

PALEONTOLOGY OF THE "COLTER FORMATION"
IN JACKSON HOLE, WYOMING

John F. Sutton
The Museum
Texas Tech University
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Research on sediments which were originally mapped as Miocene Colter Formation and subsequently discovered to contain a small pocket of Oligocene deposits continued this summer. This small exposure of Oligocene is of interest for several reasons. The deposits are the western-most exposures of Oligocene rocks known to occur in Wyoming and the relationship to the surrounding Colter Formation is poorly understood at this time. The fauna being recovered indicates that the deposits are Oligocene, and most probably very early Oligocene. The fauna includes a number of good wholly Oligocene genera and a few Eocene "holdovers". Most notable among these latter forms is a multituberculate which was thought to be extinct in the late Eocene. The fauna and nature of the deposits may help in establishing an idea of the ecology in early Oligocene time and, therefore, aid in understanding the disappearance of multituberculates, the longest lived order of mammals.

Methods used this summer included the standard paleontologic techniques for recovery of small mammals from a productive site. The deposits are first crawled to pick up any teeth or bone fragments which have weathered out and are on the surface. When this is completed, matrix is taken from the outcrops and placed in tight weave burlap bags, and these are placed in the stream to disassociate the clays. A tight weave bag of this type will retain any particle which is 1 mm. or larger and will allow the finer grained sand and clay particles to wash out. The resultant concentrate is dried and screened again to eliminate still more matrix. The concentrate was carried out on foot. Thanks are due to Gary Wright and his crew and to Franz Camenzind for help in this latter aspect of the work. Upon return to the lab the matrix is sorted manually to remove the teeth and bone from the concentrate. About two tons of matrix was processed this summer.

Results are very sketchy at this time since only about 1/5 of the concentrate has been sorted. Sorting should be complete by mid-February. We have recovered a number of interesting forms so far, however, and included in these are a jaw of a tiny eomyid rodent, several large ischomyid teeth, insectivores, other rodents, lagomorphs, artiodactyls, small carnivores, but unfortunately no multituberculates yet. A jaw of Mesohippus was recovered from the outcrop this summer and represents the largest specimen to be recovered from these deposits. Other fragmentary evidence points to large forms such as titanotheres and rhinoceros, but material has been so scrappy that no positive assignment is possible.

The results so far obtained illustrate several features we had hoped to find. The first identifiable artiodactyl teeth and the Mesohippus jaw tend to tie down the date to an early Oligocene age. These animals in conjunction with the micro-faunal elements illustrate that the unique multituberculate and other Eocene forms have survived into Oligocene time, and, since this association is found nowhere else, probably represents a unique environmental situation. In all probability we are dealing at least in part with animals found in an upland environment rather than the more typical stream border-floodplain environment.