

**Descriptive catalogue of the fossil organic remains of invertebrata  
contained in the museum of the Royal College of Surgeons of England.**

**Contributors**

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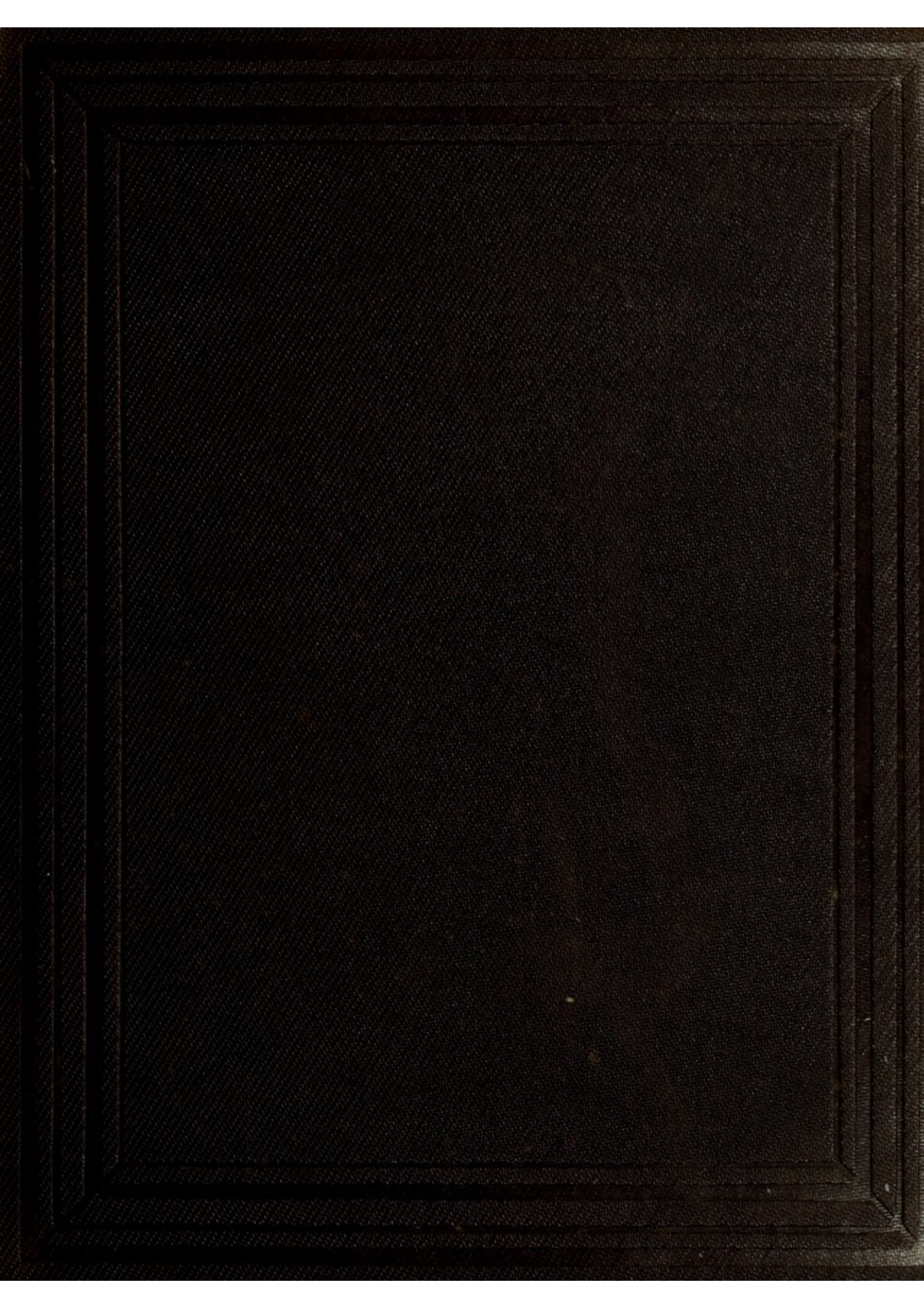
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DESCRIPTIVE CATALOGUE

OF THE

FOSSIL ORGANIC REMAINS

OF

I N V E R T E B R A T A

CONTAINED IN

THE MUSEUM

OF

THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.



LONDON :

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DESCRIPTIVE CATALOGUE

FOSSIL ORGANIC REMAINS

IN VERBENA

THE MUSEUM

THE ROYAL COLLEGE OF SURGEONS OF ENGLAND



## ADVERTISEMENT.

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THE present Volume of the Catalogue of the Fossil Organic Remains in the Museum of the College contains the descriptions of those belonging to the Invertebrate Classes, and completes the record of the Fossil department of the Collection.

The proportion of original Hunterian specimens exceeds that of the subsequent additions in a greater degree than in any other series, their number being 2092, whilst that of the Collegiate specimens are only 133 in number. Every specimen, therefore, the origin of which is not specially noted in this Catalogue, is Hunterian.

Notwithstanding the scanty measure in which the original Invertebrate series of Fossils has been augmented, they serve to exemplify all the principal forms of extinct species of Invertebrata which have been brought to light since the demise of Hunter; and they exemplify more strikingly than the Vertebrate series, the extent of his researches in Palæontology.

The proportion of the specimens which Hunter has obtained from foreign localities, noted for their fossiliferous strata, is greater in the Invertebrate classes than even in the Fossil Fishes; and the specimens themselves are for the most part remarkable for their fineness and state of preservation. No pains appear to have been spared in exhibiting their organization, and consequently rendering them as useful as possible in advancing this department of the Science of Animated Nature.



Thus, in the very rich series of fossil *Cephalopoda*, almost every specimen of the chambered shells of the Ammonites, Orthoceratites, Nautilites, and their allies, has been bisected by a skilful lapidary and carefully polished. There are probably few, if any, Collections in Europe that exhibit so great a variety of the structures of these complex and beautiful shells, as the original Hunterian series now does.

The circumstances under which these extinct Cephalopods became imbedded and subsequently fossilized and occupied by different mineral substances, are instructively elucidated in some of the bisected shells, as *e. g.* in Nos. 137, 143, 169, 188, 271.

In the arrangement of the fossil *Cephalopoda*, characteristic exemplifications of the anatomical structure of the principal families, as *e. g.* of the *Belemnitidæ* (Nos. 9 to 19), of the *Nautilidæ* (Nos. 128 to 133), of the *Ammonitidæ* (Nos. 186 to 195), are first shown and described, and the bulk of the specimens of each of these families is afterwards disposed "stratigraphically," or according to the geological formations in which they successively appear.

The specimens, Nos. 29 to 33, exemplifying the organization of a Belemnitic Cephalopod, through the extremely rare instance of the fossilization and conservation of the soft parts of the animal in a peculiar oolitic matrix, are especially worthy of notice. The College Museum has been enriched by these rare specimens chiefly through the liberality of the Marquess of Northampton, late President of the Royal Society, and of Samuel P. Pratt, Esq., F.G.S.

In the class *Gasteropoda* a brief notice of the most characteristic features of the organization of the living types, where such types still exist, and of the geographical distribution of the existing species, has been prefixed to each family or genus. Where all the representatives of a family or genus have perished, the fact is noted, and the range of the extinct members in successive strata, or in geological time, is stated.

The fossils of the class *Gasteropoda* are chiefly remarkable for the large proportion from the tertiary deposits of the Paris basin, and for the fine series of the extinct genus *Pleurotomaria*. Amongst the *Lamelibranchiata*, the species of *Trigonia* are peculiarly worthy of attention, the genus having but two or three known living representatives. There are also good illustrative series of the genera *Lima*, *Pecten*, *Gryphæa* and *Ostræa*.

The class *Brachiopoda* is exemplified by the palæozoic genera *Orthis*, *Spirifer*, *Productus*, and the singular little shell *Calceola*. The families *Rhynchonellidæ* and *Terebratulidæ* are well represented, and afford a striking contrast in the numerical proportion of the species between the secondary and present seas; the genus *Rhynchonella* containing but three known living species, and that of *Terebratula* but few in comparison with its former numbers.

Most of the principal extinct types or families of the class *Crustacea* are represented in the Hunterian Collection. Amongst the *Malacostraca* there are some remarkable forms of *Macrophthalmus* from China, and a fine series of specimens belonging to the Macrourous, Brachyurous and Anomourous sections; as, *e. g.* *Hoploparia*, *Zanthopsis*, and *Basinotopus*, from the Eocene deposits called 'London clay.' The various forms of Trilobitæ, Nos. 1597 to 1601, have been obtained by Hunter from Silurian strata of Sweden, France and Bohemia, as well as from localities where the same ancient formation occurs in England and Wales.

The class *Echinodermata* is richly illustrated. Amongst the numerous specimens of the *Crinoideæ* may be noticed the interesting genus *Encrinurus*, and the free crinoid *Marsupites*, exemplified by fossils in fine preservation. There are also very characteristic specimens of the genera *Clypeaster*, *Cidaris*, *Salenia*, *Pedina*, *Acrosalenia*, *Ananchytes*, *Nucleolites*, and *Goniaster*; the latter being interestingly exemplified by the previously nondescript species *Goniaster Hunteri*.

In the Zoophytic Sub-kingdom the palæozoic corals contain some fine and instructive specimens. The classes *Foraminifera* and *Amorphozoa* are illustrated by numerous examples.

For the formation of this Catalogue the College is principally indebted to Mr. John Morris, to whom, as a gentleman thoroughly conversant with the subject, application was made for assistance in executing the work,—one of pressing necessity. He immediately offered his services in the most disinterested and liberal manner, entering on the task in the beginning of June 1855, with great promptitude and zeal, in conformity with a Resolution of the Council,—“That the preparation of the Catalogue of the Shells, both recent and fossil, should be confided to him,”—continuing the labour, which proved to be far greater than had been expected, with much sacrifice of time, and concluding it in the beginning of February, to the satisfaction of the College.

Mr. Morris arranged the whole of the Fossil Invertebrata stratigraphically—grouped them in families, determined their localities, and named them, with the following exceptions: 52 of the Di-branchiate Order of Cephalopoda, presented by Mons. Duval Jouvé; 37 ditto by Professor Owen; 86 of the Tetrabranchiate Order of Cephalopoda (Ammonites), by Mr. Woodward, and upwards of 30 of the Corals by M. Milne-Edwards.

The descriptions of the Specimens of the Cephalopoda are by Professor Owen, but the remainder of the Catalogue, including the Gasteropoda, Pulmonifera, Lamellibranchiata, Brachiopoda, Bryozoa, Insecta, Crustacea, Cirripeda, Annulata, Echinodermata, Foraminifera, Zoophyta and Amorphozoa, is the work of Mr. Morris, with the exception of a few short notes by Professor Owen to some of the Gasteropoda.

# CONTENTS.

---

## Class CEPHALOPODA.

### Order DIBRANCHIATA.

	No of. Specimens.	Pages.
Family <i>Teuthidæ</i> .		
Genus <i>Mastigophora</i> . . . . .	1	1—2
<i>Leptoteuthis</i> . . . . .	2—4	3
Family <i>Belopteridæ</i> .		
Genus <i>Belosepia</i> . . . . .	6—8	3—4
Family <i>Belemnitidæ</i> .		
(Characteristic exemplifications of the family) . . . . .	9—24	4—10
Genus <i>Acanthoteuthis</i> . . . . .	25—33	11—16
<i>Belemnites</i> . . . . .	34—127	16—28

### Order TETRABRANCHIATA.

Family <i>Nautilidæ</i> .		
Genus <i>Nautilus</i> . . . . .	128—133	28
(Characteristic exemplifica- tions of the genus) . . . . .		28
Extinct species of . . . . .	134—164	32—37
Genus <i>Lituities</i> . . . . .	165—166	37
<i>Orthoceras</i> . . . . .	167—185	37--40

	No. of Specimens.	Pages.
Family <i>Ammonitidæ</i> .		
Genus <i>Ammonites</i> . . . . .		40
(Characteristic exemplifica- tions of the genus) . . . . .	186—195	40—43
Cretaceous species . . . . .	196—246	43—48
Oolitic species . . . . .	247—539	48—76
Genus <i>Ceratites</i> . . . . .	540—546	77—78
<i>Goniatites</i> . . . . .	547	78
<i>Crioceros</i> . . . . .	548—550	78
<i>Scaphites</i> . . . . .	551—552	79
<i>Ptyhoceras</i> . . . . .	553	79
<i>Hamites</i> . . . . .	554—556	79
<i>Baculites</i> . . . . .	557	79
<i>Turrilites</i> . . . . .	558—560	80

## Class GASTEROPODA.

### Order PECTINIBRANCHIATA.

#### Section I. *SIPHONOSTOMATA*.

##### Family *Strombidæ*.

Genus <i>Strombus</i> . . . . .	561—567	80—81
<i>Pteroceras</i> . . . . .	568—569	81
<i>Rostellaria</i> . . . . .	570—575	82
<i>Terebellum</i> . . . . .	576—578	82

##### Family *Muricidæ*.

Genus <i>Murex</i> . . . . .	579—597	83—84
<i>Typhis</i> . . . . .	598—599	84
<i>Ranella</i> . . . . .	600	84
<i>Triton</i> . . . . .	601—609	84—85
<i>Cancellaria</i> . . . . .	610—614	85—86
<i>Turbinella</i> . . . . .	615	86
<i>Pyrula</i> . . . . .	616—625	86
<i>Fusus</i> . . . . .	626—672	87—89

	No. of Specimens.	Pages.
Family <i>Buccinidæ</i> .		
Genus <i>Buccinum</i> . . . . .	673—675	89—90
<i>Terebra</i> . . . . .	676—679	90
<i>Nassa</i> . . . . .	680—685	90—91
<i>Ringuicula</i> . . . . .	686	91
<i>Cossis</i> . . . . .	687—691	91
<i>Cassidaria</i> . . . . .	692—698	91—92
<i>Harpa</i> . . . . .	699—700	92
<i>Columbella</i> . . . . .	701—702	92
<i>Ancillaria</i> . . . . .	703—707	92—93
<i>Oliva</i> . . . . .	708	93
Family <i>Conidæ</i> .		
Genus <i>Conus</i> . . . . .	709—718	93—94
<i>Pleurotoma</i> . . . . .	719—745	94—96
Family <i>Volutidæ</i> .		
Genus <i>Voluta</i> . . . . .	746—780	96—98
<i>Mitra</i> . . . . .	781—788	98
<i>Marginella</i> . . . . .	789	98
<i>Volvaria</i> . . . . .	790	99
Family <i>Cypræidæ</i> .		
Genus <i>Cypræa</i> . . . . .	791—801	99
<i>Ovula</i> . . . . .	802	100
Section II. <i>HOLOSTOMATA</i> .		
Family <i>Naticidæ</i> .		
Genus <i>Natica</i> . . . . .	803—829	100—102
<i>Sigaretus</i> . . . . .	830	102
Family <i>Cerithiadæ</i> .		
Genus <i>Cerithium</i> . . . . .	831—877	102—105
<i>Nerinæa</i> . . . . .	878—882	105
<i>Acteonella</i> . . . . .	883	105
<i>Aporrhais</i> . . . . .	884—885	106
Family <i>Turritellidæ</i> .		
Genus <i>Turritella</i> . . . . .	886—899	106—107
<i>Siliquaria</i> . . . . .	900	107

	No. of Specimens.	Pages.
Family <i>Melaniadae</i> .		
Genus <i>Melania</i> . . . . .	901—910	107—108
<i>Melanopsis</i> . . . . .	911—912	108
Family <i>Littorinidae</i> .		
Genus <i>Solarium</i> . . . . .	913—917	108—109
<i>Littorinella</i> . . . . .	918—920	109
<i>Phorus</i> . . . . .	921—925	109
Family <i>Paludinidae</i> .		
Genus <i>Paludina</i> . . . . .	926	110
Family <i>Neritidae</i> .		
Genus <i>Neritopsis</i> . . . . .	927	110
<i>Neritina</i> . . . . .	928	110
Family <i>Turbinidae</i> .		
Genus <i>Turbo</i> . . . . .	929—936	110—111
<i>Euomphalus</i> . . . . .	937—940	111
<i>Trochus</i> . . . . .	941—951	112
<i>Phasionella</i> . . . . .	952—954	113
Family <i>Pyramidellidae</i> .		
Genus <i>Chemnitzia</i> . . . . .	955	113
Family <i>Haliotidae</i> .		
Genus <i>Pleurotomaria</i> . . . . .	956—986	113—116
<i>Trochotoma</i> . . . . .	987	116
Family <i>Fissurellidae</i> .		
Genus <i>Fissurella</i> . . . . .	988	116
Family <i>Dentaliidae</i> .		
Genus <i>Dentalium</i> . . . . .	989—997	117
Family <i>Calyptæidae</i> .		
Genus <i>Capulus</i> . . . . .	998—1000	118
<i>Calyptæa</i> . . . . .	1001—1002	118
Family <i>Patellidae</i> .		
Genus <i>Patella</i> . . . . .	1003	118

	No. of Specimens.	Pages.
<b>Order PULMONIFERA.</b>		
Family <i>Helicidæ</i> .		
Genus <i>Bulimus</i> . . . . .	1004	119
<i>Helix</i> . . . . .	1005—1008	119
Family <i>Cyclostomidæ</i> .		
Genus <i>Cyclostoma</i> . . . . .	1009—1010	119
<b>Class PTEROPODA.</b>		
Genus <i>Conularia</i> . . . . .	1010a	260
<b>Class LAMELLIBRANCHIATA.</b>		
(A. <i>SIPHONIFERA</i> ).		
Family <i>Pholadidæ</i> .		
Genus <i>Teredo</i> . . . . .	1011—1017	120—121
<i>Teredina</i> . . . . .	1018	121
Family <i>Anatinidæ</i> .		
Genus <i>Myacites</i> . . . . .	1019—1022	121
<i>Pholadomya</i> . . . . .	1023—1036	121
<i>Anatina</i> . . . . .	1037	123
Family <i>Myacidæ</i> .		
Genus <i>Corbula</i> . . . . .	1038—1040	123
<i>Thetis</i> . . . . .	1041	123
<i>Neæra</i> . . . . .	1042	124
<i>Panopæa</i> . . . . .	1043	124
<i>Mya</i> . . . . .	1044—1045	124
Family <i>Tellinidæ</i> .		
Genus <i>Tellina</i> . . . . .	1046—1050	124—125
<i>Syndosmya</i> . . . . .	1051	125



	No. of Specimens.	Pages.
Family <i>Veneridæ</i> .		
Genus <i>Cytherea</i> . . . . .	1052—1067	125—126
<i>Venus</i> . . . . .	1068—1072	126—127
Family <i>Cycladidæ</i> .		
Genus <i>Cyrena</i> . . . . .	1073	127
Family <i>Cyprinidæ</i> .		
Genus <i>Cyprina</i> . . . . .	1074—1078	127—128
<i>Astarte</i> . . . . .	1079—1083	128
<i>Crassatella</i> . . . . .	1084—1095	128—129
<i>Opis</i> . . . . .	1096	129
<i>Pachyrisma</i> . . . . .	1097	129
<i>Isocardia</i> . . . . .	1098	130
<i>Cardinia</i> . . . . .	1099—1101	130
<i>Myoconcha</i> . . . . .	1102	130
<i>Hippopodium</i> . . . . .	1103	130
<i>Cardita</i> . . . . .	1104—1114	131
Family <i>Lucinidæ</i> .		
Genus <i>Lucina</i> . . . . .	1115—1120	131—132
<i>Corbis</i> . . . . .	1121	132
<i>Unicardium</i> . . . . .	1122	132
Family <i>Cardiadæ</i> .		
Genus <i>Cardium</i> . . . . .	1123—1139	132—134
Family <i>Hippuritidæ</i> .		
Genus <i>Hippurites</i> . . . . .	1140—1141	134
<i>Radiolites</i> . . . . .	1142—1146	134—135
Family <i>Chamidæ</i> .		
Genus <i>Chama</i> . . . . .	1147—1151	135
(B. <i>ASIPHONIFERA</i> .)		
Family <i>Unionidæ</i> .		
Genus <i>Unio</i> . . . . .	1152	136

	No. of Specimens.	Pages.
Family <i>Trigoniadæ</i> .		
Genus <i>Trigonia</i> . . . . .	1153—1165	136—137
<i>Myophoria</i> . . . . .	1166	137
Family <i>Arcadæ</i> .		
Genus <i>Arca</i> . . . . .	1167—1174	138
<i>Pectunculus</i> . . . . .	1175—1185	138—139
<i>Isoarca</i> . . . . .	1186	139
<i>Nucula</i> . . . . .	1187—1191	140
<i>Leda</i> . . . . .	1192	
Family <i>Mytilidæ</i> .		
Genus <i>Modiola</i> . . . . .	1193—1199	140—141
<i>Lithodomus</i> . . . . .	1200—1201	141
Family <i>Aviculidæ</i> .		
Genus <i>Avicula</i> . . . . .	1202—1205	141—142
<i>Posidonomya</i> . . . . .	1206	142
<i>Gervillia</i> . . . . .	1207—1211	142
<i>Perna</i> . . . . .	1212—1214	143
<i>Inoceramus</i> . . . . .	1215—1218 <sup>a</sup>	143
<i>Pinna</i> . . . . .	1219—1221	143
<i>Trichites</i> . . . . .	1222—1223	144

## (C. MONOMYARIA.)

Family *Ostreidæ*.

Genus <i>Spondylus</i> . . . . .	1224—1238	144—146
<i>Plicatula</i> . . . . .	1239—1242	146
<i>Lima</i> . . . . .	1243—1280	146—149
<i>Hinnites</i> . . . . .	1281	149
<i>Pecten</i> . . . . .	1282—1320	149—152
<i>Gryphæa</i> . . . . .	1321—1335	152—154
<i>Exogyra</i> . . . . .	1336—1342	154
<i>Ostrea</i> . . . . .	1343—1384	154—158

## Class BRACHIOPODA.

Family *Terebratulidæ*.

Genus <i>Terebratula</i> . . . . .	1385—1439	158—162
<i>Terebratulina</i> . . . . .	1440—1441	162—163
<i>Terebratella</i> . . . . .	1442—1447	163

Family *Thecididæ*.

Genus <i>Thecidium</i> . . . . .	1448—1450	163
----------------------------------	-----------	-----

Family *Spiriferidæ*.

Genus <i>Spirifer</i> . . . . .	1451—1468	164—165
<i>Athyris</i> . . . . .	1469—1471	165
<i>Atrypa</i> . . . . .	1472—1475	166

Family *Rhynchonellidæ*.

Genus <i>Rhynchonella</i> . . . . .	1476—1513	166—169
<i>Pentamerus</i> . . . . .	1514—1515	169

Family *Orthidæ*.

Genus <i>Orthis</i> . . . . .	1516—1522	169—170
<i>Calceola</i> . . . . .	1523—1524	170
<i>Leptæna</i> . . . . .	1525—1526	170—171

Family *Productidæ*.

Genus <i>Productus</i> . . . . .	1527—1532	171
----------------------------------	-----------	-----

## Class BRYOZOA.

Genus <i>Apsendesia</i> . . . . .	1533	171
<i>Fenestella</i> . . . . .	1534	172
<i>Homæosolen</i> . . . . .	1535	172
<i>Cenopora</i> . . . . .	1536—1538	172
<i>Eschara</i> . . . . .	1539	172

## Class INSECTA.

Order COLEOPTERA . . . . .	1540	173
NEUROPTERA . . . . .	1541—1543	173

## Class CRUSTACEA.

## Subclass MALACOSTRACA.

## Order DECAPODA.

Tribe *Brachyoura*.

Genus <i>Zanthopsis</i> . . . . .	1544—1547	174
<i>Podophthalmus</i> . . . . .	1548	174
<i>Cancer</i> . . . . .	1549—1550	175
<i>Leucosia</i> . . . . .	1551	175
<i>Portunus</i> . . . . .	1552	175
<i>Macrophthalmus</i> . . . . .	1553—1556	175

Tribe *Anomoura*.

Genus <i>Basinotopus</i> . . . . .	1557—1559	176
<i>Mesostylus</i> . . . . .	1560	176

Tribe *Macroura*.

Genus <i>Hoploparia</i> . . . . .	1561—1565	176—177
<i>Archæocarabus</i> . . . . .	1566—1571	177
<i>Megachirus</i> . . . . .	1572—1575	177
<i>Glyphea</i> . . . . .	1576—1577	178

## Subclass ENTOMOSTRACA.

Family *Cytherinæ*.

Genus <i>Bairdia</i> . . . . .	1578	178
--------------------------------	------	-----

Group *Trilobitæ*.Family *Calymenidæ*.

Genus <i>Calymene</i> . . . . .	1579—1589	179—180
---------------------------------	-----------	---------

	No. of Specimens.	Pages.
Family <i>Paradoxidæ</i> .		
Genus <i>Paradoxides</i> . . . . .	1590—1591	180
Family <i>Asaphidæ</i> .		
Genus <i>Illænus</i> . . . . .	1592—1593	181
<i>Oxygia</i> . . . . .	1594—1595	181
Family <i>Phacopidæ</i> .		
Genus <i>Phacops</i> . . . . .	1596—1597	181
<i>Dalmania</i> . . . . .	1598—1601	182

### Class CIRRIPEDIA.

Family <i>Balanidæ</i> .		
Genus <i>Balanus</i> . . . . .	1602—1607	182—183

### Class ANNULATA.

#### Order TUBICOLA.

Genus <i>Serpula</i> . . . . .	1608—1623	183—184
<i>Vermicularia</i> . . . . .	1624—1625	184
<i>Lumbricaria</i> . . . . .	1626—1629	185

### Class ECHINODERMATA.

#### Order ECHINOIDEA.

Family <i>Cidaridæ</i> .		
Genus <i>Cidaris</i> . . . . .	1630—1660	185
<i>Hemicidaris</i> . . . . .	1661—1666	188
Family <i>Salenidæ</i> .		
Genus <i>Salenia</i> . . . . .	1667—1670	189
<i>Acrosalenia</i> . . . . .	1671—1674	190

	No. of Specimens.	Pages.
Family <i>Echinidæ</i> .		
Genus <i>Diadema</i> . . . . .	1675—1679	191
<i>Cyphosoma</i> . . . . .	1680—1681	191
<i>Glypticus</i> . . . . .	1682	192
<i>Cælopleurus</i> . . . . .	1683	192
<i>Echinus</i> . . . . .	1684—1693	192
<i>Pedina</i> . . . . .	1694	193
<i>Heliocidaris</i> . . . . .	1695	193
Family <i>Clypeastridæ</i> .		
Genus <i>Clypeaster</i> . . . . .	1696—1706	194
<i>Scutella</i> . . . . .	1707—1709	195
<i>Echinocyamus</i> . . . . .	1710	195
Family <i>Galeritidæ</i> .		
Genus <i>Discoidea</i> . . . . .	1711—1714	196
<i>Pygaster</i> . . . . .	1715—1716	196
<i>Galerites</i> . . . . .	1717—1727	196—197
<i>Pyrina</i> . . . . .	1728	198
<i>Hyboclypus</i> . . . . .	1729	198
Family <i>Nucleolitidæ</i> .		
Genus <i>Nucleolites</i> . . . . .	1730—1736	198—199
<i>Catopygus</i> . . . . .	1737—1738	199
<i>Cassidulus</i> . . . . .	1739	199
<i>Pygorhynchus</i> . . . . .	1740—1743	199—200
<i>Echinolampas</i> . . . . .	1744—1752	200
<i>Conoclypus</i> . . . . .	1753—1755	201
Family <i>Spatangidæ</i> .		
Genus <i>Spatangus</i> . . . . .	1756	201
<i>Eupatagus</i> . . . . .	1757—1759	202
<i>Hemiaster</i> . . . . .	1760—1763	202
<i>Schizaster</i> . . . . .	1764—1765	203
<i>Micraster</i> . . . . .	1766—1774	204

	No. of Specimens.	Pages.
Family <i>Ananchytidæ</i> .		
Genus <i>Ananchytes</i> . . . . .	1775—1784	204—205
Subgenus <i>Holaster</i> . . . . .	1785—1789	205
Genus <i>Cardiaster</i> . . . . .	1790	205
<i>Hemipneustes</i> . . . . .	1791	206
<i>Toxaster</i> . . . . .	1792	206
<i>Dysaster</i> . . . . .	1793—1795	206
Order ASTEROIDEA.		
Family <i>Asteridæ</i> .		
Genus <i>Goniaster</i> . . . . .	1796—1799	208
<i>Oreaster</i> . . . . .	1800	208
<i>Asterias</i> . . . . .	1801—1806	209
Order OPHIUROIDEA.		
Family <i>Ophiuridæ</i> .		
Genus <i>Ophioderma</i> . . . . .	1807	209
Order CYSTOIDEA.		
Family <i>Cystidæ</i> .		
Genus <i>Echinosphærites</i> . . . . .	1808	210
Order CRINOIDEA.		
Family <i>Comatulidæ</i> .		
Genus <i>Comatula</i> . . . . .	1809	210
Family <i>Pentacrinidæ</i> . . . . .		
Genus <i>Extracrinus</i> . . . . .	1810—1817	211
<i>Pentacrinus</i> . . . . .	1818	212
Family <i>Cyathocrinidæ</i> .		
Genus <i>Cyathocrinus</i> . . . . .	1819	212
Family <i>Encrinidæ</i> .		
Genus <i>Encrinus</i> . . . . .	1820—1827	212—213

	No. of Specimens.	Pages.
Family <i>Marsupitidæ</i> .		
Genus <i>Marsupites</i> . . . . .	1828—1829	213—214
Family <i>Apiocrinidæ</i> .		
Genus <i>Bourgueticrinus</i> . . . . .	1830	214
<i>Apiocrinus</i> . . . . .	1831	214
<i>Millericrinus</i> . . . . .	1832	214
<i>Eugeniocrinus</i> . . . . .	1833—1835	214
Parts of Crinoidal columns . . . . .	1836—1853	215—216

## Class POLYPI.

### Division I. CORALLARIA.

#### Subclass ZOANTHARIA.

#### Order ZOANTHARIA APOROSA.

Family <i>Turbinolidæ</i> .		
Genus <i>Turbinolia</i> . . . . .	1854	217
<i>Flabellum</i> . . . . .	1855	218
<i>Trochocyathus</i> . . . . .	1856	218
<i>Paracyathus</i> . . . . .	1857—1858	218
Family <i>Oculinidæ</i> .		
Genus <i>Synhelia</i> . . . . .	1859	218
<i>Diplohelia</i> . . . . .	1860—1861	219
Family <i>Astræidæ</i> .		
Genus <i>Parasmilia</i> . . . . .	1862—1863	219
<i>Thecosmilia</i> . . . . .	1864—1865	219
<i>Montlivaltia</i> . . . . .	1866	219
<i>Anthophyllum</i> . . . . .	1867—1869	220
<i>Stylina</i> . . . . .	1870—1878	220—221
<i>Astrocœnia</i> . . . . .	1879	221
<i>Calamophyllia</i> . . . . .	1880—1881	221
<i>Leptoria</i> . . . . .	1882	222



	No. of Specimens.	Pages.
Genus <i>Hydnophora</i> . . . . .	1883	222
<i>Cladophyllia</i> . . . . .	1884—1885	222
<i>Astræa</i> . . . . .	1886—1907	222—224
<i>Confusastræa</i> . . . . .	1908	224
<i>Leptastræa</i> . . . . .	1909	225
<i>Isastræa</i> . . . . .	1910—1914	225
<i>Prionastræa</i> . . . . .	1915	225
<i>Thamnastræa</i> . . . . .	1916—1920	225—226
<i>Parastræa</i> . . . . .	1921—1922	226
<i>Heliastræa</i> . . . . .	1923—1930	226—227
<i>Conveastræa</i> . . . . .	1931	227
Family <i>Fungidæ</i> .		
Genus <i>Cyclolites</i> . . . . .	1932—1936	227—228
<i>Anabacia</i> . . . . .	1937	228

## Order ZOANTHARIA PERFORATA.

### Family *Poritidæ*.

Genus <i>Porites</i> . . . . .	1938	228
<i>Goniopora</i> . . . . .	1939	228

## Order ZOANTHARIA TABULATA.

### Family *Milleporidæ*.

Genus <i>Heliolites</i> . . . . .	1940—1941	229
-----------------------------------	-----------	-----

### Family *Favositidæ*.

Genus <i>Cænites</i> . . . . .	1942	229
<i>Favosites</i> . . . . .	1943—1946	229—230
<i>Michelinia</i> . . . . .	1947	230
<i>Alveolites</i> . . . . .	1948—1949	230
<i>Halysites</i> . . . . .	1950—1952	230—231
<i>Syringopora</i> . . . . .	1953—1958	231—232

## Order ZOANTHARIA RUGOSA.

	No. of Specimens.	Pages.
Family <i>Cyathophyllidæ</i> .		
Genus <i>Zaphrentis</i> . . . . .	1959	232
<i>Cyathophyllum</i> . . . . .	1960—1969	232—233
<i>Petraia</i> . . . . .	1970	233
<i>Omphyma</i> . . . . .	1971—1972	233
<i>Acervularia</i> . . . . .	1973	233
<i>Strombodes</i> . . . . .	1974	234
<i>Lithodendron</i> . . . . .	1975—1984	234—235
<i>Lithostrotion</i> . . . . .	1985—1989	235
<i>Clisiophyllum</i> . . . . .	1990	236

Subclass *ALCYONARIA*.Family *Gorgonidæ*.

Genus <i>Isis</i> . . . . .	1991	236
-----------------------------	------	-----

Family *Ventriculidæ*.

Genus <i>Ventriculites</i> . . . . .	1992—1999	236—237
<i>Cephalites</i> . . . . .	2000	238
<i>Brachiolites</i> . . . . .	2001	238

## Class FORAMINIFERA.

Genus <i>Nummulites</i> . . . . .	2002—2007	238—239
<i>Orbitoides</i> . . . . .	2008—2009	239
<i>Orbitolites</i> . . . . .	2010	239
<i>Orbitolina</i> . . . . .	2011	239

## Class PORIFERA.

Family *Siphonidæ*.

Genus <i>Hippalimus</i> . . . . .	2012—2013	240
<i>Hallirhoa</i> . . . . .	2014—2015	240

	No. of Specimens.	Pages.
Genus <i>Ierea</i> . . . . .	2016—2019	240
<i>Scyphia</i> . . . . .	2020—2025	240—241
<i>Siphonia</i> . . . . .	2026—2037	241—242
Family <i>Amorphospongiæ</i> .		
Genus <i>Spongia</i> . . . . .	2038—2042	242
Family <i>Sparsispongiæ</i> .		
Genus <i>Chenendopora</i> . . . . .	2043—2049	243
<i>Tragos</i> . . . . .	2050	243
<i>Cnemidium</i> . . . . .	2051—2054	244
Family <i>Halichondridæ</i> .		
Genus <i>Cliona</i> . . . . .	2055	244
<i>Stromatopora</i> . . . . .	2056	244
INCERTÆ SEDIS.		
<i>Receptaculites</i> . . . . .	2057	245

#### MASSES OF ROCK CONTAINING FOSSIL SHELLS.

<i>Masses from the Palæozoic Strata</i> . . . . .	2058—2070	245—246
<i>Masses from the Triassic Strata</i> . . . . .	2071—2081	246—247
<i>Masses from the Oolitic Strata</i> . . . . .	2082—2124	247—251
<i>Masses from the Cretaceous Strata</i> . . . . .	2125—2135	251—252
<i>Masses from the Tertiary Strata</i> . . . . .	2136—2225	252—260

## ALPHABETICAL INDEX OF DONORS.

---

AGASSIZ, Prof., Plaster casts of Fossil Echinodermata, pp. 206, 207.

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URE, Rev. David. No. 1578.

WHITE, Anthony, Esq. Nos. 129, 241.

# CATALOGUE.

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## FOSSIL INVERTEBRATA.

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### Class CEPHALOPODA.

### Order DIBRANCHIATA.

### Family *Teuthidæ*.

### Genus *Mastigophora*.

1. A slab of Oxford Clay with the remains of a specimen of the *Mastigophora brevipinnis*, O.

A large portion of the mantle showing the contour of the whole, with the terminal fins, the "gladius" or rudimental internal shell, the head with the eight arms more or less perfect, and the ink-bladder, are preserved.

The dorsal aspect appears, from the absence of any trace of the infundibulum, to be the one exposed.

The length of the body or mantle is 6 inches ; its breadth, at the broadest upper part, is 2 inches 10 lines ; but, as it has been flattened by pressure, this does not give the breadth of the living Cephalopod, which was probably more or less cylindrical.

The transverse fasciculi of the muscular fibres are well marked on the mantle.

The lateral fins project from each side of the termination of the mantle ;

they are 1 inch 5 lines in length, 3 or 4 lines in breadth, rounded, and apparently broadest above.

The gladius is broad and flat; the lower third of the remains of the mantle covering it has been removed to expose its termination; at which part it rapidly diminishes to an obtuse point, composed wholly of horny or albuminous fibrous matter, the fibres having a longitudinal direction along the middle, and diverging downwards and outwards at the margins of the terminal part of the gladius.

From the head there radiate eight short thick fleshy arms, conical, rather ventricose, about 1 inch in length, from 3 to 4 lines across, rapidly diminishing to a point, from which a filament about half a line in thickness is continued. From three of the arms this terminal filament is preserved for the length of 2 or 3 lines, and a shorter extent shows its existence in the rest. The longitudinal is the most conspicuous arrangement of fibres in these arms.

Assuming the dorsal aspect to be the one exposed, the fourth or ventral pair of arms seems to have been rather longer than the rest, but they are all nearly equal. In the interspace between the fourth and third arm on each side there is the trace of the basal portion of a slender tentacle.

The ink-bladder has been forced out of the pallial cavity, and lies between the base of the dorsal pair of arms and the free margin of the mantle; this margin appears to be straight and transverse. The mass of desiccated and petrified ink which is preserved is of a full elliptical form, 6 lines in the long diameter.

The base of the pair of arms, or the hinder border of the cephalic mass immediately above the ink-bag, is arched: if the original division of the funnel into two halves were persistent in this extinct form of Calamary, what is here interpreted as two diverging arms might be regarded as the diverging halves of such a divided funnel, but the analogy of the structure of all existing Dibranchiate Cephalopods is against such a view.

The chief and unquestionable peculiarity of the present Cephalopod is the rapid diminution in size of the ordinary arms, and the continuation from them of filamentary or flagelliform appendages—a peculiarity which has suggested the generic name proposed for this new and interesting fossil\*.

From the Oxford clay of Christian-Malford, Wilts.

*Presented by the Marquis of Northampton, P.R.S.*

\* Gr. μάστιξ, flagellum, φέρω, fero.

Genus *Leptoteuthis*.

2. The two halves of a split slab of the oolitic lithographic slate of Solenhofen, with the impression and part of the horny gladius and beak of the *Leptoteuthis gracilis*, O.

The mandibles are moderately long, slender, slightly arched, trenchant, pointed, and wholly horny as in other *Dibranchiata*.

The length of the "gladius" is 8 inches; it gradually diminishes at the posterior half to a point.

From the oolitic slate of Solenhofen, near Pappenheim, Germany.

3. The "sepium" or internal shell of the Cuttle-fish (*Sepia officinalis*).  
4. The sepium of the Cuttle-fish, longitudinally bisected.

These specimens appear to have been placed with No. 2 by the Founder of the Collection, in order to illustrate the nature of the Solenhofen Fossil.

*Genus et Species indeterminata.*

5. The half of a split nodule of liassic stone, containing the petrified ink-bladder and ink, with part of the fibrous mantle of a Dibranchiate Cephalopod.

From the upper lias, Ilminster. *Presented by Charles Moore, Esq.*

Family *Belopteridæ*.

Genus *Belosepia*, Voltz.

6. Two specimens of different sizes of *Belosepia sepioidea*, Blainv.

In No. 3, the shell of the Cuttle-fish will be observed to terminate at one end in a short, hard point or "mucro," from the sides and fore part of which the lamelliform part of the shell suddenly expands. The correspondence of the present fossil with the mucro of the cuttle-shell was first recognized by Cuvier, and the accuracy of the comparison has been generally admitted. In the Hunterian MS. Catalogue the present fossils are entered as "l. x. 33, the shells of some unknown fish, the shell-part still remaining on one of them." The part alluded to is the beginning of the plate which surrounds the deep cavity at the base of the mucro. In the greater depth of this



cavity, and the greater development of the mucro itself, the *Belosepia* differs generally from the existing *Sepia*, and forms a step nearer the extinct Belemnite; the mucro answering to the "guard," and the cavity to the "alveolus" of the belemnitic shell.

7. A smaller specimen of apparently the same species (*Belosepia sepioidea*, Blainv.).  
From the eocene formations of the Isle of Sheppey, Kent.

8. A portion of eocene clay, with a fine example of the *Belosepia Cuvieri*, Desh.  
The mucro is here so far prolonged as to present a close and obvious resemblance to the "guard" of the Belemnite.

From the eocene formations at Bracklesham, Sussex.

*Presented by Frederic Dixon, Esq., F.G.S.*

### Family *Belemnitidæ*.

#### *Characteristic exemplifications of this family.*

9. A considerable proportion of the shell of the *Belemnites Owenii*, Pratt. In this, as in other species, the shell is a complex body. It is composed of two chief parts, the "phragmocone" and the "guard." The "phragmocone" consists of a series of shallow subcircular chambers, concave towards the outlet of the shell, and progressively increasing in size, like a pile of watch-glasses; but the chambers are perforated near the margin by a narrow canal or "siphuncle," and they are enclosed in a "capsule," which consists of a horny or corneo-calcareous, and a nacreous layer; which capsule is prolonged, in different degrees and shapes in different species, beyond the base of the phragmocone, enlarging in a corresponding degree the extent of the last chamber, and enclosing a greater or less proportion of the soft parts of the animal. The phragmocone is here exposed by the removal of part of the guard forming the "alveolus" or conical cavity for its reception; the capsule of the phragmocone adheres in part to the alveolus, in part to the phragmocone: where it is detached from the latter, the septa of the chambers are exposed.

The "guard" is a conical or fusiform body, commonly of a spathose structure, varying in the proportions of length and breadth in different

species, and solid, save where it forms the alveolus, the parietes of which become thinner as the cavity expands. In the present instance, owing to this thinning-off of the walls of the cavity, they have been unable to resist the surrounding pressure, and the alveolus and phragmocone have been crushed at their widest part.

From the Oxford clay, Wiltshire.

*Presented by Prof. Owen, F.R.S.*

10. A portion of the guard, including the beginning or apex of the alveolus and phragmocone of the *Belemnites Owenii*, Pratt. Three of the chambers of the phragmocone have been detached, showing on both sides of the septum the orifice of the marginal siphuncle: the part of the capsule of the phragmocone corresponding to the detached chambers remains adherent to the alveolus.

From the Oxford clay, Wiltshire.

*Presented by Prof. Owen, F.R.S.*

11. The guard of the *Belemnites abbreviatus*, Miller. It shows well the alveolus, the circular marks or rings of which indicate the chambered structure of the phragmocone: this part appears frequently to have slipped out of the guard, as in the present specimen, prior to the final imbedding and fossilization of that more solid and enduring part of the shell.

From an oolitic formation; locality unnoted: the species occurs in the "coralline rag" at Malton, Yorkshire.

12. The guard of the *Belemnites abbreviatus*, Miller, split lengthwise through the entire extent of the alveolus: the prisms of the spathose structure are set vertically to the walls of that conical cavity.

From an oolitic formation; locality unnoted.

13. The phragmocone of a large species of *Belemnites*.

Its chambers have been filled by siliceous and oolitic matter, before the application of a compressing force which would otherwise have flattened this originally frail portion of the belemnitic shell; which is only slightly crushed near the base or aperture. A portion of the capsule remains attached to the phragmocone.

From the Kimmeridge? clay, at Husband's-Bosworth, Leicestershire.

14. The phragmocone and guard of the *Belemnites Owenii*, Pratt.

The compressing force has been applied before the vacated chambers of the phragmocone had been filled by siliceous or other hard matter, and con-

sequently this delicate part of the complex shell has been squeezed flat. Had the guard possessed the light cellular structure of the cuttle-bone, No. 4, and had its spathose structure been, as some have conjectured, the result of infiltration of siliceous or crystallizable calcareous matter in the course of fossilization, it would doubtless have yielded, like the phragmocone, to the pressure which has flattened that part. The present specimen, therefore, plainly demonstrates the normal original state of the belemnitic shell.

Figured in the Memoir on the Belemnites, 'Phil. Trans.' 1844, pl. 2. fig. 1.  
From the Oxford clay of Christian-Malford, Wiltshire.

*Presented by S. P. Pratt, Esq., F.R.S.*

15. A single septum of a phragmocone of probably the same species of *Belemnites*, if not detached from the same individual specimen by the gradually applied compression, like that which has produced a like dislocation of one of the septa in No. 14. The marginal position of the siphuncle and the iridescent character of the primitive layer may be noticed.

It is from the same block of clay as No. 14.

Figured in the 'Philosophical Transactions,' 1844, pl. 2. fig. 8.  
From the Oxford clay, Christian-Malford, Wiltshire.

*Presented by S. P. Pratt, Esq., F.R.S.*

16. One moiety of a longitudinally bisected and polished specimen of the *Belemnites hastatus*, Blainv., showing the structure of the phragmocone and its relation to the guard. Some of the septa have been fractured prior to fossilization, but three of the chambers are entire: the successive layers in which the prisms of the spathose guard have been formed are well displayed in this section.

From an oolitic formation; locality unrecorded.

17. The guard of the *Belemnites dilatatus*, Blainv., fractured transversely and showing at its fractured end the nuclear and peripheral layers of the spathose substance: the first-formed or nuclear parts exhibit the normal cylindrical shape: the departure from this is due to the unequal deposition of the later-formed peripheral layers.

From the Neocomian formations, South of France.

*Presented by Prof. Owen, F.R.S.*

18. One moiety of a longitudinally fractured guard of the *Belemnites dilatatus*, Blainv., showing the nuclear and peripheral layers of the spathose substance.  
From the Neocomian formations, South of France.

*Presented by Prof. Owen, F.R.S.*

19. A specimen of the guard of the *Belemnites subfusiformis*, Raspail.

The upper portion of the last-formed layers is removed, showing the projecting part of the nuclear axis, or first-formed layers of the guard.

From the Neocomian formations, Robion, South of France.

*Presented by M. Duval-Jouve.*

*Specimens illustrative of the healing powers of the shell and its relations to the soft parts of the Belemnite.*

20. Two specimens of the extremity of the guard of the *Belemnites subfusiformis*, Raspail.

Each specimen is split longitudinally, exposing the nuclear and peripheral portions of the guard, and showing how a slight injury to the nuclear part has affected the form of the subsequent depositions of spathose material.

From the Neocomian formations, South of France.

*Presented by M. Duval-Jouve.*

21. A portion of the guard of the *Belemnites subfusiformis*, Raspail.

The terminal part of this guard is split lengthwise, showing by the abrupt termination of the nuclear portion, that the extremity of the guard had been broken off in the lifetime of the animal, and replaced by an obtuse mass of the peripheral spathose matter.

From the Neocomian formations, South of France.

*Presented by M. Duval-Jouve.*

22. The guard, longitudinally split, of the *Belemnites abbreviatus*, Miller.

It has suffered a fracture opposite the apex of the alveolus, and the parts have been reunited with a slight distortion. That the union has taken place during the lifetime of the animal, and not by the matrix during fossilization, is shown by the continuity of the central part of the original spathose substance of the guard, which is exposed by the cleavage.

The substance occupying the alveolus is a cast of that cavity formed by

the matrix ; the phragmocone having previously slipped out, as in Nos. 11 and 13, and probably in Nos. 25 and 26.

The healing of the fractured shell has commenced from within ; and the Belemnite has perished before the fracture has been quite obliterated. This specimen demonstrates the fact that the belemnitic shell was internal, and that the parts were retained in contact by the investing mantle when accidentally fractured until the healing process had produced their reunion.

From the great oolite of Garsington, Oxfordshire.

*Presented by Prof. Owen, F.R.S.*

*Microscopic structure of the guard.*

23. A transverse section of the alveolar part of the guard of the *Belemnites hastatus*, Blainv.

It is cemented to glass, and so thin as to be examined microscopically by transmitted light. An appearance characteristic of the texture of the guard is produced by a number of elongated triangular specks, defined by their opacity when the section is viewed by transmitted light, and by their white or silvery surface when viewed by reflected light ; the long axis of these triangles is always parallel to the fibres, and transverse to the layers ; but on one side of the section the apices are turned towards the centre, on the other side towards the circumference of the guard ; so that a slight change of focus reverses the position of the triangular specks.

The lines produced by the concentric layers of growth are seldom marked with equal distinctness ; the strongest ones are usually in groups of three, five, or eight, with fainter lines in the clearer interspaces ; this appears due to the varying thickness of the animal membrane at the contiguous surfaces of the layers of the prismatic fibres, which membrane was either formed by, or afforded attachment to, the extremities of the delicate membranous cells which served as moulds for the calcareous matter of the fibres. The impress of these extremities has produced on many of the lines of growth a minutely undulating or crenate course. The layers of growth vary slightly in thickness ; many are brought into view by applying a magnifying power of 150 diameters to a transparent section of the guard which otherwise would escape notice ; those only being visible to the naked eye that are separated by the thicker lines ; they are thus seen to be much more numerous than the septa of the phragmocone. In the present transverse section through the middle of the

alveolus, eighty layers can be counted in a thickness of a line, and more than three hundred in the solid part of a guard whose semidiameter was 4 lines.

Both the longitudinal section of the guard through its centre, and the transverse one, demonstrate the longitudinal course of the radiating fibres, the linear indications of which might be interpreted as the folds of a plicated membrane: a longitudinal section taken near the circumference of the guard cuts across the radiating fibres, the extremities of which are thus seen in transverse section; their distinct and independent character and trihedral form are clearly demonstrated in No. 24; they vary a little in size, the average diameter being  $\frac{1}{2000}$ th of an inch.

Figured in the 'Philosophical Transactions,' 1844, pl. vii. fig. 2.

*Presented by Prof. Owen, F.R.S.*

24. A longitudinal section of part of the guard and phragmocone of the *Belemnites hastatus*, Blainv., cemented to glass, and so thin as to be viewed microscopically by transmitted light.

The guard consists of numerous, thin, for the most part concentric, layers of minute prismatic trihedral fibres, placed at right angles, or nearly so, to the planes of the layers; the crystalline fibres are indicated by lines which radiate from the central axis and cross the lines of growth; the lines which define the fibres, when magnified 150 diameters, are seen in many parts of the section to run in pairs with a minutely and gently undulating course, resembling the tubes of dentine, but differing in the transparency of the intercepted calcareous matter, which is like that in the wider spaces separating the pairs of lines.

Figured in the 'Philosophical Transactions,' 1844, pl. vii. fig. 1.

*Presented by Prof. Owen, F.R.S.*

If the extinct Belemnite, as restored by the preceding and following specimens, be compared with the existing Dibranchiate Cephalopods, there will be recognized in the outwardly concave plates and margino-ventral siphon of the chambered shell of the *Spirula*, the homologue of the hydrostatic part of the shell or phragmocone of the Belemnite: and in regard to the entire shell, that of the *Sepia* or common Cuttle-fish most nearly resembles the Belemnite in the general structure and position of its complex calcareous plate. The nucleus or terminal spine of the sepium or cuttle-bone corresponds with the terminal spathose guard of the Belemnite; the convex

posterior broad plate of horny with friable calcareous matter is homologous with the capsule of the phragmocone; but its margins, instead of being approximated and soldered together, are free and lateral in position: the congeries of transverse plates, lodged in the concavity of the nucleus and of the foregoing semi-capsule of the cuttle-bone, answer to the chambered phragmocone of the Belemnite, but, instead of being perforated by one or many siphons, they are entire and connected with each other by a series of minute undulating lamellæ perpendicular to their plane.

The lateral fins of the *Sepia* are narrow, and extend, as is well known, from the apex of the mantle to near its base; while the fins of the Belemnite (see No. 30) were relatively shorter and broader, and situated a little in advance of the middle of the body. In the relative size, shape, and position of the fins, the Belemnite must have most nearly resembled the species of the existing genera *Rossia* and *Sepiola*, but it differed in the more elongated and slender body. The character of the formidable hooks, supported by the acetabula of the arms (see No. 29), is now exclusively manifested by the genus *Onychoteuthis*.

Thus the extinct Belemnite combined characters at present divided amongst four distinct genera of Dibranchiate Cephalopods, *Spirula*, *Sepia*, *Sepiola*, and *Onychoteuthis*. But, notwithstanding the uncinated character of the arms, the balance of its natural affinities preponderates in favour of its position as a transitional link between *Spirula* and *Sepia*.

The Belemnite, with the advantage of its dart-shaped and well-balanced shell, must have enjoyed the power of swimming backwards and forwards, by the action of its cephalic and pallial fins, with greater vigour and precision than the modern Decapod *Dibranchiata*. The position of the animal was, most probably, more habitually vertical than that of its recent congeners. Thus placed, the Belemnite, in quest of prey, would rise swiftly or stealthily to infix its claws in the belly of a supernatant fish, and then dart down, and drag its prey to the bottom and devour it. And we cannot doubt but that, like the uncinated Calamaries of the present seas, the ancient Belemnites and their associates, the *Celeanos*, were, in their day, the most formidable and predaceous of Cephalopods.

The foregoing specimens, illustrative of the general nature and structure of the complex shell of the extinct Belemnite, are described in detail and in part figured in the Memoir on the Belemnite, in the 'Philosophical Transactions,' 1846.

Genus *Acanthoteuthis*, Wagner.*Belemnoteuthis*, Pearce.

25. The chambered shell of the *Belemnoteuthis antiquus*, or part answering to No. 13, the phragmocone detached from the guard of a Belemnite. It consists of a series of progressively increasing subcircular chambers, surrounded by a thin corneo-calcareous capsule; and, on the supposition of its having slipped, like No. 13, from the alveolus of a belemnitic guard of the ordinary structure, it has been subject to pressure and crushed flat, prior to fossilization and the infiltration of siliceous or other mineral matters into the chambers. The close resemblance of this crushed phragmocone with that of Nos. 9 and 14, is an important guide to its true nature; but, as it appears that the corneo-calcareous capsule is somewhat thicker than in the phragmocone *in situ*, and as several crushed and apparently detached or unguarded phragmocones, like the present specimen, have been discovered in the same formation, a second hypothesis has been propounded, viz. that they have been originally uncomplicated by the normal belemnitic spathose guard, and that they represent a distinct genus or subgenus of the extinct *Belemnitidæ*, for which the names of *Acanthoteuthis* and *Belemnoteuthis* have been proposed, and in the present instance with the specific name of *antiquus*.

From the Oxford clay, Christian-Malford, Wiltshire.

*Presented by S. P. Pratt, Esq., F.R.S.*

26. The phragmocone of the *Acanthoteuthis (Belemnites) antiquus*, Wagner and Pearce.

In the act of pressure one of the septa near the base of the shell has slipped forward, and the greater part of its concave surface is presented to view.

Figured in the 'Philosophical Transactions,' 1844, pl. 2. fig. 7.

From the Oxford clay, Christian-Malford, Wiltshire.

*Presented by the Marquis of Northampton, P.R.S.*



27. One of the septa of the phragmocone of the *Acanthoteuthis* (*Belemnites*) *antiquus*.

From the Oxford clay, Christian-Malford, Wiltshire.

*Presented by the Marquis of Northampton, P.R.S.*

28. One of the septa of the phragmocone of a large *Belemnites*, or of the *Acanthoteuthis antiquus*.

From the Oxford clay, Christian-Malford, Wiltshire.

*Presented by S. P. Pratt, Esq., F.R.S.*

29. A slab of Oxford clay, in which is imbedded a large proportion of the soft parts, with the crushed phragmocone, of the *Belemnites* or *Acanthoteuthis antiquus*, Wagner.

This specimen exhibits, besides the phragmocone, the muscular mantle, a small part of the head, and a greater or less proportion of six of the cephalic tentacles, which are armed with horny hooks as in the recent *Onychoteuthis gigas*.

The phragmocone, with the soft parts of this belemnitic Mollusk, appears to have been detached from the guard, probably soon after death; and the whole has been squeezed nearly flat after becoming interred in the laminated clayey matrix. The resistance of the ink-bag with its inspissated and indurated contents has led to abrasion and loss of the walls of the part of the phragmocone covering it, and it seems to have been pressed downwards through one or two of the basal partitions deeper into the sheath than was natural, or than it is situated in other specimens; it may be recognized by its darker colour. The capsule of the phragmocone extends about one-third of an inch beyond the ink-bag, and terminates by a well-defined border. The smooth surface of its opake white, external calcareous layer is well preserved over nearly the whole of this part. The muscular tunic of the mantle appears to commence at the peristome; it seems to have first undergone the change into adipocere and then to have become so brittle as to crack and break instead of bending to the pressure. The course of the muscular fibres is plainly visible: all those on the outer surface of the mantle are transverse or circular; this surface is smooth, and the course of the fibres is more feebly indicated; in the few places where the upper side of the mantle is broken away, and the inner surface of the opposite side is shown, the arrangement of the transverse

fasciculi is more strongly marked. In the length as compared with the breadth of the mantle, the extinct belemnitic Cephalopod is here shown to have had the same elongated form of body as the *Onychoteuthis*, and most modern *Decapoda*. A little above the capsule of the phragmocone, on the left side, there is a flattened, transverse, fibrous body, with a rounded external border, so well defined as to excite the suspicion that it must have belonged to some part superadded to the muscular mantle; its nature is demonstrated in the specimen next to be described, No. 30. An oblong portion of the same fibrous and muscular tissue as the mantle, lying obliquely in front of the anterior margin of the mantle, and in which both a longitudinal and transverse layer of fibres are discernible, seems to be the remains of the infundibulum or expiratory tube. The direction of the exposed fibres in the cephalic arms is chiefly longitudinal: the arrangement of the horny hooks in a double alternate series is indicated in some parts of the arms.

Figured in the Memoir on the Belemnite, 'Phil. Trans.' 1844, pl. iii.

From the Oxford clay, Christian-Malford, Wiltshire.

*Presented by the Marquis of Northampton, P.R.S.*

30. A slab of Oxford clay, in which is imbedded a large proportion of the soft parts of the *Belemnites* or *Acanthoteuthis antiquus*, including a portion of the muscular mantle, the two pallial fins, the infundibulum, the ink-bag and duct, and a considerable proportion of the phragmocone. This part is more distorted and less entire than in the preceding specimen; but so far as a comparison can be made, presents the same form and structure.

The reservoir of ink is situated 2 lines within the aperture of the phragmoconic capsule, which terminates with the same well-defined border; it is of an oval form and jet-black colour, with a feeble indication of its original nacreous outer coating; the inspissated ink is very hard and brittle; when reduced to a fine powder it presents a dark brown hue, and, used as a pigment, works as smoothly as roman *Sepia*, but with a darker tint.

This ink-secretion offers the closest resemblance with that from the lias of Lyme Regis, also found associated with a series of circular transverse plates and narrow chambers, resembling the phragmocone, and accordingly referred by Dr. Buckland to the genus *Belemnites*\*. In the present specimen may be observed two flattened fibrous bodies, with well-defined semi-oval externa.

\* Bridgewater Treatise, vol. i. p. 374.

and apparently free margins,—the one on the right side is entire, the one on the left having the contour of the defective part of the margin indicated by the dark carbonaceous stain in the matrix; these are the parts which are regarded as the lateral fins of the mantle. They have been slightly displaced transversely and pressed inwards upon the yielding viscera: their original cartilaginous basis would favour their encroaching in that direction if subjected to gradual and equable surrounding pressure; the lateral fin which is preserved in the specimen No. 7, has been pushed more deeply inwards.

The large end of the semi-oval free border is the anterior one, where the fin is broadest; it gradually becomes narrower posteriorly. The muscular fasciculi are strongly marked, and are arranged transversely to the long axis of the fin, as in existing Decapodous Cephalopods. It is interesting to find a rounded contour associated with an advanced position of the lateral fins in the ancient Belemnites, as in the modern *Rossia* and *Sepiola*, the rhomboidal or angular form being most common in those fins which are placed at the end of the body, as in the *Onychoteuthis* and *Loligo*. In the present specimen the fins are crossed by a narrow tract of grey, transversely fibrous substance, probably part of the mantle, near the anterior termination of which an oblong flattened tract of similar substance extends forward, slightly expanding as it advances to a position opposite the neck of the Belemnite, where it ends by a slightly concave truncation; longitudinal fibres may be discovered decussating the more abundant transverse fibres of this part, which is most probably the remains of the infundibulum. A short flattened band of fibres which connects this part with what appears to have been the neck of the animal, presents the exact position and proportions of the retractor or levator muscles of the infundibulum of the naked Cephalopods. The traces of muscular tissue in the situation of the head are much more obscure: two short processes from the anterior part of this mass are evidently the bases of tentacula or cephalic arms.

At the middle of the visceral mass, in the interval of the two lateral fins, there lies a compressed body of a horny texture and sub-bilobed form, on which may be clearly distinguished striæ passing outwards in opposite directions from the middle line, and diverging from each other in their course, which resembles that of the fibres of the digastric muscle in the gizzard of the Nautilus and other Cephalopods: this apparent remnant of the stomach lies about half an inch in advance of the ink-bladder, in a posi-

tion corresponding with that of the stomach in naked Cephalopods. There is strong negative evidence that the Belemnite possessed horny mandibles like the other naked Cephalopods, since no calcareous beaks, or Rhyncholites, have been discovered associated with the specimens from the Oxford clay, or with those from the lias.

The thickness of the layer of dried and compressed grey fibrous matter to which the mantle is reduced is half a line, and we may infer from this, that in its soft and recent state, when permeated by its sanguiferous vessels, it must have equalled in thickness that of a Calamary of the same size. In fact, the mantle of true *Teuthidæ* (Calamaries with horny pens, No. 1), preserved in the same matrix as the *Belemnitidæ* here described, has been reduced to a compact fibrous layer of the same thinness.

Figured in the Memoir on the Belemnite, 'Phil. Trans.' 1844, pl. iv.

From the Oxford clay, Christian-Malford, Wiltshire.

Presented by S. P. Pratt, Esq., F.R.S.

31. A slab of Oxford clay, in which is imbedded the principal soft parts of the *Belemnites* or *Acanthoteuthis antiquus*.

This specimen is chiefly remarkable for the perfect conservation of the complex muscular structures of the head and its uncinated arms. Eight of these, forming the normal series of cephalic arms in the Dibranchiate Cephalopods, may be defined, radiating from a contracted base. In this base may be observed two decussating groups of curved fibres, the posterior one with its concavity turned towards the mantle, the anterior one with its concavity directed forwards, and its horns continued into the bases of the arms. A similar decussated arrangement of fibres exists in the *Onychoteuthis*, and is described and figured by Cuvier in the corresponding part of the head of the *Octopus*. Almost the entire extent of five of the cephalic arms is here preserved; they are rather longer in comparison with the mantle than in the modern *Onychoteuthis*, but not as compared with the entire body of the belemnitic Cephalopod, supposing this to have been lengthened out by the terminal spathose guard. The longitudinal arrangement of the fasciculi of muscular fibres in the arms is very distinct. Each of the arms seems to have been provided with from fifteen to twenty pairs of hooks, which were doubtless developed from the horny hoofs that encircled the caruncles of the acetabula, as in the modern *Onychoteuthis*.

On each side of the head, behind the bases of the arms, there is a convex

protuberance formed by a well-defined semicircular band, about a line in thickness, of grey fibrous matter, the fibres or layers being parallel with the curve of the band.

Figured in the Memoir on the Belemnite, 'Phil. Trans.' 1844, pl. v.

From the Oxford clay, Christian-Malford, Wiltshire.

*Presented by the Marquis of Northampton, P.R.S.*

32. A slab of Oxford clay with the phragmocone and a considerable proportion of the soft parts of the *Belemnites* or *Acanthoteuthis antiquus*.

The phragmocone is crushed; but parts of the septa of the chambers, and the thin calcareous or nacreous part of the sheath may be distinguished. Portions of the muscular part of the mantle are recognizable by the transverse arrangement of the fibres. The ink-bag and some portions of the ink are preserved. A firm body in the form of a ring, about a line in breadth and eight lines in diameter, lies near the aperture of the mantle. Three or four of the long slender cephalic arms are preserved: the size and shape of the horny hooks of the acetabula are well seen in this specimen.

From the Oxford clay, Christian-Malford, Wiltshire.

*Presented by the Marquis of Northampton, P.R.S.*

33. A slab of Oxford clay with the crushed phragmocone and some soft parts of a small *Belemnites* or *Acanthoteuthis antiquus*.

The soft parts include a large proportion of the mantle, showing the transverse arrangement of the muscular fibres and some fragmentary remains of the cephalic arms. The long and slender proportions of the animal are well indicated.

From the Oxford clay, Christian-Malford, Wiltshire.

*Presented by Prof. Owen, F.R.S.*

### Genus *Belemnites*.

34. Three chambers of the phragmocone of a large *Belemnites paxillosus*, Voltz.

A mass of pyritic matter adheres to the phragmocone, indicating that it had become detached from its alveolus before fossilization.

From the middle lias of Germany.

35. The basal part of the guard of the *Belemnites paxillosus*, Voltz.  
The alveolus has given attachment to a mass of pyritic crystalline matter.  
From the middle lias of Germany.
36. The guard, longitudinally cleft, to show part of the alveolus and phragmocone of the *Belemnites paxillosus*, Voltz.  
From the middle lias, Gloucestershire.
37. A portion of lias in which is imbedded guards of the *Belemnites paxillosus*, Voltz, and *Belemnites compressus*, Voltz.  
From the middle lias ; locality unrecorded.
38. The guard, and a portion of a detached phragmocone, of the *Belemnites digitalis*, Voltz.  
From the middle lias ; locality unrecorded.
39. Four specimens of the guard of the *Belemnites tripartitus*, Voltz.  
From the upper lias, probably of Germany, but the locality is not recorded.
40. The apical portion of the guard of the *Belemnites breviformis*, Voltz.  
From the middle lias, Germany.
41. Several specimens of the guard, more or less mutilated, and of different ages, chiefly young, of the *Belemnites clavatus*, Voltz.  
From the middle lias, Germany.
42. A nodule of liassic stone containing the phragmocone and a portion of the guard of a long and slender species of *Belemnites*.  
From the lias ; locality unnoted.
43. Two specimens of the guard of the *Belemnites giganteus*, Schlotheim.  
In one the alveolus is exposed, which has become filled with the oolitic matrix after the escape of the phragmocone.  
From the inferior oolite of Suabia.
44. The guard, with part of the phragmocone, of the *Belemnites giganteus*, Schloth.  
In the septum exposed, the marginal position of the siphuncle, near the thinner wall of the alveolus, may be noticed. The capsule of the phragmo-

cone appears to have equalled in thickness that of the so-called *Belemniteuthis*.

From the inferior oolite.

45. A portion of the guard of the *Belemnites giganteus*, Schloth., to which adheres part of the shell of the *Ostrea Marshii*.

From the inferior oolite of Suabia.

46. The guard of the *Belemnites giganteus*, Schloth.

The alveolus, from which the phragmocone has probably slipped prior to fossilization, is filled with the oolitic matrix.

From the inferior oolite, Suabia.

47. A portion of the guard of the *Belemnites giganteus*, Schloth.

An extinct species of oyster (*Ostrea Marshii*?) has attached itself to the mouth of the alveolus, from which the phragmocone had previously become detached. The adherent valve is very concave, being in a great degree moulded to the shape of the vacated cavity, to the walls of which, beneath the valve, small crystals of silex adhere.

From the inferior oolite, Suabia.

48. A portion of the guard of the *Belemnites giganteus*, Schloth.

It has been perforated by some boring species, and portions of some serpuliform shell are adherent to it.

From the inferior oolite, Suabia.

49. A section of the alveolar part of the guard of the *Belemnites giganteus*, Schloth.

It has been filled by the oolitic matrix after the escape of the phragmocone.

From the inferior oolite, Suabia.

50. A portion of the phragmocone of a large specimen of the *Belemnites giganteus*, Schloth., which appears to have slipped from its alveolus. The smooth and polished nacreous layer of the septa, and the marginal siphuncle, are well shown in this specimen.

From the inferior oolite; locality unnoted.

51. A smaller portion of the phragmocone of the *Belemnites giganteus*, Schloth.

From the inferior oolite; locality unnoted.

52. Considerable portions of two phragmocones or casts of the alveolus of the *Belemnites giganteus*, Schloth.  
From the inferior oolite, Suabia.
53. The basal portion of the guard, with the alveolus, and a cast of that cavity, of the *Belemnites spinatus*, Voltz.  
From the inferior oolite, Mischek, near Prague, Bohemia.
54. Two specimens of the apical portion of the guard of the *Belemnites spinatus*, Voltz.  
From the inferior oolite, Aalen, Germany.
55. The guard, transversely fractured, of the *Belemnites latisulcatus*, O.  
From the inferior oolite; locality unrecorded.
56. A portion of the guard of the *Belemnites latisulcatus*, O.  
From the inferior oolite; locality unrecorded.
57. A portion of oolitic slate in which is imbedded part of the guard of a young *Belemnites fusiformis*, Parkinson.  
From the great oolite at Stonesfield, Oxfordshire.
58. Two specimens, each split so as to expose the alveolus of the guard of the *Belemnites abbreviatus*, Miller.  
In one, the alveolus is empty; in the other, it has become compactly filled by the matrix; in both, the phragmocone has probably slipped out prior to fossilization.  
From the oolitic formation called "Calcareous grit;" locality unnoted.
59. A considerable part of the guard, with the alveolus and part of the phragmocone, or cast of the guard, of the *Belemnites abbreviatus*, Miller.  
The cameration of the phragmocone is strongly marked on the alveolus: its excentric position in the guard is worthy of notice.  
From the calcareous grit; locality unnoted.
60. A considerable part of the guard, with the alveolus, of the *Belemnites abbreviatus*, Miller.  
The cavity is filled with the oolitic matrix: the fractured part of the guard shows its spathose structure.  
From the calcareous grit; locality unnoted.



61. Three portions of the guard of the *Belemnites hastatus*, Blainv.; the basal portion is cleft lengthwise to show the proportion and form of the alveolus, which has become filled with the matrix after the loss of the phragmocone.  
From the oolitic formation called "White Jurassic," Germany.
62. The apical portion of two guards of the *Belemnites hastatus*, Blainv.  
From the "White Jurassic," Germany.
63. Two specimens of the phragmocone of the *Belemnites semihastatus*, d'Orb.  
From the Oxford clay, Boll, Germany.
64. Two portions of the guard of the *Belemnites semihastatus*, d'Orb., one of which is split lengthwise to show its nuclear and peripheral portions.  
From the Oxford clay, Boll, Germany.
65. A slab of Oxford clay in which is imbedded the shell of the *Belemnites Owenii*, Pratt.

This species approximates in its general form to the *Belemnites elongatus* and *Bel. longissimus* of Miller, from the lias; but it presents intermediate proportions of length to breadth, and maintains the same diameter throughout a much greater part of its extent; the anterior expansion, which is very gradual, commencing, nevertheless, nearer the alveolar extremity, and ending less widely. The excavated part of the guard becomes very thin as it expands, and, there having been no infiltration of mineral matter into its cavity, or into the chambers of the phragmocone, it has yielded to the pressure of the superincumbent strata, and thus in its flattened and fractured state shows a greater degree of expansion than is natural to it. The thin and brittle margin of the spathose alveolus may be traced nearly half-way towards the base of the phragmocone, which is there invested only by the thinner and more yielding corneo-nacreous sheath. The phragmocone is crushed, and presents a structure resembling that of the so-called *Belemnoteuthis*: it extends as far beyond the solid part of the guard as the length of that part.

From the Oxford clay of Christian-Malford, Wiltshire.

Presented by W. J. Broderip, Esq., F.R.S.

66. A slab of Oxford clay in which is imbedded a smaller specimen of the shell of the *Belemnites Owenii*, Pratt.

The phragmocone has been crushed, prior to fossilization, as in the foregoing specimen.

From the Oxford clay, Christian-Malford, Wiltshire.

*Presented by S. P. Pratt, Esq., F.R.S.*

67. A slab of Oxford clay in which is imbedded the shell of the *Belemnites Owenii*, Pratt.

The crushed phragmocone is partly overlaid by the remains of the shell of the *Ammonites Elizabethæ*, Pratt.

The thickness of the apical part of the capsule of the phragmocone in this specimen is worthy of notice, where it is exposed by the crushed alveolus.

From the Oxford clay, Christian-Malford, Wiltshire.

*Presented by the Marquis of Northampton, P.R.S.*

68. A slab of Oxford clay, in which is imbedded the guard and part of the phragmocone, crushed, of the *Belemnites Owenii*, Pratt.

The extent of the sheath of the phragmocone may be traced by the discoloration of the matrix.

*Presented by Dr. A. G. Mantell, F.R.S.*

69. The guard, transversely fractured, of the *Belemnites Owenii*, Pratt.

The thick capsule of the phragmocone may be noticed in the partially crushed alveolus: the fractured portion of the guard does not exhibit any distinction of nuclear and peripheral layers: the groove is continued to the apex.

From the Oxford clay; probably of Wiltshire.

70. The guard of the *Belemnites Owenii*, Pratt.

A portion of the base, forming the alveolus, has been broken away.

From the Oxford clay; probably of Wiltshire.

71. The guard of a young specimen of the *Belemnites Owenii*, Pratt, showing the fusiform shape characteristic of that immature period.

From the Oxford clay, Christian-Malford, Wiltshire.

Figured in pl. ii. fig. 5, 'Phil. Trans.' 1844.

*Presented by S. P. Pratt, Esq., F.R.S.*

72. The guard of a very young specimen, probably just from the egg, of the *Belemnites Owenii*, Pratt.  
From the Oxford clay, Christian-Malford, Wiltshire.  
Figured in pl. ii. fig. 4, 'Phil. Trans.' 1844.  
*Presented by S. P. Pratt, Esq., F.R.S.*
73. The apex of the guard of the *Belemnites Owenii*, Pratt.  
It shows, as in the more perfect specimens, the continuation of the groove to that extremity, a character which has been noted by Hunter, who enters the specimen in the MS. Catalogue as "*d*\* 32, one of the *Belemnites sulcati*."  
From the Oxford clay; locality not recorded.
74. A portion of the phragmocone of a *Belemnites*.  
From Switzerland.
75. Several detached chambers of one or more decomposed phragmocones of a *Belemnites*.  
From Switzerland.
76. Portions and detached chambers of one or more decomposed phragmocones of a *Belemnites*.  
Locality unnoted.
77. A portion of a phragmocone of a *Belemnites*.  
Locality unrecorded.
78. The guard, with part of the alveolus, of the *Belemnites subfusiformis*, Raspail.  
It is very rare to find an example of this species so nearly entire as the present, or exhibiting any part of the alveolar region.  
From the Neocomian formations, Robion, South of France.  
*Presented by M. Duval-Jouve.*
79. A specimen of the guard of the *Belemnites subfusiformis*, Rasp., var. *robustus*, Duval.  
From the Neocomian formations, Greolières, South of France.  
*Presented by M. Duval-Jouve.*
80. Two specimens of the guard of the *Belemnites subfusiformis*, Rasp., var. *robustus*, Duval.  
From the Neocomian formations, Robion, South of France.  
*Presented by M. Duval-Jouve.*

81. Three specimens of the guard of full-grown individuals of the *Belemnites subfusiformis*, Rasp.  
From the Neocomian formations, Robion, South of France.  
*Presented by M. Duval-Jouve.*
82. Five specimens of the guard of the *Belemnites subfusiformis*, Rasp.  
These show the variation in form and proportion due to difference of age in this species.  
From the Neocomian formations, Robion, South of France.  
*Presented by M. Duval-Jouve.*
83. Two specimens, fractured in divers places after imbedding, and united by the matrix, with some displacement, of the *Belemnites subfusiformis*, Rasp.  
From the Neocomian formations, Robion, South of France.  
*Presented by Professor De Blainville.*
84. A tray of specimens of the guard, showing different degrees of deformity, of the *Belemnites subfusiformis*.  
From the Neocomian formations, Robion, South of France.  
*Presented by M. Defrance.*
85. A tray of specimens of the guard of different-aged specimens of the *Belemnites semicanaliculatus*, Blainville.  
From the gault of the ferruginous hollows called "Marnes aptesiennes" by D'Orbigny, in Estragnoles, South of France.  
*Presented by M. Duval-Jouve.*
86. A tray of specimens of the guard of the *Belemnites semicanaliculatus*, Blainville.  
From the gault, Estragnoles, South of France.  
*Presented by M. Duval-Jouve.*
87. Eight specimens of the guard of the *Belemnites semicanaliculatus*, Blainville.  
From the gault at La Garde, near Castellane, South of France.  
*Presented by M. Duval-Jouve.*
88. Three specimens of the guard of the *Belemnites semicanaliculatus*, Blainville.  
From the gault, Robion, near Castellane, South of France.  
*Presented by M. Duval-Jouve.*
89. Two specimens of the guard of the *Belemnites semicanaliculatus*, Blainville.  
From the gault, Estragnoles, South of France.  
*Presented by Professor De Blainville.*

*The following specimens, to No. 116 inclusive, were presented by M. Duval-Jouve.*

90. Five specimens of the guard of the *Belemnites hybridus*, Duval.  
From the Neocomian formations of the chloritic valleys, Robion, South of France.
91. Four smaller but more complete specimens of the guard of the *Belemnites hybridus*, Duval.  
From the Neocomian formations, Robion, South of France.
92. Two specimens of portions of the guard of the *Belemnites hybridus*, Duval.  
From the ferruginous valleys of the Neocomian formations at Liéous, near Senez, South of France.
93. A portion of the guard, of a less dilated shape, of the *Belemnites hybridus*, var., Duval.  
From the Neocomian formations, South of France.
94. A portion of the phragmocone, which has slipped out of the alveolus of the guard of a Belemnite, probably *Belemnites dilatatus*. Such a specimen, if regarded as independent of a belemnitic guard, would be referred to the genus *Belemnoteuthis*.  
From the Neocomian formations, South of France.
95. A tray of various-sized specimens of the guard of the *Belemnites dilatatus*, Blainv. At the fractured end of the larger specimens the nuclear portion of the guard is well shown.  
From the Neocomian beds of the chloritic valleys of Robion, near Castellane, South of France.
96. Two specimens of the guard of full-grown individuals of the *Belemnites dilatatus*. The nuclear part of the guard presents a circular transverse section.  
From the Neocomian beds, Robion, near Castellane, South of France.
97. A tray of specimens of the guard of young individuals, of different ages, of the *Belemnites dilatatus*, Blainv.  
From the Neocomian beds of the chloritic valleys at Robion, near Castellane, South of France.
98. A portion of the guard of the *Belemnites dilatatus*, Blainv., showing at one of the fractured ends the termination of the alveolus, and at the other, the three

divisions of the strata of prismatic crystals composing the substance of the guard. The central or nucleolar dark-coloured portion resembles a siphonic canal filled up by siliceous matter.

From the Neocomian formations, South of France.

99. A portion of the guard of the *Belemnites dilatatus*, Blainv., showing at one of the fractured ends the nucleolar, nuclear, and peripheral layers of the spathose substance.

From the Neocomian beds, South of France.

100. A moiety of a longitudinally fractured guard of an adult specimen of the *Belemnites dilatatus*, Blainv.

From the Neocomian formations, South of France.

101. Three specimens of the guard of the *Belemnites dilatatus*, Blainv., each of which has been fractured, after having been imbedded, and has been united by the siliceous element of the matrix.

From the Neocomian formations, South of France.

102. The dilated unsymmetrical termination of the guard of the *Belemnites Emerici*, Raspail.

From the Neocomian formations, Cheiron, near Castellane, South of France.

103. Two specimens of the guard, showing part of the alveolus, of the *Belemnites latus*, Blainv. The phragmocone has slipped out of the alveolus, which has become partially occupied by extraneous siliceous matter.

From the Neocomian formations at Castellane, South of France.

104. Portions of two guards of the *Belemnites grasianus*, Duval.

From the Neocomian formations, Robion, South of France.

105. Three specimens of the guard of the *Belemnites Ursula*, Duval.

From the Neocomian formations, Castellane and Peyroles, South of France.

106. A portion of the guard, with the alveolus and phragmocone, of the *Belemnites platyurus*, Duval.

From the gault, Estragnoles, South of France.

107. A tray of more or less mutilated specimens of the guard of the *Belemnites platyurus*, Duval.  
From the Neocomian formations, Chamateins, South of France.
108. Two specimens of mutilated guard, with portions of the Neocomian or green-sandstone adhering, of the *Belemnites platyurus*, Duval.  
From the Neocomian formations at Chamateins.
109. A fractured and a distorted specimen of the guard of the *Belemnites platyurus*, Duval. The former shows well the nuclear and peripheral portions of the spathose substance.  
From the gault, Estragnoles, South of France.
110. Two specimens of the guard of the *Belemnites pistilliformis*, Raspail, showing the pointed variety of this species.  
From the Neocomian formations at Talloire, South of France.
111. The dilated terminal portion of the guard of two specimens of the *Belemnites pistilliformis*, Raspail, var. *obtusus*.  
One of these specimens has been split lengthwise to show that the obtuse termination is not the result of lesion or abrasion.  
From the Neocomian formations at Talloire, South of France.
112. Four guards of the *Belemnites bipartitus*, Blainville. The two opposite long grooves, and the intermediate shorter groove of the guard are well shown in these specimens.  
From the chloritic Neocomian valleys of the Lower Alps, near La Garde, South of France.
113. Three specimens of the guard, more or less imperfect, of the *Belemnites bipartitus*, Blainville.  
From the ferruginous Neocomian valleys of Cheiron, near Castellane.
114. A specimen of the guard, divided to display the alveolus, and the post-alveolar part of another guard, of the *Belemnites Orbignyana*, Duval. The phragmocone appears to have slipped out of the alveolus prior to fossilization.  
From the Neocomian formations at Blieux, near Senez, South of France.

115. Five more or less mutilated specimens of the guard of the *Belemnites isoscelis*, Duval.  
From the Neocomian formations at Peyroles, South of France.
116. Three portions of the guard of the *Belemnites trabiformis*, Duval.  
From the Neocomian formations at Talloire, South of France.  
*The foregoing specimens, from Nos. 90 to 116 inclusive, were presented by M. Duval-Jouve.*
117. Three specimens of the guard of the *Belemnites minimus*, Lister.  
From the gault, Folkestone, Kent.
118. A portion of chalk in which is naturally imbedded the guard, wanting the apex, of the *Belemnites mucronatus*, Schloth.  
From the upper chalk; locality unnoted. The species occurs in that formation in England.
119. A portion of chalk in which is naturally imbedded the guard of the *Belemnites mucronatus*, Schloth.  
This specimen shows the apex of the guard and that of the alveolus.  
From the upper chalk; locality unnoted.
120. A mass of flint which has been deposited round the guard of the *Belemnites mucronatus*, Schloth.  
Both extremities of the guard are exposed, and at one of these the alveolar cavity is displayed. Cavities which have contained a similarly shaped body are also shown in this piece of flint, and one of these bodies appears to have been perforated by some boring worm, the track of which has been filled by flint, prior to the disappearance of the substance that has been so perforated.  
From the upper chalk of Kent.
121. Part of a nodule of flint in which is imbedded the guard of a Belemnite, probably *Bel. mucronatus*, Schloth.  
From the upper chalk of Kent.
122. Two specimens of the guard of the *Belemnites mucronatus*, Schloth.  
From the upper chalk; locality unrecorded.



123. Three more or less mutilated specimens of the guard of the *Belemnites mucronatus*, Schloth.  
The apex is entire in each, and in the largest is shown the alveolus, from which the phragmocone appears to have escaped, prior to fossilization.  
From the upper chalk of Kent.
124. Three guards, showing more or less of the alveolus, but with the mucro abraded, of the *Belemnites mucronatus*, Schloth.  
From the upper chalk of Sussex.
125. One moiety of a longitudinally divided guard of the *Belemnites mucronatus*, Schloth., showing a fine nuclear tract, or canal, extending, and slightly enlarging, towards the apex.  
From the upper chalk of Sussex.
126. A portion of the cretaceous stone of Maestricht to which adheres the guard of the *Belemnites mucronatus*, Schlotheim (*Belemnitella*, D'Orb.).  
From the upper cretaceous formation at Maestricht.
127. A portion of the cretaceous stone of Maestricht, containing the guard of the *Belemnites mucronatus*, Schlotheim, and some fragments of an Echinoderm (*Ananchites?*).  
From the upper cretaceous formation at Maestricht.

## Order TETRABRANCHIATA.

### Family Nautilidæ.

#### Genus *Nautilus*.

##### *Characteristic exemplifications of this genus.*

128. A moiety of a vertically bisected shell of the Pearly Nautilus (*Nautilus pompilius*, Linn.).  
It shows the outer coloured layer and the inner nacreous layer of the shell; the latter forms the "septa," which successively partitioned off the

“chambers” or vacated portions of shell, during the phases of the growth of the Cephalopod. The chambers so formed are traversed by a median “siphuncle,” partly calcareous and partly membranous, in this and other recent Nautili; the calcareous part is continued from the septum in the direction of the preceding chamber, and is called the “collar” of the siphuncle; the dried membranous siphuncle is here preserved only in the first-formed chambers. The septa are concave towards the outlet of the shell, and their margin extends with a slightly sinuous curve, at nearly right angles to the outer wall of the shell, thus strengthening that wall, like the cross-braces or spanners in architecture, against the pressure exercised in deep water against the vacated part of the shell. The common wall of the shell, corresponding to the ordinary simple shell of univalves, is called the “parietal part;” the partitions form the “septal” part of the shell.

In acquiring the camerated structure, the Nautilus gains the power of rising from the bottom of the sea and the requisite condition for swimming; by the exhalation of some light gas into the deserted chambers there becomes attached to its otherwise too heavy body a contrivance for ascending in its aqueous atmosphere as man ascends in his gaseous one by the aid of a balloon. But the Nautilus combines with the power of elevating and suspending itself in the water, that of opposing the currents of that medium, and of propelling itself at will in any direction. It possesses the latter essential adjunct to the utility of the balloon, as a locomotive organ, by virtue of the muscular funnel, through which it ejects into the surrounding water, doubtless with considerable force, the respiratory currents.

It appears that the proportion of the air-chambers to the occupied dwelling-chamber of the Nautilus is such as to render the whole animal of nearly the same specific gravity as the surrounding water. The siphuncle, which traverses the air-chambers, communicates with the pericardium, and is most probably filled with fluid from that large aquiferous cavity.

Neither the contents nor the vital properties of the siphuncle are, however, yet known: an artery and vein are assigned for its life and nutrition, and to extend a low degree of the same influences to the shell; but the structure of the membranous siphuncle presents, beyond the first chamber, an inextensible and almost friable texture, apparently unsusceptible of dilatation and contraction; it is also coated beyond the extremity of the short testaceous siphuncle with a thin calcareous deposit. A graver objection to the supposed hydrostatic action of the siphuncle is founded upon its structure in

many extinct species of *Nautilus*, e. g. the *N. striatus*, No. 129; the *N. imperialis*, No. 137; and the *N. hexagonus*, No. 144, in which it is provided through its whole extent with an inflexible outer calcareous tube, rendering it physically impossible that the gas of the chambers could be affected by any difference in the quantity of fluid contained in the siphon.

From these facts it is to be inferred, that the sole function of the air-chambers is that of a balloon; that the power which the animal enjoys of altering at will its specific gravity must be analogous to that possessed by the freshwater testaceous Gasteropods; and that it depends chiefly upon changes in the extent of the surface which the soft parts expose to the water, according as they may be expanded to the utmost and spread abroad beyond the aperture of the shell, or be contracted into a dense mass within its cavity. The *Nautilus* would likewise possess the additional advantage of producing a slight vacuum in the posterior parts of the chamber of occupation which is shut out by the horny cincture and by the muscles of adhesion from the rest of that cavity.

The functions of the complex and beautiful modifications of the shell of the *Nautilus pompilius*, so far as they have been discovered by a study of the anatomy and living habit of that species, must also have been enjoyed by the extinct Cephalopods with similar shells, in degrees corresponding with the closeness of that resemblance; and our knowledge of the rare existing polythalamous Cephalopod reflects light on the habits and conditions of existence of the much more numerous and earlier species and genera of the same Order, which have successively come into being and ceased to exist, in former geological periods.

Whatever advantage the existing *Nautilus* might derive by the continuation of a vascular organized membranous siphuncle through the air-chambers in relation to the maintenance of vital harmony between the soft and testaceous parts, must likewise have been enjoyed by the numerous extinct species of the tetrabranchiate Cephalopods, which, like the *Nautilus*, were lodged in chambered and siphoniferous shells.

The existing species of *Nautilus* are confined to the tropical seas of the Indian Archipelago and a few Polynesian Islands.

The specimen was obtained from the shores of Amboyna. *Purchased.*

129. The moiety of a vertically bisected *Nautilus striatus*, Sow.

Portions of the external layer of the shell, which in this extinct species is

longitudinally ridged or striated, are preserved; with a much larger proportion of the internal nacreous layer. Upwards of forty-four vacated chambers, with the last large chamber of occupation, are displayed.

The proportions of the vacated chambers, the disposition of the septa and the relative position and size of the siphuncle, are almost identical with those in the existing *Nautilus*; but the two layers of nacreous substance composing the septa, and the continuation of the calcareous wall of the siphuncle from septum to septum, are obvious differences. This structure of the siphuncle demonstrates that there could be no communication for the passage of any fluid from that tube into the chambers, which were closed spaces filled with gas. The agreement of the fossil with the recent *Nautilus* in the original condition of the vacated and inhabited chambers is well illustrated by the substances that have penetrated them after the death of the constructor of the fossil shell. The soft parts having been displaced, the clay in which the shell sank has filled the dwelling-chamber, has entered the siphuncle and has penetrated a part of the last-vacated chamber, by an accidental fracture of its walls. Into the closed chambers nothing has penetrated but pure crystallized spar, introduced by filtration through the pores of the shell, which have permitted the slow and gradual access of water holding in solution carbonate of lime.

From the lower lias, Lyme Regis, Dorsetshire.

*Presented by Anthony White, Esq.*

130. A fragment of the *Nautilus imperialis*, Sow., showing a considerable proportion of the central siphuncle traversing the vacated chambers of the shell, which are lined by a deposition of spar from the percolated fluid during the progress of fossilization. The nacreous layer retains its original iridescence. A corresponding fragment of the shell of the *Nautilus pompilius* has been placed, by Hunter, with the fossil, to illustrate its nature and affinities.

From the eocene formation, Isle of Sheppey, Kent.

131. The beak of the Pearly *Nautilus* (*Nautilus pompilius*, Linn.).

*From the specimen presented by George Bennett, Esq., F.R.C.S.*

132. A portion of oolitic stone in which is imbedded the end of one of the mandibles of a Cephalopod, probably of the genus *Nautilus*.

It shows the same difference from all known dibranchiate Cephalopods, as in the Pearly *Nautilus*, in the horny part of the beak being incased at its

extremity by a calcareous sheath, thickest at the point and on the concave or oral side of the mandible. The preservation of this part of the Cephalopod is chiefly due to this structure, although some dark carbonaceous remains of the more perishable constituent of the beak may still be seen within the calcareous sheath.

As the existing *Nautilus* uses its hard beak to break down the shells of Crustacea, we may infer a similarity of food in regard to the extinct species.

From the lower oolite at Walcot, near Bath.

133. The calcareous extremities of two mandibles of a Cephalopod, probably of the genus *Nautilus*.

These fossils were termed "Rhyncholites" and "Beak-stones," and were referred by most palæontologists, up to the time of Blumenbach, to the class of Birds; but Hunter had gained a truer idea of their nature, and entered the present specimens in his MS. Catalogue as "k. 2, Cuttle-fish beaks:" the examination of the recent *Nautilus pompilius* brought to light the fact of the same combination of calcareous and horny material which distinguishes the fossils from the beaks of the Sepiæ and other naked Dibranchiate Cephalopods.

From the lower oolite, Walcot, Bath.

*Extinct species of Nautilus, stratigraphically arranged.*

134. A specimen, wanting part of the last chamber and much of the outer part of the shell, of the *Nautilus imperialis*, Sow.

From the eocene formation called London clay, Isle of Sheppey, Kent.

135. A portion, including many of the first-formed vacated chambers, of the *Nautilus imperialis*, Sow.

From the eocene formation, Sheppey, Kent.

136. A similar portion of the *Nautilus imperialis*, Sow.

From the eocene formation called London clay, at Highgate.

137. A portion of the shell, including about thirty of the first-formed chambers, longitudinally bisected, of the *Nautilus imperialis*, Sow.

The siphuncle is well displayed in this section; its position in the first twenty chambers is very near the concavity of the curve, as in the *Spirula*; and, as in that shell, the calcareous walls are continued from septum to

septum; but in the subsequently formed chambers the siphuncle gradually approaches nearer the centre of the chambers, as in the existing species of *Nautilus*, and the siphuncle is slightly dilated in each chamber. The complete separation of the siphuncular cavity from that of the chambers is here illustrated by the different nature of the mineral substance that has filled the siphuncle from that of the substance which more or less occupies the chambers; the latter is crystallized spar or carbonate of lime, which has been slowly deposited by percolation of fluid through the pores of the shell. The cavity of the siphuncle has been more suddenly filled by the matrix in a fluid or plastic state charged by the decomposing particles of the animal, which have imparted a dark colour to the petrified clay; the ordinary coloured matrix has got access, probably by fracture of the shell, to the last two chambers exhibited in this instructive section.

From the eocene formation called London clay, Isle of Sheppey, Kent.

138. A similar specimen, longitudinally bisected, of the *Nautilus imperialis*, Sow.  
From the eocene formation, Isle of Sheppey, Kent.
139. Four mutilated specimens of the *Nautilus centralis*, Sow.  
From the eocene formation, Isle of Sheppey, Kent.
140. The young, or first-formed chambers, of the *Nautilus ziczac*, Sow. (*N. Sypho*, Buckland).  
From the eocene formation, Isle of Sheppey, Kent.
141. A cast in matrix, pyritized, of the young, or first-formed chambers, of a *Nautilus*.  
From the eocene formation called London clay; locality unnoted.
142. A cast in matrix of the *Nautilus inæqualis*, Sow.  
From the lower chalk, Kent.
143. A moiety of a bisected cast, chiefly in green crystallized spar, of the vacated chambers of the *Nautilus radiatus*, Sow.

The siphuncle is well displayed in this section; it has been filled by the ordinary matrix whilst in its fluid or plastic state, and the same substance has got access through fractures of the partly crushed first-formed chambers and broken siphuncle, to that part of the cavity of the shell; it has also passed,

apparently by rupture of the siphon, soon after immersion of the shell, into two of the later formed vacated chambers ; these progressively diminish in depth from the antepenultimate to the last, indicating that the power of growth had been exhausted, and that the animal probably died of old age.

The contrast of the contents of most of the vacated chambers and of the siphuncle well illustrates, as in No. 137, the normal relations and functions of those parts of the complex shell, and its close correspondence in this respect with that of the recent *Nautilus*. The siphuncle is calcareous throughout, and is relatively wider than in the pearly *Nautilus*.

The exterior or parietal part of the shell has been ridged or minutely undulated, in wavy lines, opposite in direction, or decussating the margins of the septa, a modification which must have augmented the strength of the shell.

From the lower green-sand, or Neocomian formations ; locality unrecorded.

144. The major part of the vacated chambers, bisected, of the *Nautilus hexagonus*, Sow.

The shell has been crushed and partially fractured prior to fossilization, as is shown by the difference in the contents of the entire and broken chambers ; the latter being filled by the same opaque brownish matrix as the siphuncle, whilst the vacated chambers with entire walls and unburst siphuncle have been wholly or partially filled by slowly infiltrated crystalline spar. The siphuncular walls are calcareous ; the tube is constricted at each septum ; it is nearer the inner or concave curve of the shell, than in the pearly *Nautilus*.

From the middle oolitic formation called "calcareous grit," Shotover, Oxfordshire.

145. The young, or first-formed chambers, of the *Nautilus lineatus*, Sow.

From the inferior oolite ; locality unnoted.

146. An older specimen, or larger proportion of the chambered part of the shell, of the *Nautilus lineatus*, Sow.

From the inferior oolite ; locality unnoted.

147. An older specimen of the *Nautilus lineatus*, Sow.

From the inferior oolite, Dorsetshire.

148. A similar-sized specimen, with the umbilicus exposed, of the *Nautilus lineatus*, Sow.

From the inferior oolite ; locality unnoted.

149. A cast, in matrix, of the young, or first-formed chambers, of the *Nautilus truncatus*, Sow.

From the lias or inferior oolite ; locality unrecorded.

150. The moiety of a bisected specimen of a cast of the first-formed chambers of the *Nautilus truncatus*, Sow.

From the lias or inferior oolite ; locality unrecorded.

151. A portion of the camerated part of the shell, longitudinally bisected, of the *Nautilus truncatus*, Sow.

About half the siphuncle is displayed, which shows the same relative position and size as in the *Nautilus hexagonus* (No. 144). Portions of both layers of the parietal part of the shell are preserved.

From the inferior oolite, and probably from the same locality as No. 144.

152. The camerated part of the shell, divided into four portions, of the *Nautilus truncatus*, Sow.

The division is due to a separation of the chambers and demonstrates the contour and disposition of their septal walls.

From the inferior oolite ; locality unnoted.

- δ. The *Nautilus truncatus*, Sow.

From the lias, Somersetshire.

153. The moiety of a bisected specimen of the camerated part of the shell of a *Nautilus* (*N. truncatus*?).

A considerable portion of the siphuncle is displayed, showing the dilatation of its calcareous walls beyond the collar or contracted tube formed by the septum. Forty-six chambers are displayed in this section.

From the inferior oolite ; locality unnoted.

154. A cast, in matrix, of the *Nautilus semistriatus*, d'Orb.

A small part of the shell is preserved near one umbilicus.

From the inferior oolite ; locality unnoted.

155. A cast, in matrix, of the *Nautilus excavatus*, Sow.

From the inferior oolite, Dorsetshire.



156. A moiety of a bisected specimen of the *Nautilus intermedius*, Sow.  
From the inferior oolite ; locality unnoted.
157. A bisected specimen of the *Nautilus polygonalis*, Sow.  
The portion of the siphuncle which is exposed shows that its parietes are calcareous, and dilated in the chamber ; and that, in the last-formed chambers the tube is situated nearer the outer or convex curve of the shell.  
From the inferior oolite of Dorsetshire.
158. A cast, in matrix, of the *Nautilus inornatus*, d'Orb.  
From the inferior oolite of France ; locality unnoted.
159. The moiety of a bisected specimen of a *Nautilus*.  
It is chiefly a cast in matrix ; and with the outer surface much abraded. The siphuncle is calcareous, dilated in the chambers, and central in position.  
From the inferior oolite or lias ; locality unnoted.
160. A bisected specimen, chiefly a cast in matrix, of a *Nautilus*.  
From the inferior oolite, Dorsetshire.
161. A cast, in matrix, of one of the vacated chambers of a large *Nautilus*.  
Apparently from an oolitic formation ; locality unnoted.
162. A cast, in matrix, of the first-formed chambers of a *Nautilus*.  
Apparently from an oolitic formation ; locality unrecorded.
163. The moiety of a bisected specimen of the chambered part of the shell, crushed and mutilated, of the *Nautilus striatus*, Sow.  
From the lias of Lyme Regis, Dorsetshire.
164. The moiety of a bisected specimen of the chambered part of the shell of the *Nautilus lineatus*, Sow.?  
From the rapidly decreased depth of the two last-vacated chambers the specimen had probably reached its full growth. The siphuncle is relatively narrower and is nearer the convex curve of the shell than in the *Nautilus radiatus* ; it is contracted and its walls are thickest where it enters the chamber, beyond which it maintains a nearly uniform diameter to near the next septum. Most of the vacated chambers have been filled by the same matrix as the siphuncle, through injury apparently to the walls of the shell

prior to fossilization; the first-formed chambers by their central and more protected position have received the carbonate of lime contained in solution in the liquid which has percolated through their pores.

From the lias at Weston near Bath, Somersetshire.

### Genus *Lituities*.

165. The larger moiety of a bisected *Lituities* (*Cornu-arietes*), Sow. ? showing sixteen of the vacated chambers which precede the large and almost straight chamber of occupation: the latter is filled by the dark matrix, the vacated chambers chiefly by light-coloured infiltrated spar; the septa are simple, and, as in *Nautilus* and *Spirula*, are concave towards the outlet.

From the Silurian formations at Kosorsz, Bohemia.

166. A fragment of rock in which is imbedded the camerated part of a *Lituities*.

From the Silurian formations at Kosorsz, Bohemia.

### Genus *Orthoceras*.

167. "A piece of red and white marble, 2 feet 5 inches long, containing an *Orthoceras* of white marble, of near the same length, and 2 inches over in the middle; the contour is well defined, but the concamerations are not apparent, and only in one or two places the siphunculus appears."—Hunterian MS. Catalogue.

Three of the septa, showing their degree of concavity, towards the outlet of the shell, and, in one, their double wall, are visible near the smaller end of this fine, though mutilated specimen.

From the Silurian formations of Bohemia.

168. "A slab 18 inches long, of red and ash-coloured stone, with an *Orthoceras* imbedded in it of a singular shape."—Hunterian MS. Catalogue.

This specimen has been longitudinally and unequally bisected; forty-five chambers are exposed in the portion of the shell here preserved; the central siphuncle has not been reached in this section.

From the Silurian formations at Oeland, shores of the Baltic.

169. A slab of reddish marble, with sections of an *Orthoceras*.  
 On one side two of these shells are exposed through their whole length, showing their long terminal chamber of occupation filled by the matrix; some of the vacated chambers are wholly, and most of them partially, filled by slowly infiltrated crystalline spar: the central siphuncle is shown near the apex of one of these specimens. On the opposite side of the slab the *Orthoceratites* have been more obliquely divided.  
 From the Silurian formations of Sweden.
170. A smaller slab of darker-coloured marble, which is almost entirely composed of *Orthoceratites*, portions of which are exposed, in various sections. The vacated chambers are chiefly filled by white spar.  
 Locality unnoted; probably from Sweden.
171. A portion of grey marble, one side of which has been cut and polished to display part of an *Orthoceras* therein imbedded.  
 Some of the vacated chambers are occupied by crystalline spar.  
 From a Silurian formation; locality unnoted.
172. A portion of reddish-grey marble, with one side polished, and showing, in relief, a part of an *Orthoceratites*.  
 The place of the siphuncle is shown in the exposed septum, at the narrow end of the shell.  
 From a Silurian formation; probably Bohemia.
173. A portion of rock with a fragment of an *Orthoceras*, showing the form of the vacated chamber and the position and proportion of the intercommunicating siphuncle.  
 From Silurian formations at Kosorsz, near Prague, Bohemia.
174. A portion of rock with a fragment of an *Orthoceras* cut and polished on one side, so as to show part of the siphuncle.  
 From a Silurian formation at Zettin, in Bohemia.
175. A portion of an *Orthoceras*, including the last-vacated chamber, and apparently much of the chamber of occupation: this is chiefly filled, as usual, with the dark-coloured matrix, and the vacated chamber by light-coloured spar; the

subcentral position of the siphuncle is shown on the convex side of the second partition.

The exterior of this specimen has been artificially polished.

From the Silurian formation at Kosorsz, near Prague, Bohemia.

176. A portion of rock to which adheres a fragment of an *Orthoceras*, including four vacated chambers and part of a fifth; these progressively enlarge, but not in the same ratio with the siphuncle, which presents a diameter of four lines at the smallest chamber, and a diameter of fourteen lines at the largest chamber.

From the Silurian formation at Kosorsz, Bohemia.

177. A portion of rock on one of the worn surfaces of which is exposed an oblique section of the camerated part of an *Orthoceras*. Some small fragments of an Encrinite are imbedded in the same matrix.

From the Silurian? limestone formation at Yas, New South Wales.

*Presented by G. Hobson, M.D.*

178. A portion of an *Orthoceras*.

From the Silurian formations at Kosorsz, Bohemia.

179. A portion of an *Orthoceras*, partly polished on one side.

From the Silurian formations at Kosorsz, Bohemia.

180. "A perpendicular half of an *Orthoceras*, loose or free, about 10 inches long, yet imperfect at the point; of coarse redstone, rugged on the outside: the inside shows twelve chambers all marked by prominent sparry lines."—Hunterian MS. Catalogue.

From the oldest Silurian formation at Kinnekulle, in Sweden.

This is one of the earliest known examples, in Geological time, of a Mollusk of the Cephalopodous class.

181. Three chambers of a straight camerated and siphonated shell; the chambers have simple borders, and the siphuncle a subcentral position, as in the genus *Orthoceras*.

Locality unnoted.

182. A detached chamber, of a full elliptical form, and with the general characters of that of an *Orthoceras*.

It has not the marginal notch which characterizes the corresponding part of a Nautilus.

Locality unnoted.

183. A portion of Silurian stone in which is imbedded a small portion of the parietal part of the shell, and a larger proportion of the siphuncle of the *Orthoceras duplex*, Wahl.

The siphuncle presents the appearance of a succession of short cylinders obliquely sheathed for a little way one within the other.

From the Silurian formations of Sweden.

184. Four of the segments of the siphuncle of the *Orthoceras duplex*, Wahl.

From the Silurian formations of Sweden.

185. A portion of a nodule of indurated clay-stone, containing casts of a small species of *Orthoceras*.

From the Devonian strata.

### Family *Ammonitidæ*.

#### Genus *Ammonites*.

##### *Characteristic exemplifications of this genus.*

186. One moiety of a vertically bisected and polished specimen of the chambered part of the shell of the *Ammonites Parkinsoni*, including upwards of ninety vacated chambers.

This specimen well illustrates the chief and most obvious differences of the Ammonite from the Nautilus. The septa are sinuous, and are more or less convex towards the outlet of the shell; the siphuncle is marginal, and is situated next the convex or outer curve of the shell; the tube is distinctly shown in several parts of the section; the tubular prolongation of the septum, or 'collar' of the siphon, projects towards the outlet of the shell, not, as in the Nautilites, in the opposite direction. On the outer side of the shell, the complex sinuosities of the border of the septa are well displayed; these sinuosities, or marginal 'sutures,' mark out processes or lobes, the arrangement and proportions of which vary in every species of Ammonite, and have accordingly afforded specific characters for the shells of this extensive genus.

Some of the earlier-formed chambers and parts of the siphuncle are filled by the oolitic matrix; the chambers which had their walls entire when the shell was imbedded have become more or less filled by beautifully formed crystals of calcareous spar.

From the lower oolite, Bridport, Dorsetshire.

*Purchased.*

187. A series of casts in crystalline carbonate of lime of chambers of the *Ammonites perarmatus*, Sow.

These casts, following the sinuosities of the original septa or walls of the chambers, remain interlocked together after the shell has perished, the margins interdigitating like the sutures of a skull.

The principal lobes defined by the sinuosities of the septa have received names for the convenience of the description of species; that marked, *d*, in the detached chamber is the *dorsal* lobe enclosing the siphuncle, the opposite smaller lobe is the *ventral* one, and the large intermediate lobes are the *lateral* ones: besides these there are smaller *auxiliary dorsal* and *auxiliary ventral* lobes. On the opposite end of the chamber there are *depressions*, answering to the lobes.

In the older works on Fossils, such separate casts of ammonitic chambers are called "spondylites."

From the oolitic formation called "coral-rag," Marsham, Oxfordshire.

188. One moiety of a vertically bisected and polished specimen of the *Ammonites obtusus*, Sow.

It shows well the extent of the last or inhabited chamber, and the effects of the influence of the animal matter of the decaying Cephalopod upon the petrifactive processes after death.

To the extent to which the last chamber had been vacated by the retraction and contraction of the *Ammonite* in the act of death, the ordinary surrounding liassic clay has penetrated, and become hardened like the surrounding matrix. The place of the particles of the slowly decomposing and dissolving mollusk has been gradually taken by crystals of infiltrated silex, which has been discoloured by the pigmental parts of the animal. The silex, which has been more slowly infiltrated in solution through the pores of the shell, into the deserted air-chambers, is of a much lighter colour.

From the lias of Charmouth, Dorsetshire.

*Presented by S. S. Rowe, Esq.*

189. A fragment of the *Ammonites cordatus*, Sow., exposing a portion of the siphuncle, which is recognizable by its dark colour: it preserves a uniform diameter of nearly a line, both in traversing the septa and the chambers.

From the calcareous grit, Calne, Wilts.

*Presented by Mrs. Baden Powell.*

190. A slab of partly petrified clay, in which is imbedded an entire but compressed specimen of the *Ammonites Jason*, Reinecke (*Amm. Elisabethæ*, Pratt).

In this remarkable specimen, the margin of the terminal or habitable chamber is prolonged into a narrow process, which is marked by those portions of the ribs of the shell which are convex forwards. Only a small portion of the outer surface of the shell is preserved; the inner surface being chiefly exposed.

*Presented by S. P. Pratt, Esq., F.R.S.*

191. A nodule of petrified clay, on one side of which is the impression of the *Ammonites serpentinus*, and near the position of the outlet of the shell are attached the two valves of the problematical fossil to which the name of *Aptychus* has last been given, and is most generally received.

From the circumstance of the *Aptychus* having been occasionally discovered within the dwelling-chamber of the Ammonite, and of sizes proportionate, in the several instances, to the shell of the Ammonite, it is supposed that the *Aptychus* formed part of the organization of the Ammonite, and might have served to defend the entry of the chamber, like an operculum.

Many valves of a small extinct species of *Ostrea* have become attached to the part of the nodule which was originally moulded upon the Ammonite, after that shell had become detached.

From the upper lias of Ilminster.

*Presented by Charles Moore, Esq.*

192. A portion of lithographic slate to which is attached the *Aptychus problematicus*, Ruppell.

From the oolitic formation at Solenhofen.

*Exemplifications of the range of Variety in the Form of the Shell in different species of Ammonites.*

193. The *Ammonites Blagdeni*, Sowerby (*Ammonites coronatus*, var. Zieten).

The exterior wall, or 'parietal' part of the shell, is produced into transverse ridges, or 'ribs,' some of which are 'integral' or extend from one side to the other, the alternate ones being partial; the extremities of some of the integral ridges are developed into tubercles.

The development and disposition of these ribs gave mechanical advantages for increasing the strength of the shell, founded on a principle which is practically applied in works of human art\*.

This specimen exhibits the extreme of that form of Ammonite characterized by the breadth of the shell: it also shows the rapid decrease in that diameter near the mouth of the last chamber, characteristic of the age and declining powers of growth of the animal.

From an oolitic stratum.

194. The *Ammonites Lamberti*, Sow.

This species exhibits the extreme of that form of Ammonite characterized by the narrowness of the shell, the dorsum, or convex curve, of the shell being carinate. Only a certain proportion of the chambered part of the shell is here preserved, as is commonly the case with examples of the present delicate fossil shell; and only the nacreous layer, impregnated with pyritic matter, is shown. Upon it may be traced the complex sinuosities of the border of the septa of the shell, by which all Ammonites differ from the Nautilites, in which their borders are simple or slightly waved.

From the oolitic formation called Oxford clay.

*Exemplification of Injury and Repair in the Ammonite.*

195. A mutilated specimen of the *Ammonites Goliathus*, d'Orb.

Only the nacreous layer of the shell remains. A portion of the shell, probably at the period when it formed the chamber of occupation, has been broken away during the lifetime of the animal, and has been repaired by fresh nacreous matter, wanting the ribbed structure of the originally formed shell.

The air-chambers here exposed are empty.

From the Oxford clay, France.

*Species of Ammonites, stratigraphically arranged.*

CRETACEOUS FORMATIONS.

196. The *Ammonites curvatus*, Sow.

From the chalk-marl, France.

\* See Buckland's Bridgewater Treatise, vol. vi. p. 340.



197. The *Ammonites Rothomagensis*, Brongniart.  
From the chalk-marl, France.
198. The *Ammonites Rothomagensis*, Brongn.  
From the chalk-marl, France.
199. Two young specimens of the *Ammonites Rothomagensis*.  
From the lower chalk, France.
200. The *Ammonites varians*, Sow.  
From the cretaceous formation called "Baculite limestone," Normandy.
201. The *Ammonites varians*, Sow.  
From the chalk-marl, France.
202. The *Ammonites varians*, Sow.  
From the chalk-marl, France.
203. Four specimens of the subcompressed variety of the *Ammonites varians*, Sow.  
From the chalk-marl ; locality unrecorded.
204. The *Ammonites leopoldinus*, d'Orb.  
From the Neocomian formations, Castellane, South of France.
205. The *Ammonites radiatus*, Brug.  
From the Neocomian formations, South of France.
206. Two mutilated specimens of the shell of the young of the *Ammonites pulchellus*,  
d'Orb.  
From the Neocomian formations, South of France.  
*Presented by M. Duval-Jouve.*
207. Four more or less mutilated shells, and a portion of the shell, of the *Ammonites*  
*Paraudieri*, d'Orb.  
From the Neocomian formations, South of France.  
*Presented by M. Duval-Jouve.*
208. The *Ammonites Fleurieusianus*, d'Orb.  
From the upper greensand, France.
209. The *Ammonites rostratus* (*Am. inflatus*), Sow.  
From the upper greensand, Wiltshire.

210. A young specimen of the *Ammonites rostratus*, Sow.  
From the upper greensand, Hampshire.
211. The *Ammonites Mantelli*, Sow.  
From the upper greensand, France.
212. The *Ammonites Mantelli*, Sow.  
From the upper greensand, France.
213. A cast, in siliceous stone, of the *Ammonites Mantelli*, Sow.  
A portion of the siphuncular canal and of the siphuncle is shown in this specimen.  
From the upper greensand, France.
214. Two smaller specimens of the *Ammonites Mantelli*, Sow.  
From the upper greensand, France.
215. The *Ammonites mammillaris*, Schlotheim (*Am. monilis*, Sow.).  
From the upper greensand, Folkestone.
216. The *Ammonites tuberculatus*, Sow.  
From the gault, Folkestone.
217. This specimen appears to be a cast of the shell of the *Ammonites Cassida*, Raspail.  
From the Neocomian formations, South of France.  
*Presented by M. Duval-Jouve.*
218. Two specimens of the shell, wanting the terminal chamber, of the young of the *Ammonites Thetys*, d'Orb.  
From the Neocomian formations, Blieux, South of France.  
*Presented by M. Duval-Jouve.*
219. A shell, wanting the terminal chambers, of the *Ammonites neocomiensis*, d'Orb.  
From the Neocomian formations, Cheiron, South of France.  
*Presented by M. Duval-Jouve.*
220. A specimen of the shell, wanting the terminal chambers, of the young of the *Ammonites Feraudianus*, d'Orb.  
From the Neocomian formations, Vergoux, South of France.  
*Presented by M. Duval-Jouve.*

221. The shell, wanting the terminal chambers, of the young of the *Ammonites Gra-sianus*, d'Orb.  
From the Neocomian formations, Cheiron, South of France.  
*Presented by M. Duval-Jouve.*
222. A tray of very young or small specimens of the *Ammonites picturatus*, d'Orb.  
From the Neocomian formations, South of France.  
*Presented by M. Duval-Jouve.*
223. Four shells, wanting the terminal chambers, of the young, at different ages, of the *Ammonites Guettardi*, Raspail.  
From the cretaceous beds called "Marnes aptesiennes," at Blieux, South of France.  
*Presented by M. Duval-Jouve.*
224. Four specimens of the shell, more or less imperfect, of the *Ammonites Duval-ianus*, d'Orb.  
From the "Marnes aptesiennes," Vergoux, South of France.  
*Presented by M. Duval-Jouve.*
225. Two specimens of the shell, wanting the terminal chambers, of the young of the *Ammonites Rouyanus*, d'Orb.  
From the "Marnes aptesiennes," Vergoux, South of France.  
*Presented by M. Duval-Jouve.*
226. The shell, wanting the terminal chambers, of the *Ammonites Marsianus*, d'Orb.  
From the "Marnes aptesiennes," Vergoux, South of France.  
*Presented by M. Duval-Jouve.*
227. The *Ammonites Martinii*, d'Orb.  
From the "Marnes aptesiennes," Vergoux, South of France.  
*Presented by M. Duval-Jouve.*
228. A portion of the shell of the *Ammonites crassicostatus*, d'Orb.  
From the "Marnes aptesiennes," Vergoux, South of France.  
*Presented by M. Duval-Jouve.*
229. The shell, wanting the terminal chambers, of the *Ammonites Nisus*, d'Orb.  
From the "Marnes aptesiennes," Blieux, France.  
*Presented by M. Duval-Jouve.*

230. The shell, wanting the terminal chamber, of the *Ammonites serratus*, Parkinson, var. *depressus*.  
From the gault, Escragnoles, South of France.  
*Presented by M. Duval-Jouve.*
231. The shell, wanting the terminal chamber, of the young of the *Ammonites serratus*, Parkinson, var. *tumidus*.  
From the gault, Escragnoles, South of France.  
*Presented by M. Duval-Jouve.*
232. A specimen, wanting the terminal chambers, of the shell of the *Ammonites Lyellii*, Leymerie.  
From the gault, Escragnoles, South of France.  
*Presented by M. Duval-Jouve.*
233. A small mutilated shell and a portion of a second specimen of the *Ammonites Delarnei*, d'Orb.  
This very rare species is from the gault, Escragnoles, South of France.  
*Presented by M. Duval-Jouve.*
234. A small specimen of the *Ammonites versicostatus*, Michelin.  
From the gault, Escragnoles, South of France.  
*Presented by M. Duval-Jouve.*
235. A cast of the interior of the *Ammonites difficilis*, d'Orb.  
This rare species is from the gault, Escragnoles, South of France.  
*Presented by M. Duval-Jouve.*
236. A cast of the interior of the shell of the *Ammonites Beudanti*, Brongniart.  
From the gault, Escragnoles, South of France.  
*Presented by M. Duval-Jouve.*
237. The shell, wanting the terminal chamber, of the *Ammonites Roissianus*, d'Orb.  
From the gault, Escragnoles, South of France.  
*Presented by M. Duval-Jouve.*
238. Two mutilated specimens of the young of the *Ammonites latidorsatus*, Michelin.  
From the gault, Escragnoles, South of France.  
*Presented by M. Duval-Jouve.*

239. The *Ammonites circularis*.  
From the gault, France.
240. The *Ammonites serratus*, Parkinson (*Amm. dentatus*, Sow.).  
From the gault, Folkestone.
241. Three portions of the *Ammonites dentatus*, d'Orb. (*Amm. interruptus*, Brugière).  
From the gault (blue clay), at Dewhurst, Berks, 14 feet below the surface ;  
found in digging a shaft for the Great Western Railway.  
*Presented by Anthony White, Esq.*
242. The *Ammonites splendens*, Sow.  
From the gault, Folkestone.
243. The *Ammonites lautus*, Sow.  
From the gault, Folkestone.
244. The *Ammonites lautus*, Sow.  
From the gault, Cambridge.
245. Two specimens of the *Ammonites varicosus*, Sow.  
From the gault, Folkestone.
246. Two somewhat mutilated specimens of the (probably opercula of an Ammonite,  
called) *Aptychus Didayi*, Coquand.  
From the Neocomian formation at Senez, South of France.  
*Presented by M. Duval-Jouve.*

## OOLITIC FORMATIONS.

247. A series of the young of different sizes of the *Ammonites perarmatus*, Sow.  
From the oolitic formation, called calcareous grit, Scarborough.
248. The *Ammonites perarmatus*.  
From the calcareous grit, Scarborough.
249. The *Ammonites perarmatus*.  
From the coral-rag, Yorkshire.
250. A larger specimen of the *Ammonites perarmatus*.  
This shows well the foliated sutures of the septa.  
From the coral-rag, Malton.

251. A similar-sized specimen of the *Ammonites perarmatus*.  
The double series of tubercles are well developed on each side.  
From the calcareous grit, Scarborough.
252. A specimen, chiefly consisting of a cast, of the *Ammonites perarmatus*.  
From the calcareous grit, Scarborough.
253. The *Ammonites perarmatus*.  
From the calcareous grit, Wiltshire.
254. A cast of five of the earlier-formed chambers of the *Ammonites perarmatus*.  
From the calcareous grit, Wiltshire.
255. Separated casts of the earlier-formed chambers of the *Ammonites perarmatus*.  
From the calcareous grit, Wiltshire.
256. Casts of two chambers of the *Ammonites perarmatus*.  
From the calcareous grit, Wiltshire.
257. Casts, in matrix, of a series of chambers of a large specimen of the *Ammonites perarmatus*.  
From the calcareous grit, Wiltshire.
258. A cast, in siliceous spar, of the chambered part of the shell of the *Ammonites vertebralis*, Sow.  
The last preserved septum shows well the characteristic lobes and sinuosities of the species.  
From the coral-rag, Yorkshire.
259. A small specimen, with the terminal part of the shell broken away, of the *Ammonites callovicensis*, Sow.  
From the oolitic formation called 'Kelloway's Rock;' locality not recorded.
260. The cast, in matrix, of a larger specimen of the *Ammonites callovicensis*, Sow.  
From the Kelloway's rock of Orenbourg, Germany.
261. One moiety of a bisected specimen of the *Ammonites callovicensis*, Sow.  
The septa present a well-marked convexity towards the outlet of the shell;



the vacated chambers are filled, as usual, with crystallized spar: the last chamber is filled with the oolitic matrix.

From the Kelloway's rock of Orenbourg, Germany.

262. A specimen, with the last chamber crushed and in part lost, of the *Ammonites Königi*, Sow.

From the Kelloway's rock, Germany.

263. A similar specimen of the *Ammonites Königi*.

From the Kelloway's rock, Germany.

264. A smaller specimen of the *Ammonites Königi*.

From the Kelloway's rock, Wiltshire.

265. A cast, in matrix, of the first-formed chambers of the *Ammonites sublævis*, Sow., showing the peculiar development of the shell in breadth.

Locality unnoted. The species, which is the same with the *Nautilus modiolaris*, Luid, occurs in both the Oxford clay and Kelloway's rock, of parts of England.

266. Casts, in matrix, of the young, at two stages of growth, of the *Ammonites sublævis*.

From the Kelloway's rock, Draycot, Wiltshire.

267. A cast, in matrix, of an older specimen of the *Ammonites sublævis*.

From the Kelloway's rock, Wiltshire.

268. The cast of the first-formed chambers of the *Ammonites sublævis*.

A small portion of the shell remains near each umbilicus, which is filled by the matrix.

From the Kelloway's rock, Wiltshire.

269. One moiety of a vertically bisected and polished cast of the first-formed chambers of the *Ammonites sublævis*.

A considerable portion of the siphuncle is exposed in this section, and is recognizable by its dark structure. Most of the chambers are filled by the crystallized silex, but the clay of the original matrix has got access to the last chambers here preserved.

From the Kelloway's rock, Wiltshire.

270. A portion, chiefly a cast in matrix, of the *Ammonites sublævis*, broken across, transversely.

A cast of the deep and large umbilicus is preserved; the increasing thickness of the shell from the bottom of the umbilicus to the outer surface is well shown.

From the Kelloway's rock, Draycot, Wiltshire.

271. A portion of a cast, in matrix, of the *Ammonites sublævis*.

The chambers of the shell are occupied chiefly with subcrystalline silex: the umbilicus is filled with the petrified matrix: the degree in which this has adapted itself to the various and minute sculpturing of the surface of the cavity it fills, indicates its original plastic condition. The complex foliated sutures of the shell are well shown in this specimen.

From the Kelloway's rock, Draycot, Wiltshire.

272. Casts of the first-formed chambers of two specimens of the *Ammonites sublævis*: cemented together by the matrix.

From the Kelloway's rock, Wiltshire.

273. A cast in matrix, with a portion of the shell of the *Ammonites Gowerianus*, Sow.

From the Kelloway's rock; locality unnoted.

274. A similar but larger specimen of the *Ammonites Gowerianus*, Sow.

From the Kelloway's rock; locality unnoted.

275. The *Ammonites spinosus*, Sow.

From the oolitic formation called "Kimmeridge clay;" locality unnoted.

276. A small specimen of the *Ammonites triplicatus*.

From the Kimmeridge clay, Dorsetshire.

277. A larger specimen of the *Ammonites triplicatus*.

From the Kimmeridge clay, Dorsetshire.

278. A bisected and polished specimen of the *Ammonites triplicatus*.

From the Kimmeridge clay, Germany.

279. A larger specimen, bisected and polished, of the *Ammonites triplicatus*.

From the Kimmeridge clay; locality unnoted.



280. A similar specimen, bisected and polished, of the *Ammonites triplicatus*.  
From the Kimmeridge clay, Germany.
281. A larger, but mutilated specimen of the *Ammonites triplicatus*.  
From the Kimmeridge clay; locality unnoted.
282. The *Ammonites triplicatus*.  
From the Kimmeridge clay; locality unnoted.
283. A specimen, wanting the last chamber, of a variety of the *Ammonites triplicatus*.  
From the oolitic formation called "White Jurassic," of Wirtemberg.
284. A cast, in matrix, of the *Ammonites planulatus*, Schlotheim.  
From the white jurassic, Germany.
285. A small specimen, with the terminal chamber fractured, of the *Ammonites planulatus* (var.), Zieten.  
From the white jurassic, Wirtemberg.
286. A small specimen of the *Ammonites colubrinus*, Reinecke (*Amm. Bakeriæ*, Sow.?).  
From the white jurassic, Wirtemberg.
287. An older specimen of the *Ammonites colubrinus*, Reinecke.  
From the white jurassic, Wirtemberg.
288. A larger specimen, but wanting the terminal chambers, of the *Ammonites colubrinus*, Reinecke.  
From the white jurassic, Germany.
289. Two similar-sized specimens of the *Ammonites colubrinus*, Reinecke.  
From the white jurassic, Germany.
290. A larger specimen of the *Ammonites colubrinus*, Reinecke (*Amm. triplex*, Sow.).  
One side is crushed; the opposite side shows the characteristic close-set bifurcate ribs in high relief.  
From the white jurassic, Germany.
291. A bisected and polished specimen of the *Ammonites colubrinus*, Reinecke.  
From the white jurassic, Germany.

292. Two very young specimens of different ages of the *Ammonites polyplocus*, Reinecke.  
From the white jurassic, Germany.
293. Two young specimens of different sizes of the *Ammonites polyplocus*, Reinecke.  
From the white jurassic, Germany.
294. An older specimen of the *Ammonites polyplocus*, Reinecke.  
The longer and shorter costæ and the smooth dorsal channel are well shown in this specimen.  
From the white jurassic, Germany.
295. A small specimen of the *Ammonites triplex*, Sow. (this is probably a variety of the *Amm. colubrinus*, Reinecke).  
The costæ are relatively a little wider apart in this specimen.  
From the white jurassic, Germany.
296. Three young specimens of different ages of the *Ammonites crenatus*, Reinecke.  
From the white jurassic, Wirtemberg.
297. A young specimen of the *Ammonites Bakeriæ*, Sow. (probably a variety of the *Ammonites colubrinus*).  
From the white jurassic, Wirtemberg.
298. A small specimen of the *Ammonites anceps*, Reinecke.  
From the white jurassic, Wirtemberg.
299. A small specimen of the *Ammonites inflatus*, Reinecke.  
From the white jurassic, Wirtemberg.
300. Five casts, in matrix, of the young, of different sizes, of the *Ammonites pictus*, Zieten.  
From the white jurassic, Switzerland.
301. A cast of *Ammonites pictus*, Zieten.  
From the white jurassic, Kirkhein, Wirtemberg.
302. A cast of the *Ammonites macrocephalus*, Schloth.  
This specimen illustrates the subcompressed variety of the species.  
From the white jurassic, Germany.

303. A cast, in matrix, of a larger specimen of the *Ammonites macrocephalus*, Schloth.  
From the white jurassic, Germany.
304. A cast, in matrix, of the *Ammonites flexuosus*, Voltz.  
From the oolitic formation called "White Jura," Germany.
305. A block of lithographic stone which has been deposited around the *Ammonites macrocephalus*, Schlotheim, and has formed, as it were, a mould of the shell.  
From the oolitic formation called lithographic slate, Pappenheim, Germany.
306. A tray of single valves of the *Aptychus crassus*.  
From an upper oolitic formation, Germany.
307. The *Ammonites athletus*, Phillips.  
From the oolitic formation called "Oxford clay," Huntingdon.
308. The *Ammonites athletus*.  
From the Oxford clay; locality unnoted.
309. The *Ammonites Williamsoni*, Phillips.  
From the Oxford clay, Wootton Bassett.
310. A cast, with the nacreous layer of the shell partially pyritized, of the *Ammonites Lalandeanus*, d'Orb.  
From the Oxford clay, Normandy.
311. Two specimens, each wanting the terminal chamber, of the *Ammonites Lalandeanus*.  
From the Oxford clay, Normandy.
312. A bisected and polished specimen of the *Ammonites Lalandeanus*.  
From the Oxford clay; locality unnoted.
313. The young of the *Ammonites Lalandeanus*.  
From the Oxford clay, Normandy.
314. One moiety of a bisected specimen of an incomplete *Ammonites Goliathus*, d'Orb.  
From the Oxford clay, Normandy.

315. A cast, in matrix, of the *Ammonites Arduennensis*, d'Orb.  
From the Oxford clay, Normandy.
316. A specimen which, though represented chiefly by a cast in matrix, and wanting the terminal chambers, is an unusually fine specimen of the *Ammonites Bakeriæ*.  
The earliest whorls and foliated sutures of the shell are well shown. The nacreous layer of the shell has been superseded apparently by a layer of pyritic matter.  
From the Oxford clay, France.
317. A young specimen of the *Ammonites Bakeriæ*, Sow.  
From the Oxford clay, France.
318. A small specimen, bisected and polished, of the *Ammonites Bakeriæ*.  
From the Oxford clay, Bamberg, Germany.
319. A tray of young specimens, of different sizes, of the *Ammonites denticulatus*, Zieten.  
From the Oxford clay, Germany.
320. A young specimen of the *Ammonites Duncani*, Sow., showing the tubercles, developed at that period of growth, which have occasioned its description as a distinct species by Sowerby under the name of *Ammonites spinosus*, and by Schlotheim under that of *Amm. ornatus*.  
From the Oxford clay; locality unnoted.
321. Four specimens of the young, of different sizes, of the *Ammonites Duncani*, Sow. These also show the tuberculate character.  
From the Oxford clay, Germany.
322. Two young specimens, of different sizes, of the *Ammonites Duncani*.  
From the Oxford clay, but by their colour probably from a different locality from the foregoing.
323. An older specimen of the *Ammonites Duncani*, retaining the spiny character, bisected and polished. The vacated chambers are large; the spiny dorsum of the earlier-formed ones are exposed in the section. Pyritic matter has taken the place of the nacreous layers of the septa.  
From the Oxford clay, Germany.

324. A small and somewhat crushed specimen of the *Ammonites Duncani*.  
The tubercles and spines are not developed in this specimen, which is inferior in size to the preceding.  
From the Oxford clay.
325. Two older specimens, of different sizes, of the *Ammonites Duncani*.  
All trace of the primitive spiny character is lost in these.  
From the Oxford clay of Normandy.
326. A larger specimen of the same variety of the *Ammonites Duncani*.  
From the Oxford clay, Germany.
327. Two specimens of the *Ammonites annularis*, Reinecke, both wanting the terminal chambers.  
From the Oxford clay, Germany.
328. A portion of the *Ammonites catenulatus*, Reinecke.  
From the Oxford clay, Germany.
329. A tray of small specimens of the *Ammonites hecticus*, Reinecke.  
From the Oxford clay, Bavaria.
330. A tray of small specimens of the *Ammonites hecticus*.  
From the Oxford clay, Bavaria.
331. A tray including larger specimens of the *Ammonites hecticus*.  
From the Oxford clay, Bavaria.
332. Five specimens of the young of different sizes of the *Ammonites cordatus*, Sow.  
From the Oxford clay, or an equivalent oolitic formation, probably of France; locality unrecorded.
333. Two specimens of the young of different sizes of the *Ammonites cordatus*.  
From the Oxford clay; locality unrecorded.
334. The young of the *Ammonites cordatus*.  
From the Oxford clay, Weymouth.
335. Two specimens of the *Ammonites cordatus*.  
To the smaller specimen one of the valves of a fossil bivalve adheres; the larger specimen shows the progressively increasing prominence of the integral ribs or ridges of the shell, as its growth proceeds.  
From an oolitic formation, equivalent to the Oxford clay, Normandy.

336. An older specimen of the *Ammonites cordatus*, showing an unusually well-marked and prominent development of both the integral and interrupted ribs, which are less numerous in this variety.  
From a middle oolitic formation, France.
337. An older specimen of the *Ammonites cordatus*, showing less prominent ridges; the complex course of the convoluted sutures of the successive chambers is well displayed in this specimen.  
From a middle oolitic formation, France.
338. A vertically bisected and polished specimen of the *Ammonites cordatus*. It is the variety with more numerous and less developed ribs. The bending of the septa in opposite directions is such as to render their section, as in the present example, in a great degree concave towards the outlet. Siliceous matter has percolated and crystallized in most of the vacated chambers.  
From the Oxford clay, Weymouth.
339. A variety, bisected and polished, of the *Ammonites cordatus*, with more numerous and shallow chambers.  
From the Oxford clay, Dorsetshire.
340. A small and mutilated specimen, bisected and polished, of the *Ammonites cordatus*.  
From the Oxford clay, Dorsetshire.
341. Three specimens of the young of different ages of the *Ammonites Arduensis*, d'Orb.  
From the Oxford clay; locality unnoted. The species has been found in Normandy.
342. Three young specimens of different sizes of the *Ammonites annularis*, Reinecke.  
From the Oxford clay, Germany.
343. A young specimen of the *Ammonites flexuosus*, Reinecke.  
From the Oxford clay, Germany.
344. A small specimen of the *Ammonites Castor*, Reinecke.  
From the Oxford clay, Germany.

345. A tray of very young specimens of the *Ammonites convolutus*, Reinecke.  
From the Oxford clay, Germany.
346. Five young specimens of the *Ammonites convolutus*. The nacreous layer shows a golden lustre.  
From the Oxford clay, Germany.
347. A tray of young specimens of different sizes of the *Ammonites convolutus*.  
From the Oxford clay, Germany.
348. A young specimen exhibiting the subcompressed variety of the *Ammonites convolutus*.  
From the Oxford clay, Germany.
349. An older specimen of the compressed variety of the *Ammonites convolutus*.  
From the Oxford clay, Germany.
350. Three specimens of the *Ammonites crenatus*, Bruguière (*Amm. cristatus*, Sow.).  
This species derives its name from the series of compressed tubercles developed from the convex curve of the shell; which give it a crenated contour, like a Cock's comb.  
From the Oxford clay, Huntingdon.
351. Three young specimens of different sizes of the *Ammonites tumidus*, Reinecke.  
One of these shows the sudden expansion of the terminal chamber.  
From the Oxford clay, Germany.
352. A larger specimen, wanting the terminal chamber, of the *Ammonites tumidus*, Reinecke.  
From the Oxford clay, Germany.
353. A tray of young specimens of different sizes of the *Ammonites Lamberti*, Sow. (*Amm. Mariæ*, d'Orb.).  
From the Oxford clay, Germany.
354. Five young specimens of different sizes of the *Ammonites Lamberti* (var. *Amm. omphaloïdes*, Sow.).  
From the Oxford clay, Germany.

355. Two young specimens of the *Ammonites Lamberti*, but probably, by their colour, different from that of the preceding.  
From the Oxford clay, Germany; locality unnoted.
356. Two specimens of the *Ammonites Lamberti* (var. *Ammonites omphaloïdes*, Sow.).  
From the Oxford clay; locality unnoted.
357. Three specimens of larger size of the *Ammonites Lamberti*.  
From the Oxford clay, Germany.
358. A small specimen, wanting the terminal part of the shell, of the *Ammonites Lamberti*, Sow. (var. *Amm. omphaloïdes*, Sow.).  
From the Oxford clay.
359. The *Ammonites Lamberti*; the terminal chamber of the shell are wanting.  
From the Oxford clay; locality unnoted.
360. A vertically bisected and polished specimen of the young of the *Ammonites Lamberti*.  
The vacated chambers are shallow and consequently numerous; the undulations of the septum are such as to present, in this section, chiefly a concavity towards the outlet.  
From the Oxford clay, Germany.
361. A small specimen, wanting the last chambers, vertically bisected and polished, of the *Ammonites Lamberti*.  
Most of the chambers of the outer whorl are filled by the clay matrix.  
From the Oxford clay; locality unnoted.
362. A mutilated specimen, bisected and polished, of the *Ammonites Lamberti*.  
The crushed and dislocated septa are recognizable by the pyritic matter which their nacreous layer has attracted.  
From the Oxford clay; locality unnoted.
363. A specimen, bisected and polished, of the *Ammonites Lamberti*.  
Showing the different mineral substances, argillaceous, metallic, and siliceous, with which the chambers have become filled.  
From the Oxford clay, Germany.



364. A specimen, bisected and polished, of the *Ammonites Lamberti*.  
 Showing the chambers filled with different mineral substances as in the preceding specimen.  
 From the Oxford clay; locality unnoted.
365. A moiety of a vertically bisected specimen of the *Ammonites Lamberti*.  
 Some of the chambers are merely lined by a thin layer of crystals of spar.  
 From the Oxford clay, Germany.
366. A full-grown specimen, bisected and polished, of the *Ammonites Lamberti*.  
 From the Oxford clay, Germany.
367. Three young specimens of the *Ammonites Mariæ*, d'Orb.  
 If this be a variety of the *Amm. Lamberti*, it is a well-marked one, through the greater breadth of the shell, in which it resembles the proportions of the *Amm. Lalandeanus*.  
 From the Oxford clay, Germany.
368. An older specimen of the *Ammonites Mariæ*, d'Orb.; probably a variety of *Ammonites Lamberti*, Sow.  
 From the Oxford clay; locality unnoted.
369. The *Ammonites funiferus*, Phillips.  
 From the Oxford clay, Trowbridge.      Presented by R. N. Mantell, Esq.
370. The *Ammonites excavatus*, Sow.  
 From the Oxford clay, Huntingdonshire.
371. A portion of the shell of the *Ammonites serratus*, Sow.  
 The major part is represented by casts of the chambers, which are remarkable for their shallowness.  
 From the Oxford clay; locality unnoted.
372. A young specimen of the *Ammonites Jason*, Reinecke.  
 From the Oxford clay, Germany.
373. An older specimen of the *Ammonites Jason*.  
 From the Oxford clay, Germany.

374. Three specimens of different sizes of the *Ammonites Jason*.

From the Oxford clay, Normandy.

375. A slab of the oolitic formation called Oxford clay ; in which is imbedded an almost entire shell of the *Ammonites Comptoni*, Pratt.

Of the long and narrow anterior productions of the walls of the terminal chamber, the base of that of one side is preserved, showing its inner concave surface, and the apex of that of the other side, showing its outer convex surface.

From the Oxford clay, Christian-Malford, Wiltshire.

*Presented by S. P. Pratt, Esq., F.R.S.*

376. A portion of a very large *Aptychus* (probably one of the opercular valves of an Ammonite).

From the Oxford clay.

*Presented by Prof. Owen, F.R.S.*

377. A fine specimen of the *Ammonites Humphriesianus*, Sow.

The shell, which presents almost a circular transverse section, is disposed in seven complete revolutions on the same plane, and the chamber of occupation, indicated by the sudden expansion of the terminal fractured parts, has been broken away.

From the inferior oolite, Dorsetshire.

378. A less perfect specimen of the *Ammonites Humphriesianus*.

From the inferior oolite, Dorsetshire.

379. A cast, in matrix, of two young specimens of a variety of the *Ammonites Humphriesianus* ; showing a more rapid increase of thickness in the successive whorls, and a stronger development of the terminal tubercles of the central ridges, than in No. 376.

From the inferior oolite ; locality unnoted.

380. A cast, in matrix, of a larger specimen of the same variety of the *Ammonites Humphriesianus*.

From the inferior oolite ; locality unnoted, but apparently the same as the foregoing.

381. A less perfect specimen of the *Ammonites Humphriesianus*, vertically bisected.  
The internal structure has been almost obliterated, but the relative size of the vacated chambers and the convexity of the septa, towards the outlet of the shell, may be observed.  
From the lower oolite, Dorsetshire.
382. A mutilated specimen, chiefly a cast in matrix, of the *Ammonites Brodiei*, Sow.  
The deep umbilicus is well shown on one side.  
From the inferior oolite, Dorsetshire.  
*Presented by Samuel Stutchbury, Esq., F.L.S.*
383. The *Ammonites insignis*, Schubler.  
From the inferior oolite, or upper lias, of France.
384. The *Ammonites insignis*.  
From the inferior oolite, Normandy.
385. Two young specimens of different sizes of the *Ammonites coronatus*, Zieten (*Amm. Blagdeni*, Sow.).  
From the inferior oolite; locality unnoted.
386. A similar cast of a smaller specimen of the *Ammonites coronatus*, Zieten.  
From the coral-rag, Wirtemberg.
387. A cast, in siliceous spar, of a specimen, wanting the terminal chambers, of the *Ammonites coronatus*.  
From the coral-rag, Wirtemberg.
388. A cast, somewhat mutilated, in matrix, of a larger specimen of the *Ammonites coronatus*.  
From the inferior oolitic formation called "Kelloway's rock;" locality unnoted.
389. A cast of a small specimen, wanting the terminal chambers, of the *Ammonites coronatus*.  
From the inferior oolite, Normandy.
390. A portion of a mass of oolitic stone which has been deposited around an Am-

monite, probably the *Ammonites coronatus*, and has formed, as it were, a mould of the shell; the present specimen being that part which has filled one of the lateral cavities of the spiral, called the 'umbilicus' of the shell.

From the inferior oolite; locality unnoted.

391. A cast, in siliceous spar, bisected and polished, of a specimen, wanting the terminal chambers, of the *Ammonites coronatus*.

From the coral-rag, Wirtemberg.

392. A similar cast, bisected and polished, of a smaller specimen of the *Ammonites coronatus*.

From the coral-rag, Wirtemberg.

393. A similar cast, bisected and polished, of a smaller specimen of the *Ammonites coronatus*.

From the coral-rag; locality unnoted.

394. A cast, in matrix, of the *Ammonites Brocchii*, Sow.

From the inferior oolite, Bayeux, Normandy.

395. Three young specimens of different sizes of the *Ammonites Brocchii*.

From the inferior oolite, Somersetshire.

396. The *Ammonites Braikenridgii*, Sow.

From the inferior oolite, Switzerland.

397. The *Ammonites Braikenridgii*, Sow.

From the inferior oolite, Switzerland.

398. A specimen of the *Ammonites linguiferus*, d'Orb., wanting the terminal chamber.

From the inferior oolite. *Hunterian.*

399. A small specimen of the *Ammonites linguiferus*.

Inferior oolite. *Hunterian.*

400. A small specimen of the *Ammonites Murchisonæ*, Sow. (*Ammonites corrugatus*, Sow.).

From the inferior oolite; locality unnoted.

401. The young of the *Ammonites Murchisonæ*, Sow.  
From the inferior oolite of Germany.
402. An older specimen of the *Ammonites Murchisonæ*.  
From the inferior oolite of Germany.
403. An older specimen of the *Ammonites Murchisonæ*.  
From the inferior oolite of Germany.
404. Two specimens of the *Ammonites Murchisonæ*.  
From the inferior oolite in the neighbourhood of Mulhausen, Switzerland.
405. The *Ammonites Truelli*, d'Orb.  
From the inferior oolite, Bridport.
406. The *Ammonites subradiatus*, Sow.  
From the inferior oolite, Germany.
407. The *Ammonites Garantianus*, d'Orb.  
From the inferior oolite; locality unnoted.
408. The *Ammonites Garantianus*.  
From the inferior oolite, Normandy.
409. A portion of a smaller specimen of the *Ammonites Garantianus*.  
From the inferior oolite, France.
410. Five very young specimens of different sizes of the *Ammonites Sauzei*, d'Orb.  
From the inferior oolite, France.
411. An older specimen of the *Ammonites Sauzei*.  
From the inferior oolite; locality unrecorded.
412. A similar-sized specimen of the *Ammonites Sauzei* (a variety).  
From the inferior oolite, Normandy.
413. A cast in matrix of a larger specimen of the *Ammonites Sauzei*.  
From the inferior oolite, Bridport.
414. The *Ammonites bullatus*, d'Orb.  
From the inferior oolite, France.

415. Two small specimens of the *Ammonites Gervillii*, Sow.  
From the inferior oolite; locality unrecorded.
416. A small specimen of the *Ammonites dimorphus*, d'Orb.  
From the inferior oolite; locality unnoted.
417. Three young specimens of different sizes of the *Ammonites Martiusii*, d'Orb.  
From the inferior oolite, France.
418. Three young specimens of different sizes of the *Ammonites Parkinsoni*, Sow.  
From the inferior oolite; locality unrecorded.
419. Two young specimens of different sizes of the *Ammonites Parkinsoni*, Sow.  
From the inferior oolite, Germany.
420. A somewhat older specimen of the *Ammonites Parkinsoni*, Sow.  
From the inferior oolite, Germany.
421. An older specimen of the *Ammonites Parkinsoni*.  
The place of the siphon is indicated by a shallow groove along the dorsum.  
From the inferior oolite, Germany.
422. The *Ammonites Parkinsoni*.  
From the inferior oolite; locality unrecorded.
423. A specimen, bisected and polished, of the *Ammonites Parkinsoni*.  
It appears to include a considerable proportion of the last chamber, which is filled by an oolitic matrix, well exemplifying the resemblance to the roe or eggs of fish, from which the name of that class of geological formations is derived.  
Some of the first-formed chambers are filled by crystals of infiltrated siliceous matter.  
From the inferior oolite of Germany.
424. One moiety of a bisected specimen of *Ammonites Parkinsoni* (a variety).  
From the inferior oolite; locality unrecorded.
425. A specimen, vertically bisected and polished, of the *Ammonites Parkinsoni* (a variety).  
From the inferior oolite, Germany.

426. A bisected and polished specimen of the *Ammonites Parkinsoni*.  
From the inferior oolite, Dorsetshire.
427. The *Ammonites Parkinsoni*.  
From the inferior oolite, Dorsetshire.
428. A specimen, wanting the terminal chamber, of the *Ammonites dorsettensis*,  
Wright.  
From the inferior oolite, Bridport.
429. A specimen, bisected and polished, of the *Ammonites dorsettensis*.  
From the inferior oolite, Bridport.
430. A larger specimen, bisected and polished, of the *Ammonites dorsettensis*.  
From the inferior oolite, Bridport.
431. The *Ammonites arbustigerus*, d'Orb.  
From the inferior oolite, Normandy.
432. The *Ammonites Brongiartii*, Sow.  
It shows the gradual diminution in breadth of the last-formed chamber.  
From the inferior oolite, Somersetshire.
433. A split nodule of liassic clay, exposing the *Ammonites communis*, Sow.  
From the lias, Whitby, Yorkshire.
434. A specimen of the *Ammonites communis*, Sow., with the last chamber broken  
away.  
It is described in the MS. Catalogue as being "ribbed and bifurcated on  
the back;" the latter expression refers to the bifurcation of certain of the  
ribs or ridges of the shell, as they approach the convex part of the curve of  
the shell.  
From the liassic formation called "alum shale," Whitby.
435. A very small specimen of the *Ammonites communis*.  
From the lias; locality unrecorded.
436. Two smaller specimens of the *Ammonites communis*.  
From the lias; locality unrecorded.

437. A small specimen of the *Ammonites communis*.  
From the white lias ; locality unrecorded.
438. The moiety of a split nodule of liassic clay, in which is imbedded the *Ammonites communis*, Sow.  
From the lias of Yorkshire.
439. Two specimens of the *Ammonites communis*.  
From the liassic formation called alum shale, Whitby. *Hunterian.*
440. The *Ammonites communis*.  
From the alum shale, Whitby.
441. A small specimen, bisected and polished, of the *Ammonites communis*.  
From the lias, Whitby.
442. A similar specimen, bisected and polished, of the *Ammonites communis*.  
From the lias, Whitby.
443. A larger specimen, bisected and polished, of the *Ammonites communis*.  
From the liassic formation called alum shale, Whitby.
444. A larger specimen, bisected and polished, of the *Ammonites communis*.  
From the alum shale, Whitby.
445. The *Ammonites Davæi*, Sow.  
From the lias ; locality unrecorded.
446. A fine specimen of the *Ammonites Holandrei*, d'Orb.  
The umbilicus is covered by a portion of the matrix on both sides of the shell.  
From the liassic formation called alum shale, Whitby.
447. A smaller specimen of the *Ammonites Holandrei*, d'Orb., bisected and polished.  
From the alum shale, Whitby.
448. A suite of six young specimens of different ages of the *Ammonites bifrons*, Bruguière.  
From the alum shale, Whitby.



449. A smaller specimen of the *Ammonites bifrons*.  
The siphuncular keel is well shown.  
From the alum shale, Whitby.
450. A similar specimen of the *Ammonites bifrons*.  
A great part of the siphuncular keel has been removed, exposing the siphon.  
From the alum shale, Whitby.
451. A specimen, bisected and polished, of the *Ammonites bifrons*.  
From the upper lias, Yorkshire.
452. The *Ammonites bifrons*.  
From the alum shale, Whitby.
453. A mutilated moiety of a bisected and polished specimen of the *Ammonites bifrons*.  
From the alum shale, Whitby.
454. A specimen, bisected and polished, of the *Ammonites bifrons*.  
From the alum shale, Whitby.
455. A fine example, bisected and polished, of the *Ammonites bifrons*.  
The air-chambers are filled with variously stained spar; the last or dwelling-chamber is of great length, and is filled by petrified mud or clay, with carbonaceous matter.  
From the alum shale, Whitby.
456. A mutilated specimen of the *Ammonites bisulcatus*, Sow., one side of which is covered by the matrix.  
From a liassic formation; locality unrecorded. *Hunterian*.
457. A specimen of the *Ammonites spinatus*, Brug., with one side covered by liassic clay, in which are younger specimens of the same species.  
The siphuncular ridge or carina is well shown in this specimen.  
From the lias, Yorkshire.
458. The shell of the *Ammonites spinatus*, in great part enveloped by pyritic nodular matter.  
The ridge on the convex side of the shell indicative of the position of the siphuncle is well marked.  
From the lias, Yorkshire.

459. A nodule of liassic clay, split, and exposing part of a specimen of the *Ammonites spinatus*.

The outer layer of the shell adheres to the smaller portion of the nodule, the inner nacreous layer to the exposed part of the shell in the other portion: where the nacreous layer has been removed from the summits of the ridges, the dark siliceous matter which has infiltrated into the chambers of the Ammonite is exposed.

From the lias, Yorkshire.

460. A nodule of liassic clay, with a specimen of the *Ammonites spinatus*.

From the lias, Germany.

461. A nodule of liassic clay, with specimens and parts of specimens, of different ages, of the *Ammonites spinatus*.

From the lias, Germany.

462. A young specimen of the *Ammonites spinatus*.

From the liassic marlstone, Yorkshire.

463. An older specimen of the *Ammonites spinatus*.

The following is the note on this specimen in the MS. Catalogue:—

“A small rusty, pyritical Ammonite, ‘*dorso tenuolato*,’ or corded on the round back; the sides with single thick ribs and bumped at the outer edge.”

From the lias, Yeovil.

464. A mass of lias-clay cementing together a group of young specimens of the *Ammonites spinatus*.

From the lias, Ilminster.

465. Two more or less mutilated specimens of the *Ammonites spinatus*.

A variety with well-developed ribs called *Ammonites costatus* by Reinecke.

From the lias, Germany.

466. A nodule of liassic clay, split, and exposing a specimen of the *Ammonites spinatus*.

From the lias of Yorkshire.

467. A nodule of liassic clay, with a portion of the *Ammonites spinatus*.

From the lias, Yorkshire.

468. The shell, partly enveloped by pyritic matter, bisected and polished, of the *Ammonites spinatus*.

Many of the inner chambers are filled by crystalline spar; the last chamber, which is of great length, is occupied by petrified mud or clay of a dusky colour, in advance of which is a gradually expanding portion of petrified clay of a redder colour. Many of the septa of the chambers are pyritized: these are the "brassy veins" alluded to in the MS. Catalogue.

Locality unnoted. This species occurs in the lias of Yorkshire.

469. A bisected and polished specimen of the *Ammonites spinatus*.

From the liassic marlstone, Germany.

470. One moiety of a bisected shell of a young specimen of the *Ammonites spinatus*.

It is the variety called *Ammonites Hawskerensis*, Phillips; but the slight differences from the foregoing specimen are probably those of immature age.

From the lias of Yorkshire.

471. Two specimens of the *Ammonites maculatus*, Young and Bird.

From the lias, Hawsker, Yorkshire.

472. A small specimen, wanting the last chamber, of the *Ammonites Turneri*, Sow.

From the lias; locality unrecorded.

473. A larger specimen of the *Ammonites Turneri*, Sow.

The last chamber has been crushed and mutilated.

From the lias; locality unrecorded.

474. A larger specimen, partly enveloped in pyritic matter, of the *Ammonites Turneri*.

From the lias of Lyme Regis, Dorsetshire.

*Presented by William Clift, Esq., F.R.S.*

475. Two small specimens of the *Ammonites armatus*, Sow.

From the lower lias, Lyme Regis.

476. Two specimens, wanting the terminal chambers, of the *Ammonites armatus*.

From the lias; locality unrecorded.

477. A larger specimen, bisected and polished, of the *Ammonites armatus*.  
 Pyritic matter has attached itself to or replaced the nacreous septa of the shell, and has filled some of the vacated chambers; the rest contain an opake spar.  
 From the lower lias, Lyme Regis.
478. The *Ammonites Bechei*, Sow.  
 The two rows of tubercles on each side, or "corona" of the shell, are well shown in parts of this specimen.  
 From the lias, Lyme Regis.
479. One moiety of a bisected and polished specimen of the *Ammonites brevispina*, Sow. (probably a variety of the *Amm. laticostatus*, Sow.).  
 The specimen includes five whorls of vacated chambers which have become filled by infiltrated and crystallized spar; only a small proportion of the proper shell remains externally.  
 From the lias of Lyme Regis, Dorsetshire.
480. A specimen of chiefly a cast of the interior of the *Ammonites fimbriatus*, Sow.  
 From the lias of Cheltenham.
481. A portion of the *Ammonites fimbriatus*, Sow.  
 From the lias; locality unrecorded.
482. A somewhat crushed specimen of the *Ammonites Birchii*, Sow.  
 It measures 18 inches across its broadest diameter.  
 From the lias, Lyme Regis.
483. One moiety of a vertically bisected and polished specimen of the *Ammonites serpentinus*, Schlotheim (*Amm. falcifer*, Sowerby). It is described as follows in the MS. Catalogue:—  
 "An Ammonites, flat, smooth, with a sharp back; a large one; a half, split and polished, of whitish limestone; the sutures undated and well defined, the outside rugged and with foliaceous sutures."  
 From the variety of the liassic formation called "marlstone;" locality unnoted.
484. A portion of the *Ammonites serpentinus*.  
 From the liassic marlstone, Duchy of Wirtemberg.

485. A cast, in matrix, of the first-formed whorls of *Ammonites Henleyi*, Sow.  
 It shows the double row of tubercles on one side.  
 From the middle lias, Germany; locality unnoted.  
 The same species occurs in the lias of Lyme, Cheltenham and Whitby, in England.
486. A compressed specimen of the *Ammonites Henleyi*, Sow. (*Amm. striatus*, Reinecke).  
 From the middle lias, Germany.
487. A series of four young specimens of different ages of the *Ammonites oxynotus*, Quenstedt.  
 From the lias, Gloucestershire.
488. A somewhat older specimen of the *Ammonites oxynotus*, Quenst.  
 From the lias, Gloucestershire.
489. The cast of a larger specimen of the *Ammonites oxynotus*.  
 From the lias; locality unrecorded.
490. A portion of the *Ammonites oxynotus*.  
 The specimen has been crushed.  
 From the lias; locality unrecorded.
491. A fragment of the *Ammonites oxynotus*.  
 It is described in the MS. Catalogue as "part of a small flat Ammonites; the body spar; the sutures brassy pyrites, and undated; the foliaceous sutures shown finely on the sides. Found in a bed of blue clay."  
 From the liassic blue clay, "at Lassington, a village in Gloucestershire."  
 (Probably sent to Mr. Hunter by Dr. Jenner.)
492. The *Ammonites complanatus*, Brug.  
 From the lias; locality unrecorded.
493. The *Ammonites annulatus*, Sow.  
 From the upper lias, Whitby, Yorkshire.
494. The *Ammonites annulatus*, Sow.  
 From the alum shale, Whitby.

495. A split nodule of lias clay inclosing a specimen of the *Ammonites annulatus*.  
From the alum shale, Whitby.
496. A small specimen of the *Ammonites annulatus*.  
From the upper lias, Whitby.
497. The *Ammonites annulatus*.  
From the alum shale, Whitby.
498. A portion of a compressed specimen of the *Ammonites annulatus*.  
From the lias of Boll, Wirtemberg.
499. A portion of a compressed specimen of the *Ammonites annulatus*.  
From the lias of Boll, Wirtemberg.
500. Two small specimens of the *Ammonites Comensis*, v. Buch.  
From the upper lias, France ; locality unnoted.
501. The *Ammonites fibulatus*, Sow.  
From the alum shale, Whitby.
502. The *Ammonites fibulatus*.  
From the upper lias, Whitby.
503. A cast in silex of a small specimen of the *Ammonites planicostatus*, Sow.  
From the lias, Somersetshire.
504. A cast in silex of a very young specimen of the *Ammonites planicostatus*.  
From the lias, Somersetshire.
505. Two specimens of the *Ammonites planicostatus*.  
From the lias, Somersetshire.
506. Five more or less perfect specimens of the *Ammonites planicostatus*.  
The nacreous shell is wanting at some parts, and exposes the dark-coloured crystalline siliceous matter which has filled the cavity of the shell.  
From the lias, Somersetshire.
507. A small and mutilated specimen of the *Ammonites obtusus*, Sow.  
A great part of the shell is removed, exposing the dark spathose cast of

the interior: in the situation of the bottom of the last chamber are some impressions of very young *Ammonites* of the same species.

From the lias; locality unrecorded.

508. The *Ammonites Maugenessi*, d'Orb.

From the middle lias; locality unnoted.

509. The *Ammonites Maugenessi*, d'Orb.

A younger specimen, showing more distinctly the character of the sutures and ridges of the first-formed chambers.

From the middle lias; locality unnoted.

510. A portion of the liassic stone of Wirtemberg in which is imbedded a specimen of the *Ammonites margaritatus*, Montfort.

It belongs to the variety in which the costæ are smooth.

From the middle lias, Wirtemberg.

511. Two incomplete specimens, of different sizes, of the *Ammonites margaritatus*; of the variety in which the costæ are slightly crenulated.

From the middle lias, Wirtemberg.

512. A crushed specimen of the *Ammonites margaritatus*.

From the middle lias, Wirtemberg.

513. An abraded specimen of the cast, in matrix, of the *Ammonites margaritatus*, Montf.

From the middle lias, Wirtemberg.

514. The *Ammonites margaritatus*, with smooth costæ, and showing a tubercle on those of the earlier-formed chambers.

From the middle lias, Wirtemberg.

515. The *Ammonites margaritatus*, showing a tubercle on the alternate costæ of the earlier-formed chambers, and on every third costa of some succeeding chambers, beyond which the costæ become smooth.

From the middle lias, Wirtemberg.

516. Two young specimens of the *Ammonites margaritatus*, showing the tubercles on the costæ of the first-formed chambers, and afterwards on the alternate costæ.

From the middle lias, Wirtemberg.

517. A series of six specimens of the *Ammonites margaritatus*, showing the relation of the tubercular variety of the costæ to the period of growth.  
From the middle lias, Wirtemberg.
518. A tray of young specimens of different ages of the *Ammonites margaritatus*, in which the more common tubercular modification of the costæ is well marked.  
From the middle lias, Wirtemberg.
519. A tray of young specimens of the *Ammonites margaritatus*, in which the tubercular character of the costæ is feebly, if at all, manifested.  
From the middle lias, Wirtemberg.
520. Three young specimens of the *Ammonites margaritatus*, of the strongly ridged and non-tuberculate variety.  
From the middle lias, Wirtemberg.
521. The *Ammonites margaritatus*, Montf. ; the variety called *Amm. Stokesi*, Sow.  
From the middle lias, Wirtemberg.
522. The *Ammonites margaritatus*.  
From the middle lias, Wirtemberg.
523. A series of young specimens, of different ages, of the *Ammonites margaritatus*.  
From the middle lias, Wirtemberg.
524. A mutilated specimen, or cast in matrix, of the *Ammonites margaritatus*.  
From the middle lias, Wirtemberg.
525. A small specimen of the *Ammonites Coynarti*, d'Orb.  
From the middle lias ; locality unrecorded.
526. A small, mutilated and partly pyritically decomposed specimen of the *Ammonites varicostatus*, Zieten.  
From the lias ; locality unrecorded.
527. A small specimen of *Ammonites ophioides*, d'Orb.  
From the lias ; locality unrecorded.
528. A small and mutilated specimen of the *Ammonites Ægion*, d'Orb.  
From the lias ; locality unrecorded.



529. A small and mutilated specimen of the *Ammonites Germaini*, d'Orb.  
From the lias ; locality unrecorded.
530. The moiety of a vertically bisected and polished specimen of the young of the *Ammonites Taylora*, Sow.  
From the middle lias, Germany.
431. Two specimens of the *Ammonites maculatus*, Young and Bird.  
From the lias, Yorkshire.
532. The *Ammonites crassus*, Phillips, with a portion of lias stone attached.  
From the upper lias, Whitby.
533. A portion of the *Ammonites radians*, Reinecke, which has been partially restored artificially.  
From the upper lias, Germany.
534. The *Ammonites radians*, Reinecke.  
From the upper lias ; locality unrecorded.
535. Two small specimens of the *Ammonites lævigatus*, Sow.  
From the lias, Lyme Regis, Dorsetshire.
536. A portion of lias containing many young specimens of the *Ammonites erugatus*, Bean.  
From the lias of Robin Hood's Bay, Yorkshire.
537. A small mass of liassic clay cementing together a number of young specimens, of different sizes, of the *Ammonites Bodleyi*, Buckm.  
From the lower lias, Bredon, near Cheltenham.
538. The young of an *Ammonites*, showing an unsymmetrical gyration of the shell.  
From the lias ; locality unrecorded.
539. A mass of liassic stone crowded with specimens of the *Ammonites planicostatus*.  
It is described as follows in the MS. Catalogue :—  
“ A mass of stone with a numerous quantity of Ammonites imbedded in it : they are extremely crowded together, of a small size ; the greater part covered with the remains of the pearly shell : the casts are of brownish spar and of the substance of the stone ; they are thickly ribbed on the sides and across the back.”  
From the lias of Somersetshire.

Genus *Ceratites*.

540. The cast of the young, or earlier-formed chambers of the *Ceratites nodosus*, De Haan.

The deeply wavy sutures are well marked, and alternate chambers of the shell have been partially removed near the aperture.

From the middle triassic formation called 'Muschelkalk,' at Engel, Germany.

This formation, which is called 'black limestone' in the MS. Catalogue, has no representative or equivalent in England: it contains no Belemnites and no true Ammonites, or those with foliated sutures, as in the incumbent lias and oolite. The present closely-allied genus is distinguished by its merely undulated sutures; the convex bends, directed towards the nucleus, show only a few minute denticulations.

541. A portion of muschelkalk with the cast, and part of the shell of a larger specimen of the *Ceratites nodosus*.

From the muschelkalk, Germany.

542. A cast, in matrix, of a portion of the shell of the *Ceratites nodosus*.

The ridges and their terminal nodosity are well developed in this specimen.

From the muschelkalk, Germany.

543. A cast, in matrix, of the *Ceratites nodosus*.

It is crushed and mutilated on one side; on the opposite side it shows well the wavy or zigzag central terminations of the undulated sutures.

Many valves of the *Posidonia minuta* are attached to the convexity of the outer whorl of this shell.

From the muschelkalk, Germany.

544. A cast, in matrix, and a small portion of the shell of the *Ceratites nodosus*.

It shows in some parts the minute crenations of the primary waves of the undulated sutures.

From the muschelkalk, Germany.

545. A bisected and polished specimen of the *Ceratites nodosus*.  
 The wavy disposition of the septa is well shown in this specimen.  
 The chambers are shallow and numerous.  
 From the muschelkalk, Germany.
546. A section of the marble called red 'Alpen-kalk,' with portions of *Ceratites*,  
 and casts of *Ceratites*.  
 From the triassic formation at Hallstadt, Germany.

#### Genus *Goniatites*, De Haan.

547. A cast, in agate, bisected and polished, of the *Goniatites sphaericus*, Martin.  
 The lobes of the septa are angular and undulated, but not foliated as in  
 the true *Ammonites*: the septa, as shown in this section, are convex towards  
 the outlet of the shell: the siphuncle is slender and marginal.  
 From the carboniferous limestone, Zweybrück, Germany.

#### Genus *Crioceras*, Léveillé.

548. Two portions of a cast of the shell of the *Crioceras Astierianum*, d'Orb.  
 This very rare fossil has hitherto been found only in a fragmentary state.  
 From the gault at Escragnoles, South of France.  
*Presented by M. Duval-Jouve.*
549. Three portions of the shell of the *Crioceras Emerici*, Léveillé.  
 As this very rare shell occurs in a very hard limestone, it is rarely  
 extracted save in a fragmentary state.  
 From the Neocomian formation at Castellane, South of France.  
*Presented by M. Duval-Jouve.*
550. A portion of the shell of the *Crioceras cristatum*, d'Orb.  
 From the Neocomian formation at Robion, near Castellane, South of  
 France.  
*Presented by M. Duval-Jouve.*

Genus *Scaphites*, Parkinson.

551. The specimens of the *Scaphites æqualis*, Sow.  
From the upper greensand, France.
552. A coloured plaster-cast of a *Scaphites*.  
From the upper greensand of North America.

*Presented by Dr. Harlan.*

Genus *Ptychoceras*, d'Orb.

553. A portion of the shell of the rare *Ptychoceras Emericianum*, d'Orb.  
From the cretaceous formation called 'Marnes aptésiennes,' Vergoux,  
South of France.

*Presented by M. Duval-Jouve.*

Genus *Hamites*, Parkinson.

554. Two specimens of mutilated shell of the *Hamites Duvalii*, Ow.  
From the Neocomian formation, South of France.
555. Two portions of the shell of the *Hamites elegans*, d'Orb.  
This species is always found in a fractured and fragmentary state, indicative  
of the fragile nature of the recent shell.  
From the gault at Escragnoles, South of France.

*Presented by M. Duval-Jouve.*

*Presented by M. Duval-Jouve.*

556. Three portions of the *Hamites intermedius*, Sow.  
From the gault, Folkestone.

Genus *Baculites*, Lam.

557. A portion of the shell of the *Baculites neocomiensis*, d'Orb.  
From the Neocomian formation at Lieous, South of France.

*Presented by M. Duval-Jouve.*

Genus *Turrilites*, Lam.

558. The *Turrilites Bergeri*, Brongniart.  
From the chalk-marl, France.
559. The *Turrilites costatus*, Lamarck.  
From the lower chalk, France.
560. A portion of the shell of the *Turrilites Emericianus*, d'Orb.  
From the Neocomian formation, Robion, near Castellane, South of France.  
*Presented by M. Duval-Jouve.*

## Class GASTEROPODA.

## Order PECTINIBRANCHIATA.

## Section SIPHONOSTOMATA.

(Margin of the mantle prolonged into a siphon or breathing-tube, by which water is conveyed into the branchial chamber. This structure is indicated by the production of a part of the lip or outlet of the shell, into a canal; and the complexity of the breathing apparatus is associated with active movements, well-developed organs of vision, and, usually, with predatory or carnivorous habits.)

Family *Strombidæ*, Wing-shells.

They are so called from the wing-like expansion of the outer lip, which is notched near the siphonal canal.

The *Strombidæ* chiefly feed on dead and decomposing animal matter, and progress by a sort of leaping movement, turning the shell from side to side; their eyes are placed on thick eye-stalks. The existing species inhabit tropical or warm temperate latitudes; on reefs, and at depths ranging to ten fathoms.

561. A fossil shell of the still existing species, *Strombus coronatus*, DeFrance.

From a tertiary, probably pliocene, formation; locality unnoted.

With this specimen is placed the shell of the recent *Strombus accipitrinus*, from South America, which shows the direction and extent of the respiratory canal, the extremity of which is broken off in the fossil.

562. Two imperfect and crushed specimens of *Strombus Fortesii*, Brong.  
From the miocene beds of Ronca, Vicentin.
563. A portion of *Strombus Bonelli*, Brong.  
It is filled with a greenish grit.  
From the miocene beds of Turin.
564. A portion of a *Strombus*, filled with soft greenish marl.  
From a tertiary formation, Sophronia, Hungary.
565. A broken specimen of a large species of *Strombus*.  
It is filled with shelly limestone.  
Locality unnoted.
566. A fossil specimen of the still existing species, *Strombus fragilis*, Linn.  
From a tertiary formation, West Indies.
567. Three specimens of *Strombus bartonensis*, Sow.  
From the eocene strata, Hordwell, Hampshire.

### Genus *Pteroceras*, Lam.

(The species of this genus are now only known to exist in India and China.)

568. The *Pteroceras radix*, Ad. Brong.  
The shell is crystalline and filled with earthy limestone.  
From the miocene beds of the Vicentin.
569. The *Pteroceras Pelagi*, Brong.  
From the lower cretaceous strata of Switzerland.

Genus *Rostellaria*, Lam.

(The existing species inhabit the shores of China, Borneo, India, and the Red Sea.)

570. Four specimens of *Rostellaria macroptera*, Lam. (*Strombus amplus*, Brander).  
The much-expanded wing-like outer lip of the shell is more or less fractured.  
From the eocene strata, Hordwell, Hampshire.
571. Seven specimens of the young state of *Rostellaria macroptera*, Lam.  
From the eocene beds of Barton, Hampshire.
572. Seven specimens, in various states of preservation, of *Rostellaria columbella*, Lam.  
From the eocene strata of the Paris basin.
573. Twelve specimens of *Rostellaria fissurella*, Lam.  
From the eocene strata of Grignon, France.
574. Eleven specimens of *Rostellaria rimosa*, Sow.  
From the eocene beds of Barton, Hampshire.
575. Four specimens of *Rostellaria lucida*, Sow.  
From the London clay of the Isle of Sheppey, Kent.

Genus *Terebellum*, Lam.

(The existing species inhabit China and the Philippine Islands.)

576. Two broken individuals of *Terebellum convolutum*, Lam.  
From the eocene strata of Hampshire.  
A recent specimen of the *Terebellum subulatum*, Lam., is added to the fossils.
577. Two specimens of *Terebellum convolutum*, Lam.  
From the eocene strata of Grignon, France.
578. The *Terebellum fusiforme*, Lam.  
From the eocene strata of Courtagnon, France.

Family *Muricidæ*.

(The Mollusks of this family have a broad foot, and a dentated, boring proboscis; they prey upon other shell-fish.)

Genus *Murex*, Linn.

(Most abundant in the tropics, but extending to temperate latitudes.)

579. Two specimens of *Murex (Fusus) minax*, Lam.  
From the eocene beds of Barton, Hampshire.
580. Seven specimens, in various stages of growth, of *Murex (Fusus) minax*, Lam.  
From the eocene strata of Soissons, near Paris.

The following nine species are from the eocene strata of the Paris basin :—

581. Two specimens of *Murex tripteroides*, Lam.
582. Two specimens of *Murex contabulatus*, Lam.
583. Five specimens of *Murex tricarinatus*, Lam.
584. Four specimens of *Murex tricarinatus*, var.
585. The *Murex tricuspидatus*, Desh.
586. Two specimens of *Murex frondosus*, Lam.
587. Nine specimens of *Murex calcitrata*, Lam.
588. The *Murex denudatus*, Desh.
589. Four specimens of *Murex crispus*, Lam.
590. An eroded specimen of *Murex micropterus*, Desh.  
(Nos. 581 to 590 inclusive are from the eocene strata of the Paris basin.)
591. The *Murex frondosus*, Lam.  
From the eocene deposits of Barton, Hampshire.
592. The *Murex tricarinatus*, Lam.  
From the eocene deposits of Barton, Hampshire.



593. Four fossil specimens of the existing species, *Murex brandaris*, Linn.  
From the pliocene strata of Italy.
594. Three specimens of *Murex conglobatus*, Mich.  
From the pliocene strata of Asti.
595. Two specimens of *Murex craticulatus*, Brocchi.  
From the pliocene strata of Italy.
596. The *Murex trunculus*, Linn.  
From the pliocene strata of Italy.
597. A fossil specimen of the existing species, *Murex cornutus*, Linn.  
From the pliocene strata of Italy.

#### Genus *Typhis*, Montfort.

(The existing species are found in the Mediterranean, West coast of Africa, the Cape of Good Hope, India, and West coast of America : ranging in depth to 50 fathoms.)

598. Three specimens of *Typhis (Murex) tubifer*, Lam.  
From the eocene strata of the Paris basin.
599. Five specimens of *Typhis pungens*, Brander.  
From the eocene strata of Barton, Hampshire.

#### Genus *Ranella*, Lam.

(The existing species have a wide geographical range : Mediterranean, Cape of Good Hope, India, China, Australia, Pacific, Western America : ranging from low water to 50 fathoms.)

600. Two mature specimens of *Ranella marginata*, Lam., and one in a less advanced state of growth, showing the longitudinal striæ.  
From the miocene strata of Italy.

#### Genus *Triton*, Lam.

(The existing species of this genus have as extensive a geographical range as the preceding ; but abound more in tropical latitudes, *e. g.* in the West Indies.)

601. Four specimens of the *Triton pyraster*, Lam.  
From the eocene strata of the Paris basin.

602. Two specimens, of different ages, of the *Triton nodularius*, Lam.  
From the eocene deposits near Paris.
603. Three specimens of the *Triton bicinctus*, Desh.  
From the eocene strata of the Paris basin.
604. Four specimens of the *Triton reticulosus*, Lam.  
From the eocene strata of the Paris basin.
605. Five specimens, one partly imbedded in matrix, of the *Triton argutus*, Brander.  
From the eocene deposits of Barton, Hampshire.
606. Two specimens of the *Triton distortus*, Brocchi.  
From the pliocene strata of Italy.
607. Two specimens of the *Triton dolearis*, Basterot.  
From the pliocene strata of Italy.
608. The *Triton anus*, Lam.  
From a recent deposit; locality unnoted.
609. The *Triton clathratus*, Lam.  
From the miocene beds, France.

### Genus *Cancellaria*, Lam.

(The existing species are found in the Mediterranean, West Africa, India, China, California, and West Indies.)

610. Two specimens of *Cancellaria acutangula*, Basterot.  
From the miocene beds near Bordeaux.
611. Two specimens of *Cancellaria uniangula*, Desh.  
From the tertiary beds of Italy.
612. The *Cancellaria evulsa*, Sow. and Desh.  
From the eocene strata, Paris basin.
613. The *Cancellaria evulsa*, Sow.  
From the eocene strata, Barton, Hampshire.

614. A species of *Cancellaria*.  
From the tertiary beds of Piedmont.

### Genus *Turbinella*, Lam.

(The existing species are found in the West Indies, South America, Africa, Ceylon, Philippines, Pacific, and West coast of America : they are chiefly tropical.)

615. A compressed specimen of a thick species of *Turbinella*, near to *T. affinis*, Sow.  
Locality unnoted ; probably from the nummulitic strata of Italy.

### Genus *Pyrula*, Lam.

(The existing species are found in the West Indies, Ceylon, Australia, China, and Western America.)

616. A cast, in grey sandstone, of *Pyrula condita*, Brong.  
From the miocene strata of Switzerland.
617. The *Pyrula nexilis*, Lam.  
From the eocene strata of Grignon, France.
618. Four specimens, of different ages, of *Pyrula clava*, Basterot.  
From the miocene beds of Dax, France.
619. The *Pyrula (Ficula) condita*, Brong.
620. The *Pyrula (Ficula) condita*, Brong. ; a smaller individual.
621. The *Pyrula melongena*.  
(The three preceding specimens are from the miocene beds of Dax.)
622. Seven specimens of *Pyrula lævigata*, Lam.  
From the eocene beds of Grignon, France.
623. A variety, with a depressed spire, of *Pyrula lævigata*, Lam.  
From the eocene strata of Grignon.
624. The *Pyrula (Myristica) Lainei*, Basterot.  
From the miocene strata of Bordeaux.
625. The *Pyrula (Pyrella) Spirillus*, Lam.  
From the miocene deposits of Italy.

Genus *Fusus*, Lam.

(This genus is represented throughout the tropical and warmer temperate zones.)

The following specimens, from No. 626 to No. 634 inclusive, are from the eocene strata of Hordwell, Hampshire:—

- 626. Twelve specimens, of various sizes, of *Fusus bulbiformis*, Lam.
- 627. A variety of *Fusus bulbiformis*, Lam.
- 628. Two large specimens of *Fusus longævus*, Lam. (*Fusus maximus*, Desh. Coq. Foss. t. 71. f. 11, 12.)
- 629. Two specimens of another variety of *Fusus longævus*.
- 630. Two specimens of a strongly tuberculated variety of *Fusus longævus*.
- 631. Four specimens of *Fusus aciculatus*, Lam.
- 632. Seven specimens, of different ages, of the *Fusus acuminatus*, Sow.
- 633. Two specimens of the *Fusus (Buccinum) defossus*, Pilkington.
- 634. The *Fusus excisus*, Lam.

From No. 626 to No. 634 inclusive, are from the eocene strata of Hordwell, Hampshire.

The following specimens, from No. 635 to No. 661 inclusive, are from the eocene strata, called Calcaire grossière, of Courtaignon and Grignon, France:—

- 635. Four specimens of *Fusus bulbiformis*, Lam.
- 636. Seven specimens of a variety of *Fusus bulbiformis*, Lam.
- 637. A globose variety of *Fusus bulbiformis*, Lam.
- 638. The *Fusus conjunctus*, Desh.
- 639. Eight specimens of *Fusus longævus*, Lam.; var. *F. scalaris*.
- 640. Nine specimens of *Fusus Noë*, Lam.
- 641. Six specimens of *Fusus ficulneus*, Lam. (*Strepsidura*, Swainson).
- 642. Six specimens of *Fusus semiplicatus*, Lam.

643. The *Fusus regularis*, Sow.
644. Two specimens of *Fusus scalarinus*, Desh.
645. Two specimens of *Fusus intortus*, Lam.
646. Two specimens of a variety of *Fusus intortus*, Lam.
647. Another variety of *Fusus intortus*, Lam.
648. Two specimens of *Fusus crassicostatus*, Desh.
649. The *Fusus breviculus*, Desh.
650. Four specimens of the *Fusus polygonus*, Lam.
651. Two specimens of *Fusus heptagonus*, Desh.
652. Three specimens of *Fusus aciculatus*, Lam.
653. Two specimens of *Fusus serratus*, Lam.
654. Two specimens of *Fusus angulatus*, Lam.
655. Four specimens of *Fusus rugosus*, Lam.
656. Six specimens of varieties of *Fusus rugosus*, Lam.
657. Two specimens of *Fusus semiplicatus*, Desh.
658. Four specimens of *Fusus subcarinatus*, Lam.
659. Two specimens of *Fusus muricoïdes*, Lam.
660. Six specimens of a small variety of *Fusus longævus*, Lam.
661. The *Fusus sublamellosus*, Desh.  
 The foregoing specimens, from 635 to 661 inclusive, are from the eocene strata of  
 Courtagnon and Grignon, France.
662. Two specimens of the *Fusus rugosus*, Sow.  
 From the eocene beds of Hordwell, Hampshire.
663. Five specimens of the *Fusus lavatus*, Brander.  
 From the eocene beds of Hordwell, Hampshire.
664. The *Fusus desertus*, Brander.  
 From the eocene beds of Hordwell, Hampshire.

665. The *Fusus quadricostatus*, Say.  
From the miocene strata of N. America.
666. Two specimens, somewhat distorted, of *Fusus subcarinatus*, Lam. ; var. *Roncanus*,  
Brong.  
From the miocene strata of Ronca.
667. Five specimens, of different ages, of the *Fusus (Trophon) antiquus*, Müller ;  
var. *contrarius*.  
From the red crag of Walton, Essex.
668. Three specimens of *Fusus antiquus*, Müller ; var. *striatus*.  
From the red crag of Walton, Essex.
669. Three specimens of *Fusus Burdigalensis*, Bast.  
From the miocene strata of Dax, France.
670. The *Fusus lignarius*, Lam.  
From the pliocene strata of Italy.
671. Two specimens of the *Fusus (Trophon) scalariformis*, Gould.  
From the pleistocene deposits of Sweden.  
*Presented by J. Morris, F.G.S.*
672. Two specimens of the *Fusus (Trophon) costiferus*, S. Wood (*Murex rugosus*,  
Sow. Min. Con. t. 37).  
From the red crag of Essex.

### Family *Buccinidæ*.

(The species of this family have a proboscis beset with fine silicified teeth, by which they are enabled to perforate the shells of the Mollusks on which they prey.)

### Genus *Buccinum*.

(The existing species of this genus inhabit the Northern and Antarctic Seas : ranging from low water to 100 fathoms.)

673. The *Buccinum Dalei*, Sow.  
From the red crag of Suffolk.

674. The *Buccinum Veneris*, Basterot.  
From the miocene strata of Bordeaux.

675. The *Buccinum undatum*, Linn.  
From the most recent tertiary deposits.

### Genus *Terebra*, Lam.

(The species of this genus are mostly tropical: one species only is known in the Mediterranean.)

676. Two worn and broken specimens of a *Terebra*.  
Locality unnoted.

677. Five specimens of *Terebra plicatula*, Lam.  
From the eocene strata of the Paris basin.

678. The *Terebra pertusa*, Lam.  
A variety of *Terebra pertusa*, Lam.  
From the miocene strata near Bordeaux.

679. The *Terebra striata*, Basterot.  
From the miocene strata near Bordeaux.

### Genus *Nassa*, Lam.

(The existing species of this genus have a world-wide distribution; in arctic, tropical, and antarctic seas.)

680. The *Nassa (Buccinum) Caronis*, Brong.  
From the miocene strata of Turin.

681. Three specimens of *Nassa semistriata*, Brocchi.  
From the miocene deposits of Piedmont.

682. Two specimens of *Nassa*.  
From the miocene strata of Italy.

683. Three fossil specimens of the existing species, *Nassa (Buccinum) mutabilis*,  
Linn.  
From the pliocene strata of Italy.

684. The *Nassa prismatica*, Brocchi.  
From the pliocene strata of Italy.
685. Three fossil specimens of the existing species, *Nassa (Buccinum) reticulata*,  
Linn.  
From the pliocene strata of Italy.

### Genus *Ringicula*, Desh.

(The few known existing species of this genus have been found in the Mediterranean, the Indian Archipelago, and the Gallapagos Islands.)

686. The *Ringicula (Voluta) buccinea*, Brocchi.  
From the miocene strata of Piedmont.

### Genus *Cassis*, Lam.

(The existing species of this genus inhabit the tropics, in shallow water ; belting the globe.)

687. Two specimens of *Cassis cancellata*, Lam.  
From the eocene strata of Mouchy, France.
688. Two specimens of *Cassis harpaformis*, Lam.  
From the eocene strata of Grignon, France.
689. The *Cassis texta*, Bronn.  
From the pliocene strata of Piedmont.
690. Two specimens of *Cassis saburon*, Basterot.  
From the miocene strata of Bordeaux.
691. The *Cassis mammillaris*, Grateloup.  
From the miocene strata of Bordeaux.

### Genus *Cassidaria*, Lam.

(All the known living species of this genus are Mediterranean.)

692. Two specimens of *Cassidaria carinata*, var., Lam.
693. Two specimens of *Cassidaria carinata*, var., Lam.



694. Two smaller individuals of *Cassidaria carinata*, var.

695. Two specimens of *Cassidaria carinata*, var.

696. Two specimens of another variety of *Cassidaria carinata*, var.

The above five varieties, Nos. 692 to 696 inclusive, are from the eocene strata of Soissons, France.

697. Casts, in sandstone, of *Cassidaria carinata*, Lam.

Locality unrecorded.

698. The *Cassidaria carinata*, Lam.

From the eocene beds of Hampshire.

### Genus *Harpa*, Lam.

(The existing species of this genus inhabit deep waters, in the Mauritius, Ceylon, the Philippines, and the tropical latitudes of the Pacific.)

699. Numerous specimens, in various stages of growth, of *Harpa (Buccinum) stromboïdes*, Lam.

From the eocene strata of Grignon, France.

700. Two specimens of *Harpa elegans*, var., Desh.

From the eocene strata of Courtagnon, France.

### Genus *Columbella*, Lam.

(The numerous living species of this genus are subtropical, and belt the globe.)

701. Specimens of *Columbella curta*, var., Bellardi.

From the tertiary beds of Piedmont.

702. A broken individual of *Columbella thiara*, Bellardi.

From the upper tertiary beds of Asti, Italy.

### Genus *Ancillaria*, Lam.

(The existing species inhabit the Red Sea, Madagascar, India, Australia, and the Pacific.)

703. Two specimens of *Ancillaria inflata*, Borson.

From the miocene beds of Turin.

704. Three specimens of *Ancillaria buccinoïdes*, Lam.  
From the eocene beds of Grignon, France.
705. A silicified shell of *Ancillaria buccinoïdes*, Lam.  
From the eocene strata of the Paris basin.
706. Specimens of *Ancillaria olivula*, Lam.  
From the eocene strata of the Paris basin.
707. Specimens of *Ancillaria canalifera*, Lam.  
From the eocene beds of Grignon, France.

### Genus *Oliva*, Lam.

(The existing species are subtropical, and belt the globe.)

708. Five specimens of *Oliva nitidula*, Desh.  
From the eocene beds of Grignon, France.

### Family *Conidæ*.

#### Genus *Conus*, Linn.

(The existing species inhabit the Mediterranean; the rest are tropical, and belt the globe.)

709. The *Conus deperditus*, Lam.
710. Eight specimens of *Conus diversiformis*, Lam., in various stages of growth.
711. Two specimens of *Conus turritus*, Lam.
712. Two specimens of *Conus antediluvianus*, Lam.  
The above species are from the eocene beds of the Paris basin, Nos. 709 to 712 inclusive.
713. Three specimens of *Conus dormitor*.  
From the eocene beds, Barton, Hampshire.
714. Two specimens of *Conus scabriculus*, Brander.  
From the eocene beds, Barton, Hampshire.

715. Two specimens of *Conus deperditus*, Lam.  
They are filled with, and partly covered by, coarse greenish grit.  
From the miocene beds of Turin.
716. Three specimens of *Conus Noë*, Brong.  
The surface of the shells is eroded: they are filled with a coarse green grit.  
From the miocene beds of Turin.
717. Two casts of a species of *Conus*, in a dark chloritic sandstone.  
From the tertiary strata of Malta.
718. A cast of a fusiform species of *Conus*, in a chloritic sandstone.  
From the tertiary strata of Malta.

### Genus *Pleurotoma*, Lam.

(This genus is represented by living species throughout the globe: ranging from low water to 100 fathoms.)

The following, from No. 719 to No. 729 inclusive, are from the eocene deposits of the Paris basin:—

719. Specimens of *Pleurotoma filosa*, Lam.
720. Specimens of *Pleurotoma prisca*, Sow.
721. Two specimens of *Pleurotoma subangulata*, Desh.
722. Three specimens of *Pleurotoma marginata*, Lam., var.
723. Four specimens of *Pleurotoma marginata*, Lam.
724. Four specimens of *Pleurotoma transversaria*, Lam.
725. Three specimens of *Pleurotoma brevicula*, var., Desh.
726. The *Pleurotoma dentata*, Lam.
727. The *Pleurotoma costellata*, Lam.
728. The *Pleurotoma undata*, Lam.
729. Three specimens of *Pleurotoma propinqua*, Desh.

The above species of *Pleurotoma*, Nos. 719 to 729 inclusive, are from the eocene deposits of the Paris basin.

730. Twelve specimens of *Pleurotoma exorta*, Brander.  
From the eocene beds of Barton, Hampshire.
731. Twenty-six specimens of *Pleurotoma colon*, Sow.  
From the eocene strata of Barton.
732. Two specimens of *Pleurotoma*.  
From the London clay ; locality unrecorded.
733. Two specimens of *Pleurotoma brevicauda*, Lam.  
From the eocene beds of Courtagnon, France.
734. One fine specimen of *Pleurotoma cataphracta*, Brocchi, and two others less perfectly preserved.  
From the miocene strata of Italy.
735. Three specimens of *Pleurotoma dentata*, Lam.  
From the eocene strata of the Paris basin.
736. Five specimens of *Pleurotoma bicatena*, Lam.  
From the eocene strata of the Paris basin.
737. Two specimens of *Pleurotoma propinqua*, Lam.  
From the eocene strata of France.
738. The *Pleurotoma Brocchii*, Bonelli.  
From the pliocene strata of Asti, Italy.
739. Two specimens of *Pleurotoma Bellardi*, Desmoulins.  
From the miocene strata of Tortona.
740. A specimen of *Pleurotoma*, with transverse granulated costæ.  
Locality unnoted.
741. The *Pleurotoma tuberculosa*, Basterot.  
From the miocene beds of the Vienna basin.
742. Three specimens of *Pleurotoma*.  
Locality unrecorded.
743. Two pyritous casts of *Pleurotoma*.  
From the London clay, Isle of Sheppey.

744. Specimens of *Pleurotoma*.  
From the eocene strata of the Paris basin.
745. Two specimens of *Pleurotoma rostrata*, Sow.  
From the eocene beds of Barton, Hampshire.

### Family *Volutidæ*.

#### Genus *Voluta*, Linn.

(The existing species inhabit the West Indies, Cape Horn, Chili, Australia, Java, and West Africa.)

746. A siliceous cast of a large species of *Voluta* (*V. denudata*, Goldf.?).  
The surface is covered by minute crystalline particles.  
From the cretaceous strata at Maestricht.
747. A portion of septaria, with shells, and a specimen of *Voluta nodosa*, Sow.  
From the London clay; probably near Highgate.
748. Two large specimens of *Voluta luctatrix*, Brander.
749. Numerous specimens, in various stages of growth, of *Voluta luctatrix*, var.,  
Brander.
750. Four specimens of *Voluta ambigua*, Sow.
751. Two specimens of *Voluta athleta*, Brander.
752. Three specimens of *Voluta spinosa*, Lam., and one showing the section and  
coloured bands.
753. Two specimens of *Voluta scabricula*, Brander.
754. The *Voluta depauperata*, Sow.  
The above species, Nos. 746 to 754 inclusive, are from the eocene strata of Hordwell,  
Hampshire.
755. Six specimens of *Voluta cithara*, Lam.
756. The *Voluta depressa*, Lam.
757. Five specimens, of various sizes, of *Voluta musicalis*, Lam.

758. Two specimens of a variety of *Voluta musicalis*, Lam.
759. Four specimens of *Voluta torulosa*, Desh.
760. Five specimens of *Voluta muricina*, Lam.
761. Three specimens of a variety of *Voluta muricina*, Lam.
762. Three specimens of another variety of *Voluta muricina*.
763. Four specimens of *Voluta angusta*, Desh.
764. The *Voluta lineolata*, Desh.
765. Three specimens of *Voluta mitrata*, Desh.
766. Two specimens of the *Voluta Branderi*, DeFrance.
767. Two specimens of *Voluta bulbula*, Lam.
768. Three specimens of *Voluta labrella*, Lam.  
One of them large and fine, from Aunis.
769. Five specimens of a variety of *Voluta labrella*, Lam.
770. Two specimens of *Voluta crenulata*, Lam.
771. Specimens of *Voluta harpula*, Lam.
772. Six specimens of *Voluta spinosa*, Lam.
773. Specimens of *Voluta ambigua*, Lam.
774. Three specimens of *Voluta luctatrix*, Brander.

The above species, Nos. 755 to 774 inclusive, are from the eocene strata of Grignon and Courtaignon, France.

775. Two silicified casts of *Voluta*, probably the *Voluta musicalis*, Lam.
776. Three silicified casts of a *Voluta*.
777. A silicified cast of a *Voluta*.

The above silicified specimens of *Voluta*, Nos. 775 to 777 inclusive, are from the eocene beds of the Paris basin.

778. Four specimens of *Voluta rarispina*, Lam.  
From the miocene strata of Dax, France.
779. Three specimens of *Voluta Lamberti*, Sowerby.  
Two of them are much stained with iron.  
From the crag formation of Essex.
780. A cast in silex of a *Voluta*.  
From an eocene formation ; locality unrecorded.

### Genus *Mitra*, Lam.

(The majority of the existing species are tropical, in Western Africa, the Red Sea, and the Indian Archipelago: the *Mitra cornea* of the Mediterranean, and the solitary arctic species, *Mitra Grœnlandica*, are comparatively small.)

781. Five specimens of *Mitra elongata*, Lam.
782. Two specimens of a more slender variety of *Mitra elongata*.
783. Two specimens of *Mitra Brongniarti*, Desh.
784. Four specimens of *Mitra labratula*, Lam.
785. Two specimens of *Mitra monodonta*, Lam.
786. Two specimens of *Mitra Parisiensis*, Desh.
787. Two specimens of *Mitra subplicata*, Desh.  
The above species, Nos. 781 to 787 inclusive, are from the eocene strata of Courtagnon and Grignon, near Paris.
788. An eroded specimen of a *Mitra*.  
Locality unnoted.

### Genus *Marginella*, Lam.

(There is one small existing Mediterranean species: the rest, of larger size, are tropical, and belt the globe.)

789. Six specimens of *Marginella ovulata*, Lam.  
From the eocene beds of the Paris basin.

Genus *Volvaria*, Lam.

(All the known species of this genus are extinct.)

790. Two specimens of *Volvaria bulloides*, Lam.  
From the eocene strata of the Paris basin.

Family *Cypræidæ*, Cowries.

(The mantle expands on each side into lobes, which can be reflected so as to meet on the back of the shell.)

Genus *Cypræa*, Linn.

(It is represented by living species in all the seas of warm latitudes, except the east coast of America.)

791. Two specimens of *Cypræa sulcosa*, Lam.  
From the eocene strata of the Paris basin.
792. The *Cypræa Lamarckii*, var. Desh.  
From the eocene strata of the Paris basin.
793. Four specimens of *Cypræa inflata*, Lam.  
From the eocene deposits of the Paris basin.
794. Two specimens of different varieties of *Cypræa media*, Desh.  
From the eocene strata around Paris.
795. Four specimens of *Cypræa lyncoides*, Ad. Brong.  
From the miocene strata of Turin.
796. An eroded specimen of a *Cypræa*.  
From the miocene beds of Turin.
797. The *Cypræa pediculus*, Gmelin.  
From the newer tertiary strata.
798. A species of *Cypræa*.  
Locality unnoted.



799. A species of *Cypræa*.  
 Locality unnoted.
800. A calcareous cast of an elongated species of *Cypræa*.  
 Locality unnoted.
801. A cast of a small pyriform *Cypræa*.  
 Locality unnoted.

### Genus *Ovula*, Lam.

(Species occur in China, Western America, the West Indies, the Mediterranean, and one small species, *O. patula*, on the south coast of England.)

802. A fine specimen of *Ovula tuberculosa*, Desh.  
 From the eocene strata of the Paris basin.

### Section II. HOLOSTOMATA.

(In this section the respiratory tube or siphon is not developed, and the margin of the shell-aperture is entire: the proboscis in most of the genera is short and non-retractile, and the species are phytophagous.)

### Family *Naticidæ*.

(In this family the proboscis is long and retractile.)

### Genus *Natica*, Lam.

(Existing species of this genus occur in the Arctic Seas, Britain, Mediterranean, Caspian, India, Australia, China, Panama, and the West Indies.)

803. An internal cast of *Natica crassatina*, Desh.  
 From tertiary strata ; locality unnoted.
804. The *Natica hybrida*, Desh.
805. Two specimens of the *Natica (Ampullaria) acuminata*, Lam.
806. Three specimens of *Natica cepacea*, Lam.

807. Four specimens of *Natica sigaretina*, Desh.
808. Four specimens of *Natica patula*, Desh.
809. Four specimens of *Natica (Ampullaria) Willemetii*, Desh.
810. The *Natica (Ampullaria) ponderosa*, Desh.
811. Numerous specimens of *Natica labellata*, Lam.
812. The *Natica mutabilis*, Desh.
813. Specimens of the *Natica epiglottina*, Lam.
814. Three silicified specimens of *Natica acuminata*, Desh.  
 The above species, Nos. 804 to 814 inclusive, are from the eocene strata of the Paris basin.
815. Two specimens of *Natica mutabilis*, Brander.  
 From the eocene strata of Barton, Hampshire.
816. Two specimens of *Natica ambulacrum*, Sow.  
 From the eocene strata of Barton, Hampshire.
817. Three specimens of *Natica canrena*, Basterot.  
 From the miocene beds of the Bordeaux basin.
818. A large specimen of *Natica hybrida*, Desh.  
 The surface has been perforated by a species of *Cliona*.  
 From the eocene strata of the Paris basin.
819. The *Natica crassatina*, Desh.  
 From the tertiary beds of the Vicentin.
820. The *Natica (Ampullaria) Vulcani*, Brong.  
 From the tertiary beds of the Vicentin.
821. A species near to *Natica hybrida*, Desh.  
 Locality unnoted.
822. A species of *Natica*.  
 From the oolitic strata; locality unnoted.
823. A large and globose species of *Natica*, near to *N. intermedia*, Desh.  
 Locality unnoted.

824. A specimen of *Natica* ; with the test replaced by calcareous spar and filled with greenish grit.  
From the tertiary beds of Carinthia.
825. Siliceous casts of a *Natica*.  
From tertiary strata ; locality unnoted.
826. Three specimens of a *Natica*.  
Probably from the oolite ; locality unnoted.
827. A cast of *Natica macrostoma*, Roemer.  
From the oolitic strata ; locality unnoted.
828. A portion of matrix from a marly bed of the 'calcaire grossière,' with two specimens of the *Natica ambulacrum*.  
From the eocene strata of the Paris basin.
829. Two casts of a species of *Natica*.  
From the coralline oolite ; locality unnoted.

#### Genus *Sigaretus*, Lam.

(The existing species are tropical : the fossil forms occur in the tertiaries of France, Britain and America.)

830. The *Sigaretus canaliculatus*, Sow.  
From the eocene beds of the Paris basin.

#### Family *Cerithiadae*.

(The proboscis is short and non-retractile.)

#### Genus *Cerithium*, Bruguière.

(The typical existing species are tropical ; the others have a world-wide distribution.)

831. The *Cerithium contortum*, Deslongchamps, Mém. Soc. Linn. Norm. t. x. p. 44.  
From the inferior oolite of Normandy.
832. Specimens and casts of *Cerithium Charlesworthi*.  
From the eocene (London) clay of the Isle of Sheppey, Kent.

833. A large and nearly perfect specimen of *Cerithium giganteum*, Lam.  
From the eocene deposits near Damery, France.
834. Four specimens of various sizes of *Cerithium giganteum*, Lam.
835. Two casts in shelly limestone (calcaire grossière) of *Cerithium giganteum*, Lam.
836. Two specimens of *Cerithium cornucopiæ*, Lam.
837. Two specimens of *Cerithium spiratum*, Lam.
838. Two specimens of *Cerithium filiferum*, Desh.
839. The *Cerithium decussatum*, DeFrance.
840. Three specimens of *Cerithium serratum*, Lam.
841. Sections of *Cerithium clavosum*, Lam.
842. Two specimens of *Cerithium emarginatum*, Lam.
843. Three specimens of *Cerithium nudum*, Lam.
844. Four specimens of *Cerithium angulosum*, Lam.
845. Two specimens of *Cerithium cinctum*, Lam.
846. Four specimens of *Cerithium tricarinatum*, Lam.
847. Three specimens of *Cerithium acutum*, Desh.
848. Two specimens of *Cerithium hexagonum*, Lam.
849. Three specimens of *Cerithium lamellosum*, Lam.
850. Four specimens of *Cerithium interruptum*, Desh.
851. Four specimens of *Cerithium lapideum*, Lam.
852. The *Cerithium cristatum*, var., Lam.
853. Three specimens of *Cerithium thiara*, Lam.
854. The *Cerithium obliquatum*, Desh.

855. Three specimens of a variety of *Cerithium lamellosum*, Lam.
856. Specimens of *Cerithium Henricarti*, Desh.
857. Two specimens of a variety of *Cerithium thiara*, Lam.
858. Three specimens of *Cerithium mixtum*, Defrance.
859. Two varieties of the *Cerithium mutabile*, Lam.
860. The *Cerithium rusticum*, Desh.
861. Six specimens of *Cerithium Prevostii*, Desh.
862. The *Cerithium emarginatum*, Lam.
863. Six specimens of *Cerithium cristatum*, Lam.
864. The *Cerithium rugosum*, Lam.
865. Three specimens of a variety of *Cerithium gibbosum*, Defrance.
866. A broken specimen of *Cerithium spinosum*, Lam.  
 The above species of *Cerithium*, from Nos. 834 to 866 inclusive, are from the eocene strata of Courtagnon and Grignon, France.
867. The *Cerithium turris*, Deshayes.  
 From the lower eocene beds of Epernay, France.
868. Three specimens of *Cerithium bidentatum*, Defrance.  
 From the miocene strata of the Bordeaux basin.
869. Four specimens of *Cerithium combustum*, Ad. Brong.  
 From the miocene strata of Verona.
870. The *Cerithium calcaratam*, Ad. Brong.  
 From the miocene strata of Ronca and Verona.
871. Two eroded specimens of *Cerithium tricinctum*, Basterot.  
 From the miocene strata of Bordeaux.
872. Specimens of *Cerithium plicatum*, Lam.  
 From the lower miocene deposits of Belgium.

873. Two specimens of *Cerithium crenatum*, Brocchi.  
From the pliocene strata of Italy.
874. The *Cerithium (Murex) terebellum*, Brocchi.  
From the pliocene strata of Italy.
875. A worn specimen of *Cerithium*, partly covered with small *Gryphææ*.  
From the coralline (oolitic) strata of France.
876. Siliceous casts of a *Cerithium*.  
From the eocene formation, Paris basin.
877. A specimen of a *Cerithium*.  
From the pliocene strata of Italy.

### Genus *Nerinæa*, Defrance.

(All the known species of this genus are extinct.)

878. The *Nerinæa nodosa*, Voltz.  
From the coralline (oolitic) strata of Germany.
879. One specimen and one cast in plaster of the *Nerinæa suprajurensis*, Voltz.  
From the coralline (oolitic) strata of Germany.
880. An internal cast of the *Nerinæa grandis*, Voltz (not Goldfuss).  
From the Portland (oolitic) strata.
881. An imperfect and worn fragment of *Nerinæa depressa*.  
From the oolitic strata; locality unrecorded.
882. A slab of earthy limestone with a fragment of a species of *Nerinæa*.  
Locality unnoted.

### Genus *Acteonella*, d'Orb.

883. A portion of a species of *Acteonella*.  
Locality unrecorded.

Genus *Aporrhais*, Aldrovandus.

(The few known existing species occur in Norway, Labrador, Britain, Mediterranean, and Western Africa.)

884. Three individuals of *Aporrhais pes-pellicani*.  
From the upper tertiary strata ; locality unnoted.
885. Two individuals of *Aporrhais pes-graculi*, Phil.  
From the tertiary strata ; locality unrecorded.

Family *Turritellidæ*.Genus *Turritella*, Lamarck.

(The existing species have a world-wide distribution.)

886. Five specimens of *Turritella carinifera*, Desh.
887. Five specimens of *Turritella terebellata*, Lam.
888. Four specimens of *Turritella sulcifera*, Desh.
889. Three specimens of *Turritella quadriplicata*, Lam.
890. Specimens of *Turritella imbricataria*, Lam. (var. *T. edita*, Brander).  
The above species, Nos. 886 to 890 inclusive, are from the eocene strata of the Paris basin.
891. Specimens of *Turritella imbricataria*, Lam. (var. *T. edita*, Brander).  
From the eocene strata of Barton, Hampshire.
892. Four specimens of *Turritella terebralis*, Basterot.  
From the miocene beds of Bordeaux.
893. The *Turritella (Proto) cathedralis*, Ad. Brong.  
From the miocene beds near Bordeaux.

894. Silicified casts of *Turritella* (*T. intermedia*), with fragments of attached Nummulites.  
From the eocene strata of France.
895. Two specimens, filled with greenish grit, of *Turritella cathedralis*, Ad. Brong.  
From the miocene strata of the Vicentin.
896. The *Turritella granulosa*, Desh., to which a *Serpula* is attached.  
Locality unnoted.
897. Eight specimens of casts, in opaline silex, of *Turritella imbricataria*, Lam.  
Some of the specimens contain a portion of the original matrix, which has penetrated as far as the retracted mollusk originally permitted; the vacuity afterwards left by the decay of the soft parts has been more gradually filled by the siliceous matter.  
From the tertiary strata; locality unnoted.
898. Two specimens of casts of a species of *Turritella* or *Melania*.  
Partly composed of opaline silex and partly of the original matrix.  
From the eocene strata of Soissons, France.
899. A portion of compact sandy rock, with a cast, in opaline silex, of a *Turritella*.  
From the tertiary strata; locality unnoted.

#### Genus *Siliquaria*, Lam.

900. Five specimens of *Siliquaria anguina*, Lam. (*S. subanguina*, d'Orb.).  
From the newer tertiary strata of Italy.

#### Family *Melaniadæ*.

#### Genus *Melania*, Lam.

(The existing species inhabit freshwater lakes and rivers throughout the warmer parts of the globe.)

901. Six specimens of *Melania marginata*, Lam.
902. Specimens of *Melania lactea*, Lam.
903. Specimens of *Melania costellata*, Lam.



904. Two specimens of *Melania sulcata*, Lam.  
 905. The *Melania (Turritella) abbreviata*, Desh.  
 906. Three specimens of *Melania (Turritella) multisulcata*, Lam.  
 907. Four specimens of *Melania (Turritella) intermedia*, Desh.  
 908. The *Melania (Turritella) vittata*, Desh.

The above species, Nos. 901 to 908 inclusive, are from the eocene strata of the Paris basin.

909. Three specimens of *Melania inquinata*, Defrance (*Cerithium melanoides*, Sow.).  
 From the lower tertiary strata (plastic clay) of Woolwich, Kent.  
 910. Four specimens of *Melania cochlearella*, Desh.  
 From the eocene strata of the Paris basin.

### Genus *Melanopsis*, Lam.

(The fossil species of this genus are found in the Wealden and Tertiary strata, and the recent forms occur in Spain, Asia, and New Zealand.)

911. A silicified specimen of *Melanopsis buccinoides*, Férussac.  
 From the lower eocene beds of France.  
 912. A large individual of *Melanopsis*, near to *Mel. aquensis*, Grateloup.  
 From the miocene strata ; locality unnoted.

### Family *Littorinidæ*.

(The existing species of this family are mostly littoral and feed on sea-weeds.)

### Genus *Solarium*, Lam.

(The existing species dwell in tropical seas, and belt the globe.)

913. Specimens of *Solarium patulum*, Lam.  
 914. The *Solarium bistratum*, Desh.

915. Four specimens of *Solarium bifrons*, Lam.

916. Specimens of *Solarium canaliculatum*, Lam.

The four species, Nos. 913 to 916 inclusive, are from the eocene strata of the Paris basin.

917. Two casts of the interior of *Solarium Martinianum*, d'Orb.

From the gault of Escragnoles, South of France.

### Genus *Littorinella*, Brown.

918. A tray of *Littorinella ulvæ*, Penn.

A recent subfossil species.

919. A thin slab of stone with many specimens of *Littorinella acuta*, Desh.

920. A piece of rock filled with *Littorinella acuta*.

The specimens, Nos. 919 and 920, are from the upper eocene of the Mayence basin.

### Genus *Phorus*, Montfort.

(The recent species occur in the tropical seas of the East and West Indies, Malacca, the Philippines, China, and Western America.)

921. Two specimens of *Phorus (Trochus) patellatus*, Desh.

922. Three specimens of *Phorus (Trochus) agglutinans*, Desh.

923. Three specimens of *Phorus (Trochus) confusus*, Desh.

The three species, Nos. 921 to 923 inclusive, are from the eocene strata of the Paris basin.

924. A thick and conical rugose variety of *Phorus agglutinans*.

Locality unrecorded.

925. A massive specimen of *Phorus (Trochus) Benettiae*, Ad. Brong.

It is partly covered by, and filled with a coarse greenish grit.

This specimen is probably distinct from the *Trochus Benettiae*, Sow., to which Brongniart has referred it.

From the miocene strata of Turin.

Family *Paludinidæ*.

(The Gasteropods of this family inhabit the fresh waters of all parts of the world.)

Genus *Paludina*, Lamarck.

926. The *Paludina lenta*, Brander.  
From the eocene (fluvatile) strata of Hampshire.

Family *Neritidæ*.

Genus *Neritopsis*, Grateloup.

(The only known living species of this genus inhabits the Pacific ocean.)

927. The *Neritopsis Bajocensis*, d'Orb.  
From the inferior oolite of Normandy.

Genus *Neritina*, Lamarck.

(The existing species are very widely distributed, both in latitude and longitude.)

928. Specimens of *Neritina conoidea*, Desh. (*Ner. Schmiedeliana*), in different stages of growth.  
From the eocene beds of Soissons, France.

Family *Turbinidæ*.

(The species of this family are marine, mostly littoral, and feed on sea-weed.)

Genus *Turbo*, Linn.

(The existing species are widely distributed through the tropical and warmer seas of the globe.)

929. The *Turbo princeps*, Roemer.  
From the oolitic deposits of Germany.

930. A variety of *Turbo capitaneus*, Goldfuss.  
From the oolitic deposits of Germany.
931. Three specimens of *Turbo Meriani*, Münster.  
From the Oxford clay of France.
932. Two fossil specimens of the existing *Turbo littoreus*, Linn.  
From the most recent tertiary deposits.
933. Two specimens of *Turbo squamulosus*, Lam.  
From the eocene strata of Courtagnon, France.
934. The *Turbo squamulosus*, Lam.  
From the eocene strata near Paris.
935. A cast in ferruginous sandstone of a species of *Turbo*.  
Probably from the jurassic strata ; locality unnoted.
936. A mass of pyrites with a cast of a *Turbo*.  
Locality unnoted.

### Genus *Euomphalus*, Sowerby.

(All the known species of this genus are fossil.)

937. Two compressed specimens of *Euomphalus rotundatus*, Sow. (*Eu. Dionysii*, Goldfuss, Petr. t. 191. f. 7).  
From the carboniferous limestone of Ireland.
938. Three specimens of *Euomphalus rugosus*, Sow.  
From the silurian limestone of Dudley.
939. Two specimens of *Euomphalus funatus*, Sow.  
From the silurian limestone of Dudley.
940. A variety of *Euomphalus discors*, Sow.  
From the silurian limestone of Dudley.

Genus *Trochus*, Linn.

(The distribution of the existing species is world-wide.)

941. A broken specimen of *Trochus ornatissimus*, d'Orb.  
From the inferior oolite of Normandy.
942. Specimens of *Trochus duplicatus*, Sow.  
From the jurassic strata of Bamberg, Germany.
943. Two specimens of a species of *Trochus* near to *Tr. Metis*, Münster, but wanting the upper crenated ridge near the suture.  
From the jurassic strata of Germany.
944. Three specimens of the *Trochus extensus*, Sow.  
From the London clay of the Isle of Sheppey, Kent.
945. Four specimens of the *Trochus monilifer*, Sow.  
From the eocene beds of Barton, Hampshire.
946. Three specimens of a *Trochus*.  
From the eocene beds of Barton, Hampshire.
947. Two specimens of the *Trochus crenularis*, Lam.  
From the eocene strata near Paris.
948. Three specimens of the *Trochus ornatus*, Lam.  
From the eocene strata of the Paris basin.
949. The *Trochus elongatus*, Desh.  
From the eocene strata of the Paris basin.
950. The *Trochus magus*, Linn.  
From the tertiary strata of Italy.
951. The *Trochus patulus*, Basterot.  
From the miocene strata near Bordeaux.

Genus *Phasianella*, Lam.

(A few small species exist in Britain, the Mediterranean, and the West Indies; the larger and typical kinds inhabit the Indian Archipelago and Australia.)

952. A portion of the *Phasianella (Melania) striata*, Sow.  
From the jurassic strata.
953. A large and fine specimen of *Phasianella (Melania) striata*, Sow.  
It is filled with a matrix of oolitic grains.  
From the coralline oolite of Yorkshire.
954. A portion of a sandy oolitic rock, with the cast of a *Phasianella*.  
From the inferior oolite, Gloucestershire.

Family *Pyramidellidæ*.Genus *Chemnitzia*, d'Orbigny.

(The recent species are found in the British, Norwegian, Mediterranean and tropical seas, and range from low water to 90 fathoms.)

955. A cast of the volutions of *Chemnitzia (Melania) Heddingtonensis*, Sow.  
From the coralline oolite of Oxfordshire.

Family *Haliotidæ*.Genus *Pleurotomaria*, DeFrance.

(All the known species of this genus are extinct.)

956. A large, conical cast of a *Pleurotomaria*, in argillaceous shelly limestone.  
From the jurassic strata of Mount Randen, Switzerland.
957. A portion of blue argillaceous limestone containing a cast, coated with iron pyrites, of the *Pleurotomaria (Trochus) anglica*, Sow.  
From the liassic strata near Bath.

958. Two specimens of *Pleurotomaria anglica*, Sow.  
One of them is attached to an oblong argillaceous nodule.  
From the lias of Normandy.
959. Another variety of *Pleurotomaria anglica*, Sow.  
The ornamented surface of the shell is well preserved.  
From the lias of Normandy.
960. A smooth cast, in carbonate of lime, of *Pleurotomaria anglica*, Sow.  
It shows a cavity lined with crystalline calc spar.  
From the lias of Normandy.
961. A specimen, in crystalline calc spar, of a smooth species of *Pleurotomaria* (*Helicina*) *expansa*, Sow.  
From the middle beds of the lias of Francomb.
962. A young individual of *Pleurotomaria anglica*, Sow.  
The surface markings are well shown, and one portion of the test exhibits a fracture of the shell which had been subsequently repaired during the life of the mollusk.  
From the liassic strata ; locality unnoted.
963. A variety of *Pleurotomaria De Buchii*, Deslongchamps.  
The upper portion of the shell is partly preserved ; the lower volution is in the state of a cast.  
From the lias of Normandy.
964. A depressed variety of *Pleurotomaria mutabilis*, var. *patula*, Deslongchamps.  
From the inferior oolite of Normandy.
965. A conical variety of *Pleurotomaria mutabilis*, var. *mutica*, Deslongchamps.  
From the inferior oolite of Normandy.
966. Two imperfect specimens of *Pleurotomaria mutabilis*, var. *abbreviata*, Deslongchamps.  
From the inferior oolite ; locality unnoted.
967. A conical variety of *Pleurotomaria mutabilis*, var. *ambigua*, Deslongchamps.  
From the inferior oolite of Normandy.

968. Two specimens of *Pleurotomaria armata*, Münster.  
The upper portion of one of the shells is removed, showing the oolitic ferruginous granules in the matrix.  
From the inferior oolite of Normandy.
969. A fine and large variety of *Pleurotomaria dentata*, Deslongchamps.  
From the inferior oolite of Normandy.
970. Two specimens of *Pleurotomaria scalaris*, var. *ambigua*, Deslongchamps.  
From the inferior oolite of Normandy.
971. A fine conical variety of *Pleurotomaria scalaris*, var. *strigosa*, Deslongchamps.  
From the inferior oolite of Normandy.
972. Three specimens of *Pleurotomaria granulata*, Sow., var. *lentiformis*.  
The larger individual is in a good state of preservation.  
From the inferior oolite of Normandy.
973. Three specimens of *Pleurotomaria granulata*, Sow., var. *cælata*, Deslongchamps.  
From the inferior oolite of Normandy.
974. A specimen of a conical form of *Pleurotomaria* near to *Pleur. reticulata*, Sow.  
From the Kimmeridge clay of Normandy.
975. Two specimens of *Pleurotomaria filigrana*, Deslongchamps.  
From the Oxford clay of Normandy.
976. Two specimens of *Pleurotomaria Münsteri*, Roemer.  
From the Oxford clay of Normandy.
977. An internal cast of a variety of *Pleurotomaria distincta*, Dujardin.  
From the cretaceous strata ; locality unrecorded.
978. A large conical cast of a species of *Pleurotomaria*.  
From the cretaceous strata ; locality unnoted.
979. An internal cast of a depressed species of *Pleurotomaria*.  
Locality unnoted.
980. A slender conical cast of *Pleurotomaria*.  
Locality unnoted.



981. A smooth calcareous cast of *Pleurotomaria*.  
Locality unnoted.
982. Two casts in earthy limestone of *Pleurotomaria*.  
Locality, Germany ; probably from the lias.
983. A cast, attached to a matrix of reddish limestone, of the *Pleurotomaria anglica*,  
Sow.  
Locality unnoted.
984. A cast of an angulated species of *Pleurotomaria*.  
Locality unnoted.
985. A ferruginous cast of a *Pleurotomaria*.  
Locality unnoted.
986. A cast of the umbilical cavity of a *Pleurotomaria*.  
Locality unnoted.

Genus *Trochotoma*, Deslongchamps (*Siphonotreta*, and  
*Ditremaria*, d'Orb.).

(All the known species of this genus are fossil.)

987. A specimen of *Trochotoma conuloïdes*, Deslongchamps.  
It shows the fissure in the last volution, which fissure does not extend to  
the margin of the tip.  
From the great oolite of Minchinhampton.

Family *Fissurellidæ*.

Genus *Fissurella*, Lam.

988. Three specimens of a *Fissurella*.  
From the tertiary strata.

Family *Dentaliadae*.

(All the mollusks of this family feed on Foraminifera and minute bivalves; and bury themselves in sand or mud.)

Genus *Dentalium*, Linn.

(The existing species are found in Norway, Britain, the Mediterranean, and the East and West Indies.)

989. Casts of *Dentalium Mosæ*, Goldfuss.  
From the cretaceous strata of Maestricht.
990. Specimens of the *Dentalium striatum*, Sow.  
From the eocene strata; locality unnoted.
991. Specimens of the *Dentalium elephantinum*, Linn.  
From the tertiary strata of Italy.
992. Specimens of the *Dentalium Bouei*.  
From the upper tertiary strata of Italy.
993. Specimens of the *Dentalium acuminatum*, Sow.  
From the eocene strata; locality unnoted.
994. A silicified cast, partially transparent, of *Dentalium*.  
Locality unrecorded.
995. The *Dentalium clavum*, Desh.  
From the cretaceous strata of Ciplly, Belgium.
996. Two specimens of the *Dentalium annulatum*, Desh.  
This is an existing species, but is found in recent deposits.
997. Specimens of a species of *Dentalium*.  
From the eocene strata, France.

Family *Calyptraïdæ*.Genus *Capulus*, Montfort (*Pileopsis*, Lam.).

(The existing species occur in Norway, Britain, the Mediterranean, East and West Indies, Australia, and California.)

998. The *Capulus ungaricus*, Linn. sp.

This is a recent British species; it is also found fossil, in the newer tertiaries.

999. Six specimens of *Capulus (Pileopsis) cornucopiæ*, Lam.

From the cocene strata of Paris.

1000. Four specimens of *Capulus (Pileopsis) dilatatus*, Lam.

From the cocene strata of Paris.

Genus *Calyptraea*, Lam.

(In the temperate and tropical seas; belting the globe.)

1001. Three specimens of *Calyptraea trochiformis*, Lam.

From the cocene strata near Paris.

1002. Three specimens of *Calyptraea deformis*, Bast.

From the miocene strata near Bordeaux.

Family *Patellidæ*.Genus *Patella*, Linn.

(The species of Limpet have a world-wide distribution.)

1003. Three specimens of *Patella rugosa*, Sow.

From the great oolite of Minchinhampton.

## Order PULMONIFERA.

(The mollusks of this Order breathe the air directly.)

### Family *Helicidæ*.

#### Genus *Bulimus*, Scopoli.

(The Mollusk is essentially organized like the shell-snail (*Helix*); the species are terrestrial, and widely distributed throughout temperate and tropical latitudes.)

1004. Three specimens of *Bulimus auris-vulpinæ*, Chemn.  
From the modern tertiary deposits of St. Helena.

#### Genus *Helix*, Linn.

(The shell-snails range northward as far as the limit of trees and southward to Terra del Fuego, but are most abundant in warm and moist climates.)

1005. A specimen of *Helix Rathii*, Thoma, in indurated limestone.  
From the upper eocene, near Mayence.
1006. The *Helix subsulcosa*, Thoma, in indurated limestone with *Littorinella acuta*.  
From the upper eocene, near Mayence.
1007. Three casts of *Helix*.  
From the tertiary strata of Germany.
1008. A siliceous cast of a species of *Helix*.  
Locality unnoted.

### Family *Cyclostomidæ*.

#### Genus *Cyclostoma*, Lam.

1009. Four specimens of *Cyclostoma elegans*, Lam.  
From the pliocene strata; locality unnoted.
1010. The *Cyclostoma mumia*, Lam.  
From the eocene strata, near Paris.

## Class LAMELLIBRANCHIATA.

(Acephalous Mollusks with a dextro-sinistral bivalve shell, lined by a commonly more or less closed mantle; branchiæ lamelliform, usually in two pairs.)

### DIMYARIA. A. SIPHONIFERA.

(With two adductor muscles; the mantle prolonged into respiratory tubes or siphons.)

#### Family *Pholadidæ*.

(Piddocks, Ship-worms, having a clavate or vermiform body, with siphons large, long, united nearly to their ends; the foot short and truncate; the shell gaping at both ends; hingeless, with sometimes accessory valves, or a supplementary tube and palettes.)

#### Genus *Teredo*, Linn.

1011. A portion of white sandstone, to which numerous specimens of *Teredo* are attached; the tubes are somewhat perpendicularly arranged, free from the investing matrix, and partially coated internally with calcareous matter.

From a tertiary formation; locality unrecorded.

1012. A fragment of fossil wood containing the tubes of *Teredo antenautæ*, Sow.

From the eocene formation called London clay; locality unrecorded.

*Presented by Sir Everard Home, Bart., V.P.R.S.*

1013. A large mass containing many specimens of *Teredo antenautæ*, Sow.

It is much impregnated with pyrites, partially decomposed; some traces of the original perforated wood remain. (A section of a piece of recent wood, similarly perforated by the *Teredo navalis*, is placed with the foregoing specimen to illustrate its nature.)

From the London clay; locality unrecorded.

1014. A mass of rock almost entirely composed of the casts of tubes of *Teredo*, and they have originally perforated a piece of wood which has afterwards been replaced by earthy matter.

From the tertiary strata of Annona.

1015. A mass of chalk containing specimens of *Teredo amphibæna*, Goldf. (*Ter. articulata*, Sow.).

From the upper chalk of Kent.

1016. A portion of indurated chalk with part of the tube of the *Teredo amphibæna*, Goldf.

From the cretaceous formations, Maestricht.

1017. A portion of similar foreign chalk with portions of five tubes of *Teredo Amphibæna*, Goldf.

From the cretaceous formations, Maestricht.

### Genus *Teredina*, Lam.

(In this genus the valves become cemented to the tube: all the known species are extinct.)

1018. Seven specimens of *Teredina personata*, Lam.

From the lower tertiary strata, near Epernay, France.

### Family *Anatinidæ*.

(Lantern-shells and their allies; in most of which the shell is inequivalve; siphons long, more or less united; foot very small.)

### Genus *Myacites*, Schlotheim.

(All the known species of this genus are extinct.)

1019. A ferruginous cast of a *Myacites*, near to *M. (Lutraria) unionides*, Goldfuss.

From the jurassic strata; locality unrecorded.

1020. A cast of *Myacites musculoïdes*, Schlotheim.

From the muschelkalk, Germany.

1021. Two casts of *Myacites*, near to *M. Alduini*, Brong. sp.

From the jurassic strata; locality unrecorded.

1022. An imperfect cast of a *Myacites*.

Locality unrecorded.

### Genus *Pholadomya*, Sow.

(One species, *Pholadomya candida*, exists in the seas of the West Indies; the majority of the known species are extinct.)

1023. A specimen of *Pholadomya ambigua*, Sow.

From the lias; locality unnoted.

1024. A variety of *Pholadomya ambigua*, Sow.  
From the lias ; locality unnoted.
1025. Two specimens of well-preserved shells of *Pholadomya paucicosta*, Ag.  
From the Kimmeridge clay of Normandy.
1026. Two specimens of *Pholadomya lyrata*, Sow. (*P. carinata*, Goldf.).  
From the cornbrash ; locality unnoted.
1027. Two specimens of *Pholadomya acuticosta*, Sow.  
Locality unnoted.
1028. A variety of *Pholadomya paucicosta*, Ag.  
Locality unnoted.
1029. The *Pholadomya clathrata*, Münst., Goldf. Petref. t. 157. f. 5.  
Described as coming from St. Gall, Switzerland.
1030. A variety of *Pholadomya truncata*, Goldf.  
Locality unnoted.
1031. A variety of *Pholadomya fidicula*, Sow.  
Locality unnoted ; the species occurs in the lower oolite.
1032. A compressed and broken specimen of *Pholadomya*, near to *Phol. angustata*, Goldf.  
Locality unnoted.
1033. Seven specimens of *Pholadomya*, near to *Phol. hemicardium*, Goldf.  
From the jurassic strata ; locality unnoted.
1034. Two compressed specimens near to *Pholadomya decorata*, Zieten.  
From the jurassic strata ; locality unnoted.
1035. A compressed specimen of *Pholadomya*, in dark slaty clay.  
Locality unnoted.
1036. A large species of *Pholadomya* with seven rounded costæ (probably *P. Murchisonæ*, Goldf., Petref. t. 165. f. 2).  
Locality unnoted.

Genus *Anatina*, Lam.

(The existing species occur in the Indian Archipelago, New Zealand, and Western America.)

1037. A fine cast of *Anatina undulata* (*Sanguinolaria*), Sow., and belonging to the genus *Cercomya*, Ag.

Probably from the calcareous grit ; locality unnoted.

Family *Myacidae*.

(Gapers and allied shells, which are widely open or 'gape' behind ; siphons united ; foot small.)

Genus *Corbula*, Brug.

(The existing species of this genus are widely distributed both in latitude and longitude ; they are found on sandy bottoms and to the depth of 80 fathoms.)

1038. Eight separate valves of *Corbula gallica*, Lam.

From the eocene strata of the Paris basin.

1039. Five separate valves of *Corbula exarata*, Desh.

From the eocene strata of the Paris basin.

1040. Two eroded valves of *Corbula*.

Locality unnoted.

Genus *Thetis*, Sow.

(The existing species of this genus, with a similar range to the foregoing, are found at from 40 to 150 fathoms' depth.)

1041. Five casts, in ferruginous sandstone, of *Thetis minor*, Sow.

From the lower green-sand of Sussex ; the species occurs also abundantly near Shanklin, in the Isle of Wight.



Genus *Neæra*, Gray.

(The existing species of this genus, with a similar range, are found at from 12 to 200 fathoms' depth.)

1042. A cast of a small individual of *Neæra inflata*, Sow.  
From the London clay of the Isle of Sheppey.

Genus *Panopæa*, Ménard de la Groye.

(The few existing species have been found in the Northern Seas, Mediterranean, the Cape, Australia, and New Zealand; the majority are fossil.)

1043. Two casts, in greenish sandstone, much corrugated, of *Panopæa Faujasii*.  
From the (miocene) tertiary beds of Switzerland.

Genus *Mya*, Linn.

(The existing species thrive on soft bottoms, especially the sandy and gravelly mud of estuaries; ranging in depth from low-water to 25 fathoms, rarely much deeper.)

1044. A single valve of *Mya arenaria*, Linn.  
From the pliocene strata of Norway.  
This species also occurs in the pliocene deposits of Scotland and the crag of Norfolk.
1045. A single valve of *Mya truncata*, Linn.  
From the pliocene beds of Norway.  
This species occurs in the pliocene deposits of Sweden, Scotland, and also in the crag formation of Suffolk; it still exists in the British seas.

Family *Tellinidæ*.

(Mantle widely open in front; foot tongue-shaped, compressed; siphons separate, long and slender.)

Genus *Tellina*, Linn.

(The existing species are found in all seas, but most abundant and slightly coloured in the tropics.)

1046. Three valves of *Tellina erycinoides*, Desh.  
From the eocene strata of the Paris basin.

1047. A variety of *Tellina scalaroides*, Lam.  
From the eocene strata of the Paris basin.
1048. Two valves of a *Tellina*.  
From the tertiary strata ; locality unnoted.
1049. The *Tellina obliqua*, Sow.  
From the red crag of Walton, Essex.
1050. A valve of *Tellina lingua-bovis*, Sow.  
From the newer tertiary strata of Bermuda.

### Genus *Syndosmya*, Recluz.

(The existing species are few and mostly boreal, ranging from the laminarian zone to 180 fathoms ; usually buried in sand or mud.)

1051. A portion of septaria with numerous casts of *Syndosmya (Tellina) splendens*, Sow.  
From the London clay ; said to be from Kent.

### Family *Veneridæ*.

(Mantle with a rather large anterior opening ; siphons unequal, more or less united ; foot tongue-shaped, sometimes byssiferous.)

### Genus *Cytherea*, Lam.

(The existing species have a world-wide distribution ; from low-water to 140 fathoms.)

1052. A partially eroded specimen of *Cytherea (Cardinia) trigonellaris*, Voltz.  
From the lias of Gundershofen, Bavaria.
1053. A tray of valves of *Cytherea semisulcata*, Lam.  
From the eocene strata of France.
1054. A variety of *Cytherea semisulcata*, Lam.  
From the eocene strata of Damery, France.
1055. The *Cytherea trigonula*, Desh.  
Eocene, Paris basin.

1056. Silicified shells of *Cytherea*.  
Locality unrecorded.
1057. A tray of *Cytherea lævigata*, Lam.  
One specimen is imbedded in the matrix.  
From the eocene strata of the Paris basin.
1058. A tray of *Cytherea nitidula*, Lam.  
From the eocene deposit near Epernay, France.
1059. A rugose species of *Cytherea*.  
From the tertiary strata of Brunn, near Enzersdorf, in Lower Austria.
1060. A valve of *Cytherea suberycinoïdes*, Desh.  
From the miocene strata of Dax, France.
1061. A siliceous cast of a species of *Cytherea*.  
Locality unrecorded.
1062. Two casts in grey sandstone of a *Cytherea*.  
From the tertiary strata (molasse) of Belp, Switzerland.
1063. Two oblong casts in grey rock of *Cytherea suberycinoïdes*.  
From the tertiary strata (molasse) of Belp, Switzerland.
1064. A cast of a species of *Cytherea*.
1065. A cast of a species of *Cytherea*.
1066. Two casts of species of *Cytherea*.  
The localities of the above three specimens are unrecorded; they are probably from tertiary strata.
1067. Two imperfect and eroded specimens of *Cytherea rugosa*, Bronn.  
From the (miocene) tertiary deposits of Germany.

### Genus *Venus*, Linn.

(The distribution of the existing species of this genus agrees with that of *Cytherea*.)

1068. Three valves of *Venus plicata*, Gmelin.  
From the upper tertiary strata of Italy.

1069. Three valves of *Venus verrucosa*, Linn.  
From the newer tertiary strata of Italy.
1070. A single valve, the right, of the *Venus islandicoides*, Ag.  
From the tertiary (pliocene) strata of Italy.
1071. The left valve of the *Venus Mortonis*, Say.  
From the tertiary strata of South Carolina.
1072. A fine example of the entire shell of a variety of the *Venus Mortonis*, Say.  
From the tertiary strata of South Carolina.

b. INTEGROPALLIALIA.

(Siphons short; pallial line simple.)

Family *Cycladidæ*.

(Mantle open in front; siphons more or less united; foot large, tongue-shaped.)

Genus *Cyrena*, Lam.

1073. Specimens of the *Cyrena consobrina*, Caill. (*C. Gemarellii*, Philippi).  
From the pliocene freshwater deposits containing the remains of Mammalia at Ilford, Essex.  
This species still exists, ranging from Egypt to Cashmere and China.

Family *Cyprinidæ*.

Genus *Cyprina*, Lam.

(The existing species of this genus range from Greenland to Norway and England, and are found in depth from 5 to 80 fathoms.)

1074. Two casts, in argillaceous limestone, one partly pyritized, of *Cyprina Morrisii*, Sow.  
From the eocene tertiary strata.
1075. A broken specimen of *Cyprina planata*, var., Sow.  
From the eocene formation called London clay; locality unrecorded.

1076. A cast of a species of *Cyprina*.  
From the nummulitic strata ; locality unrecorded.
1077. A cast in ferruginous sandstone of a *Cyprina*.  
From Weissenstein in Hesse.
1078. A cast in brown sandstone of *Cyprina Islandica*, Linn.  
A portion of the test remains on both valves.  
From the recent tertiary deposits of Iceland.

### Genus *Astarte*, Sow.

(The existing species of this genus occur in Behring's Sea, Wellington Channel, Norway, Britain, the Canary Isles, and the Ægean.)

1079. Three specimens of *Astarte Menardi*, Lam.  
One example is broken and shows the peculiar ferruginous character of the matrix.  
From the inferior oolite of Normandy.
1080. A small individual of *Astarte*.  
From the inferior oolite of Normandy.
1081. Five specimens of a trigonal species of *Astarte*, near to *A. Voltzii*.  
Locality unrecorded.
1082. An imperfect specimen of *Astarte rugata*, Sow.  
From the London clay of the Isle of Sheppey.
1083. A subquadrate species of *Astarte*.  
From the inferior oolitic strata of France.

### Genus *Crassatella*, Lam.

(The existing species of this genus occur in the Canaries, Western Africa, Brazil, India, the Philippines, Australia and New Zealand.)

1084. A fine and perfect specimen of *Crassatella Robinaldina*, d'Orb.  
From the neocomian strata ; locality unnoted.

1085. A large specimen of *Crassatella tumida*, Lam.  
The valves are separated, showing the cardinal area and the muscular impressions.
1086. Two perfect specimens of *Crassatella tumida*.  
The valves are in contact and the shell is filled with the matrix of calcaire grossière.
1087. Two specimens, with the valves separated, of *Crassatella tumida*.
1088. One perfect specimen and four detached valves of *Crassatella compressa*, Lam.
1089. One entire specimen and a single valve of *Crassatella lamellosa*, Lam.
1090. Two single valves of *Crassatella sinuosa*, Desh.
1091. Four valves of *Crassatella scutellaria*, Desh.
1092. Three perfect specimens and two separate valves of *Crassatella gibbosula*, Lam.  
The above specimens, Nos. 1085 to 1092 inclusive, are from the eocene strata of the Paris basin.
1093. One perfect specimen and two valves of *Crassatella sulcata*, Brander.  
From the eocene strata of Barton, Hampshire.
1094. A single valve of a *Crassatella undulata*, Say.  
From the miocene strata of Maryland, America.
1095. A variety of *Crassatella tumida*, Desh.  
From the nummulitic strata; Swiss Alps.

#### Genus *Opis*, DeFrance.

(All the known species of this genus are extinct.)

1096. A valve of *Opis similis* (*Cardita*), Sow.  
From the inferior oolite of France.

#### Genus *Pachyrisma*, Morris & Lycett.

(The species of this genus are extinct.)

1097. A fragment of a species of *Pachyrisma*, containing crystalline calc spar.  
From the jurassic strata; locality unnoted.

Genus *Isocardia*, Lam.

(The existing species occur in the British and Mediterranean Seas, in China and Japan.)

1098. A weathered cast of *Isocardia cordata*, Buckman.  
From the inferior oolite of Gloucestershire.

Genus *Cardinia*, Agassiz (*Pachyodon*, Stutchbury).

(The species of this genus are extinct.)

1099. An imperfect specimen of *Cardinia concinna*, Stutchbury.  
From the middle lias of Gloucestershire.
1100. A cast in argillaceous limestone of a species of *Cardinia*, coated with crystals of iron pyrites and carbonate of lime.  
From the liassic strata, near Bristol.
1101. The *Cardinia (Unio) Listeri*, Sow.  
From the liassic strata.

Genus *Myoconcha*, Sow.

(The species of this genus are extinct.)

1102. A specimen, longitudinally bisected, of *Myoconcha crassa*, Sow.  
It shows the pisolitic ferruginous grains of the matrix.  
From the inferior oolite of Normandy.

Genus *Hippopodium*, Conybeare.

(The species of this genus are extinct.)

1103. A fine specimen of *Hippopodium ponderosum*, Sow.  
From the liassic strata of Gloucestershire.

Genus *Cardita*, Brug. (*Venericardia*, Lam).

(The existing species of this genus are found chiefly in tropical seas, on rocky bottoms and in shallow water.)

1104. A specimen of *Cardita planicosta*, Lam., filled with the matrix, which consists of calcareous sand, mixed with chloritic grains.
1105. Two specimens, with separated valves, of *Cardita planicosta*.
1106. Two silicified valves of *Cardita planicosta*.
1107. Two valves of *Cardita crassa*, Lam.
1108. One specimen and two valves of *Cardita acuticosta*, Lam.
1109. Six valves of *Cardita imbricata*, Lam.
1110. Two valves of *Cardita angusticostata*, Desh.
1111. Three valves of a *Cardita*.

The above specimens, from Nos. 1104 to 1111 inclusive, are from the eocene strata of the Paris basin.

1112. A large specimen of *Cardita*, near to *C. multcosta*, Lam.  
Locality unrecorded.
1113. Two specimens and twelve valves of *Cardita globosa*, Sow.  
From the eocene deposit of Barton, Hampshire.
1114. One large and two smaller valves of *Cardita planicosta*, Lam.  
From the eocene beds of Bracklesham, Sussex.

Family *Lucinidæ*.

(Mantle usually widely open below, with one or two siphonal apertures; foot long, sometimes byssiferous.)

Genus *Lucina*, Bruguière.

(The existing species occur in Norway, the Black Sea, the West Indies, and New Zealand.)

1115. A large specimen of *Lucina gigantea*, Desh., to which a portion of the matrix is attached.



1116. One perfect specimen and several valves of *Lucina concentrica*, Lam.
1117. A single valve of *Lucina scalaris*, DeFrance.  
The specimens, Nos. 1115 to 1117 inclusive, are from the eocene deposits of the Paris basin.
1118. Two specimens, with the valves separated, of *Lucina mutabilis*, Lam.  
From the eocene strata of the Paris basin.
1119. Three specimens filled with the matrix of *Lucina mutabilis*, Lam.  
From the eocene strata of the Paris basin.
1120. Four imperfect casts of *Lucina*.  
From the eocene strata ; locality unnoted.

### Genus *Corbis*, Cuvier.

(The species of this genus occur in India, China, North Australia and the Pacific.)

1121. One perfect specimen and five separate valves of *Corbis lamellosa*, Lam.  
From the eocene deposit of Damery, France.

### Genus *Unicardium*, d'Orb.

(The species of this genus are extinct.)

1122. Two specimens of *Unicardium cardioïdes*, Phillips, sp.  
From the liassic strata ; locality unnoted.

### Family *Cardiadae*.

(The existing species of Cockle have a world-wide distribution ; foot large sickle-shaped, protruded through a large orifice in the mantle ; siphons usually short.)

### Genus *Cardium*, Brug.

1123. Two specimens of *Cardium semigranulatum*, Sow.  
From the London clay ; locality unnoted.  
The species occurs at Highgate and Wandsworth.

1124. Six valves of *Cardium porulosum*, Lam.  
From the eocene strata of the Paris basin.
1125. Three valves of *Cardium aviculare*, Lam.  
From the eocene strata of the Paris basin.
1126. Two valves of *Cardium rachitis*, Desh.  
From the eocene strata of the Paris basin.
1127. Two valves of *Cardium hippopæum*, Desh.  
One valve is an original specimen; the opposite is a cast in plaster to correspond with it.  
From the eocene strata of the Paris basin.
1128. An entire shell and a valve of a variety of the *Cardium edule*, Linn.  
From the most recent tertiary deposits; locality unnoted.
1129. A cast of a large-ribbed *Cardium*.  
From the tertiary strata; locality unrecorded.
1130. A cast of a species of *Cardium*.  
Locality unnoted.
1131. A cast of a species of *Cardium*.  
From the miocene tertiary formation, called 'molasse,' of Belp in Switzerland.
1132. Two imperfect casts of a *Cardium*.  
From the molasse, Switzerland; locality unnoted.
1133. A cast, in ferruginous stone, of a species of *Cardium*, described in the MS. Catalogue as "an *Ætites*, and rattles briskly when shaken."  
From the iron mines of Samabor, Croatia.
1134. A cast of a broad-ribbed *Cardium*.  
Locality unnoted; probably from the tertiary deposits.
1135. A cast, in dark sandstone, of a species of *Cardium*.  
From the tertiary formation called 'molasse;' locality unrecorded.
1136. Two valves of *Cardium obliquum*, Lam.  
From the eocene strata of the Paris basin.

1137. A valve of a species of *Cardium*, filled with a coarse grit.  
From the miocene strata of Turin.
1138. A large species of *Cardium*, near to *C. hippopæum*, Deshayes, filled with a crystalline matrix.  
From the tertiary formations ; locality unnoted.
1139. The *Cardium Fittoni*, d'Orb.  
From the tertiary strata of Southern Russia (Taganrog?).

### Family *Hippuritidæ*.

(All the species of this family are extinct ; the shell is inequivalve, unsymmetrical, thick, attached by the right umbo ; umbones frequently cambered ; hinge-tooth 1-2 ; adductor impressions two, large ; those of the left valve on prominences ; pallial line simple, submarginal.)

### Genus *Hippurites*, Lam.

1140. A large specimen of *Hippurites dilatatus*, DeFr.  
It is divided into two pieces, so as to show the internal cavity and the structure of the thick shell.  
From the cretaceous beds of Gosau.
1141. A specimen of the internal cast of *Hippurites Peirousii*, Goldf.  
Showing the casts of the dental and muscular pits.  
From the cretaceous strata at Maestricht.

### Genus *Radiolites*, Lam.

1142. A specimen of the larger valve of *Radiolites Ponsiana*, d'Orb.  
From the cretaceous strata of France.
1143. A small specimen of *Radiolites angeiodes*, Lam.  
From the cretaceous strata of France.
1144. A large specimen of *Radiolites mammillaris*, Matheron, showing the internal cavity.  
From the cretaceous strata of the South of France.

1145. A portion of *Radiolites triangularis*, d'Orb., showing the outer shell and a cast of the inner cavity.

From the cretaceous strata of the South of France.

1146. The internal cast of *Radiolites Hæninghausii*, Desm. sp.

Described in the MS. Catalogue as the "cast of a large conic fungites."

From the upper cretaceous beds; Maestricht.

### Family *Chamidæ*.

(The pedal and siphonal orifices of the mantle small, subequal; the foot very small; shell inequivalve.)

### Genus *Chama*, Linn.

(The existing species occur in tropical seas, especially among coral reefs.)

1147. Two valves of *Chama lamellosa*, Lam.

1148. A perfect specimen of *Chama gigas*, Desh.

1149. Two large and one small specimen of *Chama calcarata*, Lam.

1150. Three separate valves and a piece of 'calcaire grossière' with a partly imbedded valve of *Chama calcarata*, Lam.

Spines are developed from some of the lamellæ on the exterior of the shell.

The above specimens, Nos. 1147 to 1150 inclusive, are from the eocene strata of the Paris basin.

1151. Ten valves of *Chama squamosa*, Brander.

From the eocene deposits, Hordwell, Hampshire.

DIMYARIA. B. *ASIPHONIFERA*.

(With two adductor muscles ; siphons very short or absent ; pallial line simple.)

Family *Unionidæ*.Genus *Unio*, Retzius.

(The existing species are freshwater, and widely distributed ; the fossil forms occur in the Wealden and Tertiary strata.)

1152. A broken specimen of *Unio*, showing a portion of the layers of the thick and pearly shell.  
From the freshwater tertiary strata ; locality unrecorded.

Family *Trigoniadæ*.

(Mantle-lobes separated ; foot long and bent ; shell equivalve, trigonal.)

Genus *Trigonia*, Bruguière.

(The few known living species are now confined to Australia.)

1153. Two specimens of *Trigonia navis*, Brug.  
From the lias of Wirtemberg.
1154. A valve of *Trigonia costata*, Parkinson.  
From the inferior oolite ; locality unnoted.
1155. Two pieces of slaty sandstone containing the impression of *Trigonia impressa*, Sow.  
From the oolitic strata of Stonesfield, Oxfordshire.
1156. Two specimens of *Trigonia Moretonis*, Morris & Lycett.  
From the oolitic strata of Gloucestershire.

1157. A large and compressed specimen of *Trigonia clavellata*, Park.  
From the Oxford clay ; locality unnoted.
1158. Five specimens of *Trigonia clavellata*.  
From the Oxford clay ; locality unnoted.
1159. Two specimens of an elongated variety of *Trigonia clavellata*, Park.  
From the Oxford clay, near Weymouth, Dorsetshire.
1160. Four specimens of *Trigonia costata*, Park.  
From the Oxford clay ; locality unnoted.
1161. Three specimens of *Trigonia costata*, Park., var. *elongata*.  
From the Oxford clay of France.
1162. A portion of grey and sandy rock containing two valves of *Trigonia costata*, one valve of *Trigonia clavellata*, Park., and fragments of *Gervillia aviculoides*, Sow.  
From the Oxford clay ; locality unnoted.
1163. A cast of the interior of a species of *Trigonia gibbosa*, Sow.  
From the upper oolitic strata of the Isle of Portland, Dorsetshire.
1164. A cast in matrix, partly made up of plaster, of a species of *Trigonia*, near to *T. Dædalæa*, Park.  
Locality unrecorded.
1165. Two valves of *Trigonia alæformis*, Park.  
From the cretaceous strata ; locality unnoted.

### Genus *Myophoria*, Bronn.

(The species of this genus are extinct.)

1166. A cast of *Myophoria vulgaris*, Bronn.  
From the muschelkalk of Germany.

Family *Arcadae*.

(Mantle-lobes separated; foot large, bent and deeply grooved; shell equivalve; hinge long, with many teeth.)

Genus *Arca*, Linn.

(The living species of Ark-shells have a world-wide distribution; but are most abundant in the warmer latitudes.)

1167. Four valves of *Arca biangula*, Lam.  
From the eocene strata near Paris.
1168. Two valves of the *Arca magellanoides*, Desh.  
From the eocene strata of the Paris basin.
1169. Four valves of the *Arca barbatula*, Lam.  
From the eocene strata near Paris.
1170. One valve of the *Arca quadrilatera*, Lam.  
From the eocene strata of the Paris basin.
1171. One valve of the *Arca rudis*, Desh.  
From the eocene deposits of the Paris basin.
1172. Two valves of the *Arca Diluvii*, var., Basterot.  
From the miocene strata of Bordeaux.
1173. An entire shell and a single valve of the *Arca Diluvii*, Lam.  
From the upper tertiary strata of Italy.
1174. A cast of a specimen of *Arca*, containing phosphatic matter.  
From the cretaceous strata of France.

Genus *Pectunculus*, Lam.

(The existing species of this genus occur in the seas of Britain, East and West Indies, New Zealand and Western America.)

1175. Three valves of *Pectunculus umbonatus*, Sow.  
From the green-sand of Blackdown.

1176. Two specimens of *Pectunculus brevirostris*, Sow.  
Imbedded in rock; the interior cast of one valve showing the muscular impressions.  
From the London clay of Bognor, Sussex.
1177. Four valves of *Pectunculus deletus*, Brander.  
From the middle eocene of Barton, Hampshire.
1178. A tray of valves of the *Pectunculus pulvinatus*, Lam.  
From the eocene strata of the Paris basin.
1179. Five valves of *Pectunculus polyodonta*, Bronn.  
From the miocene strata of Germany.
1180. A large valve of *Pectunculus polyodonta*, Bronn.  
Locality unnoted.
1181. Two valves of the *Pectunculus pyrenaicus*, Brong.  
From the tertiary strata of Italy
1182. A large and a small specimen of the *Pectunculus pulvinatus*, var., Basterot.  
From the miocene strata of Bordeaux.
1183. A large and thick variety of *Pectunculus polyodonta*, Bronn.  
From the tertiary strata; locality unnoted.
1184. Two valves of *Pectunculus variabilis*, Sow.  
From the red crag of Essex.
1185. An internal cast of a *Pectunculus*, in pisolitic rock.  
From the eocene tertiary strata, France.

### Genus *Isoarca*, Münster.

(The species of this genus are extinct.)

1186. Two imperfect casts of a species of *Isoarca*.  
From the jurassic strata of Germany.



Genus *Nucula*, Lam.

(The living species occur in Norway, the Cape of Good Hope, Japan, Chili; usually on coarse bottoms, from 5 to 100 fathoms deep.)

1187. Two specimens of the *Nucula Hammeri*, DeFrance.  
From the upper lias of Wirtemberg.

1188. Two specimens of the *Nucula ovalis*, Goldfuss.  
From the oolitic strata of Germany.

1189. Three specimens and casts of *Nucula pectinata*, Sow.  
From the gault of Kent.

1190. Two specimens of *Nucula amygdaloides*, Sow.  
From the London clay of the Isle of Sheppey, Kent.

1191. The *Nucula margaritacea*, Lam.  
From the eocene strata of the Paris basin.

Genus *Leda*, Schumacher.

1192. The *Leda* (*Nucula*) *attenuata*, Sow.  
From the carboniferous shales of Scotland.

Family *Mytilidæ*.

(Mantle-lobes united between the branchial and anal slits or orifices; foot cylindrical, byssiferous.)

Genus *Modiola*, Lam.

(Most of the living species of this genus are tropical; one only is known in British and Arctic Seas.)

1193. The *Modiola scalprum*, Sow.  
From the liassic strata of Germany.

1194. Three specimens of *Modiola Sowerbyana*, d'Orb. (*M. plicata*, Sow.).  
From the inferior oolite of the Cotteswolds, Gloucestershire.

1195. The *Modiola bipartita*, Sow.  
From the oolitic strata ; locality unnoted.
1196. The *Modiola reniformis*, Sow.  
From the inferior oolite of Somersetshire.
1197. Four specimens of the *Modiola bipartita*, Sow.  
From the Oxford clay of Weymouth.
1198. Three specimens of the *Modiola (Mytilus) pectinata*, Sow.  
From the upper jurassic strata (Oxfordian) of Dorsetshire ; the species occurs also in Normandy.
1199. A specimen of *Modiola barbata*, Linn.  
Imbedded in grey sandstone, filling the interior of a valve of an *Isocardia*.  
From the tertiary deposits of Piedmont.

#### Genus *Lithodomus*.

(The living species occur in the West Indies and New Zealand.)

1200. Internal casts in white limestone, partially encrusted by calcareous matter, of two species of *Lithodomus*.  
From the miocene strata of Malta.
1201. Three smaller specimens of the same species of *Lithodomus*.

#### Family *Aviculidæ*.

(Lobes of the mantle widely separated ; foot small, byssiferous ; anterior adductor very small, leaving its impression within the umbo.)

#### Genus *Avicula*, Bruguière.

(The existing species occur in the British Channel, the Mediterranean, India, the Pacific, and Mexico.)

1202. A portion of dark shale with impressions of *Avicula (Aviculopecten) papyracea*, Sow.  
From the coal-measures ; locality unnoted.

1203. A thin slab of shale with casts of *Avicula Munsteri*, Goldf.  
From the liassic strata of Westbury Cliff.
1204. A portion of oolitic slate with a valve of the *Avicula inæquivalvis*, Sow.  
From the oolitic strata, Stonesfield, Oxfordshire.
1205. A cast in highly ferruginous sandstone of an *Avicula*.  
From the oolitic strata, Bavaria.

### Genus *Posidonomya*, Bronn.

(The species of this genus are extinct.)

1206. Two pieces of schist containing impressions of *Posidonomya Becheri*, Bronn.  
From the Devonian strata of the Rhine.

### Genus *Gervillia*, Defrance.

(The species of this genus are extinct.)

1207. The *Gervillia (Avicula) socialis*, Bronn.  
From the muschelkalk of Germany.
1208. Casts of *Gervillia pernoides*, Deslongchamps.  
From the oolitic strata.
1209. Four specimens of *Gervillia aviculoides*, Sow.  
From the Oxford clay of Normandy.
1210. Two imperfect specimens of *Gervillia aviculoides*, Sow.  
From the Oxford clay.
1211. An impression of a *Gervillia*, in clay.  
Locality unnoted ; probably from the lower cretaceous strata.

Genus *Perna*, Lam.

(The existing species occur in the tropical seas.)

1212. Three specimens of *Perna mytiloides*, Lam.  
From the Oxford clay of Normandy.
1213. A valve of *Perna approximata*, Goldf., in soft earthy limestone.  
From the cretaceous strata of Maestricht.
1214. Two broken valves of *Perna maxillata*, Lam.  
From the tertiary (miocene) strata of Bononia, Italy.

Genus *Inoceramus*, Sow.

(The species of this genus are extinct.)

1215. Two casts of *Inoceramus concentricus*, Sow.  
From the gault of Folkestone, Kent.
1216. A cast of one of the valves of an *Inoceramus*.  
From the upper chalk; locality unnoted.
1217. Three specimens of *Inoceramus sulcatus*, Park.  
From the gault of Folkestone.
1218. Two fragments of the shell of an *Inoceramus*, imbedded in flint.  
From the upper chalk, Kent.
- 1218 a. A specimen of *Inoceramus substriatus*, Münst.  
From the liassic strata of Bavaria.

Genus *Pinna*, Linn.

(The existing species of this genus are widely distributed.)

1219. A portion of rock containing a fragment of *Pinna folium*, Sow.  
From the lias of Somersetshire.

1220. A mass of rock containing a fragment of *Pinna decussata*, Goldf.  
From the cretaceous strata of Germany.

1221. A broken specimen of *Pinna affinis*, Sow.  
From the eocene strata (London clay); locality unnoted.

### Genus *Trichites*, Llhwyd (*Pinnigène*, Saussure).

(The species of this genus are extinct.)

1222. A fragment of a species of *Trichites*, showing the fibrous structure of the shell; the surface is eroded and pierced with boring mollusks.  
From the oolitic deposits of Switzerland.

1223. Fragments of the shell of *Trichites*.  
This genus occurs in the inferior oolite of England.

### C. MONOMYARIA.

(With one (the posterior) adductor muscle.)

### Family *Ostreidæ*.

(Lobes of the mantle widely separated; foot small, byssiferous or absent; shell inequivalve, slightly inequilateral.)

### Genus *Spondylus*, Linn.

(The existing species of this genus occur in the Mediterranean, East and West Indies, the Canaries, Torres Straits, the Pacific, and Western America.)

1224. A fine specimen of *Spondylus truncatus*, Lam.  
From the cretaceous strata of France.

1225. A variety of *Spondylus truncatus*, Lam.  
From a cretaceous formation; locality unrecorded.

1226. A perfect specimen of *Spondylus spinosus*, Sow.  
From the upper chalk of Kent.
1227. An imperfect specimen of *Spondylus spinosus*, Sow.  
The umbones are broken, and the upper valve shows the remains of spines.  
From the upper chalk of Sussex.
1228. The *Spondylus spinosus*, with the valves separated.  
From a cretaceous formation ; locality unnoted.
1229. A small imperfect valve of *Spondylus spinosus*, Sow., imbedded in a piece of chalk.  
From a cretaceous formation ; locality unnoted.
1230. Two casts in flint of *Spondylus spinosus*, Sow.  
A portion of the testaceous matter remains upon one of the specimens.  
From the upper chalk of Croydon, Surrey.
1231. A brown siliceous cast of *Spondylus spinosus*, to which a few orbicular granules of silex are attached.  
From a cretaceous formation ; locality unrecorded.
1232. A silicified specimen of *Spondylus striatus*, Brong.  
From the greensand of Germany.
1233. A young specimen of *Spondylus truncatus*, Lam.  
From the greensand of France.
1234. A large and partly broken shell of a globose species of *Spondylus*.  
The attached valve shows the serial arrangement of the bases of spines, the other valve is regularly costated.  
From the tertiary strata of Brendola.
1235. Two valves of *Spondylus bifrons*, Münster.  
From the tertiary strata of Italy.
1236. An internal cast, in soft limestone, of a *Spondylus*.  
Locality unrecorded.

1237. The *Spondylus radula*, Lam.  
From the eocene strata of the Paris basin.
1238. Two compressed and distorted specimens of *Spondylus spinosus*, Sow.  
From the cretaceous strata of Germany.

### Genus *Plicatula*, Lam.

(The existing species occur in the East and West Indies, the Philippines, Australia and Western America.)

1239. A tray of specimens of *Plicatula spinosa*, Sow.  
From the middle lias of Wirtemberg.
1240. A tray containing a variety of *Plicatula spinosa*.  
From the middle lias of Metz, France.
1241. Various specimens of *Plicatula armata*, Goldf.  
From the Oxfordian strata of the Ardennes.
1242. Specimens of a variety of *Plicatula armata*.  
From the Oxfordian strata; locality unnoted.

### Genus *Lima*, Brug. (*Plagiostoma*, Sow.).

(This genus is widely distributed; the largest known living species (*Lima excavata*) is found on the coast of Norway.)

1243. A mass of argillaceous limestone containing numerous eroded specimens of *Lima striata*, Desh.  
From the muschelkalk, Germany.
1244. A perfect example of *Lima striata*.  
From the muschelkalk, Germany.
1245. Three separate specimens, imbedded in argillaceous limestone, of *Lima striata*.  
From the muschelkalk, Germany.

1246. Two valves of *Lima striata*, imbedded in the matrix.  
From the muschelkalk, Germany.
1247. Two specimens of *Lima lineata*, Desh.  
From the muschelkalk, Wirtemberg.
1248. Fragments of *Lima striata*, Desh., with *Gervillia (Avicula) socialis*, imbedded in the matrix.  
From the muschelkalk, near Jena, Germany.
1249. A large and crushed specimen of the *Lima gigantea*, Sow.  
From the lias ; locality unrecorded.
1250. The *Lima gigantea*.  
From the lias, Waldenheim, Austria.
1251. Three specimens of *Lima gigantea*.  
From the lias ; locality unrecorded.
1252. The *Lima gigantea*.  
From the lias of Blue Lodge Quarries, Bath.
1253. A small specimen of *Lima gigantea*, in the matrix, with the valves separated.  
From the lias of Blue Lodge Quarries, Bath.
1254. Three detached valves, in the matrix, of *Lima gigantea*, Sow.  
From the lias, Bath.
1255. One valve of *Lima gigantea*, attached to a portion of the matrix.  
From the lias, Walsingen, in Wirtemberg.
1256. The *Lima gigantea* ; the valves are partly separated.  
From the lias ; locality unrecorded.
1257. The *Lima gigantea*, to each valve of which an oyster is attached.  
From the lias ; locality unrecorded.
1258. Two detached valves, in the matrix, of *Lima gigantea*.  
From the lias of Bath.
1259. Three specimens of *Lima gigantea* ; one of them is imbedded in the matrix.  
From the lias ; locality unrecorded.



1260. A young individual of *Lima gigantea*, Sow.  
From the lias ; locality unrecorded.
1261. A slab of limestone containing six valves of *Lima gigantea*.  
From the lias of Bath.
1262. Two specimens of the *Lima Hermanni*, Voltz.  
From the lias ; locality unrecorded.
1263. A valve of *Lima Hermanni*, Voltz, attached to a mass of earthy limestone.  
From the lias near Bristol. *Presented by Prof. J. Quekett.*
1264. The *Lima Hermanni*, Voltz.  
From the lias ; locality unrecorded.
1265. One valve, attached to a portion of matrix, of the *Lima lævigata*, Sow.  
From the coralline oolite of Yorkshire.
1266. The *Lima tegulata*, Münster.  
From the oolitic strata of Germany.
1267. The *Lima duplicata*, Sow.  
From the oolite ; locality unrecorded.
1268. The *Lima gibbosa*, Sow.  
From the inferior oolite ; locality unrecorded.
1269. The *Lima notata*, Goldf.  
From the oolite, Waldenheim, five leagues from Stranburg, in Alsatia.
1270. A specimen and a single valve of the *Lima rigida*, Sow.  
From the coralline oolite ; locality unrecorded.
1271. The *Lima proboscidea*, Sow.  
From the oolite ; locality unrecorded.
1272. A specimen of *Lima proboscidea*.  
From the inferior oolite ; locality unrecorded.

1273. Two fine specimens of *Lima proboscidea*, to one of which small *Gryphææ* are attached.  
From the Oxfordian strata; probably of Weymouth.
1274. A gibbose variety of *Lima proboscidea*; eroded and waterworn.  
From the oolite; locality unrecorded.
1275. The *Lima proboscidea*.  
From the inferior oolite; locality unrecorded.
1276. The *Lima Hector*, d'Orb., to which small *Serpulæ* are attached.  
From the inferior oolite of Normandy.
1277. Two separated valves of *Lima Hector*, d'Orb.  
From the inferior oolite, Normandy.
1278. A specimen of *Lima duplicata*, Sow., attached to the matrix.  
From the coralline oolite of Scarborough.
1279. A portion of matrix, with a single worn valve, of *Lima cardioides*, Sow.  
From the oolitic strata, Dunsbourn, Gloucestershire.  
*Presented by Mrs. Baillie.*
1280. A single valve of the *Lima proboscidea*, Sow.  
From the oolitic strata of Hungary.

### Genus *Hinnites*, Defrance.

(The species of this genus are extinct.)

1281. An entire specimen and a single valve of the *Hinnites Cortesii*, Defrance  
(*H. crispus*, Bronn).  
From the upper tertiary strata of Italy.

### Genus *Pecten*, Müller.

(The existing species of this genus have a world-wide distribution, and have been found to the depth of 200 fathoms.)

1282. Two specimens of the *Pecten æquivalvis*, Sow.  
From the liassic marlstone of Somersetshire.

1283. Two specimens, in ferruginous sandstone, of *Pecten æquivalvis*, Sow.  
From the liassic marlstone of Gloucestershire.
1284. A specimen of *Pecten sublævis*, Phillips.  
From the lias ; Yorkshire.
1285. The *Pecten vagans*, Sow., imbedded in slaty oolite.  
From the oolitic formation called 'Stonesfield slate,' Oxfordshire.
1286. The *Pecten vagans*, Sow., imbedded in oolitic rock.  
From the great oolite of Gloucestershire.
1287. Three specimens of *Pecten fibrosus*, Sow.  
From the middle jurassic strata ; locality unrecorded.
1288. A large valve, imbedded in oolitic rock, of *Pecten demissus*, Phillips.  
From the lower oolitic strata ; locality unrecorded.
1289. The *Pecten barbatus*, Sow.  
This species occurs in the coral rag of England and France.
1290. The *Pecten articulatus*, Schlotheim.  
This species is found in the coralline oolite of England and Germany.
1291. Two silicified specimens, partly attached to the matrix, of *Pecten asper*,  
Lam.  
From the upper greensand of France.
1292. Two silicified specimens of *Pecten asper*, Lam.  
From the upper greensand of Wiltshire.
1293. Two specimens of *Pecten quadricostatus*, Sow.  
From the upper greensand of France.
1294. The gibbose valve of *Pecten quadricostatus* ; attached to a mass of green  
siliceous rock.  
From the upper greensand of Wiltshire.
1295. The *Pecten quadricostatus*.  
From the cretaceous strata of Belgium.

1296. Six of the flat valves of *Pecten quadricostatus*, imbedded in a soft calcareous shelly matrix.  
From the cretaceous deposits at Maestricht.
1297. A valve of *Pecten quinquecostatus*, Sow.  
From the cretaceous strata; locality unrecorded.
1298. An imbedded valve of *Pecten Nilssoni*, Goldfuss.  
From the cretaceous deposits at Maestricht.
1299. The *Pecten circularis*, Goldfuss, filled with a matrix of chloritic sandstone.  
From the upper greensand of Germany.
1300. Two separated valves of *Pecten orbicularis*, Mantell.  
From the lower chalk; locality unrecorded.
1301. The *Pecten burdigalensis*, Lam.  
From the miocene beds of Malta.
1302. Two valves and a perfect specimen of *Pecten flabelliformis*, Brocchi  
From the pliocene strata of Italy.
1303. Three specimens of *Pecten* near to *P. Grayi*, Michelotti.  
From the miocene strata of Italy.
1304. An imperfect specimen and fragment of a valve of *Pecten latissimus*, Brocchi.  
From the tertiary strata of Italy.
1305. A smaller specimen of *Pecten latissimus*.  
From the tertiary strata of Giengen.
1306. A cast of an imperfect specimen of a ribbed *Pecten*.  
From the miocene molasse of Belp, Switzerland.
1307. A valve of *Pecten arcuatus*, Brocchi.  
From the tertiary strata of Italy.
1308. Two valves of the *Pecten polymorphus*, Bronn.  
From the tertiary strata of Italy.
1309. The *Pecten demissus*, Phillips.  
From the oolitic strata; locality unrecorded.

1310. Two gibbose valves of *Pecten*.  
From the tertiary strata of France.
1311. Two specimens of *Pecten*.  
From the tertiary strata; locality unrecorded.
1312. Two specimens of *Pecten* near to *P. Josslingi*, Smith.  
From the tertiary strata of Lisbon.
1313. A *Pecten*.  
From the tertiary strata.
1314. Two valves of a species of *Pecten*, imbedded in coarse and loose shelly rock.  
From the tertiary strata of Sopronia, Hungary.
1315. A large specimen of *Pecten*.  
From the newer tertiary strata; locality unrecorded.
1316. The separated valve of *Pecten solarium*, Lam.  
From the newer tertiary strata of Brunn near Engersdorf, in Lower Austria.
1317. An eroded specimen of *Pecten*, filled with earthy limestone.
1318. A *Pecten*.  
From the tertiary strata.
1319. Two specimens of *Pecten (Ostrea) striatus*, Brocchi.  
From the newer tertiary strata of Italy.
1320. A cast of a *Pecten*, in dark limestone.  
From a liassic formation, Walkenberg, Germany.

### Genus *Gryphæa*, Lam.

(The species of this genus are extinct.)

1321. A slab of argillaceous limestone, containing four valves of *Gryphæa incurva*, Sow.  
From the lias; locality unrecorded.

1322. Three specimens of *Gryphæa incurva*, Sow.  
From the lias of Gloucestershire.
1323. A specimen of *Gryphæa incurva*, attached to the gibbose valve of the same species.  
From the lias ; locality unrecorded.
1324. A group of the *Gryphæa incurva*.  
From the lias ; locality unrecorded.
1325. The *Gryphæa incurva*.  
From the lias ; locality unrecorded.
1326. A perfect specimen of *Gryphæa incurva*.  
From the lias ; locality unrecorded.
1327. Two specimens and a valve of the *Gryphæa Maccullochii*, Sow.  
From the lias ; locality unrecorded.
1328. The *Gryphæa cymbium*, Lam.  
From the lias ; locality unrecorded.
1329. Three specimens of *Gryphæa dilatata*, Sow.  
From the Oxford clay of Normandy.
1330. A variety of *Gryphæa dilatata*, Sow., showing the impression, on both valves, of an Ammonite to which it has been attached.  
From the Oxford clay ; locality unrecorded.
1331. Two specimens of *Gryphæa dilatata*.  
From the Oxford clay ; locality unrecorded.
1332. Two specimens of *Gryphæa dilatata*.  
One is attached to the flat valve of another specimen.  
From the Oxford clay ; locality unrecorded.
1333. A broken specimen of *Gryphæa dilatata*.  
From the Oxford clay, St. Clements, Oxford.
1334. Six portions of cretaceous rock containing more or less complete specimens of *Gryphæa globosa*, Sow. (*Ostrea vesicularis*, Brong.).  
From the cretaceous strata of Maestricht.

1335. Two specimens, imbedded in a soft calcareous matrix, of *Gryphæa* (*Ostrea*) *vesicularis*, Brong.  
From the cretaceous strata of Maestricht.

### Genus *Exogyra*, Lam.

1336. The *Exogyra Couloni*, Leymerie.  
From the lower neocomian strata; locality unrecorded.
1337. Three specimens of *Exogyra Couloni*, Leym.  
From the cretaceous strata; locality unrecorded.
1338. A valve of *Exogyra conica*, Sow.  
From the upper greensand of Wiltshire.
1339. Four silicified valves of *Exogyra conica*, Sow.  
From the cretaceous strata; locality unrecorded.
1340. Four specimens of *Exogyra columba*, Goldfuss.  
From the cretaceous strata of Squorez near Schwartz, Rostatez, Bohemia.
1341. Five valves of the young state of *Exogyra columba*, Goldf.  
From the cretaceous strata; locality unnoted.
1342. Two specimens of *Exogyra* (*Gryphæa*) *sinuata*, Sow.  
From the lower greensand, Kent.

### Family *Ostreidæ*.

#### Genus *Ostrea*, Linn.

(The living species of Oyster have a world-wide distribution.)

1343. Eight specimens of *Ostrea Marshii*, Sow.  
From the inferior oolite of Wirtemberg.
1344. Six specimens of *Ostrea Marshii*.  
From the Oxford clay, France.

1345. A specimen of *Ostrea Marshii*, attached to the valves of *Perna mytiloides*.  
From the Oxford clay, France.
1346. A variety of *Ostrea Marshii*.  
From the oolitic strata ; locality unrecorded.
1347. Four specimens of *Ostrea deltoidea*, Sow.  
From the Kimmeridge clay ; locality unrecorded.
1348. The *Ostrea gregaria*, Sow.  
From the Oxford clay of Normandy.
1349. A mass of variously attached specimens of *Ostrea gregaria*, Sow.  
From the coral rag of Buckinghamshire.
1350. The *Ostrea rastellaris*, Münster.  
From the coral rag of Germany.
1351. Two varieties of *Ostrea acuminata*, Sow.  
From the oolitic strata ; locality unrecorded.
1352. Two specimens of *Ostrea solitaria*, Sow.  
From the coral rag ; locality unrecorded.
1353. The *Ostrea Knorrii*, Voltz.  
From the middle oolite of Wirtemberg.
1354. The *Ostrea amor*, d'Orb.  
From the Oxford clay of France.
1355. The *Ostrea explanata*, Goldfuss.  
From the Oxfordian strata ; locality unrecorded.
1356. A large and massive ribbed Oyster, probably a variety of *Ostrea Marshii*.  
From the lower oolitic strata, Germany.
1357. Two varieties of *Ostrea diluviana*, Goldf.  
From the cretaceous strata of Germany.
1358. Two specimens of *Ostrea* (near to *O. frons*), attached by the matrix.  
Locality unrecorded.



1359. Three varieties of *Ostrea prionota*, Goldfuss.  
From the cretaceous strata, Havre.
1360. A coarsely ribbed variety of *Ostrea frons*, Parkinson.  
From the lower chalk, Havre.
1361. Four specimens of *Ostrea carinata*, Lam., two of which are attached.  
From the lower chalk of France.
1362. A fine and perfect specimen of *Ostrea carinata*, Lam.  
From the lower chalk, France.
1363. The *Ostrea lineata*, Nilsson.  
From the cretaceous deposits, Maestricht.
1364. The *Ostrea larva*, Lam.  
From the cretaceous deposits, Maestricht.
1365. A valve of *Ostrea flabelliformis*, Nilsson.  
From the cretaceous strata, Odolka, in the circle of Kautzimen, Bohemia.
1366. A valve of *Ostrea colubrina*, Lam., attached to a serpula.  
From the coralline oolite of France.
1367. A tray of *Ostrea flabellula*, Lam.  
From the eocene strata of Barton, Hampshire.
1368. Various specimens of *Ostrea flabellula*, Lam.  
From the eocene strata of the Paris basin.
1369. Various specimens of *Ostrea callifera*, Lam.  
From the (miocene) tertiary strata; locality unrecorded.
1370. The *Ostrea Bellovacina*, Lam.  
From the lower eocene strata of the London basin.
1371. Different varieties of *Ostrea undata*, Lam.  
From the upper tertiary strata of Italy.
1372. Three specimens of *Ostrea lamellosa*, Brocchi.  
From the upper tertiary strata of Italy.

1373. A large and perfect specimen, with the valves separated, of *Ostrea longirostris*, Lam.  
From the molasse of Germany.
1374. Five different forms of *Ostrea longirostris*, Lam.  
From the miocene strata of Germany.
1375. A large and massive oyster (*Ostrea*), partially coated and cemented by calcareous matter.  
From tertiary formations, Hardenheim in Alsatia.
1376. A single thick valve of an *Ostrea*, much perforated, and coated by parasitic testacea.  
Locality unrecorded.
1377. A single thick valve of an *Ostrea*, partially coated with a bryozoon.  
Locality unrecorded.
1378. Two single valves of an *Ostrea*, imbedded in a coarse soft shelly rock.  
From Sopronia, Hungary.
1379. A smaller specimen, with the valves separated, of the *Ostrea longirostris*; it bears a label "Ostreites, e Veronâ; communicavit SPADA\*."  
From the tertiary beds near Verona.
1380. A similar-sized specimen, with the valves adherent, of the *Ostrea longirostris*.  
From tertiary strata; locality unrecorded.
1381. Two single valves of large specimens of the *Ostrea longirostris*. Of these the MS. Catalogue gives the following note:—"The large and long thick Virginian Oyster, one an upper and perfect valve; this species is found recent in the sea about Virginia. Lisbon is almost built of stone with these petrifications."  
The recent species of Oyster to which Hunter here refers are placed at the end of the present series of the genus *Ostrea*.

\* SPADA was an Italian Naturalist and author of the works entitled,—“Dissert. ove si prova, che gli petrificati Corpi marini che nei Monti adjacenti a Verona si trovano, non sono Scherzi di Natara, nè diluviani, ma antidiluviani. Verona, 1737, 4to.” “Catalogus Lapidum Veronensium, &c.” Veronæ, 1744, 4to.

1382. A portion of chalk with the fragment of a valve of an *Ostrea*, which has taken the impression of the umbilical cavity of an Ammonite, to which it had been attached in the progress of its growth.

From the cretaceous formations; locality unrecorded.

1383. A large and a small specimen of the *Ostrea virginica*, Lam.

These shells are recent, and of an existing species; now found on the coasts of North America.

1384. Several co-attached valves of a variety of the *Ostrea virginica*, Lam.

They are recent, and belong to a species now existing in the estuary of the Tagus.

## Class BRACHIOPODA.

(Acephalous Mollusks, symmetrical, with a dorso-ventral bivalve shell, lined by a closely adherent mantle of two widely separated lobes. Branchiæ attached to, or a part of, the mantle. Oral tentacles two, long, fringed, usually more or less spirally disposed. Two separate hearts.)

### Family *Terebratulidæ*.

(Ventral valve with a prominent notched or perforated beak and two curved hinge-teeth; dorsal valve with a depressed umbo; a cardinal process between the dental sockets, and an internal calcareous, usually looped brachial appendage. Animal attached by a short pedicle or by the ventral valve.)

### Genus *Terebratula*, Lhwyd.

(One living species of true *Terebratula* has been found in the Mediterranean, at 250 fathoms' depth; the majority are extinct.)

1385. Three specimens of *Terebratula numismalis*, Lam.

From the lias of Germany.

1386. A tray of *Terebratula numismalis*, Lam.

Some of the specimens exhibit the casts of the interior and the muscular impressions.

From the lias of Germany.

1387. Three gibbose forms of *Terebratula numismalis*, Lam.  
From the liassic strata ; locality unrecorded.
1388. Two specimens of *Terebratula punctata*, Sow.  
From the lias, near Stratford-on-Avon.
1389. Two specimens of *Terebratula quadrifida*, Lam.  
From the liassic strata of Normandy.
1390. Two specimens of *Terebratula cornuta*, Sow.  
From the lias of Somersetshire.
1391. Three specimens of *Terebratula bullata*, Sow.  
From the inferior oolite of Normandy.
1392. Two large specimens, partly silicified, of *Terebratula Phillipsii*, Morris.  
From the inferior oolite of Germany.
1393. Varieties of *Terebratula Phillipsii*, Morris.  
From the inferior oolite ; locality unrecorded.
1394. Two specimens of *Terebratula carinata*, Lam.  
From the inferior oolite of France.
1395. Three specimens of *Terebratula ovoides*, Sow.  
From the inferior oolite of Normandy.
1396. A variety of *Terebratula ovoides*, Sow.  
From the inferior oolite ; locality unrecorded.
1397. Various specimens of *Terebratula globata*, Sow.  
From the inferior oolite of Gloucestershire.
1398. Different varieties of *Terebratula sphaeroidalis*, Sow.  
From the inferior oolite of Somersetshire.
1399. The *Terebratula resupinata*, Sow.  
From the inferior oolite of Somersetshire.
1400. Three specimens of *Terebratula resupinata* (var.), Sow.  
From the inferior oolite of Germany.

1401. Three specimens of a variety of *Terebratula perovalis*? Sow.  
From the oolitic strata.
1402. The *Terebratula emarginata*, Sow.  
From the oolitic strata.
1403. Three specimens of *Terebratula ornithocephala*, Sow.  
From the oolitic formation called "Fuller's earth," near Bath.
1404. Varieties of *Terebratula ornithocephala*, Sow.  
From the Fuller's earth and cornbrash strata, Somersetshire.
1405. A tray of *Terebratula digona*, Buch.
1406. A variety of *Terebratula digona*.
1407. A variety of *Terebratula digona*.  
From the oolitic formation called "Bradford clay," Wiltshire.
1408. Two specimens of *Terebratula lagenalis*, Schlotheim.  
From the Bath oolite of Germany.
1409. Two specimens of *Terebratula coarctata*, Park.  
From the Bradford clay of Wiltshire.
1410. Various specimens of *Terebratula intermedia*, Sow.  
From the cornbrash of Wiltshire.
1411. Varieties of *Terebratula intermedia*, Sow.  
From the oolitic strata; locality unrecorded.
1412. Four specimens of *Terebratula obovata*, Sow.  
From the cornbrash strata; locality unrecorded.
1413. Three specimens of *Terebratula nucleata*, Schlotheim.  
From the Oxfordian strata of Germany.
1414. Two specimens of *Terebratula maxillata*, var., Sow.  
From the great oolite of Oxfordshire.
1415. Three specimens of *Terebratula impressa*, Von Buch.  
From the Oxford clay of Germany.

1416. Casts of *Terebratula impressa*, von Buch.  
From the Oxford clay.
1417. The *Terebratula diphya*, Colonna. This is a remarkable form of *Terebratula*,  
having a perforation through both of the valves of the shell.  
From the Oxfordian strata? of Italy.
1418. Varieties of *Terebratula insignis*, Schubler.  
From the coralline oolite of Germany.
1419. Six specimens of *Terebratula cardium*, Lam. (*Ter. orbicularis*, Sow.).  
From the Bath oolite of Normandy.
1420. Three specimens of *Terebratula fimbria*, Sow.  
From the inferior oolite of Gloucestershire.
1421. The *Terebratula Royerana*, d'Orb.  
From the Oxfordian strata of the Ardennes.
1422. Specimens of *Terebratula acuta*, Quenstedt.  
From the lower greensand of Neufchatel.
1423. Three specimens of *Terebratula tamarindus*, Sow.  
From the lower greensand of Seranon, France.
1424. Two specimens of *Terebratula hippopus*, Roemer.  
From the lower greensand of Vergoux, France.
1425. Two specimens of *Terebratula biplicata*, Sow., var.  
From the gault of Escragnoles.
1426. The *Terebratula biplicata*, Sow.  
From the upper greensand of Warminster.
1427. The *Terebratula obtusa*, Sow.  
From the upper greensand of Cambridge.
1428. The *Terebratula depressa*, Lam.  
From the upper greensand of Belgium.



1429. The *Terebratula Harlani*, Morton.  
From the cretaceous strata of New Jersey.
1430. Specimens of *Terebratula subundata*, Mantell.  
From the chalk of Sussex.
1431. Various specimens of *Terebratula semiglobosa*, Sow. One of them (from Brighton) is filled with flint.  
From the lower chalk of Kent and Sussex.
1432. Three specimens of *Terebratula semiglobosa*, Sow., imbedded in the cretaceous matrix.  
From the chalk of Kent.
1433. A variety of *Terebratula semiglobosa*, Sow.  
From the cretaceous strata; locality unrecorded.
1434. A small specimen of *Terebratula sulcifera*, var., Morris.  
From the lower chalk; locality unrecorded.
1435. A broken specimen of *Terebratula longirostris*, Nilsson.  
From the cretaceous rocks of Sweden.
1436. A cast, imbedded in flint, of *Terebratula carnea*, Sow.  
From the upper chalk of Kent.
1437. The *Terebratula ampulla*, Brocchi.  
From the newer tertiary strata of Italy.
1438. A valve of *Terebratula costata* (*Anomia*), Linn.  
From the cretaceous rocks of Sweden.
1439. Two specimens of *Terebratula hastata*, Sow.  
From the carboniferous limestone; locality unrecorded.

#### Genus *Terebratulina*, d'Orb.

(The few known living species have been found in Norway, the United States, the Cape of Good Hope, and Japan.)

1440. Various specimens of *Terebratulina striata*, d'Orb., sp.  
From the cretaceous strata (chalk and upper greensand); locality unrecorded.

1441. Eight specimens of *Terebratulina striatula*, Mantell, sp.  
From the London clay of the Isle of Sheppey, Kent.

### Genus *Terebratella*, d'Orbigny.

(The existing species occur at Cape Horn, Valparaiso, New Zealand, Japan, Spitzbergen, and Labrador.)

1442. Specimens of *Terebratella loricata*, Schlotheim, sp.  
From the middle oolite of Germany.
1443. The *Terebratella pectunculoïdes*, Schlotheim, sp.  
From the coralline rag of Nattheim, Wirtemberg.
1444. The *Terebratella Menardi*, Lam., sp.  
From the upper greensand of France.
1445. The *Terebratella Lima*, Defrance, sp.  
From the upper greensand of France.
1446. Three specimens of *Terebratella lyra* (*Terebrirostra*, d'Orb.), Sow.  
From the upper greensand of France.
1447. A variety of *Terebratella lyra*, Sow., with the costæ bifurcate. The produced beak is artificial.  
From the upper greensand of France.

### Family *Thecididæ*.

#### Genus *Thecidium*, Defrance.

(One existing species has been found in the Mediterranean; the majority are extinct.)

1448. Seven specimens of *Thecidium radians*, Sow.  
From the cretaceous strata of Normandy.
1449. Various specimens of *Thecidium radians*, Sow.  
From the cretaceous strata, near Maestricht.
1450. A valve of *Thecidium hippocrepis*, Goldfuss.  
From the cretaceous strata, near Maestricht.



Family *Spiriferidæ*.Genus *Spirifer*, Sow.

(All the known species are extinct.)

1451. *Spirifer exporrectus* (*Cyrtia*), Dalman.  
From the upper Silurian of Dudley.
1452. Two casts of *Spirifer cultrijugatus*, Roemer ; one of them attached to a piece of indurated shale and showing the muscular impressions.  
From the Devonian strata of the Rhine.
1453. The *Spirifer micropterus*, Hall.  
From the Devonian strata. This species occurs abundantly near the river "Aux Sables," which empties itself into Lake Huron.
1454. Two specimens of *Spirifer disjunctus*, Sow.  
From the Devonian strata of the Eifel, Germany.
1455. A variety of *Spirifer disjunctus*, Sow.  
From the Devonian strata of the Eifel.
1456. Two specimens of *Spirifer*, with nine imbricated costæ on each side of the mesial furrow, which is itself imbricated.  
From the Devonian strata ; locality unrecorded.
1457. Different varieties of *Spirifer glaber* (*Anomites*), Martin.  
From the carboniferous limestone.
1458. Three specimens (two very small) of *Spirifer glaber*, var. *mesoloba*, Phillips.  
From the carboniferous limestone.
1459. The *Spirifer lineatus* (*Anomites*), Martin.  
From the carboniferous limestone ; locality unrecorded.
1460. The *Spirifer pinguis*, Sow., var. *rotundatus*.  
From the carboniferous limestone ; locality unrecorded.

1461. The *Spirifer trigonalis* (*Anomites*), Martin.  
From the carboniferous limestone ; locality unrecorded.
1462. Two specimens of *Spirifer striatus* (*Anomites*), Martin.  
From the carboniferous limestone ; locality unrecorded.
1463. A fragment of a cast of a *Spirifer* (*S. convolutus*).  
From the carboniferous limestone ; locality unrecorded.
1464. The *Spirifer duplicicosta*, Phillips.  
From the carboniferous limestone ; locality unrecorded.
1465. Three specimens of *Spirifer Walcottii*, Sow.  
From the liassic strata ; locality unrecorded.
1466. The *Spirifer rostratus*, Schlotheim.  
From the lias of Germany ; locality unrecorded.
1467. Two crushed specimens of *Spirifer rostratus*, Schloth.  
From the lias of Germany.
1468. Six small individuals of *Spirifer rostratus*, Schloth. Some of them show the granulated surface of the shell.  
From the lias of Germany.

### Genus *Athyris*, M'Coy.

(All the known species are extinct.)

1469. The *Athyris concentrica* (*Terebratula*), von Buch.  
From the carboniferous limestone of Belgium.
1470. The *Athyris Ezquerria* (*Terebratula*), Verneuil.  
This species occurs abundantly in the Devonian strata near Ferrones, Spain, and at Nehou in France.
1471. A variety of *Athyris concentrica* (*Terebratula*), von Buch.  
From the Devonian strata of the Eifel, Germany.

Genus *Atrypa*, Dalman.

(All the known species are extinct.)

1472. A tray of *Atrypa reticularis* (*Anomia*), Linn.  
From the upper Silurian strata of Dudley.
1473. Six specimens of *Atrypa reticularis*, Linn., var. *aspera*.  
From the Devonian strata of the Eifel.
1474. Two specimens of *Atrypa marginalis* (*Terebratula*), Dalman.  
From the upper Silurian strata of Dudley.
1475. A fragment of *Atrypa cuneata* (*Terebratula*), Dalman.  
From the upper Silurian strata of Dudley.

Family *Rhynchonellidæ*.Genus *Rhynchonella*, Fischer (*Terebratula*, sp., Auct.).

(Of the two existing species one occurs at Labrador, Hudson's Bay, Melville Island, and the Icy Sea, the other at New Zealand. The extinct species abound in the palæozoic and secondary strata.)

1476. Two specimens, one imperfect, of *Rhynchonella borealis*, Schlotheim.  
From the upper Silurian strata of Dudley.
1477. Six specimens of *Rhynchonella acuminata* (*Anomites*), Martin.  
From the carboniferous limestone; locality unrecorded.
1478. The *Rhynchonella pleurodon* (*Terebratula*), Phillips.  
From the carboniferous limestone of Yorkshire.
1479. The *Rhynchonella rhomboidea* (*Terebratula*), Phillips.  
From the carboniferous limestone of Yorkshire.
1480. A silicified specimen and a cast in silex of a species of *Rhynchonella*, near to *R. subwilsoni*, d'Orb.  
Locality unrecorded; probably from Devonian strata.

1481. Two specimens of *Rhynchonella tetrahedra*, Sow.  
From the liassic strata ; locality unrecorded.
1482. A large variety of *Rhynchonella tetrahedra*, Sow.  
From the liassic strata ; locality unrecorded.
1483. The *Rhynchonella acuta*, Sow.  
From the liassic strata ; locality unrecorded.
1484. Four specimens of *Rhynchonella rimosa*, von Buch.  
From the liassic strata of Germany.
1485. The *Rhynchonella variabilis*, Schlotheim.  
From the liassic strata of Germany.
1486. Two fine specimens of *Rhynchonella serrata*, Sow.  
From the inferior oolite of Normandy.
1487. Two specimens of *Rhynchonella cynocephala*, Richard.  
From the inferior oolite ; locality unrecorded.
1488. Five specimens of *Rhynchonella spinosa*, Schlotheim.  
From the inferior oolite ; locality unrecorded.
1489. Two specimens of *Rhynchonella senticosa*, von Buch.  
From the inferior oolite ; locality unrecorded.
1490. Six specimens of *Rhynchonella varians*, Schlotheim.  
From the oolitic formation called " Fuller's earth " of Wiltshire.
1491. The *Rhynchonella plicatella*, Sow.  
From the inferior oolite ; locality unrecorded.
1492. Five fine specimens of *Rhynchonella decorata*, von Buch.  
From the great oolite of the Department of the Aisne, France.
1493. Four specimens showing varieties of *Rhynchonella farcta*, Linn.  
From the Bradford clay ; locality unrecorded.
1494. A fine ribbed variety of *Rhynchonella farcta*, Linn.  
From the Bradford clay ; locality unrecorded.

1495. Four specimens of *Rhynchonella varians*, var., Schlotheim.  
From the middle oolitic strata ; locality unrecorded.
1496. Four specimens, two of them crushed, of *Rhynchonella inconstans*, Sow.  
From the Kimmeridge clay, Oxford.
1497. Two smaller individuals of *Rhynchonella inconstans*, Sow.  
From the upper oolitic strata ; locality unrecorded.
1498. The *Rhynchonella trilobata*, Münster.  
From the middle oolitic strata, Germany.
1499. Six specimens of *Rhynchonella quadriplicata*, Schlotheim.  
From the middle oolitic strata, Germany.
1500. Two specimens, one small and fragmentary, of *Rhynchonella Asteriana*, d'Orb.  
From the middle oolitic strata ; locality unrecorded.
1501. Three imperfect specimens of *Rhynchonella sulcata*, Park.  
From the gault of Gourdon, near Grasse, France.  
*Presented by M. Duval-Jouve.*
1502. Three specimens of *Rhynchonella compressa*, Lam.  
From the upper greensand of France.
1503. A fine variety of *Rhynchonella compressa*, Lam.  
From the upper greensand of France.
1504. Various specimens of *Rhynchonella Vespertilio*, Brocchi.  
From the upper greensand of France.
1505. The *Rhynchonella Cuvieri*, d'Orb. The specimen is attached to a piece of  
hard chalk.  
From the lower chalk ; locality unrecorded.
1506. Specimens of *Rhynchonella Grasiana*, d'Orb.  
From the upper greensand of Wiltshire.
1507. Four specimens of *Rhynchonella octoplicata*, Sow. One of the specimens is  
separated, showing the interior muscular impressions.  
From the upper chalk ; locality unrecorded.

1508. Three specimens of *Rhynchonella plicatilis*, var., Sow. sp.  
From the upper chalk ; locality unrecorded.

1509. Two specimens of *Rhynchonella subplicata*, Mantell.  
From the upper chalk of Sussex.

1510. Casts of *Rhynchonella*, in translucent pinkish silex.  
From the cretaceous strata ; locality unrecorded.

1511. The cast of a *Rhynchonella* in flint, with one surface polished.  
From the cretaceous strata ; locality unrecorded.

1512. Specimens of a *Rhynchonella*.  
From the middle oolitic strata ; locality unrecorded.

1513. Four casts of *Rhynchonella*, probably *Rh. socialis*.  
From the middle oolitic strata, Wirtemberg.

#### Genus *Pentamerus*, Sow.

(All the known species are extinct.)

1514. The *Pentamerus galeatus* (*Atrypa*), Dalman.  
From the upper Silurian strata of Dudley.

1515. The *Pentamerus linguiferus* (*Atrypa*), Sow.  
From the upper Silurian strata of Walsall.

#### Family *Orthidæ*.

##### Genus *Orthis*, Dalman.

(The species of this genus are extinct.)

1516. A portion of rock with casts of *Orthis striatula*, Schlotheim, sp.  
From the Devonian strata of the Eifel.

1517. A similar block of slaty argillaceous rock, with impressions of *Orthis striatula*.  
From the Devonian strata of the Eifel.

1518. Five internal casts of *Orthis striatula*. They show the muscular impressions and cardinal plates.  
From the Devonian strata of the Eifel.
1519. Four specimens of *Orthis Michelini*, Léveillé. Two of them show the interior surface of the shell.  
From the carboniferous limestone of Belgium.
1520. Three specimens of *Orthis biloba* (*Anomia*), Linn.  
From the upper Silurian strata of Dudley.
1521. The *Orthis resupinata* (*Anomites*), Martin.  
From the carboniferous limestone; locality unnoted.
1522. Three specimens of a variety of *Orthis interlineata*, Sow.  
From the Devonian strata of the Eifel.

### Genus *Calceola*, Lam.

(The species of this genus are extinct.)

1523. A fragment of rock, in which two valves of *Calceola sandalina*, Lam. (*Ungulithes Hüfeschi*), are imbedded.  
From the Devonian strata of Dollendorf, in the Eifel.
1524. Four of the triangular valves of *Calceola sandalina*.  
From the Devonian strata of the Eifel.

### Genus *Leptæna*, Dalman (*Strophomena*, Blainville).

(The species of this genus are extinct.)

1525. Three specimens of *Leptæna rhomboidalis*, Wahl. (*Leptæna depressa*, Sow.). One of them is perfect, with both valves in contact; another specimen shows the internal structure and muscular impressions of the lower valve.  
From the upper Silurian strata of Dudley.

1526. A specimen of *Leptæna rhomboidalis*, Wahl. It is attached by the lower valve to a piece of argillaceous limestone.  
From the upper Silurian rocks of Dudley.

### Family *Productidæ*.

#### Genus *Productus*, Sow.

(The species chiefly belong to Devonian and carboniferous strata.)

1527. A valve of *Productus pustulosus*, Phil., attached to a piece of dark limestone.  
From the carboniferous limestone ; locality unrecorded.
1528. The *Productus pyxidiformis*, de Koninck.  
From the carboniferous limestone of Germany.
1529. Three specimens of *Productus scabriculus*, Sow.  
From the carboniferous limestone ; locality unrecorded.
1530. Two specimens of *Productus punctatus* (*Anomites*), Martin.  
From the carboniferous limestone ; locality unrecorded.
1531. Three specimens of *Productus semireticulatus*, Martin.  
From the carboniferous limestone ; locality unrecorded.
1532. Four specimens of *Productus Geinitzianus*, de Koninck.  
From the Permian strata of Germany ; locality unrecorded.

### Class BRYOZOA, Ehrenberg.

(Compound radiated animals, with hollow ciliated tentacles ; alimentary canal with a stomach, intestine and anus ; the polypary, or protecting part, external, horny or calcareous.)

#### Genus *Apsendesia*, Lamouroux.

1533. A small mass of stone containing the radiating cellules of *Apsendesia cristata*, Lamouroux.  
From the oolitic strata of Normandy.



Genus *Fenestella*, Lonsdale.

(The species of this genus belong to the palæozoic strata.)

1534. A dark slaty stone containing imperfect impressions of a species of *Fenestella*.  
From the palæozoic formation of Eschosotz, near Prague in Bohemia.

Genus *Homæosolen*, Lonsdale.

1535. A spreading and branched specimen of *Homæosolen ramulosus*, Lonsdale.  
It is attached to a piece of chalk by the poriferous surface; the exposed portion shows the striated surface.  
This species is found in the upper chalk of Kent and Sussex.

Genus *Cerriopora*, Goldfuss.

1536. Two portions of calcareous rock containing specimens of *Cerriopora dichotoma* and *C. angulosa*, Goldfuss.  
From the cretaceous strata of Maestricht.
1537. Various specimens of *Cerriopora angulosa*, Goldfuss.  
From the jurassic strata of Baireuth.
1538. A slab of calcareous rock containing numerous slender, ramose, but weathered specimens of Bryozoa.  
From the cretaceous strata; locality unrecorded.

Genus *Eschara*, Lam.

1539. Two portions of calcareous rock almost entirely composed of fragments of Bryozoa, among which are specimens of *Eschara cyclostoma* and *E. piriformis*, Goldfuss.  
From the cretaceous strata of Maestricht.

## Class INSECTA.

### Order COLEOPTERA.

(The remains of Coleopterous Insects have been found in the coal-measures, the jurassic, the Purbeck, where many families of this order are represented, the Wealden, and the tertiary beds.)

1540. A slab of Stonesfield slate containing the elytron or wing-case of a beetle, probably belonging to the *Prioniidæ* (*Prionus Bucklandi*; *Buprestis*, Mant.), together with impressions of *Trigonia impressa*, Sow.

From the great oolite, Stonesfield, Oxfordshire.

*Presented by the Very Rev. Dr. Buckland, F.R.S.*

### Order NEUROPTERA.

(The remains of Neuropterous Insects occur in the coal-measures, the jurassic, the Wealden, and the tertiary formations.)

1541. Two corresponding portions of marl-slate containing the impressions of the larval state of a species of *Æshna* or *Libellula* (*Libellula Eningensis*, König?).

From the tertiary deposits of Germany.

1542. Two small portions of marl-slate containing the impressions of the larval state of a species of *Libellula*.

From the tertiary strata of Germany.

1543. Five pieces of thin marl-slate, similar to the last, containing indistinct impressions of a species of *Libellula*.

From the tertiary strata of Germany.

## Class CRUSTACEA.

## Subclass MALACOSTRACA.

## Order DECAPODA.

(The Decapod Crustacea are but feebly represented in the palæozoic strata; but are abundant in some localities in the secondary and tertiary rocks.)

## Tribe BRACHYURA.

Genus *Zanthopsis*, M'Coy.

1544. Specimens, in various states of preservation, of *Zanthopsis Leachii* (*Cancer*) Desmarest.  
From the London clay of the Isle of Sheppey, Kent.
1545. A variety of *Zanthopsis Leachii*, Desmarest, sp. It shows a portion of the shell, feet, abdomen and tail.  
From the London clay of the Isle of Sheppey.
1546. Various specimens of *Zanthopsis nodosa*, M'Coy.  
From the London clay of the Isle of Sheppey.
1547. Two specimens of a species of *Zanthopsis*.  
From the London clay of Sheppey.

Genus *Podophthalmus*, Desmarest.

1548. An imperfect specimen of a Crustacean in soft earthy limestone; near to *Podophthalmus DeFrancii*, Desmarest.  
Locality unrecorded.

Genus *Cancer*, Linn.

1549. A specimen of *Cancer macrochelus*, Desm., with the carapace, abdomen and one of the large chelæ, in a matrix of light-coloured limestone.  
From the tertiary strata ; locality unrecorded. This species occurs at Malta.
1550. Two specimens, male and female, of *Cancer punctulatus*, Desm.  
From the lower eocene strata of Bayonne.

Family *Leucosiadæ*.Genus *Leucosia*, Fabricius.

(The existing species of this genus are found in the East Indies and Philippine Islands.)

1551. Three specimens of *Leucosia cranium*, Desm.  
From the tertiary strata, India.

Genus *Portunus*, Fabr.

1552. A specimen near to *Portunus leucodon*, Desm., with the carapace, part of the chelæ, abdomen, &c.  
From the tertiary strata ; locality unrecorded.

Genus *Macrophthalmus*, Latreille.

1553. Three specimens, in a good state of preservation, of *Macrophthalmus (Gonoplax) Latreillii*, Desmarest.
1554. A variety of *Macrophthalmus Latreillii*, Desm.
1555. The *Macrophthalmus incisus*, Desm. Named "Shih-hae" by the Chinese.
1556. A specimen of *Macrophthalmus (Gonoplax) emarginatus*, Desmarest.

Nos. 1553 to 1556 inclusive are from tertiary strata ; and are stated in the MS. Catalogue to come from Coromandel. Similar specimens are, also, brought from China, where they are used as remedial agents, and are stated to be found in the province of Kwang-si.

Family *Anomura*.Genus *Basinotopus*, M'Coy.

1557. A series of specimens (six) showing different states of preservation of *Basinotopus Lamarckii* (*Inachus*), Desmarest.  
From the London clay of the Isle of Sheppey.
1558. Another species of *Basinotopus*, with a more oval and less ornamented surface.  
From the London clay of the Isle of Sheppey.
1559. A crushed and distorted specimen, partly pyritized, of a Crustacean near to *Basinotopus*, showing the carapace, some of the abdominal segments and parts of the chelæ.  
From the London clay of the Isle of Sheppey.

Genus *Mesostylus*, Bronn.

1560. Two specimens of the claws of *Mesostylus Faujasii* (*Pagurus*), Desmarest, imbedded in a soft calcareous stone.  
From the cretaceous strata of Maestricht.

Family *Macrura*.Genus *Hoploparia*, M'Coy.

1561. A fine and well-preserved specimen of *Hoploparia gammaroides*, M'Coy, showing the carapace, the large chelæ, and the abdominal segments.  
From the London clay of the Isle of Sheppey.
1562. A compressed and worn specimen of *Hoploparia gammaroides*, M'Coy.  
From the London clay.

1563. A portion of *Hoploparia gammaroides*, M'Coy, with parts of the carapace and well-preserved segments, showing the punctate surface.  
From the lower eocene (London clay).
1564. A part of the carapace, chelæ and feet of *Hoploparia gammaroides*, M'Coy, in a nodule of brown clay-stone.  
From the London clay.
1565. Two imperfect specimens of *Hoploparia Bellii*, M'Coy, imbedded in brown clay-stone, one of them showing the sculptured surface.  
From the London clay of the Isle of Sheppey.

Genus *Archæocarabus*, M'Coy.

1566. An eroded specimen of *Archæocarabus Bowerbankii*, M'Coy, showing a portion of the carapace, abdominal segments and some of the feet, imbedded in indurated clay-stone.  
From the lower eocene (London clay) of the Isle of Sheppey, Kent.
1567. A piece of clay-stone containing portions of the segments of *Archæocarabus*.  
From the London clay of the Isle of Sheppey.
1568. Parts of two claws of *Archæocarabus Bowerbankii*, M'Coy, imbedded in clay-stone.  
From the London clay of the Isle of Sheppey.
1569. A portion of *Archæocarabus*, showing the abdominal segments.  
From the London clay of the Isle of Sheppey.
1570. A water-worn nodule of reddish clay-stone, with portions of *Archæocarabus Bowerbankii*, M'Coy.  
From the London clay of Harwich.
1571. Three specimens of portions of the abdominal segments of an *Archæocarabus*, or an allied Crustacean.  
From the London clay of the Isle of Sheppey.

Genus *Megachirus*, Bronn.

1572. A slab of indurated marl-slate, containing an impression of *Megachirus locusta* (*Mecochirus*), Germar.  
From the jurassic strata of Pappenheim.

1573. A smaller specimen of *Megachirus locusta* (*Mecochirus*), Germar, on a similar portion of slate to the last.  
From the jurassic strata of Pappenheim.
1574. An impression with a portion of the test of *Megachirus Bajeri*, Germar.  
From the lithographic slate of Pappenheim.
1575. Two corresponding portions of marl-slate containing an imperfect impression and cast of *Megachirus locusta*, Germar.  
From the jurassic slate near Pappenheim.

### Genus *Glyphea*, H. von Meyer.

1576. A portion of the carapace of a *Glyphea*, imbedded in grey crystalline limestone.  
From the oolitic strata; locality unrecorded.
1577. Two small pieces of marl-slate containing impressions, with a portion of the test, of *Glyphea* (*Macrourites*) *modestiformis*, Schloth. (*Palæmon*? Desm.).  
From the jurassic slate of Pappenheim.

## Subclass ENTOMOSTRACA.

### Family *Cytherinæ*.

#### Genus *Bairdia*, M'Coy.

1578. The tastefully arranged minute fossils from East Kilbride contain, at least, six species of small bivalve Crustaceans. Some of these were already, but inadequately, figured in an account of these and sundry other fossils from the same locality, published in "Ure's History of Rutherglen and East Kilbride in 1793" (p. 312), and illustrated by figures; but they appear to have escaped notice until referred to by Mr. T. Rupert Jones in King's Monograph of Permian fossils (Palæontographical Society, 1850), who alluded to these specimens in the Hunterian Museum. Two forms among these specimens appear to be the same as those figured by M'Coy as *Bairdia curta* and *B. gracilis*; these are placed in the first compartment of the case (A). The second compartment (B) contains a very interesting and undescribed form,

having a curious alliance with the form of *Beyrichia* of the still older rocks; the third compartment (C) contains a series of simple forms of *Entomostraca*, allied to M'Coy's genus *Cytheropsis*. In the same case with these bivalved *Entomostraca* are numerous examples of *Turritella Uriei*, together with very minute Turbo-like shells, which are mounted in the recesses of an Urn-like paper pattern in a glazed and framed case.

From the carboniferous limestone of East Kilbride.

*Presented to John Hunter, F.R.S., by the Rev. David Ure, of East Kilbride.*

### Group *Trilobitæ*.

(The Trilobites comprise a remarkable group of *Crustacea*, all the species of which are extinct, and highly characteristic of the palæozoic series. They attained the greatest development, both generically and specifically, in the lower palæozoic or Silurian strata, and gradually decreased in number in the Devonian and Carboniferous strata, above which they have not, hitherto, been found.)

### Family *Calymenidæ*.

#### Genus *Calymene*, Brongniart.

1579. A distorted and compressed specimen of *Calymene Tristani*, Brong., coated with crystals of iron pyrites.

From the lower Silurian slates of Angers, France.

1580. The tallying parts of a split portion of slate including an impression of the mesial portion and pygidium of *Calymene Tristani*, Brong.

From the lower Silurian slates of Angers, France.

1581. A fine and perfect specimen of *Calymene Blumenbachii*, Brong., attached to a mass of argillaceous limestone. This specimen shows the more important parts of the genus, as the *glabella*, *eyes*, *facial suture*, *pleuræ*, and *pygidium*.

From the upper Silurian strata of Dudley.

1582. A large expanded specimen of *Calymene Blumenbachii*, Brong.

From the Silurian limestone of Dudley. *Presented by W. Long, Esq.*

1583. Three specimens of *Calymene Blumenbachii*, Brong., two of them entirely coiled up.

From the Silurian limestone, near Dudley.



1584. Two specimens (one very perfect) of *Calymene Blumenbachii*, Brong.  
From the Silurian limestone of Dudley.
1585. Two imperfect specimens, partially coiled up, of *Calymene Blumenbachii*, Brong.  
From the Silurian strata; locality unnoted.
1586. A thin slab of dark slate containing portions of fifteen specimens of *Calymene Blumenbachii*, Brong. The specimens are partially distorted and compressed, being expanded on one side and contracted on the other; this change of form has been due to the agencies which have produced the slaty cleavage of the rock, which cleavage is rarely coincident with the original plane of bedding or deposition, and in this specimen, varies but a few degrees.  
From the lower Silurian strata of Angers, France.  
The specimens, Nos. 1579, 1580, and those of *Illænus*, Nos. 1592, 1593, are examples of similar phenomena.
1587. A portion of argillaceous limestone with a well-preserved specimen of *Calymene Blumenbachii*. The marginal portion of the head is well displayed.  
From the lower Silurian limestone of Dudley.
1588. The anterior portion, expanded and partly displaced, of *Calymene Blumenbachii*, Brong.  
From the Silurian strata of Dudley.
1589. A large expanded variety, very imperfect, of *Calymene Blumenbachii*, Brong.  
The under surface of the anterior margin is tolerably preserved.  
From the Silurian limestone of Sweden.

### Family *Paradoxidæ*.

#### Genus *Paradoxides*, Brongniart.

1590. The glabella of *Paradoxides Bohemicus*, Barrande, imbedded in greenish slate.  
From the Silurian strata, near Beraun, Bohemia.
1591. An internal cast of the mesothorax of *Paradoxides Bohemicus*, Barrande.  
From the Silurian strata of Bohemia.

Family *Asaphidæ*.Genus *Illænus*, Dalman.

1592. A thin slab of dark slate containing two casts, compressed, distorted and elongated, of *Illænus giganteus*, Burm., and the reverse portion of slate with the corresponding impressions.

From the lower Silurian strata of Angers, France.

- 1593 A portion of slate split in two, showing the cast and the corresponding impression of a distorted specimen of *Illænus giganteus*, Burmeister.

From the lower Silurian slates of Angers, France.

Genus *Ogygia*, Brongniart.

1594. A portion of compact slaty rock, containing an impression of *Ogygia Buchii*, Brong.

From the lower Silurian strata of Wales.

1595. A piece of rock containing two impressions of the caudal portion of *Ogygia Buchii*, Brong.

From the lower Silurian strata of Builth, North Wales.

Family *Phacopidæ*.Genus *Phacops*, Emmrich

1596. The caudal portion of *Phacops caudatus*, Brunnich, sp., imbedded in a piece of grey limestone.

From the Silurian strata of Wales.

1597. Two specimens of the caudal portion of *Phacops longicaudatus*, Murchison, one imbedded in earthy limestone, the other in shale.

From the Wenlock limestone and shale of Shropshire.

Genus *Dalmania*, Emmerich.

1598. A fragment of the caudal portion of *Dalmania Hausmanni* (*Asaphus*), Brong., var., *D. spinifera*, Barrande.  
From the Silurian strata, Bohemia.
1699. A portion of the mesothorax and pygidium of *Dalmania Hausmanni*, Brong., var. The shell is preserved on some parts of the pleuræ.  
From the Silurian strata, Bohemia.
1600. An internal cast of *Dalmania Hausmanni*, Brong., with portions of the test.  
From the Silurian strata, Bohemia.
1601. A fragment, much worn, of *Dalmania Hausmanni* (*Asaphus*), Brong.  
From the Silurian strata, Bohemia.

## Class CIRRIPEDIA.

Family *Balanidæ*.Genus *Balanus*, Auct.

(The *Balanidæ* are sessile cirripeds, with a conical shell fixed by the base to submarine bodies; the upper portion is closed by unequal opercular pieces or valves. The recent species are widely distributed, and the fossil forms are found in the tertiary strata.)

1602. A mass of Oysters filled with a sandy matrix, to which are attached three specimens of a *Balanus*, probably *B. concavus*, Darwin.  
From the tertiary strata: similar forms occur in the U. States and Italy.
1603. A group of five specimens of *Balanus concavus*, Darwin, partly filled with a sandy matrix.  
From the newer tertiary strata; probably from the coralline crag.

1604. A massive or worn specimen of a species of *Balanus* (*B. concavus*?), filled with compact sandy stone.  
From the tertiary strata ; locality unrecorded.
1605. A group of *Balani*, much eroded and perforated with parasitic bodies ; partly imbedded in a compact calcareous matrix.  
From the tertiary strata ; locality unrecorded.
1606. A specimen of *Balanus tintinnabulum*, Linn., attached to a portion of sandy rock.  
From the tertiary strata ; locality unrecorded.
1607. A portion of a *Balanus*, attached to a sandy rock.  
From the tertiary strata ; locality unrecorded.

## Class ANNULATA.

### Order TUBICOLA.

#### Genus *Serpula*, Linn.

1608. The *Serpula limax*, Goldfuss.  
From the oolitic strata of Germany.
1609. The *Serpula vertebralis*, Sow.  
From the oolitic strata of Germany.
1610. The *Serpula gordialis*, Schlotheim.  
From the upper jurassic strata of Germany.
1611. The *Serpula socialis*, Goldf., attached to a mass of argillaceous limestone.  
From the jurassic strata of Germany.
1612. The *Serpula macrocephala*, Goldf.  
From the upper jurassic strata of Germany.
1613. The *Serpula socialis*, Goldf., var., on a piece of limestone, partly polished.  
From the jurassic strata ; locality unrecorded.

1614. The *Serpula socialis*, Goldf., var.  
From the jurassic strata ; locality unrecorded.
1615. The *Serpula quadricarinata*, Münster.  
From the upper greensand of Regensburg.
1616. The *Serpula plexus*, Sow., attached to the under side of *Ananchytes ovatus*, Lam., imbedded in chalk.  
From the upper chalk ; locality unrecorded.
1617. The *Serpula spirulæa*, Lam.  
• From the lower eocene strata, "Mountains of the Castle of St. Felix, near Verona, Italy." This species occurs in the nummulitic deposits.
1618. A small portion of argillaceous and shelly limestone, with casts of *Serpulæ*.  
From the jurassic strata, calcareous grit of Shotover, Oxfordshire.
1619. A small group of *Serpula arenaria*, Brocchi.  
From the tertiary (pliocene) strata of Annona, in Piedmont.
1620. Two specimens of *Serpula arenaria*, Brocchi.  
From the tertiary strata of Piedmont.
1621. A tray of *Serpula arenaria*, Brocchi.  
From the tertiary strata of Annona, Italy.
1622. Two portions of a large species of *Serpula*, finely striated and banded, attached to a mass of marly limestone. Numerous smaller carinated *Serpulæ* (*Spirorbis*) are attached to the specimen.  
Locality unrecorded.
1623. A small group of *Serpula mutabilis*, König.  
From the tertiary strata ; locality unrecorded.

#### Genus *Vermicularia*, Lam.

1624. The *Vermicularia Bognoriensis* (*Vermetus*), Sow.  
From the lower eocene strata.
1625. A rolled nodule of green sandstone containing numerous specimens of *Vermicularia concava*, Sow.  
From the upper greensand of the Isle of Wight.

Genus *Lumbricaria*, Münster.

1626. A large slab of stone containing tortuous vermiform impressions, resembling the bodies referred to *Gordia* (Hall), in the Palæozoic rocks.  
Locality unrecorded.
1627. A slab of marly lithographic stone containing the *Lumbricaria intestinum*, Münster.  
From the jurassic strata of Pappenheim.
1628. A small slab with an impression of *Lumbricaria intestinum*, Münster.  
From the jurassic strata near Eichstadt.
1629. Two portions of marl-slate, containing impressions of *Lumbricaria*, and coated with dendritic matter.  
From the jurassic strata, near Pappenheim.

## Class ECHINODERMATA.

## Order ECHINOIDEA.

Family *Cidaridæ*.

(Urchins of circular form and thick test with narrow ambulacra, and large prominent tubercles on the interambulacral areas. The mouth is central and inferior and the anus opposite and superior. The dental apparatus consists of five pieces vertically placed, and articulated to calcareous processes which are attached to the basal plates.)

Genus *Cidaris*, Lam.

(The ambulacral areas about one-fourth the width of the interambulacral; with the pores arranged in simple pairs; mouth circular and without indentations. The genus *Cidaris* is widely distributed, occurring in the Northern, Mediterranean, and more abundantly in the tropical seas. The fossil species range from the triassic to the tertiary strata; the oolitic and some triassic forms have the base of the tubercles crenulated.)

1630. Two specimens, one imbedded in the matrix, of *Cidaris nobilis*, Münster.  
From the jurassic strata of Wirtemberg.

1631. Five specimens of *Cidaris coronata*, Goldfuss.  
From the coralline oolite of Wirtemberg.
1632. A specimen of *Cidaris coronata*, Goldfuss.  
From the jurassic strata of Wirtemberg.
1633. Spines of *Cidaris coronata*, Goldfuss.  
From the jurassic (coralline) strata of Wirtemberg.
1634. Various spines of *Cidaris florigemma*, Phillips.  
From the jurassic strata of Wirtemberg.
1635. A block of limestone containing broken portions of the spines of *Cidaris Blumenbachii*, Goldfuss.  
From the jurassic strata of Wirtemberg.
1636. Spines of *Cidaris glandifera*, Goldfuss.  
From the jurassic strata of Wirtemberg.
1637. A piece of slaty oolitic stone containing a muricated spine of a *Cidaris*.  
From the Stonesfield strata of Oxfordshire.
1638. A spine of *Cidaris coronata*, Goldfuss, imbedded in oolitic rock.  
From the jurassic strata of Wirtemberg.
1639. Two spines of *Cidaris cyathifera*, Ag.  
From the cretaceous strata of St. Aignan.
1640. Spines of *Cidaris clunifera*, Ag.  
From the lower cretaceous strata of Switzerland.
1641. Portions of compressed and triangular spines of *Cidaris*, probably *C. nobilis*.  
From the jurassic strata ; locality unrecorded.
1642. Muricated spines of *Cidaris*.  
From the jurassic strata ; locality unrecorded.
1643. A pyriform spine of *Cidaris colocynda*, Ag.  
From the cretaceous strata ; locality unrecorded.

1644. Various spines of *Cidaris*.  
From the jurassic strata ; locality unrecorded.
1645. Portions of the dental apparatus of a species of *Cidaris*.  
From the jurassic strata ; locality unrecorded.
1646. An impression on a piece of flint of the two interambulacral rows of plates of a *Cidaris*.  
From a partially rolled flint-nodule of the chalk formation ; locality unrecorded.
1647. A part of an irregular nodule of flint, containing some of the plates and spines of *Cidaris perornata*, Forbes.  
From the upper chalk, Kent.
1648. A crushed specimen filled with flint of *Cidaris vesiculosa*.  
From the upper chalk, Kent.
1649. A spine of *Cidaris vesiculosa*, imbedded in a piece of chalk.  
From the upper chalk, Kent.
1650. Two portions of chalk, containing spines of *Cidaris perornata*, Forbes.  
From the upper chalk, Kent.
1651. Portions of the plates and muricated spines of *Cidaris sceptrifera*, Mant.  
From the chalk formation ; locality unrecorded.
1652. Three spines of *Cidaris sceptrifera*.  
From the upper chalk.
1653. Six pieces of chalk containing spines of *Cidaris sceptrifera*.  
From the upper chalk strata.
1654. A partially crushed test of the *Cidaris clavigera*, König, with numerous attached spines.  
From the upper chalk, Kent.  
This specimen is figured in Dixon's 'Geology and Fossils of the Tertiary and Cretaceous Formations of Sussex,' tab. xxv. fig. 14.



1655. A fine specimen in chalk of the test of *Cidaris clavigera*, König, to which a few spines are attached.  
From the upper chalk, Kent.
1656. Two pieces of flint containing imbedded spines of *Cidaris sceptrifera*, Mant.  
From the chalk strata of Kent.
1657. Three pieces of chalk, each containing a group of the spines of *Cidaris clavigera*, König.  
From the upper chalk.
1658. A crushed specimen of the test and spines of *Cidaris clavigera*, König.  
From the upper chalk.
1659. A series of casts, in variously coloured flint, showing the impressions of the inner surface of the plates, the poriferous avenues, and the oral and anal apertures, of species of *Cidaris*.  
From the chalk strata, Kent.
1660. A compressed cast in brown sandstone of a species probably belonging to the *Cidaridæ*, showing the remains of the dental apparatus.  
Probably from the oolitic strata ; locality unnoted.

### Genus *Hemicidaris*, Agassiz.

(This genus differs from *Cidaris* in having large tubercles towards the base of the ambulacral areas and in having a decagonal aperture. All the species are fossil and belong chiefly to the jurassic strata.)

1661. Two specimens of *Hemicidaris intermedia*, Fleming.  
This species occurs in the coral rag of Wiltshire.
1662. A partially worn specimen of *Hemicidaris*, near *H. Bravenderi*, Wright.  
From the jurassic strata.
1663. A specimen of *Hemicidaris stramonium*, Ag., showing the three large tubercles within and near the margin of the ambulacral area.  
From the jurassic strata of Germany.

1664. A piece of grey slaty stone containing a smooth spine of an *Hemicidaris*, probably *H. Stokesii*, Wright.  
From the Stonesfield slate of Oxfordshire.
1665. Two pieces of slaty stone containing portions of spines of *Hemicidaris*.  
From the Stonesfield slate of Oxfordshire.
1666. The *Hemicidaris granulosa*, Wright.  
From the inferior oolite of Gloucestershire.

### Family *Saleniæ*.

(The Urchins comprising this family are of small size and generally ventricose, with a thick test ; having the appearance of *Cidaris*, but differing, and distinguished from that genus in the great and peculiar development of the apical disk ; this is composed of genital and ovarial plates, and an additional plate, termed the suranal, which is sometimes placed before, and sometimes behind the anal orifice. The tubercles on the interambulacral areas are large and crenulated, imperforated in *Salenia*, perforated in *Acrosalenia*. The pores are arranged in simple series. All the species are fossil ; those belonging to *Salenia* are cretaceous forms, those comprising *Acrosalenia* belong to jurassic strata.)

### Genus *Salenia*, Ag.

1667. A specimen of *Salenia granulosa*, Forbes, showing the confluent plates of the apical disk.  
From the chalk of Kent.
1668. A perfect individual and one broken specimen of *Salenia Portlocki*, Forbes, showing the developed apical disk composed of the ovarian and axillary plates.
1669. Four less perfect specimens of different sizes of *Salenia Portlocki*, Forbes.

The following is the description of this species :—

Body ventricose, divided by five prominent and slightly sinuous ambulacral spaces ; apical disk a little convex, somewhat larger than the oral aperture and with a slightly sinuous outline ; anal opening large, triangular and produced, with the suranal plate anterior to it, which plate occupies the centre of the disk, is broader than long, and is excavated and notched posteriorly ; the five ovarial plates hexagonal or even heptagonal : the margins of the three anterior plates where they join the suranal plate are marked by two oval pits ; at the angles or where three plates join, these pits are triangular ; the five interovarial or ocular plates are subtriangular ;

the poriferous avenues are separated and bordered on each side by a closely arranged row of nearly equal-sized tubercles, the narrow interspace being filled with alternate tubercles of much smaller dimensions. The interambulacral spaces have two rows of four prominent tubercles, the bases of which are much elevated from the smooth space below. The rows of primary tubercles are separated by four irregular and slightly flexuous series of secondary tubercles, of which the outer or those bordering the bases of the primary tubercles are the largest. The edges of the circular spaces around the large tubercles are bordered by a few scattered secondary tubercles; the mouth is round, of moderate size, the margin slightly thickened, and indented on each side of the poriferous sutures.

From the cretaceous strata; locality unrecorded.

This species also occurs in the upper chalk of Norfolk and in Ireland.

1670. A small depressed species of *Salenia*, with a thick and corrugated ovarial disk.  
From the cretaceous strata.

### Genus *Acrosalenia*, Agassiz.

(This genus differs from *Salenia* in having the tubercles perforated as well as crenulated. All the species are from jurassic strata.)

1671. An eroded specimen of a fine species of *Acrosalenia* (*A. Hunteri*, Morris), showing the well-defined apical disk.

The species may be characterized as follows:—

Shell somewhat ventricose, elevated; poriferous avenues slightly flexuous, separated by a space equal to their width; interambulacral areas with two rows of seven large tubercles; apical disk smaller than the mouth; anal opening triangular; suranal plate pentagonal, notched posteriorly; the two anterior genital plates heptagonal and larger than the others.

From the jurassic strata; locality unrecorded.

1672. Three specimens of *Acrosalenia Lamarckii*, Ag.  
From the cornbrash stratum, near Marquise, France.

1673. Two specimens of *Acrosalenia hemicydaroides*, Wright.  
From the cornbrash stratum of Wiltshire.

1674. Two small specimens of *Acrosalenia spinosa*, Ag.  
From the great oolite of Gloucestershire.

### Family *Echinidæ*.

(The Urchins of this family have the tubercles equal on both the ambulacral and interambulacral areas; the tubercles are sometimes both perforated and crenulated. The pores are simple or multiple and differently arranged in the various genera.)

#### Genus *Diadema*, Gray.

(This genus differs from *Echinus* in having the tubercles perforated and, at the base, crenulated. The species extend from the jurassic strata to the present period.)

1675. The *Diadema subangulare*, Ag.

From the jurassic strata of Wirtemberg; it also occurs in the coralline and inferior oolite of England.

1676. The *Diadema mammillanum*, Roemer.

From the coralline oolite of Hanover.

1677. A variety of *Diadema pseudodiadema*, Ag.

From the jurassic strata; locality unrecorded.

1678. The *Diadema Roissyi*, Desor.

From the upper greensand of France.

1679. A small conical species of *Diadema*, with rather prominent tubercles, and a row of smaller tubercles which extend from the base about half-way towards the apex.

Probably from a cretaceous formation; locality unrecorded.

#### Genus *Cyphosoma*, Agassiz.

(This genus differs from *Diadema* in not having the tubercles perforated. All the species are cretaceous forms.)

1680. Four specimens, and a portion of chalk with spines, of *Cyphosoma Königii*, Mant.

From the upper chalk of Kent.

1681. A specimen of *Cyphosoma corollare* (*Echinus*), Park., containing a portion of the dental apparatus and ovarial plates.  
From the upper chalk of Kent.

### Genus *Glypticus*, Agassiz.

(The species are fossil, and occur in the oolitic and cretaceous strata.)

1682. Four specimens of *Glypticus hieroglyphicus* (*Echinus*), Goldfuss.  
From the jurassic strata of Switzerland.

### Genus *Cælopleurus*, Agassiz.

(The species are fossil, and occur in the tertiary strata.)

1683. The *Cælopleurus coronalis* (*Cidaris*), Klein.  
From the tertiary strata of Barcelona, Spain.

### Genus *Echinus*, Linn.

(The ambulacral areas are about half the width of the interambulacral, with the tubercles of nearly the same size on both areas, but not having their summits perforated nor their base crenulated. Certain species of this genus occur living in the North Sea, Mediterranean and Atlantic; others are extinct, and are found fossil in the jurassic, cretaceous and tertiary strata.)

1684. Two fine specimens, and two smaller individuals, of *Echinus gyratus*, Ag.  
This species occurs in the middle jurassic strata of Germany. One specimen is stated to be from Witney, Oxfordshire (MS. Catalogue), but is probably from Germany.
1685. A variety of *Echinus gyratus*, silicified.  
From an oolitic formation.
1686. Two specimens of *Echinus perlatus*, Desmarest.  
This species occurs in the oolitic strata (coralline and inferior oolite) of England, France and Germany.

1687. Small individuals of *Echinus serialis*, Ag.  
From the coral rag of Nattheim, Wirtemberg.
1688. Three specimens of *Echinus excavatus*, Leske.  
From the jurassic strata of Wirtemberg.
1689. A specimen of *Echinus radiatus*, Höninghaus.  
From the greensand strata of Essen, Germany.
1690. A specimen of *Echinus serialis*, Ag.  
From the inferior oolite of Dorsetshire.
1691. Two specimens of *Echinus Spadae* (*Arbacia*), Ag.  
From the tertiary strata near Rome and Sicily.
1692. A depressed specimen of *Echinus*, with numerous regular tubercles, having four rows on the ambulacral areas, and four tubercles on each of the interambulacral plates; this specimen is probably a variety of *Echinus multiporus*, Ag.  
From the middle oolitic strata; locality unrecorded.
1693. A large subconical species of the genus *Echinus*, partially distorted and filled with coarse shelly rock.  
From the tertiary strata; probably from Verona.

#### Genus *Pedina*, Agassiz.

(This genus differs from *Echinus* in having the tubercles crenulated and perforated, and from *Diadema* by the pores being arranged in three oblique pairs. All the species are fossil and are chiefly found in the oolitic strata.)

1694. The *Pedina sublævis*, Ag.  
From the jurassic strata of France.

#### Genus *Heliocidaris*, Agassiz.

1695. A fine specimen of an *Echinoderm*, covered with equal-sized tubercles, both on the ambulacral and interambulacral areas; having on some parts of the test secondary and tertiary tubercles interspersed; the pores in the ambula-

cral avenues are sometimes in two, at others in three sets ; the aperture or mouth is covered by white earthy limestone, with which also the shell is filled. This specimen agrees with the *Heliocidaris mirabilis*, Ag.

From the middle oolitic strata ; locality unrecorded.

### Family *Clypeastridæ*.

(The Urchins of this family have generally a thick test and are of an elliptical or rounded form ; the mouth is central and pentagonal, the anus posterior, marginal or inframarginal, the ambulacra are largely petaloid, and the dental apparatus strong and horizontally placed. The genera occur in the tertiary strata, and are living in the seas of warm latitudes.)

### Genus *Clypeaster*, Lamarck.

(All the species either belong to the tertiary strata or are living in the seas of warm latitudes.)

1696. A large specimen of *Clypeaster tauricus*, Ag. ; the test is replaced by spathose calc-spar and filled with shelly limestone.  
From the tertiary strata ; locality unrecorded.
1697. A nearly perfect specimen of *Clypeaster altus*, Lam., var. *crassicosatus*, Ag., filled with greenish sandstone.  
From the tertiary strata of Malta.
1698. A smaller individual of *Clypeaster altus*, var. *crassicosatus*.  
From the tertiary strata of Malta.
1699. A large specimen, partly broken, of *Clypeaster Reidii*, Wright ; the test is replaced by crystalline calc-spar and filled with compact shelly limestone.  
From the tertiary strata of Malta.
1700. Two specimens of *Clypeaster altus*, var.  
From the tertiary strata.
1701. The *Clypeaster marginatus*, Lam.  
This species occurs in the miocene strata of France, Malta and Corsica.
1702. The *Clypeaster marginatus*, var. *C. Tarbellianus*, Desmoulin.  
From the miocene strata of Bordeaux.

1703. A fine and perfect specimen of a conical and pentagonal variety (*C. turritus*) of *Clypeaster altus*, Lam.  
From the tertiary strata of Malta.
1704. A conical and distinctly pentagonal form of *Clypeaster altus*, Lam.  
From the tertiary strata of Malta.
1705. A large and somewhat regularly conical form of *Clypeaster Reidii*, Wright.  
From the tertiary strata of Malta.
1706. Two internal casts of *Clypeaster*, related to *Clypeaster altus*, var., showing the impressions of the petaloid ambulacra.  
From the tertiary strata of Minorca.

### Genus *Scutella*, Lam.

(The species belong to the tertiary formations and the present epoch.)

1707. Two specimens of *Scutella subrotunda*, Leske; one is attached to the soft shelly matrix.  
From the miocene strata of Malta.
1708. The *Scutella Faujasii*, Defrance.  
From the miocene strata of Touraine.
1709. Three attached specimens of *Scutella Faujasii*.  
From the miocene strata of Touraine.

### Genus *Echinocyamus*, Van Phelsum.

(Some species still exist; others are extinct and found fossil in the tertiary period.)

1710. Six specimens of *Echinocyamus ambiguus*, Defrance.  
From the tertiary strata of France.



### Family *Galeritidæ*.

(Form elongate or circular ; mouth central, pentagonal or decagonal ; anus posterior or inferior. Ambulacra simple. All the genera of this family are fossil in the jurassic and cretaceous rocks.)

#### Genus *Discoidea*, Gray.

(The species belong to the oolitic and cretaceous strata.)

1711. Eight specimens of *Discoidea (Holectypus) depressa*, Lam., sp.  
From the inferior oolite of Normandy.
1712. Numerous specimens of *Discoidea subucula*, Linn., sp.  
From the upper greensand of Warminster.
1713. The *Discoidea canaliculata*, Goldfuss.  
From the lower chalk ; locality unrecorded.
1714. A siliceous cast of *Discoidea canaliculata*, Goldf., showing the casts of interior plates on the lower margin, and which distinguish *Discoidea* from *Holectypus*.  
From the lower chalk.

#### Genus *Pygaster*, Agassiz.

(All the species belong to the jurassic and cretaceous formations.)

1715. The *Pygaster semisulcatus (Clypeus)*, Phillips, with a portion of the matrix in which it has been imbedded.  
From the coral rag of Farringdon, Berkshire.
1716. The *Pygaster semisulcatus*, Phillips, sp.  
From the inferior oolite, Gloucestershire.

#### Genus *Galerites*, Lam.

(The species are extinct, and belong to the cretaceous period.)

1717. Two specimens of *Galerites albogalerus*, Lam., one of them partly covered with *Bryozoa*.  
From the upper chalk of Kent.

1718. A conical variety of *Galerites albogalerus*, Lam.  
From the upper chalk of Kent.
1719. A specimen of *Galerites albogalerus*. It is filled with flint, and attached to a portion of the same containing a *Ventriculite*.  
From the upper chalk of Kent.
1720. The *Galerites albogalerus*, filled with flint and partly imbedded in a mass of flint.  
From the upper chalk near Basingstoke.  
*Presented by R. A. Stafford, Esq., F.R.C.S.*
1721. A portion of flint containing a crushed cast of *Galerites albogalerus*.  
Originally from the upper chalk ; locality unrecorded.
1722. A siliceous cast of a variety of *Galerites albogalerus*.  
From the upper chalk ; locality unrecorded.
1723. Six siliceous casts, in different states of preservation, of *Galerites albogalerus*, Lam.  
From the cretaceous strata.
1724. A singular and interesting conical form of a siliceous cast of *Galerites albogalerus*, Lam., having only *four* instead of *five* rows of ambulacra. A similar form is figured in the 'Encyc. Méthodique,' tab. 153, figs. 10, 11.  
From the upper cretaceous strata.
1725. Five specimens in flint, one of them retaining the shelly test, of *Galerites subrotundus*, Mant.  
From the upper chalk, Kent.
1726. Four siliceous casts of *Galerites vulgaris*, Lam.  
From the upper chalk ; locality unrecorded.
1727. A cast in translucent flint and a small specimen of *Galerites abbreviatus*, Lam.  
From the upper chalk ; locality unrecorded.

### Genus *Pyrina*, Desmoulins.

(The species are extinct, and occur in the cretaceous strata.)

1728. Four specimens of *Pyrina* (*Nucleolites*) *ovulum*, Lam.  
From the cretaceous strata of Maestricht.

### Genus *Hyboclypus*, Agassiz.

(All the species belong to the jurassic period.)

1729. The *Hyboclypus* *agariciformis*, Forbes.  
From the inferior oolite of Gloucestershire.

### Family *Nucleolitidæ*.

(Mouth central or subcentral ; anal opening marginal or supra-marginal. Ambulacra petaloid. The genera are found in the jurassic and cretaceous strata.)

### Genus *Nucleolites*, Lam.

(There is one living species ; the fossil forms occur in the oolitic and cretaceous strata.)

1730. Three specimens of *Nucleolites* *sinuatus*, Leske.  
This species occurs both in the coralline and inferior oolite of England.
1731. Two specimens of *Nucleolites* *sinuatus*, Leske.  
From the lower oolitic strata ; locality unrecorded.
1732. Nine specimens of *Nucleolites* *scutatus*, Lam.  
From the coral-rag formation ; locality unrecorded.
1733. A specimen of *Nucleolites* *scutatus*, Lam., partly imbedded in the matrix.  
From the coralline oolite of France.
1734. A variety of *Nucleolites* *scutatus*, Lam.  
From the inferior oolite ; locality unrecorded.
1735. A variety of *Nucleolites* *Woodwardii*, Wright.  
From the coralline oolite ; locality unrecorded.

1736. A large specimen, much eroded, of *Nucleolites Agassizii*, Wright, var. *grandis*. This specimen is probably only a variety of the *N. Agassizii*, from which it differs slightly in the form and position of the anal opening, which is placed in a narrow and deep furrow, closely adjoining and running up to the vertex, and the test not showing much depression between the lower part of the aperture and the margin. The central spaces between the pores are about as wide as the poriferous avenues, and with them contract near the circumference. The diameter is  $4\frac{3}{4}$  inches, and the width across the vertex  $7\frac{1}{4}$  inches. The specimen is filled with a calcareous sandy matrix, and is from the oolitic strata; but the locality is not recorded.

The *Nucleolites Agassizii* has been found in the inferior oolite of Dorsetshire.

### Genus *Catopygus*, Agassiz.

(The species are extinct, and chiefly belong to the cretaceous strata.)

1737. Five specimens of *Catopygus (Nucleolites) carinatus*, Goldfuss.  
From the cretaceous strata of Westphalia.  
This species also occurs in the upper greensand of England.
1738. A variety of *Catopygus (Nucleolites) carinatus*, Goldf.  
From the cretaceous strata of Belgium.

### Genus *Cassidulus*, Lam.

(There is one living species; the fossil forms occur in the cretaceous and tertiary strata.)

1739. Four specimens of *Cassidulus (Nucleolites) lapis-canceri*, Goldf.  
From the cretaceous strata of Maestricht.

### Genus *Pygorhynchus*, Agassiz.

(The species are extinct, and belong to the lower tertiary strata.)

1740. The *Pygorhynchus Cuvierii (Clypeaster)*, Münster.  
From the lower tertiary strata of Paris, and occurs also at Kressenberg.
1741. The *Pygorhynchus grignonensis (Nucleolites)*, Defrance.  
From the tertiary strata of France.

1742. Two specimens of *Pygorhynchus crassus*, Ag.  
From the tertiary strata of Verona.
1743. Two specimens of an elongated form of *Pygorhynchus grignonensis*, Defrance.  
From the tertiary strata; locality unrecorded.

### Genus *Echinolampas*, Gray.

(Some species are living in the Red and Australian Seas; others are found fossil in the tertiary deposits.)

1744. The *Echinolampas Richardi*, Desmarest.  
From the miocene strata of Malta.
1745. A worn specimen of an *Echinolampas*, near to *E. Richardi*.  
Probably from the tertiary strata of Malta.
1746. An oval specimen of *Echinolampas Beaumontii*, Ag., filled with coarse shelly limestone.  
From the tertiary deposits of Verona.
1747. Two specimens of *Echinolampas affinis*, Desm.  
From the tertiary strata of France.
1748. Two specimens of *Echinolampas ovalis*, Desmoulins.  
From the tertiary strata of France.
1749. A variety of *Echinolampas similis*, Ag.  
From the tertiary strata of France.
1750. The *Echinolampas Kleinii* (*Clypeaster*), Goldfuss.  
This species occurs in the miocene strata of Germany.
1751. The *Echinolampas Hoffmanni*, Desor.  
From the tertiary strata of Palermo.
1752. The *Echinolampas subsimilis*, d'Archiac. The specimen is broken at the base and filled with grey earthy rock, in which some nummulites are imbedded.  
From the lower tertiary strata of Biaritz.

Genus *Conoclypus*, Agassiz.

1753. A worn specimen of *Conoclypus conoideus* (*Clypeaster*), Lam., filled with a green sandy matrix and grains of pisolitic iron ore.  
From the tertiary strata of Kressenberg.
1754. A conical and elevated variety of *Conoclypus conoideus*, Lam.  
From the tertiary strata of Malta?
1755. A specimen of *Conoclypus Flemingii*, d'Archiac, filled with soft limestone, and the test replaced by spathose carbonate of lime.  
From the eocene deposits of India.

Family *Spatangidae*.

(The general form in this family is more or less oval or oblong. The mouth is beneath, bilabiate, edentulous, and situated near the anterior margin. The anal opening is posterior and placed above the margin. The anterior single ambulacrum presents a different structure to the other four, and is generally placed in a more or less deep furrow, which extends to the anterior border. Some of the forms of *Spatangidae* present on the surface of the shell certain lines which have a smooth appearance, but in reality are formed of minute tubercles. These lines are termed *fascioles*, and are differently arranged in each of the genera presenting them. The fasciole is termed peripetal when it surrounds the ambulacra, as in *Hemiaster*; internal, when it encloses the single ambulacrum, as in *Amphidetus*; lateral, when it extends along the sides, as in *Schizaster*; subanal, if it occurs below the anal opening, as in *Spatangus*.)

Genus *Spatangus*, Klein.

(*Spatangus* has no peripetal fasciole, but a subanal fasciole deeply marked below the anal opening. The few living species of this genus (as restricted) are found in the British, Mediterranean and Australian Seas; the fossil forms occur in the tertiary strata.)

1756. The *Spatangus Hoffmanni*, Goldfuss.  
From the tertiary deposits of Westphalia; it occurs also fossil at Malta.

Genus *Eupatagus*, Agassiz.

(*Eupatagus* has both a peripetal and subanal fasciole, and differs from *Spatangus* in having the large tubercles of the interambulacral areas circumscribed by the fasciole. A recent form is found in the Australian Seas, and the fossil species occur in the tertiary strata.)

1757. A broken specimen of *Eupatagus Koninckii*, Wright.  
From the tertiary strata of Barcelona, Spain.
1758. The *Eupatagus Veronensis*, Agass.  
From the miocene strata of Verona.
1759. *Eupatagus ornatus* (*Spatangus*), DeFrance. The upper surface is broken, showing the nature of the matrix filling the shell.  
From the nummulitic strata of Biaritz.

Genus *Hemiaster*, Agassiz.

(Ambulacral furrows shallow; the posterior shorter than the anterior; peripetal fasciole angular, surrounding the ambulacra; no subanal fasciole. All the species are fossil and belong to the cretaceous and nummulitic strata.)

1760. Four specimens of *Hemiaster Bufo* (*Spatangus*), Cuvier.  
From the cretaceous strata of Maestricht.
1761. Two specimens and a flint-cast of *Hemiaster prunella* (*Spatangus*), Lam.  
From the cretaceous strata of Maestricht.
1762. A large gibbose specimen, partly compressed, of a species of *Hemiaster* (*H. nucleus*, Desor?).  
From the cretaceous strata; locality unrecorded.
1763. Two specimens of *Hemiaster acuminatus*, Agass.  
From the miocene deposits of Malta.

Genus *Schizaster*, Agassiz.

(The peripetal fasciole flexuous and surrounding the ambulacra, a lateral fasciole arising from the peripetal and passing below the anal opening; ambulacral furrows deep. The existing species are found in the Red, Mediterranean and West Indian Seas, and the fossil forms occur in the tertiary strata.)

1764. The *Schizaster eurynotus*, Sismonda.

From the miocene strata of Malta.

1765. A compressed specimen attached to the matrix of *Schizaster Parkinsoni*, Agass.

From the miocene strata; locality unrecorded.

Genus *Micraster*, Agassiz.

(No peripetal fasciole, but a distinct subanal fasciole; ambulacral furrows shallow. All the species belong to the cretaceous strata.)

1766. Two specimens of a conical variety of *Micraster gibbus*, Lam. sp.

From the upper chalk.

1767. Two specimens of an elongated variety of *Micraster cor-bovis*, Forbes.

From the upper chalk.

1768. Four specimens of *Micraster cor-anguinum*, Lam.

From the upper chalk.

1769. Eight silicified casts, of various sizes and in different conditions, of *Micraster cor-anguinum*, Lam. sp.

From the upper chalk.

1770. A cast in flint of a portion of *Micraster cor-anguinum*, showing the impressions of three of the ambulacra and of the anal orifice; the other part being covered with small crystals of quartz.

From the upper chalk.

1771. A portion of light-coloured flint containing a siliceous cast of *Micraster cor-anguinum*.

From the upper chalk.



1772. A mass of flint containing an imbedded cast of *Micraster cor-anguinum*; the original shelly test being destroyed, allows the flint cast to remain free in the cavity.  
From the upper chalk.
1773. A sharply defined cast, in grey flint, of *Micraster cor-anguinum*, Lam.  
From the upper chalk of Long Sutton, Hampshire.  
*Presented by Capt. Sir E. Home, Bart., R.N.*
1774. A variety of *Micraster rostratus*, Mant.  
From the upper chalk, Kent.

### Family *Ananchytidæ*.

(Ambulacra simple, not petaloid, with the summits separated; no fascioles; mouth central, bilabiate; anus excentric or marginal. The genera are fossil and occur in the jurassic and cretaceous strata.)

### Genus *Ananchytes*, Lam.

(The species of this genus are restricted to the cretaceous strata.)

1775. The *Ananchytes conoideus*, Goldfuss; the upper part perforated by a species of *Cliona*.  
From the upper chalk of Norfolk.
1776. A cast in flint of *Ananchytes conoideus*, Goldf.  
From the upper chalk; locality unrecorded.
1777. Four specimens of *Ananchytes ovatus*, Lam.  
From the upper chalk of Kent.
1778. Four siliceous casts of varieties of *Ananchytes ovatus*, Lam.  
From the chalk strata; locality unrecorded.
1779. Two casts, in ferruginous flint, of *Ananchytes ovatus*, Lam.  
From the chalk of Basingstoke, Hampshire.  
*Presented by R. Stafford, Esq., F.R.C.S.*
1780. A portion of *Ananchytes ovatus*, Lam., filled with and imbedded in black flint.  
From the upper chalk; locality unrecorded.

1781. Two ferruginous casts, partly in decomposed pyrites, of *Ananchytes ovatus*.  
From the upper chalk ; locality unrecorded.
1782. An interesting cast of *Ananchytes ovatus*, Lam., the lower half filled with light-coloured flint, and showing the casts of the ambulacra ; the upper portion is replaced by translucent silex, and exhibits the casts of the rhombic planes of the crystalline calc-spar which originally occupied the interior of the test and were symmetrically arranged in relation to the plates.  
From the upper chalk ; locality unrecorded.
1783. An imperfect specimen of a variety of *Ananchytes ovatus* (var. *striatus*), and a section of the same species.  
From the upper chalk ; locality unrecorded.
1784. Two siliceous casts of a variety of *Ananchytes ovatus*.  
From the upper chalk.

#### Subgenus *Holaster*, Agassiz.

(All the species of this group belong to the cretaceous strata.)

1785. Three specimens of *Ananchytes (Holaster) suborbicularis*, Ag.  
From the junction bed of the lower chalk and upper greensand of Wiltshire.
1786. The *Ananchytes (Holaster) planus*, Mant.  
From the lower chalk ; locality unrecorded.
1787. The *Ananchytes (Holaster) laevis*, Deluc.  
From the upper greensand of Wiltshire.
1788. Two imperfect specimens of *Ananchytes (Holaster) Trecensis*, Leym.  
From the lower or grey chalk ; locality unrecorded.
1789. A cast in flint of *Holaster pilula*, Lam.  
From the chalk of Sussex.

#### Genus *Cardiaster*, Forbes.

1790. The *Cardiaster fossarius (Spatangus)*, Benett.  
From the upper greensand of France.

Genus *Hemipneustes*, Agassiz.

1791. Two large and well-preserved specimens of *Hemipneustes radiatus* (*Spatangus*), Lam., showing the flexuous *ambulacra*.  
From the cretaceous strata of Maestricht.

Genus *Toxaster*, Agassiz.

1792. Four specimens of *Toxaster* (*Spatangus*) *retusus*, Lam.  
From the Neocomian strata of Switzerland.

Genus *Dysaster*, Agassiz.

(The species are extinct and occur in the jurassic and lower cretaceous strata.)

1793. Three specimens of *Dysaster ovalis*, Parkinson.  
From the middle jurassic strata of Germany.
1794. A variety of *Dysaster ovalis*, Park.  
This species occurs in the coralline oolite of England and Germany.
1795. Four specimens of *Dysaster carinatus*, Gmelin.  
From the middle jurassic strata of Switzerland.

A Catalogue of casts in plaster of certain species of fossil *Echinodermata*, prepared by Professor Agassiz in illustration of his "Prodrome d'une Monographie des Radiaires ou Echinodermes," 'Annales des Sciences Naturelles,' tom. vii. 1837, and of his "Catalogue Raisonné des Espèces, des Genres et des Familles d'Echinides," 'Annales des Sciences,' tom. viii. 3<sup>ème</sup> Sér. 1847.

[The Specimens printed in Roman type were presented by Prof. Agassiz.]

## CENTURIA PRIMA.

- |  |                                    |   |
|--|------------------------------------|---|
| 1. <i>Spatangus Hoffmanni</i> , Goldf. | 5a. <i>Cidaris sceptrifera</i> .   | 10. <i>Cidaris tripterygia</i> .          |
| 2. <i>Spatangus asterias</i> .         | 6. <i>Micraster cor-anguinum</i> . | 10b. <i>Micraster acutus</i> .            |
| 3. — ornatus, Defr.                    | 7. <i>Hemicidaris crenularis</i> . | 11. — acutus.                             |
| 4. <i>Echinolampas Studeri</i> .       | 7a. <i>Holaster subglobosus</i> .  | 12. <i>Ananchytes tuberculata</i> , Defr. |
| 4a. <i>Micraster minimus</i> .         | 8. <i>Holaster altus</i> .         | 13. — tuberculata, Defr.                  |
| 5. — minimus.                          | 9. <i>Micraster helveticus</i> .   | 14. — ovata, Lam.                         |

- |   |   |   |
|---|---|---|
| 15. <i>Ananchytes ovata</i> , Lam.              | 43. <i>Amblypygus apheles</i> .             | 72. <i>Pyrina ovulum</i> .                  |
| 16. — <i>ovata</i> , Lam.                       | 44. <i>Pygorhynchus crassus</i> .           | 73. <i>Discoidea hemisphærica</i> .         |
| 17. <i>Holaster subglobosus</i> .               | 45. <i>Echinolampas stelliferus</i> .       | 74. <i>Pygaster laganoides</i> .            |
| 18. <i>Schizaster ambulacrum</i> .              | 46. — <i>eurypygus</i> .                    | 75. <i>Hyboclypus gibberulus</i> .          |
| 19. <i>Dysaster ringens</i> .                   | 47. <i>Pygorhynchus Grignonensis</i> .      | 76. — <i>gibberulus</i> .                   |
| 19 <i>b</i> . <i>Cælastor Couloni</i> .         | 47 <i>b</i> . — <i>Cuvierii</i> .           | 77. <i>Pygorhynchus Grignonensis</i> .      |
| 20. <i>Dysaster ringens</i> .                   | 48. — <i>Cuvierii</i> .                     | 78. <i>Catopygus depressus</i> .            |
| 21. — <i>Eudesii</i> .                          | 49. <i>Echinolampas Burdigalensis</i> .     | 79. <i>Galerites lævis</i> .                |
| 22. — <i>Eudesii</i> .                          | 50. — <i>Burdigalensis</i> .                | 80. <i>Catopygus parvulus</i> .             |
| 23. — <i>Eudesii</i> .                          | 51. <i>Conoclypus microporus</i> .          | 81. <i>Caratomus rostratus</i> .            |
| 24. — <i>ovalis</i> .                           | 51 <i>b</i> . <i>Echinolampas similis</i> . | 82. <i>Catopygus alpinus</i> .              |
| 25. <i>Holaster Raulini</i> , Desh.             | 52. <i>Diadema distinctum</i> .             | 83. <i>Hemicidaris diademata</i> .          |
| 26. — <i>transversus</i> .                      | 53. <i>Conoclypus plagiosomus</i> .         | 83 <i>b</i> . <i>Pygaster costellatus</i> . |
| 27. — <i>suborbicularis</i> .                   | 54. — <i>conoideus</i> .                    | 84. <i>Cidaris pisifera</i> .               |
| 28. — <i>latissimus</i> .                       | 55. <i>Clypeaster crassus</i> .             | 85. <i>Cidaris coronata</i> , Goldf.        |
| 29. — <i>bicarinatus</i> .                      | 56. — <i>altus</i> .                        | 86. — <i>clavigera</i> , König.             |
| 30. <i>Amphiope bioculata</i> .                 | 57. — <i>marginatus</i> .                   | 87. <i>Holaster complanatus</i> .           |
| 31. <i>Holaster lævis</i> .                     | 58. <i>Clypeus angustiporus</i> .           | 88. <i>Dysaster carinatus</i> .             |
| 32. <i>Scutella Faujasii</i> .                  | 59. <i>Clypeaster latirostris</i> .         | 89. <i>Cidaris colocynda</i> .              |
| 33. — <i>truncata</i> .                         | 60. — <i>latirostris</i> .                  | 90. — <i>cyathifera</i> .                   |
| 33 <i>b</i> . <i>Conoclypus semiglobus</i> .    | 60 <i>b</i> . <i>Echinus perlatus</i> .     | 91. — <i>colocynda</i> .                    |
| 34. <i>Echinolampas hemisphæricus</i> .         | 61. <i>Nucleolites elongatus</i> .          | 92. — <i>copeoides</i> .                    |
| 35. — <i>hemisphæricus</i> .                    | 62. <i>Galerites castanea</i> .             | 93. — <i>copeoides</i> .                    |
| 36. <i>Salenia scutigera</i> .                  | 63. <i>Discoidea rotula</i> .               | 94. — <i>filograna</i> .                    |
| 36 <i>b</i> . <i>Conoclypus æquidilatatus</i> . | 64. <i>Galerites castanea</i> .             | 95. — <i>copeoides</i> .                    |
| 36 <i>c</i> . <i>Echinolampas Studeri</i> .     | 65. <i>Catopygus fenestratus</i> .          | 96. — <i>filograna</i> .                    |
| 37. <i>Cidaris monilipora</i> .                 | 66. <i>Galerites castanea</i> .             | 97. <i>Cyphosoma Beaumontii</i> .           |
| 38. <i>Holaster L'Hardyi</i> .                  | 67. — <i>Rhotomagensis</i> .                | 98. — <i>Beaumontii</i> .                   |
| 39. <i>Pygurus trilobus</i> .                   | 68. — <i>vulgaris</i> , Lam.                | 99. <i>Hemicidaris pustulosa</i> .          |
| 40. — <i>depressus</i> .                        | 69. <i>Pygorhynchus Grignonensis</i> .      | 100. — <i>alpina</i> .                      |
| 41. <i>Echinolampas Escheri</i> .               | 70. — <i>Grignonensis</i> .                 |   |
| 42. <i>Conoclypus Anachoreta</i> .              | 71. — <i>Grignonensis</i> .                 |   |

## Supplemental specimens from

## CENTURIA X.

- |                                 |                                   |                                     |
|---------------------------------|-----------------------------------|-------------------------------------|
| a. <i>Acrocidaris nobilis</i> . | j. <i>Cidaris punctatissima</i> . | s. <i>Cælopleurus radiatus</i> .    |
| b. <i>Cidaris pyriferæ</i> .    | k. <i>Diadema hemisphæricum</i> . | t. <i>Diadema distinctum</i> .      |
| c. — <i>alata</i> .             | l. — <i>lucæ</i> .                | u. — <i>inæquale</i> .              |
| d. — <i>filograna</i> .         | m. <i>Echinopsis elegans</i> .    | v. <i>Goniopygus heteropygus</i> .  |
| e. — <i>meandrina</i> .         | n. <i>Codiopsis doma</i> .        | w. — <i>Menardi</i> .               |
| f. — <i>cucumifera</i> .        | o. <i>Pedina aspera</i> .         | x. <i>Hemicidaris depressa</i> .    |
| g. — <i>pustulifera</i> .       | p. <i>Goniopygus apiculatus</i> . | y. <i>Acrosalenia tuberculosa</i> . |
| h. — <i>heteropleura</i> .      | q. <i>Echinopsis latipora</i> .   | z. <i>Peltastes pulchellus</i> .    |
| i. — <i>pustulifera</i> .       | r. <i>Cælopleurus equis</i> .     |                                     |

## Order ASTEROIDEA.

### Family *Asteridæ*.

#### Genus *Goniaster*, Agassiz.

(The *Goniasters* are pentagonal Starfishes, with the angles either slightly projecting or sometimes much produced ; the margins are bounded by two rows of large plates, and the upper surface is sometimes smooth or variously studded with minute granulations. The living species occur in the temperate and tropical seas, and the fossil forms have been found in the greensand, white chalk and London clay.)

1796. A nearly perfect external margin with the double series of ossicula ; the form obtusely pentagonal, with nearly straight sides, belonging to *Goniaster* (*Goniodiscus*) *Hunteri*, Forbes.

This specimen is the type of the species, and is figured and described in Dixon's 'Geology and Fossils of the Tertiary and Cretaceous Formations of Sussex,' page 331, tab. 21, fig. 1 ; and in Mantell's 'Medals,' 2nd edit. p. 305.

From the upper chalk of Kent, where this species is not rare.

1797. Portions of the marginal and discal ossicula of *Goniaster*.

From the chalk of Kent.

1798. Eleven marginal ossicula of a *Goniaster*.

From the chalk of Kent.

1799. Two characteristic portions, replaced by pyrites, of *Goniaster Stokesii*, Forbes.

From the London clay of the Isle of Sheppey.

#### Genus *Oreaster*, Müller.

(A genus of pentagonal and convex Starfishes, formed of large irregular polygonal plates of various forms, squamately disposed on the arms ; various parts of the dorsal surface are occupied by large tubercles. The margins are formed of two rows of granulated overlapping plates ; there are two rows of suckers in each avenue. The genus is confined to the Indian Ocean ; the fossil species hitherto found belong to the white chalk.)

1800. A group of ossicula belonging to a species of *Oreaster*.

From the chalk of Kent.

Genus *Asterias*, Lam. (including *Uraster* and *Astropecten*).

(The subgenus *Uraster* is one of the most common Starfishes in the British Seas and is also found in various parts of the globe, but is more characteristic of northern regions. The fossil species are found in the English palæozoic deposits, and they also occur in the secondary and tertiary strata. The subgenus *Astropecten* is widely distributed, but the larger number are found in warm climates. The fossil species have been obtained in the oolitic, cretaceous, and tertiary strata.)

1801. A piece of ferruginous sandstone, containing imperfect casts of *Asterias* (*Uraster*) *lumbricalis*, Schlotheim.  
From the liassic sandstone of Coburg.
1802. Two sharply defined casts, in fine-grained sandstone, of *Asterias* (*Uraster*) *lumbricalis*, Schlotheim.  
From the liassic strata of Coburg.
1803. A cast, with portions of other specimens on sandstone, of *Asterias* (*Uraster*) *lumbricalis*, Schlotheim.  
From the liassic strata of Coburg.
1804. Separated plates of *Asterias* (?) *scutata*, Goldfuss.  
From the jurassic strata of Streitberg.
1805. A block of oolitic limestone containing portions of an *Asterias* (*Astropecten*) *Orion*, Forbes.  
From the coralline oolite ; locality unnoted.
1806. Impressions of a small species of *Asterias*.  
From the jurassic strata of Pappenheim.

OPHIUROIDEA.

Family *Ophiuridæ*.

Genus *Ophioderma*, Müller.

1807. Two pieces of micaceous sandstone containing imperfect specimens of *Ophioderma* *Egertoni*, Broderip.  
From the lower oolitic strata near Lyme Regis, Dorset.

## CYSTOIDEA.

Family *Cystideæ*.

(The Cystideans are somewhat spherical bodies covered with polygonal plates, which are more or less definite in number, according to the genera. They were attached inferiorly by a stem and furnished most usually with three orifices on the superior portion, viz. a *mouth* which is central and terminal opposite to the basal attachment, an *anal opening* contiguous to the mouth, and a pentagonal pyramid of plates which is supposed to have covered the generative outlet. The form and size of the mouth varied in the different genera. Some of the Cystideans were provided with arms, and others were armless, of which the following genus is an example. All the genera and species are extinct, and highly characteristic of the lower palæozoic strata.)

Genus *Echinosphærites*, Wahlenberg.

1808. A specimen, partly crystalline, of *Echinosphærites aurantium*, Gyllenhal.  
From the lower Silurian strata of Russia.

## CRINOIDEA.

(The *Crinoidea*, or lily-shaped Echinoderms, have the body, with the tentacular rays, temporarily or permanently supported on a jointed stem; one genus however, the *Marsupites*, had no column of support, and the receptacle was free and unattached during all periods of its growth. The receptacle which contained the viscera presents considerable diversity of form, and according to the modifications in the number, shape and arrangements of the plates composing it, and the structure of the column, arms and tentacula, the order is subdivided into families and genera. The fixed Crinoids are but feebly represented at the present period, but were abundant in the earlier seas, some portions of the palæozoic limestones being almost entirely composed of their remains. They also existed in different forms during the secondary and tertiary periods, and are now represented by the living West Indian genus, *Pentacrinus*.)

Family *Comatulidæ*.

(In the *Comatulidæ* the body is liberated from the stem in the adult state.)

Genus *Comatula*, Lam. (*Solanocrinus*, Goldfuss).

1809. Two portions of the cup of *Comatula* (*Solanocrinus*) *costata*, Goldfuss.  
From the middle jurassic strata of Wirtemberg.

Family *Pentacrinidæ*.Genus *Extracrinus*, Austen (*Pentacrinus* (pars), Auct.).

(This genus is distinguished from *Pentacrinus* by the remarkable development of the second series of perisomic pieces, which extend downwards much below the margins of the dorso-central or basal plates.)

1810. A mass of crinoidal limestone containing many stems and portions of the head and arms of *Extracrinus* (*Pentacrinus*) *Briareus*, Müller. The *Briarean Pentacrinite* is so named from the numerous tentacula attached to its stem. The number of distinct pieces in this Crinoid have been estimated to exceed one hundred thousand.

From the liassic strata of Dorsetshire.

1811. A triangular piece of limestone with portions of the columns and a small head of *Extracrinus Briareus*.

From the liassic strata ; locality unrecorded.

1812. A slab of limestone showing a portion of the columns and head, with their many articular rays, of *Extracrinus Briareus*.

From the liassic strata ; locality unrecorded.

1813. A mass of limestone containing a beautiful impression of the brachial rays and articular pieces of *Extracrinus Briareus*.

The specimen is partially replaced by pyrites.

From the liassic strata ; locality unrecorded.

1814. A slab of limestone full of fragments of the stem and also containing portions of the brachial rays of *Extracrinus Briareus*.

From the liassic strata ; locality unrecorded.

1815. A slab of limestone containing a portion of the stem of *Extracrinus Briareus*, covered with the auxiliary branches, which are partly pyritized.

From the liassic strata of Yorkshire.

*Presented by Sir Anthony Carlisle, F.R.S.*

1816. Numerous fragments of the stems of *Extracrinus Briareus*.

From the liassic strata of Germany.

1817. Portions of the stem of *Extracrinus* (*Pentacrinus*) *subangularis*, Müller.

From the liassic strata of Germany.



Genus *Pentacrinus*, Miller.

(The *Pentacrinus* is the only genus of Crinoids with a persistent stem which is represented in the present seas, the *P. caput-Medusæ* being occasionally found in the West Indian Seas; of this species, showing all the characters of the genus, a fine specimen, No. 1818\*, is in the College Collection. The receptacle or calyx, in which the digestive and other viscera are situated, is composed of calcareous plates in close apposition; from the upper margin of the calyx proceed ten multiradiate arms, which again subdivide into slender branches; on the upper and inner sides of the arms the articulate tentacula are attached. The calyx is supported on a long stem, affixed by the base, and composed of numerous pentagonal plates, centrally perforated and articulated by a pentapetal radiating surface.)

1818. A piece of chalk containing three joints of the column of *Pentacrinus Agassizii*, Hagenow.

From the chalk near Maidstone, Kent.

*Presented by Samuel Stutchbury, Esq., F.G.S.*

Family *Cyathocrinidæ*.Genus *Cyathocrinus*, Miller.

(This genus occurs in the Silurian, Devonian and Carboniferous strata.)

1819. A piece of light-coloured limestone containing a broken and crushed specimen of a *Cyathocrinus*, near to *C. ramosus* or *C. planus*, Schloth.; showing a portion of the pelvis, brachial rays and tentacular pieces.

From the palæozoic limestone of the Duchy of Brunswick.

Family *Encrinidæ*.Genus *Encrinus*, Miller.

(This genus is restricted to the triassic strata. The beautiful Crinoid which forms the type of this genus has been popularly termed the 'Stone-lily,' from its cup resembling the expanding flower of a Lily or Tulip. The receptacle is composed of five basal plates, upon which are successively placed three series of other plates, to the uppermost of which the pieces bearing the tentacula were articulated. The column is formed of numerous round ossicles, with a central aperture and radiating articular surfaces; these ossicles or 'joints' become alternately large and small towards the summit of the stem.)

1820. A large block of shelly limestone containing a specimen of the column and head of *Encrinus liliiformis*, Schloth. (*E. moniliformis*, Goldfuss), with a portion of another column.

From a shelly limestone called "muschelkalk," forming the central member of the triassic series of Germany. The specimen is from near Brunswick.

1821. An irregular mass of coarse shelly limestone containing the perfect head of the *Encrinus liliiformis*, Schloth.  
From the muschelkalk near Brunswick.
1822. A small quadrangular block of shelly limestone, with numerous crinoidal joints and a portion of the column, to which is attached the perfect head of the *Encrinus liliiformis*.  
From the muschelkalk, near Brunswick.
1823. A piece of shelly limestone with a portion of the column, pelvis, and brachial rays of the *Encrinus liliiformis*.  
From the muschelkalk, Brunswick.
1824. A perfect specimen of the head of the *Encrinus liliiformis*, showing the arrangement of the plates of the pelvis and the first columnar joint.  
From the muschelkalk, Brunswick.
1825. Two specimens, one attached to the matrix, of the *Encrinus liliiformis*.  
From the muschelkalk, Brunswick.
1826. A broken portion of the head of *Encrinus liliiformis*, exhibiting parts of the ten brachial rays, and the internal disposition of the small tentacular pieces.  
From the muschelkalk of Lacklum, near Brunswick.
1827. Separate portions of the column of *Encrinus liliiformis*, Schloth.  
From the muschelkalk, Brunswick.

### Family *Marsupitidæ*.

#### Genus *Marsupites*, Mantell.

(The *Marsupites* were free Crinoids, consisting of a number of large plates (one central, five basal, five intermediate and five brachial) forming a kind of sac enclosing the viscera. The genus is restricted to the upper chalk.)

1828. A portion of the pelvis of the *Marsupites Milleri*, Mant. (the Tortoise Encrinite of Parkinson), filled with the cretaceous matrix.  
From the chalk of Sussex.

1829. A more perfect specimen of *Marsupites Milleri*, showing the plates to which the brachial rays were attached.  
From the chalk of Sussex.

### Family *Apiocrinidæ*.

(This family have the jointed column long, round, not verticillate, and attached by a complex root; the calyx or receptacle is solid, cupuliform or pyriform, slightly excavated superiorly to support the viscera, without containing them. All the genera are extinct.)

### Genus *Bourgueticrinus*, d'Orbigny.

1830. Several portions of the head, column, and root of *Bourgueticrinus* (*Apiocrinus*) *ellipticus*, Miller (the Bottle or Stag's-horn Encrinite of Parkinson).  
From the upper chalk of Kent.

### Genus *Apiocrinus*, Miller.

1831. A portion of the calyx of the *Apiocrinus Parkinsoni*, Schlotheim.  
From the Bradford clay of Wiltshire, where this species is abundant.

### Genus *Millericrinus*, d'Orbigny.

1832. Portions of the column of *Millericrinus* (*Rhodocrinus*) *echinatus*, Schlotheim.  
From the middle jurassic strata of Bavaria.

### Genus *Eugeniocrinus*, Miller.

(A small clove-like form of Crinoids, having a simple receptacle with a small cavity, formed of but one series of plates, to which the five arms were articulated. The genus is of jurassic age.)

1833. Numerous specimens of *Eugeniocrinus caryophyllatus*, Goldfuss.  
From the jurassic strata of Wirtemberg.
1834. Portions of the column of *Eugeniocrinus*.  
From the jurassic strata of Wirtemberg.
1835. Numerous specimens of *Eugeniocrinus nutans*, Goldfuss.  
From the jurassic strata of Streitberg.

*Parts of Crinoidal Columns.*

1836. A polished slab of dark limestone with numerous regularly arranged Crinoidal columns.  
From the palæozoic limestone of Kosorz near Prague, Bohemia.
1837. A slab of dark limestone covered with portions of Crinoidal stems, the joints of which are very thin.  
From the palæozoic limestone of Kosorz, near Prague.
1838. A slab of limestone, partly polished, with portions of Crinoidal columns.  
From the palæozoic limestone of Kosorz, near Prague.
1839. A piece of argillaceous limestone containing a portion of a Crinoidal stem, from which proceed numerous and closely approximate ramuli.  
From the Silurian limestone of Dudley.
1840. Two small pieces of ferruginous sandstone, full of impressions of the joints of Crinoidal stems.  
From the Devonian strata of Germany.
1841. Portions of large Crinoidal columns.  
From the Silurian limestone.
1842. A large slab almost entirely composed of portions of the column of *Poteriocrinus*.  
From the mountain limestone of Derbyshire.
1843. A small polished slab of reddish marble showing longitudinal and oblique sections of Crinoidal columns.  
From the carboniferous limestone ; locality unnoted.
1844. A mass of ferruginous chert, full of casts of Crinoidal columns and impressions of a *Spirifer*.  
From the Devonian strata of Germany.
1845. A large mass of grey chert with siliceous casts of the column of *Poteriocrinus crassus*.  
From the carboniferous limestone of Derbyshire.

1846. A mass of grey wavy chert with impressions of Crinoidal stems ; one of the portions is filled with crystalline quartz.  
From the carboniferous limestone of Derbyshire.
1847. A similar mass of grey chert with casts of the interior of Crinoidal stems, commonly called Entrochi, or screw stones.  
From the carboniferous limestone of Derbyshire.
1848. A mass of entrochal limestone with the columns of *Poteriocrinus*.  
From the carboniferous limestone ; locality unnoted.
1849. A mass of grey limestone partly composed of the columnar joints of *Encrinus liliiformis*.  
From the muschelkalk of Germany.
1850. A piece of ferruginous shaly rock, containing a layer of the stems of *Pentacrinus*.  
From the liassic strata of Germany.
1851. A piece of porous encrinital ironstone, containing the mould of a Crinoidal column with a cast of the interior.  
From the Devonian strata of Germany.
1852. A large irregular mass of chert containing casts of *Spirifer*, *Productus*, *Orthis*, and a well-defined cast of the interior of the column of a *Poteriocrinus*, showing its striated surface, the outer calcareous portion of the column having been destroyed.  
This specimen illustrates one process of fossilization, in which the siliceous matter, either in a fluid or semi-fluid state, permeated and filled the central cavity of the calcareous column of a *Poteriocrinus*, and which calcareous part has been subsequently removed, leaving a well-defined cast of the structure and form of the tubular cavity.  
From the mountain limestone of Derbyshire.
1853. A mass of worn crystalline limestone containing portions of Crinoidal columns belonging to *Poteriocrinus*.  
From the mountain limestone of Derbyshire.

## Subkingdom ZOOPHYTA.

## Class POLYPI.

## Div. I. CORALLARIA.

(The Polypi of this division have the polypary in general calcareous and either tubular, discoid or cyathoid; they possess internal reproductive organs and have the visceral cavity surrounded by radiating vertical lamellæ.)

## Subclass ZOANTHARIA.

(The *Zoantharia* are divided into two principal groups, the one having the dermal tissue always soft and flexible, the other having a calcareous polypary; the latter is arranged in four orders chiefly according to the subdivisions of the visceral cavity and the structure of the walls. The mode of development of the Polypi is also an important distinctive character. Of these four great orders of *Zoantharia*, represented by the fossils in the Collection, two, viz. the *Zoantharia aporosa* and *Z. perforata*, belong to the recent, tertiary and secondary epochs; the other two, *Z. tabulata* and *Z. rugosa*, are chiefly characteristic of the palæozoic period.)

## Order ZOANTHARIA APOROSA.

(This Order comprises the most lamelliferous and stelliform of all the Corals; the septal apparatus is essentially composed of six elements and is destitute of tabulæ.)

Family *Turbinolidæ*.Genus *Turbinolia*, Lam.

(The species are extinct and occur in the tertiary strata.)

1854. Various specimens of *Turbinolia elliptica*, Brong.  
From the tertiary strata of the environs of Paris.

Genus *Flabellum*, Lesson.

(The existing species are found in the seas of warm latitudes, and the fossil forms occur in the tertiary strata.)

1855. A specimen of *Flabellum cuneatum* (*Turbinolia*), Goldf.  
Probably from the tertiary strata of Italy.

Genus *Trochocyathus*, Edwards and Haime.

(The species are extinct and belong to the cretaceous and tertiary strata.)

1856. Three varieties of *Trochocyathus* (*Turbinolia*) *sinuosus*, Brong.  
This species occurs in the lower tertiary strata of the South of France and North of Italy.

Genus *Paracyathus*, Edwards and Haime.

(There are a few living species ; the fossil forms belong to the tertiary strata.)

1857. Three specimens of *Paracyathus caryophyllus*, Lam.  
From the London clay of the Isle of Sheppey.
1858. Three specimens of varieties of *Paracyathus caryophyllus*, Lam. (*P. crassus*?).  
From the London clay of the Isle of Sheppey.

Family *Oculinidæ*.Genus *Synhelia*, Edwards and Haime.

(The one recorded species belongs to the cretaceous strata.)

1859. A piece of chalk on which is imbedded a ramose portion of *Synhelia Sharpeana*, Edwards and Haime.  
This species occurs in the lower chalk of Dover, Kent.

Genus *Diplohelia*, Edwards and Haime.

(The species belong to the eocene deposits.)

1860. A specimen of *Diplohelia (Oculina) Solandri*, DeFrance.  
From the eocene strata of France.
1861. Various specimens of *Diplohelia (Oculina) raristella*, DeFrance.  
From the eocene strata of France.

Family *Astræidæ*.Genus *Parasmilia*, Edwards and Haime.

(The species occur in the cretaceous strata.)

1862. Various specimens, in different stages of growth, of *Parasmilia centralis*,  
Mantell, sp. (*Monocarya*, Lonsdale).  
This species occurs in the upper chalk of Kent and Sussex.
1863. A variety of *Parasmilia centralis*, Mant. (*P. cultrata*?).  
From the upper cretaceous strata.

Genus *Thecosmilia*, Edwards and Haime.

(The species are chiefly jurassic; a few are cretaceous.)

1864. Two specimens of a species of *Thecosmilia*, with the branches of the coral  
silicified.  
From the oolitic strata of Wirttemberg.
1865. Two varieties of *Thecosmilia annularis*, Parkinson.  
From the coralline oolite.

Genus *Montlivaltia*, Lamouroux.

(This genus occurs in the triassic, jurassic and cretaceous strata.)

1866. The *Montlivaltia Delabechii*, Edwards and Haime.  
This species occurs in the inferior oolite of Dorsetshire.



Genus *Anthophyllum*, Goldfuss.

1867. A broken portion of a silicified specimen of *Anthophyllum obconicum*, Münster.  
From the jurassic strata of Wirtemberg.
1868. A silicified specimen of *Anthophyllum* near to *A. turbinatum*, Münster.  
From the jurassic strata.
1869. A large conical and silicified specimen of *Anthophyllum* near to *A. obconicum*,  
Münster.  
From the jurassic strata of Randen, Switzerland.

Genus *Stylina*, Lam.

(The species are chiefly confined to the jurassic rocks.)

1870. A fine mass of *Stylina coalescens*, Edw. and Haime; the branches are irregularly  
attached together.  
From the oolitic strata of Mezières, in Champagne, France.
1871. Another irregular mass, partly silicified, of *Stylina coalescens*, Edw. and  
Haime.  
From the oolitic strata; said to be from the environs of Mons.
1872. A smaller portion of *Stylina coalescens*.  
Probably from the oolitic strata; locality unnoted.
1873. A mass of calcareous rock containing some imbedded portions of *Stylina  
coalescens*, Edw. and Haime.  
Locality unrecorded.
1874. A mass of rock almost entirely composed of casts of the tubuli of a species of  
*Stylina*.  
Locality unrecorded.
1875. A globose and ferruginous mass of a coral, partly silicified, near to *Stylina  
tubulifera*.  
From the oolitic strata; locality unnoted.

1876. Two masses of saccharoid limestone, containing casts of the tubuli and transverse septa of *Stylina Gaulardi*, Michelin.  
One specimen exhibits the terminal or superficial portion of the coral.  
This species occurs in the coralline oolite of the department of the Meuse.
1877. A variety of *Stylina Gaulardi*, Michelin, in saccharoid limestone, the transverse lamellæ of which are more conical.  
From the coralline oolite, Meuse.
1878. A mass of saccharoid limestone containing a species of *Stylina*.  
From the coralline oolite, Meuse.

#### Genus *Astrocænia*, Edwards and Haime.

(The species occur in the Oxfordian, cretaceous and middle tertiary strata.)

1879. An irregular mass of *Astrocænia Koninckii*, partly covered with the matrix ; and a smaller specimen of the same.  
From the cretaceous strata of Gosau.

#### Genus *Calamophyllia*, Blainville.

(The species occur in the triassic, middle jurassic and upper cretaceous strata.)

1880. A group of the tubuli, partly free and partly imbedded in matrix, belonging to *Calamophyllia striata*, Blainville ; and a similar but smaller specimen of the same.  
From the oolitic strata of France.
1881. A mass of calcareous shelly rock, partly polished, on the other surface of which are branches of a *Calamophyllia* near to *C. Stokesii*, showing the annulated structure.  
From the oolitic strata ; locality unnoted.

Genus *Leptoria*, Edwards and Haime.

(There are some living species ; the fossil forms occur in the tertiary strata.)

1882. A piece of argillaceous limestone containing a portion of *Leptoria Koninckii*,  
Edwards and Haime.  
From the cretaceous strata of Gosau.

Genus *Hydnophora*, Fischer de Waldheim.

(There are some living species ; the fossil forms are found in the cretaceous strata.)

1883. A small portion, partly polished, of *Hydnophora Styriaca*, Edw. and Haime.  
From the cretaceous strata of Gosau.

Genus *Cladophyllia*, Edwards and Haime.

1884. A mass of aggregated branches of *Cladophyllia Babcana*, Edw. and Haime,  
imbedded in a calcareous matrix.  
Locality unnoted.
1885. Two large masses formed of the aggregated branches of *Cladophyllia dichotoma*,  
Edw. and Haime, partly free of the investing matrix.  
From the oolitic strata of Mezières, in Champagne, France.

Genus *Astræa*, Lam.

(The species range from the cretaceous to the present period.)

1886. Two pieces of calcareous rock containing portions of *Astræa geminata*, Goldf.  
(*Aplosastræa*, d'Orb.).  
From the cretaceous strata of Maestricht.
1887. A portion of soft calcareous rock with the casts, very prominent, of the cells  
of *Astræa geminata*, Goldf.  
From the cretaceous deposit of Maestricht.

1888. A mass of calcareous rock containing *Astræa geminata*, Goldf. (*Aplosastræa*, d'Orb.), and casts of a parasitic body which has perforated the coral.  
From the cretaceous strata of Maestricht.
1889. Three specimens of calcareous rock showing different states of *Astræa arachnoides*, Schröter (*Phyllocænia*, Edw. and Haime).  
From the cretaceous strata of Maestricht.
1890. A variety of *Astræa arachnoides*, Schröter.  
From the cretaceous strata of Maestricht.
1891. A portion of earthy limestone containing casts of the cells of *Astræa angulosa*, Goldfuss (*Stephanocænia*, Edw. and Haime).  
From the cretaceous strata of Lorraine.
1892. A variety of *Astræa angulosa*, Goldfuss.  
From the cretaceous strata of Maestricht.
1893. Three portions of calcareous rock containing *Astræa geometrica*, Goldf. (*Synastræa*, Edw. and Haime). The specimens exhibit the coral in different states of preservation.  
From the cretaceous strata of Maestricht.
1894. Three specimens of friable calcareous rock containing portions of *Astræa clathrata*, Goldf. (*Synastræa*, Edw. and Haime). One specimen exhibits traces of a parasitic organism.  
From the cretaceous strata of Maestricht.
1895. A piece of calcareous rock containing a species of *Astræa* near to *A. textilis*, Goldf.  
From the cretaceous strata of Maestricht.
1896. A portion of coarse calcareous rock with the surface showing the casts of the cells of an *Astræa* near to *A. geminata*, Goldf. (*Aplosastræa*, d'Orb.).  
From the cretaceous strata of Lorraine.
1897. Two specimens of *Astræa emarciata*, Defrance.  
From the tertiary strata of France.
1898. A species near to *Astræa pediculata*, Desh.  
Locality unrecorded.

1899. A fragment near to *Astræa radiata*, Lam.  
From the "Montibus Gorizensibus."
1900. A small partly polished nodule of an *Astræa* near to *A. stylophora*, Goldfuss.  
From the Tyrolese Alps.
1901. A mass of soft limestone with the projecting casts of portions of *Astræa* (*Gorgonia*) *bacillaris*, Goldf.
1902. Two portions of a similar limestone showing, on the different surfaces, varieties of *Astræa* (*Gorgonia*) *bacillaris*.
1903. Another variety of *Astræa* (*Gorgonia*) *bacillaris*, Goldf., showing portions of the tubes and impressions of the same in a loose calcareous matrix.
1904. Two portions of similar calcareous rock showing the lateral view of the tubuli of *Astræa* (*Gorgonia*) *bacillaris*.
1905. Two smaller pieces of rock showing other forms of *Astræa* (*Gorgonia*) *bacillaris*.  
The above seven specimens are from the cretaceous strata of Maestricht.
1906. A small globose and weathered specimen near to *Astræa rotularis*, Michelin.  
Locality unrecorded.
1907. Two thin slabs of pinkish limestone containing sections of an *Astræa*? similar to one figured in Parkinson's 'Organic Remains,' vol. ii. tab. 6. fig. 10; and said to come from Switzerland.

### Genus *Confusastræa*, d'Orb.

(The species are found in the jurassic strata.)

1908. A partially polished specimen showing an oblique section of a species of *Confusastræa*.  
From the salt-mines of Upper Austria.

Genus *Leptastræa*, Edw. and Haime.

1909. Two portions of *Leptastræa Forbesii*, Edw., and a smaller specimen of the same.  
From the tertiary strata of Maryland, Virginia.

Genus *Isastræa*, Edw. and Haime.

1910. A specimen of *Isastræa helianthoides*, Edw. and Haime.  
From the oolitic strata ; locality unrecorded.
1911. A portion of a specimen of *Isastræa*.  
From the oolitic strata ; locality unnoted.
1912. A mass of *Isastræa Bernardana*, Edw. and Haime.  
From the oolitic strata ; locality unrecorded.
1913. A mass of saccharoid limestone, containing the weathered portions of *Isastræa explanata*, Goldf., and a smaller portion of the same.  
From the coralline oolite of Oxfordshire.
1914. A silicified specimen, partly decomposed, of a variety of *Isastræa Bernardana*.  
From the oolitic strata of Germany.

Genus *Prionastræa*, Edw. and Haime.

1915. A mass of silicified coral belonging to the genus *Prionastræa*, from which a transverse section has been removed and the surface polished.  
Locality unrecorded.

Genus *Thamnastræa*, Le Sauvage.

(The species belong to the jurassic strata.)

1916. A specimen in indurated limestone of *Thamnastræa*, near to *T. Lamourouxii*, Blainville.  
From the jurassic strata.

1917. A fragment of a species of *Thamnastræa*.  
From the coralline oolite probably of Oxfordshire.
1918. A weathered coral near to *Thamnastræa limitata* (*Astræa*), Lam.  
From the jurassic strata.
1919. A polished specimen of a species of *Thamnastræa*.  
Locality unrecorded.
1920. A large and well-preserved species of *Thamnastræa*, in which the structure of the coral is distinctly shown, as well as the mode of gemmation of the new cells.  
From the oolitic strata; locality unnoted.

### Genus *Parastræa*, Edw. and Haime.

(The species are found in the jurassic and tertiary strata and in the present seas.)

1921. A silicified mass of a species of *Parastræa*?, the polished section showing the transverse structure.  
Locality unrecorded.
1922. Two very ferruginous masses of a species of *Parastræa*?  
Locality unnoted.

### Genus *Heliastræa*, Edw. and Haime.

1923. A mass of weathered *Heliastræa Rochetteana*, Edw. and Haime; partially covered with fragments of shells.  
From the miocene strata of Dax, France.
1924. A mass of coral belonging to *Heliastræa*.  
Locality unnoted; probably recent.
1925. Two highly ferruginous specimens of *Heliastræa stylinoides*, Edw. and Haime.  
From the secondary strata of Uchaux, France.
1926. A worn specimen of *Heliastræa Ellisiana*, Edw. and Haime, showing the transverse and longitudinal sections.  
From the miocene strata of Dax, France.

1927. A more perfect specimen of the *Heliastræa Ellisiana*.  
From the miocene strata of Dax.
1928. A mass of *Heliastræa*, attached to a calcareous rock.  
Locality unnoted.
1929. A fragment, in white crystalline limestone, of *Heliastræa*.  
Locality unnoted.
1930. A large mass of coral, partly polished, and probably belonging to a species  
of *Heliastræa*, near to *H. Ellisiana*.  
Locality unnoted.

#### Genus *Convexastræa*, d'Orbigny.

1931. Two specimens, partly silicified, of *Convexastræa sexradiata*, Edw. and Haime.  
From the oolitic strata of Wirtemberg.

#### Family *Fungidæ*.

#### Genus *Cyclolites*, Lam.

(The species are chiefly found in the cretaceous strata.)

1932. A piece of soft earthy limestone containing the cast, and a smaller specimen, of  
*Cyclolites (Fungia) cancellata*, Goldfuss.  
From the cretaceous strata of Maestricht.
1933. Two pieces of calcareous rock containing fragments of *Bryozoa*, numerous  
specimens of *Orbitoides Fortisii*, d'Archiac, and a portion of *Cyclolites can-*  
*cellata*, Goldfuss.  
From the cretaceous strata of Maestricht.
1934. Two specimens of *Cyclolites elliptica (Fungia polymorpha)*, Goldfuss).  
From the cretaceous strata of Gosau.



1935. A conical variety of *Cyclolites elliptica*, Lam.  
From the cretaceous strata of Gosau.

1936. A large specimen of a *Cyclolites*, near to *C. elliptica*.  
Locality unrecorded.

### Genus *Anabacia*, d'Orbigny.

(The species are all jurassic.)

1937. Two specimens, and one partly polished, of *Anabacia (Fungia) orbulites*,  
Lamouroux.

This species occurs in the great and inferior oolite of England and France.

## Order ZOANTHARIA PERFORATA.

(This Order has the septal apparatus consisting of six elements, without tabulæ; the lamellæ are always porous; the visceral chamber is open throughout.)

### Family *Poritidæ*.

#### Genus *Porites*, Lam.

1938. An irregular mass of a ferruginous coated coral, and two smaller specimens,  
belonging to *Porites Gaimardi*, Edw. and Haime.

Locality unnoted.

#### Genus *Goniopora*, Quoy and Gaimard.

1939. A small polished slab of a *Goniopora*.

Probably from Barbadoes.

## Order ZOANTHARIA TABULATA.

(This Order is characterized by the visceral cavity being divided by transverse tabulæ; the septa are rudimentary.)

### Family *Milleporidæ*.

#### Genus *Heliolites*, Dana.

(The species are extinct and are found in the Silurian and Devonian strata.)

1940. A specimen of *Heliolites interstincta*, Linn., sp. (*Porites pyriformis*, Lonsdale), and a weathered variety of the same.  
From the Silurian limestone of Dudley.
1941. Two polished sections of *Heliolites porosa*.  
From the Devonian strata of Devonshire.

### Family *Favositidæ*.

#### Genus *Cænites*, Eichwald.

1942. A mass of argillaceous limestone containing *Tentaculites*, *Atrypa*, *Leptæna*, and a branched specimen of *Cænites juniperinus*, Edw. and Haime.  
From the Silurian strata of Dudley.

#### Genus *Favosites*, Lam.

(The species chiefly belong to the palæozoic strata.)

1943. Three varieties and a polished section of *Favosites Forbesii*, Edw. and Haime.  
From the Silurian limestone of Dudley.
1944. Two specimens and a polished section of *Favosites Gothlandica*, Lam.  
From the upper Silurian strata of Dudley.
1945. Two varieties of *Favosites spongites*, Goldf.  
From the palæozoic strata.

1946. A branched portion of a species of *Favosites*, attached to a piece of argillaceous limestone.

From the Silurian limestone of Gothland, Sweden.

### Genus *Michelinia*, De Koninck.

(This genus is found in the Devonian and Carboniferous deposits, chiefly in the latter.)

1947. A silicified specimen of *Michelinia convexa*, d'Orb.; the cells of the coral are partly filled with opaline silex, as shown on the polished surface.

From the palæozoic strata of Michigan.

### Genus *Alveolites*, Lam.

(The species are essentially palæozoic forms.)

1948. A specimen of *Alveolites suborbicularis*, Lam., sp., and a variety of the same. From the palæozoic limestone of Heinbrach in the Duchy of Berg.

1949. A portion of *Alveolites* near to *A. Labechii*, Edw. and Haime.

From the palæozoic strata.

### Genus *Halysites*, Fischer (*Catenipora*, Lam.).

(The species occur in the Silurian and Devonian strata.)

1950. Two varieties of *Halysites catenulatus*, Linn., sp. (*Catenipora escharoides*, Goldf.). In one specimen the coral is imbedded in the matrix; in the other the tubuli are more closely arranged, free of the investing matrix and partly silicified.

This species has a wide distribution in the upper Silurian strata, occurring in England, Sweden, Russia and the United States.

1951. A broken portion of argillaceous limestone showing the longitudinal section of *Halysites catenulatus*, Linn., sp.

From the upper Silurian strata of Gothland, Sweden.

1952. Two masses of argillaceous limestone, one square and partly polished, showing, both on the upper weathered portion and under polished surface, the chain-like arrangement of this coral (*Halysites catenulatus*), from which Lamarck gave to it the name *Catenipora*.

From the upper Silurian limestone of Shropshire.

### Genus *Syringopora*, Goldfuss.

(The species are found in the palæozoic strata.)

1953. A mass of aggregated tubuli of *Syringopora ramulosa*, Goldfuss ; partly free and partly imbedded in the calcareous matrix.

From the mountain limestone, Derbyshire.

1954. A series of aggregated tubuli, silicified, of *Syringopora reticulata*, Goldf. ; the coral is free from the investing matrix.

From the mountain limestone, Derbyshire.

1955. A slab of grey crystalline limestone ; the polished surface showing sections of the tubes of *Syringopora ramulosa*, Goldf.

From the mountain limestone of Derbyshire.

1956. A species of *Alveolites*, the surface of the coral being invested with the spreading tubuli of *Syringopora serpens*, Linn.

From the Devonian limestone of Germany.

1957. A large mass of aggregated branches of *Syringopora geniculata*, Phil. ; the polished portion showing the transverse sections of the tubes.

From the mountain limestone of Derbyshire.

1958. A similar mass of aggregated branches of *Syringopora geniculata*, Phil. ; the two polished sides showing the transverse and longitudinal sections of the coral.

From the mountain limestone of Derbyshire.

## Order ZOANTHARIA RUGOSA.

(In this Order the septa are arranged on a quaternary plan, and are subject to great variations in their development. The visceral chamber is occupied by transverse tabulæ or by a vesicular structure.)

### Family *Cyathophyllidæ*.

#### Genus *Zaphrentis*, Rafinesque (*Caninia*, Michelin).

(The species belong to the Devonian and Carboniferous epochs.)

1959. A piece of dark limestone showing a section of *Zaphrentis*?  
From the mountain limestone.

#### Genus *Cyathophyllum*, Goldfuss.

(The species belong to the palæozoic strata.)

1960. A slab of partly polished dark limestone containing oblique and transverse sections of *Cyathophyllum*; and two smaller pieces of the same.  
From the carboniferous limestone of the county of Durham.
1961. A longitudinal section of a species of *Cyathophyllum*.  
From the carboniferous limestone.
1962. A mass of calcareous rock containing portions of a *Cyathophyllum*.  
From the mountain limestone.
1963. A compact mass of dark limestone containing the imbedded branches of *Cyathophyllum æquiseptatum*, Edw. and Haime.  
From the palæozoic limestone, near Prague in Bohemia.
1964. Four specimens of dark limestone containing transverse sections of species of *Cyathophyllum*.  
From the Devonian limestone of Devonshire.

1965. Different varieties of *Cyathophyllum articulatum*, Wahlenberg, sp.  
From the Silurian limestone of Dudley.
1966. A variety of *Cyathophyllum articulatum*, Wahl., sp. (*C. dianthus*, Lonsdale).  
From the Silurian limestone of Shropshire.
1967. A large mass of the *Cyathophyllum Boloniense*, Blainv. (*C. hexagonum*, Mich.).  
This species occurs in the Devonian strata of France.
1968. A silicified specimen of *Cyathophyllum regium*, Phillips; the under surface is  
polished and shows the structure of the coral.  
From the mountain limestone.
1969. A large siliceous mass containing a species of *Cyathophyllum*.  
Locality unrecorded.

#### Genus *Petraia*, Münst. (*Turbinolopsis*, Phillips).

(This genus is restricted to the Devonian and Silurian strata.)

1970. Two imperfect casts, in indurated clay-slate, of *Petraia celtica*.  
Probably from the Devonian strata of Cornwall.

#### Genus *Omphyma*, Rafinesque.

1971. A bisected and other specimens of a species of *Omphyma*.  
From the Silurian limestone of Dudley.
1972. A bisected specimen of *Omphyma subturbinata*, d'Orb., showing the numerous,  
large, strong tabulæ in the central area, and the large, oblique and unequal  
vesicular structure of the outer zone.  
From the Silurian limestone of Dudley.

#### Genus *Acervularia*, Schweigger.

1973. Two specimens of *Acervularia luxurians*, Edw. and Haime (*Astræa ananas*,  
Lonsdale).  
From the upper Silurian limestone of Dudley.

Genus *Strombodes* (pars), Schweigger.

1974. A mass of argillaceous limestone, containing a variety of *Strombodes Murchisoni*, Edw. and Haime.  
From the Silurian limestone of Dudley.

Genus *Lithodendron*, Phillips.

(The species belong chiefly to the Carboniferous strata.)

1975. A piece of dark limestone showing weathered longitudinal portions and transverse sections of *Lithodendron irregulare*, Phillips.  
From the mountain limestone of Derbyshire.
1976. One square slab and another irregular piece of dark limestone studded with transverse sections, in crystalline calc-spar, of *Lithodendron irregulare*, Phillips.  
From the mountain limestone of Derbyshire.
1977. A mass of limestone containing the *Lithodendron Martini*, Edw. and Haime.  
From the mountain limestone of Derbyshire.
1978. A mass of the silicified anastomosing branches, free from the investing matrix, of *Lithodendron Martini*, Edw. and Haime (*Lithodendron fasciculatum*, Phil.).  
From the mountain limestone of Westmoreland.
1979. A large mass of grey limestone containing silicified stems, in relief, of *Lithodendron affine*, Flem., sp.  
From the mountain limestone of Derbyshire.
1980. A small mass of the weathered corallites of a *Lithodendron* (*L. irregulare*, Phil.).  
From the mountain limestone.
1981. A mass of dark limestone containing the irregular aggregated tubuli of *Lithodendron junceum*, Flem. (var. *sexdecimale*); the surface of the limestone is weathered and exposes the tubuli in relief.  
From the mountain limestone of Derbyshire.

1982. A similar mass of dark limestone containing the weathered portions of *Lithodendron junceum*, Flem.  
From the mountain limestone of Derbyshire.
1983. Two specimens of dark chert; the polished sections showing the transverse and longitudinal structure of a species of *Lithodendron* or *Diphyphyllum*.  
From the mountain limestone of Derbyshire.
1984. A weathered mass of dark bituminous limestone containing the weathered portions of *Lithodendron junceum*, Flem.  
From the mountain limestone of Derbyshire.

### Genus *Lithostrotion*, Fleming.

(The species belong chiefly to the Carboniferous period.)

1985. A large mass of aggregated branches, perpendicularly arranged, of *Lithostrotion Phillipsi*, Edw. and Haime; the specimen is silicified and the fractured portions show the structure of the coral.  
From the mountain limestone of Derbyshire.
1986. A mass of dark limestone containing a variety of *Lithostrotion Martini*, Edw. and Haime.  
From the mountain limestone; locality unknown.
1987. A large silicified mass of coral belonging to *Lithostrotion floriforme*, Fleming. The under surface is polished and exhibits structure, and the upper portion is weathered.  
From the mountain limestone of Derbyshire.
1988. Two specimens of *Lithostrotion striatum*, Fleming.  
From the mountain limestone of Derbyshire.
1989. A large piece of light grey limestone with two of the sides polished, showing both transverse and longitudinal sections and exhibiting the structural character of *Lithostrotion striatum*.  
From the mountain limestone of Tenby, S. Wales.



### Genus *Clisiophyllum*, Dana.

(The specimens illustrate the general structural character of the genus, showing in the vertical section, a central area composed of vesicular plates, surrounded by a more dense zone of cells which arch upwards, and form the margin of the conical boss in the centre of the cup; an intermediate area of larger, curved, cellular structure, separates the central from the outer area, the latter being composed of small cellular structure, inclining upwards and outwards; the transverse section shows the central and intermediate areas, from which the lamellæ radiate, and the outer zone with the numerous plates connecting the primary and secondary lamellæ.)

1990. A bisected portion showing the longitudinal section, and a transverse section, of a species of *Clisiophyllum*.

From the palæozoic (carboniferous) strata.

### Subclass **ALCYONARIA.**

(The polypary in this Order has an axial stem in the centre of the compound mass formed by the polypes; the dermal tissue is strengthened by spiculæ or concretions only; the visceral cavity is not subdivided by longitudinal septa. The Order comprises three natural families, the *Alcyonidæ*, *Gorgonidæ* and *Pennatulidæ*.)

#### Family *Gorgonidæ*.

##### Genus *Isis*, Linn.

(The species occur in the tertiary strata and also in the present seas.)

1991. Two portions of the *Isis melitensis*, Goldfuss (*Isisina*, d'Orb.).

This species occurs in the tertiary strata of Italy and Sicily.

#### Family *Ventriculidæ*, Toulmin Smith.

(The *Ventriculidæ* are funnel-shaped or flexuous forms with a simple or complex but always regular cavity, varying in size and expansion; the membrane forming the wall of the cavity is either simple and smooth on both surfaces or more or less regularly folded. There is a remarkable peculiarity in the structure of the tissue of the *Ventriculidæ*; the substance of the body consists of membranous tissue composed of very delicate anastomosing fibres, arranged in regular squares, which are further strengthened at each angle by a plexus of other fibres presenting an octohedral arrangement. The discovery and elucidation of these characters, and the classification of this family, are the result of the labours of Mr. Toulmin Smith, who by this investigation has considered the group to occupy a different position from that to which its forms have been before assigned.)

##### Genus *Ventriculites*, Mantell.

(The forms in this genus are pouch-shaped, with a single and regular cavity.)

1992. The typical form of *Ventriculites*, *V. simplex*, Smith, with the root passing through a nodule of flint, into the chalk below; the surface exhibits the ovarian sacs and the margin:—also a smaller specimen of the same, showing

the basal portion of the polypidom perfect, with the place of the ensheathing root.

From the upper chalk of Kent. *Presented by Toulmin Smith, Esq.*

1993. A waterworn flint exposing a cast of the membranous folds of *Ventriculites decurrens*, Smith, and showing the cast of the processes.

This partially rolled pebble was originally a flint nodule in the upper chalk.

1994. A cylindrical piece of flint, the form being due to the aggregation of siliceous matter around a species of *Ventriculites*, *V. decurrens*, var. *temiplicatus*, Smith; the longitudinal fracture exposes the interior structure.

From the upper chalk of Sussex.

1995. A funnel-shaped mass of flint containing an imbedded specimen of *Ventriculites quincuncialis*, Smith, showing a portion of the structure around the margin.

From the upper chalk.

1996. A large, irregular, conical-shaped flint, embodying the form of *Ventriculites radiatus*? Mantell. Some portions of the specimen exhibit the curious cubical arrangement of different parts of the tissue of this family.

From the upper chalk.

- 1996a. A broken nodule of flint, exposing the structure of *Ventriculites radiatus*, Mant.

From the cretaceous strata.

- 1996b. A square mass of indurated chalk, with an expanded portion of the cup of *Ventriculites radiatus*, imperfectly preserved, showing the ovarian sacs.

From the cretaceous strata.

1997. A slab of marly calcareous rock containing the ferruginous impressions of the reticulated tissue of a species of *Ventriculites*, *V. decurrens*? Smith.

From the cretaceous strata (lower pläner-kalk) of Plauen, near Dresden.

1998. *Ventriculites (Scyphia) texata*, Münster.

From the jurassic strata of Wirttemberg.

1999. A bisected specimen of *Ventriculites (Scyphia) pertusa*, Goldf., showing the peculiar structure; this form resembles *V. quincuncialis* of the chalk.

From the jurassic strata of Switzerland.

### Genus *Cephalites*, Smith.

(The tissue of this genus is deeply folded, and the upper edges of the folds are connected by a simple unfolded membrane.)

2000. A specimen of *Cephalites longitudinalis*, Smith.

From the chalk of Kent.

*Presented by Toulmin Smith, Esq.*

### Genus *Brachiolites*, Smith.

(Shape and size varying, but more or less lobed or branched.)

2001. A specimen of *Brachiolites labrosus*, Smith.

From the upper greensand of Kent.

*Presented by Toulmin Smith, Esq.*

## Class FORAMINIFERA.

(The Foraminifera are in general minute animals, related to the Sponges, and occupying but a low degree in the scale of animal life. They are gelatinous bodies, destitute of a stomach: these bodies are either single and globular, or comprise a number of segments arranged in a more or less symmetrical series, either straight, curved, spiral, or alternate, or presenting a combination of these forms, and are coated with a thin calcareous, rarely membranous, covering. In this tegument are one or more large openings, through which the gelatinous mass is protruded for the formation of new segments, and by means of which and still more minute pores, on different parts of the surface, numerous slender elongated filaments or "pseudopodia" are extruded, serving the purposes of attachment, locomotion, and possibly nutrition. The Foraminifera are exceedingly abundant in most seas and estuaries; certain forms are characteristic of different oceanic areas, while others have a far more extensive distribution. The fossil species are found in the palæozoic, secondary, and tertiary strata; and they are very abundant in the cretaceous and tertiary deposits, where some forms attain a comparatively large size, as *Nummulites*, *Orbitolites*, *Orbitoides*. Some species, belonging to the genera *Globigerina*, *Dentalina*, and *Globulina*, have existed from the cretaceous epoch to the present period.)

### Genus *Nummulites*, Lam.

(A symmetrical concamerated shell, formerly known as "fossil money" or "devil's coin." The genus *Nummulites* is highly characteristic of the Tertiary period, and it also occurs (although rarely) in the present seas, for example, in the English Channel and the Red Sea. Closely allied forms are occasionally found in the palæozoic and oolitic strata.)

2002. Numerous specimens of *Nummulites lævigatus*, Lam.

From the middle cocene strata of Belgium and France. This species also occurs in the middle cocene deposit at Bracklesham, Sussex.

2003. Numerous specimens of *Nummulites planulatus*, Lam.  
From the middle eocene strata of Belgium and France.
2004. Several specimens of *Nummulites Gizehensis*, Ehrenberg.  
From the eocene strata of Egypt.
2005. A specimen of *Nummulites complanatus*, Lam.  
From the eocene strata of Egypt.
2006. Three specimens of *Nummulites Raymondi*, d'Archiac.  
This species has an extensive range, from Southern Europe to Cutch in India.
2007. Specimens, in various stages of growth, of *Nummulites (Assilina) exponens*.  
From the eocene strata of the Tyrol?

#### Genus *Orbitoides*, d'Orb.

(An intermediate form between *Orbitolites* and *Nummulites*; it is discoidal, slightly convex on both sides, and is formed of a single range of cells which are thickly encrusted in the centre of the disk. The species are all fossil, and are found in the tertiary deposits of North America, Europe, and India.)

2008. Several specimens of *Orbitoides Fortisii*, d'Archiac.  
From the cretaceous strata of Royan, France.
2009. Several specimens of *Orbitoides Prattii*, d'Archiac.  
From the eocene strata of Bayonne.

#### Genus *Orbitolites*, Lam.

(A discoidal flat form, equally developed on both sides. It is found in the upper chalk and lower tertiary strata, and the recent forms are not rare in the West Indian, Mediterranean and Red Seas, and attain a particularly large growth in the seas of Australia and New Zealand.)

2010. Six specimens of *Orbitolites complanatus*, Lam.  
From the cretaceous strata of Royan, South of France.

#### Genus *Orbitolina*, d'Orb.

(A convex, circular, poriferous form, closely related to the Sponges. It is found fossil in the greensand of England and France.)

2011. Various specimens of *Orbitolina concava*, Lam., sp.  
From the upper greensand of France.

## Class PORIFERA.

Family *Siphonidæ*.

(A group of Porifera of a pyriform, bulbous or cylindrical shape, with a more or less enlarged central cavity, on the surface of which terminate the openings of a series of canals that traverse the surrounding tissue.)

Genus *Hippalimus*, Lamouroux.

2012. A worn specimen of *Hippalimus fungoides*, Lamouroux (*Polypothechia agariciformis*, Benett), showing the radiating tubuli from the central cavity.

From the upper greensand of France.

2013. A variety of *Hippalimus Roissyii*? Michelin.

From the upper greensand of France.

Genus *Hallirhoa*, Lamouroux.

2014. *Hallirhoa costata*, Lamouroux, with five lobes.

This species occurs in the upper greensand of England and France.

2015. A variety of *Hallirhoa Tessonis*, Michelin.

From the greensand of France.

Genus *Ierea*, Lamouroux.

2016. A portion of a branched specimen near to *Ierea arborescens*, Michelin.

From the upper greensand.

2017. The basal portion, very irregularly lobed, of an *Ierea*.

From the upper greensand.

2018. A cylindrical fragment of a stem of *Ierea*.

From the upper greensand.

2019. A lobed portion of a species probably belonging to *Ierea*.

From the upper greensand.

Genus *Scyphia*, Schweigger.

2020. Two specimens of *Scyphia striata*, Münster.

From the jurassic strata of Switzerland.

2021. A variety of *Scyphia empleura*, Goldf.

From the jurassic strata of Switzerland.

2022. A pyriform variety of a species of *Scyphia*, Goldf. It has been longitudinally bisected and polished, by which the internal structure is exposed.

From the jurassic strata of Switzerland.

2023. Two rugose varieties of *Scyphia empleura*, Goldf. (*Ventriculidæ*?).  
From the jurassic strata of Switzerland.
2024. A variety of *Scyphia striata*, Münster.  
From the jurassic strata of Switzerland.
2025. A worn specimen of a species of *Scyphia*.  
From the jurassic strata of Switzerland.

### Genus *Siphonia*, Parkinson.

(A genus of Porifera of a somewhat symmetrical structure. The body is generally of a pyriform shape with a central cavity, and supported by a slender stem fixed at the base. The stem as well as the porous tissue composing the body is traversed by canals which terminate on the surface of the cavity.)

2026. Two specimens of varieties of *Siphonia incrassata*, Goldf.  
From the greensand of France.
2027. Three specimens of *Siphonia pyriformis*, Goldf.  
From the greensand of France.  
This species also occurs in the greensand of Blackdown, Devonshire.
2028. A mass of sandstone containing an imbedded specimen of *Siphonia pyriformis*, Goldf.  
From the upper greensand.
2029. An elongated and compressed variety of *Siphonia pyriformis*, Goldf.  
From the greensand of Blackdown, Devon.
2030. Two specimens (laterally attached) of *Siphonia*, probably *S. incrassata*.  
From the greensand of France.
2031. Two small elongate and pyriform species of *Siphonia*.  
From the upper greensand; locality unnoted.
2032. A specimen of *Siphonia*, showing the outer surface; a broken portion of the same exhibits the radiating canals, and a weathered cavity exposes the inner tubular cavity, with the canals irregularly arranged and traversing the adjoining portion of the tissue.  
From the upper greensand.
2033. Two portions of the basal attachment and stems of *Siphonia*.  
From the upper greensand.

2034. A portion of a species of *Siphonia* near to *Siphonia ficus*, Goldfuss ; the part of the central cavity is occupied by tubuli.  
From the upper greensand.
2035. An irregular and broken specimen of a spongiform body (*Siphonia*), showing a portion of a poriferous surface.  
From the upper greensand.
2036. A series of small pyriform bodies, with a central cavity and reticulated structure, probably belonging to the genus *Siphonia*.  
Locality unrecorded.
2037. A small portion of *Siphonia Morrisii*, Mant., imbedded in white chalk.  
From the upper chalk of Brighton, Sussex.

#### Family *Amorphospongiæ*.

#### Genus *Spongia*, Auct.

2038. An irregular undulated specimen of *Spongia*, probably a variety of *Spongia peziza*, Goldf., sp.  
From the upper greensand.
2039. Small globular bodies, with minute cellular structure, near to *Spongia globularis*, Phillips, sp.  
From the cretaceous strata.
2040. A small pyriform spongoid body with a coarse structure replaced by flint.  
Locality unrecorded.
2041. Two portions of globular flint, with the sections partly polished, and showing in the centre traces of spongy structure, in and around which the siliceous matter has aggregated.  
From the cretaceous strata.
2042. A mass of flint containing spongy structure showing portions of the tubuli : these parts are more highly coloured than the surrounding matrix.  
From the upper chalk.

Family *Sparsispongidae*, d'Orb.Genus *Chenendopora*, Lamouroux.

(These cup-shaped sponges are composed of irregular dense tissue sometimes strengthened by siliceous spiculæ; the external surface is lobed or furrowed, the internal surface is smooth, and poriferous.)

2043. Two massive specimens attached together of a variety of *Chenendopora*, Michelin.

From the upper greensand.

2044. Another variety of *Chenendopora pocillum*, Michelin.

From the upper greensand.

2045. A portion of the cup, with a thin edge, of *Chenendopora pocillum*, Michelin, showing the structure of the inner and outer surfaces.

From the upper greensand.

2046. A large individual of *Chenendopora fungiformis*, Lamouroux.

2047. A more rugose variety of *Chenendopora fungiformis*, Lamouroux, showing the canals and structure of the inner surface.

2048. A variety of *Chenendopora fungiformis*, Lamx., with an elongated stem and more thickened cup.

These three forms are from the upper greensand, and are found in England and France.

2049. A thin, expanded, broadly funnel-shaped fossil, doubtfully referred to *Chenendopora*, showing the closely radiating arrangement of the fine tissue. This specimen is near to *C. undulata*, Michelin.

From the upper greensand.

Genus *Tragos*, Schweigger.

2050. A funnel-shaped specimen of *Tragos patella*, Goldf., and a smaller individual.

From the jurassic limestone of Switzerland.



Genus *Cnemidium*, Goldfuss.

(Irregular cup-shaped or tubular Porifera, composed of dense tissue, traversed by diverging canals.)

2051. Two specimens, one partly polished, exposing a section, of *Cnemidium stellatum*, Goldf.  
From the jurassic strata of Switzerland.
2052. Three smaller specimens of *Cnemidium stellatum*.  
From the jurassic strata of Switzerland.
2053. A variety of *Cnemidium rimulosum*, Goldf.  
From the jurassic strata of Randen.
2054. Two attached cylindrical portions of flint, the form being due to a spongioid body (*Cnemidium*).  
From the cretaceous? strata, Lagenthal in Hesse.

Family *Halichondridæ*.Genus *Cliona*, Grant.

(A form of sponge with siliceous spiculæ, occupying the cavities formed in shells and other bodies, and which are presumed to be excavated by it. The living edible oyster frequently exhibits small perforations of this nature which are filled with *Cliona*.)

2055. A small mass of shelly limestone showing numerous casts of cavities once occupied by a species of *Cliona* near to *C. Conybeari*, Morris, with their connecting tubuli.  
From the tertiary or lower eocene strata.

Genus *Stromatopora*, Goldfuss.

2056. A weathered specimen, of a triangular form, of a variety of *Stromatopora concentrica*, Goldf.  
From the Devonian strata of the Eifel, Rhine.

## INCERTÆ SEDIS.

Genus *Receptaculites*, DeFrance.

2057. A weathered specimen of *Receptaculites Neptuni*, DeFrance.  
From the Devonian strata of the Eifel.

## MASSES OF ROCK CONTAINING FOSSIL SHELLS.

(The masses of rock in this Collection, containing the fossilized remains of testacea, belong to different members of the geological series, those specimens derived from the triassic and tertiary strata being the most numerous. The specimens are in various states of preservation and consolidation, and exhibit numerous phases of accumulation and deposition of the testacea in marine and fluviatile deposits. The specimens further illustrate the changes they have undergone by the action of chemical agency since their deposition, some being replaced by calcareous, others by siliceous matter: the latter process is well shown, more especially in the specimens from the Paris basin.)

*Masses from the Palæozoic Strata.*

2058. A mass of argillaceous limestone containing impressions and casts of *Trilobites* and *Terebratula*, with fragments of *Fenestella antiqua*, *Tentaculites annulatus*, *Rhynchonella* and *Atrypa aspera*.  
From the Wenlock limestone of the Silurian group.
2059. A similar mass of limestone containing casts of *Rhynchonella* and *Fenestella*.  
From the Silurian limestone of Dudley.
2060. A fragment of crystalline shelly limestone, inclosing portions of shells and segments of crinoidal stems.  
From the Silurian limestone of Dudley.
2061. A mass of Dudley limestone containing impressions of Crinoidal stems and specimens of *Rhynchonella ferita* and *Atrypa aspera*.  
From the Silurian limestone of Dudley.
2062. A large slab of dark limestone, one surface polished, and traversed by a vein of calcareous spar, and showing sections of the septa of *Orthoceratites*.  
From the Silurian strata of Kosorz, Bohemia.

2063. A mass of argillaceous shelly limestone with numerous impressions of fossils, chiefly *Tentaculites ornatus*, *Leptaena depressa*, *Atrypa affinis*, *Rhynchonella*, *Nerita spirata* and fragments of *Trilobites*.  
From the Silurian strata of Dudley.
2064. A mass of micaceous and ferruginous sandstone with impressions of *Orthidea*, *Rhynchonella* and *Turbinolopsis*.  
From the Devonian strata of the Rhine.
2065. A small portion of shelly sandstone, containing casts of *Orthis*, *Spirifer*, and *Leptaena*.  
From the Devonian strata of the Rhine.
2066. A mass of slaty sandstone with impressions of Crinoids and Spirifers.  
From the Devonian strata of the Rhine.
2067. A thin piece of slate with impressions of *Rhynchonella*.  
From Reutlingen in Switzerland.
2068. A mass of shelly sandstone containing two specimens of *Pleurodictyum problematicum*, Goldfuss.  
From the Devonian strata of the Rhine.
2069. A mass of ferruginous sandstone, with numerous impressions of *Spirifer macroptera*.  
From the Devonian strata of America.
2070. Two pieces of shelly limestone, with *Orthoceratites* and *Cardiola cornucopiae*.  
From the Silurian strata of Kosorz near Prague, Bohemia.

*Masses from the Triassic Strata.*

2071. A mass of argillaceous limestone containing many specimens of *Terebratula vulgaris*, Schloth.  
From the muschelkalk of the triassic group, Germany.
2072. A smaller mass of similar stone containing *Terebratula vulgaris*, with portions of the stem of an *Encrinus*, partly polished.
2073. A small mass of argillaceous limestone with impressions of *Terebratula vulgaris*, *Avicula (Gervillia) socialis* and *Lima striata*, Schlotheim, sp.  
From the muschelkalk, Germany.

2074. A large mass of argillaceous limestone with casts of *Avicula (Gervillia) socialis*, *Lima*, and *Fusus Hehlii*, Zieten.  
From the muschelkalk, Germany.
2075. A square mass, partly polished, of argillaceous limestone containing impressions of *Avicula (Gervillia) socialis*, Schlotheim, sp.  
From the muschelkalk, Germany.
2076. A similar mass, containing *Avicula (Gervillia) socialis*, and *Myophoria*.  
From the muschelkalk, Germany.
2077. A mass of sandy limestone, containing numerous impressions of bivalves, and described in the Hunterian Catalogue as coming from Hesse.
2078. A mass of argillaceous limestone with numerous impressions of *Lima striata*, Goldfuss.  
From the muschelkalk, Germany.
2079. A piece of argillaceous limestone with casts of *Myophoria vulgaris*, Bronn.  
From the muschelkalk of the triassic group of Germany.
2080. A mass of sandy limestone with *Myophoria vulgaris* and *Chemnitzia Hehlii*.  
From the muschelkalk, Germany.
2081. A large mass of reddish indurated marly limestone, with layers and impressions of *Monotis salinaria*, Bronn.  
From the salt mines in the triassic strata of Upper Austria.

*Masses from the Oolitic Strata.*

2082. A large mass of argillaceous limestone with numerous fragments of shells and many joints of the *Pentacrinus briareus*, a valve of *Gryphæa incurva*, and specimens of *Avicula inæquivalvis*.  
From the lias.
2083. A thin slab of limestone with numerous specimens of *Avicula Münsteri*.  
From the lias of Somersetshire.
2084. A small piece of limestone with many impressions of the *Avicula Münsteri*.  
From the lias.

2085. A small mass of argillaceous ironstone full of fragments of shells (*Ammonites*, *Lima*, &c.) and specimens of *Cardium truncatum*, Sow.  
From the marlstone of Yorkshire.
2086. A mass of green and brown calcareous sandstone, full of many small specimens of *Rhynchonella tetrahedra*, Sow.  
From the marlstone of Oxfordshire.
2087. A mass of argillaceous limestone with four specimens of *Lima gigantea*, Sow., a valve of a *Gryphæa*, and a palatal tooth of *Acrodus nobilis*, Ag.  
From the lias of Walcot near Bath.
2088. A piece of greenish shelly limestone, with specimens of *Terebratula punctata*, Sow.  
From the marlstone.
2089. A mass of ferruginous sandy limestone containing *Rhynchonella tetrahedra*, Sow., sp., and *Terebratula punctata*, Sow.  
From the marlstone of Oxfordshire.
2090. A similar mass of stone containing the same fossils as the last piece.  
From the marlstone or middle liassic strata.
2091. A brownish red sandstone, with *Rhynchonella media*, Sow., and *Terebratula punctata*, Sow.  
From the marlstone.
2092. A dark reddish sandstone, with casts and impressions of *Rhynchonella tetrahedra*, Sow.  
From the marlstone.
2093. A piece of argillaceous limestone with casts of the two valves of *Cardinia concinna*, Sow., coated with crystals of pyrites and calcareous spar.  
From the lias of Walcot near Bath, Somersetshire.
2094. A mass of impure brown limestone, with *Cardinia Listeri*, Sow.; one side polished, showing sections of the shells.  
From the lias; locality unnoted.
2095. A mass of calcareous sandstone, with fragments of *Ostrea* and other bivalves.  
From the lias; locality unnoted.

2096. A large mass of argillaceous limestone containing a cast of *Ammonites Jamesoni*, Sow., three specimens of *Gryphæa incurva*, Sow., a variety of *Lima antiquata*, Goldf., a cast of *Pleurotomaria*, and palatal teeth of *Acrodus nobilis*, Ag., also species of *Ostræa* and *Lima*.  
From the lias formation of Walcot near Bath.
2097. A mass of argillaceous and shelly limestone with twelve specimens of *Gryphæa arcuata*, Sow.; exposing the gibbose valve.  
From the lias formation of Marieneron near Oppenheim, Germany.
2098. A slab containing many crushed and broken specimens of *Rhynchonella farcta*, Linn., sp. (*Terebratula obsoleta*, Sow.).  
Locality unnoted; probably from the forest marble of Wiltshire.
2099. A mass of clay filled with numerous specimens of *Ammonites planicostatus*, Sow., many of them retaining the testaceous covering.  
From the lias of Germany.
2100. A mass of sandy limestone, containing *Ammonites Holandrei*, d'Orb.  
From the marlstone of the lias; locality unnoted.
2101. A small portion of grey sandy limestone with portions of *Ammonites Holandrei*, d'Orb.  
From the lias marlstone; locality unnoted.
2102. A polished slab of limestone, with sections of bivalve shells and *Nerinaea*.
2103. A mass of soft shelly limestone, with many segments of the stem of an *Encrinurus*.  
From the oolitic strata.
2104. A piece of compact shelly limestone with impressions of *Pecten*.  
From the oolitic strata.
2105. A small fragment of soft limestone, with *Terebratula obovata*, Sow.  
From the oolitic strata.
2106. A piece of oolitic limestone with casts of the interior of *Cerithium Portlandicum*, Sow.  
Portland oolite; Isle of Portland.

2107. A piece of oolitic limestone with fragments of *Rissoa*.  
Great oolite, Gloucestershire.
2108. A mass of fine oolitic limestone with *Pecten demissus*, *Lima cardiiformis* and *Mytilus*.  
From the oolite of Dunsbourne, Gloucestershire.
2109. A small fragment of sandy limestone, showing transverse and longitudinal sections of *Nerinæa*.  
Described in the MS. Catalogue as "large *Strombitæ*, eroded and opened, in limestone from Switzerland."
2110. A mass of black shaly limestone with numerous *Cyrenæ*.  
From the Wealden strata.
2111. A piece of soft shelly shale with impressions of *Nucula ovum*, Phil.  
From the alum shale of Whitby, Yorkshire.
2112. A mass of reddish shale with valves of *Cyrena angulata*, Sow.  
Wealden.
2113. A mass of argillaceous ironstone with numerous shells of *Cyrena angulata*.  
Wealden.
2114. A thin piece of shelly shale with *Cyrena media*, Sow.  
Wealden.
2115. A mass of ferruginous and argillaceous stone, with numerous casts of *Cyrena*.  
From the Wealden strata of Sussex.
2116. A piece of shelly limestone with numerous specimens of *Potamis strombiformis*, Schloth., sp. (*Cerithium carbonarium*), Roemer, in a beautiful state of preservation.  
Wealden, Hanover.
2117. A mass of friable shelly limestone, with many examples of *Potamis strombiformis*.  
Wealden of Hanover.
2118. An angular fragment of argillaceous limestone with casts of the interior of two specimens of *Pleurotomaria Anglica*, Sow., coated with crystals of calc-spar and pyrites.  
From the lias of Somersetshire.

2119. A polished slab of purplish limestone with sections of shells.  
Locality unnoted.
2120. A mass of argillaceous limestone with fragments of shells, the surfaces of which exhibit iridescent colours.  
Locality unknown.
2121. Two masses of argillaceous ironstone showing the molecular arrangement, called "Cone-in-cone."  
From the coal measures of Derbyshire.
2122. A mass of sandstone with an impression of the interior of a species of *Lima*.  
Locality unknown.
2123. A small fragment of an *Astræa*, perforated by a *Lithodomus*.  
From the coralline oolite of Gloucestershire.
2124. A small piece of pisolitic iron-ore with fragments of *Avicula* and *Pecten*.  
Locality unknown ; from the oolite.

*Masses from the Cretaceous Strata.*

2125. A mass of compact shelly limestone with casts of the interior of *Astræa geminata*, Goldf.  
Cretaceous, Maestricht.
2126. Friable shelly limestone with specimens of *Dentalium Mosæ*, Bronn.  
Cretaceous, Maestricht.
2127. A mass of friable limestone, full of casts and shells of *Dentalium Mosæ*.  
Cretaceous, Maestricht.
2128. A small piece of an *Astræa*, with a cast of a cavity of *Lithodomus*.  
Cretaceous, Maestricht.
2129. Friable limestone with a spreading mass of *Eschara*, probably *E. pyriformis*.  
Cretaceous, Maestricht.
2130. Friable shelly limestone with fragments of *Escharæ*, *Celloporæ* and *Terebratulæ*.  
Cretaceous, Maestricht.



2131. A mass of yellowish earthy limestone, the surface covered with the projecting tubes.  
From the cretaceous strata near Maestricht.
2132. An irregular piece of earthy limestone composed of fragments of Bryozoa, Corals and Testacea cemented together.  
From the cretaceous beds near Maestricht.
2133. A polished slab of brown limestone with sections of bivalve shells.
2134. An oblong mass of brown limestone, partly polished, exhibiting sections of shells.  
Locality unknown.
2135. A mass of friable limestone full of fragments of Bryozoa and many specimens of *Orbitoides intermedius*, *O. stellatus*, and a specimen of *Orbitolites complanatus*, Lam., and *Siderolites*.  
From the cretaceous strata of the south of France.

*Masses from the Tertiary Strata.*

2136. A mass of sandy limestone (Bognor rock) full of internal casts and shells of *Pectunculus brevirostris*, Sow.  
London clay, Bognor.
2137. A portion of *Septaria*, with many specimens of *Pectunculus decussatus*, Sow.  
London clay, Highgate.
2138. A piece of *Septaria* full of casts, in carbonate of lime, of *Syndosmya splendens* (*Tellina*, sp., Sow.).  
London clay, Highgate.
2139. A large slab of *Septaria*, the sides coated with brown carbonate of lime; the mass of the rock is filled with specimens of *Syndosmya splendens* (*Tellina splendens*, Sow.).  
From the London clay of Highgate.
2140. A mass of reddish shelly limestone, filled with portions of a variety of *Turritella edita*, Brander.  
From the eocene strata of Hordwell, Hampshire.

2141. A mass of stone remarkable for being almost entirely composed of *Nummulites planulatus*, Lam., many of the specimens exhibiting sections of the interior.  
From the eocene strata of Belgium.
2142. A piece of sandy limestone with numerous sections, both transverse and vertical, of *Nummulites lævigatus*, Lamarck.  
Eocene, France.
2143. A mass of sandy limestone full of *Nummulites lævigatus*, Lam., exhibiting sections of internal structure.  
Eocene, France?
2144. Two specimens of calcareous sandstone, full of *Nummulites lævigatus*, Lam.  
Eocene, France.
2145. A mass of sandy limestone with specimens of *Nummulites granulosus* (abundant) and *N. Biaritzensis*, d'Archiac (rare).  
Eocene. Described in MS. Catalogue as coming from "Turrch, in the county of Leptovia, Hungary."
2146. A brownish mass of friable stone, with many specimens of *Turritella imbricataria*, Lam., *Neritina conoidea*, and *Nummulites planulatus*, Lam.  
Eocene, France.
2147. A mass almost entirely composed of *Nummulites planulatus*, Lam.  
Eocene, Belgium?
2148. A brownish friable mass, composed of many specimens of *Turritella imbricataria* (young), and *Nummulites planulatus*.  
Eocene, France.
2149. A mass of brown stone in which are imbedded many siliceous internal casts of *Turritella imbricataria*, Lam., and *Nummulites planulatus*.  
Eocene, France.
2150. A small piece of stone, full of brown siliceous casts of *Nummulites planulatus*, Lam.  
From the eocene strata.

2151. An oblong piece of yellowish shelly limestone, partly polished, showing transverse sections of *Nummulites granulosus*, and *N. Biaritzensis*, d'Archiac.  
From the eocene strata of Brendole in the Vicentin, Italy.
2152. A slab of calcareous sandstone, containing *Nummulites (Asilina) exponens*.  
From the eocene strata of Neufchatel, Switzerland.
2153. A polished slab of brownish red calcareous stone, full of oblong bodies or fragments of shells coated with concretionary matter.  
Locality unrecorded.
2154. An argillaceous mass full of pyrites and containing *Potomomya plana*, Sow.  
From the eocene strata of the Isle of Wight.
2155. A friable mass of shelly stone, with many specimens of *Turritella imbricata*, *Fusus longævus*, Lam., and *Nummulites planulatus*.  
From the eocene strata of France.
2156. A fragment of pisolitic rock.
2157. A polished slab of brown septaria with sections of *Turritellæ*, silicified.  
From the eocene deposits; locality unknown.
2158. A mass of marly limestone, with *Planorbis euomphalus*, Sow., and *Lymnæus fusiformis*.  
From the eocene strata of the Isle of Wight.
2159. A fragment of pisolitic rock, composed of small and large calcareous concretions.  
Locality unknown.
2160. A piece of siliceous limestone with sections of *Cerithium*.  
Eocene, France.
2161. A mass of limestone containing many examples of *Cerithium lapidum*, Lam.  
Eocene, France.
2162. Two pieces of sandstone with mica, and full of casts of *Natica*.  
Eocene? from Duchomierz, Bohemia.
2163. A mass of earthy limestone with casts of a species of *Phorus* and *Cypræa*.  
Locality unknown.

2164. Sandstone with fragments of shells and numerous individuals of *Nummulites variolaria*, Lam.  
From the eocene strata of Belgium.
2165. A mass of soft white limestone, with numerous casts of *Pectunculus*.  
Locality unrecorded.
2166. A piece of marly limestone, the upper surface of which is covered with fragments of shells, as *Chama*, *Cardium*, *Tellina*, as also of *Turritella* and *Cerithium*.  
Locality unnoticed.
2167. A mass of shelly conglomerate, formed of numerous casts of *Cardium* and *Mastra*.  
Locality unrecorded.
2168. A mass of univalve shells, chiefly *Turritella imbricataria*, Lam., and *T. vittata*, Lam., cemented by opaline siliceous matter.  
From the eocene strata of France.
2169. A piece of sandy limestone with many *Nummulites laevigatus*, Lam., and a specimen of *Voluta ambigua*, Lam.  
From the eocene strata of France.
2170. Two pieces of soft limestone with specimens of *Natica mutabilis*, Desh.  
From the eocene strata of France.
2171. A piece of ferruginous sandstone, with casts of *Turritella*, *Cardium*, *Phorus*, and *Natica*.  
From the eocene deposits.
2172. A portion of indurated ferruginous clay, with *Cyrena cuneiformis*, Sow., and *Melania inquinata*, Defr.  
From the eocene deposits of the Woolwich series.
2173. A sandy calcareous mass with casts of *Lucina*, *Pectunculus*, and *Voluta harpa*, Lam.  
From the eocene strata of the Paris basin.
2174. A mass of shelly rock with *Fusus bulbiformis*, Lam., *Voluta harpa*, Lam., and *Turritella intermedia*, Desh.  
From the eocene deposits of the Paris basin.

2175. A large triangular mass of shelly rock, containing *Chama papyracea*, Desh., *Arca barbatula*, Lam., *Voluta spinosa*, Lam., *Ancillaria buccinoides*, Lam., *Rostellaria fissurella*, Lam., *Solarium plicatum*, Lam.  
From the eocene strata of the Paris basin.
2176. A compact shelly mass with *Cerithium semicoronatum*, Desh., and *C. pleurotomoides*, Lam.  
From the eocene strata of the Paris basin.
2177. A soft earthy limestone with *Voluta spinosa*, Lam.  
From the eocene deposits of the Paris basin.
2178. A sandy mass with *Cerithium tricarinatum*, Lam.  
From the eocene strata near Paris.
2179. Siliceous limestone, with casts in translucent brownish silex of *Cerithium mutabile*, Lam., and *Fusus bulbiformis*, Lam., var.  
From the eocene strata near Paris.
2180. A mass of sandy rock with siliceous casts of *Cerithium*, *Voluta*, and *Natica*.  
From the eocene strata near Paris.
2181. Two pieces of rock, one partly polished, full of opaline siliceous casts (sometimes crystalline) of *Cerithium mutabile*, Lam.  
From the eocene strata near Paris.
2182. Two brown siliceous masses with many casts, in semi-transparent silex, of *Turritella imbricata*, Lam.  
From the eocene strata of France.
2183. Two portions of brown siliceous rock, containing many silicified specimens of *Cerithium lapidum*, Lam.  
From the eocene strata of France.
2184. A slab of soft shelly rock with portions of *Cerithium echinoides*, Lam.  
From the eocene strata of France.
2185. A mass of siliceous rock, full of semi-transparent siliceous casts of *Cerithium lapidum*, Lam.  
From the eocene strata of France.

2186. A fragment of compact calcareous stone with *Cerithium emarginatum*, Desh.  
From the eocene strata of France.
2187. A piece of soft calcareous stone with *Cerithium pleurotomoides*, Lamk.  
From the eocene strata of France.
2188. A brown shelly mass with fragments of *Cardium*, *Crassatella* and *Cerithium*.  
From the eocene strata of France.
2189. A piece of shelly limestone with *Turritella intermedia*, Desh.  
From the eocene deposits.
2190. A triangular mass of siliceous limestone, full of shells, *Turritella intermedia*,  
Desh., and *Cardita acuticostata*, Lam.  
From the eocene strata of France.
2191. A compressed, cylindrical mass of calcareous stone filled with numerous casts  
of the perforations of *Teredina personata*, Lam. The perforations, which are  
now replaced, were originally made in some woody stem.  
From the eocene strata of France.
2192. Soft earthy and calcareous stone full of *Dentalium (Ditrupa) strangulatum*, Desh.  
Eocene, Paris basin.
2193. A mass of fossil wood, perforated by the *Teredo antenautæ*, Sow., the walls of  
the cavities being partially filled with carbonate of lime.  
From the London clay of the Isle of Sheppey?
2194. A portion of soft limestone with the external casts of a species of *Cardium*.  
Tertiary, Lake Baladon, Hungary.
2195. A portion of soft white limestone with internal casts of *Pectunculus* and *Cy-  
therea*.  
Locality unnoted; tertiary.
2196. A piece of siliceous shelly grit with silicified casts of *Potamides*, and fragments  
of Conchifera.  
From the eocene strata; locality unnoted.
2197. A piece of white siliceous limestone, with impressions of *Melania* and *Planorbis*.  
From the eocene strata.

2198. An eroded portion of indurated marly limestone with casts of *Planorbis rotundatus*, Brong.  
From the freshwater beds of the eocene strata.
2199. A mass of siliceous limestone with casts of *Limnæa longiscata*, Brong.  
From the eocene strata of the Paris basin.
2200. A slab of limestone entirely composed of numerous individuals of a small univalve cemented together, the *Litorinella acuta*, Desh., sp.  
From the upper eocene deposits of the Mayence basin.
2201. A small portion of rock composed of fragments of *Litorinella*, agglutinated together.  
From the upper eocene strata.
2202. A piece of loose shelly rock containing numerous specimens of *Mytilus (Dreissina) Faujasii*, Brard., and *Litorinella acuta*.  
From the tertiary strata of Mayence basin.
2203. Three portions of shelly limestone, with *Litorinella acuta*, Desh., and *Mytilus Faujasii*.  
From the tertiary strata of the Mayence basin.
2204. A small piece of rock with *Litorinella acuta*, and parts of four specimens of *Limnæa subpalustris*, Thoma.  
Locality unnoted, probably from the Mayence basin.
2205. A portion of rock almost entirely composed of *Litorinella inflata*, Brard.  
From the tertiary strata near Mayence.
2206. A piece of shelly rock composed of fragments of *Modiola*.
2207. Two thin slabs of marl slate with impressions of *Anodon*.  
From the tertiary strata of Ceningen.
2208. A greenish sandy rock with fragments of shells and portions of *Pectunculus*, *Arca* and *Cerithium*.  
Locality unnoted.
2209. A calcareous sandy rock with casts of *Natica* and *Cardium*.  
Locality unnoted.

2210. A soft calcareous marl with impressions of *Cardita*.  
Locality unnoted.
2211. A portion of septaria with casts of *Trochus (Phorus) extensus*, Brander.  
From the London clay of the Isle of Sheppey.
2212. A small piece of cavernous shelly rock with casts of *Astarte* and *Cardium*.  
Locality unknown, probably from the tertiary series of Belgium.
2213. A slab of coarse pisolitic rock, the concretions being partly formed of fragments of shells incrustated with calcareous matter and subsequently agglutinated together.  
Locality unknown.
2214. A mass of sandy rock with portions of three *Pectens*.  
Locality unknown.
2215. A thin slab of calcareous rock containing a few impressions of *Cytherea*.  
Locality unnoted.
2216. Two pieces of loose shelly rock with numerous specimens of *Cerithium cinctum*, Lam.  
From the eocene strata of Soissons, France.
2217. A sandy rock with fragments and specimens of *Lucina*.  
Locality unnoted.
2218. A species of *Lucina*, to which three specimens of *Cerithium* are attached (near to *C. thiara*, Lam.).  
Locality unnoted; probably Barbadoes.
2219. Portions of *Pectens* (in a sandy rock), to which are attached numerous specimens of *Balani*.  
Locality unnoted.
2220. Two portions of shelly sandstone, containing *Voluta rarispina*, Lam., *Cassis Saburon*, *Natica glaucina*, Bast., and *Turritella terebralis*, Lam.  
From the miocene strata of the Bordeaux basin.
2221. A mass of shelly breccia, in which fragments of *Cardium* and coarse sand are loosely cemented together.  
Locality unnoted, probably recent.



2222. Two pieces of friable sandy clay, with fragments of shells and specimens of *Oliva*, *Turritella* and *Natica* imbedded in it.  
Locality, Sumatra.
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2223. A coarse sandstone described in the MS. Catalogue as a "large ramose coralloid of sandstone with knobbed branches."  
Locality. From Mona in Piedmont.
2224. A piece of argillaceous ironstone commonly called "cone-in-cone," the form of which is probably due to imperfect crystalline arrangement.  
This form of ironstone is of frequent occurrence in the coal measures of Worcestershire and Staffordshire.
2225. A large slab of pinkish sandstone, called "flexible sandstone" from its structure, which is owing to the peculiar arrangement of the aggregated particles, having a freedom of motion.  
Rock of this nature occurs in Brazil.

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## A D D E N D A.

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### Class PTEROPODA.

#### Genus *Conularia*, Sow.

- 1010a. Two argillaceous nodules containing specimens of *Conularia Africana*, Sharpe.  
From the Devonian strata of the Cedarberg, South Africa.  
*Presented by Sir John F. Herschel, Bart., F.R.S.*

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#### Genus *Solen*, Linn.

- 1045a. A specimen of *Solen vaginalis*, Desh., imbedded in soft calcareous rock.  
From the eocene strata of the Paris basin.
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1586. The casts of Trilobites on this slate probably belong to *Calymene (Placoparia) Tournemini*, Roualt.









