

cation, an exercise of one of the classes of school-masters, at Exeter Hall, at which we were present a few evenings since: an exercise so incontestably evidencing six months of solid progress and acquirement on the part of those who, six months ago, knew nothing, as to confirm all our favourable judgment upon the applicability of the method in question to the instruction of the English people.

The family of the late M. Petit-Radel, who devoted his life to the investigation of the gigantic constructions known as Pelasgic or Cyclopean, and enriched the *Bibliothèque Mazarine*, of which he was director, with a valuable collection of models of many of those remarkable monuments, have put together the unpublished documents left by that learned writer on the subject, and given them to the press, under the title of *Recherches sur les Monuments Pélasgiques ou Cyclopéens*.

The Minister of Public Instruction has despatched M. Noël Desvergers into Sicily to seek the traces which the Normans may have left behind of their establishment there, in the eleventh century, and to collect such documents as may help to throw light on the two previous centuries of that country's history, under the dominion of the Arabs.—The same authority, in conjunction with the Minister for Foreign Affairs is likewise about to send the Chevalier Bourgoin, Vicomte d'Orli, an orientalist, formerly attached to the *Bibliothèque du Roi*, to inspect the dépôts of archives existing in the same kingdom (the Two Sicilies), and in Corsica,—with a view to collecting all such unknown documents as throw light upon the history of Corsica, and the ancient commercial relations of its inhabitants with Italy, Spain, France, and the Levant.

Among the new works announced in the French papers as published or forthcoming, are—'Colomba,' by Prosper Mérimée; 'Les Cent Jours,' by M. Capefigue, a sequel to his work on Europe during the Consulate and Empire of Napoléon, reviewed in this paper, No. 654; 'Histoire des Églises du Désert, chez les Protestans de France, depuis le fin du règne de Louis XIV. jusqu'à la Révolution Française,' by Charles Cocquerel; 'Histoire du Synode de Dordrecht, considéré sous ses Rapports Religieux et Politique, des 1609 à 1619,' by M. N. Chatelain; 'De l'Humanité et de ses divers Ordres de Civilisation,' by Joanny Bonnetain; 'De la Démocratie chez les Prédicateurs de la Ligue,' by M. Charles Labitte; 'Traité de la Prerogative Royale en France et en Angleterre, suivi d'un Essai sur le Pouvoir des Rois à Lacédémone,' by M. Lorieux; and the first series, including the 12th, 13th, 14th, and 15th centuries, of a 'Recueil de Chants Historiques Français, depuis le douzième jusqu'au dix-huitième Siècle,' with Notes, and an Introduction, by M. Le Roux de Lincy; 'Assises de Jérusalem,' by the Comte Beugnot—a collection of the celebrated works on jurisprudence, known under this name, that formed the text according to which the Christian states founded by the Crusaders in the East were governed, and forming a portion of that 'Recueil des Historiens des Croisades,' which the Academy of Inscriptions and Belles Lettres is preparing, in continuation of the valuable collections commenced by the learned Benedictines; 'De l'Unité Spirituelle, ou de la Société et de son but au-delà du temps,' by M. Antoine Blanc de Saint-Bonnet.—To these notices of publication, we may add that the edition of Dion Cassius, which Messrs. Didot are about to add to their 'Bibliothèque des Auteurs Grecs,' is advertised to contain three new unpublished fragments of that historian, communicated by M. Angelo Mai, already so conspicuous as the discoverer of Cicero's treatise 'De Re publicâ,' and many other important fragments of various Greek and Latin authors.

BRITISH INSTITUTION, PALL MALL.

The Gallery, with a Collection of Pictures from the Italian, Flemish, and Dutch Schools; also the works of the deceased English Artists, Sir J. Reynolds, Wilson, Gainborough, Hogarth, and a Selection from the pencil of the late Thomas Stothard, Esq. R.A., IS OPEN DAILY, from Ten in the Morning till Six in the Evening. Admission, 1s.; Catalogue, 1s.

WILLIAM BARNARD, Keeper.

THE DIORAMA, REGENT'S PARK.

THE TWO NEW PICTURES now exhibiting, represent the Interior of the CATHEDRAL OF AUCH, in the South of France, and the SHRINE OF THE NATIVITY, at Bethlehem, taken from a sketch made on the spot by D. Roberts, R.A., in 1839, with various effects of light and shade. Both Pictures are painted by M. Renoux. Open from Ten till Five.

ROYAL POLYTECHNIC INSTITUTION, REGENT STREET.—FIRST EXHIBITION of, and Lecture on, BAIN'S ELECTRO-MAGNETIC PRINTING TELEGRAPH, by means of which a banker in London can write a Letter in the office of a correspondent in Edinburgh. The letter, with its answer, can be conveyed the 800 miles in a very few minutes. SIXTY PATENTED ELECTRIC CLOCKS, by BARWISE and BAIN, MOINAU'S PATENTED CLOCKS, CARY'S ORRERY and the NEW DISSOLVING VIEWS, to which a magnificent Fire Scene has been added. PHOTOGRAPHIC PORTRAITS, nearly 2,000 Works which display eminent Art, Science, and Ingenuity. Microscope, Diver, Diving Bell, and popular Lectures and Experiments. CANTON, and other beautiful COSMORAMIC VIEWS, are added to the Evening Exhibition.—Admission, 1s.

THE THAMES TUNNEL

is OPEN daily (Sunday excepted), from Nine o'clock in the Morning until dusk. Entrance is on the Surrey side of the River, close to Rotherhithe Church. The Tunnel is brilliantly lighted with gas.—Admittance 1s. each.—The Foot Passengers' Shaft at Wapping, 55 feet in diameter, is now in progress. Company's Office, J. CHARLIER, Clerk to the Company. Walbrook Buildings, Walbrook, 28 July, 1841.

SCIENTIFIC AND LITERARY

GEOLOGICAL SOCIETY.

Feb. 24.—R. I. Murchison, Esq. Pres., in the chair. Mr. Owen read a paper on parts of the Skeleton of three species of Labyrinthodon from the New Red Sandstone of Warwickshire, with remarks on the probable identity of the Cheirotherium with this genus of extinct Batrachians. In a former paper (see *Athenæum*, No. 699,) Mr. Owen described in great detail, the complicated peculiarities in the dental structure of the Labyrinthodon, exhibited in slices, obtained from about the middle third part of the tooth; and he inferred from the external longitudinal grooves diminishing in number towards the apex of the tooth, that the internal structure of that portion, which he had not then microscopically investigated, would prove to be more simple than the middle. Since that paper was read, Mr. Owen has been enabled fully to verify this inference, by the examination of slices of a tooth of the *Labyrinthodon leptognathus*, found at Coton End, near Warwick, which resemble in their intimate structure that of the entire tooth of the ordinary Batrachia, and of most reptiles. The principal object of this memoir being to describe the remains of the skeleton of the Labyrinthodon which have been found in England, Mr. Owen dwells at great length upon the peculiarities of each bone, indicating, with his wonted accuracy, and by means of his extensive knowledge, the points of resemblance to recent Batrachia and Crocodiles; and demonstrating most clearly, that this very ancient extinct reptile possessed characters, which at present are not found united in any one genus of existing animals. We can give only the general conclusions of the author. The remains which are thus described consist of portions of the upper and lower jaws, an anterior frontal bone, two vertebrae, a sternum, a fractured humerus, an iliac bone with a great part of the acetabulum, the head of a femur, and two ungual phalanges. These bones were found detached, and some of them in different quarries; but at Leamington there was discovered a closely and irregularly aggregated group of bones manifestly belonging to the same skeleton, and including four vertebrae more or less complete, portions of ribs, a humerus, a femur, and the two tibiae, one end of a large flat bone, and several small dermal osseous scutæ. In the course of the paper abundant proofs are given that all these remains belong to the Labyrinthodon, possessing the same intermixture of Batrachian and Crocodilian characters. With respect to the bones of the head, Mr. Owen says, if the cranial structure of the Labyrinthodon be compared with the Batrachian condition of the same part, a striking and important difference will be seen, while an approximate agreement with that of the Crocodilian will be found to exist. In both the caducibranchiate and perennibranchiate species of Batrachia, the upper maxillary bones present the form of slender elongated styles, attached only by a slightly expanded anterior extremity, from which they project backwards, and generally terminate in a free and disengaged point; and their external surface rises almost vertically above the alveolar margin, and is not extended horizontally over the upper surface of the skull, a very wide interval being left between the maxillary and nasal bones; and the palatal processes of the former contribute as little to the formation of the floor of the same cavity. In the crocodile, on the contrary, the palatal processes of the maxillary bones extend horizontally inwards, and meet at the middle line of the roof of the mouth, forming an un-

broken floor to the nasal cavity. In the Labyrinthodon the superior maxillary extends inwards to the nasal bone, constituting with it a continuous strong bony roof over the nasal cavities; but the palatal processes, instead of reaching to the middle line, as in the crocodile, are very narrow, as in the Batrachia; and the osseous roof of the mouth is principally composed of a pair of broad and flat bones analogous to, but of greater relative extent than, the divided vomer of Batrachia. In this part of its structure, Mr. Owen states, the Labyrinthodon comes physiologically nearest to the crocodile, but that the structure itself, morphologically, is essentially Batrachian, the bony roof of the mouth being formed by a greater development of the vomerine bones situated, as in the Batrachians, at a part of the skull which is occupied solely by the maxillary bones in the crocodiles. The most marked character, however, in this portion of the Labyrinthodon, as distinguishing it from that of the crocodile, is the occurrence of palatal teeth. In the *L. leptognathus*, a row of five transversal teeth is arranged across the anterior expansion of each palatine bone, the three median ones being small and equal, and the two exterior much larger; while from the outermost of the latter commences a longitudinal row of small and equal sized teeth, which is continued backward along the outer margin of the palatine bone, the whole series describing an arch nearly concentric with the external maxillary teeth. In Laceratine reptiles, the examples of a palatal row of teeth are very few, and, where it exists, it is short, and situated towards the back of the palate upon the pterygoid bones, as in the Iguana and Mosasaur. In the Batrachia, the palatine teeth are mostly arranged transversely at the anterior part of the divided vomer in the frog, and at the posterior part in certain toads: they form also an extensive row along the anterior margin of the vomer in the Menopome and Salamander; and in the Amphiuma, a longitudinal series along the outer edge of the long and narrow palatine bone. It has been just shown that in the Labyrinthodon both these dispositions of the palatal teeth are combined. The maxillary teeth are almost all of moderate and equal size, and are closely arranged in a single straight row, each tooth being implanted by a broad base in a distinct but not deep socket, whilst the three remaining teeth in the portion of *L. leptognathus* examined by Mr. Owen, are much larger and less regularly situated at the anterior part of the dental series. The base of each tooth is ankylosed to the outer wall of the socket, and projects directly from it, there being no external alveolar ridge. The basal third of the serial teeth is fluted, but the apical two-thirds are cylindrical and smooth. With respect to the shedding and renewal of the maxillary and palatal teeth in the *L. leptognathus*, Mr. Owen shows, that the process took place alternately in each series, as in many fishes. From the close resemblance between the Labyrinthodon and the Saurians in the physiological condition of the nasal cavity, the author believes that the extinct animal differed from living Batrachia, in having distinct posterior nasal apertures surrounded by bone, and placed far behind the anterior or external nostrils, and that, therefore, the mode of respiration was the same as in the higher air-breathing reptiles; from this construction he also infers, that the Labyrinthodon had well developed ribs, and not merely rudimentary styles as in existing Batrachia. The facial division of the skull was broad and flattened, resembling that of the gigantic salamander and the alligator. The outer surface of the nasal and maxillary bones is sculptured as in the Crocodilian family, but in a relatively larger pattern; nevertheless, as analogous sculpturing characterizes the cranial and other bones of certain fishes, as well as the jugal bones of the spotted cavy among Mammalia, Mr. Owen lays less stress on this indication of Saurian affinities, than he does on the unquestionably Batrachian characters exhibited in the expanse and entireness of the maxillary wall of the skull. The posterior and anterior palatal foraminae agreed most nearly with those of the Iguana. In the *L. leptognathus*, the length of the head, as compared with the breadth, approximates more nearly to the Crocodilian proportions than to the ordinary Batrachian ones. In describing a portion, six inches in length, of a long straight left ramus of the lower jaw of the *L. leptognathus*, from near Warwick, the author dwells on other striking Batrachoid