

doubts, first, the accuracy of the determination, and adds that the *Volzia* was not found in the mottled marls, but in deposits "parallel to the Permian limestone."

The Zechstein (dolomites, dolomitic limestones, oolite, and gypsum), which reaches a great thickness in the provinces of Kazan and Samara, is a formation which was contemporary with the Permian marls, sandstones, and conglomerates which are widely spread in the provinces of Kazan, Nijni, Vyatka, Perm, Ufa, and Orenburg. On the places where both meet together, the Zechstein penetrates in the shape of thinner sheets into the marls. The copper sandstones of the Ural also would be, according to the same author, contemporary with the Zechstein. These marls and sandstones have a characteristic fauna, and MM. Stuckenberg and Zaitseff discovered in them the following fossils:—*Lingula orientalis*, Golovk.; *Unio umbonatus*, Fisch.; *Unio castor*, Eichw.; *Aucella Hausmanni*, Goldf.; *Estheria exigua*, Eichw.; *Beyrichia Pyrrhae*, Eichw.; and remains of ganoid fishes and lizards. These fossils are characteristic of the group, but it contains also the Zechstein fossils, *Stenopora columnaris*, Schl., *Schizodus obscurus*, Gein., *Schizodus rossicus*, Vern., *Nucula Beyrichi*, Bron., *Murchisonia subangulata*, Vern., *Gervillia sulcata*, Gein., *Gervillia serotophaga*, Schl., *Hinnites (Avicula) speluncaria*, Schloth., *Arca Kingiana*, Vern., *Clidophorus Pallasi*, Vern., *Terebratula elongata*, Schl., *Productus Cancrini*, Vern., *Camarophoria Schlotheimi*, Buch., and *Spirifer rugulatus*, Kut. The flora of this series is characterised by many Coniferæ (among others, the *Uhlmannia Bronnii* and *brevifolia* Noeggerathia (*expansa* and *cuneifolia*), ferns, &c. These deposits are thus Permian, and it is worthy of notice that they contain the *Unio umbonatus* and *castor*, the *Estheria exigua*, and the *Beyrichia Pyrrhae*.

As to the upper mottled marls, which are precisely the subject of the controversy, there was discovered in them but a very few fossils, by MM. Krotoff and Stuckenberg, namely, the four just mentioned (*Unio umbonatus*, *Unio castor*, *Estheria exigua*, and *Beyrichia Pyrrhae*), on the Volga at Tetushi, and the same in the Government of Vyatka, where the marls contain sheets of limestone; besides, M. Krotoff found Zechstein fossils, as *Arca Kingiana*, in the tuff-like limestone on the Volga, which M. Stuckenberg considers as belonging to the same series. Finally, there was discovered during a boring at Mount Bogdo (Astrakhan), in sandstones and conglomerates, a series of Permian fossils (*Matica minima*, Brown, *Turbonila volgensis*, Golowk., *Gervillia antiqua*, Mün., *Clidophorus Hollebeini*, *Clidophorus Pallasi*, Vern., *Schizodus rossicus*, Vern., *S. obscurus*, Gein., *Nucula Beyrichi*, Brown, *Leda speluncaria*, Gein., and *Hinnites (Avicula) speluncaria*, Schloth. M. Stuckenburg, considering the Bogdo sandstones as contemporary with the upper mottled marls, gives to it great weight; but it must be observed that the contemporaneity of the Bogdo marls with the upper mottled marls of the Volga is all but established.

As to the palæontological evidence produced for considering the upper mottled marls as Triassic, namely, those found of the Triassic, *Equisetites columnaris* (*Calamites arenaceus*), *Volzia heterophylla*, and *Estheria minuta*, M. Stuckenburg considers it unsatisfactory, and points out that the *Volzia heterophylla* was found rather in Permian deposits; and that Mr. Jones, in his "Monograph of the Fossil Estherie," considers the *Estheria minuta* of the Russian mottled marls as different from the *E. minuta*, Bronng., and rather like to the *E. tenella* of Jordan, which last belongs to the Permian and Carboniferous of Western Europe. As to the *Calamites arenaceus*, found by Barbot de Marny, F. Römer, in the last edition of his "Lethea geognostica," remarks that it is too badly preserved to be a decisive evidence. He concludes, therefore, that contrary to the opinion of almost all Russian geologists, that the mottled marls ought to be considered again as Permian. But, as seen from the above summary, it will be much more prudent to conclude that the whole question still remains open for further investigation.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE

CAMBRIDGE.—The Rede Lecture was delivered on Tuesday in the Senate House by Prof. Huxley, the subject being "The Origin of the Existing Forms of Animal Life, Construction or Evolution?" There were at least eleven hundred persons present, and amongst them nearly all the University dignitaries now in residence.

In the second part of the Natural Sciences Tripos sixteen men

and one lady are placed in the first class; of this Mr. Harmer of King's College is distinguished in Zoology and Comparative Anatomy; Mr. Reid of Cavendish College in Human Anatomy; and Mr. Sharrington of Caius College in Physiology.

Prof. Hughes has been elected to a Professorial Fellowship at Clare College.

Messrs. P. Frost, I. Todhunter, and Joseph Wolstenholme are to receive the degree of Doctor in Science.

The Woodwardian Professor dissents strongly from the proposal to place the Sedgwick Museum on the Downing Street site in front of the new museums.

SCIENTIFIC SERIALS

THE *Journal of Anatomy and Physiology* for April, 1883, contains:—A contribution to the study of *Spina bifida*, encephalocele, and anencephalus, by Prof. Cleland (Plates 11 and 12).—On the minute structure of the palatine nerves of the frog, and the termination of nerves in blood-vessels and glands, by Prof. W. Stirling and J. F. Macdonald (Plate 13).—On the lymphatics of Periosteum, by Drs. George and F. Elizabeth Hoggan (Plate 14).—The brachial plexus of the macaque monkey, and its analogy with that of man, by W. T. Brooks.—A case of primary sarcoma of the pleura, by R. W. Greenish (Plate 15).—Infiltrating carcinoma of the breast, by Dr. G. Barling.—Observations of the diameters of human vertebrae in different regions, by Dr. R. J. Anderson.—On a simple form of Lippman's capillary electrometer useful to physiologists, by Prof. McKendrick.—On so-called sponge-grafting, by Drs. K. Franks and P. S. Abraham (Plate 16).—The valvular action of the larynx, by Drs. T. L. Brunton and T. Cash.—Origin of the internal circumflex from the deep epigastric artery, by Dr. A. Thomson.—On cervical ribs and the so-called bicipital ribs in man in relation to the corresponding structures in the Cetacea, by Prof. Turner.—On a new form of ether microtome, by Dr. Cathcart.—On right-sided sigmoid flexure and rectum, by Dr. E. E. Maddox.—A note to Mr. Haswell's paper on myology of pigeon.

THE *Quarterly Journal of Microscopical Science* for April, 1883, contains:—On the anatomy and development of *Peripatus capensis*, by the late Prof. F. M. Balfour, edited by Professors Moseley and Sedgwick (Plates 13 to 20).—On a morphological variety of *Bacillus anthracis*, by Dr. E. Klein, with notes thereon by Prof. Ray Lankester (Plate 21).—Note on a pink Torula, by H. Marshall Ward (Plate 22).—On double staining nucleated blood corpuscles with anilin dyes, by Dr. V. Harris.—Some recent researches on the continuity of the protoplasm through the walls of vegetable cells, by W. Gardiner.—Review of recent researches on Spermatogenesis, by J. E. Bloomfield.—Note on a minute point in the structure of the spermatozoon of the newt, by G. F. Dowdeswell.—On the existence of Spengel's olfactory organ and of paired genital ducts in the pearly nautilus, by Prof. Ray Lankester and A. G. Bourne.

SOCIETIES AND ACADEMIES

LONDON

Royal Society, April 12.—"On a New Crinoid from the Southern Sea." By P. Herbert Carpenter, M.A., Assistant Master at Eton College. Communicated by W. B. Carpenter, C.B., M.D., F.R.S.

Among the collections of the late Sir Wyville Thomson, a small *Comatula* has recently been discovered which was dredged by the *Challenger* at a depth of 1800 fathoms in the Southern Sea. Although it is unusually small, the diameter of the calyx being only 2 mm., the characters presented by this form are such as to render it by far the most remarkable among all the types of recent Crinoids, whether stalked or free. The name proposed for it is *Thaumalocrinus renovatus*.

But it is distinguished by four striking peculiarities:—

- (1.) The presence of a closed ring of basals upon the exterior of the calyx.
- (2.) The persistence of the oral plates of the larva, as in *Hyo-rinus* and *Rhizocrinus*.
- (3.) The separation of the primary radials by interradials which rest on the basals.
- (4.) The presence of an arm-like appendage on the interradial plate of the anal side.

Taking these in order—

- (1.) No adult *Comatula*, except the recent *Atelecrinus* and