

DISCOVERY OF MELANISTIC MALAYAN TAPIR (*Tapirus indicus* var. *brevetianus*) IN TEKAI TEMBELING FOREST RESERVE

***Jambari Asrulsani, Izaffi Amri, Hazril Rafhan, Sohaimi Samsuddin,
Muhd Hakim Saharudin, Mohd Fauzi Seman, Muhamad Syafiq,
Mohammad Faizul Nasri & Pazil Abdul Patah**

*Department of Wildlife and National Park (DWNP) Peninsular Malaysia, KM
10 Jalan Cheras, 56100 Kuala Lumpur, Malaysia*

*Corresponding author's email: asroaldz@gmail.com

*Received (08-August-16); Accepted (12-July-17);
Available online (28-July-17)*

Citation: Asrulsani, J., Amri, I., Rafhan, H., Samsuddin, S., Saharudin, M.H., Seman, M.F., Syafiq, M., Nasri, M.F., & Patah, P.A. (2017). Discovery of melanistic Malayan Tapir (*Tapirus indicus* var. *brevetianus*) in Tekai Tembeling Forest Reserve. *Journal of Wildlife and Parks*, **32**: 79-83.

Melanism is a development of dark-coloured pigment which is conferred by a recessive allele that leads to the condition of having dark-coloured skin or fur coat known as melanistic (Eliason *et al.*, 2013; *et al.*, 2015). Compared to common melanism phenomenon in other species such as felids (Schneider *et al.*, 2012), squirrels (McRobie *et al.*, 2009), rodents and birds (Majerus & Mundi, 2003; Caro, 2005; Hoekstra, 2006) only two cases of melanism in Malayan tapirs have been reported. Remarkably, the ongoing survey of First National Tiger Survey Program 2016–2018 (1st NTS) under the Eleventh Malaysia Plan 2016-2020 embarked by Department of Wildlife and National Park (DWNP) discovered one adult male melanistic Malayan tapir.

Images of an adult male melanistic Malayan tapir were captured using a passive infrared digital camera trap (Reconyx HC500 Full HD 1080P) based on pre-determined systematically 2.5 x 2.5km grid plot for the implementation of the 1st NTS program. The images were captured in Tekai Tembeling Forest Reserve located in the central Peninsular Malaysia of Pahang region which covers an area of approximately 2,646km² of logged-over dipterocarp forests (Eswani *et al.*, 2010). Topographical structures of the forest comprise of various types of

lowland areas, limestone terrain and hilly forest with elevation of 86–1,063m a.s.l. Apart from being threatened by the impact of ongoing selective logging, this reserve is vulnerable to illegal encroachment.

A total of 67 images of melanistic Malayan tapir (*Tapirus indicus* var. *brevetianus*) were recorded from a total of 6,196 trap nights. The first 54 images were recorded on 20th May 2016 around 1944 hours (Figure 1a & b) while the remaining 13 images were captured on 30th May 2016 around 2131 hours (Figure 1c & d) with the same camera trap location approximately 9,300m from the nearest village. The exact location of this finding is kept confidential for security reasons. Based on identifiable features i.e. marks and deep scars on the body, wrinkles on the neck and belly, and damage to the ears (Holden *et al.*, 2003; Noss *et al.*, 2003; Novarino *et al.*, 2005; Trolle *et al.*, 2008; Traeholt & Mohd Sanusi, 2009), all the images of the melanistic Malayan tapir captured came from only one individual.



Figure 1 Captured images of a male melanistic Malayan tapir in Tekai Tembeling Forest Reserve. (a) & (b) Images captured on 20th May 2016 showing the right and left flank, respectively, (c) & (d) Images captured on 30th May 2016 showing the left and right flank, respectively.

The first record of a melanistic Malayan tapir was in Palembang, Sumatera in 1924; was captured and sent to Rotterdam Zoo (Kuiper, 1926). It was classified as a subspecies *Tapirus indicus brevetianus* after its discoverer Captain K. Brevet from the Royal Dutch-Indian Army. Meanwhile, the second record was in 2000,

when two separate images of melanistic Malayan tapirs were recorded during a study of tigers in the Jerangau Forest Reserve in Hulu Terengganu, Peninsular Malaysia, as documented by Mohd. Azlan (2002). The first image was captured on 9th July 2000 at 1944 hours in a lowland forest, while the second image was captured on 20th July 2001 at 0113 hours in a hill forest. These are the photos of the same animal which may roam the lowlands and hill areas of Jerangau Forest Reserve.

This recent finding corroborate that the melanistic Malayan tapir still exists, although they are exceedingly rare and limited in every generation. Kuiper (1926) suggest that this condition would most probably caused by genetic abnormality. Culver *et al.* (2010) and Wei *et al.* (2015) added that the degree of dark-coloured pigment genes might also be an evolutionary response to different habitat to allow for better adaption within their environments. Unfortunately, the first individual which was captured in 1924 and kept in Rotterdam Zoo died before mating, denying the opportunity to further investigate the cause of the melanism.

ACKNOWLEDGEMENTS

We thank all staff of DWNP for their contribution throughout the 1st NTS 2016-2018 project.

REFERENCES

- Caro, T.I.M. (2005). The adaptive significance of coloration in mammals. *Bio-Science*, **55**: 125–136.
- Culver, M., Driscoll, C., Eizirik, E. & Spong, G. (2010). Genetic applications in wild felids. In *Biology and conservation of wild felids* (Macdonald, D.W. & Loveridge, A.J., eds.), pp. 107-123. New York: Oxford University Press Inc.
- Eliason, C.M., Bitton, P.P. & Shawkey, M.D. (2013). How hollow melanosomes affect iridescent colour production in birds. *Proceedings of the Royal Society B: Biological Sciences*, **280** (1767): 20131505.
- Eswani, N., Kudus, K.A., Nazre, M. & Awang Noor, A.G. (2010). Medicinal plant diversity and vegetation analysis of logged over hill forest of Tekai Tembeling Forest Reserve, Jerantut, Pahang. *Journal of Agricultural Science*, **2**(3): 189-210.

- Hoekstra, H.E. (2006). Genetics, development and evolution of adaptive pigmentation in vertebrates. *Heredity*, **97**: 222–234.
- Holden, J., Yanuar, A. & Martyr, D.J. (2003). The Asian tapir in Kerinci Seblat National Park, Sumatra: evidence collected through photo-trapping. *Oryx*, **37**:34–40.
- Kuiper, K. (1926). On a black variety of the Malay tapir (*Tapirus indicus*). *Proceedings of the Zoological Society of London*, **96**: 425-426.
- Majerus, M.E. & Mundy, N.I. (2003). Mammalian melanism: natural selection in black and white. *Trends in Genetics*, **19**: 585–588.
- McRobie, H., Thomas, A. & Kelly, J. (2009). The genetic basis of melanism in the gray squirrel (*Sciurus carolinensis*). *Journal of Heredity*, **100**(6): 709-714.
- Mohd. Azlan, J. (2002). Recent observations of melanistic tapirs in Peninsular Malaysia. *Tapir Conservation*, **11**(1): 27-28.
- Noss, A.J., Cuéllar, R.L., Barrientos, J. Maffei, L., Cuéllar, E., Arispe, R, Rúmiz, D. & Rivero, K. (2003). A camera trapping and radio telemetry study of lowland tapir (*Tapirus terrestris*) in Bolivian dry forests. *Tapir Conservation*, **12**: 24-32.
- Novarino, W., Kamilah, S.N., Nugroho, A., Janra, M.N., Silmi, M. & Syafri, M. (2005). Habitat use and density of the Malayan tapir (*Tapirus indicus*) in the Taratak Forest Reserve, Sumatra, Indonesia. *Tapir Conservation*, **14**: 28-30.
- Schneider, A., David, V.A., Johnson, W.E., O'Brien, S.J., Barsh, G.S., Menotti-Raymond, M. & Eizirik, E. (2012). How the leopard hides its spots: ASIP mutations and melanism in wild cats. *PLoSOne*, **7**(12): e50386.
- Traeholt, C. & Mohd Sanusi, M. (2009). Population estimates of Malay tapir, *Tapirus indicus*, by camera trapping in Krau Wildlife Reserve, Malaysia. *Tapir Conservation*, **18**: 18-26.
- Trolle, M., Noss, A.J., Cordeiro, J.L.P. & Oliveira, F.L.B. (2008). Brazilian tapir density in the Pantanal: a comparison of systematic camera-trapping and line-transect surveys. *Biotropica*, **40**: 211–217.

Wei, C.T.K., Moore, J., Saaban, S.B., Campos-Arceiz, A. & Macdonald, D.W. (2015). The discovery of two spotted leopards (*Panthera pardus*) in Peninsular Malaysia. *Tropical Conservation Science*, **8**(3): 732-737.