CYLINDRODONT RODENTS FROM THE LOWER OLIGOCENE OF NORTHEASTERN COLORADO

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ABSTRACT.—*Pseudocylindrodon* sp. differs from *P. neglectus* in having a narrower incisor, incisor capsule, and mental foramina under the diastema. The geologically youngest specimens of *Cylindrodon fontis* have a weak to strong spur extending posteriorly into the central basin of the cheek teeth.

Remains of cylindrodont rodents are not common in the lower Oligocene deposits in northeastern Colorado. Despite diligent searching, a decade of field seasons passed by before the first specimen was found by Professor Robert W. Wilson's field party in 1958. Of the places where specimens have been found only one, the "Shable Butte" locality (See lists of referred specimens for the localities where cylindrodonts have been found.) can be regarded as productive. I am indebted to Dr. Peter Robinson, University Colorado Museum, for the privilege of collecting at Shable Butte.

I have regarded the Horsetail Creek Beds in northeastern Colorado to be late Chadronian in age (Galbreath, 1953). Within this span of time I think that the "Iliff" and "Molly and Mabel" localities in Logan County are younger than those in Weld County.

Pseudocylindrodon SP.

Referred Specimens: — Right jaw with I, P_4-M_3 no. 10577, Mus. Nat. Hist. Univ. Kansas (KU); fragments of mandible with right M_1-M_3 and left M_2-M_3 no. P-449, Zool. Dept. Co. Illinois Univ. (SIU); "Iliff" locality, Horsetail Creek Beds, W½ secs. 9 and 16, T. 10 N., R. 51 W., Logan County, Colorado. Figure 1 and Table 1.

These two specimens are assigned to *Pseudocylindrodon* because of the short crowns on the cheek teeth and the shape of the lower incisors. The occlusal pattern of SIU P-449 is new enough to demonstrate that the cheek teeth did not have hypsodont crowns like those seen in *Cylindrodon fontis*. Except for the details to be discussed below, the lower incisors match Black's description (p. 10, 1965) of the lower incisors of *P. neglectus*.

The University of Kansas specimen (no. 10577) has features worthy of note. The mental foramina are below the diastema rather than the premolar. An incisor capsule is present on the jaw. Although not shown in Figure 1, a distinct groove separates what remains of the inner wall of the capsule from the surface of the ascending ramus. In both specimens the incisors are narrow; the transverse dimensions being 59 and 62 percent of the anteroposterior dimensions. These ratios are less than the ratios of such dimensions seen in the type and other specimens of *P. neglectus*.

The very narrow and rounded incisor, presence of an incisor capsule, and failure of the mental foramina to shift posteriorly suggest that in these late Chadronian specimens we have the last expression of a line separate from *P. neglectus*. This speculation indicates a species different from *P. neglectus* but I cannot honor my inclination to name a new species because neither specimen is fit to be a type.

Cylindrodon fontis DOUGLASS

Referred Specimens: — RP^4 no. P-447, R?M^1 no. P-448, right jaw with P_4-M_3 no. P-450, Zool. Dept. So. Illinois Univ. (SIU); right jaw with I, P_4-M_2, no.

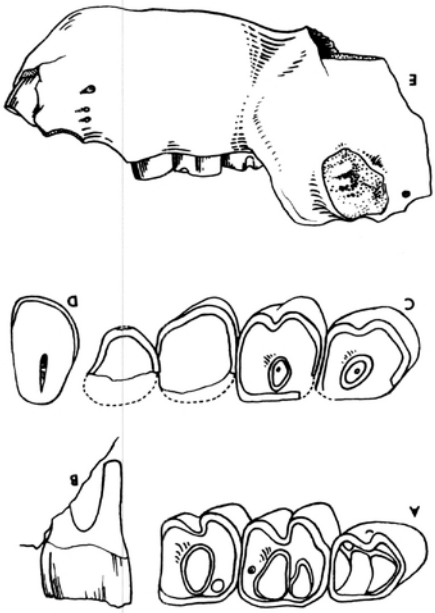

FIGURE 1. — *Pseudocylindrodon* sp. Occlusal view (A) of right M_1-M_3 and anterior view (B) of left M_2 no. P-449, Zool. Dept., So. Illinois Univ. Occlusal view (C) of P_4-M_3, cross-sectional view (D) of incisor, and lateral view (E) of right jaw no. 10577, Mus. Nat. Hist., Univ. Kansas. Views of teeth x6 and view of jaw x3.

11160, Mus. Nat. Hist., Univ. Kansas (KU). Specimens from "Molly and Mabel" locality, Horsetail Creek Beds, N½ sec. 31, T. 11 N., R. 53 W., Logan County, Colorado.

Right M^2, no. P-242 and left jaw with I, P_4-M_3 no. P-451, Zool. Dept. So. Illinois Univ.; "Section 36" locality, Horsetail Creek Beds, SE¼, sec. 36, T. 10 N., R. 59 W., Weld County, Colorado.

P^4 no. 30983, P^4 no. 30991, ?M^1 no. 30985, M^2 no. 30984, left jaw with weathered P_4-M_3 no. 22050, right jaw with I, P_4-M_2 no. 30987, left jaw with P_4-M_2 no. 30988, left jaw with weathered M_1-M_3 no. 30989, and right jaw with I, P_4-M_3 no. 30992, Univ. Colorado Mus. (UCM); "Shable Butte" locality, Horsetail Creek Beds, NE¼, sec. 21, T. 9 N., R. 58 W., Weld County, Colorado. Figure 2 and Table 2.

TABLE 1.—Dimensions (in mm) of Specimens of *Pseudocylindrodon* sp. from the Horsetail Creek Beds of Northeastern Colorado. All anteroposterior and transverse measurements of cheek teeth are at the occlusal surface. KU; Mus. Nat. Hist., Univ. Kansas. SIU; Zool. Dept., So. Illinois Univ.

		KU 10577	SIU P-499 (right jaw)
P_4-M_3	(alv.)	7.90	.....
I	A-p.	2.51[1]	2.43[2]
	Tr.	1.50	1.52
M_1	A-p.	1.90	1.86
	Tr.	.....	2.15
M_2	A-p.	2.00	1.90
	Tr.	2.19	2.10
M_3	A-p.	1.99	1.80
	Tr.	1.72	1.55
Depth of jaw at M_1		7.00	.....
Height of left M_2		.....	3.00

[1] Deep to alveolus.
[2] Under M_1.

Only the specimens of *Cylindrodon fontis* from the "Molly and Mabel" locality need comment. A sharp spur, arising from the metalophid, extends posteriorly into the central basin of the lower cheek teeth. The feature is present but not well-developed on KU 11160. No other cylindrodont teeth that I know of show this spur. The presence of the spur takes on additional interest when one realizes that these specimens came from beds that could be regarded as intermediate in age between Chadronian and Orellan times.

LITERATURE CITED

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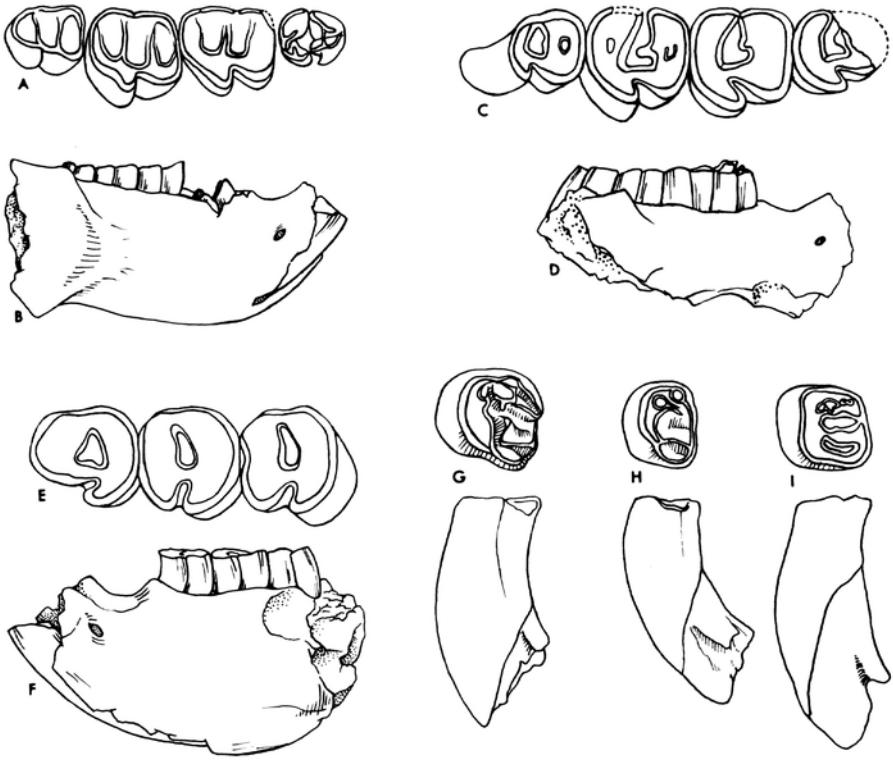
GALBREATH, E. C. 1953. A contribution to the Tertiary geology and paleontology of northeastern Colorado. Univ. Kansas Publ., Paleont. Contrib., Vertebrata, Art. 4:1-120.

Manuscript received July 11, 1968.



Halichoerf. Figure 2. Cylindrodont Rodents from Lower Oligocene of northern Colorado.

FIGURE 2. — *Cylindrodon fontis* Douglass. Occlusal view (A) of P_4-M_3 and lateral view (B) of right jaw no. 30992, Univ. Colorado Mus. Occlusal view (C) of P_4-M_3 and lateral view (D) of right jaw no. P-450, Zool. Dept., So. Illinois Univ. Occlusal view (E) of P_4-M_2 and lateral view (F) of left jaw no. P-451, Zool. Dept. So. Illinois Univ. Occlusal and anterior views (G) of P^4 no. P-447, (H) ?M^1 no. P-448, and (I) M^2 no. P-242, Zool. Dept., So. Illinois Univ. Views of teeth x6 and views of jaws x3.

TABLE 2.—Dimensions (in mm) of Specimens of *Cylindrodon fontis* from the Horsetail Creek Beds of Northeastern Colorado. Except where noted, all anteroposterior and transverse measurements of cheek teeth are at the occlusal surface. KU; Mus. Nat. Hist., Univ. Kansas. SIU; So. Illinois Univ. UCM; Univ. Colorado Mus.

		SIU P-447	UCM 30983	UCM 30991	SIU P-448	UCM 30985	SIU P-242	UCM 30984
P^4	A-p.	2.30	1.73	1.85	...	...	...	...
	Tr.	2.40	1.80	1.70	...	...	...	...
	Height[1]	5.23	4.30	3.60	...	...	...	...
?M^1	A-p.	...	...	...	1.88	1.76	...	...
	Tr.	...	...	...	1.74	1.60	...	...
	Height	...	...	...	4.60	3.40	...	...
M^2	A-p.	...	...	...	...	...	1.82	1.90
	Tr.	...	...	...	...	...	1.74	2.00
	Height	...	...	...	...	...	5.45	4.60

		KU 11160	SIU P-450	SIU P-451	UCM 22050	UCM 30987	UCM 30988	UCM 30989	UCM 30992
P_4-M_3 (Alv.)		...	...	...	...	...	...	...	7.50
Depth of jaw at M_1		...	...	8.+	7.21	7.20	...	...	...
I	A-p.	2.15[2]	...	2.45[2]	...	2.04[2]	...	...	1.90[3]
	Tr.	2.06	...	2.41	...	1.95	...	...	1.79
P_4	A-p.	2.10	...	2.40	...	2.25	1.86	2.00	1.68[4]
	Tr. (a.)	1.27	...	1.55	...	...	1.22	...	1.40
	Tr. (p.)	1.73	2.11	2.19	...	1.77	1.54	...	1.60
M_1	A-p.	2.32	2.35	2.30	...	1.87	1.85	2.00	2.10
	Tr.	1.93	2.26	2.37	...	2.10	1.81	...	1.54
M_2	A-p.	2.23	2.35	2.15	2.09	1.87	1.99	1.72[5]	1.98
	Tr.	1.88	2.10	2.37	...	2.10	1.76	...	1.55
	Height	...	...	...	...	...	4.50	5.50	...
M_3	A-p.	...	1.68	...	1.78	...	...	...	1.67
	Tr.	...	1.49	...	...	...	...	...	1.20

[1] Here and elsewhere, height is dimension from occlusal surface to end of root.
[2] Dimensions deep to alveolus.
[3] Dimensions at alveolus.
[4] Dimensions of visible part of tooth.
[5] Approximate dimension.