b. Two parts of calices and the upper part of a stem. Paynter's Hill. American Museum collection.	
<i>Talarocrinus simplex</i>	1261
7. Side view.	
7a. Base of the same individual \times 2-12. From Paynter's Hill.	
7b. Side view of a specimen. Natural size. From Bloomington.	
7c. Side view of a small specimen from Spergen Hill \times 2 $\frac{1}{2}$. All in the Indiana University collection.	
<i>Talarocrinus Cf. trijugus</i>	1260
8. Specimen from Paynter's Hill. Enlarged. Indiana University Collection.	
<i>Dichocrinus oblongus</i>	1260
9. Posterior view. After Wachsmuth and Springer.	
<i>Forbesiocrinus sp.</i>	
10. Looking down on top of the column. From Paynter's Hill. Indiana University collection.	
<i>Synbathocrinus swallowi</i>	1262
11. Basal view of calyx of a specimen from Paynter's Hill. Indiana University collection.	

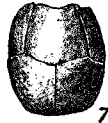
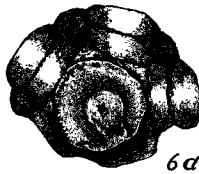
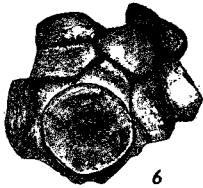
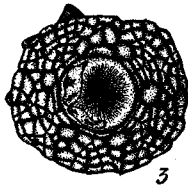
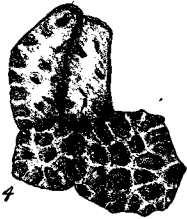
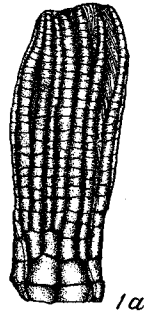
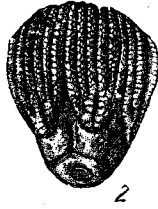


PLATE XIV.

	Page
<i>Synbathocrinus swallowi</i>	1262
1. Top view of calyx of specimen figured, Plate XIII, Fig. 11.	
<i>Talarocrinus</i> <i>Of. trijugus</i>	1260
2. Basal view of calyx.	
2a. Top view of calyx of the same specimen. Enlarged. From Louisville. Collection of G. K. Greene.	
<i>Balocrinus calyculus</i>	1247
3, 3a. Posterior and anterior diagrams of calyx. After Hall.	
3b. Diagram of plates. After Hall.	
<i>Ithyocrinus clarkensis</i>	1257
4. Lateral view of specimen.	
<i>Platycrinus boonvillensis</i>	1256
5, 5a. Two lateral views, one showing base.	
5b. Base of another specimen. All taken from Wachsmuth and Springer's illustrations.	
<i>Archaeocidaris norwoodi</i>	1268
6. Side view of a very small plate highly magnified, showing striae.	
6a. Top view of same very highly magnified, showing striae. From Spergen Hill. Indiana University collection.	
<i>Tricoelocrinus meekianus</i>	1266
7. Base of specimen from Bedford.	
7a. Base of another specimen from Bedford. Note the nearly flat base with depressions.	
7b. Top aspect of No. 7 somewhat crushed.	
7c. Enlargement of a portion of the surface of No. 7 to show the markings.	
<i>Troostocrinus wortheni</i>	1266
8. Lateral view of specimen, young, after Shumard. Much enlarged.	
8a. Enlargement of Ambulacral area, as figured by Shumard.	
8c. Enlargement of the summit according to Shumard.	
<i>Synbathocrinus swallowi</i>	1262
9. Top view of calyx, showing posterior notch and the prong on the edge of the rarial on the right. From Lanesville. Natural size. Indiana University collection.	

Plate XIV.

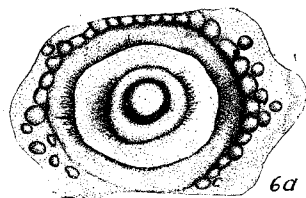
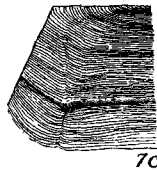
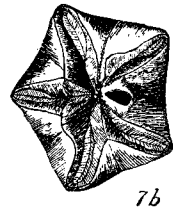
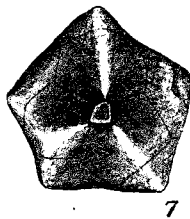
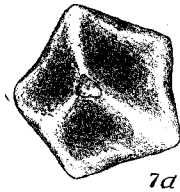
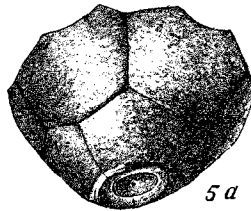
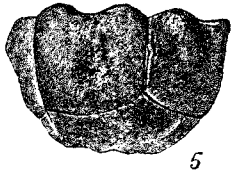
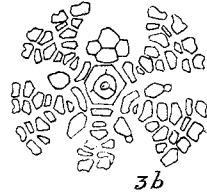
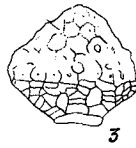
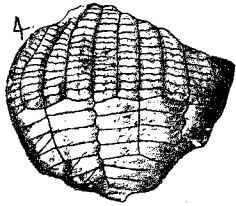


PLATE XV.

	Page
<i>Batocrinus magnirostris</i>	1244
1, 2, 3. Ventral, side and dorsal views of the type specimen.	
<i>Batocrinus irregularis</i>	1244
4, 5, 6. Ventral, anal side and dorsal views of a small specimen.	
<i>Batocrinus davisi</i>	1248
7, 8, 9. Ventral, anal side and dorsal views of a specimen.	
<i>Batocrinus crassitestus</i>	1249
10, 11, 12. Ventral, side and dorsal views of the type specimen.	
<i>Batocrinus davisi</i>	1250
13, 14, 15. Ventral, anal side and dorsal views of the type.	
<i>Batocrinus icosidactylus</i>	1243
16, 17, 18. Ventral, anal side and dorsal views of a fine specimen.	
<i>Batocrinus icosidactylus</i>	1243
19, 20, 21. Ventral, side and dorsal views of a small specimen with a portion of the ventral tube attached.	
24, 25. Views of two detached ventral tubes.	
26. Side view of a ventral disk with the base of the ventral tube.	
27, 28. Basal and side views of the dorsal cup of a large specimen.	
<i>Batocrinus davisi sculptus</i>	1250
22, 23. Side and dorsal views of a slightly crushed specimen.	

Plate XV.

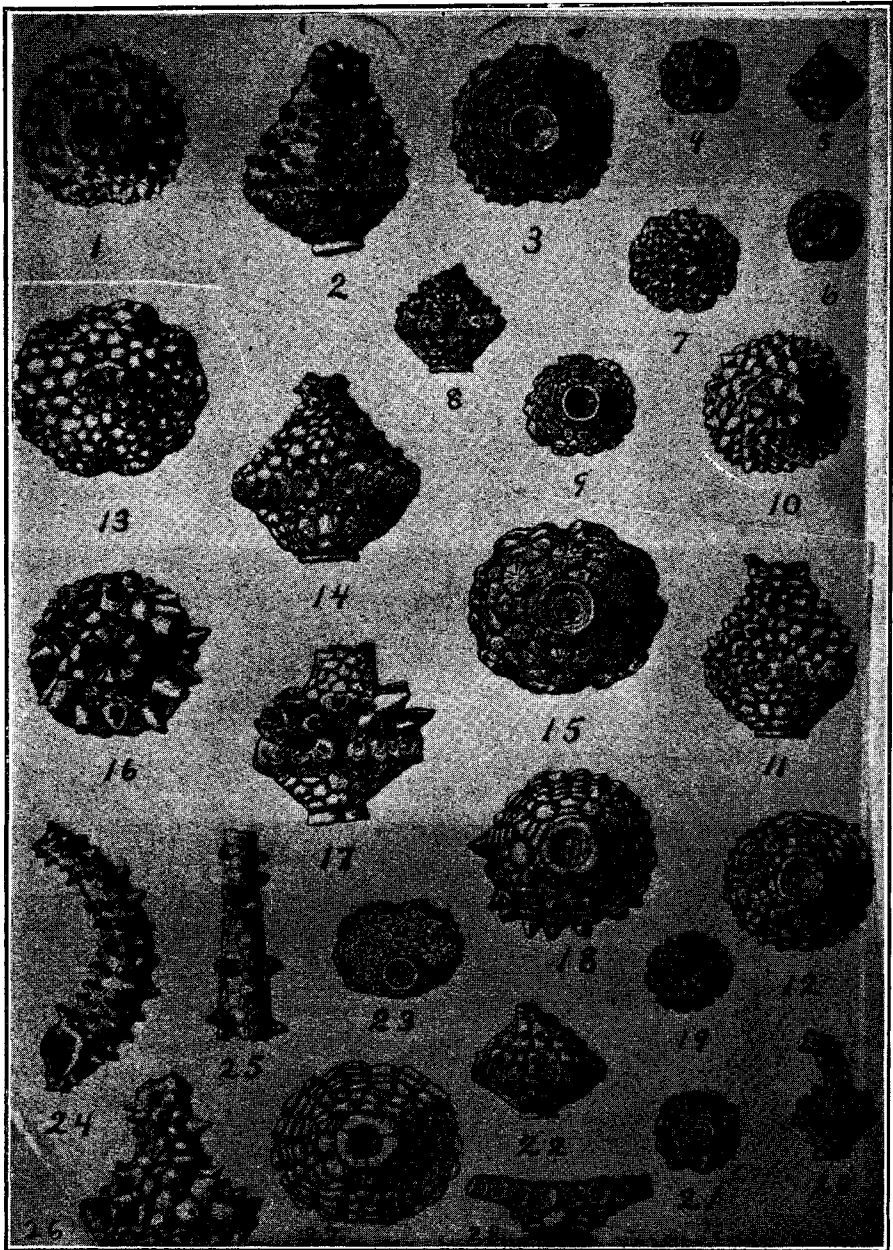


PLATE XVI.

	Page
<i>Dizygocrinus unionensis</i>	1253
1-1d. Views of specimens with and without arms. After Wachsmuth and Springer.	
<i>Dizygocrinus euconus</i>	1252
2. View of base.	
2a. Lateral view of specimen. After Wachsmuth and Springer.	
<i>Temnocheilus coxanus</i>	1370
3. Umbilical view of specimen, after Meek and Worthen.	
4. Posterior view of specimen.	

Plate XVI.

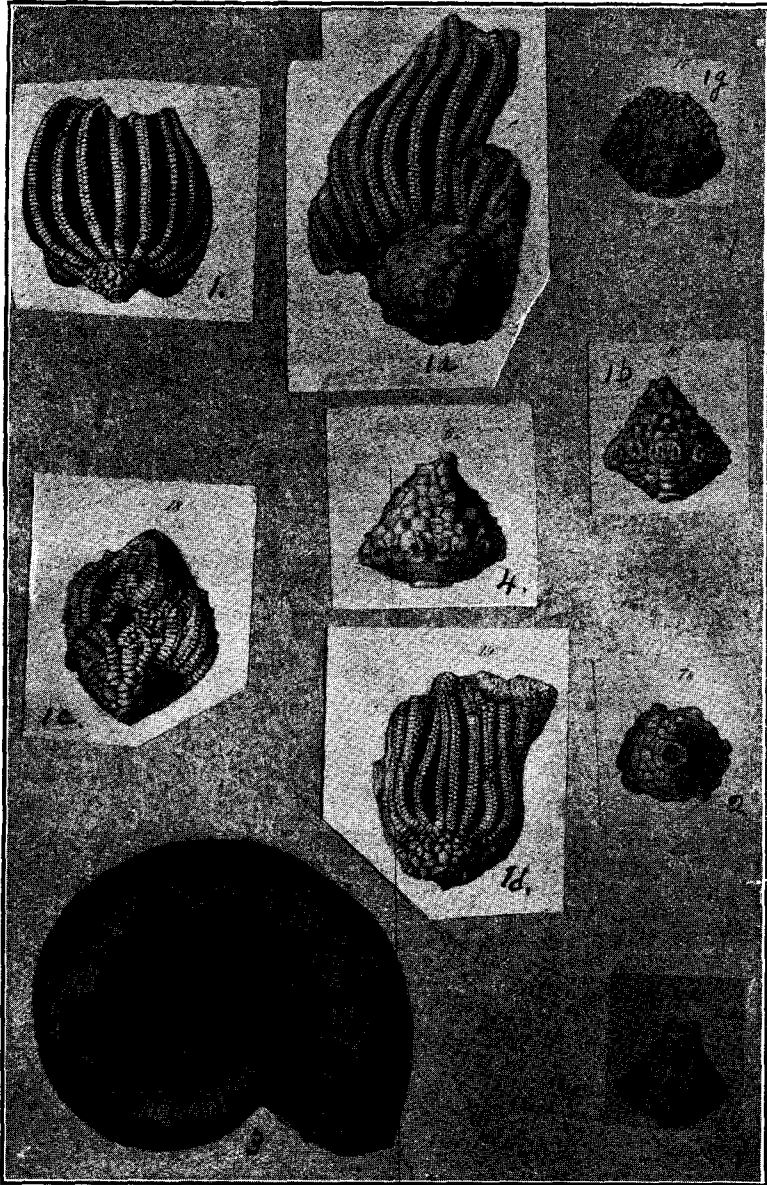


PLATE XVII.

	Page
<i>Dichocrinus striatus?</i>	1258
1. Basal view of calyx.	
1a. Lateral view of basal plate. Enlarged. Both from Paynter's Hill. Indiana University collection.	
<i>Dichocrinus blatchleyi</i>	1259
2, 2d, 2e. Lateral views of parts of bases, showing surface marks.	
2a, 2b, 2c, 2f. Radial plates showing markings. All enlarged. From Paynter's Hill. Indiana University collection.	
<i>Archaeocridaris norwoodi</i>	1268
3-3e. Smooth spines with only extremely fine longitudinal lines.	
3f-i. Specimens with incipient barbules. All enlarged. From Harrods- burg. Indiana University collection.	
<i>Metablastus wortheni</i>	1266
4, 4a. Lateral views of the specimens.	
<i>Spirorbis imbricatus</i>	1271
5-5c. Side views of specimens. White ones from Harrodsburg. All en- larged. Indiana University collection.	
<i>Spirorbis annulatus</i>	1271
6. A specimen similarly enlarged with the others for comparison. In- diana University collection.	
<i>Dizygocrinus sp?</i>	1254
7. Basal view of specimen. Collection of G. K. Greene.	

Plate XVII.

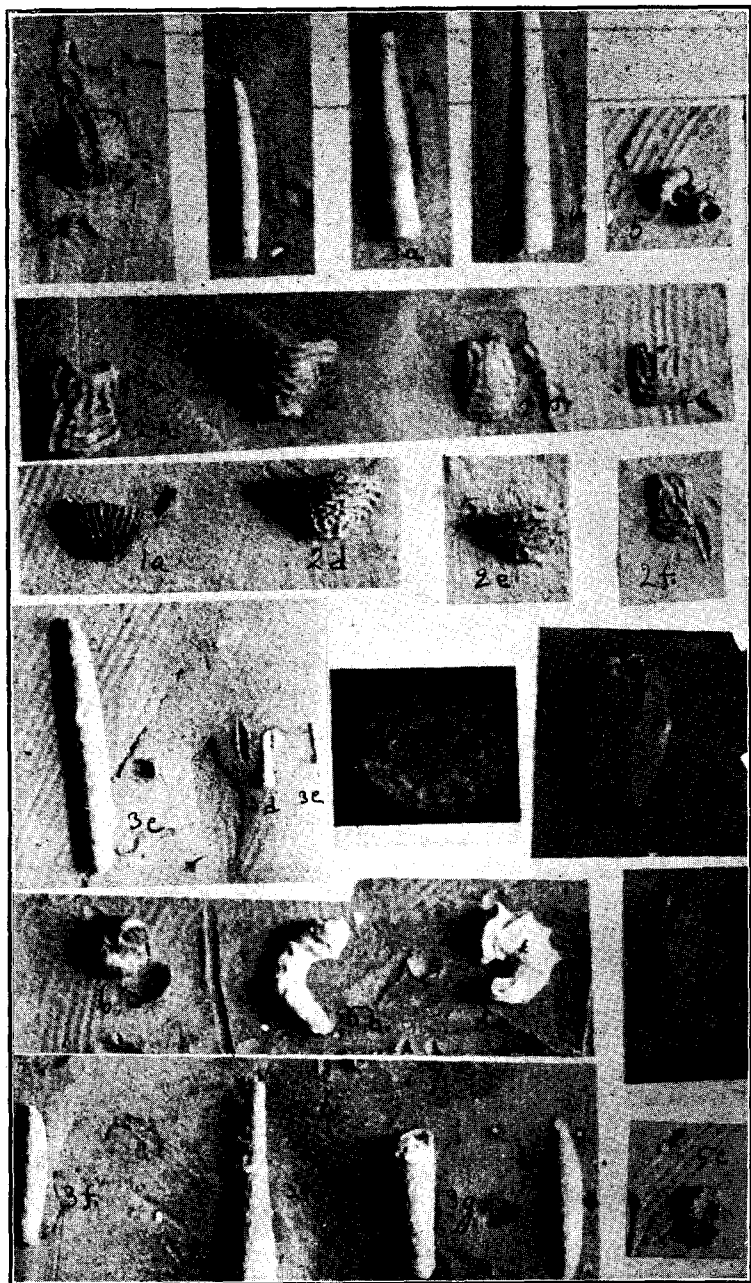


PLATE XVIIIA.

	Page
<i>Productus burlingtonensis</i> var.	1301
1, 1a. Lateral and vertical views of two specimens. Natural size.	
1b. Posterior view of a specimen with somewhat coarser markings and more produced and inflated beak.	
1c. Inside of brachial valve of specimen with internal marks removed.	
All natural size and from Spergen Hill. Indiana University collection.	
<i>Productus gallatinensis</i>	1302
2, 2a. Posterior and vertical views of two specimens. Natural size.	
From Spergen Hill. Indiana University collection.	
3-3e. Views of specimens after Girty, for comparison.	
<i>Productus burlingtonensis</i>	1301
4, 4a. Specimens after Hall, for comparison with No. 1.	
<i>Archaeocidaris norwoodi?</i>	1268
5-5f. Various views of supposed teeth of this species. Natural size.	
From Paynter's Hill. Indiana University collection.	
<i>Spirorbis imbricatus</i>	1271
6. Specimen from Bedford attached to a Bryozoan. Enlarged. Indiana University collection.	

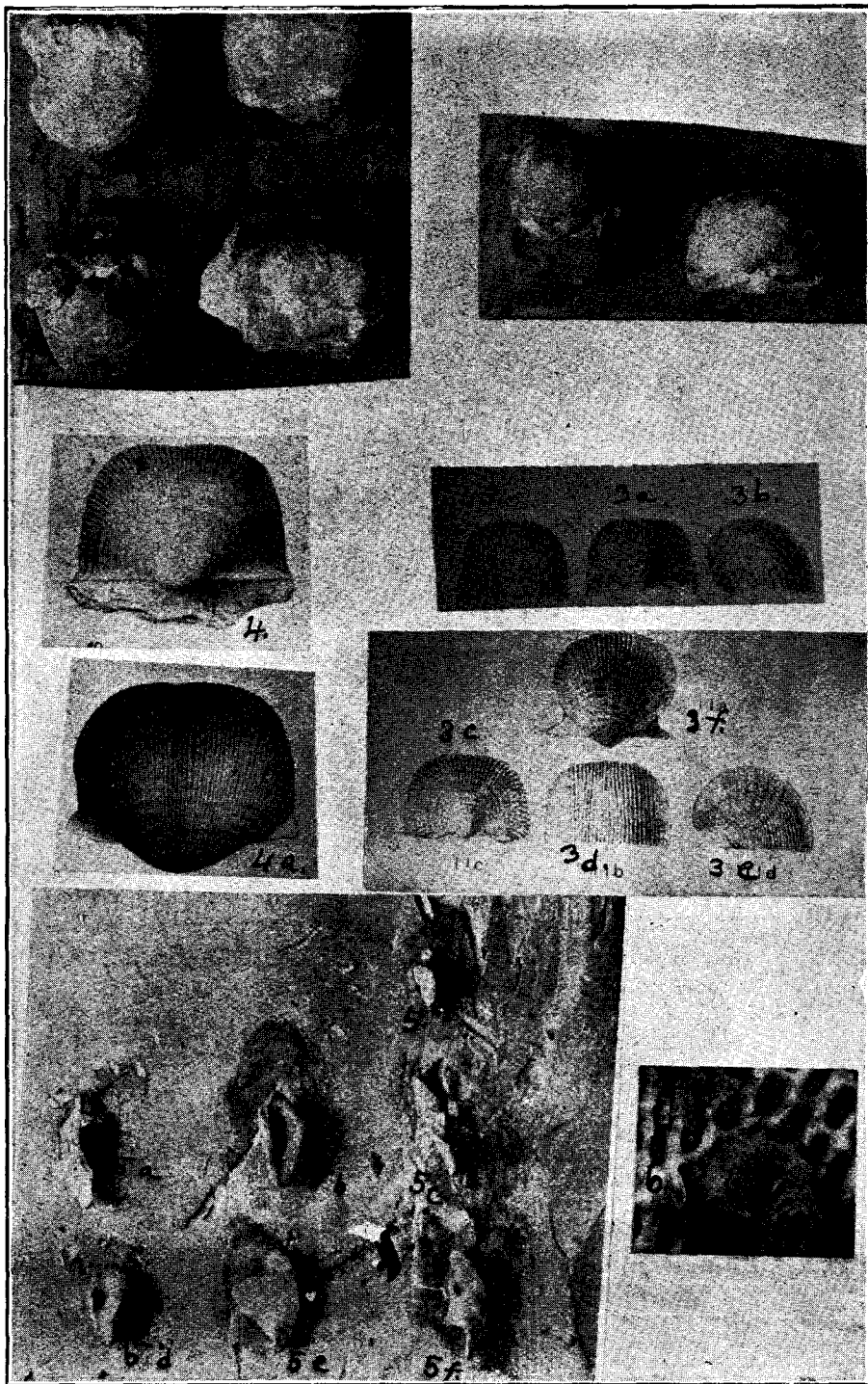


PLATE XVIII.

	Page
<i>Orthothetis minutus</i>	1297
1. Ventral valve of a specimen 4.75 mm. broad.	
1a. Dorsal valve of a specimen 5.5 mm. broad by 4 mm. long.	
2. Profile view of a specimen 5 mm. long.	
3, 4, 5. Ventral, profile and cardinal views of a specimen 0.9 mm. broad and 0.6 mm. long.	
6, 7, 8. Three views of a specimen 2 mm. broad which has an abnormally convex ventral valve and an abnormally short area.	
9, 10, 11. Three views of a specimen 2 mm. broad.	
12, 13, 14. Specimen 2.5 mm. broad.	
15 and 16. Ventral and dorsal interiors of two mature specimens.	

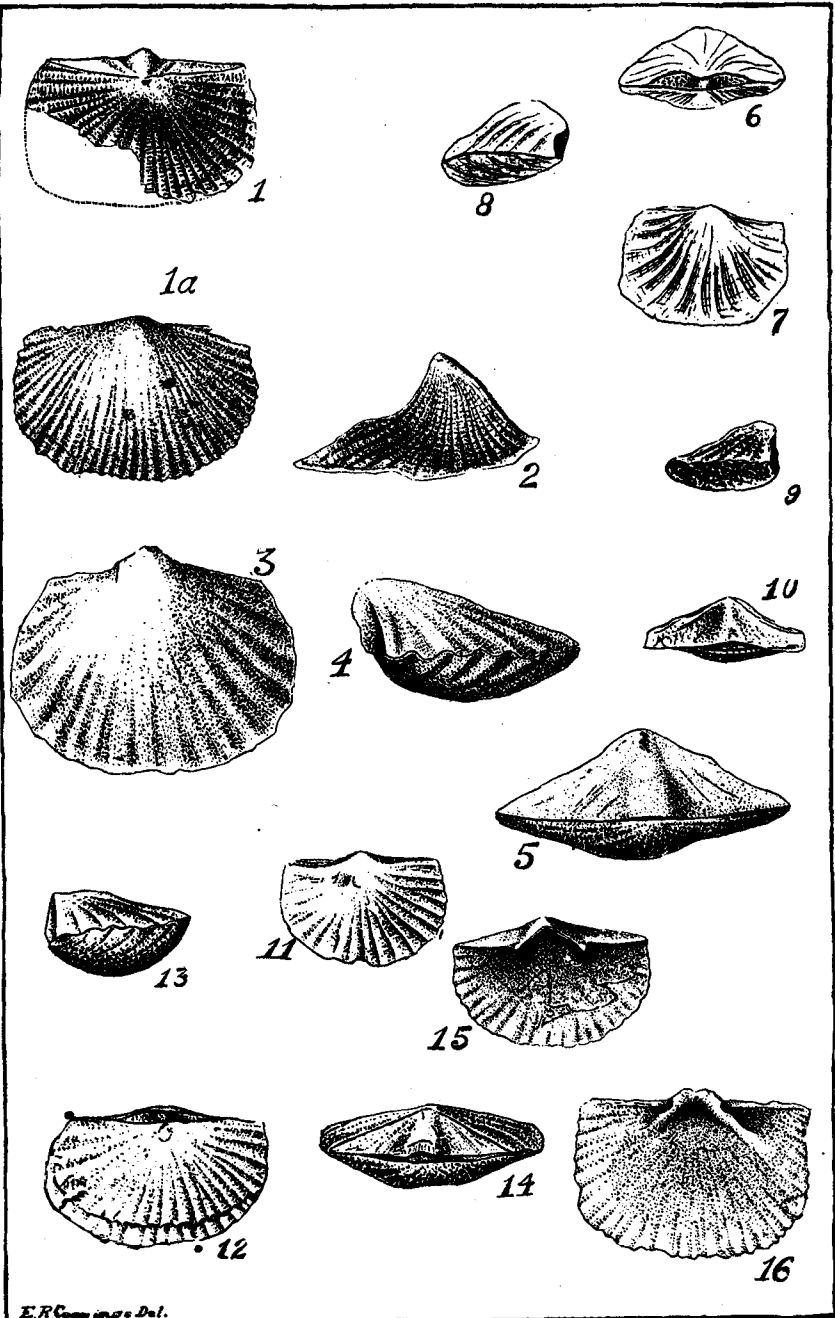


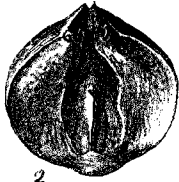
PLATE XIX.

	Page
<i>Cleiothyris hirsula</i>	1320
1. View of hinge plate from the front, showing the elevation of the plate, crural bases and minute visceral foramen.	
1a. View of same from above, showing crescentiform wall made by crural lobes and thick central lobe of the plate. After Hall and Clarke. From Bloomington.	
<i>Athyris densa</i>	1320
2. Interior of large pedicle valve, showing the thickening of the shell in the unbonal region and the mesial ridge. From Washington County, Indiana.	
2a. Dorsal view of complete specimen.	
2b. Interior of pedicle valve, showing further details of muscular impressions. Both from Colesburg, Ky.	
2c. Another pedicle valve with septum and dim muscular impressions. From Washington County, Indiana. All after Hall and Clarke.	
<i>Spirifer suborbicularis</i>	1312
3. Cast of pedicle valve, showing deep impressions of the dental lamellae and traces of muscular impression. Shell badly worn.	
3a. Interior of pedicle valve, showing details of muscular impressions and dental lamellae with the teeth, broad foramen and high beak. Natural size. Both from Lanesville. Collection of G. K. Greene.	
<i>Pugnax? quadrirostris</i>	1306
4. View of anterior end, showing linguat extension of pedicle valve.	
4a. Lateral view of another specimen.	
4b. Brachial view of the same specimen. All from the Big Creek quarries. Greatly enlarged. Indiana University collection.	
4c. Lateral view of type specimen, showing concave brachial valve and its wing-like shape, and its relation to the pedicle valve.	
4d. Brachial view of the same.	
4e. View of pedicle valve, showing radiating plications. Very faint. From Harrodsburg. Highly magnified. Indiana University collection.	
<i>Dielasma turgidum</i>	1309
5, 5a. Lateral and pedicle views of a gigantic specimen from Lanesville. Natural size. Collection of G. K. Greene.	
<i>Productus biseriatus</i>	1299
6. A specimen showing spines in place. From Bloomington. Natural size. Indiana University collection.	
<i>Productus Indianensis</i>	1300
7. Brachial views of specimen, showing very concave brachial valve. Natural size. From Lanesville. Collection of G. K. Greene.	
7a. Specimen from Bloomington, showing convex interior of valve, cardinal process, muscular marks, mesial ridge and lateral thickening along the hinge. Natural size. Indiana University collection.	
<i>Ortonia blatchleyi</i>	1273
8. Two tubes as they lie attached to <i>Monilopora beecheri</i> . Types. From Bedford. Indiana University collection.	
<i>Holothurian?</i> spicules	1270
9-17. Spicules of various forms highly magnified. Harrodsburg. Indiana University collection.	

Plate XIX.



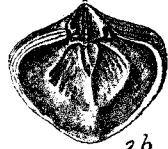
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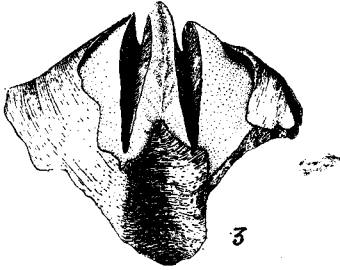
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2a



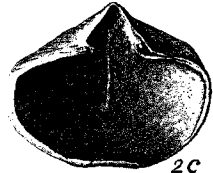
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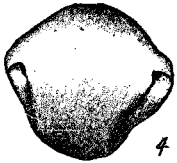
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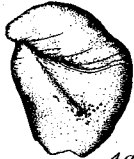
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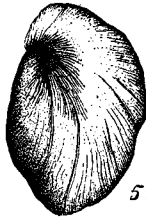
2c



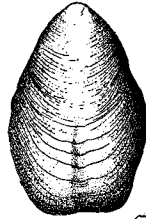
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4a



5



5a



4c



4d



6



9



10



11



4e



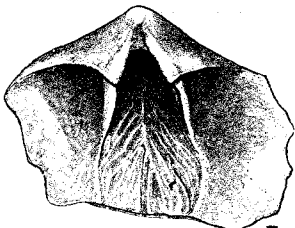
12



13



14



3a



4b



15



16



17



7



7a



8

PLATE XX.

	Page
<i>Productus burlingtonensis</i> var.	1301
1. Specimen figured on plate XVIIIA, with the produced beak and rather coarse striae.	
1a. Brachial valve of another specimen. Both natural size. From Spergen Hill. Indiana University collection.	
<i>Spirifer horizontalis</i>	1315
2, 2a. Lateral and brachial views of the type. After Rowley. Lanesville. G. K. Greene collection.	
<i>Spirifer lateralis delicatus</i>	1314
3. Cardinal view of specimen. After Rowley.	
3a. Anterior view of another specimen. After Rowley.	
<i>Spirifer subaequalis</i>	1316
4. Cardinal view of specimen from Lanesville.	
4a. View of pedicle valve of the same.	
4b. Interior of brachial valve of another specimen from the same locality. All from Lanesville. In the collection of G. K. Greene.	
<i>Dielasma gorbyi</i>	1310
5. Pedicle valve. Natural size. From Edwardsville. Collection of G. K. Greene.	
<i>Reticularia pseudolineata</i>	1317
6. Interior of pedicle valve, showing septum, dental lamellae, teeth, and wide base of the foramen.	
6a. Posterior view of the same, showing hinge line and area, broad foramen. From Bedford. Natural size. Indiana University collection.	
<i>Orthothetes minutus</i>	1297
7. A very old, wrinkled pedicle valve with the usual distorted beak. Natural size. Lanesville. Indiana State Museum collection.	
<i>Cephalopod</i>	
8. A large portion of the living chamber; $\times \frac{1}{2}$. From Ellettsville. Indiana State Museum collection.	

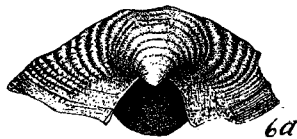
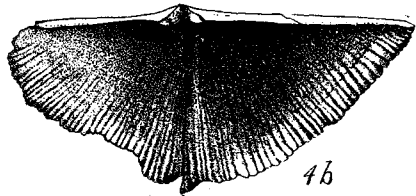
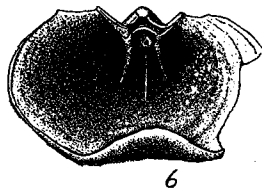
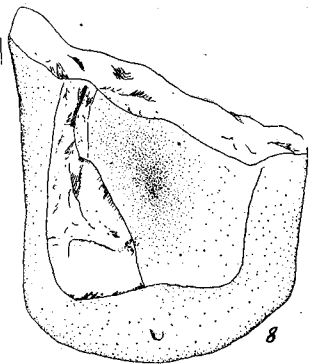
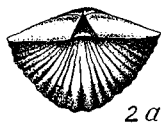
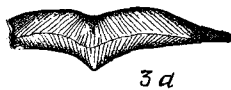
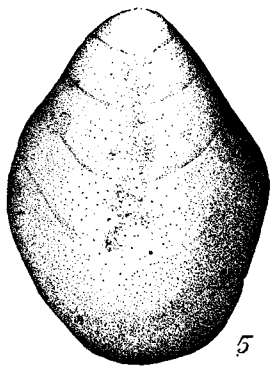
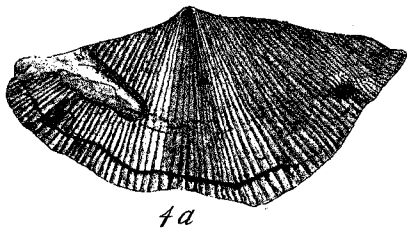
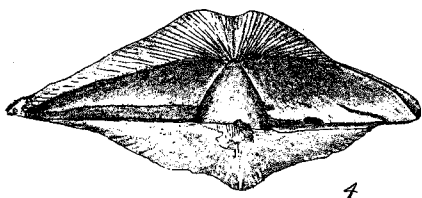
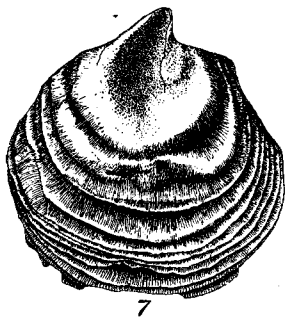
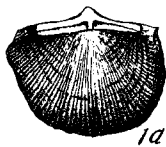
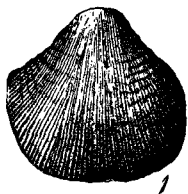


PLATE XXI.

	Page
<i>Reticularia setigerus</i>	1318
1, 1a. Brachial and pedicle aspect of a specimen. After Hall.	
<i>Spirifer subcardiiformis</i>	1313
2. Brachial aspect of specimen. After White.	
2a. Lateral view of same. After White. From Spergen Hill.	
<i>Spirifer subaequalis</i>	1316
3, 3c. Specimens showing pedicle, brachial and cardinal aspects to compare with previous figures of the species. After Hall.	
<i>Spirifer subordicularis</i>	1312
4. Lateral view of specimen. After Hall.	
<i>Reticularia pseudolineata</i>	1317
5. Specimen fragment, showing the double-barreled spines with barbules:	
× 2. From Bedford. Indiana University collection.	

Plate XXI.

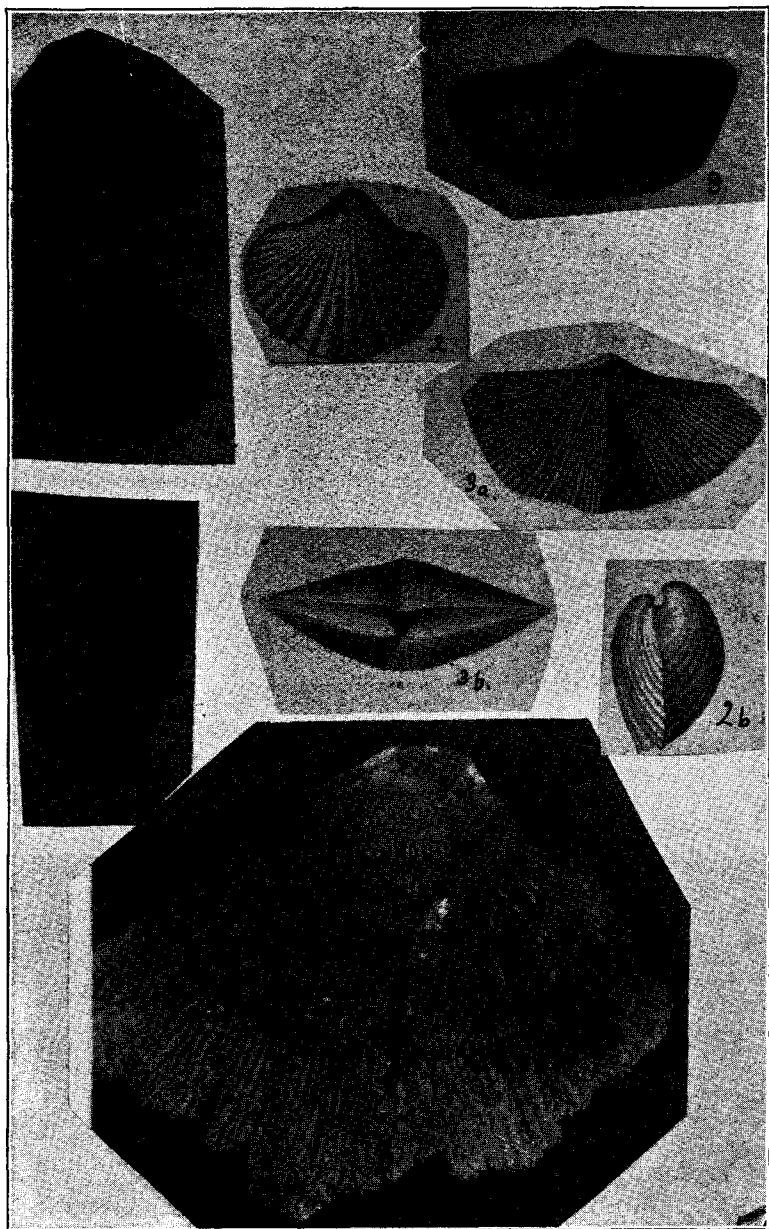


PLATE XXII.

	Page
<i>Rhipidomella dubia</i>	1303
1. Dorsal view of a ventricose specimen from Bloomington, Ind.	
2-4. Three views of a larger specimen from Spergen Hill, Ind.	
5. Interior of ventral valve of a large individual from Paynter's Hill.	
<i>Productus Indianensis</i>	1300
6, 7. Profile and vertical views of the largest type specimen (2x).	
<i>Productus biseriatus</i>	1299
8. Enlarged (2x) view of interior of dorsal valve. From Bloomington.	
9. Another nat. size from Alton, Ill.	
10-12. Three views of a large specimen from Spergen Hill. From later collections.	
<i>Spirifera bifurcata</i>	1314
13. View of the original specimen (6x).	
14. A larger individual (3x).	
15. A still larger one (2x) from Spergen Hill.	
<i>Spiriferina Norwoodana</i>	1311
16, 17. Dorsal and front views of one of the types (3x). From Alton, Ill.	
<i>Cleiothyris hirsuta</i>	1320
18. A small Spergen Hill specimen (2x), showing setae.	
19-21. Three views of a larger specimen from later collections at the same locality.	
<i>Seminula trinuclea</i>	1322
22, 23. Views of two specimens from Bloomington, showing variation of form.	
24-27. Views of a larger specimen more recently obtained from Spergen Hill.	
<i>Eumetria marceyi</i>	1319
28. View of a specimen (2x) from Spergen Hill.	
29. From a specimen more recently obtained from Paynter's Hill, Ind.	
30. Enlargement of hinge from one of the originals.	
<i>Pugnax Grosvenori</i>	1305
31, 32. Views (2x) of a large rotund specimen.	
33, 34. A smaller one (3x) from Bloomington, Ind.	
<i>Camarophoria Wortheni</i>	1305
35-38. Four views (2x) of the type specimen showing strong plications.	
39. One (2x) showing a different form of plication.	
<i>Rhynchonella macra</i>	1307
40-42. Three views (2x) of a large specimen from Alton, Ill.	
<i>Pugnax mutata</i>	1306
43. Dorsal view of a specimen of medium size.	
44, 45. Dorsal and front views of a large one. Alton, Ill.	
<i>Rhynchonella recinula</i>	1308
46. Dorsal view (6x) of one of the originals from Spergen Hill.	
<i>Camarophoria subcuneata</i>	1304
47-49. Dorsal, ventral and profile views of a specimen from Bloomington, Ind.	
<i>Centronella crassicardinalis</i>	1308
50-52. Exterior, interior and profile views of a separated ventral valve of a specimen from Spergen Hill, Ind.	
<i>Dielasma turgida</i>	1309
53-55. Three views of a specimen of medium size from Bloomington, Ind.	
56-58. Similar views of a larger specimen from Ellettsville, Ind. From later collections.	
<i>Dielasma formosa</i>	1310
59, 60. Two views of a small specimen from the original collection.	
61-64. Similar views of larger specimens subsequently obtained. Spergen Hill.	

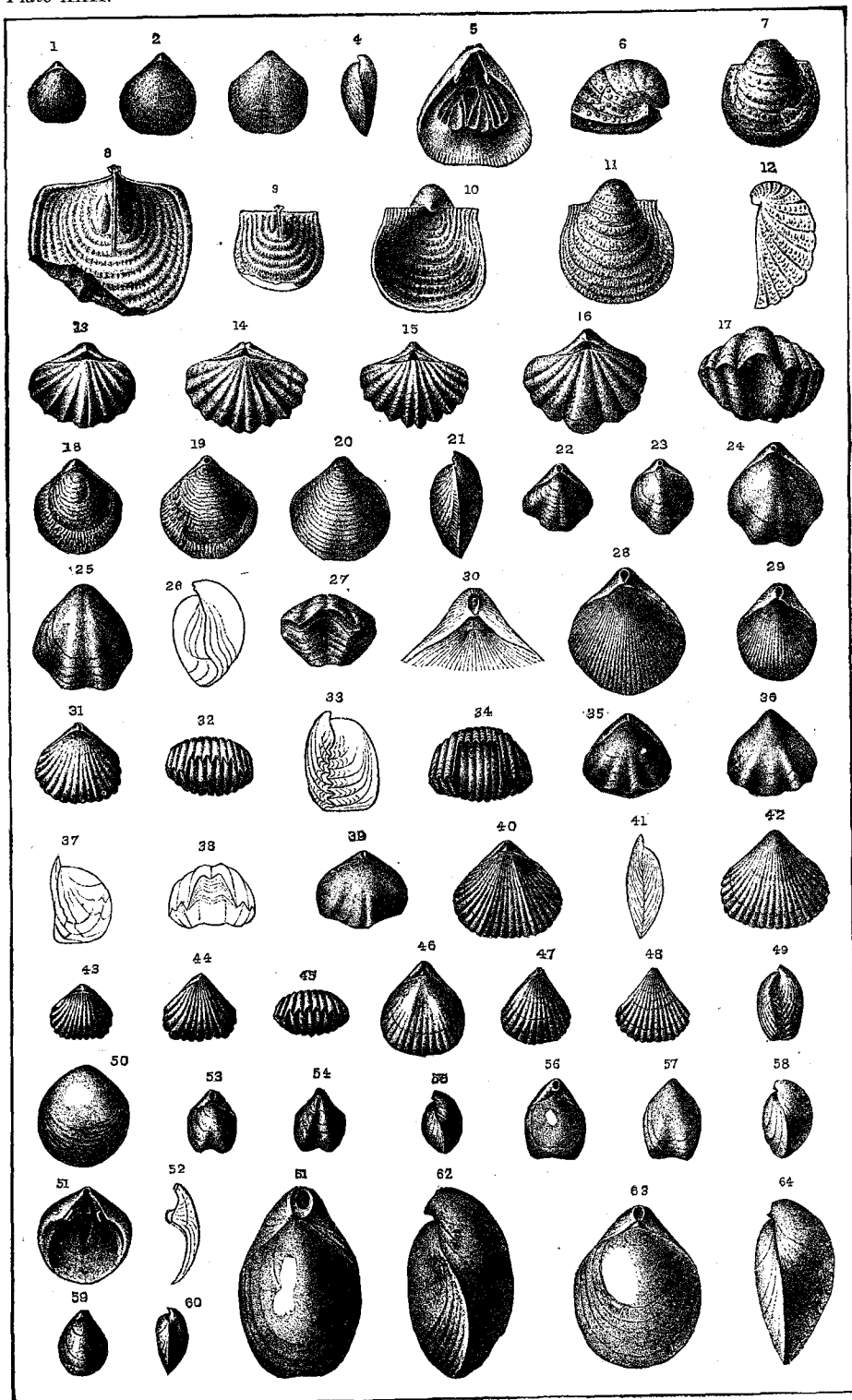


PLATE XXIII.

	Page
<i>Pteronites Spergenensis</i>	1323
1. View of a left valve of the species (2x) from Spergen Hill.	
<i>Nucula Shumardana</i>	1323
2, 3. Lateral and cardinal views (2x) of a specimen of normal form.	
4, 5. Lateral and dorsal views of a more elongate specimen (2x) from later collections.	
6. Outline view, showing hinge (3x).	
<i>Nuculana nasuta</i>	1324
7, 8. Similar views (4x) of two original specimens.	
9. View (3x) of a specimen subsequently obtained. All Spergen Hill, Ind.	
<i>Cypricardinia Indianensis</i>	1324
10. Cardinal view (4x) of a specimen from a later collection, showing both valves.	
11. End view, showing the inequality of the valves.	
12. View of the hinge (3x) as shown on a specimen from later collections from Spergen Hill.	
13, 14. Cardinal and lateral views (2x) of original specimens from Bloomington, Ind.	
<i>Conocardium catastomum</i>	1325
15-17. Lateral views of specimens from Spergen Hill (4 and 3x).	
16. Basal view of the specimen 15.	
<i>Conocardium carinatum</i>	1326
18, 19. Posterior and lateral views (2x) of an imperfect specimen. Spergen Hill.	
<i>Conocardium peattenanum</i>	1328
20. Enlarged lateral view (4x) of the only example of the species obtained. Alton, Ill.	
<i>Conocardium Meekanium</i>	1328
21-23. Three views (3x) of a specimen from Alton, Ill.	
<i>Conocardium cuneatum</i>	1327
24, 25. Lateral and posterior views (2x) of a specimen from Bloomington.	
26. Basal view (2x) of one from Spergen Hill, Ind.	
<i>Microdon subellipticus</i>	1330
27, 29. Lateral and cardinal views (3) of a specimen from Spergen Hill.	
28. View (3x) of another specimen, showing hinge.	
<i>Microdon oblongus</i>	1330
30, 31. Lateral and cardinal views (2x) of the principal type specimen. This specimen was given in the Iowa Geol. Rept. as <i>C. nucleata</i> .	
32. View (2x) of a cast showing muscular imprints.	
33. Enlargement of the hinge from a separated valve subsequently collected.	
34. View of a very large valve (natural size) subsequently collected. Spergen Hill, Ind.	
<i>Microdon nucleatus</i>	1331
35, 36. Lateral and cardinal views of a specimen (4x) from Spergen Hill.	
<i>Microdon ellipticus</i>	1331
37. Lateral view of the specimen (2x). Spergen Hill, Ind.	
<i>Edmondia (?) subplana</i>	1332
38. Lateral view of the type specimen. Natural size.	
<i>Goniophora (?) plicata</i>	1332
39. Lateral view (3x) of one of the original specimens.	

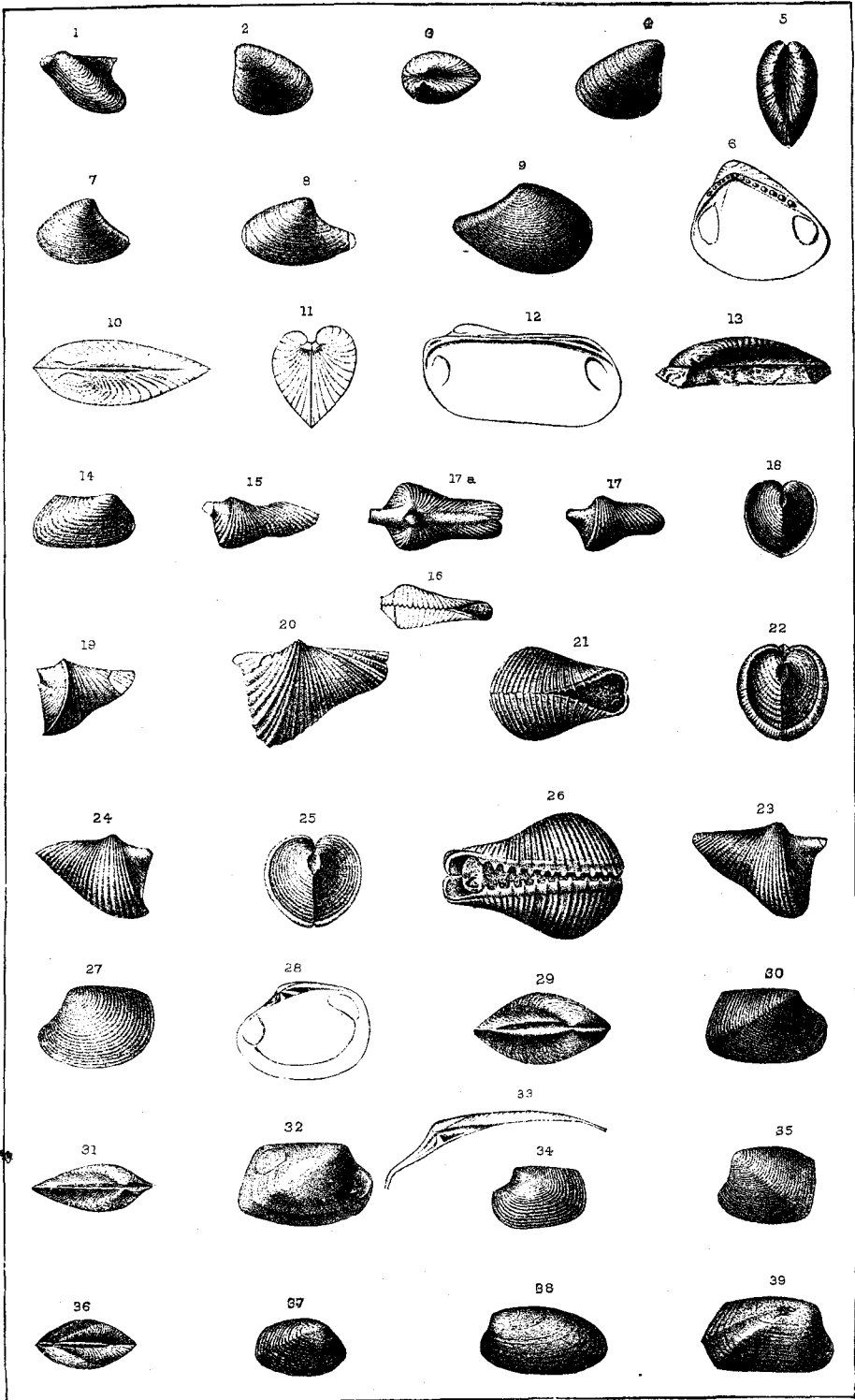


PLATE XXIV.

	Page
<i>Aviculopecten sp.</i>	
1. View of right valve.	
1a. Portion of surface enlarged. Spergen Hill. Indiana University collection.	
<i>Macrodon sp.</i>	1333
2. Left valve. Spergen Hill. Indiana University collection.	
<i>Macrocheilus sp.</i>	1341
3, 3a. Spergen Hill.	
<i>Griffithides bufo</i>	1370
4. After Meek and Worthen.	
<i>Bellerophon Gibsoni</i>	1361
5, 5b. After White.	
<i>Polytremaria (?) solitaria</i> n. sp.	1364
6. Lateral view (enlarged), showing perforations.	
6a. Top view, showing spire. Spergen Hill. Indiana University collection.	
<i>Subulites Harrodsburgensis</i> n. sp.	1363
7. Posterior view.	
7a. Anterior view.	
7b. Detail of aperture. Harrodsburg, Ind. Indiana University collection.	
<i>Gryphochiton (?) parvus</i>	1365
8. Anterior segment.	
8a. Body segment.	
8b. Posterior segment.	
8c. Profile of last. Harrodsburg, Ind. Indiana University collection.	
<i>Soleniscus glaber</i> n. sp.	1363
9, 9a. Anterior and posterior views. Spergen Hill. Indiana University collection.	
<i>Macrocheilus Stinesvillensis</i> n. sp.	1341
10, 10a. Anterior and posterior views. Stinesville, Ind. Indiana University collection.	
<i>Platyceras circularis</i>	1363
11, 11a. Apertural and profile views. After Rowley. Lanesville, Ind. G. K. Greene collection.	
<i>Anomphalus rotuliformis</i> n. sp.	1364
12, 12a. Apertural and top views. Spergen Hill. Indiana University collection.	
<i>Orthoceras sp.</i>	1368
13, 13a. Edwardsville, Ind. G. K. Greene collection.	
<i>Conularia Greenei</i>	1367
14. Spergen Hill? G. K. Greene collection.	
<i>Acmaca (?) sp.</i>	1366
15, 15a. Lanesville, Ind. G. K. Greene collection.	

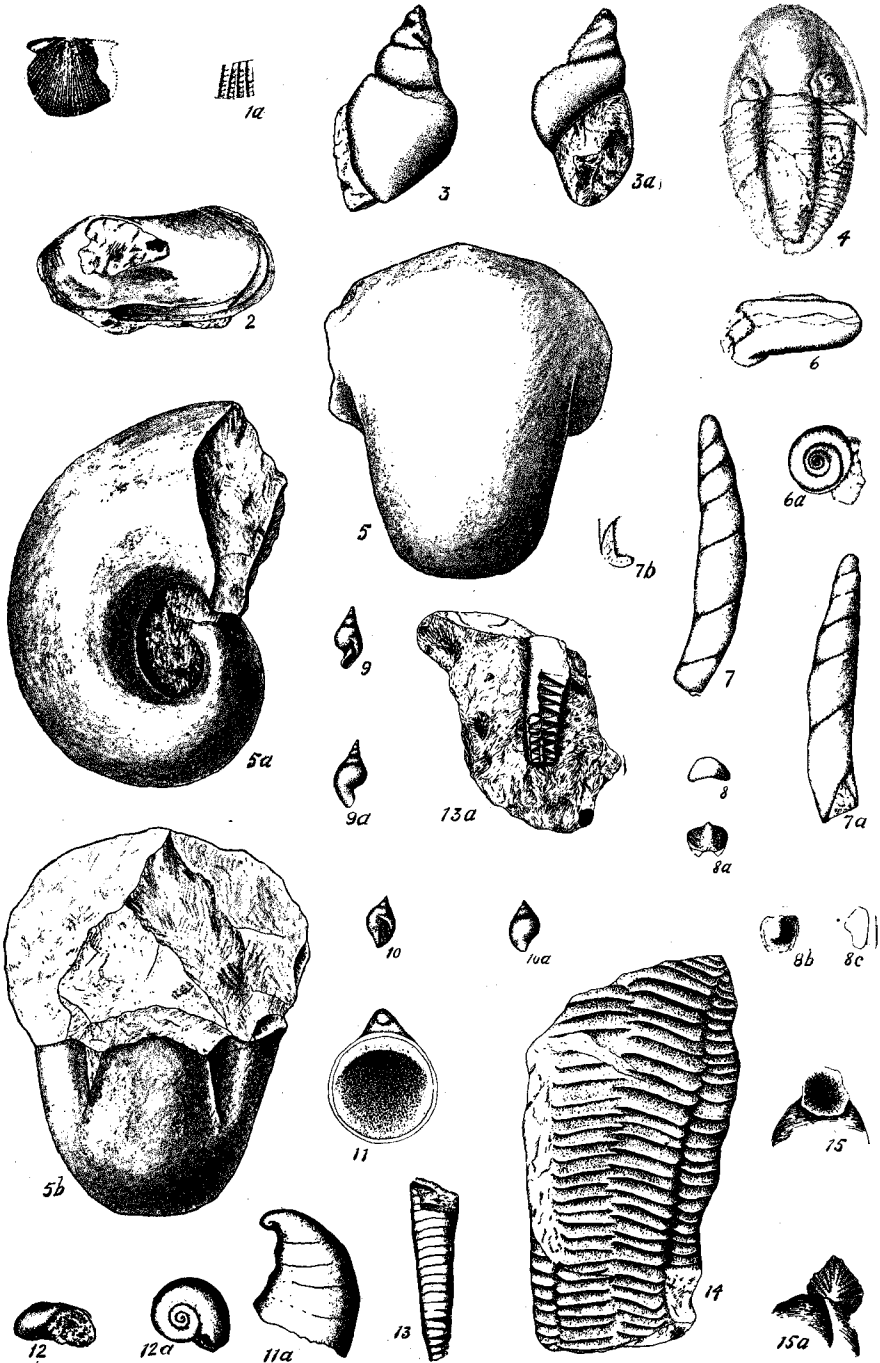


PLATE XXV.

	Page
<i>Nautilus Clarkanus</i>	1369
1. Lateral view of the specimen described.	
<i>Orthoceras epigrus</i>	1368
2. x2.	
<i>Conularia subulata</i>	1366
3. Lateral view x2.	
<i>Bucanopsis textilis</i>	1362
4, 5. Dorsal and lateral view (x2). Bloomington, Ind.	
<i>Bellerophon sublaevis</i>	1360
6, 7.	
<i>Lepetopsis Levctici</i>	1337
8. Lateral view of a young specimen doubtfully of this species (x4).	
9. Top view of a large individual.	
10. Same with shell removed to show muscular scar.	
11. View of a second individual.	
12. Profile of 10 and 11.	
<i>Orthonychia acutirostre</i>	1385
13, 14. Lateral and dorsal views of same specimen.	
15. Lateral view of a second specimen. Both Bloomington, Ind.	
<i>Straparollus spergenensis</i>	1337
16-19. Typical <i>S. spergenensis</i> . From Spergen Hill.	
20, 21. So-called var. <i>planorbiformis</i> . From Bloomington, Ind.	
22, 23. So-called <i>S. planispira</i> . From Bloomington, Ind.	
24, 25. So-called <i>S. quadrivolvis</i> . From Bloomington.	
<i>Strophostylus carleyana</i>	1340
26, 27. Posterior views. Natural size. View of aperture (x2). Bloomington, Ind.	
<i>Macrocheilus littonanus</i>	1341
28. Anterior view (x4).	
<i>Cyclonema leavenworthana</i>	1344
29. From Spergen Hill (x2).	
30. From Bloomington. Natural size.	
31. Aperture of specimen from Spergen Hill (x2).	
<i>Cyclonema subangulatum</i>	1345
32. Posterior view of type (x2).	
<i>Holopea proutana</i>	1342
33, 34. Anterior and posterior views (x2). Spergen Hill.	
<i>Loxonema yandellana</i>	1346
36. Fragment showing striae (x3).	
35. Another specimen (x3).	
<i>Bulimorpha bulimiformis</i>	1343
37. Specimen from Bloomington, Ind. (x2), showing columella.	
38. Lateral view of smaller specimen (x3), Spergen Hill, showing sinus in upper part of lip.	
39. Anterior view of another Spergen Hill example (x3).	
<i>Bulimorpha elongata</i>	1344
40. Type (x2).	
<i>Bulimorpha canaliculata</i>	1343
41. Type (x3) showing the channeled sutures.	

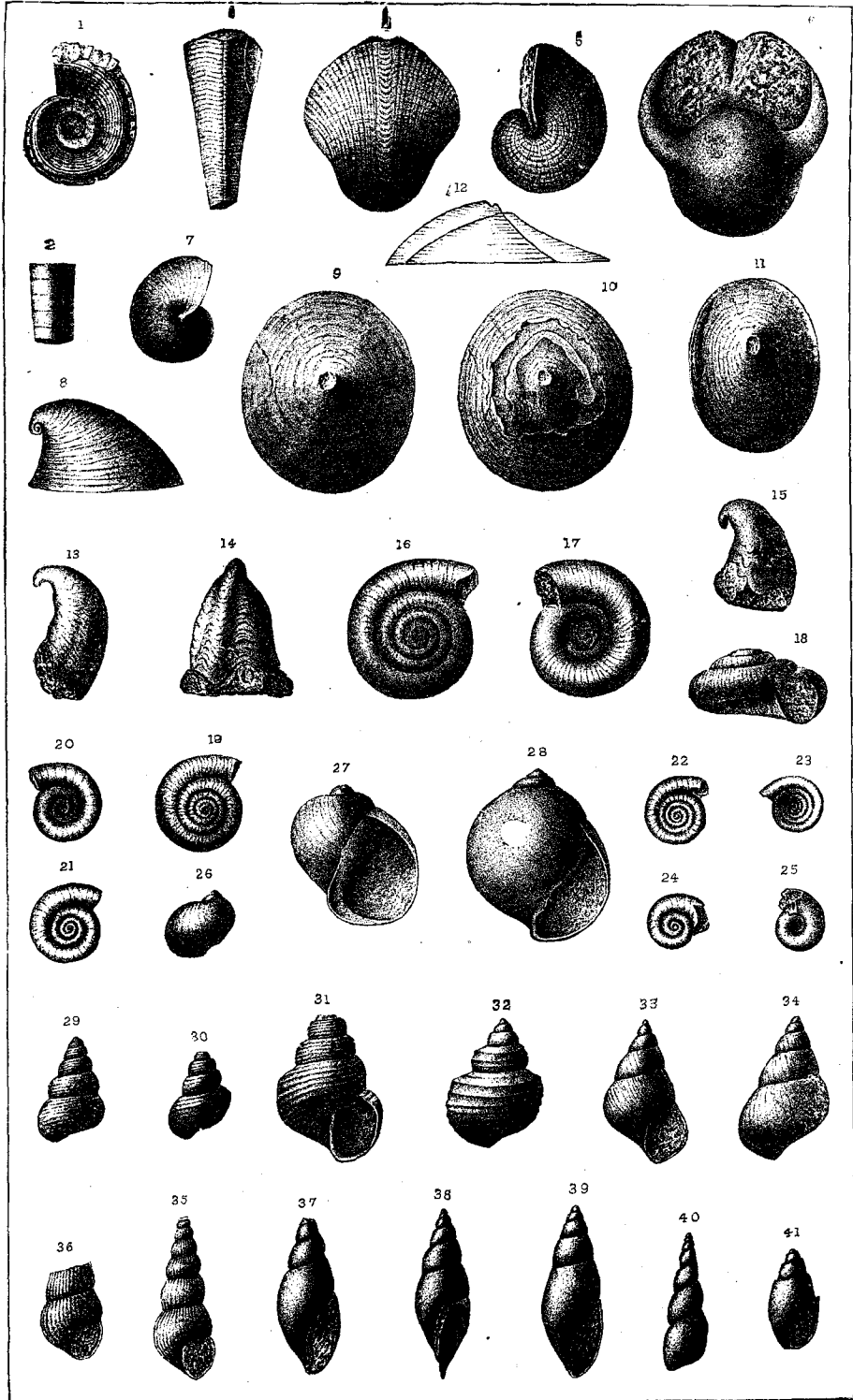


PLATE XXVI.

	Page
<i>Pleurotomaria</i> (?) <i>Swallowana</i>	1349
1, 2. Vertical and lateral views of a specimen from Spergen Hill, Ind. (x4).	
3. Top view (x4) of so-called <i>P. humilis</i> .	
<i>Pleurotomaria</i> (?) <i>wortheni</i>	1351
4. Apertural view of type. (See other figures, Geol. Iowa, 1858).	
<i>Pleurotomaria</i> (?) <i>nodulostriata</i>	1350
5. Apertural view (x4) of a specimen of medium height.	
<i>Pleurotomaria</i> (?) <i>piasaensis</i>	1353
6, 7. Lateral and top views of a specimen with sharp periphery (x3).	
<i>Pleurotomaria</i> (?) <i>Meekana</i>	1352
8, 9. Lateral and top views of type slightly restored (x3).	
<i>Pleurotomaria</i> (?) <i>subglobosa</i>	1348
10. Lateral view, showing aperture (x2). Spergen Hill.	
<i>Solenospira</i> <i>vermicula</i>	1357
11. Specimen from Spergen Hill (x5).	
<i>Solenospira</i> <i>turritella</i>	1358
12. Specimen from Spergen Hill (x2).	
<i>Solenospira</i> <i>attenuata</i>	1359
13. Type (x6).	
<i>Murchisonia</i> (?) <i>vineta</i>	1359
14. View of the most perfect of the type specimens (x2).	
<i>Murchisonia</i> (?) <i>terebriiformis</i>	1357
15. View of the type (x2).	
16. View of last volution, further enlarged and restored in lower part.	
<i>Pleurotomaria</i> (?) <i>conula</i>	1354
17. View showing aperture with slit (x4).	
<i>Murchisonia</i> (?) <i>insculpta</i>	1356
18. Specimen from Spergen Hill (x4).	
<i>Bembecia</i> <i>elegantula</i>	1355
19. Type (x2).	
<i>Pleurotomaria</i> (?) <i>trilineata</i>	1350
20. Specimen from Bloomington, Ind. (x3).	
<i>Eotrochus</i> <i>concavus</i>	1347
21, 22. Lateral and basal views of a specimen from Spergen Hill (x2).	
23. Section of a shell enlarged.	
<i>Leperditia</i> <i>carbonaria</i>	1347
24-27. Views of a specimen, greatly enlarged, showing the features of the species.	
<i>Cytherellina</i> <i>glandella</i>	1271
28, 29. Lateral and profile views of a specimen greatly enlarged.	
<i>Spirorbis</i> <i>annulatus</i>	1271
30. View of the lower side of a specimen from Alton, Ill. (x2).	
<i>Spirorbis</i> <i>nodulosus</i>	1272
31. Enlarged view of the type specimen (x4).	
<i>Pentremites</i> <i>conoideus</i>	1263
32. Lateral view of a specimen. Natural size. From Spergen Hill.	
33. Young example of <i>P. conoideus</i> . (This is the form described by Hall as <i>P. Koninckana</i> .) For other figures of this species see plates 45-47.	
<i>Endothyra</i> <i>Baley</i>	1201
34, 35. Two views of the same specimen, greatly enlarged, showing prevailing form.	
36. View, similarly enlarged, of a less symmetrical form.	

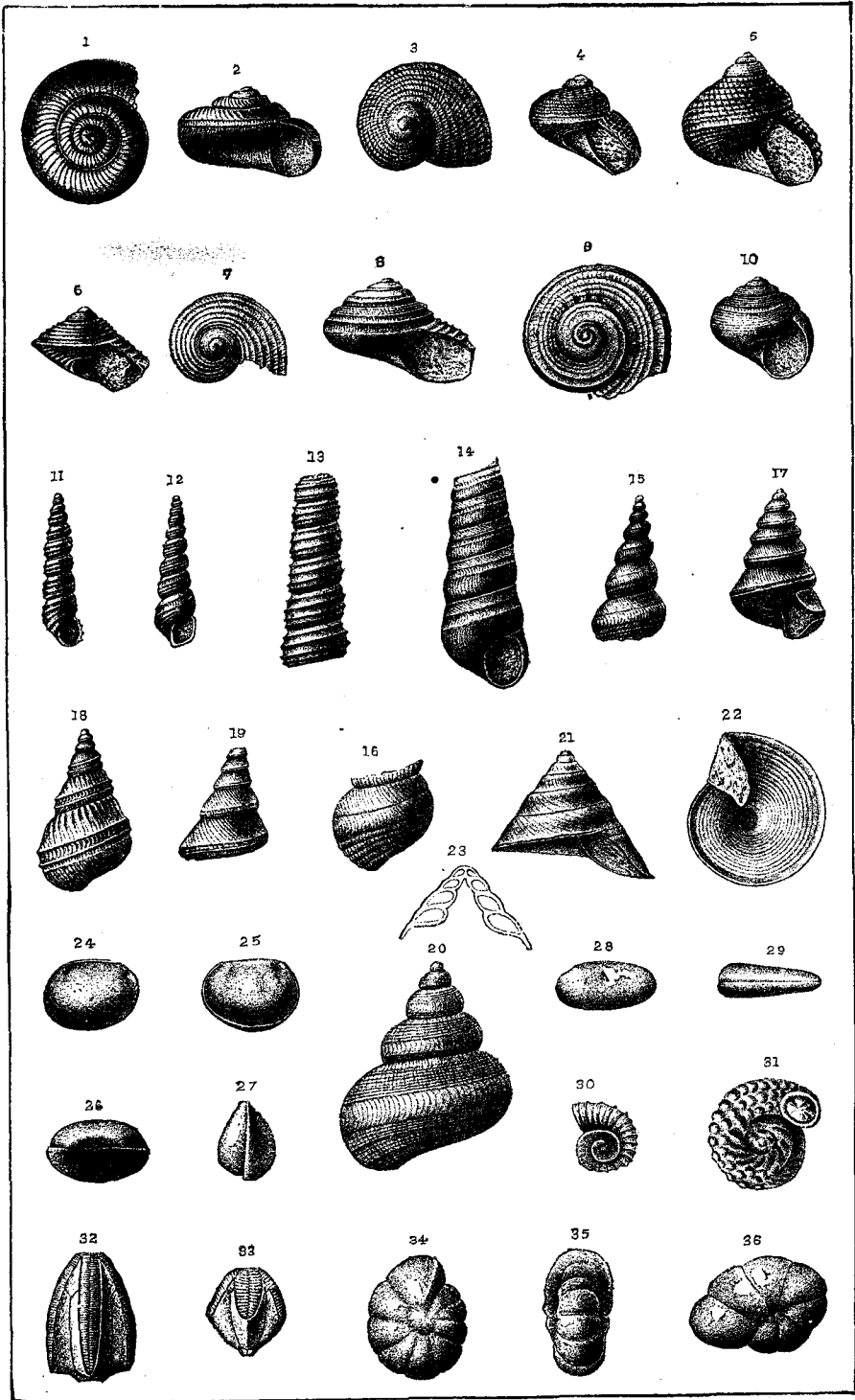


PLATE XXVII.

	Page
<i>Fenestralia sancti-ludovici</i>	1275
1. An unusually robust example of this species (x8.5). Bedford, Ind.	
1a. Obverse of a specimen, showing the normal form of the species. Collection of the U. S. National Museum.	
<i>Fenestralia sancti-ludovici</i> var. <i>compacta</i>	1276
2. Obverse of an example of this variety, showing the smaller branches and more numerous fenestrules (x8.5). Bedford, Ind.	
<i>Fenestella rudis</i>	1277
3. Portion of the obverse of the basal part of a frond, showing strong brace roots (x8.5).	
3a. Reverse of same (x8.5).	
3b. Obverse of another specimen (x8.5).	

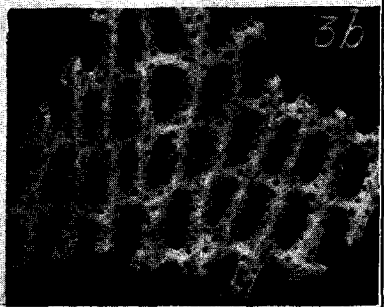
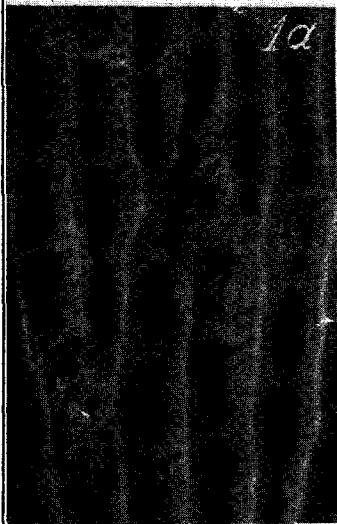
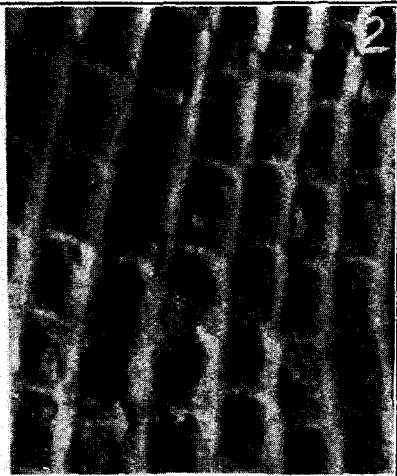
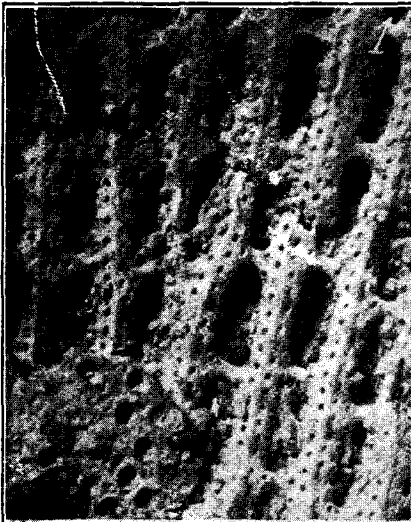


PLATE XXVIII.

	Page
<i>Fenestella compressa</i> var. <i>elongata</i> n. var.	1277
1. Portion of the obverse of a frond (x8.5), showing high, narrow carina and number and spacing of zoecia.	
1a. Reverse of another specimen (x8.5), showing lax habit of growth and quadrate fenestrules.	
1b. Obverse of another specimen (x8.5) with narrower fenestrules and somewhat more carinate dissepiments.	
2. Obverse of a form in which the fenestrules are unusually short (x8.5).	
2a. Reverse of a similar form (x8.5).	
2b. Reverse of the normal form with elongate narrow fenestrules (x8.5).	
2c. Obverse of a similar specimen (x8.5).	
<i>Fenestella exigua</i>	1278
3. Reverse (x8.5), showing the large nodes at the angles of the fenestrules.	
3a. Obverse (x8.5), showing carina with distant spines, etc.	

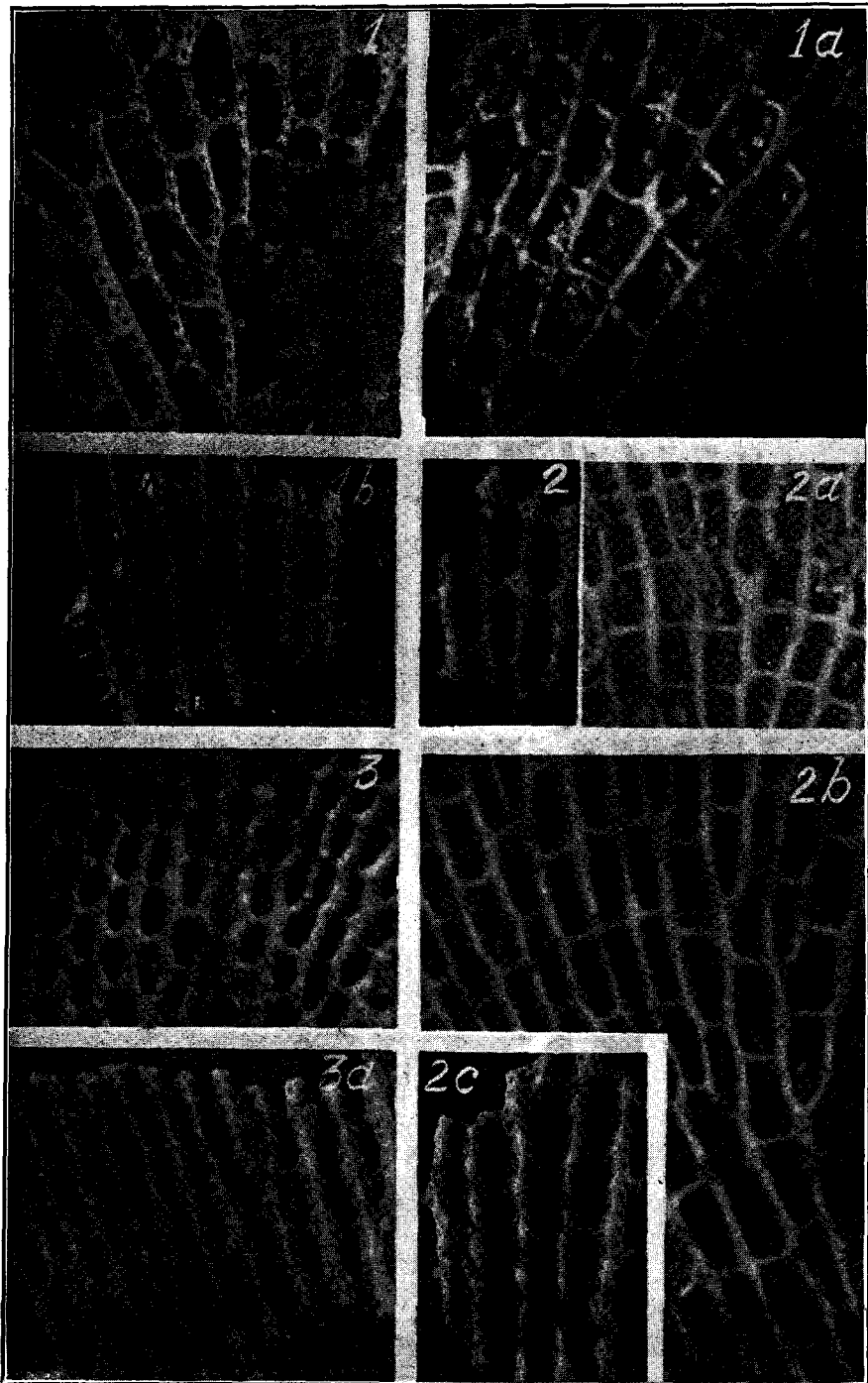


PLATE XXIX.

	Page
<i>Fenestella multispinosa</i>	1278
1. Obverse of a frond, showing the opercular coverings of many of the zoæcia (x8.5).	
1a. Reverse of another specimen, showing rounded fenestrules in the mature portion of the frond, and numerous granules (x8.5).	
1b. Reverse of another specimen, showing the granular-striate appearance of the younger portions of the zoarium and the rectangular fenestrules (x8.5).	
1c. Obverse and reverse of a form in which the reverse of both the branches and dissepiments are covered with strong round nodes (x8.5).	
1d. Obverse of a specimen, showing the spines on the dissepiments unusually large (x8.5).	
1e. Obverse of a specimen, showing the prominent peristomes of the zoæcia (x8.5).	

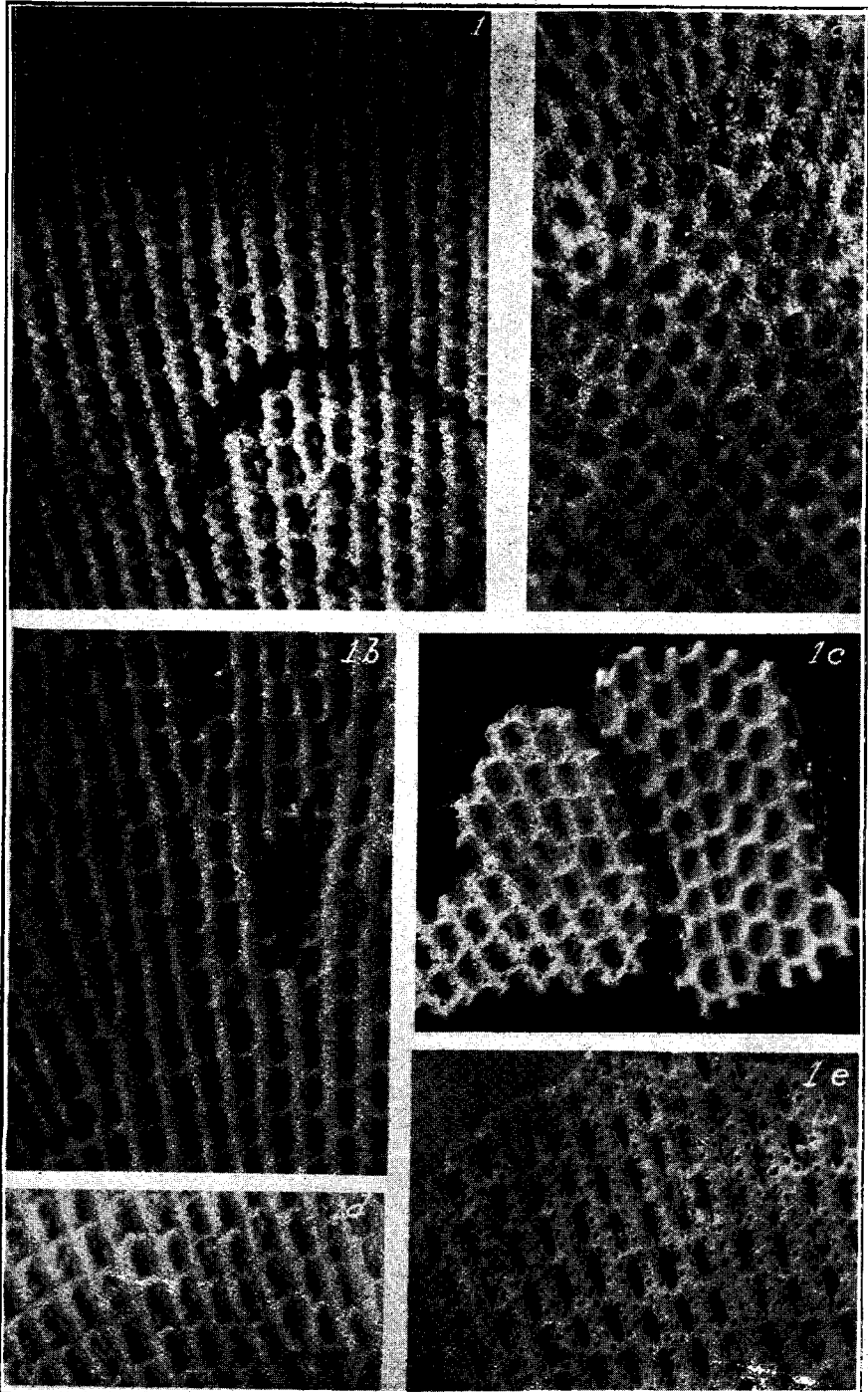


PLATE XXX.

	Page
<i>Fenestella tenax</i>	1279
1. Specimen showing the carina and the prominent peristomes of the small zoëcia (x8.5). Bedford, Ind.	
<i>Fenestella serratula</i>,	1280
2. Reverse of a finely preserved specimen, showing granulose striae (x8.5). Bedford, Ind.	
2a. Reverse of another specimen, showing variation in size of branches (x8.5). Bedford, Ind.	
2b. Obverse of a specimen, showing the usual appearance of Bedford examples of this species.	
2c. A very perfect example, showing the typical appearance of the species (x8.5). Bedford, Ind.	
3. Obverse, showing the straight, close branches and serrate carina (x8.5).	
3a. Reverse of another specimen. Bedford, Ind.	
<i>Fenestella tenuissima</i> n. sp.	1280
4. Obverse (x8.5).	

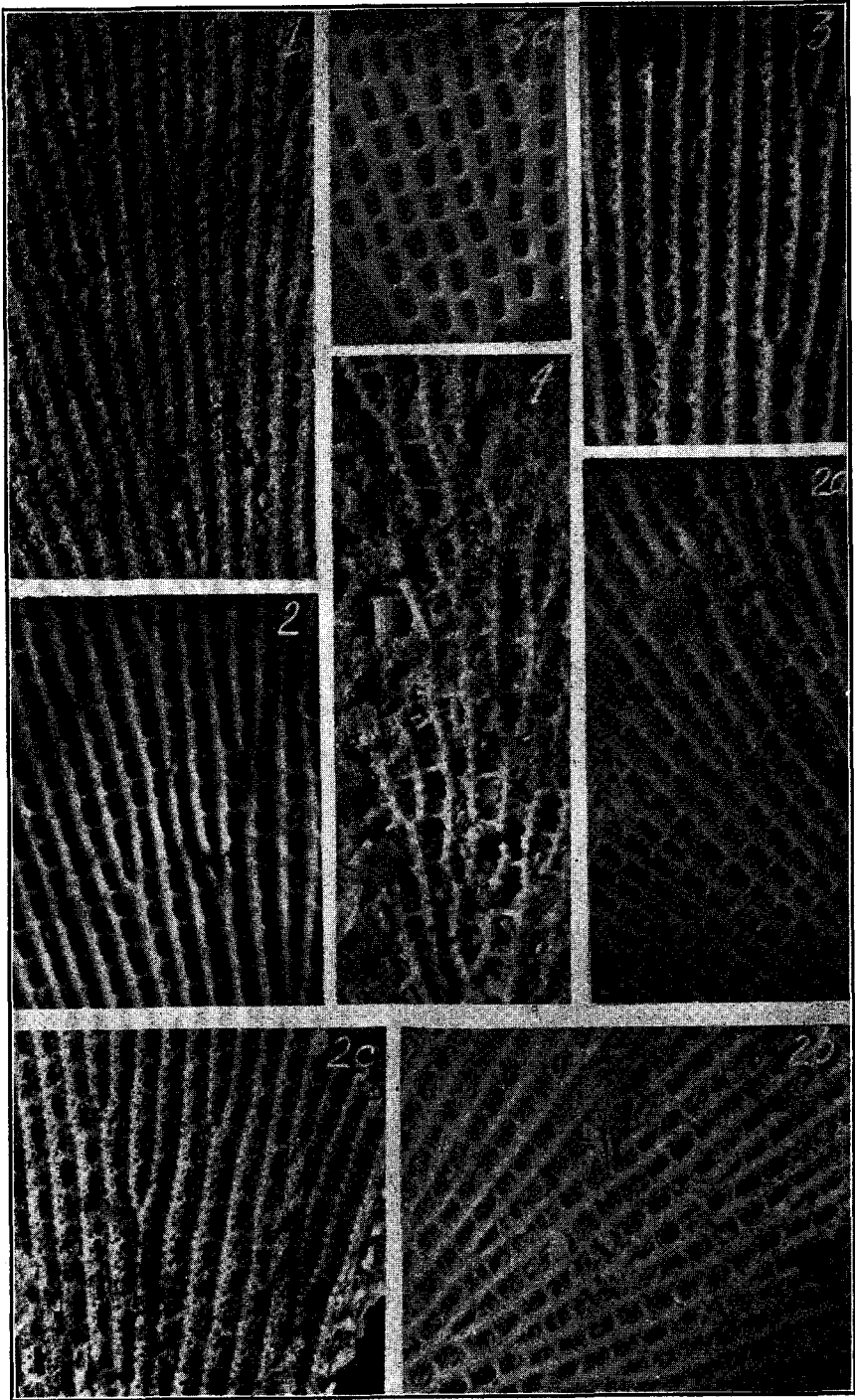


PLATE XXXI.

	Page
<i>Fenestella tenax</i>	1279
1. Obverse of a fine specimen, showing the closely arranged branches and distant bifurcations (x7).	
1a. Same specimen (x2). Bedford, Ind.	
1b. Reverse of another specimen (x7). Bedford, Ind.	
<i>Fenestella tenax</i> var. <i>multinodosa</i> n. var.	1279
2. Obverse of a specimen, showing the numerous nodes arranged in a zig-zag line (x7). Bedford, Ind.	
2a. Reverse of another specimen (x7). Bedford, Ind.	
<i>Fenestella serratula</i> var. <i>quadrata</i> n. var.	1280
3. Obverse, showing narrow branches and rectangular fenestrules (x8.5). Bedford, Ind.	
3a. Reverse of another specimen (x7). Bedford, Ind.	

Plate XXXI.

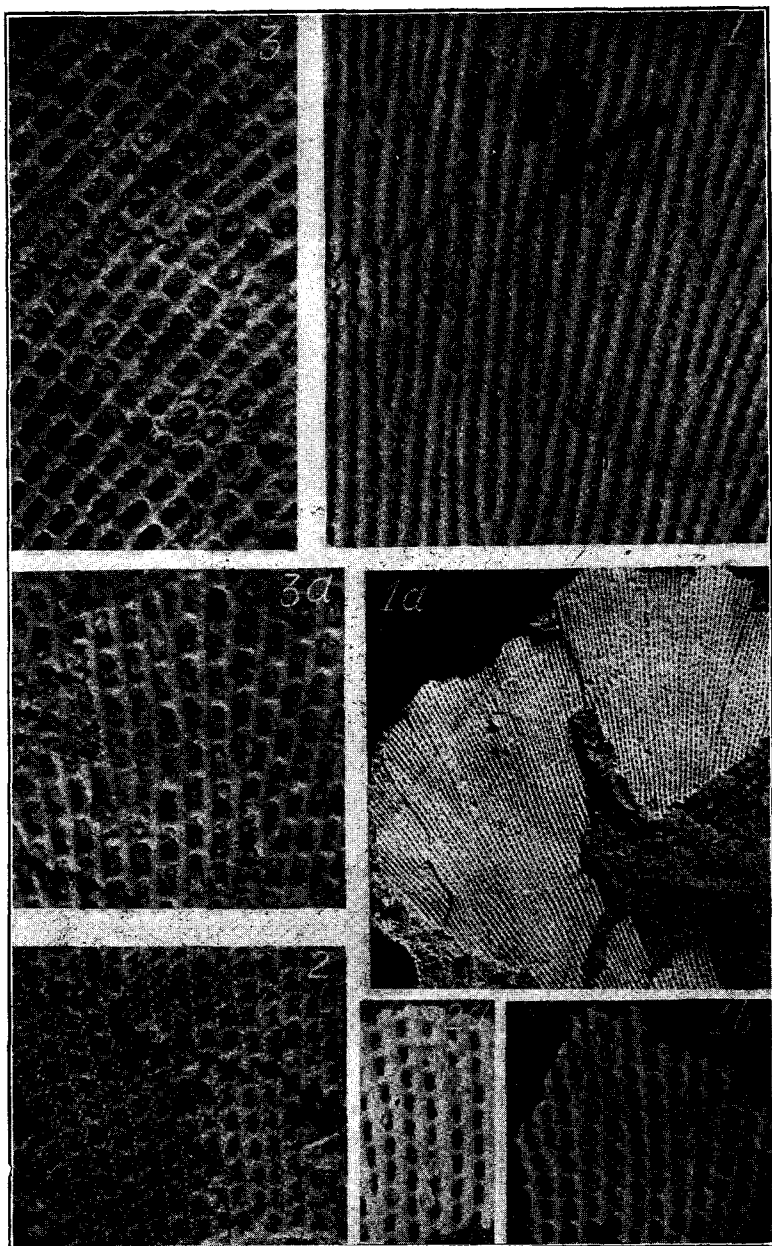


PLATE XXXII.

	Page
<i>Hemitrypa proutana</i> var. <i>nododorsalis</i> n. var.	1282
1. Reverse, showing short, wide fenestrules and strong nodes at the angles (x7). Bedford, Ind.	
1a. Obverse of another specimen (x7). Bedford, Ind.	
1b. Another part of the same frond as the last, showing superstructure (x7).	
1c. Obverse and reverse of a specimen in which the dorsal nodes are very prominent (x7). Bedford, Ind.	
<i>Hemitrypa proutana</i>	1281
2. Reverse of a specimen, showing the normal appearance (x7). Spergen Hill, Ind. American Museum collection.	
2a. Superstructure of another specimen (x7). Edwardsville, Ind. G. K. Greene collection.	
2b. Superstructure of another specimen. U. S. National Museum collection.	
<i>Hemitrypa beedei</i> n. sp.	1283
3. Reverse, showing strong striae (x7).	
3a. Obverse of same specimen (x7).	
3b. Superstructure of another specimen, showing pustules projecting into the interstices (x7).	
3c. Reverse of same specimen, showing the slit-like fenestrules (x8.5). All from Bedford, Ind.	

Plate XXXII.

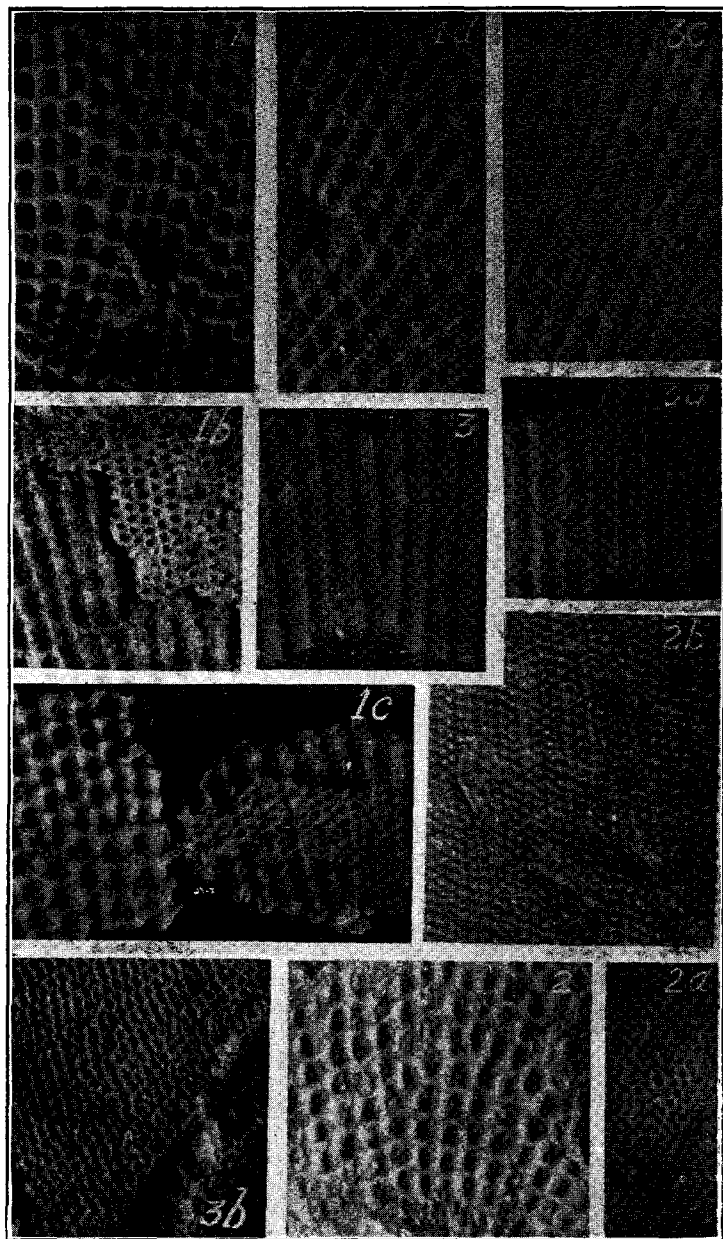


PLATE XXXIII.

	Page
<i>Polypora simulatrix</i>	1284
1. Obverse of younger portion of a very large frond (x8.5).	
1a. Obverse of older portion of same frond (x8.5). Bedford, Ind.	
1b. Reverse of another specimen (x8.5). Bedford, Ind.	
<i>Polypora striata</i> n. sp.	1285
2. Obverse of a specimen (x8.5). Bedford, Ind.	
2a. Reverse of a portion of the younger part of a large frond, showing striæ (x8.5). Bedford, Ind.	

Plate XXXIII.

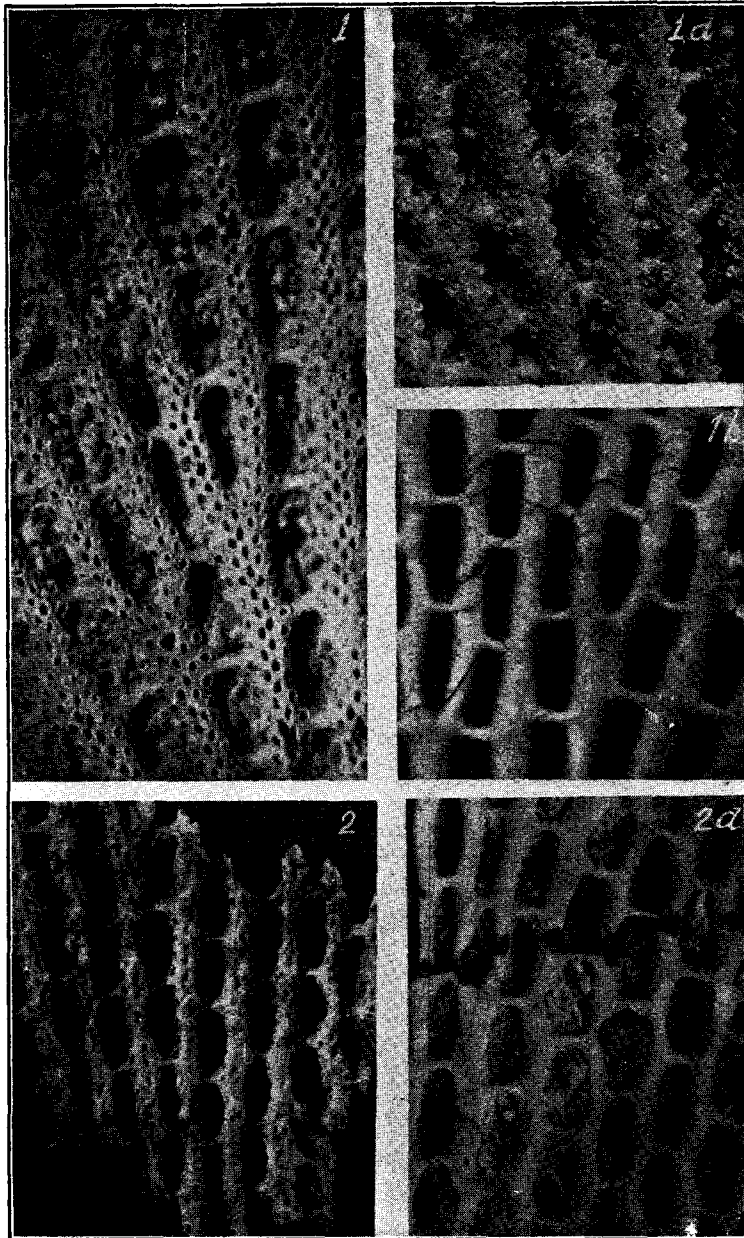


PLATE XXXIV.

	Page
<i>Polypora internodata</i> n. sp.	1285
1. Reverse of a fine specimen, showing the spines or nodes on the dissepiments (x8.5).	
1a. Obverse of another specimen (x8.5). Bedford, Ind.	
<i>Polypora biseriata</i>	1286
2. Obverse of a somewhat weathered specimen (x8.5).	
2a. Obverse of a more perfect example (x8.5).	
2b. Reverse of same (x8.5). Bedford, Ind.	
<i>Pinnatopora</i> sp.	1288
3. Obverse (x8.5).	
3a. Reverse (x8.5). Bedford, Ind.	
<i>Dichotrypa flabellum</i>	1288
4. Portion of a somewhat weathered frond (x8.5). Spergen Hill, Ind.	

Plate XXXIV.

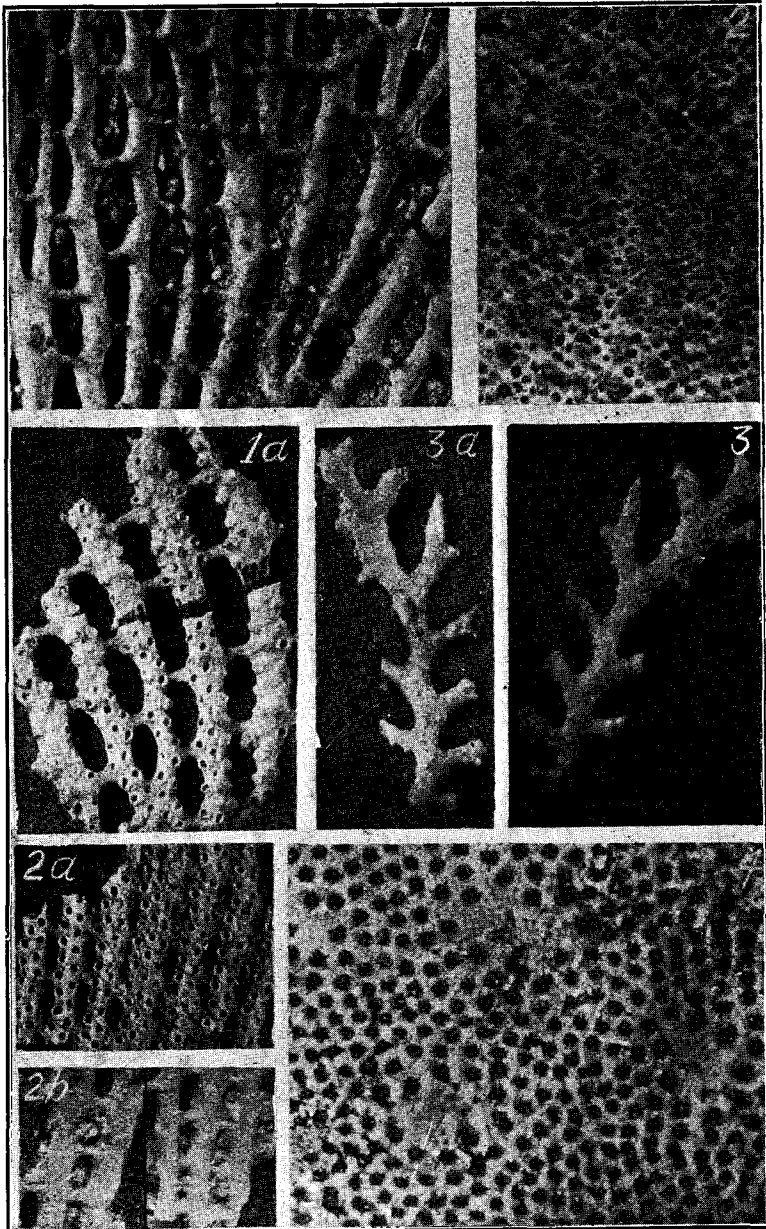


PLATE XXXV.

	Page
<i>Cystodictya lincata</i>	1289
1. A bifurcating branch (x8.5). Spergen Hill, Ind.	
<i>Cystodictya ocellata</i>	1290
2. Bifurcating frond, showing the absence of longitudinal ridges and minutely granulose surface (x8.5). Bedford, Ind.	
<i>Worthenopora spinosa</i>	1290
3. Fragment showing breadth of frond and short subquadrate zoëcia (x8.5). Bedford, Ind.	
<i>Worthenopora spatulata</i>	1291
4. Portion of a frond (x8.5). Bedford, Ind.	
<i>Rhombopora bedfordensis</i> n. sp.	1292
5. Specimen (x8.5), showing the general character of this species. Bedford, Ind.	
<i>Dichotrypa</i> sp.	1288
6. Portion of a frond (x8.5). Stinesville, Ind.	

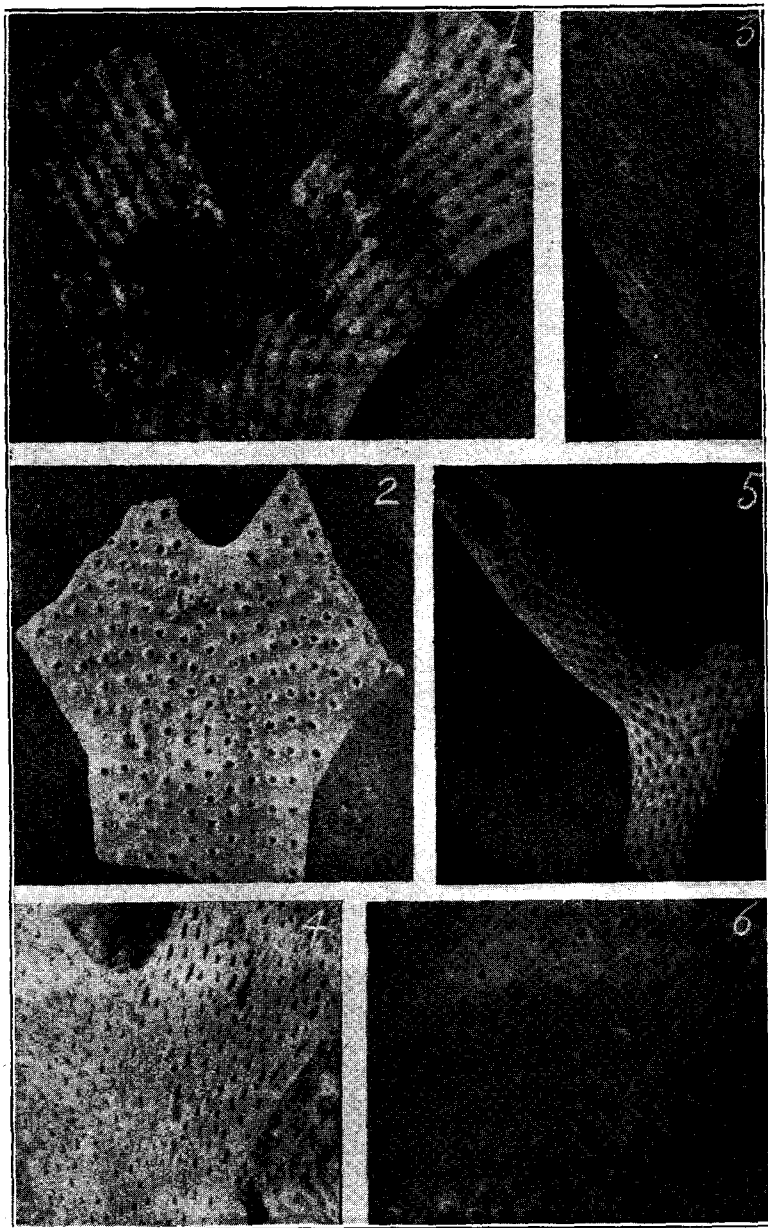


PLATE XXXVI.

	Page
<i>Glyptopora michelinia</i>	1294
1. Portion of one of the cups of this species (x8.5). Bedford, Ind.	
<i>Stenopora sp.</i>	1295
2. Portion of an expansion, showing the mesospores and pustulose walls (x8.5).	
<i>Stenopora rudis</i>	1295
3. Portion of a circular expansion, showing the large polygonal zoëcia (x8.5).	
<i>Fistulipora spergenensis</i> var. <i>minor</i>	1293
4. Portion of a young colony, showing the strong zoëcial hoods.	
<i>Fistulipora spergenensis</i>	1292
5. A beautifully preserved specimen from Bedford, Ind. (x8.5).	
6. Specimen from the U. S. National Museum (x8.5).	

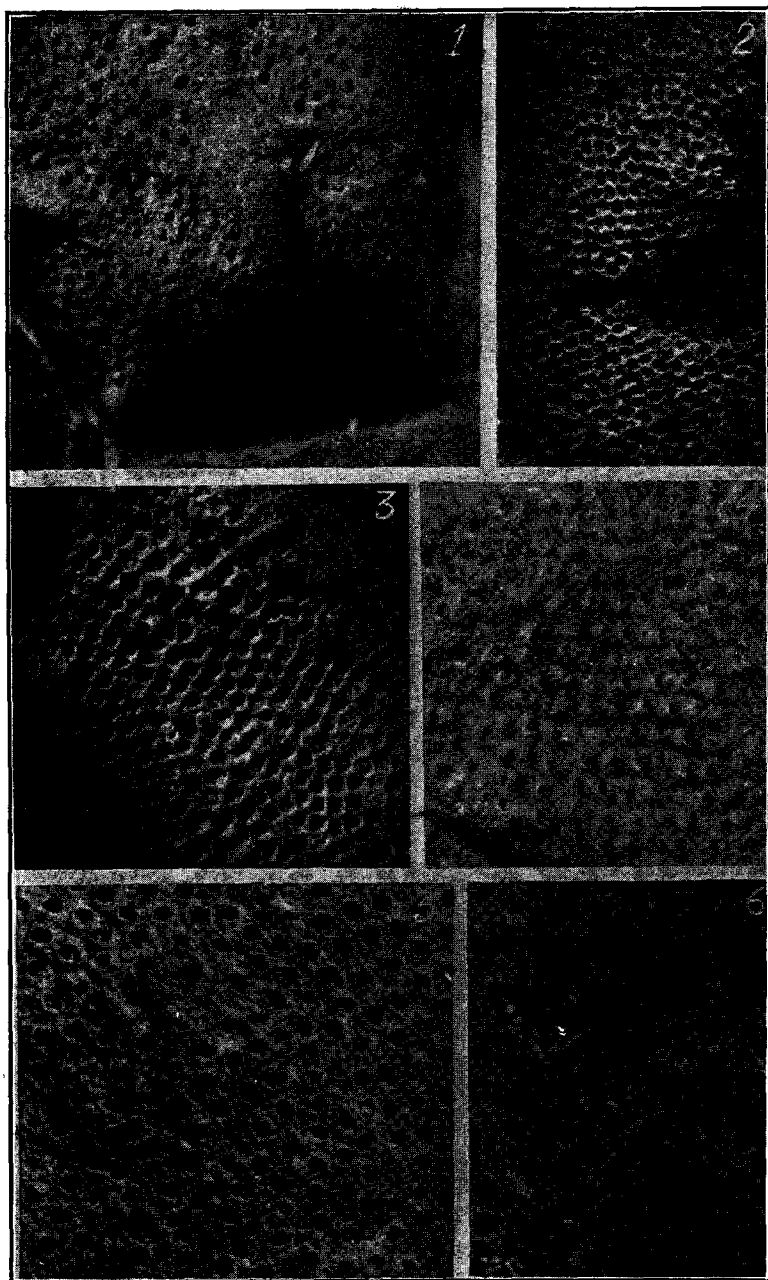


PLATE XXXVII.

Portion of a large slab of limestone from Bedford, Ind., showing a portion of a large frond of *Polypora simulatrix* (a), and fronds of *Fenestella rudis* (b), *Polypora striata* (c) and *Fenestella serratula* (d). a' shows the portion of the frond of *P. simulatrix*, illustrated in 1, plate XXXIII, and a' shows the portion in 1a, plate XXXIII. Natural size.



PLATE XXXVIII.

1. A frond of *Fenestella multispinosa*, showing the reverse. Natural size.
2. A handsome frond of *Fenestella compressa* var. *elongata*. Reverse side. Natural size.
3. Slab showing fronds of *Polypora simulatrix* (*a* and *c*) and *Fenestella compressa* var. *elongata* (*b*). Natural size.
4. Fronds of *Glyptopora Michelinia* (*a*), *Fenestella multispinosa* (*b*), and *Fenestella serratula* (*c*), and a *Stenopora* (*d*). Natural size.
5. Fronds of *Fenestralia Sancti-ludovici* (*a*), and *Fistulipora Spbergenensis* (*b*). Slightly enlarged.
6. Large and very perfect specimen of *Fistulipora Spbergenensis*. Natural size.
7. *Polypora simulatrix*. Natural size.
8. *Fenestella serratula*. Natural size.
9. Frond of *Fenestella exigua*. Natural size.

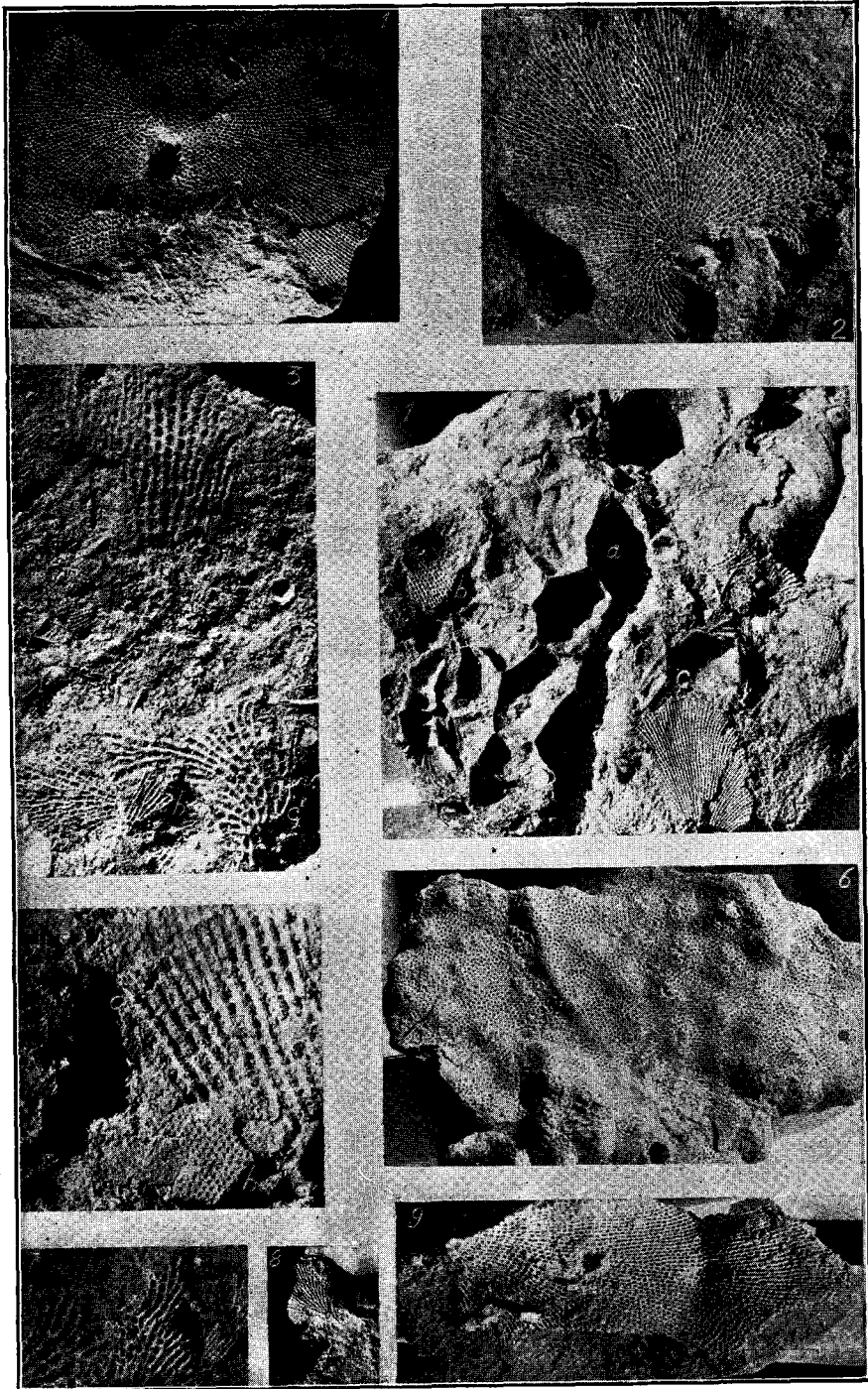
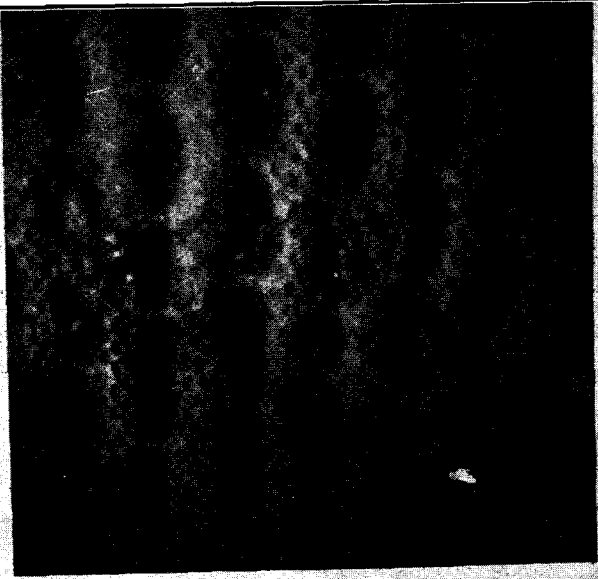
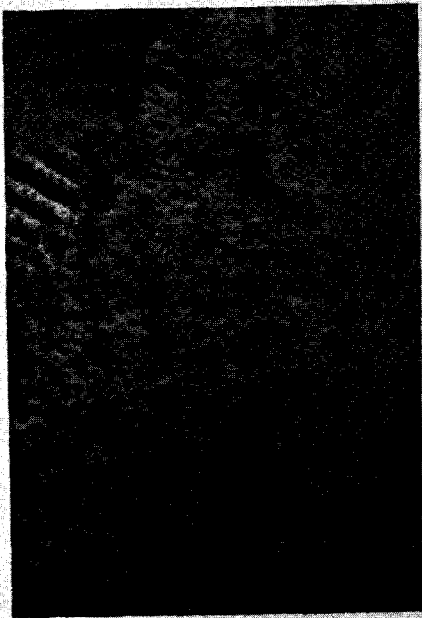


PLATE XXXIX.

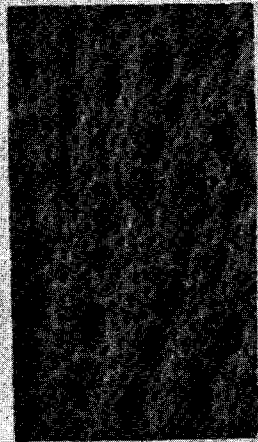
	Page
<i>Polypora Maccoyana</i>	1286
1. Obverse ($\times 8\frac{1}{2}$).	
<i>Polypora spininodata</i>	1287
2. Obverse of a specimen from Bedford, Ind.	
3. Obverse of a specimen in the collection of the U. S. National Museum.	



1



2



3

PLATE XL.

	Page
<i>Polypora Maccoyana</i>	1286
Large frond (x2).	

Plate XI.

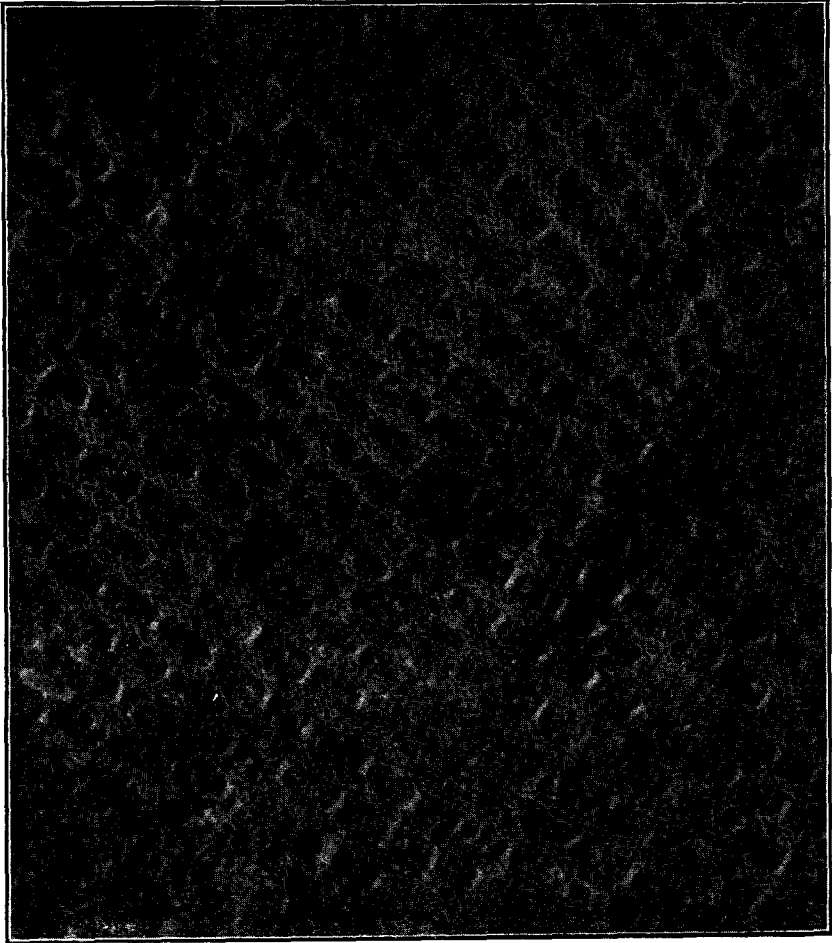


PLATE XLI.

	Page
<i>Cladodus spinosus</i> Newberry and Worthen.....	1377
1-2. Views of top and anterior sides of tooth. ($\times\frac{1}{2}$).	
<i>Cladodus ferax</i> Newberry and Worthen.....	1376
3-4. View of top and anterior side of tooth. ($\times\frac{1}{2}$).	
<i>Helodus coniculus</i> Newberry and Worthen.....	1382
5-7. Section, anterior side, and posterior side of imperfect tooth.	
<i>Deltodopsis bialveatus</i> St. John and Worthen.....	1391
8-9. Side and top views of imperfect tooth.	
<i>Helodus incisus</i> Eastman.....	1382
10-12. Section, posterior, and anterior views of imperfect tooth.	
<i>Petalodus linguifer</i> Newberry and Worthen.....	1379
13-15. Posterior view, section, and anterior view of tooth.	
<i>Helodus laevis</i> Newberry.....	1381
16-17. Side views of two teeth.	
18-20. Top views of three teeth.	
21-22. Cross sections of two teeth.	
<i>Psephodus latus</i> St. John and Worthen.....	1387
23. Top view of posterior maxillary or mandibular tooth.	
<i>Deltodus</i> sp. indet.....	1391
24. Top view of imperfect tooth.	
<i>Otenacanthus pellensis?</i> St. John and Worthen.....	1393
25. Side view of fragment of large spine.	
<i>Sandalodus porcatus</i> Branson.....	1386
26. Top view of type specimen. Drawn from photograph of type.	
<i>Deltodus trilobus</i> St. John and Worthen.....	1389
27-28. Lateral and top views of imperfect tooth.	
<i>Chomatodus inconstans</i> St. John and Worthen.....	1380
29-31. Top and side views and cross section of large tooth.	
<i>Psephodus regularis</i> St. John and Worthen.....	1388
32. Top view of imperfect tooth.	
<i>Sandalodus occidentalis</i> Leidy.....	1384
33. Top view of imperfect tooth.	
<i>Deltodus spatulatus</i> Newberry and Worthen.....	1388
34. Top view of imperfect tooth.	

Plate XLI.

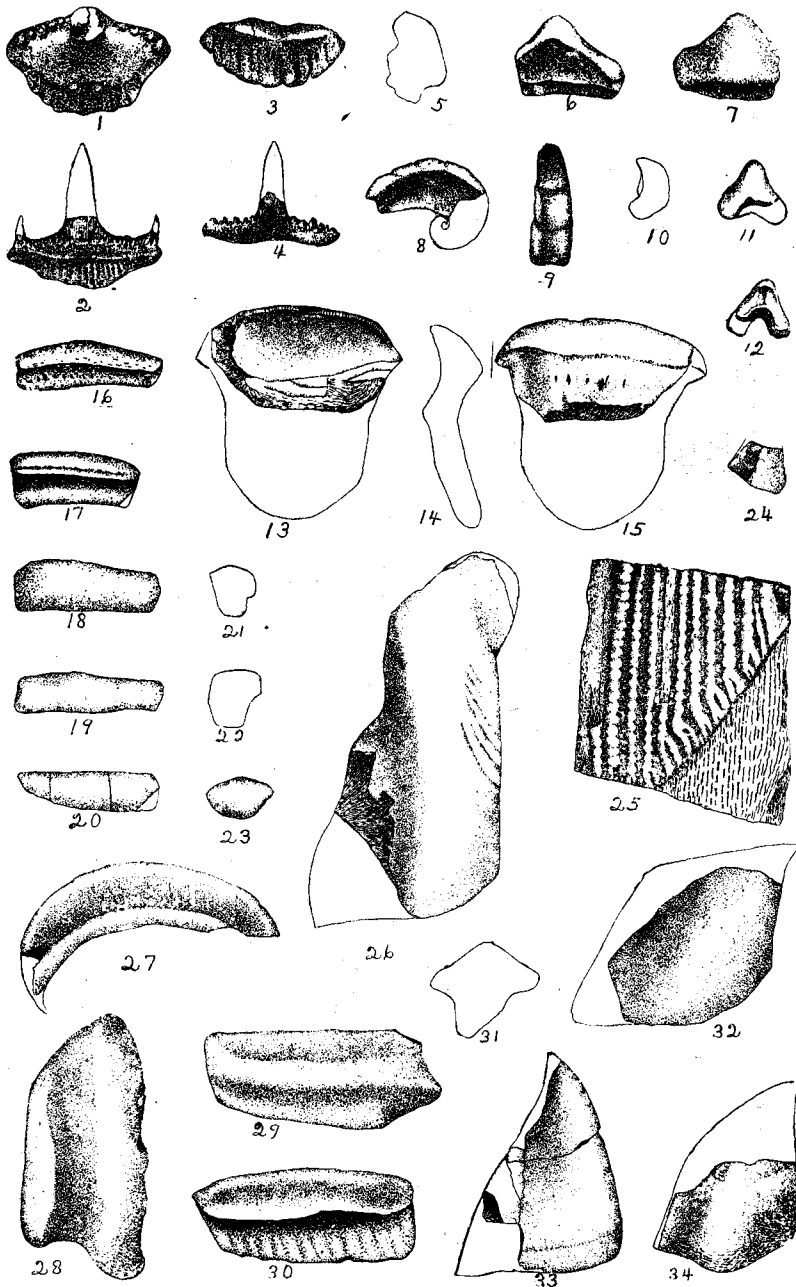


PLATE XLII.

	Page
<i>Cladodus striatus</i> sp. nov.	1378
1-4. Anterior, posterior and side views and outline of base.	
<i>Cladodus indianensis</i> sp. nov.	1377
5-8. Posterior, side and anterior views and outline of base.	
<i>Cladodus lamnoides</i>	1378
9, 10. Posterior and side views.	
<i>Cladodus</i> sp. indet.	1379
11. Anterior view of imperfect tooth.	
<i>Desmoidus salemensis</i> sp. nov.	1392
12-14. Posterior, side and anterior views of perfect specimen.	
<i>Chomatodus lanesvillensis</i> sp. nov.	1381
15-18. Anterior, posterior and top views, and cross-section of type specimen. One end broken away.	
<i>Otenacanthus bellus</i> sp. nov.	1393
19-21. Section, side and posterior views of fragment of spine.	
<i>Helodus robustus</i> sp. nov.	1382
22-24. Top, side and anterior views.	
<i>Orodus simplex</i> sp. nov.	1392
25, 26. Top and side views of tooth with one end broken away.	
<i>Helodus elegantulus</i> sp. nov.	1383
27-29. Side and top views of tooth with one end broken away.	
Gen. et sp. indet.	1394
30, 31. Top and side views of perfect tooth (x2).	
<i>Helodus minutus</i> sp. nov.	1384
32-34. Bottom, side and top views (x2).	
<i>Orodus neglectus?</i>	1391
35, 36. Side and top view of tooth retaining little more than the median.	
37. Fragment of jaw of Elasmobranch.	1394
<i>Helodus ornatus</i> sp. nov.	1383
38-40. Anterior, top and posterior views of tooth with a small part of one end broken away.	
<i>Deltodus cinctus</i>	1390
41. Top view of tooth with inner end broken away.	
<i>Sandalodus convolutus</i> sp. nov.	1386
42-44. Views of anterior end, top, antero lateral and postero lateral sides. Inner end of tooth broken away.	

Plate XLII.

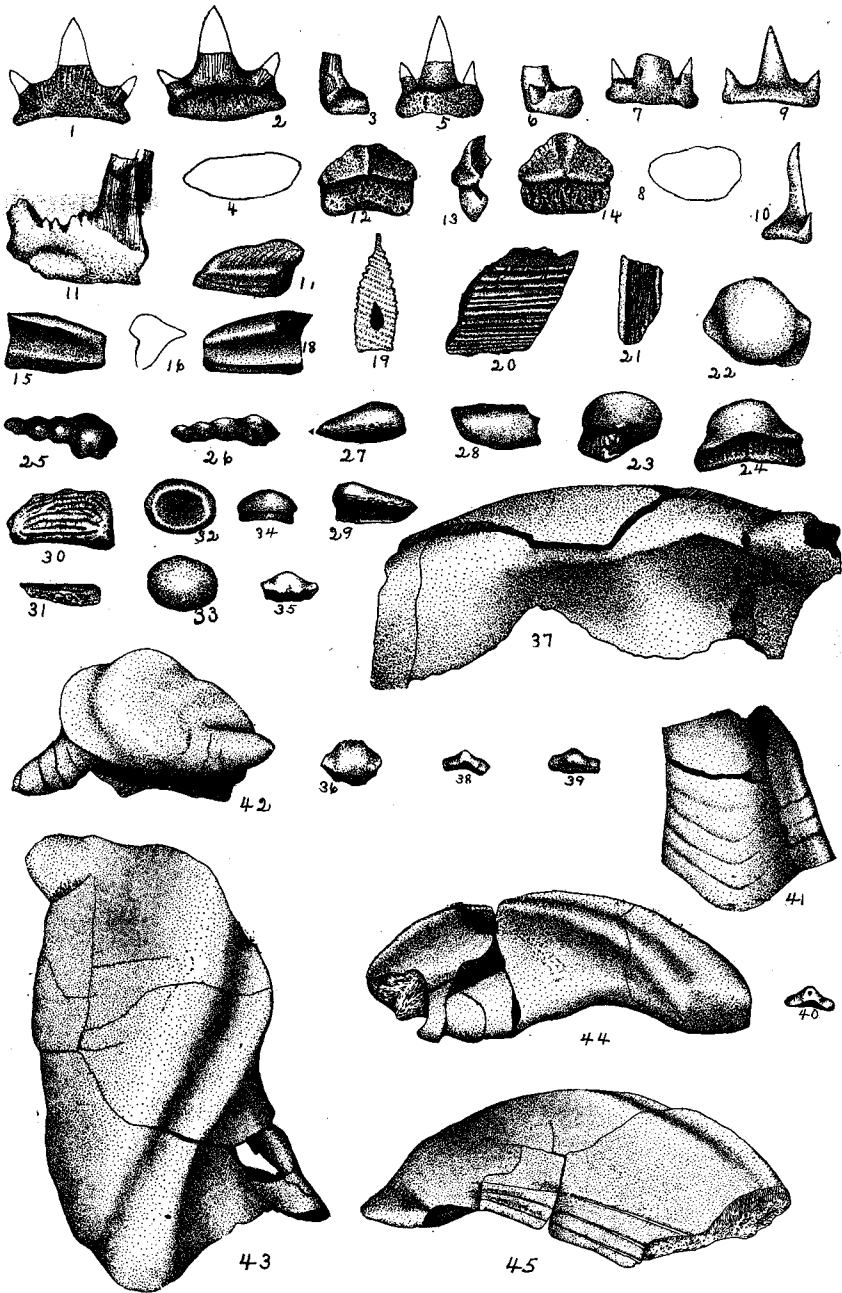


PLATE XLIII.

Pentremites conoideus.

Variation curves obtained from a study of the Harrodsburg specimens. Each of the five largest curves represents the variation of all the specimens from Harrodsburg. The six smaller curves in the right-hand corner are the curves obtained from the grouped data for the ratio of length to breadth.

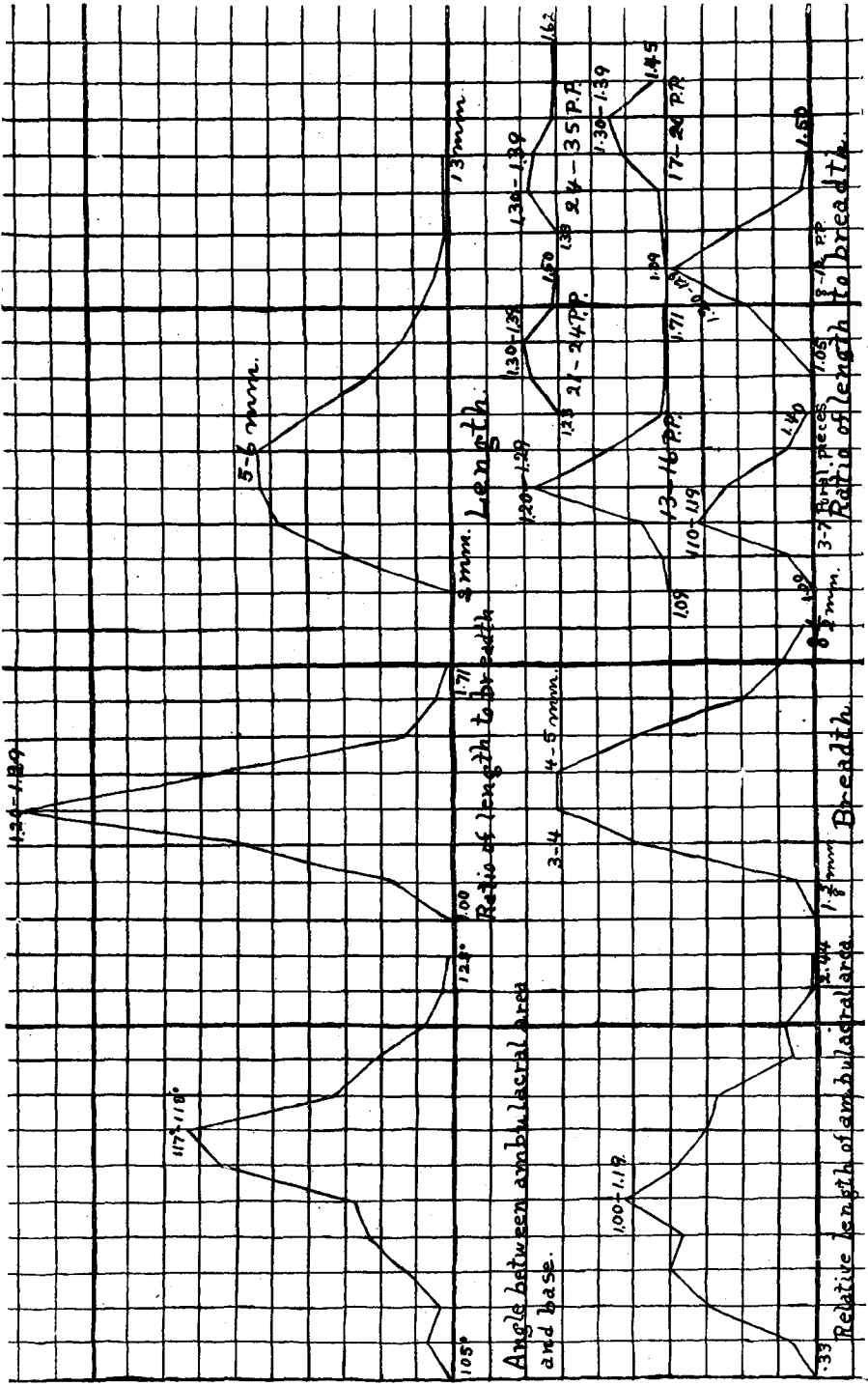


PLATE XLIV.

Variation curves obtained from the study of the grouped data of the Harrodsburg specimens of *Pentremites conoideus*. See page 1219.

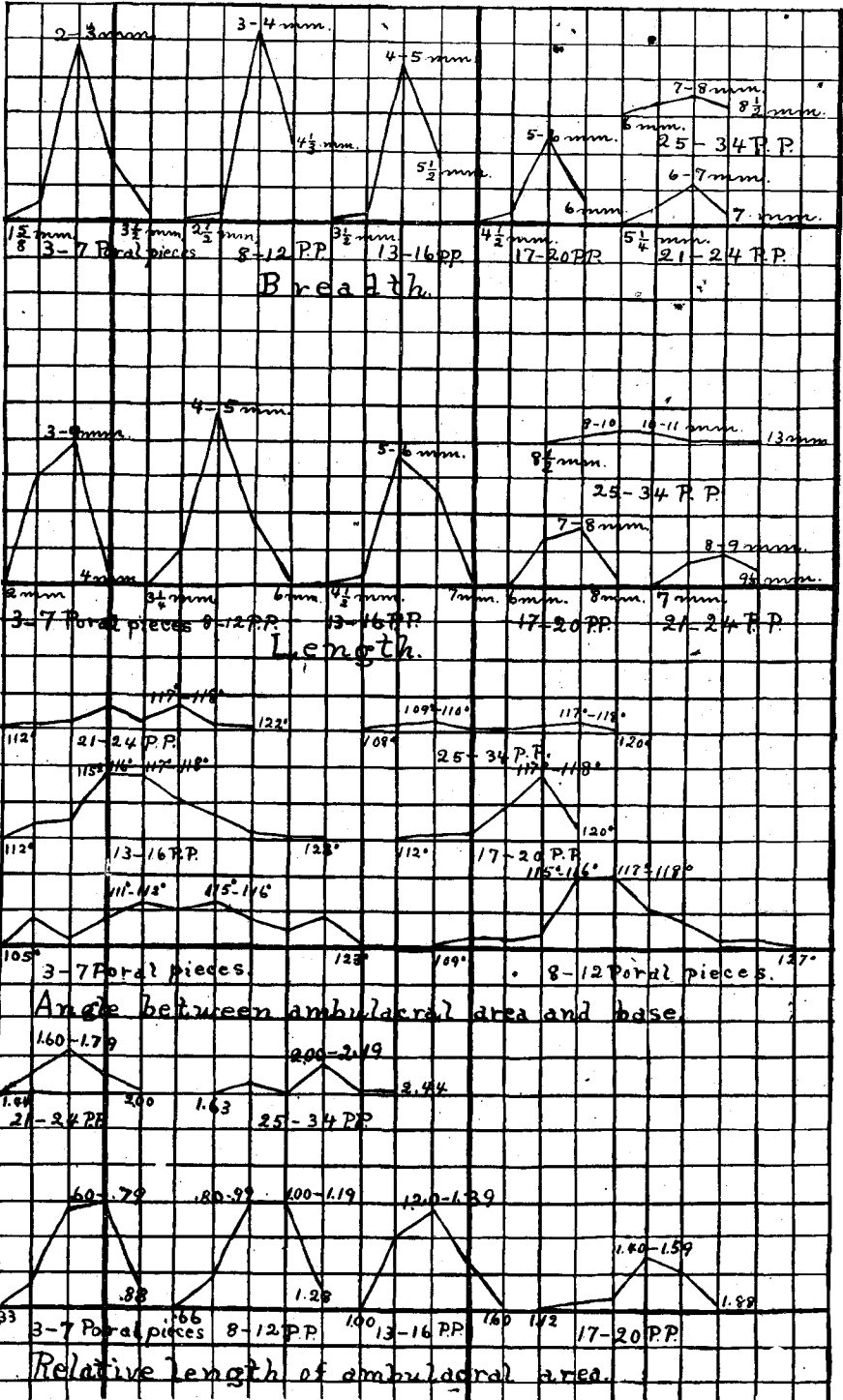


PLATE XLV.

Figs. 1 and 2. Views of the distal portion of specimens of *P. conoideus*. In the upper central portion of Fig. 2 are shown some of the smallest specimens found.

Figs. 3, 4, and 5. Side view of same specimens as are shown in Fig. 2. Salem limestone, Harrodsburg, Ind. All figures in Plate III x 8 $\frac{1}{2}$. Indiana University collection.

Plate XLV.

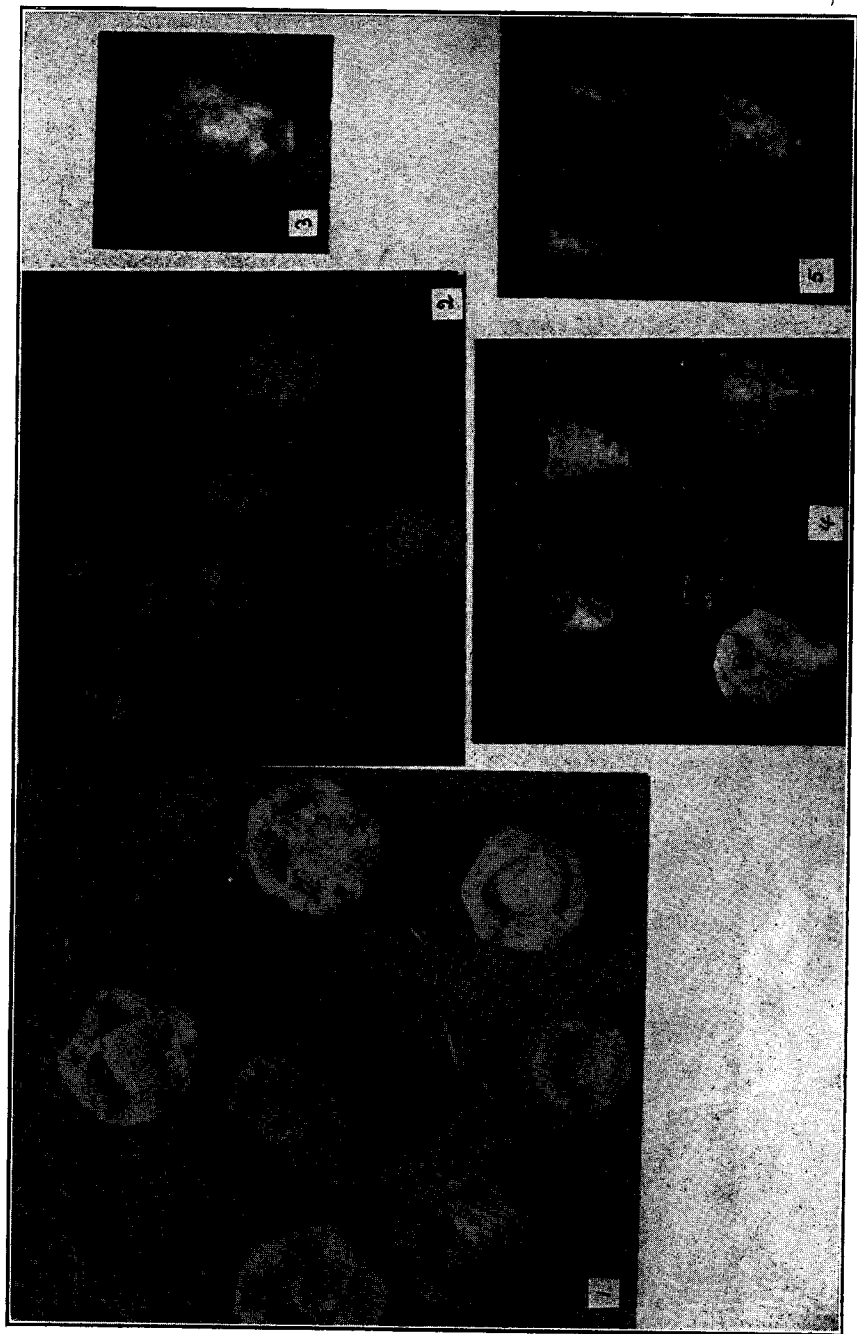


PLATE XLVI.

Fig. 1. Side view of a series of specimens of *P. conoideus*, ranging from the smallest to one of the largest specimens. The smallest specimens have no poral pieces, the largest one shown has 50.

Fig. 2. View of the distal portion of the same series. Specimens from Harrodsburg, Ind., Ellettsville, Ind., and Pentremite Hollow, Bloomington, Ind. All natural size. Indiana University collection.

Plate XLVI.

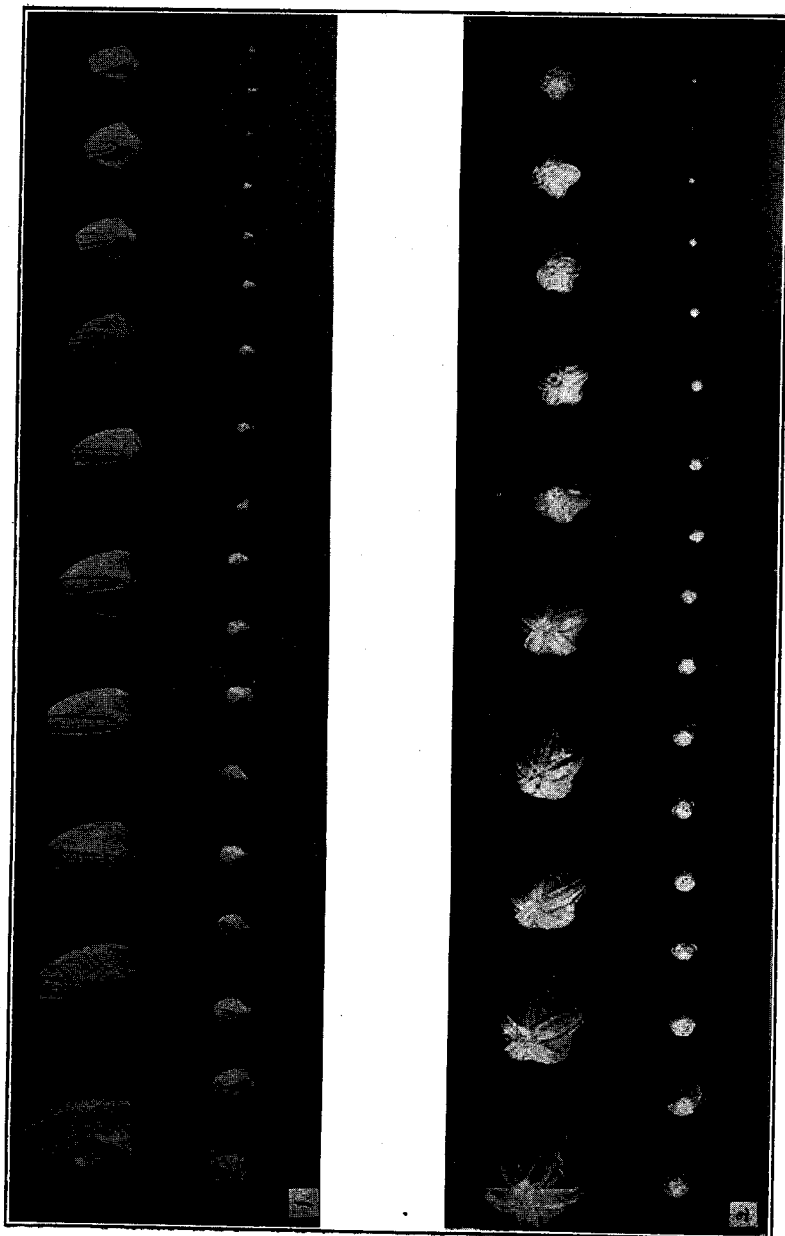


PLATE XLVII.

Fig. 1. A series of specimens of *Codaster* (natural size), from the Hamilton formation, Thedford, Ontario, showing the similarity in shape to the youngest specimens of *P. conoideus*.

Figs. 2 and 4. Specimens of *P. conoideus* showing plates or septa in the mouth opening, Salem limestone, Lanesville, Ind., x 8½.

Fig. 3. Specimens from Harrodsburg and Pentremite Hollow, to show dwarfing of Harrodsburg specimens. The two upper specimens have the same number of poral pieces; to the left, Harrodsburg specimen, to the right Pentremite Hollow specimen. The two lower specimens are of the same length. Harrodsburg specimen to the left has 28 poral pieces, Pentremite Hollow specimen to the right has 24 poral pieces. Natural size.

Fig. 5. Specimen of *P. conoideus* showing the three basal plates x 8½. Salem limestone, Harrodsburg, Ind.

Fig. 6. Drawing from photograph of two of the specimens shown in Fig. 5. Specimens shown in Figs. 1, 3, 4, and 5, Indiana University collection. Specimens in Figs. 2 and 4, collection of Mr. G. K. Green.

