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Biofluorescence in the masked palm civet (*Paguma larvata*)

Biofluorescence has come to general public attention over the last decade with the industrial production of "black lights". While numerous reports on biofluorescence have become available for some groups of species such as invertebrates (Jeng 2019), birds (Wilkinson *et al.* 2019), amphibians (Taboada *et al.* 2017), and reptiles (Prötzel *et al.* 2021), there are fewer reports on fluorescence in mammals (Lagorio *et al.* 2015). So far, ultraviolet fluorescence is known from a few mammal species only, including flying squirrels (Kohler *et al.* 2019), mice (Weagle *et al.* 1988), Chinese pangolins (Jeng 2019), Virginia opossums (Meisner 1983) and other didelphid marsupials (Pine *et al.* 1985), springhares (Olson *et al.* 2021), African pygmy hedgehogs (Wolff *et al.* 2005), European hedgehogs (Hamchand *et al.* 2021) and platypuses (Anich *et al.* 2020, Spaeth, 2020). The fluorescence is, however, not produced by the animal itself in the case of hedgehogs, but by commensal bacteria (Hamchand *et al.* 2021). Green fluorescence can also be expressed by transgenic animals (Zhu *et al.* 2018), including non-human primates (Niu *et al.* 2010), and the trait can become inheritable (Sasaki *et al.* 2009).

During unrelated field surveys on the 2^{nd} of March 2022 in Nanjing, People's Republic of China (32.059°N; 118.820°E), a trio of masked palm civets (*Paguma larvata*) was observed in the tree canopy at 21:18 o'clock. The black light was provided by a Skyfire P90 flashlight (Ningbo, China). All three individuals were observed under normal and black light conditions (Fig. 1), and blue fluorescence was observed, especially on the frontal stripe and the hindquarters. No special fungal growth was visible under normal light, though we acknowledge the difficulty of observing individuals in the tree canopy.

Biofluorescence results from the absorption of short wavelength electromagnetic radiation and their re-emission at longer wavelengths (Lagorio *et al.* 2015, Prötzel *et al.* 2018). The origin is different for different vertebrate taxa, originating from bones in reptiles (Sloggett 2018, Prötzel *et al.* 2018) and amphibians (Goutte *et al.* 2019), and porphyrins in many mammals, emitting red (~630–660 nm) when irradiated with UV-A, blue, or green light (Hamchand *et al.* 2021). The fluorescence observed on *P. larvata* was blue, indicating that another mechanism is probably at the origin of the fluorescence. In addition, the fluorescence could be related to communication in the species, as seen in mate selection through fluorescence in bustards (Hamchand *et al.* 2021). Finally, as the strength of the fluorescence on the hindquarters of the civets seemed to be variable, the trait could be linked to mate selection, similar to colour variations in the hindquarters of *Macaca fuscata* (Rigaill *et al.* 2019).

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Plate 34

Figure 1. Observation of two masked palm civets (*Paguma larvata*) under **(A)** normal light and **(B)** black light