ACTA PALAEONTOLOGICA POLONICA

Juvenile-only clusters and behaviour of the Early Cretaceous dinosaur *Psittacosaurus*

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Acta Palaeontologica Polonica 59 (4), 2014: 827-833 doi: http://dx.doi.org/10.4202/app.2012.0128

It has hitherto been hard to prove that any association of juvenile dinosaurs represents original behaviour rather than sedimentary accumulation, and it has been hard also to determine the ages of such juveniles. A previously described specimen, which consists of an "adult" *Psittacosaurus* with 34 fully articulated juveniles, turns out to be a composite: the "adult" skull probably has been added, and in any case it is below breeding age. Other juvenile-only clusters have been reported, but the best examples that likely reflect behaviour rather than sedimentary accumulation are specimens from the Early Cretaceous Lujiatun beds in NE China, which were entombed beneath pyroclastic flow deposits. A remarkable juvenile-only cluster of *Psittacosaurus* shows clear evidence of different ages (five 2-year olds and one 3-year old) based on bone histological analysis. These juveniles may have associated together as a close-knit, mixed-age herd either for protection, to enhance their foraging, or as putative helpers at the parental nest.

Key words: Dinosauria, ceratopsian, juvenile-only, mixed-age, bone histology, Cretaceous.

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