In June of 1958 the writer collected a fragment of a skull of *Sinopa cf. vulpecula* Matthew from the Cuchara formation near La Veta, Huerfano County, Colorado. Only two other fossil mammals are known to have been collected from the Cuchara formation: one of these is lost (letter from R. C. Hills to Walter Granger, dated December 7, 1916, in the files of the American Museum of Natural History); the other specimen is misplaced. The lost specimen was a P$^3$ of *Phenacodus intermedius* (letter from Walter Granger to R. C. Hills, dated November 23, 1916) and the misplaced specimen is a lower jaw of *Hyracotherium* (= *Eohippus*). Granger did not determine the species of the *Hyracotherium* specimen. Both *Hyracotherium* and *Phenacodus intermedius* are found throughout the early Eocene.

The *Sinopa* specimen, Yale Peabody Museum (YPM) No. 16460, is from the lower part of the Cuchara formation, probably less than 1000 feet above its base. The Cuchara formation is approximately 5000 feet thick in the La Veta area (Johnson 1958 p. 565). The exact locality is shown on aerial photograph No. CL22-30, of the 1:20,000 series flown by the Forest Service in 1937. Using the coordinate system described by Olson (1948 p. 189), the locality is placed on the photograph at 1.22-4.74 starting from the lower left hand
collimating mark. This exposure is in SW\(\frac{1}{4}\) S19 T29S R67W approximately four miles east of La Veta.

Order CARNIVORA
Suborder CREODONTA
Family Hyaenodontidae
Sinopa cf. vulpecula Matthew 1915

YPM No. 16460 is most similar to Sinopa vulpecula Matthew. The specimen consists of the orbital region of the skull with parts of P\(^4\)-M\(^3\) of both sides preserved. M\(^1\) is slightly smaller than referred specimens of S. vulpecula in the American Museum of Natural History. P\(^4\) and M\(^2\) agree well with the referred specimens. The M\(^2\) possesses a lingual cingulum; the lingual portion of M\(^1\) is missing. M\(^3\) had a metacone, but it is broken off. The presence of a metacone on M\(^3\) and the lingual cingulum on M\(^2\) show that this specimen is not referrable to Tritemnodon. The buccal portion of M\(^3\) overlaps the metastyle of M\(^2\); how much of the present condition is due to post-mortem crushing is not certain.

Figure 1. Sinopa cf. vulpecula Matthew, YPM No. 16460, from the Cuchara formation, Huerfano County, Colorado. Palatal view of the right side of skull fragment with P\(^4\)-M\(^3\) present. Magnification 2X linear.
The buccal lengths of teeth of YPM No. 16460 are:

<table>
<thead>
<tr>
<th>Tooth Type</th>
<th>Length (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>left $P^4$</td>
<td>6.3</td>
</tr>
<tr>
<td>left $M^1$</td>
<td>5.3</td>
</tr>
<tr>
<td>right $M^1$</td>
<td>5.1</td>
</tr>
<tr>
<td>right $M^2$</td>
<td>6.8</td>
</tr>
</tbody>
</table>

The type specimen of *S. vulpecula* came from the Lost Cabin level of the Bighorn Basin (Matthew 1919 p. 80). Referred specimens are found as low as the upper Grey Bull level of the same basin (Matthew 1915 p. 80). Gazin (1952 p. 53) referred a specimen from the La Barge fauna of the Knight formation to this species. Gazin correlates the La Barge fauna with the type Lost Cabin of the Wind River Basin (Gazin 1952 p. 10). Therefore known specimens of *S. vulpecula* occur through the upper half of the lower Eocene rocks of Wyoming. The possibility that the species occurs also at earlier levels is good since specimens referable to it are rare and coeval species of *Sinopa* (*S. strenua* and *S. multicuspis*, Matthew 1915 p. 74, 80) occur throughout the lower Eocene. The presence of *Sinopa cf. vulpecula* in the lower beds of the Cuchara formation indicates an early Eocene age for the beds from which the specimen came, and perhaps a late early Eocene age. The occurrence of *Hyracotherium* and *Phenacodus* supports this age determination; the locality(ies) of these specimens is(are) not known. Recent work by Johnson (1958 p. 565) cites a probable early Eocene age based on stratigraphic position.

The Cuchara formation can, by inference from its thickness, include beds of middle Eocene and perhaps younger rocks. The writer is currently describing the fauna of the Huerfano formation; he believes that the Cuchara and Huerfano formations are in general correlative. However, detailed discussion of this will appear later.

The writer wishes to thank Dr. E. H. Colbert of the American Museum of Natural History for allowing him to study the *Sinopa* material and for allowing him to refer to the correspondence of Walter Granger and R. C. Hills. Mrs. Rachel H. Nichols of the same institution kindly helped locate specimens and correspondence. Dr. Joseph T. Gregory of Peabody Museum graciously criticized the manuscript.
REFERENCES


