

# 琉球大学学術リポジトリ

## 波照間島でのヤエヤマオオコウモリ *Pteropus dasymallus yayeyamae* の体色異常個体の記録

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## Records of the Yaeyama Flying Fox *Pteropus dasymallus yayeyamae* with anomalous body coloration on Hateruma Island, Japan

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**Abstract.** The Ryukyu Flying Fox, *Pteropus dasymallus*, with anomalous body color was observed multiple times in July 2021, August 2021 and August 2022 on Hateruma Island. Due to agreement of the external characteristics and the close sighted locations, these observations could be based on the same individual. White or light brown hair on the body and dark brown eyes suggest that anomalous body color was caused by hypomelanism. This report deals with a rare case of body color aberrations in fruit bats that roost on trees.

### Record

The Ryukyu Flying Fox *Pteropus dasymallus* is distributed on the southwestern islands of Japan and Taiwan, and the northern part of the Philippines (Kinjo & Nakamoto 2015; Nakamoto 2017; Chen et al. 2021). The population on the Miyako Islands and Yaeyama Islands is recognized as a subspecies the Yaeyama Flying Fox *P. d. yayeyamae* (Yoshiyuki 1989; Kinjo & Nakamoto 2015; Osawa & Osawa 2013). In 2021 and 2022, I observed an individual of this subspecies exhibiting anomalous body coloration several times, at a nearly identical location on Hateruma Island. All of observations in this report were made by chance during surveys of the Ryukyu Scops Owl *Otus elegans* at night, while walking with a headlight lighting trees on the edge of the forest.

**Observations in 2021.** At 8:38 p.m. on July 13, 2021, an individual Yaeyama Flying Fox with an anomalous body color was found alone at a height of about four meters in a white leadtree *Leucaena leucocephala* at the forest edge along a road (24°04'02.4"N 123°47'03.7"E) (Fig. 1). It looked similar in size to typical adult flying foxes. The hair on the head and body was white or light brown, and the hair on the neck was yellow. The claws and skin around the nose were light brown, however, the ears, wings, and eyes were the dark brown typical of this species. No abnormalities were observed in its behavior, and it flew away after being observed for

several minutes. At least five individuals with normal body colors were flying around in the area.

At 10:54 p.m. on August 23, 2021, an individual with anomalous body color was confirmed again at almost the same observation point as above (24°04'03.7"N 123°47'02.7"E) (Fig. 2). It was hanging on an electric wire and was confirmed as a male from the external genitalia. The individual flew around in the same way as several individuals with normal body colors, and sometimes perched on the tips of branches of banyan trees *Ficus microcarpa* and electric wires.

**Observations in 2022.** At 9:20 p.m. on August 15, 2022, an individual with anomalous body color was confirmed at almost the same point as the observation point in 2021 (24°04'04.0"N 123°47'01.8"E). Again, I observed it flying around and perching on the tips of branches of trees or electric wires. Although I could not take a picture, it was confirmed as a male from the external genitalia.

**Observations in 2023.** In 2023, I searched for a flying fox with anomalous body color near the observation points in 2021 and 2022 (24°04'03.7"N 123°47'02.7"E). The survey dates were June 18 (7:30 p.m.), June 24 (7:05 p.m.), June 29 (7:32 p.m.), and July 2 (9:05 p.m.). On each day, I searched for flying foxes for 10 minutes by lighting the forest edge and electric wires with a headlight. However, only a few individuals with normal body coloration were observed each time, and no individuals with anomalous body coloration were observed.

### Discussion

The flying fox with anomalous coloration observed in this report had light brown claws and skin around the nose, and white or light brown hair on the head and body. However, it had typical dark brown ears, wings, and eyes. These characteristics suggest that the cause of the anomalous coloration is hypomelanism (Lucati & López-Baucells 2017). If albinism, the eyes would be red, and if leucism



Fig. 1. A Yaeyama Flying Fox with anomalous body coloration observed on Hateruma Island (July 13, 2021).  
図 1. 波照間島で観察されたヤエヤマオコウモリの体色異常個体 (2021 年 7 月 13 日).

the body color would be whitish overall (van Grouw 2006). Lucati & López-Baucells (2017) reviewed the chromatic disorders in bats around the world and documented 609 bats with body color anomalies, but only four cases were of fruit bats (3 albinism and 1 piebaldism). Therefore, this is a rare case report of hypomelanism in the fruit bat family Pteropodidae.

This observation is also a rare example of body color aberration in a bat species that roosts on trees. According to a review (Lucati & López-Baucells 2017), only 3 out of 354 anomaly colored bats with detailed location data were observed at external spaces other than inside (e.g., caves or buildings). Lucati & López-Baucells (2017) also pointed that, among the species with abnormal body colorations that have been recorded, the percentage of species which roost on trees was 1.2%. It has been suggested that roosting in caves and buildings contributes to reducing the risk of exposure to sunlight and predation for albino individuals (Uieda 2000). Although the Ryukyu Flying Fox roosts on trees (Nakamoto et al. 2007; Kinjo & Nakamoto 2015),

such increase in predation risk due to white body color may be small, at least on Hateruma Island, since potential native predators such as carnivorous mammals, large raptors, and large reptiles are not distributed on the island (Miyagi 1981), although feral cats may predate on them (Nakachi et al. 2016). Finally, the individual in Fig. 1 and the individual in Fig. 2 have similar body coloration, and the date and location of the observations were close to each other. Slight differences in body coloration seem to be due to differences in photographing conditions (by a compact digital camera with a headlight in Fig. 1, and by a digital single-lens reflex camera with a strobe light in Fig. 2). Therefore, it is possible that they are the same individual.

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Fig. 2. A Yaeyama Flying Fox with anomalous body coloration observed on Hateruma Island (August 15, 2021). Since it was just before breeding season, distinctive orange hair on neck and enlarged testicles were recognizable.

図2. 波照間島で観察されたヤエヤマオコウモリの体色異常個体(2021年8月23日)。繁殖期直前だったため、顕著なオレンジ色の首輪模様と肥大した睾丸が確認できる。

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## 波照間島でのヤエヤマオオコウモリ *Pteropus dasymallus yayeyamae* の体色異常個体の記録

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要旨．波照間島において Hypomelanism と考えられる体色異常のあるオスのヤエヤマオオコウモリ *Pteropus dasymallus yayeyamae* を観察した．2021年7月，2021年8月，2022年8月にほぼ同一地点で各一個体が目撃され，個体の特徴も類似していたため，これらは同一個体と考えられた．白色または淡褐色の体と濃褐色の眼を有していたことから hypomelanism と考えられる．本報告は樹上にねぐらを設けるオオコウモリの仲間では稀な体色異常の報告である．

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