Blue-throated Bee-eater *Merops viridis* in Kerala: An escapee, or a wild vagrant?

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A Blue-throated Bee-eater *Merops viridis* that I photographed in Kannur District (Kerala), in May 2013, created waves amongst bird-watchers, with several photographers from Kerala zeroing on to the place to capture its photograph too. Many encouraged me to report this sighting in *Indian BIRDS*, which I finally did in March 2014. However, I realised recently that such a note never reached the editor (Praveen J., *verbally* 11 June 2016), and hence I resubmitted it with some additional discussion, though this observation itself is dated and well known.

Both: Sasidharan Manekkara

88. Blue-throated Bee-eater *Merops viridis*, in Kerala.

In Kangol village, near Payyannur (12.10°N, 75.19°E), Kannur District, Kerala, a nesting colony of Blue-tailed Bee-eaters *M. philippinus* has been known to local bird-watchers for several years. This is the only known breeding site of this species in Kerala, a species that is otherwise known to be a winter visitor to the state (Sashikumar *et. al.* 2011). The local people say that this breeding site has been in existence for over thirty years, even though it is quite obvious to any passer-by, as it is right next to the main road. During the breeding season, from March to July, the colony gets at least a few hundred Blue-tailed Bee-eaters that nest in the sand bunds; the breeding peaks in April–May. The entire colony is covers an area of *c.* 40 x 70 m, with three oval soil pits with an average depth of three meters, and a radius of ten meters.

Since 2003, I have regularly visited the site three to four times during the breeding season, to monitor, and ensure its safety. My first visit of 2013 was on 24 March and second was on 28 April, but those visits were rather short, and I couldn't make detailed observations at the time. On my third visit, on 26 May 2013, there were more than 1000 Blue-tailed Bee-eaters, and nearly 90 active nests. At 1230 hrs, a differently coloured bee-eater came and perched on a leafless tree about five meters from me. It was markedly different from a Blue-tailed Bee-eater, though it had a chestnut-coloured head like the Chestnut-headed Bee-eater *M.* leschenaulti; it had elongated central tail streamers, and a blue throat **[88]**. This did not match any bee-eater species that is known from India. I spent the rest of the day checking if there were more of its kind around; it was a lone bird. It seemed

89. Blue-throated Bee-eater with Blue-tailed Bee-eaters, at the latter's breeding colony, in Kerala.

to freely mingle with the Blue-tailed Bee-eaters **[89]** and once it also came close to a nest hole, as if ready to enter.

Having failed to identify it, I posted the pictures on the Internet group, *'Kerala Birder'* (http://groups.yahoo.com/group/keralabirder) with the hope that someone would identify the species. Members of the group suggested that it was a Blue-throated Bee-eater, a species that is known to occur only in Southeast Asia. Identification was straightforward. There are about 15 species of colourful *Merops* that have tail streamers like this bird. None of them have a blue throat, in combination with a blue tail, and bluish-white tail streamers—other than this species. A further discussion ensued as to its origin. People were divided on whether it was an escapee, or a wild vagrant.

I had visited the site again on 28 and 30 May 2013, and on 01 June 2013, to further observe, and photograph the bird. A few photographers, and birdwatchers also saw the bird during the last week of May, and first week of June, including Abdul Raheem Munderi, Muhamed Jafar Palot, and Vijesh Vallikkunu. Vijesh was the last one to observe and photograph it on 08 June. Praveen J., Dipu K., and Jafer Palot visited the site on 15 June 2013, but did not see the bird (Praveen J., *in litt.*, e-mail dated 19 July 2016). My last visit was on 23 June 2013, by which time all the bee-eaters had departed.

Discussion

While the identification of the bird was beyond doubt, and the fact that it was new for India quite clear (Grimmett *et al.* 2011; Rasmussen & Anderton 2012), its origin was much debated. This species was excluded from the Kerala checklist (Praveen 2015), and the India checklist (Praveen *et al.* 2016), as its origins were unknown (Praveen & Narayanan 2013). After I posted a picture in Internal Bird Collections (http://ibc.lynxeds.com/node/290500), the account of *HBWAlive* was updated, with a link to my photo, indicating it as a vagrant to south-western India (Fry & Boesman 2016). Hence, it seems prudent to discuss in etail, its possible origins: the primary focus of this note.

In mails posted to *Kerala Birder*, based on private correspondences with several experts (Praveen 2013): Bill Harvey had stated that this individual was strongly suggestive of an escapee, as the green in its plumage was decidedly blue. The green seems to be a pigment that cannot be maintained in captivity, presumably because of the irregular diet proffered, and Harvey cited examples of captive Common Green Magpies *Cissa chinensis*. He further commented that though bee-eaters are uncommon in aviaries, they are kept in zoos, where mealworms are a common item in the diets of birds, and a private collector could have illegally transported this particular specimen. Yong Ding Li indicated that he had never seen this species in the bird trade, despite, "hundreds of bird surveys in Singapore", and since it migrates between Sumatra and Malay Peninsula (de Candido ***et al.*** 2010), this bird could have been storm blown, and seemed unlikely to have been of captive origin given the, "condition of the flight feathers and the rectrices, which are largely unbroken or undamaged". Rajat Bhargava of BNHS-India, while agreeing that the involvement of a private collector cannot be ruled out, felt that this particular bird was of wild origin, as it "does not look as if it has escaped from captivity". He gave details from secondary sources in the bird trade, stating that Green-, Blue-tailed-, Chestnut-headed-, Blue-cheeked *M. persicus* and rarely Blue-bearded Bee-eater *Nyctyornis athertoni* had all been recorded in bird trade in India. However, he had not recorded any instance where a bee-eater had been exported from India; presumably they are difficult to maintain in captivity, and Indian aviculturists do not keep insectivorous species. He had not personally recorded any case of bee-eaters being kept in captivity anywhere in India. With respect to bluish pigment, he also cited two instances where he had examined freshly caught 'bluish' Common Green Magpies from the wild. Prasanth Narayanan also suggested that wild mutations could occur, as evident in another recently photographed Green Bee-eater *M. orientalis* where the green pigment was replaced by olive (Narayanan 2013; Thurakkal 2013), and additionally stated that he did not know any aviculturists in Kerala keeping bee-eaters.

Summing up, there were three main points in the discussions that need to be further reflected upon.

Blue pigment in plumage: It has been found that green feathers of Common Green Magpie fade to turquoise when frequently exposed to sun. This is because the green pigment in plumage is produced by a combination of two sources: a special feather structure that produces blue colouring due the feather refracting light (known as schemochromes), combined with yellow carotenoids, a group of bio-pigments derived from the bird's diet. Captive birds, and those wild individuals that spend a lot of time in the sun, will fade to blue because carotenoids are destroyed by light or the lack of a proper diet. Blue-coloured captive birds that are not kept outdoors are probably not getting enough carotenoids in their diet so they grow blue plumage when they moult (Grrlscientist 2012).

That said, it is worth mentioning that genetic blue plumage colour variants do tend to pop up fairly frequently even in the wild (Grrlscientist 2012) as evidently observed by others above. Apart from reasons cited above, where naturally occurring bluish mutation has been recorded, there are about half a dozen photographs on the *Oriental Bird Images* website (Appendix), taken from the native ranges of the nominate subspecies, which show extensive blue on wings, back, and scapulars, which otherwise should have been green. Finally, vagrants are known to demonstrate atypical plumages (e.g., the Sabine's Gull in Sreenivasan *et al.* 2014) as it is suspected that a faulty navigation system is connected to genetic mutation (Lees & Gilroy 2009). In conclusion, the presence of unusual amounts of blue in its plumage does not seem to be a strong reason for hypothesising a captive origin in this case.

Presence in bird trade: The lack of reports from the bird trade, of bee-eaters in general, and the Blue-throated Bee-eater in particular, lend further support to this bird being of wild origin. While the original source of information is unknown, several websites, including Wikipedia, state that the Blue-throated Bee-eater is "very rare in captivity" (*https://en.wikipedia.org/wiki/Blue-throated_bee-eater; Accessed on 01 July 2016*), with just one prior instance from Germany. The website, *http://www.zootierliste.de*, lists several bee-eaters in various zoos across the world, however, there are no holdings listed of the Blue-throated Bee-eater. While the possibility of such birds being escapees has been argued in the past, for more obvious cases of pet birds e.g., Snow Goose (Praveen *et al.* 2014), Red-breasted Parakeet (John *et al.* 2016), and Chestnut-eared Bunting (George 2013), where a substantial population of these birds exists in the bird trade or in private aviaries, it is certainly not the case for this species.

Potential for vagrancy: Though the species is resident in some parts of its range, most birds are known to be nomadic, while other populations are strongly migratory (Fry & Boesman 2016). Blue-throated- and Blue-tailed Bee-eaters are known to migrate

during the same period in a year, though not together in the same flock, over southern Thailand, and Malaysia, and are believed to be breeding in southern China (de Candido *et al.* 2010). Though their studies were conducted mostly till the end of March, de Candido *et al.* (2010) observed flocks migrating till 05 May, and such birds would have reached the breeding grounds in China on a date that nearly coincides with the arrival of this species in Kerala.

However, it is worth mentioning that, despite being a migrant, there have not been any reported cases of vagrancy for Blue-throated Bee-eater (Fry & Boesman 2016). Though Fry & Boesman (2016) mentioned that it is a vagrant to Hong Kong, online searches reveal that there are multiple records, and some birds do pass via Hong Kong on their journey to/from the provinces of Guangdong, Guangxi, and Fujian in China where they breed. Hence, true vagrancy, for this species, is unreported.

It is now well-known that several migratory species using the East-Asian Flyway straggle to the Indian Subcontinent during their return migration, and quite a few recent additions in the India Checklist like, Blue-and-White Flycatcher *Cyanoptila cyanomelana*, Mugimaki Flycatcher *Ficedula mugimaki*, and Swinhoe's Minivet *Pericrocotus cantonensis* were during spring migration (Praveen *et al.* 2016). Hence, it is a pattern which may extend to other species also, and Blue-throated Bee-eater, though seen very late in spring, could be yet another instance for this phenomenon.

Migratory birds are known to make mistakes in direction but not in distance (Pfeifer *et al.* 2007). In this respect, it would be interesting to note that the distance between Borneo-Sumatra, and this site, is similar to the distance to its regular breeding ground in southern China—3500–4000 km.

The Blue-tailed Bee-eater is a winter visitor to Kerala, except for this breeding population, members of which start arriving at the site in March and disperse by early July. Large swarms of winter migrants (of this species) reach Kerala only by the first week of September. Hence, it is unclear where this breeding population disperses to, after July, and at least up till September. This is particularly of relevance to understand the chances of Blue-throated Bee-eater joining a flock of migrating Blue-tailed Bee-eaters in their journey to this site in Kerala. Satellite telemetry studies are needed to understand the migratory routes of the breeding Blue-tailed Bee-eaters.

In the discussion above, while there exists a weak support to form a case for an escapee, it is not pressing enough to discount a wild origin for the bird. Hence, I propose this individual be treated as a genuine wild vagrant, as already treated by Fry & Boesman (2016), and an addition to the Indian avifauna.

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Editors' note: We additionally queried Species360 (http://www2.isis.org/species360/default.aspx) for any listed holdings of this species in any zoological parks, and they found just one (amongst 1000+ listed holdings) at Loro Parque, Spain. Based on the arguments presented here, and the comments received from our referees, we accept this species to the India Checklist.

Appendix (All websites were accessed on 01 July 2016)

Websites that mention the bird is very rare in captivity:

http://www.revolvy.com/main/index.php?s=Blue-throated%20bee-eater&item_type=topic.

http://america.pink/blue-throated-bee-eater_693776.html.

http://www.wikiwand.com/en/Blue-throated_bee-eater.

https://hotspotbirding.com/species?name=Merops%20viridis.

Website for search query for Blue-throated Bee-eater in zoo holdings:

http://www.zootierliste.de/en/?klasse=2&ordnung=225&familie=22506&art=2200408.

List of images from *Oriental Bird Images*, referred in this paper:

http://orientalbirdimages.org/images/data/bluethroatedbeeeaterbath21may16.jpg.

http://orientalbirdimages.org/images/data/dsc_0379b.jpg.

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