



## Systematics of the Lower Ordovician pliomerid trilobite *Hintzeia*, with species from the Great Basin, western USA

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### Abstract

The pliomerid trilobite genus *Hintzeia* Harrington, 1957, includes only species from the early Tulean (upper Tremadocian) of the Great Basin, USA, and from the Northwest Territories, Canada. Previously assigned species reported from Scandinavia, China, South Korea, and Australia do not appear to be closely related to the western Laurentian species and are excluded from the genus. The monophyly of the group needs to be tested in the context of a broader phylogenetic analysis, but *Hintzeia* is rediagnosed with potential synapomorphies including a long, wide anterior border with a large, semicircular median arcuate anterior curve in the posterior margin. *Hintzeia celsaora* (Ross, 1951) and *H. firmimarginis* (Hintze, 1953) are redescribed based on large new collections from Utah and Idaho. Ontogenetic material of *H. celsaora* includes an articulated silicified M13 meraspid. *Hintzeia parafirmimarginis* n. sp. is described on the basis of both abundant disarticulated sclerites and a large articulated individual. Large topotype collections indicate that *Hintzeia celsaora* (Ross, 1951) is a senior synonym of *Protopliomerops aemulus* Hintze, 1953; previously claimed differences appear to reflect small original sample sizes, ontogenetic change, and differing photographic orientation.

**Key words:** Silicified, Utah, Idaho, Ibexian, Tulean, Pliomeridae

### Introduction

This is the third work in a series (McAdams and Adrain, 2009a, 2010a) on systematics of Pliomeridae Raymond, 1913, based on description and revision of taxa from rich Lower and Middle Ordovician silicified faunas of western Laurentia. The broader project involves a comprehensive field based revision of the classic Ibexian successions of southeastern Idaho and northern Utah (Ross, 1951) and western Utah and eastern Nevada (Hintze, 1953). Work to date has been summarized by Adrain *et al.* (2009), who also detailed a revised trilobite zonation for the Tulean and Blackhillsian stages which is followed herein.

This paper focuses on *Hintzeia* Harrington, 1957, which was established for the species *Protopliomerops celsaorus* Ross, 1951, and *Protopliomerops firmimarginis* Hintze, 1953, with the type species *Protopliomerops aemu-*