

PLATES AND MAPS
IN ILLUSTRATION
OF
VOLUME III.
SECOND SERIES,
OF
THE TRANSACTIONS
OF
THE GEOLOGICAL SOCIETY
OF LONDON.

LONDON:

PRINTED BY RICHARD TAYLOR, RED LION COURT, FLEET STREET.

SOLD AT THE APARTMENTS OF THE GEOLOGICAL SOCIETY,
SOMERSET HOUSE.

—
1835.

EXPLANATION OF THE PLATES.

PLATE XXXIX.

Gosau.

- | | |
|--|--|
| <i>Fig. 15.</i> <i>Cardium productum.</i> | <i>Fig. 25.</i> <i>Fusus muricatus.</i> |
| <i>Fig. 16.</i> <i>Tornatella Lamarckii.</i> | <i>Fig. 26.</i> — <i>abbreviatus.</i> |
| <i>Fig. 17.</i> <i>Cerithium reticosum.</i> | <i>Fig. 27.</i> — <i>cingulatus.</i> |
| <i>Fig. 18.</i> ——— <i>conoideum.</i> | <i>Fig. 28.</i> <i>Nassa carinata.</i> |
| <i>Fig. 19.</i> ——— <i>pustulosum.</i> | <i>Fig. 29.</i> — <i>affinis.</i> |
| <i>Fig. 20.</i> <i>Pleurotoma fusiforme.</i> | <i>Fig. 30.</i> <i>Mitra cancellata.</i> |
| <i>Fig. 21.</i> ——— <i>spinosum.</i> | <i>Fig. 31.</i> <i>Voluta acuta.</i> |
| <i>Fig. 22.</i> <i>Fasciolaria elongata.</i> | <i>Fig. 32.</i> <i>Terebra coronata.</i> |
| <i>Fig. 23.</i> <i>Fusus heptagonus.</i> | <i>Fig. 33.</i> <i>Volvaria lævis.</i> |
| <i>Fig. 24.</i> — <i>carinella.</i> | |

Lower Styria.

- | | |
|--|--|
| <i>Fig. 1.</i> <i>Lutraria convexa.</i> | <i>Fig. 9.</i> <i>Trochus variabilis.</i> |
| <i>Fig. 2.</i> <i>Cardium transversum.</i> | <i>Fig. 9a.</i> ——— (recent, p. 395.) |
| <i>Fig. 3.</i> ——— <i>minutum.</i> | <i>Fig. 10.</i> <i>Cerithium pulchellum.</i> |
| <i>Fig. 4.</i> ——— <i>planicostatum.</i> | <i>Fig. 11.</i> ——— <i>lineolatum.</i> |
| <i>Fig. 5.</i> <i>Amphidesma minimum.</i> | <i>Fig. 12.</i> ——— <i>disjunctum.</i> |
| <i>Fig. 6.</i> <i>Venus obtusa.</i> | <i>Fig. 13.</i> ——— <i>turritella.</i> |
| <i>Fig. 7.</i> <i>Pullastra nana.</i> | <i>Fig. 14.</i> <i>Buccinum duplicatum.</i> |
| <i>Fig. 8.</i> <i>Modiola cymbæformis.</i> | |

PLATE XL.—(*Lithographic View of Gosau-thal.*)

In the foreground are the church and principal village of Gosau-thal. The wooded mountain on the right is the Horn, that on the left is the Ressenberg; the summit of the former being composed of reddish, gritty sandstone, the latter of greenish, micaceous whetstone; and both are based upon blue marls with a profusion of shells, which are best exposed in deep ravines right and left of the spectator.

The steep and arid peaks in front consist of Alpine limestone, chiefly considered as the equivalents of the oolitic series, and are called in the neighbourhood the Stein Gebirge, each peak being known by a local name, as the "Donner Kogel," "Henner Kogel," &c.

EXPLANATION OF THE PLATES.

PLATE XLI.

Illustrates Dr. Buckland's memoir on Fossil Bones of the Iguanodon found in the Iron Sand of the Wealden Formation in the Isle of Wight and Isle of Purbeck: p. 425.

PLATE XLII.

Map to illustrate Mr. R. C. Taylor's account of a part of the Mineral Basin of South Wales, in the vicinity of Pontypool. The portion of the Map coloured represents the mountain limestone; the portion uncoloured, the coal measures: p. 433.

PLATE XLIII. to XLVI.

Illustrate Mr. Clift's memoir on the Megatherium: p. 437.

PLATE XLIII.

A copy of a portion of a Manuscript Map in the possession of Woodbine Parish, Jun., Esq., which comprehends that part of Spanish America in which those Remains of the Megatherium which have hitherto been sent to Europe were chiefly discovered.

No. 1. Denotes the situation on the River Lujan (or Luxan) whence the bones were derived which were sent to Spain in 1789 by the Marquis of Loreto, and from which were constructed the Skeleton of the Megatherium now preserved in the Royal Cabinet of Natural History at Madrid, described and figured by Don Juan Bautista Bru, and published by Don Joseph Garriga, under the title "*Descripcion del Esqueleto de un Quadrúpedo muy corpulento y raro,*" Madrid, 1796:—and by Messrs. Pander and D'Alton under the name of "*Das Riesen-Faulthier, Bradypus giganteus,*" Bonn, 1821.

No. 2. Rincon de Sosa, (situated in the southern part of the Map,) the property of Don Hilario Sosa, on the banks of the River Salado, the spot on which were discovered the Bones which form the subject of the present paper. Not any portion of Shell or Cuirass was found at this spot.

No. 3. The lake Las Averias, at which locality was found the most perfect example of the Cuirass, imbedded in a stratum of hard clay, at about four feet below the upper surface, together with some bones, which were exposed to view by the occasional beating of the waters against the sides of the Lake in stormy weather. The shell, when first discovered, (according to the assurances of the Peons, or country people, who accompanied the person sent by Mr. Parish to the spot,) was at least twelve feet in length, and from four to six feet in the widest or deepest part. The Bones on being taken out of the earth almost immediately mouldered away. A fragment of the pelvis was all that reached Buenos Ayres. The Skeleton was said to have appeared to be as large as that found at Señor Sosa's.

An external and internal view of a small but characteristic fragment of this Shell or Cuirass is given in Plate LXVI.

EXPLANATION OF THE PLATES.

No. 4. Villanueva. The bones found at this spot, dug out of the bed of a small rivulet, were of small size, and in a very fragile state, and crumbled to pieces on exposure to the air. Part of a jaw with one very small though nearly perfect tooth in the socket, part of a scapula, and some of the feet-bones were all that were capable of being preserved. The shell lay about a foot below the principal mass of the bones, the concave side uppermost, and resembled the section of a large cask; but would not bear to be lifted out of its bed, broke into small pieces, and crumbled to dust almost immediately.

PLATE XLIV.

An outline traced from Plate I. of Messrs. Pander and D'Alton's work above mentioned, with the intention of showing all the parts hitherto known, or supposed to be known, of this extraordinary animal, the Megatherium.

The simple outline represents the state of the skeleton, as now articulated, in the Royal Cabinet of Natural History at Madrid. Whether properly or improperly mounted, i. e. whether all the parts are of one or more individuals, whether they belong to the situation or position in which they are placed, whether all the parts are genuine or partly modelled, or whether parts are eked out by bones that do not belong to the part or situation in which they are now located, does not interfere with the object of the outline in this Diagram; no blame being intended to be attributed to the Articulator, who, probably, had little or no guide in such a difficult task. Upon this outline are engraved up, but in a *faint* degree, 1st, those parts which have been collected and preserved by Mr. Parish that also exist in the Madrid Skeleton; 2ndly, *in a greater degree of strength*, those parts which are preserved in the series of Bones described in this paper which are deficient in the Skeleton at Madrid; thus endeavouring to show at one view the general tenour of the Skeleton, together with all the important points hitherto determined.

PLATE XLV.

Fig. 1. represents, of the natural size, the last phalanx of a toe belonging to one of the fore feet. This has been selected as one of the smallest bones, capable of being represented on a quarto plate, that could in any degree give a just notion of the magnitude of the creature to which it appertained; and by comparison with the same bone *in situ* in Plate XLIV. it cannot fail of answering that intention better than the most correct description, or minute detail of admeasurement.

Fig. 2. represents, also of the natural dimension, a molar tooth or grinder, of which class all the teeth of the animal consist. This tooth was selected as one of the largest and most entire among those discovered; but although imperfect as regards its entire length (of which it is about two inches minus at its lower extremity, a fact determined by other specimens, less perfect in other respects), it shows more of its real form and structure than a perfect example could have permitted from any one point of view. This figure shows the inclination of the four facets of which the grinding

EXPLANATION OF THE PLATES.

or cutting surface of the tooth is composed,—the curved and slightly convex form of the anterior part of its body,—its flat side slightly depressed in the centre, and its flat and somewhat concave posterior surface. The fractured lower part permits a view of its square hollow cavity, which contained the vascular pyramidal pulp, on and from which the tooth was continually growing and projected upwards, in proportion as its grinding surface was worn away by attrition.

PLATE XLVI.

Two views of a small fragment of the shell or cuirass discovered at Las Averias, and described at No. 3. Plate XLIII., represented of the natural size. Although a considerable number of pieces of this armour have been preserved,—as many, perhaps, as would cover a space of five feet square,—it was difficult to select a portion sufficiently perfect on both surfaces to show its structure satisfactorily. A great part of this covering is incrustated on both surfaces by a very dense calcareous cement, the removal of which always produced more or less injury to the fragile surface. In this example, however, both surfaces are sufficiently perfect to show the relative size and number of tesseræ of which it is composed, and their forms, which are generally irregular hexagons. They are united to each other

Fig. 1. The external surface.

Fig. 2. The internal surface.

PLATE XLVII.

Sections in North Wales, distinguishing stratification from cleavage; in illustration of Prof. Sedgwick's memoir on the Structure of large mineral masses, p. 461.

Fig. 1. Transverse section through a part of the great chain of North Wales, showing the anticlinal lines. The cleavage planes are omitted: see p. 470.

Fig. 2. Section through the western flank of the chain, as seen on the south side of the great road about seven miles east of Bangor. The beds and cleavage planes are both exhibited: see p. 475.

Fig. 3. Section near Harlech; (*a*) beds, (*b*) cleavage planes: p. 475.

Fig. 4 and 4 a. Contorted strata on the left bank of the Towey: pp. 470, 475.

Fig. 5. represents the position of the beds and cleavage planes in a section on the banks of the Wye, a few miles above Rhaiadr: p. 476.

Fig. 6. Arched beds in the slate quarry called Craig y Grebbin, on the road from Llan-gollen to Ruthin: p. 476.

Fig. 7. Section of calcareous slate rock, with subordinate beds of impure limestone, on the west side of Foel Faur, about two miles from Llanrhaidr: p. 476.

Fig. 8. Profile of a ridge a few miles south-east of Bala. The lines represent the cleavage planes; and the dots the stripes in the slate: p. 477.