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Asexual queen succession in the Neotropical higher termite Embiratermes neotenicus

Robert Hanus, Romain Fougeyrollas, Klara Dolejsova, David Sillam-Dusses, Chantal Poteaux, Yves Roisin, Virginie Roy

Sexual and asexual reproductions both have undisputable advantages as well as drawbacks. The best option for the breeding queens of social insects thus would be to combine these modes of reproduction and benefit from an increased genetic contribution to next generations produced by asexual reproduction while still maintaining sufficient genetic diversity of their offspring through sexual reproduction. There is now rising evidence that termite queens are able to do so. Asexual queen succession (AQS) in which workers and alates are produced sexually while multiple neotenic queens arise through thelytokous parthenogenesis has recently been described in three species of the subterranean genus *Reticulitermes*. However, there are more termite species and genera in which neotenic reproductives replace the founding primary queen at a certain stage of the colony development, including a few species of higher termites. The Neotropical humivorous species *Embiratermes neotenicus* (Termitidae: Syntermitinae) is notorious for the occurrence of numerous neotenics in its large and populous colonies. Using nine newly developed polymorphic microsatellite markers, we studied the genetic structure in *E. neotenicus* colonies sampled in French Guiana. The colonies contained either a single primary queen with a primary king or up to 150 neotenic queens with a primary king and rarely a few neotenic males. Neotenic females never carried exclusive paternal alleles at the studied loci unlike the sterile castes (workers and soldiers). This strongly supports the hypothesis that in *E. neotenicus*, the primary queen is replaced by asexually produced neotenic queens. Thus, it appears that AQS is not restricted to a single genus of lower termites and can be expected to be found in more termite species, including higher termites. What are the circumstances promoting the occurrence of this unusual reproductive strategy in phylogenetically and ecologically distant termites, remains an open question.