pp. 99. Probably belongs to the next species. Upper Lias, Ilminster.

26. *DISCINA LEVIS*, Sow. (*Patella*), Min. Con., t. 139, f. 5, non. 14. *Helcion sublevis*, D'Orbigny, Prodr. *Patella levior*, Fleming Brit. Animals. Upper Lias, Whitby (Leckenby).

27. *DISCINA PAPYRACEA*, Munster (*Patella*), Goldf. Petref. t. 167, f. 8. Oppel considers this species to be included under *D. reflexa*, Sow., and quotes it from the Alum Shale of Whitby.

28. *LINGULA DAVIDSONI*, Oppel. Die Juraf., p. 109.

This species, discovered by Dr. Oppel in the Oxynotus-shales in Gloucestershire, has a small, narrow shell, apparently smooth, with radial striae.

29. *LINGULA METENSIS*, Terquem. Bull. Soc. Geol. de Fr. vol. viii. (1850), t. 1, f. 10.

This species is most nearly related to *L. tenuis* of the London clay, but has been referred to *L. Beanii* by Portlock and others.

In France *L. Metensis* is confined to the Lower portion of the Lower Lias; in Ireland it occurs in the zones of *Am. angulatus* and *Bel. acutus*; in England in that of *A. raricostatus*, Churchdown, (Smithe).

30. *LINGULA VOLTZII*, Terquem, *op. cit.*, t. 1, f. 2.

This species has been confounded with *L. Beanii*, from which it differs in its subovate outline, whilst that of the latter is ovate oblong. According to Dr. Oppel, *L. Beanii*, as well as *Discina reflexa*, are fossils of the Inferior Oolite and not of the Lias; and possibly many of the localities given for that species belong to *L. Voltzii*. I refer the *Lingula* of the zone of *A. capricornus* at Mickleton, and from the Middle Lias of Bath and Chipping Campden, to this species.

31. *LINGULA LONGOVICENSIS*, Terquem. Bull. Soc. Geol. de Fr., 1850, p. 12.

Oppel finds this species in the Alum Shale of Yorkshire; but in referring *Patella levis* to it, makes a mistake, as that shell is a true *Discina*. Mr. Leckenby writes—"I think you need take no trouble about *Patella levis* (see Young and Bird's remarks). I send the shell (an *Orbicula*) for inspection; you will see it is the same as the little miserable thing Fig. 4, t. 139 (Sowerby)."

VI.—ALPHABETICAL CATALOGUE OF THE TYPE SPECIMENS OF FOSSIL FISHES IN THE COLLECTION OF THE EARL OF ENNISKILLEN, AT FLORENCE COURT.

Having seen in the September Number of the GEOLOGICAL MAGAZINE (p. 408), the Catalogue of Types of Fossil Fishes in the collection of my valued friend and fellow-worker Sir Philip de Malpas Grey Egerton, Bart., M.P., with whom I have collected for so long a time, it occurred to me that the addition of the list of the type specimens of genera and species in my own collection would be a useful supplement to Sir Philip Egerton's carefully prepared catalogue, and might not be wholly unacceptable to the student in Palichthyology. I therefore beg to subjoin it, and, in doing so, to re-

echo the sentiment expressed by my friend, that my collection, like his own, although a private one, is always accessible to the student in Geology or Palæontology who may deem it of sufficient interest to visit Florence Court in order to study it.

ENNISKILLEN.

- ACANTHODERMA, Ag.
— *spinosum*, Ag., P. F., tom. 2, tab. 75, fig. 4.
- ACANTHOPLEURUS, Ag.
— *serratus*, Ag., P. F., tom. 2, tab. 75, fig. 1.
- ACIPENSER, Linn.
— *Toliapicus*, Ag., P. F., tom. 2, feuil. 280.
- ACRODUS, Ag.
— *Anningia*, Ag., P. F., tom. 3, tab. 22, fig. 4.
- ÆTOBATES, Müll. and Henle.
— *irregularis*, Ag., P. F., tom. 3, tab. 47, figs. 3-5.
- ANENCHELUM, De Blain.
— *dorsale*, Ag., P. F., tom. 5, tab. 37a, fig. 4.
— „ Ag., P. F., tom. 5, tab. 37a, fig. 2.
— *Glarisianum*, De Blain, P. F., tom. 5, tab. 37, fig. 1. (Counterpart.)
— „ De Blain, P. F., tom. 5, tab. 37, fig. 2.
— *heteropleurum*, Ag., P. F., tom. 5, tab. 37a, fig. 3.
- ASTERACANTHUS, Ag.
— *semisulcatus*, Ag., P. F., tom. 3, tab. 8a, fig. 7.
- BELONOSTOMUS, Ag.
— *Münsteri*, Ag., P. F., tom. 2, tab. 47a, fig. 2. (Counterpart.)
- CARCHARODON, Smith.
— *subseratus*, Ag., P. F., tom. 3, tab. 36, figs. 14, 15.
- CENTROLEPIS, Eg.
— *asper*, Eg., M. G. S., Dec. 9, pl. 5. P. F., tom. 2, feuil. 304.
- CERATODUS, Ag.
— *obtusum*, Ag., P. F., tom. 3, tab. 19, fig. 20.
- CHARACODUS, Ag., Mss. (Psammodus cornutus, Ag.)
— *angulatus*, Ag., Mss., June 27, 1859.
— *cuneatus*, Ag., Mss., June 27, 1859.
- CHIMÆRA, Linn.
— *brevirostris*, Ag. (Ischyodus, Eg.), P. F., tom. 3, feuil. 344.
- CHOMATODUS, Ag.
— *cinctus*, Ag., P. F., tom. 3, tab. 15, fig. 13.
- CHONDROSTEUS, Ag.
— *acipenseroides*, Ag., Phil. Trans., 1858, pl. 67. P. F., tom. 2, pt. 2, feuil. 280.
— „ „ Phil. Trans., 1858, pl. 69.
- CLUPEA, Linn.
— *Beurardi*, De Blain, Dic. d'His. Nat., tom. 28, p. 61.
— *brevis*, Ag., P. F., tom. 5, tab. 62, fig. 2. (Counterpart.)
- COCCOSTEUS, Ag.
— *oblongus*, Ag., P. F. V. G. R., tab. 11, figs. 1, 2, 3.
- COCHLIODUS, Ag.
— *contortus*, Ag., P. F., tom. 3, tab. 19, fig. 14.
— n.s., Ag., Mss., June 27, 1859.
- CÆLACANTHUS, Ag.
— *caudalis*, Eg., King. Perm. Foss., pl. 28, M. G. S., Dec. 12, pl. 5, fig. 5.
— „ (Counterpart.)
— *gracilis*, Ag., P. F., tom. 2, pt. 2, feuil. 173.
— *Münsteri*, Ag., P. F., tom. 2, pt. 2, feuil. 173.
- COPODUS, Ag., Mss. (Psammodus cornutus, Ag.)
— *cornutus*, Ag., Mss., June 27, 1859.
— *furcatus*, Ag., Mss., June 27, 1859.
— *lunulatus*, Ag., Mss., June 27, 1859.
— *spathulatus*, Ag., Mss., June 27, 1856.
- CORAX, Ag.
— *Egertoni*, Ag., P. F., tom. 3, tab. 36, fig. 6.

- COSMOLEPIS, Ag.
 — *Egertoni*, Ag., M. G. S., Dec. 9, pl. 1, fig. 1.
- CTENACANTHUS, Ag.
 — *nodosus*, Eg., J. G. S., vol. 9, p. 281.
- CTENOPETALUS, Ag., *Mss.* (Petalodus, Ag.). Ctenoptychius, Ag.).
 — *serratus*, Ag., P. F., tom. 3, feuil. 173.
- CYCLURUS, Ag.
 — *minor*, Ag., P. F., tom. 5, tab. 53, fig. 1.
- DAPEDIUS, De la Beche.
 — *Colei*, Ag., P. F., tom. 2, tab. 25*b*.
- DELTOCUS, Ag., *Mss.*, June 27, 1859.
 — *sublævis*, Ag. (Pœcilodus), P. F., tom. 3, feuil. 174 (P. parallelus).
- DELTOPTYCHIUS, Ag., *Mss.* (Cochliodus, Ag.).
 — *acutus*, Ag., P. F., tom. 3, feuil. 104.
 — *gibberulus*, Ag., *Mss.*, June 27, 1859.
- DIODON, Linn.
 — *erinaceus*, Ag., P. F., tom. 2, pt. 2, feuil. 274.
 — *Scilla*, Ag., P. F., tom. 2, pt. 2, feuil. 274.
- DIMYLEUS, Ag., *Mss.* (Psammodus, Ag.).
 — *Woodi*, Ag., *Mss.*, June 27, 1859.
- EUGNATHIUS, Ag.
 — *chirotes*, Ag., P. F., tom. 2, tab. 57*b*.
 — *polyodon*, Ag., P. F., tom. 2, pt. 2, feuil. 104.
- GANODUS, Eg.
 — *emarginatus*, Eg., P. F., tom. 3, feuil. 345.
- GLYPTOLEPIS, Ag.
 — *leptopterus*, Ag., P. F. V. G. R., tab. 20, fig. 1.
 — " " P. F. V. G. R., tab. 20, fig. 5. (Counterpart.)
 — " " P. F. V. G. R., tab. 21, fig. 2. (Counterpart.)
 — " " P. F. V. G. R., tab. 21, fig. 3.
- GYRODUS, Ag.
 — *Murchisoni*, Mant. Medals of Creation, vol. 2, pl. 134.
 — *perlatus*, Ag., P. F., tom. 2, pt. 2, feuil. 236.
 — *trigonus*, Ag., P. F., tom. 2, tab. 69*a*, fig. 15.
- HARPACODUS, Ag., *Mss.*, June 27, 1859 (Ctenoptychius, Ag.)
 — *dentatus*, Ag. P. F. tom. 3, feuil. 173.
- HETEROLEPIDOTUS, Eg. (Eulepidotus, Eg. Lepidotus, Ag.)
 — *sauroides*, Eg., J. G. S., 1868, p. 503.
 — " Eg., J. G. S., 1868, p. 503.
 — *serrulatus*, Ag. (Lepidotus), P. F., tom. 2, tab. 31.
- HOLOPHAGUS, Eg.
 — *gulo*, Eg., J. G. S., 1868, p. 502.
- HYBODUS, Ag.
 — *carinatus*, Ag., P. F., tom. 3, tab. 9, figs. 13-14.
 — *complanatus*, Owen, Geol. Mag. 1869, tom. 6, No. 11, P. 482.
 — *crassispinus*, Ag., P. F., tom. 3, tab. 8*b*, fig. 7.
 — *dorsalis*, Ag., P. F., tom. 3, tab. 10, fig. 1.
 — *grossiconus*, Ag., P. F., tom. 3, tab. 23, figs. 34-40-41.
 — *marginalis*, Ag., P. F., tom. 3, tab. 10, fig. 18.
 — *minor*, Ag., P. F., tom. 3, tab. 23, figs. 21-23.
 — *reticulatus*, Ag. (H. curtus Ag.) P. F., tom. 3, tab. 8*a*, fig. 5.
- ISOCOLUM, Eg.
 — *granulatum*, Eg., J. G. S., 1868, p. 501.
- ISURUS, Ag.
 — *macrurus*, Ag., P. F., tom. 5, tab. 21, fig. 3.
- LABODUS, Ag., *Mss.* (Psammodus cornutus, Ag.)
 — *planus*, Ag., *Mss.*, June 27, 1859.
 — *prototypus*, Ag., *Mss.*, June 27, 1859.
- LEPIDOTUS, Ag.
 — *minor*, Ag., P. F., tom. 2, tab. 29*c*, fig. 12.
 — *palliatius*, Ag., P. F., tom. 2, tab. 29*c*, fig. 2.
 — " P. F., tom. 2, tab. 29*c*, fig. 3.
 — *pectinatus*, Eg., M. G. S., Dec. 6, pl. 3.

- LEPRACANTHUS, Eg.
 — *Colei*, Eg., P. F., tom. 3, feuil 177, and Geol. Mag. 1869, tom. 6, No. 11, P. 481.
- LEPTACANTHUS, Ag.
 — *semistriatus*, Ag., P. F., tom. 3, tab. 7, fig. 6.
 — *serratus*, Ag., P. F., tom. 3, tab. 7, fig. 1.
 — *tenuispinus*, Ag., P. F., tom. 3, tab. 1a, figs. 12–13.
- LEUCISCUS, Klein.
 — *macrurus*, Ag., P. F., tom. 5, tab. 51b, fig. 3.
- MEGALURUS, Ag.
 — *Damoni*, Eg., M. G. S., Dec. 9, pl. 8, fig. 2.
- MESOGOMPHUS, Ag., *Mss.* (*Psammodus cornutus*, Ag.)
 — *lingua*, Ag., *Mss.*, June 27, 1859.
- MYLACODUS, Ag., *Mss.* (*Psammodus cornutus*, Ag.)
 — *quadratus*, Ag., *Mss.*, June 27, 1859.
- MYLAX, Ag., *Mss.* (*Psammodus cornutus*, Ag.)
 — *batoides*, Ag., *Mss.*, June 27, 1859.
- MYLIOBATES, Dumeril.
 — *goniopleurus*, Ag., P. F., tom. 3, tab. 47, figs. 9–10.
 — *Toliapicus*, Ag., P. F., tom. 3, tab. 47, figs. 15–16.
- MYRIACANTHUS, Ag.
 — *granulatus*, Ag., P. F., tom. 3, tab. 8a, fig. 16.
 — *paradoxus*, Ag., P. F., tom. 3, tab. 6, fig. 5.
- NEMOPTERYX, Ag.
 — *crassus*, Ag., P. F., tom. 5, tab. 22 (*Counterpart*).
 — *elongatus*, Ag., P. F., tom. 5, tab. 21a, fig. 2 (*Counterpart*).
- ORODUS, Ag.
 — *ramosus*, Ag., P. F., tom. 3, tab. 11, figs. 5–6.
- OSMERUS, Arted.
 — *Glarisianus*, Ag., P. F., tom. 5, tab. 62, fig. 3.
 — „ Ag., P. F., tom. 5, tab. 62, fig. 4.
- OSTEORACHIS, Eg.
 — *macrocephalus*, Eg., J. G. S. 1868, p. 500.
 — „ Eg., J. G. S. 1868, p. 500.
- OXYGNATHUS, Eg.
 — *ornatus*, Eg., M. G. S., Dec. 8, pl. 9, fig. 1.
- PACHYCORMUS, Ag.
 — *branchialis*, Ag., *Mss.*
 — *curtus*, Ag., P. F., tom. 2, tab. 59 (*Counterpart*).
 — *latus*, Ag., P. F., tom. 2, pt. 2, feuil. 114.
- PALÆONISCUS, Ag.
 — *arcuatus*, Eg., J. G. S., vol. 6, pl. 1, fig. 1.
 — *Beaumonti*, Eg., J. G. S., vol. 6, pl. 1, figs. 5, 6.
 — *decorus*, Eg., J. G. S., vol. 6, pl. 2.
- PALÆORHYNCHUM, De Blain.
 — *Colei*, Ag., P. F., tom. 5, tab. 32, fig. 1.
 — *Egertoni*, Ag., P. F., tom. 5, tab. 34a, fig. 2 (*Counterpart*).
 — *latum*, Ag., P. F., tom. 5, tab. 3c, fig. 2.
 — *longirostre*, Ag., P. F., tom. 5, tab. 34a, fig. 3 (*Counterpart*).
 — *microspondylum*, Ag., P. F., tom. 5, tab. 34a, fig. 1.
- PETALORHYNCHUS, Ag., *Mss.* (*Petalodus*).
 — *psittacinus*, Ag., P. F., tom. 3, feuil 174 (*P. sagittatus*).
- PHOLIDOPHORUS, Ag.
 — *minor*, Ag., P. F., tom. 2, tab. 42a, fig. 5.
- PHYLLODUS, Ag.
 — *Colei*, Cocchi, Pesch. Lab. Tav. 1a, fig. 1.
 — *marginalis*, Ag., Pesch. Lab. Tav. 2a, fig. 1.
 — *medius*, Ag., Pesch. Lab. Tav. 2a, figs. 11–11a.
 — *speciosus*, Cocchi, Pesch. Lab. Tav. 1a, fig. 7.
- PINACODUS, Ag., *Mss.* (*Psammodus cornutus*).
 — *gelasimus*, Ag., *Mss.*, June 27, 1859.
 — *gonoplax*, Ag., *Mss.*, June 27, 1859.
 — *sesamini*, Ag., *Mss.*, June 27, 1859.

- PLEUROGOMPHUS, Ag., *Mss.*
 — *auriculatus*, Ag., *Mss.*, June 27, 1859.
- PŒCILODUS, Ag.
 — *Jonesi*, Ag., P. F., tom. 3, feuil 174 (P. obliquus).
- POLYRHIZODUS, McCoy.
 — *radicans*, Ag., P. F., tom. 3, feuil 174 (P. etalodus radicans and rectus).
- PRISTODUS, Ag., *Mss.*
 — *falcatus*, Ag., *Mss.*, June 27, 1859.
- PSAMMODUS, Ag.
 — *rugosus*, Ag., P. F., tom. 3, tab. 19, figs. 15 *a b c d*.
- PSEPHODUS, Ag., *Mss.*, June 27, 1859.
 — *magnus*, Ag., P. F., tom. 3, feuil 174 (Cochliodus).
- PTERICHTHYS, Ag.
 — *cornutus*, Ag., P. F. V. G. R., tab. 2, fig. 2.
 — „ Ag., P. F. V. G. R., tab. 2, fig. 4.
 — „ Ag. P. F., V. G. R., tab. 2, fig. 5.
 — *productus*, Ag., P. F. V. G. R., tab. 5, fig. 1 (*Counterpart*).
 — „ Ag., P. F. V. G. R., tab. 5, fig. 2.
- PTYCHOLEPIS, Ag.
 — *Bollensis*, Ag., P. F., tom. 2, tab. 58*b*, figs. 1-2-3.
 — *minor*, Eg., M. G. S. Dec. 6, pl. 7, fig. 2.
- PYCNOTUS, Ag.
 — *didymus*, Ag., P. F., tom. 2, tab. 72*a*, figs. 24-25.
 — *parvus*, Ag., P. F., tom. 2, pt. 2, feuil. 199.
- PYGÆUS, Ag.
 — *Coleanus*, Ag., P. F., tom. 4, tab. 44, fig. 5.
 — *Egertoni*, Ag., P. F., tom. 4, feuil. 257.
 — *gibbus*, Ag., P. F., tom. 4, feuil. 257.
- RHYMODUS, Ag., *Mss.* (Psammodus cornutus).
 — *transversus*, Ag., *Mss.*, June 27, 1859.
- SCOMBRINUS, Ag.
 — *nuchlias*, Ag., Rep. Brit. Ass. 1844, p. 307.
- SCYLLIODUS, Ag.
 — *antiquus*, Ag., P. F., tom. 3, tab. 38, fig. 1 (*Counterpart*).
 — „ Ag., P. F., tom. 3, tab. 38, fig. 2.
- SEMIONOTUS, Ag.
 — *rhombifer*, Ag., P. F., tom. 2, tab. 26*a*.
 — *striatus*, Ag., P. F., tom. 2, tab. 27*a*, fig. 6.
- SPHYRÆNODUS, Ag. (Dictyodus, Owen).
 — *priscus*, Ag., P. F., tom. 5, tab. 26, figs. 4, 5, 6.
- STREBLODUS, Ag., *Mss.* (Cochliodus).
 — *Colei*, Ag., *Mss.*, June 27, 1859 (Cochliodus oblongus).
 — *Egertoni*, Ag., *Mss.*, June 27, 1859 (Cochliodus oblongus).
 — *oblongus*, Ag., P. F., tom. 3, feuil. 174 (Cochliodus oblongus).
- STROPHODUS, Ag.
 — *reticulatus*, Ag., P. F., tom. 3, tab. 17.
- TETRAGONOLEPIS, Ag. (not Bronn.), (Echmodus, Eg.).
 — *confluens*, Ag., P. F., tom. 2, tab. 23*a*, fig. 1.
 — *leiosomus*, Ag., P. F., tom. 2, tab. 23*a*, fig. 3.
 — *pustulatus*, Ag., P. F., tom. 2, 23*c* (Dapedius).
 — *speciosus*, Ag., P. F., tom. 2, tab. 23*b*.
- THRISSENOTUS, Ag.
 — *Colei*, Ag., M. G. S., Dec. 9, pl. 2.
- TOMODUS, Ag., *Mss.*
 — *convexus*, Ag., *Mss.*, June 27, 1859 (Cochliodus magnus).
- XYSTRODUS, Ag., *Mss.* (Cochliodus).
 — *augustus*, Ag., *Mss.*, June 27, 1859 (Cochliodus striatus).
 — *striatus*, Ag., P. F., tom. 3, feuil. 174 (Cochliodus).

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VII.—ON THE OCCURRENCE OF ALBITE IN THE GRANITE OF LEINSTER.

By W. H. STACPOOLE WESTROPP, M.R.I.A.

DURING the past summer, I had the good fortune to detect Albite (Soda-feldspar) in some blocks of granite in the wall of the west pier at Kingstown, Co. Dublin. As the pier is built of rock from the Dalkey quarries, the mineral can be referred, with tolerable certainty, to its original locality. I was induced to look closely at the above-mentioned blocks, through noticing that they contained a mineral of a purple colour; this proved to be fluor, which occurs sparingly throughout the Leinster granite. Associated with the fluor was a pretty considerable quantity of a white mineral, occurring in aggregations of minute crystals; this appeared to me to be so like Albite that I considered it deserving a careful examination. I brought some of it to the Rev. Professor Haughton, F.R.S., who agreed with me in thinking that it had a very albitic look, and kindly undertook to have it analyzed, which has been done with the following result:—

Silica	...	...	...	...	...	...	...	...	...	64.70
Alumina	...	...	...	...	...	...	...	...	...	21.80
Potash	...	...	...	...	...	...	...	...	...	2.84
Soda	...	...	...	...	...	...	...	...	...	9.78
Loss	...	...	...	...	...	...	...	...	...	0.30
										99.42

Unfortunately the quantity which could be separated sufficiently pure for analytical purposes was very small.

This discovery is one of no little interest in the correlation of the irruptive granites of Leinster with those of Mourne and Cornwall.

There can be little doubt but that most, if not all, granite contains a second feldspar in addition to Orthoclase (Potash-feldspar).

The second feldspar that is a constituent of the bedded granites of Connaught, Donegal, parts of Scotland, and Scandinavia, is always oligoclase. The opinion is daily gaining support that these bedded rocks are really of metamorphic origin.

Oligoclase has never been found in irruptive (intrusive) granites, such as those of Leinster, Mourne, Cornwall, and parts of Scotland, but it is not improbable that Albite may be a normal constituent, though not always occurring in the crystalline condition.

It is some years since Professor Haughton, in the first of his well