

**PRELIMINARY INTERPRETATION OF AN UPPER TRIASSIC
(NORIAN) ICHTHYOSAUR FROM THE OTUK FORMATION, WESTERN
BROOKS RANGE, ALASKA**

Parsons, Jennifer¹; Druckenmiller, Patrick^{1,2}; and Whalen, Michael¹

¹Department of Geology and Geophysics, University of Alaska Fairbanks, 900 Yukon Dr., Fairbanks, Alaska 99775; ²University of Alaska Museum, 907 Yukon Dr., Fairbanks, Alaska 99775

The partial skeleton of a large ichthyosaur, discovered in 1950 and collected in 2002, is the first record of this diverse and cosmopolitan group of Mesozoic marine reptiles to be recorded in Alaska. The specimen was collected approximately 55 kilometers northwest of Howard Pass in the western Brooks Range. The ichthyosaur was discovered within the Limestone Member of the Otuk Formation although its stratigraphic position within the member was not precisely documented. The Otuk Formation ranges in age from Early Triassic to Early Jurassic and consists of the Shale, Chert, Limestone and the Blankenship members. The Triassic portion of the Otuk is partially equivalent to more proximal Early to early-Middle Triassic rocks of the Ivishak Formation and the late-Middle to Late Triassic Shublik Formation. The Limestone Member is Norian in age and consists dominantly of rhythmically interbedded siliceous lime mudstone, shale, and chert. All are laminated to thin bedded, with a paucity of sedimentary structures and most body fossils indicating deposition below storm wave base in an outer neritic to inner bathyal setting.

The preserved portion of the semi-articulated skeleton measures four meters in length as preserved, representing approximately one-third to one-half total body length. With the possible exception of a few fragments of the rostrum, most of the skull and all of the tail region of the specimen have been lost, presumably through weathering; however, many portions of the limbs and torso are preserved, including most of the dorsal ribs and gastralia, parts of the pectoral and pelvic girdle, proximal elements of the forelimb, and a nearly complete femur. Significantly, the presence of numerous small (less than one centimeter maximum dimension) bone and invertebrate fragments in the abdominal region may represent partially digested remains within the alimentary canal. Based on its occurrence in Late Triassic rocks, large size, and skeletal morphology, the specimen is tentatively referred to the Shastasauridae, a clade of large (up to 23 meters total length), Middle to Late Triassic ichthyosaurs whose remains are best known from the Triassic stable margin successions of California, Nevada, and British Columbia. The Howard Pass ichthyosaur considerably extends northward the geographic range of this clade in North America and its occurrence, as well as that of other reported vertebrate remains in the Otuk Formation, suggests that further field investigations in the unit is warranted.