

# PALEOBIOGEOGRAPHY AND RELATIONSHIP OF SOUTH AMERICAN HETTANGIAN (LOWER JURASSIC) AMMONITES.

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In the uppermost Triassic (Late Rhaetian) of South America only the cosmopolitan genus *Choristoceras* is found which probably persisted - like in North America - to the first appearance of the Psilocerataceae. Most authors postulate for the Psilocerataceae a monophyletic origin from the Phyllocerataceae which survived in the open seas of that time, the critical period across the Triassic/Jurassic boundary. The basal Jurassic ammonite layer in northern Peru yielded specimens of *Psiloceras* which are characterized by a steep umbilical wall with a distinct umbilical border, showing great similarity with phylloceratacean genera, especially with *Rhacophyllites*. The suture line is that of *Psiloceras tilmanni* with a flat umbilical wall and the innermost whorls show the typical „Knötchenstadium“ which does not exist in Triassic ammonites. *P. tilmanni* probably is the oldest species of *Psiloceras* and was also found in North America but does not exist in northwestern Europe or in the Alps. The oldest species of *Psiloceras* found in these areas are comparable with species which occur in Chile above horizons with *P. tilmanni*. The adult suture line of these species is less complicated compared to the sutures found in *P. calliphylum* from the Alps, but it is similar to that of *P. psilonotum* from northwestern Europe. These differences probably were caused by different habits and ecology. Complexity of the suture line in epicontinental seas had no longer the importance as under pelagic conditions of an open ocean. It is striking that similar species are appearing in different Hettangian epicontinental seas (northwestern Europe, North and South America) which were not directly interconnected. This may be explained only by repeated immigrations from the open ocean. The genus *Caloceras* was not shown to exist in South America. This genus is more frequent in northwestern Europe than in the Alps and the evidence in North America is doubtful. Above biozones with different species of *Psiloceras* follow horizons with *Kammerkarites* which evolved from *Psiloceras*. *Kammerkarites* is frequent in the Tethyan Realm but is also found in northwestern Europe, North America and northeastern Asia. *Discamphiceras* derived from *Kammerkarites* and is frequent in the Middle Hettangian of South America. This genus is not found in northwestern Europe but in North America and the Tethyan Realm. Again the South American species have a less complicated suture line. The upper part of the Middle Hettangian is characterized by the mainly Tethyan genera *Laqueoceras* and *Sunrisites*. The Late Hettangian genus *Schlotheimia* by most authors is derived from *Saxoceras*, a genus which is frequent in northwestern Europe but which was not found in South America. The source of *Schlotheimia* could also be the Tethyan genus *Storhoceras* which is also found in South America, and transitional species between this genus and *Schlotheimia* exist. *Schlotheimia* is less frequent in South America than in northwestern Europe. Abundant is *Badouxia*, an endemic genus for North and South America. The Tethyan genera *Paracaloceras* and *Pseudaeotomoceras* are represented by species which in part are comparable with species from North America and the Alps. Species of *Angulaticeras* are similar to those appearing in the Alps, northwestern Europe and North America.

Phylloceratina and Lytoceratina are much less frequent than Ammonitina but they are sporadically found also in North America. The phylloceratid genera *Nevadophyllites*, *Fergusonites* and *Phylloceras* and the lytoceratid genera *Eolytoceras* and *Ectocentrites* were identified. Both suborders are lacking in northwestern Europe. The connections between the Jurassic Pacific and the adjacent epicontinental seas of North and South America probably were better than between the Tethys and northwestern Europe.

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