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Male Bimaturism and reproductive success of Bornean Orangutans

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Orangutans are Asian species of great apes, which inhabit only in Borneo and Sumatra islands. Unlike the African great apes, they do not form group. In addition to their semi-solitary lifestyle, they are characterized by extreme sexual dimorphism. Male orangutans show distinct bimaturism. “Flanged male” has a large body, cheek pads and a throat sack and “unflanged male” does not have such second sexual characteristics. The flanged male is dominant to the unflanged males. However, recent studies have suggested that the unflanged males sired offspring and they might stay in the arrested condition as alternative reproductive tactics. From both behavioral and genetic data, I investigated a hypothesis: Is it possible for the flanged male to monopolize mating opportunity and reproductive success?

From 2010 to 2011, I conducted field research in Sepilok Orangutan Rehabilitation Centre, Sabah, Malaysia. I followed 8 adult orangutans (4 males and 4 females) and recorded name of the association partners and mating behavior. I collected fecal samples from 22 individuals, including 4 pairs of mother-infant, to determine the biological fathers of the infants using by 11 microsatellite markers.

Behavioral data suggests that the non-dominant “unflanged” males succeeded in mating with fertile females and the dominant “flanged” male could not guard such females. But genetic data reveals that no unflanged males sired their offspring. This suggests that the unflanged males failed to mate with the females during their sexually active periods (ovulatory period lasts 3-5 days over a 28-day cycle). Hormonal analysis is needed to test this new hypothesis.