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*EKALAKIA LAMBERTI* N. GEN., N. SP.  
(CRUSTACEA, DECAPODA) FROM THE UPPER CRETACEOUS  
PIERRE SHALE OF EASTERN MONTANA

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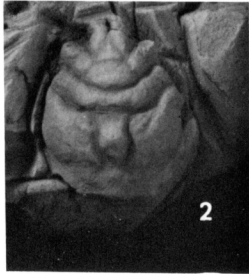
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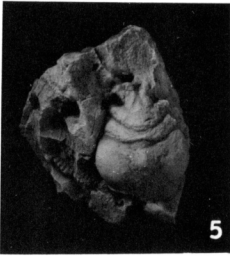
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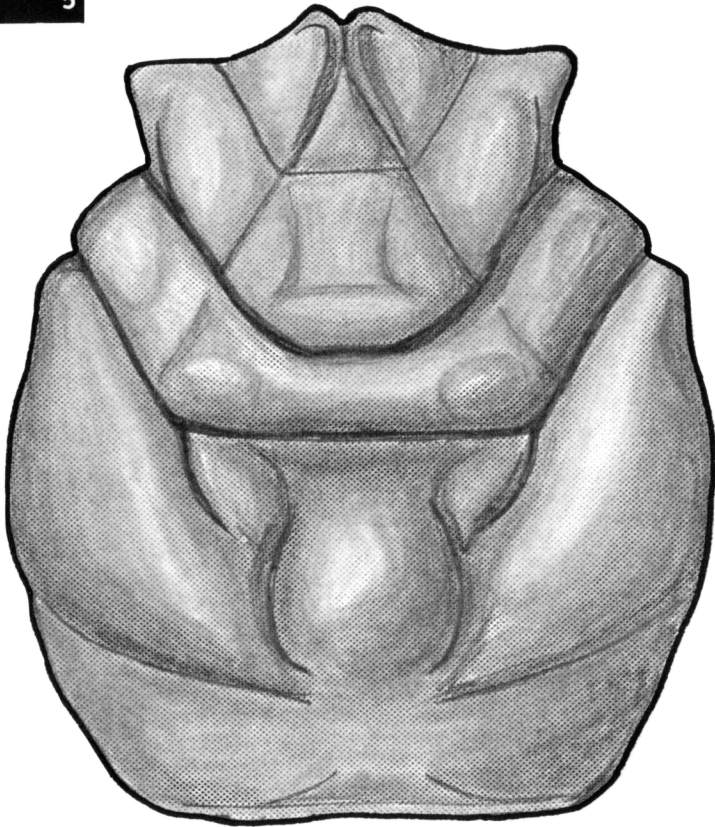
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PIERRE SHALE OF EASTERN MONTANA

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ABSTRACT *Ekalakia lamberti* n. gen., n. sp. is represented by two specimens from eastern Montana. Both were collected from the Pierre Shale of Late Cretaceous (Campanian or Maastrichtian) age. This taxon enlarges our knowledge of the Mesozoic Dromioidea.

INTRODUCTION

Fossil crabs are rare in Cretaceous rocks. The discovery of two specimens of *Ekalakia* n. gen. demonstrates the presence of the Prosopidae in the Late Cretaceous of Montana. Exact stratigraphic and geographic data are lacking for the two specimens which were graciously loaned to me by Mr. Marshall Lambert, Curator of the Carter County Museum (C.C.M.) for examination and description.

Specimen C.C.M. 5590 was collected by Marshall Lambert from the Pierre Shale "about 30 miles south of Ekalaka in T. 4 S., R. 60E., probably in section 1 or 12." This locality is in the headwaters of Skull Creek, a tributary of Boxelder Creek, Carter County, Montana. Specimen C.C.M. 5571 was collected from the Pierre Shale "southeast of Baker, Montana, by the late Albert Fost... in 1950." This description indicates the locality is on the strike of the axis of the Cedar Creek Anticline which brings the uppermost Pierre Shale to the surface along its crest (Dobbin and Larsen, 1934). The uppermost Pierre Shale in this area is probably Campanian or possibly Maastrichtian in age (Bishop, 1973a; Robinson, Mapel, and Cobban, 1959, p. 103; Gill and Cobban, 1973, p. 25).

The scarcity of fossil crabs from most of the Cretaceous of North America places these specimens in a position of importance. Therefore it was deemed useful to publish this note even though exact stratigraphic or geographic

information is lacking on each specimen. This crab adds to our previous knowledge of the brachyuran decapod fauna of the Pierre Shale in the Western Interior which consists of:

*Dakoticancer overanus* Rathbun, 1917  
*Homolopsis punctata* Rathbun, 1917  
*Necrocarinus picrensis* (Rathbun), 1917  
*Tetracarcinus subquadratus* Weller, 1905  
*Homolopsis dawsonensis* Bishop, 1973  
*Ekalakia lamberti* n. gen., n. sp.

The first three species very often occur together in great numbers as recognizable assemblages (Bishop, 1972). The other taxa occur as single specimens in widely separated areas (*T. subquadratus*, one specimen, Wyoming; *H. dawsonensis*, one specimen, near Glendive, Montana; and *E. lamberti*, two specimens, Carter County, Montana).

SYSTEMATIC PALEONTOLOGY

Superfamily DROMIOIDEA de Haan, 1833  
Family PROSOPIDAE von Meyer, 1860  
Subfamily PROSOPINAE von Meyer, 1860  
Genus *EKALAKIA* n. gen.

*Type species.* *Ekalakia lamberti* n. sp. from the Upper Cretaceous Pierre Shale of eastern Montana.

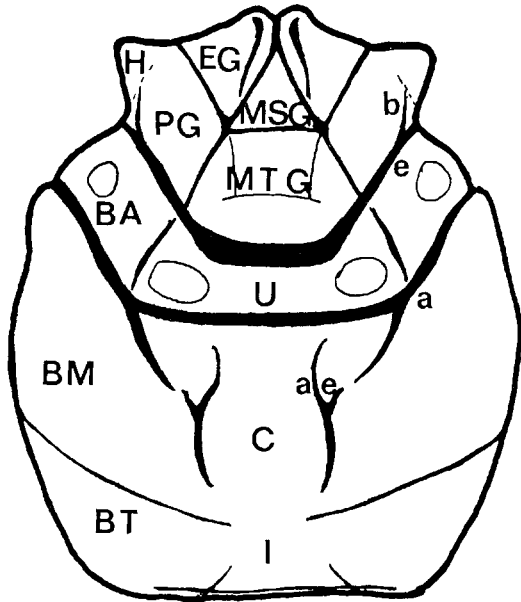
*Etymology.*—From the nearby community of Ekalaka, Montana.

*Diagnosis.*—Carapace slightly longer than wide with flaring rectangular anterior protruding ahead of the ovate, nearly circular

←

EXPLANATION OF PLATE 1

FIG. 1-1 *Ekalakia lamberti* n. gen., n. sp., holotype (C. C. M. #5590) in 1, dorsal view (×1); 2, dorsal view (×2); 3, anterior view (×2); and 4, right lateral view (×2).  
5—*Ekalakia lamberti* n. gen., n. sp., paratype (C. C. M. #5571) in dorsal view (×1).  
6—Stipple drawing of *Ekalakia lamberti* in dorsal view (×8).



TEXT-FIG. 1.—*Ekalakia lamberti*, dorsal view, showing terminology.

Regions :

EG	epigastric
MSG	mesogastric
MTG	metagastric
PG	protogastric
H	hepatic
BA	anterior branchial
BM	mesobranchial
BT	metabranhial
U	urogastric
C	cardiac
I	intestinal

Grooves :

e	cervical
a	branchio-cardiac
b	antennular
ae	attachment of the attractor epimeralis muscle

posterior. Carapace strongly convex transversely and convex longitudinally. Cervical and branchio-cardiac furrows U-shaped, equally deep, and subparallel. These along with a weak, subparallel, U-shaped depression between the epigastric and protogastric regions and a change in slope onto the shelf-like posterior, separate the carapace into five U-shaped bands. Rostrum downturned with well defined medial sulcus.

*Comparison.*—The parallel, equally developed, U-shaped cervical and branchio-cardiac furrows help to distinguish this genus from the other prosoponopids. It is similar in shape to *Prosopon* von Meyer, 1835, *Laeviprosopon* Glaessner, 1933, *Vectis* Withers, 1945, and *Wilmingtonia* Wright and Collins, 1972. *Ekalakia* has a straighter branchio-cardiac furrow with no forward convexity as is shown by *Prosopon*, *Laeviprosopon*, and *Vectis*. In over-

all shape and areolation *Ekalakia* is most similar to *Wilmingtonia* from which it can be distinguished by its more oval shape, narrower scapular arch, more subdued areolation, and much less developed anterior-branchial bosses.

EKALAKIA LAMBERTI n. sp.  
Pl. 1, figs. 1-6; Text-fig. 1

*Etymology.*—In honor of the collector of the holotype, Marshall E. Lambert, Curator of the Carter County Museum, Ekalaka, Montana.

*Types.*—The holotype (C.C.M. #5590) and paratype (C.C.M. #5571) are deposited in the collections of the Carter County Museum in Ekalaka, Montana.

*Occurrence.*—The two specimens of *Ekalakia lamberti* are decorticated steinkerns preserved in dark gray limestone concretions along with many molluscs. The carapace was apparently thin (~ 0.3 mm) and peeled off as the specimens were prepared. Some scratch marks from the preparation are obvious on both specimens. Both specimens are from the Pierre Shale of Upper Cretaceous (Campanian or perhaps Maestrichtian) age.

*Description.*—The carapace (Text-fig. 1) is oval with a protruding anterior, slightly longer than wide, and widest across the mesobranchial region. It is convex longitudinally and very convex transversely.

	Length, mm	Width, mm
C.C.M. #5590	10.7	9.3
C.C.M. #5571	14.7	12.6

The carapace is crossed by two equally developed deep transverse grooves that are subparallel to one another and U-shaped. The anterior one is the cervical groove. The posterior one, the branchio-cardiac, is straighter across the bottom of the "U" with slightly angulated junctions with the arms of the "U." In these bends there may be small pits developed. A third U-shaped groove is a poorly developed depression that lies anterior to the cervical groove and separates the epigastric and mesogastric areas from the protogastric and metagastric areas. A medial rostral sulcus is well developed on the rostrum and splits into fainter grooves on either side of the mesogastric and metagastric areas becoming barely discernible between the cervical and branchio-cardiac furrows. A very faint groove (the antennular furrow) splits off the cervical furrow near the outer edge of the dorsal shield

and extends forward. Opposite the point where the branchio-cardiac furrow bends, a branch of the branchiocardiac extends backward and inward diminishing in depth until it disappears near the cardiac region. Better defined along the edges of the cardiac region is the attachment scar of the *attractor epimeralis* muscle. The branchio-cardiac furrow becomes only a change in slope along the posterior of the cardiac area. A change in curvature of the carapace divides the metabranchial region into two parts just behind the cardiac region. This change in slope is more prominent on the smaller specimen.

The regions are thus differentiated into five U-shaped bands with the U's opening anteriorly. The first band, ahead of the slight depression, consists of the triangular mesogastric and a pair of roughly triangular epigastric areas. The anterior of the latter merge forming the sulcate, downturned rostrum. A pair of low epigastric ridges parallel the gastric furrows from the rostral area nearly to the depression. The second band consists of the medial, hexagonal metagastric region bounded by paired proto-gastric regions which are produced distally into prominent, vertical, hepatic bosses. The third band is a continuous ridge barely separated into a medial urogastric region bounded by the paired anterior branchial regions. The fourth band is the broadest and consists of the cardiac mesobranchial, and inflated part of the metabranchial regions. The cardiac region is raised well above the rest of the carapace. The fifth band forms a broad shelf on the hind margin of the carapace and consists of the intestinal and paired, flattened, posterior parts of the metabranchial regions. A very faint posterior marginal groove is present along the rather straight posterior margin.

The slightly underturned lateral margin is crossed by three grooves. The deep gastric depression and cervical groove are bent backward and the less distinct branchio-cardiac furrow curves forward to meet the cervical. There is a slight ridge on the anterior branchial region just behind the cervical furrow.

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