

The most important evidence was the observation, on the north slopes of Draper mountain, of three small bosses of the Shenandoah limestone projecting up through an extensive area of only slightly disturbed Devonian shales; these seem to furnish incontestible proof that the shales were laid down on a folded and eroded surface of Shenandoah limestone.

This has a wide bearing on the structure of the entire province, for it marks a period of folding that occurred about the beginning of Devonian time and one in the Lower Carboniferous, and shows that a portion of the valley was dry land during Devonian times.

24. *The Trias and Jura of the Western States.* ALPHEUS HYATT, Boston, Mass. The author announced the following results of his studies upon the fossils of these two systems: The Trias, or at least a *Monotis* fauna having the aspect of a member of the Trias, has been found by Dr. Curtice while collecting for the U. S. Geological Survey in American cañon, south of Cisco, California. Just above this horizon there occurred a *Daonella* bed, and next above this a bed containing numerous *Ammonitine*. The *Daonellæ* were supposed to be Triassic until it was found that they passed sporadically into the *Ammonites* bed. The *Ammonitine* are of doubtful affinity, and it was found impracticable to decide whether they are Liassic or Triassic, because no sutures are preserved in any of the numerous examples. With these were also two species of rugose *Aptychi* not hitherto found below the upper Lias in Europe.

The Mesozoic rocks of Sailor's cañon and American cañon to the lower limits of the Snow Mountain tuffs contain a similar fauna, and none of them are younger than the Lias nor older than the Trias.

The announcement was made of the rediscovery of a number of Gabb's Triassic and Jurassic types, and among these were fossils from New Pass, Desatoya Mts., Nevada, which showed the occurrence of a fauna like that of Humboldt county to the west in Nevada, and that both are Muschelkalk. Gabb's types of *Ammonites nevadanus* and an associated species of *Coroniceras*, described as new, show the existence of the lower Lias in Esmeralda county, Nevada, thirty miles from Walker's lake. A collection of fossils loaned by Prof. Thomas Condon of Eugene City, Oregon, contains species identical with some of those found at Taylorville, Cal., in the Hardgram sandstone of the Upper Lias. Gabb's types also demonstrate the existence of the same sandstone at the Walker's lake locality, or Volcano, as Gabb named that region; and the fauna of this horizon in the Upper Lias is found at all three of these widely separated localities.

The fossils collected by the officers of the U. S. Geological Survey during the last four or five years represent the rocks of the western slope of the Sierra Nevada fairly well. These consist of *Aucellæ* and *Ammonitine* and some other less important and less characteristic fossils. The *Ammonitine* mainly belong to the genera *Perisphinctes* and *Cardioceras*, and these may be closely affiliated with species of the Russian faunas of the Upper Jura. The *Aucellæ* associated more or less with the *Ammonitine* tell the same story. They are all striated species and quite distinct from the smooth forms of the Knoxville slates. The *Aucellæ* occur in similar association with *Cardioceras* and *Perisphinctes* in the faunas of the Upper Jura in Russia; and their relations to the species of the same genus in the lower part of the Knoxville slates show that the Gold Belt series contains older faunas. These fossils were mainly from Mariposa, Calaveras and Tuolumne counties in California.

Gabb's type of *Perisphinctes (Amm.) nevadanus* was among those lately found, and it demonstrates, together with some other similar species collected by the U. S. Geological Survey near Colfax, that the dark slates of that region are also Upper Jurassic.

[TO BE CONTINUED.]

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A MEDIAN HORNED RHINOCEROS FROM THE
LOUP FORK BEDS OF NEBRASKA.*

By J. B. HATCHER, Princeton, N. J.

Hitherto no median horned rhinoceroses have been reported from the western continent. During last April and May, while engaged in explorations for the Princeton Scientific Expedition of 1893, in the Loup Fork beds of Sheridan Co., Nebraska, the writer had the good fortune to secure, among other interesting vertebrate fossils from these beds, the remains of a rhinoceros with a well-marked, median, nasal horn.

The material secured, while clearly belonging to the Rhinocerotidae, represents, nevertheless, a new genus of that family, which may be called *Teleoceras* in reference to the position of the horn on the end of the nasals. The species may be called *major*, in reference to its size, which is decidedly greater than that of any other known *American* member of the Rhinocerotidae.

The type specimen of *Teleoceras major* consists of the greater portion of the skull and lower jaw. These represent an animal about one-third larger than *Aphelops fossinger* (Cope). The teeth are very much worn, showing the individual to have been fully adult. It is readily distinguished from all known genera of the *Rhinocerotidae* by the following combination of characters: Absence of a *crochet* and presence of an *anticrochet* on the superior molars and premolars; with the presence of a sagittal crest (?) and of a median horn situated on the extreme point of the nasals. This horn is directed forward and upward, and extends considerably beyond the extremities of the nasals proper.

*Separate copies of this paper were published Feb. 1, 1894.

The principal specific characters are: *Post-tympanic* and *post-glenoid* processes confluent throughout two-thirds their length, entirely enclosing the *external auditory meatus*. Pterygoids slightly bifid. Anterior border of posterior nares on a line with posterior border of median sinus of second molar. Nasals not co-ossified. The structure of the teeth is very much obliterated by the wear to which they were subjected before the animal died. The inferior and superior molars are all represented in the type specimen, as well as the fourth upper and lower premolars. Of the superior dentition the second and third molars are the least worn, and, therefore, present the most trustworthy characters. The *dorsum* is very flat. The *median costa* is entirely wanting, and the *anterior* and *posterior costae* are but weakly developed. The *anterior sinus* is quite small and the *anterior vallum* is not strong. The *median sinus* is well developed and obstructed by a very large *anticrochet* and a small *crista*, but there is no *crochet*, as before stated. The *posterior sinus* is of ordinary size with a strong *posterior vallum*. In the last upper molar *only* there is a distinct *median tubercle*. In the type specimen the first upper molar and fourth premolar are so much worn that the enamel at the bottom of the median sinus, between the base of the anticrochet and the opposite side, has been removed, thus cutting off the inner portion of the median sinus, which now appears as an anterior fossette. By the same wear the enamel once covering the posterior vallum has been entirely removed in these teeth, and as a result the posterior sinus now appears as a posterior fossette. The *anterior borders* of the upper molars and premolars are convex, the *posterior* borders concave, excepting that of the last molar, which is convex. The molar and premolar teeth are very large in comparison with the skull, and the maxillaries are proportionately strengthened in order to receive them. The inferior molars and premolars seem to present no distinctive characters.

To the kindness of Prof. W. B. Scott, who had charge of the expedition, I am indebted for the privilege of publishing this preliminary notice, which will be followed later by a full description, with figures, of this and other material from the same beds.

NEW SPECIES OF CRINOIDS AND BRACHIOPODS FROM THE MISSOURI HAMILTON.

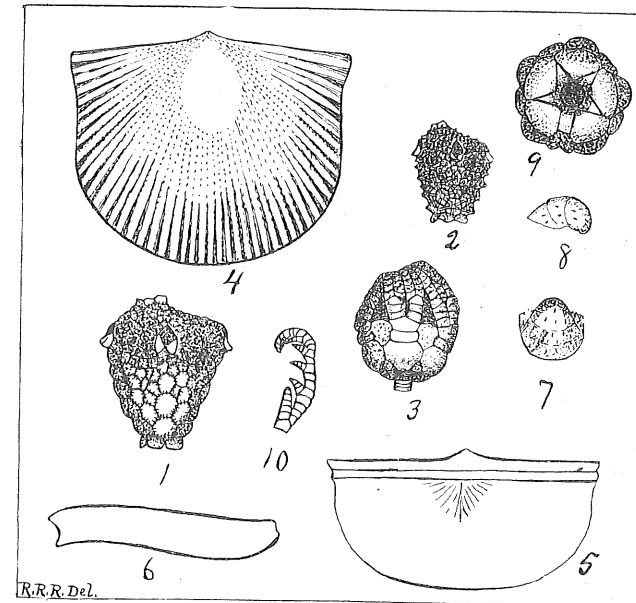
By R. R. ROWLEY, Louisiana, Mo.

Melocrinus tersus. (n. sp.)

Fig. 1. Side view of the body, natural size.

Calyx obconical; dome almost flat; basal plates four, three of which are quadrangular, the fourth and largest pentagonal. Breadth nearly twice the length, but slightly expanded; excavated for the reception of the column.

Of the first radials, three are heptagonal and two are hexagonal; width a little greater than length. Of the second radials two are heptagonal, two hexagonal, another? octagonal. In the ray to the left of the anal area, the second radial? is entirely separated from the first radial (a malformation)



FIGS. 1-10.—Illustrations of the species described in this paper.

by the abutment of the lower lateral edges of the large piece of the anal area and the large interradial to the left of the anal area. Third radials heptagonal, supporting, on the upper sloping sides, two small secondary radials.

Interradial areas filled by from 12 to 14 pieces, the lowest one of which is almost as large as the first radial and hexag-