

On the biogeography of some so-called gondwanaland-spiders—new findings after investigation of fossil spiders (Araneae) in amber

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Abstract. The extant and fossil distribution of the spider (Araneae) families Archaeidae and Cyatholipidae is shortly discussed.

The spider families Archaeidae and Cyatholipidae are restricted in their extant distribution to tropical and subtropical (rain) forests of the southern hemisphere, mainly South Africa, Madagascar, Chile and the Australian region. An exception is only one species of the Cyatholipidae from Jamaica. The discovery of about a dozen fossil species of these families in Baltic and Saxonian (= Bitterfelder) amber (? = Baltic amber) on the northern hemisphere was surprising (compare Wunderlich 1986, 1993).

Griswold (1987) wrote regarding the biogeography of the Cyatholipidae: “representing former parts of the Gondwanaland.”

I suppose that today’s distribution is a relict one of a very wide distribution in the lower tertiary period.

“The now common-place view, that southern hemisphere trans-oceanic disjunction resulted directly from the Mesozoic integrity of the southern continents and their subsequent fragmentations and drift, was criticized both from facts and methodology. Disjunct ranges resulting from the extinction of ‘intermediate links’ in the northern continents were demonstrated to be a fundamental regularity among terrestrial and freshwater invertebrates. The proposed mechanisms imply: (1) the gradual reduction of a pancontinental to a bipolar (= amphitropical) range, (2) a ‘Gondwanan’ distribution due to the disappearance of the northern ‘semicircle’ ” (Eskov, 1984, Eskov & Golovatch, 1986).

The reasons for the extinction of the members of the spider families mentioned above on the northern hemisphere are not known with certainty. One reason regarding the Cyatholipidae was perhaps the competition with members of the subfamily Erigoninae (family Linyphiidae), this subfamily is not known from Baltic and Saxonian amber, and it radiated perhaps in the Oligocene when the Baltic amber forest was already gone. Perhaps the glaciations had more influence on the limited extant distribution of the Archaeidae and Cyatholipidae on the northern hemisphere than on the southern one. The reason could be the smaller land mass of this part of the world (note of I. Weiss).

On the other hand Baltic amber spider genera could well have survived on the northern hemisphere in the South East Asian (rain) forests which have not yet been well studied.

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