

EXPLANATION OF PLATE 3. A.

UPPER PALEOZOIC ZOOPHYTA.

- 1 HETEROPHYLLIA GRANDIS (M^cCoy). Natural size, from Derbyshire, shewing the irregular longitudinal costæ.
 - 1 a — Horizontal section magnified three diameters, shewing the irregular anastomosing of the lamellæ.
- 2 HETEROPHYLLIA ORNATA (M^cCoy). Natural size, from Derbyshire.
 - 2 a — Magnified four diameters, shewing at top the horizontal section and irregular anastomosing of the lamellæ, below this the external surface with the tuberculated costæ, and at bottom the vertical section shewing the distant oblique interstitial plates, the mesial line being formed by some of their edges.
- 3 STYLAXIS FLEMINGI (M^cCoy). Portion of mass, natural size, from Derbyshire.
 - 3 a — Horizontal section magnified three diameters, shewing the central axis and inner and outer areas.
 - 3 b — Vertical section magnified three diameters, shewing the central axis, the nearly simple inner area, and vesicular outer area, and the top giving a portion of horizontal section, shewing the relation of the two views.
- 4 STYLAXIS MAJOR (M^cCoy). Natural size, from Derbyshire, shewing near base the mode of division of certain faces of a column to form a young individual.
 - 4 a — Horizontal section magnified three diameters, shewing the axis and inner and outer areas.
 - 4 b — Vertical section magnified three diameters, shewing the central axis, complex inner area, and vesicular outer area; at top a portion of horizontal section, shewing the relation of these appearances.
- 5 STYLAXIS IRREGULARIS (M^cCoy). Portion of mass natural size, from Derbyshire, shewing the very irregular mode of growth.
 - 5 a — Horizontal section magnified six diameters, shewing the central axis and irregularly anastomosing lamellæ.
 - 5 b — Vertical section magnified four diameters, shewing the central axis in the right, and part of left-hand column, the broad, transversely septate inner area, and narrow outer vesicular area, upper part of left-hand column shewing a partially weathered section.
- 6 NEMATOPHYLLUM ARACHNOIDEUM (M^cCoy). Part of mass natural size, from Derbyshire, shewing the weathered appearance of the stars (the impressed lines being the sites of the original coral which wore faster than the matrix); several of the stars shew young buds within their lengthened corners.
 - 6 a — Horizontal section of one star magnified two diameters, shewing the central axis and the circular germ of a young individual within the area of the parent.
 - 6 b — Vertical section magnified three diameters, of one column and part of a second, to shew the thick solid divisional wall between them, the thick central axis, the broad transversely septate inner area, and broad vesicular outer area.
- 7 ASTRÆA (PALASTRÆA) CARBONARIA (M^cCoy). Part of mass natural size, from Derbyshire, shewing weathered terminal cells of small stars at the right-hand corner; ditto worn at the left hand.
 - 7 a — Part of same mass, shewing at top horizontal section of one large star, magnified two diameters, and portions of two others, shewing the vesicular character of the space between them, the irregular centres, numerous radiating lamellæ and connecting vesicular plates; the lower portions of the figure shew a vertical section, the vertical lines in the left half being the ends of the radiating lamellæ, the vesicular structure in the right half shewing the uninterrupted passage of this texture from the inter-space to the centre.