the ventral valve. In casts of old specimens of *T. reticularis* the muscular impressions are seen to be analogous to those of the American shell, but from a difference in the proportions of the various parts, our shell does not present the strong resemblance to the base of a horse's hoof to which the *T. unguiformis* owes its celebrity and name.

(16) *PORCELLIA ORNATA*, Conrad sp.—Shell consisting of two or three whorls wholly exposed and increasing very rapidly in size; whorls sharply carinated, ornamented on each side with a row of 12 or 15 tubercles, which expand laterally into short ribs, occupying about half the width of the shell; back crossed by elevated rows of minute tubercles arranged in straight lines nearly at right angles to the keel: opening irregularly quadrangular.

Found in the Hudson's River group on the Salmon River, and in the blue limestone of Ohio at Cincinnati.

I have no doubt that this is the *Cyrtolites ornatus* of Conrad and Vanuxem, although the specimens I have seen do not show the whorls detached in the manner represented in Mr. Vanuxem's figure. The species is so nearly related to *Porcellia Puzo* of Léveillé, and *P. armata* of De Verneuil, that I could not hesitate to place it in the same genus, without having seen its true generic characters.

A shell found in the Lower Silurian beds of North Wales near Bettws-y-Coed cannot be distinguished from the American species, although the specimen is hardly perfect enough to give a certain identification. The *Euomphalus Corndensis*, Sowerby, Sil. Syst. t. 22. f. 16, may perhaps be also related to the genus *Porcellia*, and has some resemblance to this species.

DECEMBER 15, 1847.

John North, Esq., and Thomas F. Gibson, Esq., were elected Fellows of the Society.

The following communications were then read:—

1. *On the Mineral Character and Fossil Conchology of the Great Oolite, as it occurs in the neighbourhood of MINCHINHAMPTON.*
By JOHN LYCETT, of Minchinhampton.

My principal design in this paper is to exhibit the organic remains of a district small in area, but peculiarly rich in fossil testacea. These likewise occur in a better state of preservation than is common in rocks of a similar geological character, the external ligaments of the bivalves, and coloured markings of the univalves, being not unfrequently visible. Of the remains of reptiles, fishes, crustacea, insects and plants of the oolitic period, the slates of Stonesfield have afforded good illustrations; but the shells are comparatively few as to species.

Mr. Lonsdale's list from the vicinity of Bath, at the south-western extremity of the formation, is equally scanty. A few species may be found in the 'Mineral Conchology of Great Britain;' and recently

Messrs. Buckman and Strickland have made additions to the Stonesfield slate shells in their work on the Geology of Cheltenham. These are all the authorities relating to the course of the great oolite in the middle and south of England. The testacea of these rocks in the north of England have been more fully illustrated, and the lists of Messrs. Phillips, Bean and Williamson contain a considerable number of species; but unfortunately the oolitic series of rocks beneath the Oxford oolite in Yorkshire constitute a great carboniferous deposit, which differs essentially both in its natural subdivisions and mineral character from the presumed parallel series in the middle and south of England. On this account the Yorkshire lists of shells have little more than a local value, inasmuch as the particular stratum to which they are referred cannot with certainty be placed as the equivalent of a stratum whose position in the series is elsewhere determined. Further information respecting the shells of this epoch can only be obtained by referring to the works of Roemer, Goldfuss, Bronn, Dunker, D'Archiac, Deslongchamps, &c., where a large number of foreign oolitic shells are figured and described. It would seem that there attaches a degree of reproach to us that the shells of a formation which engaged the attention of the fathers of geology in the earliest infancy of the science should still remain perhaps less generally known than those of any other fossiliferous series in the kingdom. In the hope that this little memoir may somewhat assist in remedying this defect, I have ventured to submit the accompanying list of species and observations. The district to which these remarks apply is very small, having a radius of only three miles. Nevertheless within this limited space, very many species, and even several genera, are found which are new to science. Possibly some few of these may be described in foreign authorities with which I am not acquainted; it is not likely, however, that their number is considerable. In fact, when collating foreign oolitic forms, it is remarkable how few are found identical with our own;—there is so strong a family resemblance that at first we feel confident that we shall establish a specific relationship; but a closer scrutiny undeceives us, and eventually we feel surprised at the small number which we can call our own. In some instances errors are corrected into which others have fallen from describing imperfect specimens, or from unacquaintance with the hinges of the bivalves; nor is it unlikely that here also similar errors are committed from the same causes. The smallness of area has at least one advantage,—it enables us to exhibit the grouping or assemblage of contemporaneous species free from the doubt which must sometimes exist with regard to fossils collected over a more extensive tract of country. The results of this examination, it is trusted, are such as will afford some curious information with respect to the proportion and diffusion of the Zoophagous tribes. Until very recently an opinion has prevailed that we might in vain look for the carnivorous Trachelipods in rocks of such antiquity as the great oolite, or that they were extremely few, and that it was only on the extinction of those two great families of Cephalopods, the Ammonites and Belemnites, that this class of mollusks first ap-

peared, and have continued down to the recent period to perform the office of those extinct races. It will here, however, be seen that out of 142 species of univalves, exclusive of Cephalopoda and Radiaria, no less than forty-one are carnivorous, and five others belong to a genus (*Phasianella*) the recent species of which are both phytophagous and carnivorous, thus presenting a proportion of species in the Zoophagous tribes not very different from that which obtains in warm seas of the recent period. The unusual paucity of Cephalopoda, taken in connection with this fact, is worthy of notice;—of Belemnites there is only one small species, and the number of individuals is but few; so also with the Nautili, of which only two species occur; and an Ammonite is decidedly a “*rara avis*,” six species, with less than forty individuals, are all which have fallen under my notice. The inquiry naturally follows: Was this peculiar distribution of families characteristic of the great oolite generally over large areas, or was it merely local, and dependent upon conditions found only within certain limited spaces, so that it ceased when these conditions no longer existed? We know that both before and after this period the Cephalopoda reigned supreme among the molluscos tribes, a fact favouring the existence of a local cause to account for such an unusual assemblage. Even a cursory glance at our largest sections of the great oolite suggests the idea that the beds were deposited from a shallow sea where strong currents prevailed; where the surface and mineral character of the deposit were continually changing. A closer view confirms the first impression; heaps of broken shells, piled in irregularly laminated beds, are intermixed with occasional rounded boulders of rock foreign to the neighbourhood, with fragments of abraded madrepores, dicotyledonous wood, crabs’ claws, &c. Other portions of the shelly beds have suffered denudation, and the removed portion has been filled with clay. These, together with false stratification and nonconformity of certain beds in juxtaposition, are conclusive upon this point; and the effect is not lessened by the occurrence of other beds, barren or less fossiliferous, but of more uniform character. May not these circumstances suffice to account for a paucity of Cephalopoda, and for the absence of species fitted for such conditions over large and more tranquil areas where a similar littoral surface could not be expected? As a contrast to these conditions, the mineral character and fossils of the same formation in the vicinity of Bath may be cited. The rock has there the oolitic structure for its prevailing character; corals are large and abundant, but testacea scarce, and those chiefly Brachiopoda,—denizens, it may be presumed, of a deep and tranquil sea. In Mr. Lonsdale’s list of thirty-one species of testacea from the Bradford clay, great oolite and Fuller’s earth of that locality, there are upwards of eight Terebratulæ, and a Crania has since been discovered,—a larger number in proportion than will be found in the 300 species here tabulated.

Geological features of the district.

The beds of the great or Bath oolite within the limits of this sketch consist of forest marble, great oolite and Fuller’s earth; but

it is chiefly the lower 30 or 40 feet of the great oolite which will engage our attention, inasmuch as the testacea of the other divisions are unimportant with respect to number of species, and rarely contain any which are not likewise found in the testaceous portion referred to.

The general geological features of the neighbourhood are already sufficiently known; all the exposed sections are artificial, the quarries are openwork, and nearly the whole are situated in the parishes of Minchinhampton and Bisley, near escarpments of the oolite, caused by the two deep valleys of Chalford and Woodchester, with their lateral ramifications. These valleys of denudation have cut through the series of rocks from the forest marble to the lias, having a mean depth of 500 feet, and have produced a combination of circumstances eminently favourable for bringing the valuable beds of oolite into use at a small comparative expense, and of transporting it by water-carriage.

The rocks have the same general dip to the south-east, at a small angle, which usually prevails over this part of England. Many sections indeed exhibit a dip at variance with this general position, and one lateral valley (Toadsmere) has an anticlinal axis producing considerable upthrow of the beds on each side. These variations however from the general rule are local only, and do not affect the inclination of the beds when viewed on a large scale.

Joints (*lissens* of the quarrymen) are for the most part parallel in their direction and frequently widely separated. In one curious instance a large *Nautilus* was severed by a joint, and the divided portions remained a yard apart on opposite sides of the chasm. Our sections, though numerous, are but of small extent, and have not disclosed any fault or displacement of importance, nor is there any reason to suspect the occurrence of such within the limits here chosen.

The compound great oolite, irrespective of the Fuller's earth, has an aggregate thickness of about 130 feet, and will admit of the following general subdivisions:—

1. Forest marble beds with bands of clay and marl representing the Bradford clay.
2. Thin-bedded sandstones, not shelly.
3. Weatherstone, being the portion quarried for building purposes. This subdivision is distinguished from the one above by the superior thickness of the beds, their shelly structure and frequent diagonal lamination, thereby approaching in general aspect the uppermost or forest marble beds. The two former subdivisions occupy the surface to the east of the town of Minchinhampton; the latter is exposed to the west and north.

The forest marble series consists of many very irregular thin beds of oolitic sandstone more or less shelly, and frequently separated by bands of brown or grey marl or clay; these latter are the probable representatives of the Bradford clay; the *Terebratula digona* however does not occur in them, although they contain many bivalves, the most conspicuous of which is the *Cardium Beaumonti*, d'Archiac. Some of the shelly beds are very hard, split into thin laminæ, and

are extensively used for roofing. In the preparation of the tiles no exposure to frost is necessary, light dressing with the hammer being all that is required: they form a covering more durable than the Stonesfield slate, but heavier and less neat. These laminated tile-stones are sprinkled over with small oysters, pentacrinid remains, spines of *Echini*, ossicula of *Ophiura*, &c.

Connected with the forest marble a local deposit occurs of a curious character; it consists of a bed of thin, brashy, but very hard calcareous stone, full of irregular holes, forming masses sometimes very large. One of these has been placed erect, about a mile from the town, and is known by the name of Longstone, a sepulchral monument it is supposed of great antiquity. The extent of this stratum is unknown, but it certainly covers very many acres, and is extracted for out-of-door ornamental purposes, on account of the grotesque forms which it assumes. Unlike other oolitic stones, the only change which it experiences by exposure to the weather is that it becomes somewhat whiter. Its singular structure would appear to be owing to the forcible escape of gases from beneath while the stratum was of a soft or pasty consistence.

No positive line of separation can be drawn between the forest marble and great oolite; the shelly beds of the former gradually change to thin-bedded sandstones nearly destitute of organic remains; stems of *Apiocrinites*, however, may be traced throughout the middle subdivision. At the upper part of this series, or about 90 feet above the Fuller's earth, is a bed from $1\frac{1}{2}$ to 2 feet in thickness, emphatically termed the '*limestone bed*'; which is distinguished from all the associated strata by a remarkable uniformity of thickness and mineral character over a large area. It may be described as a very hard, homogeneous, cream-coloured rock, occasionally containing shells which agree specifically with those of the uppermost beds of building stone or planking. It has been traced from the town of Minchinhampton on the west to a deep section made by the Swindon and Gloucester Railway, close to the east entrance of the smaller of the two Sapperton tunnels, a distance of five miles; where it appears near the middle of the section. It is sometimes burned for lime, which is moderately good, though more impure than that obtained from the carboniferous limestone.

The third subdivision or weatherstone is exposed in many openwork quarries situate to the west of the town and on the northern side of the vale of Brimscombe or Chalford; the whole of the beds are extracted down to the Fuller's earth. The mineral character of the weatherstone beds is found to vary considerably within a short distance, a change being sometimes observable even on opposite sides of the same quarry. The description of any one section will therefore afford only a very general and distant notion of a similar section in another locality. Taking for example the largest quarry on Minchinhampton Common, one mile west of the town, we there find the upper part to consist of thinly-laminated stone, the laminæ being irregular and often rising at a high angle, 5 or 6 feet in thickness; this should probably be referred to the middle subdivision.

A. Planking, 10 feet, usually consists of several beds; a shelly, coarse calcareous sandstone, having oolitic globules in particular layers, but upon the whole sparingly distributed. These beds are sometimes very hard and barren of organic remains; in other situations again they are distinguished by a profusion of relics, including many zoophagous Trachelipods, which seem peculiar to the great oolite. The partings of the beds frequently exhibit a remarkable appearance; the shells, for the most part broken, are piled in diagonal layers, so as frequently to constitute a large proportion of the mass of the rock, together with rounded fragments of harder sandstones, coralline bodies, crabs' claws, palates and teeth of fishes, remains of Pentacrinite, Ophiura, spines of *Cidaris*, &c. Other blocks will be found strewn with small spiral univalves belonging to the genera *Cerithium* and *Nerinea*. The structure of the shells consists of pure crystalline carbonate of lime, and their internal cavities are frequently filled with the same substance. From this crystalline structure the stone appears to derive its superior hardness and durability; when once dried by exposure to the sun it does not readily absorb water and consequently resists the action of frost. The largest blocks are worked into pillars, gate-posts, trough-stones, and other uses where much exposure is required.

Beneath the planking sometimes succeeds a few inches of sand or brown clay, and it may be remarked that the bivalve shells in this and other clay seams, unlike the stony beds, have usually both valves in apposition, though for the most part in the form of casts.

- B. Soft, yellowish sandstone, thin-bedded, 12 to 14 feet, divided occasionally by sandy partings. These beds are worthless for economical purposes, the absence of shells and crystalline lime rendering it liable to destruction from frost, which, together with its small masses and tendency to lamellar separation, preclude its employment for building; it is accordingly suffered to disintegrate on the banks of the quarries.
- C. Soft yellowish sandstone, shelly, 6 feet, much more coherent than B, and advantageously worked for purposes where hardness is not necessary; it is therefore sawn into ridge-tiles and coping for walls. The shells increase in quantity downwards; both this bed and B exhibit numerous holes bored by the *Lithophagidæ*, in some of which *Lithodomi* may still be found. 'Oven-bed' is the workmen's term for these strata.
- D. Weatherstone, 6 feet, separable into two or three beds; greyish-brown sandstone, abounding with shells and carbonate of lime; the hardness increases downwards until we arrive at the lowest bed.
- E. Lowest weatherstone, 6 to 9 inches; a coarse, grey, shelly limestone. The superior hardness of this bed is due to the valves of small oysters, chiefly *O. acuminata*; these in fact constitute the greater portion of its mass; it strikes fire with the tools of

the workmen; the lowest two or three inches are frequently blue.

Of the Fuller's earth which underlies the last stratum a brief notice will suffice; its thickness in this neighbourhood varies from 60 to 80 feet. Northwards in the parish of Bisley, somewhat beyond the limits of this sketch, it rapidly thins out, and at Throughham and Lypiatt, where the Stonesfield slate in mass begins to occupy its position, the thickness is reduced to about 9 or 10 feet. It consists of stratified blue and brown marls and clays, traversed by three or four bands of hard brown argillaceous rock called "clay rag." The uppermost of these is a lamellar argillaceous slate having all the characters of the Stonesfield slate, and judging from the number of places where it occurs, would appear to be continuous over the whole district. Occasional traces of various organic remains may be observed, but rarely sufficiently distinct to be recognised. The shells distributed through the Fuller's earth, though abundant in certain layers, belong to few species; Terebratulæ predominate. One or two bands of stone and the neighbouring clays are nearly made up of the valves of *Ostrea acuminata*.

The soil over the Fuller's earth is the best in the neighbourhood; and when properly drained constitutes good pasturage and orchard land. The springs which burst out at the base of the superincumbent oolite frequently afford the means of ministering to domestic purposes; accordingly its course may usually be traced in populous districts by a zone of cottages and gardens girdling the hill-sides, and affording a strong contrast to the barren slope of the inferior oolite beneath.

From the occurrence of a series of clay beds between two rock formations in a single hill-slope, it may be conjectured that landslips are of frequent occurrence, and accordingly we sometimes find the steep slope of inferior oolite rendered fertile by a coating of the marls of the Fuller's earth.

In illustration of the diversity of mineral characters which may exist in the great oolite within a small area, I will mention that at the Box, one mile from the large section which I have quoted, the beds A, B and C are absent, and their place is occupied by a thick stratified deposit of brown clay containing several bands of argillaceous rock and nodules; in fact, a repetition of the Fuller's earth as far as mineral character is concerned. From this uncertainty it follows that the success of opening and working a quarry in this formation somewhat resembles the risk of a mining speculation; a slight accidental circumstance will sometimes defeat the project by rendering the quarryman unable to compete with others more favourably situated.

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CONCHIFERA.

<i>Macrodon Hirsonensis</i> (Cucullæa), Archiac;	<i>Anatina undulata</i> (Sanguinolæa), Phill.
<i>C. elongata</i> , Phillips;	<i>Pholas</i> , n. sp.
<i>C. rudis</i> , Sow.;	<i>Pholadomya ventricosa</i> , Goldf.
<i>Arca elongata</i> , Goldfuss.	— <i>orbiculata</i> , Roemer.
<i>Cucullæa Goldfussii</i> , Roemer.	— <i>truncata</i> , Goldf.
— <i>minuta</i> , Sowerby.	— <i>nana</i> , Phill.
— <i>oblonga</i> , Phillips.	— <i>Murchisoni</i> , Goldf.;
<i>Arca lata</i> , Dunker.	<i>Cardita deltoidea</i> , Sow.
— <i>pulchra</i> , Sow.	<i>Pholadomya ambigua</i> , Sow.
— <i>æmula</i> , Phill.	— 2 n. sp.
— n. sp.	<i>Donax</i> , 3 n. sp.
<i>Nucula variabilis</i> , Phill.	<i>Capsa oblita</i> (Pullastra), Phill.
— <i>lachryma</i> , Sow.	— n. sp.
— <i>acuminata</i> , Goldfuss.	<i>Mactra gibbosa</i> , Roemer.
— <i>elliptica</i> , Phill.	<i>Mactromya</i> , 2 n. sp.
<i>Pectunculus ooliticus</i> , Archiac.	<i>Hiatella</i> , n. sp.
<i>Corbula curtansata</i> , Phill.	<i>Lucina lirata</i> , Phill.
— <i>involuta</i> , Goldf.	— <i>cardioides</i> , Roemer.
<i>Corbis Lajoyei</i> , Archiac.	— <i>despecta</i> , Phill.
— <i>lævis</i> , Roemer.	<i>Astarte cuneata</i> , Sow.
<i>Mya margaritifera</i> , Young and Bird.	— <i>lucida</i> , Sow.
— <i>æquata</i> , Phill.	— <i>squamula</i> , Archiac.
— <i>dilatata</i> , Phill.	— <i>excavata</i> , Sow.

Astarte minima, Phill.
 — *similis*, Goldf.
 — *elegans*, Phill.
 — *orbicularis*, Sow.
 — *rotundata*, Roemer.
 — 3 n. sp.
Venus ovalis, Sow. ??
 — *isocardioides*, Roemer.
 — n. sp.
Cytheræa deltoidea, Goldf.
 — *dolabra*, Phill.
 — *lamellosa*, Goldf.
 — n. sp.
Cyrena nuculiformis, Roemer. ??
Opis lunulatus (*Cardita*), Sow.
 — *similis* (*Cardita*), Sow.
 — *extensus*, Goldf.
 — 2 n. sp.
Cardium striatulum, Phill.
 — *Beaumonti*, Archiac.
 — *globosum*, Bean.
 — *acutangulum*, Phill.
 — *pes-bovis*, Archiac.
 — 2 n. sp.
Isocardia truncata, Goldf.
 — *striata*, Sow.
 — *nitida*, Phill.
Ceromya v. scripta (*Cardita*),
 Buckman.
 — *excentrica* (*Isocardia*),
 Roemer.
 — *concentrica* (*Isocardia*),
 Sow.
 — n. sp.
Cypricardia solida (*Venus*),
 Buckman.
 — n. sp.
Sphæra Madridi (*Cardium*),
 Arch. ; *C. incertum*, Phill.
Lutraria concentrica, Goldf.
Trigonia gibbosa, Sow.
 — *quadrata*, Sow.
 — *cuspidata*, Sow.
 — *muricata*, Goldf.
 — *costata*, Sow.
 — *litterata*, Goldf.
 — *angulata*, Sow.
 — *striata*, Sow.
Lysianassa v. scripta, Goldf.
Myoconcha crassa, Sow.
Mytilus Hausmanni, Goldf.

Mytilus obtusus, Buckman.
 — *sublævis*, Sow.
 — *pectinatus*, Sow.
 — n. sp.
Modiola subæquiplicata, Goldf.
 — *plicata*, Sow.
 — *pulcherrima*, Roemer.
 — *cuneata*, Sow.
Lithodomus inclusus (*Modiola*),
 Phill.
 — n. sp.
Pinna ampla, Sow.
 — 2 n. sp.
Lima duplicata, Sow.
 — *rigida* (*Plagiostoma*), Sow.
 — *ovalis* (*Plagiostoma*), Sow.
 — *gibbosa*, Sow.
 — *substriata*, Goldf.
 — *notata*, Goldf.
 — *Cardiiforme* (*Plagiostoma*),
 Sow. ; *L. læviuscula*, Goldf.
 — 3 n. sp.
Pecten abjectus, Phill.
 — *vagans*, Sow.
 — *annulatus*, Sow.
 — *lens*, Sow.
 — *clathratus*, Roemer.
 — *arcuatus*, Sow.
 — *personatus*, Goldf.
 — *fibrosus*, Sow.
 — 2 n. sp.
Hinnites tuberculatus (*Spondy-*
lus), Goldf.
 — *velatus* (*Spondylus*), Goldf.
Plicatula, 3 n. sp.
Placuna? Jurensis, Roemer.
Monotis, n. sp.
Perna mytiloides, Goldf. ; *P.*
quadrata, Phill.
 — *rugosa*, Goldf.
 — n. sp.
Gervillia lanceolata, Goldf. ; *G.*
acuta, Phill.
 — *siliqua*, Deslongchamps.
 — *Costatula*, Deslongchamps.
 — n. sp.
Avicula ovata, Sow.
 — *echinata*, Sow.
 — *Munsteri*, Goldf.
 — *pygmæa*, Dunker.
 — n. sp.

Ostrea Marshii, Sow.
 — *costata*, Sow.
 — *gregarea*, Sow.
 — *acuminata*, Sow.
 — n. sp.
 Several other species undetermined.
Terebratula orbiculata, Roemer.

Terebratula perovalis, Sow.
 — *media*, Sow.
 — *intermedia*, Sow.
 — *ornithocephala*, Sow.
 — *bullata*, Sow.
 — *concinna*, Sow.
Crania, n. sp.

MOLLUSCA.

Patella rugosa, Sow.
 — *nana*, Sow.; *P. cingulata*, Goldf.
 — *Aubentonensis*, Archiac.
 — *tenuistriata*, E. Deslongchamps.
 — 3 n. sp.
Metoptoma, n. sp.
Rimula clathrata (*Emarginula*), Sow.; *R. Goldfussii*, Roemer.
Emarginula scalaris, Sow.
 — *tricarinata*, Sow.
Fissurella, n. sp.
Pileolus plicatus, Sow.
 — *lavis*, Sow.
Nerita costata, Sow.
 — *minuta*, Sow.; *N. pulla*, Roemer.
 — *decussata* (*Natica*), Goldf.
 — *sulcosa*, Archiac.
 — 5 n. sp.
Monodonta Lyellii, Archiac.
 — *laevigata*, Goldf., (*Nerita*) Sow.
 — n. sp.
Turbo clathratus, Roemer.
 — *obtusus*, Sow.
 — *Meriani*, Goldf.
 — *capitaneus*, Goldf.
 — *muricatus*, Sow.
 — *pyramidalis*, Archiac.
 — *princeps*, Roemer.
 — 5 n. sp.
Bulinula olivæformis (*Bulla*), Dunker.
 — n. sp.
Rissoa acuta, Sow.
 — *duplicata*, Sow.
Phasianella Leymeriei, Archiac.
 — 4 n. sp.

Chemnitzia lineata (*Melania*), Sow.
 — *undulata* (*Melania*), Deslong.
 — 2 n. sp.
Natica Verneuli, Archiac.
 — *grandis*, Goldf.
 — *Michelini*, Archiac.
 — *adducta*, Phill.
 — *elegans*, Sow.
 — *globosa*, Roemer.
 — 7 n. sp.
Trochus plicatus, Archiac.
 — *glaber*, Dunker.
 — *obsoletus*, Roemer.
 — 5 n. sp.
Pleurotomaria, 5 n. sp.
Trochotoma affinis, Deslong.
 — *acuminata*, Deslong.
 — *conuloides*, Deslong.
 — 2 n. sp.
Cirrus nodosus, Sow.
 — n. sp.
Solarium polygonum, Archiac.
 — 4 n. sp.
Delphinula coronata (*Euomphalus*), Sow.
 — n. sp.
Bulla suprajurensis, Roemer.
 — *Hildesiensis*, Roemer.
Cylindrites acutus (*Actæon*?), Sow.
 — *cuspidatus* (*Actæon*), Sow.
 — *bullata*, *Conus*? *minimus*, Archiac.
 — 3 n. sp.
Cerithium muricato-costatum, Goldf.
 — *Dufrenoyi*, Archiac.
 — *limæforme*, Roemer.

- Cerithium quadricinctum*, Goldf. *Rostellaria paradoxa*, Deslong.
 — *Portlandicum* (*Terebra*), — 6 n. sp.
 Sow.
 — *pentagonum*, Archiac. Note.—All the species in this group are characterized by the absence of a siphon on the spire.
Nerinea Roissyi (*Turritella*), Archiac.
 — *fasciata*, Roemer. *Murex*, 3 n. sp.
 — 13 n. sp. *Purpuroidea nodulata* (*Murex*),
Buccinum sublineatum, Roemer. Young and Bird; *Murex tuberosus*, Sow.
 — *parvulum*, Roemer. — 2 n. sp.
Pleurotoma, n. sp. *Fusus unilineatus* (*Buccinum*),
Rostellaria composita, Phill. Sow.
 — *trifida*, Phill. — *obliquatus* (*Rissoa*), Sow.
 — *bispinosa*, Phill. — n. sp.
 — *atractoides*, Deslong.

CEPHALOPODA.

- Belemnites hastatus*, Orbigny. *Ammonites Parkinsoni*, Sow. (var.)
Nautilus truncatus, Sow. — *coronatus*, Brug.
 — (species undetermined). — *Lalandeanus*, Orbigny.
Ammonites Herveyi, Sow. — (2 sp. undetermined).

RADIARIA.

- Clypeus sinuatus*, Parkinson. *Acrosalenia Hoffmanni* (*Cidarites*), Goldf.
Pygaster patelliformis, Agassiz. — (species undetermined).
Nucleolites clunicularis, Phill. *Cidaris subangularis*, Goldf.
 — (species undetermined). *Echinus germinans*, Phill.
Acrosalenia coronata (*Cidaris*), Goldf.

Numerical proportion of species obtained from the Great Oolite of Minchinhampton.

Conchifera	109
Monomyaria	44
Brachiopoda	8
Gasteropoda	142
Cephalopoda	9
Radiaria	9
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2. Extract of a Letter to J. CARRICK MOORE, Esq. from COLONEL MACINTOSH, F.G.S.

Florence, June 15, 1847.

. . . . When at Naples I visited Pozzuoli twice; the first time on the 27th of May 1847, at seven o'clock P.M. The tide was still flowing slowly out of the Temple of Serapis. The water was then exactly on a line with the angular base of the northern column (*a*), the surface of which, as well as the first ring (*a b*), was at the time wet, and