

unresting' home. And in this change the sea has deepened; and, while the shore-animals were left above, a new feeding-ground was thus opened to immigration from a new province and a deeper zone.

It is worth notice that the species of Gasteropods and Cephalopods which are generically similar to those of the Greensand occur here only in the lowest beds of the Chalk; which indicates rather a deeper zone than a changed province. In Mr. Whitaker's 'Chalk-rock' many of them reappear; and I therefore regard the fauna of that singular stratum as the result, among other causes, of a temporary and partial uplifting.

The change from Shanklin Sands to Gault was one of depression; but from Gault to Greensand was upheaval; and from Greensand to Chalk it was depression again.

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ABSTRACTS OF FOREIGN MEMOIRS.

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GEOLOGY OF THE HIMALAYAS.

DR. F. STOLICZKA has recently communicated to the Academy of Sciences, Vienna, a brief account of his expedition to the Valley of Spiti and the upper regions of the Himalayan Chain. He intended to traverse a part of the province of Tchou-Tchou, but this project had to be abandoned, because the natives opposed the passage of Dr. Stoliczka and his companion traveller, Mr. J. Mallet, of the Geological Survey of India, with the thirty-six coolies and ten soldiers in their service. The Himalayas were crossed by the Parang-Là Pass,\* 19,000 feet above the level of the sea, between the Sutlej and the Indus. The geological end in view was successfully attained. The existence of nine different formations has been determined in the Spiti Valley, where only two were previously known. The SILURIAN formation extends to the defile of Bhaleh, where it disappears beneath the CARBONIFEROUS strata, easily recognized by their fossils. Above the latter, the formations succeed in the following order:—

1. Well-developed TRIASSIC limestones with *Halobia Lommeli*, *Orthoceras*, *Auloceras*, *Ammonites* of the group *Globosi*, and numerous *Brachiopoda*.
2. Bituminous limestones, containing a large thick-shelled bivalve, *Megalodus triquetus*. These limestones represent probably the Rhætic series.
3. 'Limestones of the Pass of Parang-Là,' very analogous to the Hierlatz beds† of the Alps, rich in *Brachiopoda*, and containing *Belemnites* and some rare *Ammonites*.
4. Black Shales, with concretions, already known by their remains of *Cephalopoda*.

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\* Lat. 33° N., long. 78° E.

† The Hierlatz beds are of the age of the Middle Lias, and contain fossils chiefly characteristic of the zone of *Am. margaritatus*.—R. T.

5. Yellow sandy limestones with *Avicula echinata* and *Opis*, probably equivalent with Jurassic beds of Nattheim,\* Wurtemberg.
6. Limestone with *Nodosaria*, *Dentalina*, *Cristellaria*, and fragments of *Rudistes*, on which are superimposed calcareous marls without fossils. These deposits indicate the presence of the Cretaceous system, hitherto unrecognized in the Chain of the Himalayas, but known in Persia.

The expedition suffered very much by the want of water and provisions, as also from the cold. The flora and fauna were found to be excessively poor; the terrestrial Mollusca in the Spiti Valley are represented by only three species of *Helix*, one *Pupa*, and a *Limnaea*.—From 'L'Institut,' April. R. T.

#### SOME NEW TERTIARY FOSSILS. By Dr. LOEW.

(Proceedings of the Imperial Geological Institute, Vienna, June 21, 1864.)

THESE have been found in the Cerithian Sands of Nussdorf (NW. of Vienna), intercalated between brackish plastic clay. Among them are two species of *Paludina* (*P. ventrosa*, Mont., and *P. Baltica*, Nils.), both now inhabiting brackish waters, the first on the coasts of the Channel, the other in the Baltic, and an undetermined species of *Pupa*, the first representative of this genus hitherto found in Tertiary deposits. With these shells were found a number of seeds of a species of *Celtis*, of the rusty colour common to all organic remains preserved in the Cerithian Sands. They are hollow in their interior, fragile, and evidently inferior in size to those of *Celtis australis* and *Celtis occidentalis*. The characteristic reticulation of their surfaces being more or less rubbed off, it is hardly possible to state to which of the two living species, *C. australis* (a native of the European and African coasts of the Mediterranean, also said to occur on the mountains of Tyrol, Carniola, Styria, and Hungary), or *Celtis occidentalis* (a native of the south of Northern America), they must be referred. COUNT M.

#### REVIEWS.

THE APPLICATIONS OF GEOLOGY TO THE ARTS AND MANUFACTURES. Being Six Lectures on Practical Geology, delivered before the Society of Arts, as a part of the Cantor Series of Lectures for 1865. By Professor D. T. ANSTED, M.A., F.R.S. London: HARDWICKE. 1865.

THE attempt commenced some years ago by the Society of Arts to ascertain and organize the Lecture-giving power of the scientific community seems to have been successful in some respects, and to have obtained recognition of success in a most satisfactory form. The celebrated Dr. Cantor, of the E. I. Medical Service,

\* Of the age of the Coral-rag.—T. R.