

The Paleontology of the Colter Formation
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Study of the vertebrate faunas of the Colter formation was begun this summer using the biological station as a base of operations. The Colter formation itself is composed primarily of Miocene volcanic sediments derived largely from the Yellowstone-Absaroka volcanic field. The extent of the study area was not large, with localities in the Gros Ventre mountains, near Cunningham cabin, and along both forks of Pilgrim creek. Most of the field season was spent prospecting these areas for deposits of vertebrate fossils. Some collection of the promising areas was undertaken, but a concentrated program of washing and screening the sediments was not carried out during this field season. The field season revealed many localities with fragmentary remains of vertebrate fossils and three localities with fair vertebrate faunas.

Along Ditch creek in the Gros Ventre mountains two exposures of the Colter formation produced fossil wood and a few unidentifiable bone scraps. Some of the bulk samples taken from these exposures have not been processed yet and it is possible that they may produce a microfauna.

The locality near Cunningham cabin was suspected to be middle Miocene in age based on the vertebrates collected there in 1967. Our preliminary data from this season suggest that the locality may be somewhat younger, possibly late Miocene, based on the discovery of Merycodus, an ancestral antilocaprid, Monosaulax, a primitive beaver, and a late Miocene representative of the horse Merychippus. Other fossil elements found at this locality are not fully identified as yet and most of the bulk sample from this locality has not yet been processed.

The north fork of Pilgrim creek was prospected with no success. Several areas produced one or two pieces of badly worn bone, but nothing identifiable was found. Along the east fork, however, two localities with vertebrate fossils were found. The first of these localities had been prospected in the past and produced two skeletons in 1947 and a horse jaw in 1967. This locality was extensively prospected this summer and some bulk samples were taken. The surface prospecting yielded only two horse teeth which are tentatively assigned to Merychippus sp. The bulk sample was washed and screened. Picking of most of the material has turned up only two teeth of the rodent Proheteromys.

The other locality on the east fork of Pilgrim creek is located at the base of the section near the eastward limit of the exposed Colter formation. The locality is unique in that it is a siltstone which is not present at any of the other Colter localities. Fossils are not plentiful, however some teeth were found, enough to assign a tentative age to this part of the section. The genus Cylindrodon is represented by two teeth. This genus is exclusively early Oligocene in its temporal distribution. Other Oligocene genera represented in this fauna are Mustelavus and Palaeolagus. The majority of fossil material from this locality is fragmented and represented by bone scrap only. On the basis of this scant information, it is likely that this locality is not part of the Miocene Colter sequence, but rather is part of an earlier sequence of Oligocene deposition.

It is important to point out that these results are preliminary at best and further work must be done in the areas discussed above. The first field season, just completed, was primarily a prospecting season with more intense collection at the discovered sites to follow later. Thanks are extended to Dr. J. D. Love of the U. S. Geological Survey for his help and advice in locating exposures of the Colter formation and offering the benefit of many years of experience in the Teton area to my project.

The Colter Fauna

Insectivora

Fam. Soricidae

Domnina Cope, 1873

Fam. Talpidae

Scalopoides isodens (?) Wilson, 1960

Lagomorpha

Fam. Leporidae

Palaeolagus Leidy, 1856

Rodentia

Fam. Ischyromyidae

Cylindrodon Douglass, 1902

Fam. Eomyidae

Pseudotheridomys Schlosser (1926)

Fam. Sciuridae

Miospermophilus Black, 1963

Protospermophilus Gazin

Fam. Heteromyidae

Proheteromys (2 species) Wood, 1932

Fam. Castoridae

Monosaulax Stirton, 1935

Fam. Zapodidae

Pleisosminthus Viret, 1926

Carnivora

Fam. Mustelidae

Mustelavus Clark, 1936

Perissodactyla

Fam. Equidae

Merychippus (2 species) Leidy, 1857

Fam. Hyracodontidae

Hyracodont sp.

Artiodactyla

Fam. Merycoidodontidae

Merycochoerus Leidy, 1858

Brachycrus Matthew, 1901

Merychys Leidy, 1858

Fam. Camelidae

Oxydactylus Peterson, 1904

Fam. Antilocapridae

Merycodus Leidy, 1854

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