



### **A new spider family record for Hispaniola—a new species of *Plectreurys* (Araneae: Plectreuridae) in Miocene Dominican amber**

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The Plectreuridae is a relatively small, ecribellate, haplogyne spider family consisting of only two extant genera. *Kibramoa* Chamberlin has seven described species restricted to the USA and Mexico (Gertsch 1958) and *Plectreurys* Simon is known from 22 species, with similar distributions (Gertsch 1958, Jiménez 2006), but also including Cuba and Costa Rica (Alayón 1993, 2003). In addition, a single fossil species *Palaeoplectreurys baltica* Wunderlich, known only from the holotype, has been described from the Eocene Baltic amber of Europe (Wunderlich 2004). Additional fossils are known from the Jurassic of China and these are currently being described by Selden (pers. comm. 2009), who also questions the placement of *Palaeoplectreurys* Wunderlich in this family. Thus, the extant forms may represent relicts of a family more widespread in the past. Little is known about the biology of this family, although they are unusual among ecribellate haplogynes in possessing eight, rather than six eyes. They are nocturnal, hunting spiders, which live in a silken tube that they seldom leave, rather like the closely related Segestriidae (Gertsch 1958). However, males leave their tube upon maturity to go in search of females, at which point they become more susceptible to entrapment in tree resin seeps (Penney 2002). The tibia of leg 1 in males of *Plectreurys* has a distinctive stout retrolateral process towards the distal end, which bears a strong spine. These coupling spurs, which are absent in *Kibramoa* and *Palaeoplectreurys* are presumed to be used for restraining or positioning the female during mating.

Miocene Dominican amber has been dated at 16 Ma (Iturralde-Vinent 2001) and exhibits probably the best quality of preservation of all known ambers (Grimaldi and Engel 2005), despite there being more than 160 deposits known worldwide (Martínez-Delclòs *et al.* 2004). Although traces of amber are present in various other countries of the Caribbean, e.g., Haiti, Puerto Rico and Jamaica, it occurs in exploitable quantities only in the Dominican Republic (Iturralde-Vinent 2001). The origin of unusually large Miocene deposits of amber in the Dominican Republic can be explained by the fortunate combination of adequate conditions of relief and soil for the development of large populations of the resin producing trees *Hymenaea protera* during a constrained warm and humid climate optimum (Iturralde-Vinent, 2001). The amber is found in two main regions of the country: the Cordillera Septentrional in the north, and to a lesser extent in the Cordillera Oriental in the northeast. The amberiferous region in the north consists of the upper 300 m of an Oligocene to Middle Miocene suite of clastic rocks called the La Toca Formation and consists mainly of sandstone containing thin lamellae of lignite, and occasional conglomerate. In the northeast the amber is found embedded in lignite and sandy clay in the 100 m thick Yanigua Formation. These two amber deposits are thought to have been deposited in the same sedimentary basin, prior to their displacement along major faults (Iturralde-Vinent and MacPhee 1996). See Iturralde-Vinent (2001) for a comprehensive review of the geology of these deposits and Penney (2008) for comprehensive discussions regarding age, botanical origin, preservation etc. Data on more than 1000 described fossil species in Dominican amber are given in Pérez-Gelabert (2008).

The fossil spider fauna of Dominican Republic amber is well known, with 170 named species described to date (Penney 2008, Pérez-Gelabert 2008). However, the extant fauna is rather poorly known with only 325 species recorded (Penney 2008), including five new family records in recent years: Hersiliidae (Rheims and Brescovit 2004), Prodidomidae (Platnick and Penney 2004), Ochyroceratidae (Hormiga *et al.* 2007), Mysmenidae (Hormiga *et al.* 2007) and Symphytognathidae (Hormiga *et al.* 2007). The present paper describes a new species of Plectreuridae in Dominican amber, which represents only the second known fossil of this family, which was previously unrecorded from either the fossil or extant Hispaniolan faunas and thus represents an additional new family record for the island.