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Callibrachion and *Datheosaurus*, two historical and previously mistaken basal caseasaurian synapsids from Europe

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This study represents a re-investigation of two historical fossil discoveries, *Callibrachion gaudryi* (Artinskian of France) and *Datheosaurus macrourus* (Gzhelian of Poland), that were originally classified as haptodontine-grade sphenacodontians and have been lately treated as nomina dubia. Both taxa are here identified as basal caseasaurs based on their overall proportions as well as dental and osteological characteristics that differentiate them from any other major synapsid subclade. As a result of poor preservation, no distinct autapomorphies can be recognized. However, our detailed investigations of the virtually complete skeletons in the light of recent progress in basal synapsid research allow a novel interpretation of their phylogenetic positions. *Datheosaurus* might represent an eothyridid or basal caseid. *Callibrachion* shares some similarities with the more derived North American genus *Casea*. These new observations on *Datheosaurus* and *Callibrachion* provide new insights into the early diversification of caseasaurs, reflecting an evolutionary stage that lacks spatulate teeth and broadened phalanges that are typical for other caseid species. Along with Eocasea, the former ghost lineage to the Late Pennsylvanian origin of Caseasauria is further closed. For the first time, the presence of basal caseasaurs in Europe is documented.

Key words: Synapsida, Caseasauria, Carboniferous, Permian, Autun Basin, France, Intra-Sudetic Basin, Poland.

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