EXPLANATION OF THE PLATES AND WOOD-CUTS.

PLATES I. & II.

Illustrate Mr. Weaver's paper on the Geological Relations of the South of Ireland: p. 1 to 68.

Plate I.

Contains—(a.) View of the mountains on the south of the Blackwater river, extending from the Neagles mountains on the east to MacGillicuddy's Reeks on the west. Taken from Drumskeha, about four miles south-west from Kanturk, and three miles north of the Blackwater.

(b.) View of mountain and hilly ranges, from the Mullaghaneesh on the east to the Cahirconréé on the west. Taken from the southern brow of the coal country, about three miles north of the town of Castle Island.

N.B. These two views (a. and b.) combined, extend through the principal mountain chain in the south of Ireland.

Sections through the South of Ireland.

No. 1. Section from the sea at Loop Head, on the south-west, through the county of Clare to Lough Derg, on the east.
No. 2. Section from the sea at Castle Haven, through the counties of Cork and Kerry to the sea at Kerry Head, from south-east to north-west.
No. 3. Section from the river Maine (Section No. 2.), through the counties of Kerry and Limerick into Tipperary, from south-west to north-east.
No. 4. Section from the sea at Courtmacsherry Bay, through the county of Cork to Broadford in the county of Limerick (Section No. 3.), from south-east to north-west, and from north-west to north.
No. 5. Section from the sea at the entrance of Cork Harbour, through parts of Cork and Waterford to the county of Tipperary, from south-west to north-east.
No. 6. Section through the Dromagh Coal Field, from south to north.

N.B. In the Sections Nos. 1 to 5, objects are, in some cases, projected on the line of section, though they do not stand immediately in the line.
EXPLANATION OF THE PLATES AND WOOD-CUTS.

PLATE II.
Contains a Geological Map of the South of Ireland;  
Also a Geological Map of all Ireland.

WOOD-CUTS ILLUSTRATIVE OF MR. WEAVER’S PAPER.
Plan and Section of Muckruss Copper Mine: p. 29.
Plan and Section of Ross Island Copper Mine, with the embankment against the Lake of Killarney: p. 30.
Diagram illustrative of the relative position of the properties in the coal district south, west of Kanturk: p. 51.
Plan and Sections of the Annagh Lead Mine, near Castlemaine: p. 64.
N.B. I take this opportunity of noticing, that in the 5th Vol., First Series, of the Geological Transactions, and Plate VII., View No. 4, of my Memoir on the East of Ireland, the words “Keeper mountain” are engraved in a wrong position. They should have been placed over the round topped mountain, which is situated immediately west of the western “Bilboa mountains.”

PLATE III.
Map illustrative of Mr. Bryce’s Memoir on the north-eastern part of the county of Antrim: p. 69 to 81.

PLATE IV.
Lithographic Drawing of the Squaloria, described in Dr. Riley’s Memoir: p. 83 to 88.  
Figs. 1. 2. 3. Magnified representations of a scale. (This plate has been copied, by permission of M. Agassiz, from Table 42, Recherches sur les Poissons Fossiles.)

PLATE V.
Illustrates Capt. Bayfield’s paper on the Geology of the North Coast of the St. Lawrence: p. 89 to 102.
Fig. 1. Sketch of the River and Gulf of St. Lawrence: p. 89.
Fig. 2. Natural columns of limestone on the east side of Niapisca Island, one of the Mingan Islands: p. 93.
This drawing was made by Mr. Bowen, R.N., not with reference to geological phenomena, but on account of the picturesque beauty of the columns.
EXPLANATION OF THE PLATES AND WOOD-CUTS.

PLATE VI.

Fig. 1. General Map of the group, the outline of the reef having been sketched from the usual authorities.

Fig. 2. illustrates contours of ground taken at points without any special selection: the difference of level is indicated by different intensity of tints: pp. 109 & 117.

WOOD-CUTS ILLUSTRATIVE OF LIEUT. NELSON'S PAPER.

Fig. 1. & 2. Sections at the summit of Retreat Hill, St. George's Island. The waved lines mark the disposition of the layers of sand: p. 106.

Fig. 3. & 4. General sketches of the cliffs along the south side of Bermuda, or the Main Island: p. 107.

Fig. 5. Section across the east end of Ireland Island: p. 108.

Fig. 6. Section at right angles to a. Fig. 5. The difference in the direction of the dip indicating the former existence of mantle or saddle-shaped strata: p. 108.

Fig. 7. Caverns covered by red earth: p. 108.

Fig. 8. Cave once under the North Bastion, Ireland Island: p. 112.

Fig. 9. Sections through a supposed fossil palmetto grove. The parts marked a are filled with hard compact stalagmite: p. 115.

Fig. 10, c and d. Plan and section of the recent palmetto root: p. 115.

Fig. 11. Plan of a coral reef forming around a sand-bank: p. 116.

Fig. 12. Section of a small isolated coral reef: p. 116.

Fig. 13. Plan and section of a serpuline reef near Elbow Bay, south side of Bermuda: p. 117.

Fig. 14. Section near the Magazine Pond, Ireland Island, illustrative of one of the first steps in the formation of caverns: p. 118.

Fig. 15. Sand caves: p. 119.

Fig. 16. Pinnacles near Tobacco Bay, St. George's Island: p. 120.

PLATE VII.
Map and Sections illustrative of Mr. Romley Wright's paper on the Brown Clee Hill: p. 125 and 126.

PLATES VIII. & IX.
Fossils from the well sunk at Hampstead, and described in Mr. Wetherell's paper: p. 131 to 136.
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PLATE VIII. p. 136.

Fig. 1. Desmophyllum.
Fig. 2. Pennatula.
Fig. 3. Pentacrinus subbasaltiformis.
Fig. 4. Sowerbii.
Fig. 5. Pollicipes (?).
Fig. 6. Tellina splendens.
Fig. 7. Lucina Goodhalli.
Fig. 8. Venus tenuistiata.
Fig. 9. Arca nitens.
Fig. 10. impolita.
Fig. 11. Nucula Bowerbankii.
Fig. 12. Wetherellii.
Fig. 13. striata, var.
Fig. 14. compressa.
Fig. 15. Avicula arcuata.
Fig. 16. papyracea.
Fig. 17. Dentalium anceps.
Fig. 18. Scalaria undosa, var.
Fig. 19. Ovulum retusum.

PLATE IX. p. 136.

Fig. 1. Cytherina barbata.
Fig. 2. Pollicipes (?).
Figs. 3. 4. 5. 6. 7. Nodosaria.
Figs. 8. 9. Articulina.
Fig. 10. Articulina ?
Fig. 11. Frondicularia ?
Fig. 12. Marginulina.
Fig. 19. Cristellaria.
Fig. 20. Miliola.
Fig. 21. Cellepora.
Fig. 22. Flustra ?

PLATE X.

Map and Sections illustrative of Mr. Prestwich's paper on the neighbourhood of Gamrie: p. 139.
The Map extends along the coast from White Hills to Trouphead. The dotted portion represents gravel and other superficial detritus.
Sections—No. 1. Is the coast section from Blackpots to Banff. The horizontal scale of this and the other sections is four times that of the Map.
No. 2. Cliff of Gamrie Bay: pp. 140. 145.
No. 3. From Gamrie to near Afforks: p. 145.
No. 4. Section of the superficial detritus at Castle Hill, near Gamrie: p. 146.

WOOD-CUT.

Section of the strata containing Ichthyolites at the ravine near Mr. Dockar's house, Finden: p. 142.

PLATE XI.

Map and Sections explanatory of Archdeacon Verschoyle's paper on the north coast of Mayo and Sligo: p. 149 to 170.
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WOOD-CUTS ILLUSTRATIVE OF THE PAPER.

No. 1. Shifted quartz veins in a perpendicular cliff at Myreeny, between Blind Harbour and Erris Head: p. 158.

No. 2. Diagram explanatory of No. 1. The portion folded back is intended to represent the surface, at the top of the cliff; and the other part of the diagram the cliff as represented in No. 1. In using the diagram, the portion folded back should be held at right angles to the other: p. 159.

No. 3. Strata of mica slate bent over projecting masses of trap at Attatovick Point: p. 162.


No. 5. Trap dyke in carboniferous limestone east of Killala Bay: p. 167.

PLATE XII.

Illustrates Mr. Broderip's memoir on some fossil Crustacea and Radiata found at Lyme Regis: p. 171 to 174.

Figs. 1. 2. Coleia antiqua: p. 172. Fig. 1. represents a young individual in the collection of the Geological Society.

Fig. 2. a. Peduncle of mesial antennæ.
   b. Internal setæ.
   c. External setæ.
   d. Lamelliform appendage of the peduncle of the external antennæ.
   e. Base of the terminal setæ of the external antennæ.

Fig. 1. f. f. Eyes.
Fig. 1. 2. g. g. Thorax.

Feet.

First pair or chelæ, which have been displaced in both specimens, and pushed forward in the smaller one.

Fig. 2. h. Humerus.
   i. Cubitus.
   k. Carpus.
   l. Manus.
   m. Digitus.
   n. Pollex.

Fig. 1. o. o. Indications of the other feet, shown by the partial removal of the thorax.
   q. q. Caudal natatory lamellæ.

Figs. 3. 4. Remains of a macrourous Decapod, allied to the Salicoques of Latreille: p. 173.
   a. a. Point to the impressions of the branchiæ, exposed by the removal of the lateral portions of the thorax.
   b. b. Terminal spines of the post abdominal segments.

Fig. 5. Ophiura Egertoni from the collection of Mrs. Murchison. The figure repre-
EXPLANATION OF THE PLATES AND WOOD-CUTS.

sents the inferior or ventral aspect of the animal; in consequence of weathering, the external surface is gone, leaving an internal view of the disk and arms: p. 174. Fig. 6. Represents the external surface of the dorsal aspect of an arm of the same species, found by Lord Cole, and in his possession.

Fig. 6*. Three magnified segments of the same.

N.B. The arms in the specimen, figure 5, are truncated, but there is no doubt that in this, as well as in the other species, the arms were continued to a great length, till they terminated in a very fine point.

PLATE XIII.

Description of the Plate accompanying Mr. Mantell's memoir on the Fossil Bones of Birds, discovered in the Strata of Tilgate Forest: p. 175.

Fig. 1. a. The anterior; and fig. 1. b. the posterior aspect of the lower extremity of a left tarso-metatarsal bone of a bird. At o is seen the elliptical rough surface denoting the place of attachment for the posterior or opposable toe; and it is situated at such a distance above the other toes as to prove that the bone belonged to a wader, and not to an insessorial or a raptorial species. The dotted outline represents a restoration of the inferior extremity of the bone, which is wanting in the fossil; probably, as Mr. Owen has suggested, from the bird having been young, and the epiphysis not anchylosed.

x Fig. 1. b. Marks the longitudinal ridges for the attachment of the aponeurotic thecae, which tie down the tendons as they glide along the metatarsus to the toes.

Fig. 2. Posterior view of the left tarso-metatarsal bone of a heron (Ardea cinerea) for comparison with the fossil: o marks the place of attachment of the opposable toe.

Fig. 3. The proximal extremity of a bone which was found with fig. 1. in the same block of sandstone, and is so similar to the latter, both in colour, surface, and substance as to appear like the other extremity of the same bone. Mr. Owen considers it to be the proximal end of a tibia of a bird.

Fig. 4. The distal extremity of a tarso-metatarsal bone, and the bones of the toes of a heron, to illustrate the nature of the fossil specimens.

Fig. 5. a. A fragment of a bird's bone imbedded in sandstone, showing a longitudinal groove. Fig. 5. b. represents a section of one extremity.

Fig. 6. The tarso-metatarsal bone of a bird imbedded in Tilgate grit. This specimen was carefully examined by Baron Cuvier, who confirmed the opinion of the author of its belonging to some species of Grallae.

WOOD-CUTS

Explanatory of Mr. Griffith's memoir on Syenite Veins in Mica Slate and Chalk, at Goodland Cliff and Torr Eskert, county of Antrim: p. 179 to 185.

No. 1. Section exhibiting the geological structure of the country from Fair Head to East Torr: p. 179.

Nos. 2. 3. Syenite veins passing through mica slate in Goodland cliff, south of Murlough
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Bay. In No. 3. a third vein is represented, interposed between the two principal veins: p. 180.

PLATE XIV.

[All the figures are of the natural size except 9 and 10, which are reduced to one half.]

Fig. 1. Atlas of an Ichthyosaurus.
   a. Occipital socket.
   b. Articulating surface for the first subvertebral bone.

Fig. 2. Side view of fig. 1.
   A. The atlas.
   B. The axis.
   a. Surface for the insertion of ligaments.
   b. c. f. g. Planes for the articulation of the subvertebral bones.
   d. Articulation of the first rib.

Fig. 3. Atlas and axis disunited.
   a. Articulating surface for the first subvertebral bone.
   b. Second subvertebral bone in situ.
   c. Articulation for the first rib.

Fig. 4. Upper view of the first subvertebral bone.
   a. Surface articulating with the atlas.
   b. b. Anterior alas.
   c. Socket embracing the lower circumference of the occipital tubercle.
   d. Plane abutting against the second subvertebral bone.

Fig. 5. Under view of fig. 4.
   a. Central boss of bone.

Fig. 6. Lateral view of fig. 5.

Fig. 7. View of the cervical portion of an Ichthyosaurus.
   a. Basilar element of the occipital bone.
   b. c. d. e. f. Cervical vertebrae.
   g. h. i. Three subvertebral bones.
   k. l. Sockets for the first and second subvertebral bones.

Fig. 8. Three subvertebral bones seen from below.

Figs. 9. 10. Cervical vertebrae of a large Ichthyosaurus, reduced half.
   a. a. Intervertebral cavity. b. b., c. c., Alternate elevations and depressions of the articulating surfaces of the bones fitting into each other.

Fig. 11. Third cervical vertebra of a small Ichthyosaurus.
   a. Articulation for the third subvertebral bone.

Fig. 12. Atlas and axis of Ichthyosaurus tenuirostris from Street, in Somersetshire.
   a. Articulation for the first subvertebral bone.
   b. Second subvertebral bone in situ.
   c. Sharp edge of the axis, showing the non-existence of the third subvertebral bone in this species.
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PLATE XV.
Map and Sections illustrative of Mr. Maclauchlan's memoir on the Forest of Deane.
The scale is the same as that of the Ordnance Map: pp. 195 to 206.

WOOD-CUTS.
Diagram to explain the contortion in the Coal Measures near Lidbrook Valley: p. 201.
Diagram of part of the great fault between Lydney and Denbigh Lodge: p. 205.

PLATES XVI. & XVII.
Illustrate Mr. Stokes’ memoir on a piece of Wood, partly petrified by carbonate of lime; with some remarks on Fossil Woods: p. 207 to 214.
In Pl. XVI. Fig. 3. and Pl. XVII. Fig. 1. the dotted lines indicate the portions presented in the magnified figures, Pl. XVI. Fig. 4. and Pl. XXII. Fig. 2.

WOOD-CUT.
Partially petrified Wood from the Vale of the Aire, near Ferrybridge, Yorkshire: p. 211.

WOOD-CUT.
To illustrate Mr. Hunton’s remarks on the distribution of Fossil Testacea in the Upper Lias and Marlstone of Yorkshire: pp. 215, 221.

PLATE XVIII.
Fossils of the Faxoe Chalk: noticed in Mr. Lyell’s Memoir on Seeland and Möen: p. 243 to 257.
Fig. 1. 2. 3. Cypræa bullaria (Cyprecites bullaria Schlotheim) from a drawing supplied by Dr. Beck: p. 250, note.

WOOD-CUTS.
Fig. 1. Valve of a Venericardia resembling V. senilis of the Crag: p. 245.
Fig. 2. Section in the Cliff near the church of Hoierup, Stevensklint: p. 247.
Fig. 3. Cliff between Hoierup and the lighthouse, Stevensklint: p. 248.
Fig. 4. Caryophyllia Faxoensis (Beck): p. 249.
Fig. 5. Coral allied to Isis, from the limestone of Faxoe: p. 249.
Fig. 6. Section from Stevensklint to Faxoe: p. 251.
Fig. 7. Section of a chalk cliff near a rock called Taleren, Möen: p. 254.
Fig. 8. View from the sea beach of the ravine at Sommerspiret: p. 254.
Fig. 9. Side view of part of the northern precipice in the same ravine, exhibiting a great mass of sand let into the chalk, and a huge fragment of chalk again included in the sand: p. 255.
Fig. 10. Section of a promontory between Taleren and Sommerspiret, in which a mass of blue clay intersects the chalk: p. 255.
Fig. 11. View of the Cliff called Dronningestolen, Island of Möen: p. 256.