

## Biodiversity Record: Occurrence of twins in wild long-tailed macaques

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**Subjects:** Long-tailed macaque, *Macaca fascicularis fascicularis* (Mammalia: Primates: Cercopithecidae).

**Subjects identified by:** Chua Amos.

**Location, date and time:** Singapore Island, Lower Peirce Reservoir Park, near fishing ground; 28 September 2023; around 1330 hrs.

**Habitat:** Parkland at the edge of secondary forest.

**Observer:** Chua Amos.

**Observations:** An adult female long-tailed macaque was first observed feeding on a grass patch with two infants by her side. Shortly after, the infants clambered onto the adult, who was assumed to be their mother. One of the infants began suckling (Fig. 1). The two infants seemed to be twins, for they appeared to be the same age, and were of similar size and fur colour. Their gender could not be determined. The two infants were observed suckling on the adult female, one on each nipple. After around two minutes, the female macaque moved to another location with the twins clinging to her belly (Figs. 2 & 3). She sat on a concrete pillar for about one minute, and during this time, the twins were observed to be resting and suckling (Fig. 4). The female was observed displaying a bare-teeth grin at another macaque in front of her before running away with the twins. She moved towards a group of macaques and sat next to another adult female with an infant for about five minutes. The twins appeared to be suckling all this time. An adult male macaque was then observed approaching the group. Upon noticing him, members of the group started to run away from him. The female with the twins immediately placed her children close to her chest and took off with the rest of the group.



Fig. 1. First sighting of adult female with two, presumably twin, infants. One was suckling, the other was clambering about on its mother. Fig. 2. Lateral view of female carrying two infants under her belly moving to another location (Photographs by: Chua Amos).



Fig. 3. Fronto-lateral view of female carrying two infants under her belly. Fig. 4. Female seated on concrete pillar with both infants resting and suckling (Photographs by: Chua Amos).

**Remarks:** This observation records a rare incidence of twin births in the long-tailed macaque in Singapore. Twin births appear to be rare in Old World monkeys; the rate of twin births in humans and non-human primates is about 1%, and rate for macaques is estimated to be about 0.3% (Schultz, 1956). Twin births have been recorded in *Macaca arctoides* (the stump-tailed macaque) by Aru & Suchinda (2018), *Macaca cyclopis* (the Taiwan macaque) by Hsu et al. (2000), *Macaca fuscata* (the Japanese macaque) by Nakamichi (1983), *Macaca mulatta* (the rhesus macaque) by Bercovitch et al. (2002), *Macaca sylvanus* (the barbary macaque) by Schaub (1987), *Macaca thibetana* (the Tibetan macaque) by Xia et al. (2012), as well as *Macaca fascicularis* (the long-tailed macaque) by Fuentes et al. (2011). Twin births are extremely costly for a primate species that does not usually give birth to multiple young as the mother would need to expend more energy in nursing and carrying two offspring. Additionally, the mother needs to adopt new strategies such as foraging for higher quality food to meet energy needs, or adjusting her activity budget, which includes more rest, lesser movement, and lesser social interactions with others, to minimise energy expenditure (Xia et al., 2012).

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