Short Communication

First record of *Cheironotus parryi* Grey, 1848 (Coleoptera: Euchirinae) in Cambodia

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Within the family Scarabaeidae, the subfamily Euchirinae is regarded as under-studied and its status and phylogenetic placement remain uncertain (Young, 1989; Smith *et al*., 2006; Šípek *et al*., 2011). The group comprises 16 species (Young, 1989; Muramoto, 2008) divided among three genera: *Propomacrus* Newman, 1837 (four species), occurring in East Asia (Japan, China and Korea), East Europe and the Middle East (Iran, Syria, Turkey, Cyprus and Balkan Peninsula); *Euchirus* Burmeister & Schaum, 1840 (two species), distributed in the Philippines and Indonesia; *Cheironotus* Hope, 1841 (ten species), found in continental Asia. Species within the latter genus are usually associated with densely forested highlands with mature broadleaved trees, alluvial forests and vegetative growth next to small streams and rivers, all these having an abundance of trees with cavities required for survival of the immature stages and adults (Šípek *et al*., 2011).

The larvae of *Cheironotus* spp. feed on the decaying wood parts of living trees (Young, 1989). Under laboratory conditions, the eggs hatch after three weeks, and the first instar lasts for about a month. The second instar lasts between 21 and 170 days, while the last instar can last more than 200 days, or even over a year in certain cases (Šípek *et al*., 2011). The larvae feed mainly on large pieces of decayed wood and make deep burrows into soft wood. Their pupal chamber is realized with wooden debris coagulated around the larvae. The nymphal stage is short (two or three weeks). Adult beetles remain buried inside the substrate and are mainly active from dusk onwards (Šípek *et al*., 2011). They feed mostly on ripe fruits or tree sap. Males are active for two or three weeks while females live longer and start laying eggs soon after their emergence. The full life cycle lasts between one and two years (Šípek *et al*., 2011).

We collected a single large male specimen of *C. parryi* in Phnom Kulen National Park, Svay Leu District, Siem Reap Province (Fig. 1–2). Phnom Kulen National Park is

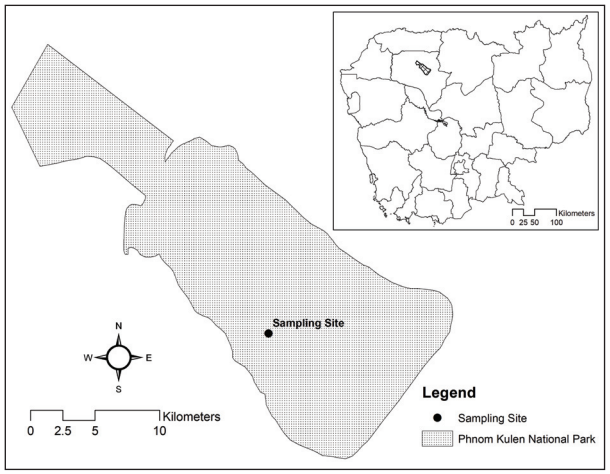

Fig. 1 Location of the first record of *Cheironotus parryi* in Phnom Kulen National Park and Cambodia.

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Fig. 2 Live adult male of *Cheironotus parryi* Grey, 1848 from Phnom Kulen National Park.

Fig. 3 A) Dorsal habitus of the male *Cheironotus parryi* Grey, 1848 (CEI-004121). B) Details of male genitalia.

located in the Southern Indochina Dry Evergreen Forest Ecoregion (WWF, 2020) and covers 37,350 ha. The park encompasses lowland areas and sandstone hills that climax in two plateaus ca. 450 m above sea level (Phauk *et al*., 2013). Habitat types present include evergreen and semi-evergreen forests on the hillsides and plateaus, while lowland areas are dominated by dry dipterocarp forest (Neou et al., 2008). Although not the southernmost known location for the species, our record represents the first for Cambodia. The species was collected during an insect inventory conducted by the Cambodian Entomology Initiatives (CEI) team on 8 July 2015 and was accidently captured with a sweep net around 1900 hrs, close to the ranger station within the park (13°33.870′N, 104°06.447′E). The specimen, measuring 56 mm, matches the description of *C. parryi* by Young (1989) and Ek-Amnuay (2008) and is deposited in the entomology collection of the CEI at the Royal University of Phnom Penh (Accession code: CEI-004121). Its pronotum bears a deep median groove with a greenish reflection and the characteristically-shaped long-apical process on the front tibia (Fig. 3). Prior to our record, the taxon was known to occur Myanmar (Mandalay District), India (Assam State, Himachal Pradesh State, Nagaland State, Sikkim State, Sikkim-Bhutan border, Uttar Pradesh State), Laos (Ban Pak Neun district, Khammouane "plateau") and Thailand (Ban Chiang Dao, Doi Pui, Nakhon Ratchasima) (Ek-Amnuay, 2008; Young, 1989). It was also recorded in Nam Cat Tien National Park in Vietnam (Bezděk & Spitzer, 1996) and appears to inhabit lowland seasonal forests including *Lagerstroemia* tree species (Spitzer *et al*., 1991).

While the occurrence of Euchiridae is often considered as a bio-indicator of pristine, old and well–established tropical forests (Young, 1989; Šípek *et al*., 2011), the broader situation in Cambodia presents a concern in possessing one of the fastest deforestation rates in the world. Between 1965 and 2016 for instance, the country

reportedly lost almost one-quarter of its forest cover (Forest Administration, 2010; WWF, 2013). As such, potentially suitable habitats for *C. parryi* could disappear in the near future. From the conservation point of view, further investigations should be conducted in potential habitats for this rare species in the northwest and eastern part of the country.

Material examined: CEI-004121, 1 ♂ "Cambodia, Siem Reap Province, Phnom Kulen National Park; 13°33.870′N, 104°06.447′E (WGS84); 08.vii.2015; sweep net; Phauk, Kheam, Chhum, Sour, Ly, Heang, Lorn, Hok."

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References

Bezděk, A. & Spitzer, K. (1996) Notes on the distribution of *Cheironotus jansoni* and *Cheironotus parryi* (Coleoptera: Euchiridae) in Vietnam. *Klapalekiana*, **32**, 135–136.

Ek-Amnuay, P. (2008) *Beetles of Thailand*. 2nd edition. Siam Insect Zoo & Museum, Chiang Mai, Thailand.

Forestry Administration (2010) Cambodia Forestry Outlook Study. Working paper series No. APFSOS II/WP/2010/32, Food and Agriculture Organization of the United Nations Regional Office for Asia and the Pacific, Bangkok, Thailand.

Muramoto R. (2012) A catalogue of Euchirinae (Coleoptera, Scarabaeidae). *Kogane*, **13**, 87–102.

Neou B., Khou E. & Touch S. (2008) *Preliminary Study of the Kulen National Park for Development of a Botanical Garden*. Unpublished report to Ministry of Environment, Royal Government of Cambodia, Phnom Penh, Cambodia.

Phauk S., Phen S. & Furey, N.M. (2013) Cambodian bat echolocation: a first description of assemblage call parameters and assessment of their utility for species identification. *Cambodian Journal of Natural History*, **2013**, 16–26.

Smith, A.B.T., Hawks, D.C. & Heraty, J.M. (2006) An overview of the classification and evolution of the major scarab beetle clades (Coleoptera: Scarabaeoidea) based on preliminary molecular analyses. *Coleopterists Society Monograph*, **60**, 35–46.

Spitzer, K., Lepš, J. & Zacharda, M. (1991) *Nam Cat Tien Czechoslovak Vietnamese Expedition, November 1989*. Unpublished report, Institute of Entomology, Czechoslovak Academy of Sciences, Prague, Czech Republic.

Šípek, P., Janšta, P. & Král, D. (2011) Immature stages of Euchirinae (Coleoptera: Scarabaeoidea): genera *Cheirotonus* and *Propomacrus* with comments on their phylogeny based on larval and adult characters. *Invertebrate Systematics*, **25**, 282–302.

Young, R.M. (1989) Euchirinae (Coleoptera: Scarabaeidae) of the world: distribution and taxonomy. *The Coleopterists Bulletin*, **43**, 205–236.

World Wide Fund for Nature (2013) *Ecosystems in the Greater Mekong: Past Trends, Current Status, Possible Futures*. World Wide Fund for Nature, Gland, Switzerland.

World Wide Fund for Nature (2020) *Greater Mekong Region*. Https://www.worldwildlife.org/places/greater-mekong [Accessed 10 March 2020].

