

further particulars are wanted the undersigned will be glad to supply them.

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### OCCURRENCE OF THE MALONE AND TORCER FAUNAS AT THE BASE OF THE ARIZONA COMANCHEAN

THE stratigraphic problems associated with the interpretation of the Upper Jurassic-Lower Cretaceous sequence of the Malone district in Texas are well known. Briefly summarized, in 1905 Cragin described as the "Malone formation" strata near Malone, Texas, that contain ammonites and lamellibranchs.<sup>1</sup> He interpreted the entire assemblage of the Malone fossils as belonging to the Upper Jurassic. The Jurassic (Kimmeridgian) age of the Malone ammonites, collected by Cragin, was upheld by V. Uhlig and later by L. F. Spath. In 1926 F. L. Kitchin demonstrated that the *Trigoniae* described by Cragin could not be of earlier age than Valanginian (earliest Cretaceous) and emphasized that there was no proof that all of Cragin's fossils came from a single horizon.<sup>2</sup>

W. S. Adkins, therefore, restricted the term Malone to the Jurassic part of the section of central Malone

Mountain near Torcer station on the Southern Pacific Railway west of Sierra Blanca, and introduced the name Torcer for the Cretaceous (Neocomian) portion of Cragin's "Malone formation."<sup>3</sup>

In the lower part of the Cretaceous sequence near Bisbee, Arizona, there are limestone beds that contain abundantly represented and well preserved specimens of *Trigonia vyschetskii* Cragin, *Trigonia calderoni* (Castillo and Aguilera), *Trigonia goodelli* Cragin, *Trigonia proscabra* Cragin, *Pleuromya inconstans* Castillo and Aguilera, *Astarte (Eriphyla) malonensis* Cragin, *Exogyra potosina* Castillo and Aguilera and other lamellibranchs described by Cragin from the Malone area. The conditions of deposition apparently were the same as at Malone, and forms referred by Cragin to *Astrocoenia* and *Serpula* are found in abundance. Immediately above these limestone beds are cross-bedded sandstones and fresh-water-laid sandstones with large silicified tree logs. In the younger argillaceous limestones *Dufrenoya texana* Burckhardt, marking the Upper Aptian (Travis Peak), is found.

About 500 feet below the *Trigonia* beds are grits alternating with sandstones and impure limestones. The grits yield *Idoceras schucherti* (Cragin) which demonstrates the Kimmeridgian (early Upper Jurassic) age of these strata.

A detailed account of this find will be published in the near future.

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## SCIENTIFIC BOOKS

### ANATOMY OF VERTEBRATES

*The Microscopic Anatomy of Vertebrates.* By G. G. SCOTT and J. I. KENDALL. 306 pp., 167 figs. Lea and Febiger, Philadelphia, 1935.

THIS is an elementary treatise on vertebrate histology that is designed to fit a college course one semester in length. For this reason the descriptions have been kept brief and relatively simple, although by judicious elimination of minor detail and justifiably dogmatic presentation a surprisingly large amount of information is made accessible. The style is clear and readable and the arrangement of text-matter logical. There is an adequate index.

The illustrations, mostly original, are partly unlabelled photomicrographs and partly line drawings. The former are rather good in comparison to the natural limitations of this ideally desirable but practically disappointing medium. The line drawings make no pretense toward the faithful portrayal of cell, tissue or organ structure but exist as diagrams which serve

in a stylized way as keys to what might be found in actual preparations. No magnifications are given, since the authors believe college students incapable of comprehending such magnitudes. To the reviewer this seems a definite shortcoming and a palpable libel on collegiate intelligence. But even admitting that a college student can not visualize what is implied in an illustration being enlarged 10, 100 or 1,000 times the original size, it still is true that such information allows one to judge of relative size by knowing that certain drawings were made in the ratio of 200 to 400 units, and so on. Nevertheless, the authors state that the student constantly using the microscope will have little difficulty in appraising the degree of magnification and that he can measure things mentally by the familiar artifice of using the erythrocyte as a yardstick. One wonders, however, if escape has not been made from one difficulty into worse ones. The degree of magnification, as judged by the eye, is something like stating the apparent size of the moon, while the correct sensing of the absolute value of the micron is probably harder than understanding magnification values. Moreover, in a comparative course the verte-

<sup>1</sup> F. W. Cragin, "Paleontology of the Malone Jurassic Formation of Texas," U. S. Geol. Survey Bull. 266, 1905.

<sup>2</sup> F. L. Kitchin, "So-called Malone Jurassic Formation in Texas," *Geological Magazine*, Vol. 63, pp. 454-469, 1926.

<sup>3</sup> W. S. Adkins, "The Mesozoic Systems in Texas," University of Texas Bull. 3232, pp. 286-291, 1932.