

of that detailed comparative morphology of the teeth, in which the homologies of the several cusps is considered, and from which the American palæontologists have been able to draw very important conclusions as to the phylogeny of many groups of mammals.

In a paper entitled "Über die Herkunft unserer Thierwelt eine Zoogeographisch Skizze," 1867, Rüttimeyer gives a masterly account of the distribution of the mammalia, showing the relations of the fossil faunas to one another and to the recent forms. It is a testimony to his sagacity that the great additions to our knowledge of this subject have confirmed most of his conclusions, and have rendered very few untenable.

He was elected a Foreign Member of the Geological Society of London in 1882.

Up to the time of his death Prof. Rüttimeyer maintained a lively interest in all scientific researches, and carried on his correspondence to the last. He died at Basel on 26th November, 1895.

E. A. WÜNSCH, F.G.S.

BORN 1822.

DIED NOVEMBER 19TH, 1895.

THIS gentleman was one of the original members of the Glasgow Geological Society, which was founded in 1858, and he has served the office of Vice-President several times from 1858 to 1881, when he left Glasgow to reside at Carharrack, Scorrier, Cornwall, where he died November 19th, aged 73 years.

The most important service which he rendered to geological science was his discovery in 1865 of *erect trees buried in volcanic ash at Arran*. These trees were discovered in the Lower Carboniferous strata of the north-eastern part of Arran in the sea-cliff, about five miles north of Corrie, near the village of Laggan. Here strata of volcanic ash occur, forming a solid rock cemented by carbonate of lime and enveloping trunks of trees, determined by Mr. Binney to belong to the genera *Sigillaria* and *Lepidodendron*. Sir Charles Lyell mentions that he visited the spot in company with Mr. Wünsch in 1870, and saw that the trees with their roots, of which about fourteen had been observed, occur at two distinct levels in volcanic tuffs, parallel to each other, and inclined at an angle of about 40°, having between them beds of shale and coaly matter seven feet thick. It is evident that the trees were overwhelmed by a shower of ashes from some neighbouring volcanic vent, as Pompeii was buried by matter ejected from Vesuvius. The trunks, several of them from three to five feet in circumference, remained with their stigmarian roots spreading through the stratum below, which had served as a soil. The trees must have continued for years in an upright position after they were killed by the shower of volcanic ash, giving time for a partial decay of the interior, so as to afford hollow cylinders into which the spores of plants were wafted. These spores germinated and grew, until finally their stems were petrified by carbonate of lime, like some of the remaining portions of the wood of the original *Sigillaria* tree-trunks.—"Lyell's Students Elements," 4th edition, 1885, pp. 496, 497.

THE HON. WALTER B. D. MANTELL, F.G.S.—We regret to record the loss of this excellent naturalist and geologist, who died at Wellington, New Zealand, September 7th, 1895, in his 75th year. He was the eldest son of the well-known geologist, Dr. G. A. Mantell, F.R.S., and settled in New Zealand in 1840, where he was for years a member of the Colonial Government. We hope to give a fuller notice of his work later on.

MISCELLANEOUS.

SEARCH FOR COAL IN EAST ANGLIA.—The Eastern Counties Coal Boring Association has abandoned the hope of finding coal at Stutton on the Stour, where the bore has been carried down 1,525 feet. The consulting geologists and the mining engineer expert are agreed that the rocks reached are evidently older than the Coal-measures. The next trial bore is likely to be made either some ten miles to the north, about Bramford, in Suffolk, or the same distance to the south, near Bentley or Weeley, in Essex. At present the latter site seems to be most in favour.—*St. James Gazette*, November 28th, 1895.

GEOLOGY OF THE SAN FRANCISCO PENINSULA.—Observations made by Mr. A. C. Lawson on the geology of the San Francisco Peninsula show the presence of seven groups of rocks or “terranes.” (1) Crystalline limestone, of unknown age; (2) Granite, referred to as the Montara granite, which is intrusive in the crystalline rock, is perhaps of post-Jurassic age, and is spoken of as “a great batholite, which has invaded the crust from below”; (3) The Franciscan series, probably of Cretaceous age, in which there are not only grits, conglomerates, shales, great beds of sandstone, and some volcanic rocks, but also foraminiferal limestones, and peculiarly-bedded Radiolarian cherts; (4) Sandstone of Eocene age; (5) Monterey series (Miocene); (6) Merced series (Pliocene); and (7) Terrace formations (Pleistocene and later). The Radiolarian cherts of the Franciscan series are hard, flinty, siliceous rocks, of varied colour, and they occur in thin sheets (two to four inches thick) with partings of shale; but they are not of great extent. The beds are, in places, several hundred feet thick, and they are interbedded with sandstones. In many cases the cherts are true jaspers, and sometimes they pass into a quartz-rock resembling vein-quartz. The Radiolaria appear as minute dots quite distinct from the matrix. The suggestion that these cherts are deep-sea deposits is negatived by their interbedding with sandstones. Nor can they be considered as mainly organic. The silica of the cherts seems to have been originally an amorphous chemical precipitate, deposited at local centres on the sea-bottom, in which Radiolarian remains were sporadically entombed. The most probable origin of the bulk of the silica is considered by Mr. Lawson to have been sub-marine siliceous springs of solfataric character. (*American Geologist*, June, 1895.)