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*Asexual queen succession in soil-feeding termites (*Cavitermes tuberosus*)*

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Asexual queen succession (AQS) is a process by which a termite queen gets herself replaced by multiple parthenogenetic daughters, which mate with the founder king. AQS is known to occur in subterranean termites (*Reticulitermes* spp.), where it might boost the egg production rate without inbreeding (1). In a totally different context, some soil-feeding Termitidae from tropical rainforests commonly display multiple neotenics as well. We investigated the genetic and social pathways of neotenic production in one such species, *Cavitermes tuberosus* (Emerson), in French Guiana. Nests were dissected and searched for reproductives. The reproductive female function was assumed by the primary queen in 39 colonies, and by neotenic females (up to 450 individuals) in 28 colonies. A primary king was accompanying the primary or neotenic queen(s) in most nests, but only one neotenic male was found. Nests headed by a primary queen were never found to contain neotenic females, but they often contained female nymphs of an atypical form, which might be future neotenics. Eighteen microsatellite markers were specifically developed. Our first genetic analyses strongly support AQS as near-exclusive source of neotenic females in this species. Most neotenic females were completely homozygous, as expected under parthenogenesis with terminal fusion. All other individuals appeared to be produced sexually. The finding of AQS in an arboreal-nesting, soil-feeding tropical rainforest species, thus ecologically opposite from wood-feeding, subterranean *Reticulitermes*, raises the question of its adaptive significance. In addition, *Reticulitermes* (Rhinotermitidae) and *Cavitermes* (Termitidae) are phylogenetically distant, which indicates either an unlikely convergence or an ancient origin of facultative terminal fusion parthenogenesis in termites. It suggests that AQS may be much more widespread in termites that previously thought.

(1) Matsuura et al. (2009) Science 323, 1687. Vargo et al. (2012) Proc. R. Soc. B. 279, 813-819. Luchetti et al. (2013) Insect. Soc. 60, 203-211.