

VARANUS SALVATOR MACROMACULATUS (Southeast Asian Water Monitor). LEECH PARASITISM. *Varanus salvator macromaculatus* has a widespread distribution in north-eastern India, continental Southeast Asia, Hainan (China), Greater Sunda Islands (except Java), and offshore islands (Ziegler and Vences 2020. Der Zool. Garten 88:31–50) and are never found far from water (Bennett 1998. Monitor Lizards: Natural History, Biology, Husbandry. Edition Chimaira, Frankfurt am Main, Germany. 352 pp.). Ticks are the only reported ectoparasites of monitor lizards

(e.g., Auffenberg and Auffenberg 1990. Bull. Florida Mus. Nat. Hist. Biol. Sci. 35:1–34) and herein I report an observation of the presence of a leech on a wild *V. s. macromaculatus* in Singapore.

On 3 December 2022, at 0827 h, an adult *V. s. macromaculatus* was observed near the bank of the Kallang River, in Bishan-Ang Mo Kio Park, Singapore (1.3648°N, 103.8352°E; WGS 84; 18 m elev.) with a large leech attached to its back (Fig. 1A). The leech appeared to be attached to an old wound near the lizard's mid-dorsum between the shoulder blades slightly posterior to its arms (Fig. 1B). It was not possible to catch the lizard to inspect the leech, but the Asian Buffalo Leech (*Hirudinaria manillensis*) is found in other areas in Singapore (Chan and Lau 2022. Nat. Singapore 15:e2022060). This leech species attains a relatively large size from 4 to 5 inches, is dark brown in color, and has a black middorsal line (Tubtimon et al. 2014. ZooKeys 452:15–33) and based on the size, coloration, and known distribution of this leech I surmise it was an Asian Buffalo Leech.

Leeches are commonly known ectoparasites aquatic reptiles including turtles (Readel et al. 2008. Copeia 2008:227–233; McKnight et al. 2021. Ecol. Evol. 11:10936–10946) and crocodilians (Moser et al. 2014. J. Arkansas Acad. Sci. 68:163–166), but to my knowledge this is the first report of ectoparasitism by a leech in *V. s. macromaculatus*, although Asian Buffalo Leeches have been reported to feed on other reptile species (Lai and Chen 2010. Leech fauna of Taiwan. National Taiwan University, Taipei, Taiwan. 118 pp.; Jeffery et al. 1990. J. Vet. Malaysia 2:39–41). Interestingly *V. s. macromaculatus* is known to feed on leeches (Yu et al. 2021. Anim. Biol. 72:27–37) and this is a case of role reversal between the lizard and leeches.

PRZEMYSŁAW ZDUNEK, Association du Refuge des Tortues, 2920 Route de Paulhac, 31660 Bessières, France, and NATRIX Herpetological Association, ul. Opolska 41/1, 52-010 Wrocław, Poland; e-mail: zdunek.komodo@gmail.com.

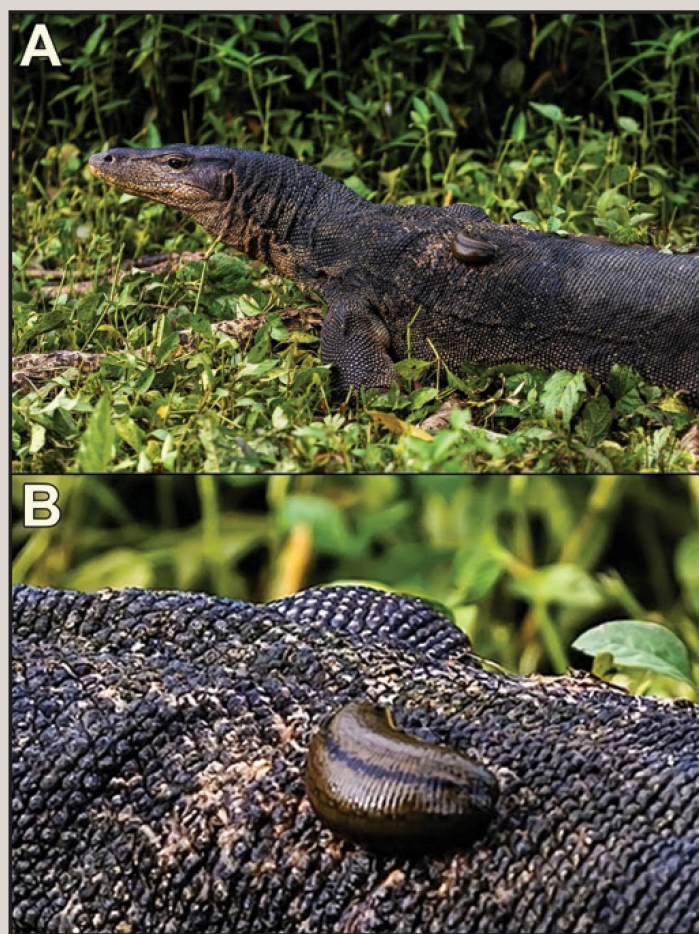


FIG. 1 An adult *Varanus salvator macromaculatus* with a leech on its back (A), feeding on an old wound (B).