

Fig. 3. Number of web and forum pages mentioning trading and captivity of *Platymma tweediei* from 2007 to 2013 classified according to destination countries of the market.

suggests that hobbyists are not able to raise *P. tweediei* successfully from hatchling to adulthood and hence a continuous supply of wild caught adult specimens is required for the hobby to continue. This is not surprising given that many cloud forest organisms including land snails are ecologically and altitudinally specialised, and therefore sensitive to environmental changes (e.g. Nadkarni & Longino 1990; Soh *et al.*, 2006; Liew *et al.*, 2009). The source locations for *P. tweediei* for the trade market remain unknown but in general forests along major roads are prone to overharvesting of wildlife because of the greater access afforded to poachers (Laurance *et al.*, 2009). The presence of captive *P. tweediei* displayed in one highly-accessible tourist attraction in the Cameron Highlands further suggests such a possibility (Sow Yan Chan, pers. comm.).

In view of the circumstances *Platymma tweediei* is facing, more detailed studies are urgently required to address the limited knowledge of the distributional patterns and ecological interactions of the species in order to gauge its vulnerability to habitat loss and exploitation. Relevant measures ensuring sustainable development should also be in place to minimise damage to the sensitive cloud forest habitat (Peh *et al.*, 2011). A thorough assessment of the extent to which *P. tweediei* is being traded should also be conducted to prevent over-exploitation of the species in the Cameron and Lojing Highlands.

I thank R.G. Clements and T.S. Liew for their comments in improving the paper, A. Alliamat for permitting the use of his photos, M.E.Y. Low for his help in acquiring some references as well as S.K. Tan and S.Y. Chan for discussion of the species in 2006. Photo by K.S. See was sourced from Wikimedia Commons under fair use purposes for research.

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IN SEARCH OF *CORILLA ANAX* (CORILLIDAE), RARE AND ENDEMIC LAND MOLLUSC OF THE WESTERN GHATS

By N.A. Aravind, Roshmi Rekha Sarma, Madhushree Munsri & Sandeep Sen

The Western Ghats of India, running parallel to the West Coast of India, is one of the 34 biodiversity hotspots of the world (Myers *et al.*, 2000) with amazing diversity and



Fig. 1. Shells of *Corilla anax* collected from Valparai, Tamil Nadu.

endemism of flora and fauna especially of vertebrates. However, diversity and endemism of invertebrates have not been studied except for certain charismatic taxa. This is particularly true for land snails of India, in general and in the Western Ghats in particular. The Indian land snail fauna is very diverse and to date 1,129 species have been reported from the country (Ramakrishna & Dey, 2010). There may be many more undescribed species, especially in the three biodiversity hotspots - the Western Ghats, part of the Himalayas and part of the Indo-Burma hotspot (which includes north-eastern Indian states). The Western Ghats biodiversity hotspot has 270 species representing 24 families and 58 genera (Aravind, 2005; Aravind *et al.*, 2005) with 76 % endemism. The ecology of many land snail species of the Western Ghats is still poorly known. Among many cryptic and interesting snail species is *Corilla anax* (Corillidae). The genus *Corilla* is represented by only one species in the Western Ghats (Fig. 1) and ten from Sri Lanka. The Natural History Museum, London, Royal Belgian Institute of Natural Sciences, Brussels and ATREE, Bangalore, are collaborating in an effort to understand the evolutionary relationships between corillids from the Western Ghats and Sri Lanka.

William Henry Benson, a pioneer in Indian malacology, described *Corilla anax* in 1865 (Benson, 1865). The type locality is 'Mavillicurray' in the Travancore Hills of Kerala state of western India. Benson's description says the 'Mavillicurray [sic] Hills are 2000 feet in height, to the east of the station of Cottyam'. Cottyam is currently known as Kottayam (9° 35' N, 76° 31' E) in Kerala, southwestern India (Fig. 2). Our recent extensive survey around the type locality has yielded no shells of *Corilla anax*. According to Gude (1914), *C. anax* is also found in 'Anamullay' (now Anamalais), which is in the present day Tamil Nadu state of

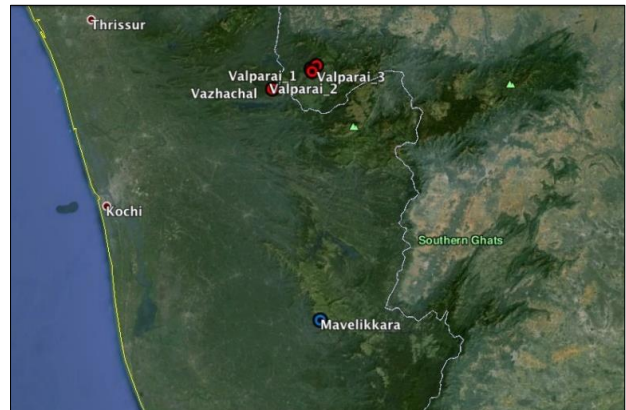


Fig. 2. Past and present distribution of *Corilla anax* in the Southern Western Ghats, India. The blue dot indicates the type locality and the red dots the current distribution. (Image source: Google Earth)



Fig. 3. Live sub-adult *Corilla anax* from Vazhachal forest, Kerala, Western Ghats, India. This is the only photograph of live *Corilla anax* from the Western Ghats. (Photo: NCF, Mysore)

southern India. A survey was conducted recently in this part of the Ghats, especially in the forest fragments amidst tea and coffee plantations in the Valparai of Anamalais region (Fig. 2). Our survey yielded a few fresh and old shells, but we failed to locate any live specimens. We were surprised when Shankar Raman of the Nature Conservation Foundation (NCF), an NGO working in Valparai, showed us a photograph of a small, live sub-adult of *C. anax* (Fig. 3), which he photographed at Vazhachal forest, adjacent to Valparai plateau in Kerala state. This is the first ever photograph of a live *C. anax* from India. Further extensive surveys in the adjoining less disturbed forests might yield good population information of *C. anax*. Currently, *C. anax* is known to occur on the western slopes and the hill top evergreen forests of the Western Ghats. Its altitudinal range is between 600-1,200 m asl. It prefers evergreen forest with thick canopy and thick litter cover. Ecological niche modeling using BIOCLIM and altitude data show that *C. anax* has very limited suitable area in the northern part of the southern Western Ghats. Most of this area, however, is under cardamom, tea and rubber plantations (Fig. 4).

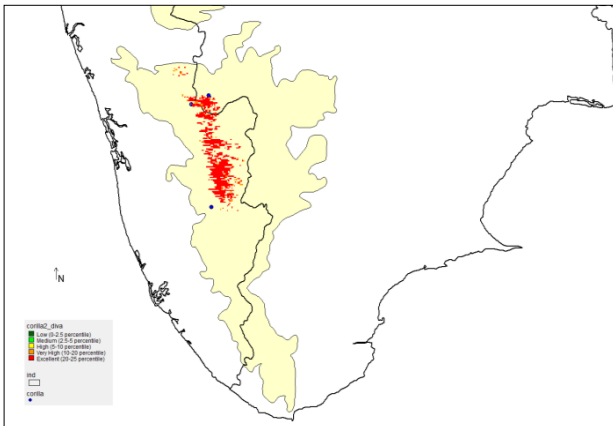


Fig. 4. Ecological niche modelling of the potential *Corilla anax* range in the Western Ghats.

The major threat to *C. anax* is deforestation. The forests around the type locality are almost completely lost and converted into rubber, tea and cardamom plantations. The remaining patches are highly disturbed. The majority of these transformations, especially in Kerala, have occurred in just the last century. According to Jha *et al.* (2000), between 1976 and 1995, Kerala lost 25 % of its evergreen forest to other vegetation types. *Corilla anax* prefers evergreen forests with good canopy cover and we presume that perhaps 100 years ago this species must have been widely distributed. The habitat has shrunk dramatically as a result of various development activities and plantation expansion reducing the suitable areas and thus leading to local extinction of populations.

Restoration efforts by NCF, with the help of Tata Coffee, of the fragments in Valparai where *C. anax* was found are underway. This effort might help to build local populations of *C. anax*. Further degradation of the fragments or forest patches should be curtailed. Given the low abundance of this species, it is imperative to conserve and connect the patches wherever possible to maintain genetic diversity. With the present distribution, population density and the level of threat this species is facing, we recommend that this species should be classified as ‘Critically Endangered’.

The authors acknowledge DST (Ref no: SR/SO/AS/89-2012), the Darwin Initiative and the Royal Belgian Institute of Natural Sciences, Brussels, Belgium, for funding. We thank T.R. Shankar Raman for sharing the photograph of *Corilla anax*.

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NINE MOLLUSCS ASSESSED BY COSEWIC IN 2013

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The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) was busy again in 2013 (see [Tentacle 21](#) for explanation of COSEWIC’s mandate), assessing and re-assessing mollusc species that were previously assessed as being at risk of extinction or extirpation from Canada. In 2013 three mollusc species were assessed for the first time while six were re-assessed.

Cryptomastix devia (Puget Oregonian) was confirmed as Extirpated. In Canada this terrestrial snail is only known from three old records (1850-1905) from Vancouver Island and the Lower Fraser Valley of British Columbia (BC). Continuing extensive searches within the historical range have still failed to find this snail.

Allogona townsendiana (Oregon Forestsnail; Fig. 1) was confirmed as Endangered. This large land snail (up to about 3 cm in diameter) is endemic to western North America but in Canada it mainly occurs within the Lower Fraser Valley, BC. Habitat loss due to residential and commercial development continues to fragment and isolate the remaining snail populations trying to survive in the most densely human-populated and highly fragmented region in BC.



Fig. 1. *Allogona townsendiana* (Oregon Forestsnail). (Photo: Jennifer Heron)