The ornithology of the state of Tripura, in north-eastern India (22.93°–24.53°N, 91.17°–92.35°E; 10490 km²), had been relatively poorly covered in published literature, until the publication of an annotated checklist by Choudhury 2010). Presented below are further observations on birds found in the state, made during a trip in 2016, which also update the state checklist. All these records were direct observations through binoculars, apart from a few where birds’ calls were noted, and some interviews with local forest staff and villagers on conspicuous species. Direct observations were made while walking along existing paths, and from vehicles along roads. This trip lasted for 20 days, from 28 January to 16 February 2016; for convenience, observations from single day visits on 22 November 2016 and on 05 May 2017 have been clubbed here.

Details are provided for the more interesting, and significant records, including rarities (one Threatened, and three Near Threatened species; IUCN 2016), and new records. Apart from the status listed in Choudhury (2010), online information from eBird (2017), and records from a trip report (Chatterjee 2010) are discussed here.

**Oriental Darter Anhinga melanogaster**

[Near Threatened] (henceforth, NT)

One seen perched on a dead tree standing in a small waterbody inside Boromura-Gandhari Reserved Forest (RF) [83] in Gomati District, on 05 February 2016. Another seen on 07 February 2016 near Bison Point in Trishna National Park and Wildlife Sanctuary (henceforth, NP & WS). It has also been reported once from Gumti (Dumbur) Lake, Dhalai/Gomati (Krishnan 2016b) [84].

**Asian Openbill-Stork Anastomus oscitans**

Many sightings of small groups. Rudrasagar Lake on 29 January 2016 (more than ten birds); near Sepahijala NP & WS [85] on 30 January 2016 (one bird); around Belonia on 31 January 2016 (three birds); in Gumti Lake on 01 February 2016 (two birds); between Sonamura and Kathalia (three birds); in Trishna NP & WS (one bird) on 07 February 2016; near Lalgin (three birds) on 13 February 2016; and enroute Rajnagar tower, near Trishna NP & WS (15+) on 15 February 2016. There are also many records of this species in eBird (Choudhury 2014a,b, 2015,
Black-headed Ibis *Threskiornis melanocephalus* [NT]

Three, and nine birds were seen near Bison Point in Trishna NP & WS on 31 January 2016. Flocks of six, and seven ibises were seen in the same area on 07 February 2016. Earlier, a lone bird flew over Udaipur town in the morning on the same day. More than six were seen foraging in a watered field at the outskirts of Agartala on 02 February 2016. Six were seen near Bison Point, and seven *enroute* Rajnagar Tower in Trishna NP & WS on 15 February 2016 [86]. It was not listed in Choudhury (2010), and Chatterjee (2010). Subsequently there are at least eight reports in eBird (Choudhury 2014a,b; Dutta 2015a; Krishnan 2016c; Sarkar 2016; Sinha 2016a, 2017c,e).

Grey-headed Fish Eagle *Icthyophaga ichthyaetus*. [NT]

Not listed in Choudhury (2010). One was seen perched in a tall tree near a reservoir in Sepahijala NP & WS on 30 January 2016. Again, a lone bird was perched in a tall tree three near the rest house in Trishna NP & WS on 31 January 2016; there was an active nest in a nearby gujar tree *Dipterocarpus turbinatus*. The local forest staff informed that nest is in regular use. Two birds, an adult, and an immature, were seen in flight between Kathalia and Trishna NP & WS (c. 2 km from former) in Sepahijala District on 07 February 2016 [87]. These birds were not Lesser Fish Eagle *I. humilis* as the white tail of the adult bird had a well-defined black terminal band. Also listed by Chatterjee (2010), and in eBird (Choudhury 2014a; Krishnan 2016c).

*Brahminy Kite* *Haliastur indus*

Two lone birds were seen, near Bison Point, in Trishna NP & WS on 31 January 2016, and one in flight in the Anandapur area between Boxanagar and Sonamura in Sipahijala District on 04 February 2016. There are at least seven records in eBird (Choudhury 2014b, 2015c, 2016d; Dutta 2015a; Krishnan 2016c; Sinha 2016a, 2017b).

Crested Goshawk *Accipiter trivirgatus*

Listed as uncommon in Choudhury (2010). A lone bird seen perched high up the banks of the Gumti River, c. 2 km downstream of Chhabimura, in Gomati District on 03 February 2016.

*Buzzard* *Buteo* sp.

A lone bird seen perched in a tree in a rubber garden in the Anandapur area between Boxanagar and Sonamura, in Sipahijala District on 04 February 2016. It continued to perch allowing good views. The upperparts appeared brownish, with white edges to feathers. Underparts brown with white patches on breast, which were clearly visible. The tail was paler grey. The bird could be a Common/Himalayan Buzzard *Buteo buteo/refectus* [88].

Shikra *Accipiter badius*

Resident, with several sightings of lone birds. A bird was seen perched in a low shrub on the right bank of the Gumti River at Chhabimura on 03 February 2016. Another was seen in a shrub near Boromura-Gandhari Reserve Forest (henceforth, RF) along the Udaipur–Amarpur road on 05 February 2016 [89]; both in Gomati District. Several reports exist in eBird (Sinha 2016a, b; Viswanathan 2010a, d, e, f, g).

*Osprey* *Pandion haliaetus*

One in low flight over the Gumti River, c. 2 km downstream of Chhabimura on 03 February 2016 in Gomati District, and another near Bison Point in Trishna NP & WS on 07 February 2016. Four reports exist in eBird from March and December (Choudhury 2015c; Dutta 2015a,b; Viswanathan 2010g).
Common Snipe Gallinago gallinago
Two were seen in Rudrasagar Lake on 29 January 2016. The prominent white trailing edge to wing (seen when they made short flights) separated these two from similar looking Pintail G. stenura, and Swinhoe’s G. megala Snipes. There is a clear photographic record in eBird (Sarkar 2016), and four other sight records (Choudhury 2014a; Dutta 2015b; Krishnan 2016c; Sinha 2017f), without notes. Sight records are treated here as tentative as snipes are notoriously difficult to identify unless well seen.

Wood Sandpiper Tringa glareola
Two were seen in Rudrasagar Lake on 29 January 2016, and nine near Amarpur on 10 February 2016. Records exist in eBird from November (Sarkar 2016), and February (Choudhury 2014a).

Pale-capped Pigeon Columba punicea [Vulnerable]
One seen in slow flight in Churaibari RF (24.87ºN, 91.36ºE), North Tripura District on 22 November 2016. The site is c.1.5 km, as the crow flies, from Longai RF of Assam’s Karimganj District. Its pale cap and glossed chestnut-brown upperparts made its identification straightforward. These features, and its slightly longer tail and larger size, removed any doubt of confusion with Pompadour Green Pigeons Treron pompadora. The habitat was mixed, with bamboo, trees, and also a few hutments. Although not listed in Choudhury (2010), a bird was photographed at Lembucherra near Agartala, West Tripura District (Sinha et al. 2015).

Wedge-tailed Green-Pigeon T. sphenurus

Vernal Hanging Parrot Loriculus vernalis
Two were seen, one after another, flying to a tree, and then out of it, in Boromura-Gandhari RF in Gomati District on 05 February 2016 [91]. Also, two lone birds in Trishna NP & WS on 07 February 2016, a few in flight in the Pitra area of Boromura-Gandhari RF on 09 February 2016, and one in flight in West Kalajari RF, also in Gomati District on 10 February 2016.

Kaleej Pheasant Lophura leucomelanos
A female of the black-breasted subspecies lathami was seen in the Babushai area of Gumti WS on 11 February 2016, and a male in Teponia Eco-park (part of Radhakishorepur RF) in Gomati District on 14 February 2016. It has also been reported from Subalsingh, West Tripura (Viswanathan 2010c).

Red Junglefowl Gallus gallus
Seen on many occasions. Also, there are at least five records in eBird (Viswanathan 2009, 2010a,d,g,h). Up to ten birds (not in a single flock) were seen in Sepahijala NP & WS on 30 January 2016 [90]. Several birds were seen in Boromura-Gandhari RFs on 08 February 2016. Eleven (in groups of seven and four) were seen in Teponia Eco-park (part of Radhakishorepur RF) on 12 February 2016.

Grey-headed Lapwing Vanellus cinereus
Near Pitra, two, and one respectively on 08 and 09 February 2016; near Amarpur (a few) on 10 February 2016; and near Lalghir (11+) in the fields on 13 February 2016; all in Gomati District. Choudhury’s (2010) was the first published record. There are also two records in eBird (Choudhury 2014a; Sarkar 2016).
Oriental Pied Hornbill *Anthracoceros albirostris*
Three perched, and then in flight, in the Anandapur area between Boxanagar and Sonamura on 04 February 2016; call heard in Radhakishorepur RF on 14 February 2016 and a pair in Chandichara near Taibandul on 16 February 2016 [92]. Both these sites are in Sipahijala District. Forest staff showed me photos, taken of breeding birds, from north of Ampinagar in Gomati District. There are two records in eBird (Viswanathan 2010c,d). The species, however, is under threat owing to loss of mature trees, and opportunistic hunting.

Eurasian Wryneck *Jynx torquilla*
One seen foraging in shrubs on the banks of Rudrasagar Lake at Melaghar on 29 January 2016. There are two other records from January in eBird (Hussain 2017; Krishnan 2016c).

Greater Yellownape *Picus flavinucha*
Two birds seen in Boromura-Gandhari RF on 05 February 2016; several lone birds in Sepahijala NP & WS on 06 February 2016 [93], in the Pitra area of Boromura-Gandhari RF on 09 February 2016; and in West Kalajari RF, Gomati District on 10 February 2016. There are five other records in eBird (Viswanathan 2009, 2010a,d, 2010f,g).

Olive Bulbul *Iole viridescens*
Several lone birds were seen feeding on flower nectar in West Kalajari RF in Gomati District on 10 February 2016 [94]. It is a rare bird in India with a restricted range in the southern part of north-eastern India only. It was not listed in Choudhury (2010). There is a single record in eBird (Viswanathan 2010a), and in Chatterjee (2010).

Black-headed Bulbul *Pycnonotus atriceps*
Two birds were perched in a leafless shrub near the Gumti River, c. 2 km downstream of Chhabimura in Gomati District on 03 February 2016; and three to four birds feeding in Trishna NP & WS on 15 February 2016 [95] and a lone bird in Rowa WS on 5 May 2017. It is a rare bird in India with a restricted range in the southern part of NE India only. There are more records in eBird (Bhutia 2015; Viswanathan 2010a,b,g).

Orange-headed Ground Thrush *Zoothera citrina*
An uncommon species (Choudhury 2010). A lone bird was seen perched in a shrub near the rest house in Trishna NP & WS on 31 January 2016.
Pied Bushchat Saxicola caprata

An uncommon species, not shown in range maps in Kasmierczak (1998), and Grimmett et al. (2011). Listed in Choudhury (2010) as uncommon. Two birds were seen at the edge of fields between Maharani and Chandrapur RF in Gomati District on 02 and 04 February 2016. There is a record in eBird (Viswanathan 2010b).

Large Scimitar Babbler Pomatorhinus hypoleucos

A single bird was seen south of the Udaipur–Amarpur road in Boromura-Gandhari RF in Gomati District on 09 February 2016. It was scratching on the ground, at the base of a tree, on a slope, when I noticed it. It allowed close observation for a moment, showing its dark olive-brown back, stout down-curved bill, and dark eyes. It could be confused with only the Spot-breasted Scimitar Babbler P. erythrocnemis, but the latter is smaller, and has a finer bill, yellow eyes, and brown spotting on breast. It is generally an uncommon bird, with small range in India (Grimmett et al. 2011). There is another record of this species in eBird, which was reported from near a wetland (Sinha 2017d), and hence, needs confirmation.

Maroon Oriole Oriolus trailii

Not listed in Choudhury (2010), and not shown on the range map in Kasmierczak (1998), or Grimmett et al. (2011). A lone bird was seen perched in a shrub high up the banks of the Gumti River, c. 1 km downstream of Chhabimura in Gomati District on 03 February 2016. Two more records exist in eBird (Viswanathan 2010a-g).

Lesser Racket-tailed Drongo Dicrurus remifer

An uncommon species in the state (Choudhury 2010). A lone bird was seen in Babushai area of Gumti WS on 11 February 2016. Its larger cousin, the Greater Racket-tailed Drongo D. paradiseus is, however, common, and sighted regularly. Another record of this species is present in eBird (Bhutia 2015) without accompanying notes; however the Greater Racket-tailed Drongo is not present in this list, and hence worth rechecking; therefore this record is treated here as tentative.

Discussion

Choudhury (2010) had mentioned the paucity of fieldwork in Tripura in the past as well as in recent decades. The lack of records of common species means that trends in the avifauna are hard to discern. Altogether 277 species were listed for Tripura in Choudhury (2010). The present work adds Black-headed Ibis, Grey-headed Fish Eagle, Common Kestrel, Pale-capped Pigeon, Wedge-tailed Green-Pigeon, Olive-backed Pipt, Olive Bulbul, and Maroon Oriole to the state’s checklist. Nowadays, given the popularity of photography, birders visiting the region should try to photograph as many species as possible and upload them to websites like eBird so that the records can be assessed independently.

Some common species were seen in large numbers during this work. These included Cotton Pygmy Goose Nettapus coromandelianus (250+ in Rudrasagar on 29 January 2016), Lesser Whistling Duck Dendrocygna javanica (500+ in Rudrasagar on 29 January 2016, and in Sepahijala NP & WS on 30 January 2016; 800+ in Trishna NP & WS on 31 January 2016; and c. 1500 in Chandicchara near Taibandul on 16 February 2016), and Little Cormorant Phalacrocorax niger (150+ in Rudrasagar on 29 January 2016).

The Gumti (Dumbur) Lake, which had several species that Choudhury (2010) documented, including a few Critically Endangered Baer’s Pochard Aythya baeri, did not result in any significant sightings this time around. The level of disturbance in both Gumti, and Rudrasagar wetlands has increased owing to growth in human population and their activities.

A major conservation concern is the clearing of forests found in the plains, even inside reserved forests, for paddy cultivation. Then there is the expansion of rubber cultivation, irrespective of the status of the land. At some places, land allotted to tribal communities, under the Forest Dwellers (Rights) Act, is converted into rubber estates. The four-laning of the national highway, from Churaibari to Sabroom, and the extension of the railway, from Agartala to Sabroom, have also seriously affected (loss, disturbance, and fragmentation) several reserved forest areas, including Sepahijala NP & WS. In the Sepahijala NP & WS sector, the four-lane highway must be diverted along the railways.

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References

Notes on the diet of a Jerdon’s Leafbird

Chloropsis jerdoni chick

Reshma Solanki, Kartik Upadhyay, Rahul Bhatt & Raju Vyas

J erdon’s Leafbird Chloropsis jerdoni [96 A, B] is endemic to Peninsular India, and Sri Lanka (Jathar & Rahmani 2007). It is widely distributed in Gujarat, and is found in several protected areas (Ganpule 2016). It prefers wooded habitats in relatively drier areas. Here we present some aspects of its behaviour including, parental care of young, food brought to the nest, feeding habits, and vocal mimicry of other birds’ calls during the study period.

Study area

Observations were carried out in the Benakoyi area in Bhat village (22.40°N, 73.62°E) of the Jambughoda Wildlife Sanctuary (henceforth, JWS; Panchmahal, and Vadodara Districts, Gujarat). The terrain is undulating and hilly, as this is the southern-most extension of the Aravallis, forming the western fringe of the Vindhya Mountain Range (Pandya & Oza 1998). The vegetation in the sanctuary consists of the Southern Tropical Dry Deciduous type forest (Champion & Seth 1968). The mean annual temperature in the sanctuary is 25.5ºC, with a maximum of 45ºC (May), and a minimum of 07ºC (January). The annual precipitation in the area ranges between 800–1200 mm.

Methodology

Our study was carried out for 19 days i.e., from 08 to 26 October 2015, till the fledgling left the nest. Direct visual observations were made from the ground, from a distance of 30–40 m using binoculars (Olympus 10x50), to prevent disturbing the nesting pair. Three observers were involved in the study, with at least two on the lookout for the birds’ activities at any given moment during observation time. Invasive observations, like of the assessment of nesting material, and the measurement of the nest, were carried out only after the entire family, including the fledgling, had left the nesting site. We used a calibrated measuring tape to document the food items for all measurements such as, the nest’s height above the ground, all measurements such as, the nest’s height above the ground, the adult’s beak in the removing of insects’ wings, and legs, were also included in the list. All prey was identified up to generic level, including, parental care of young, food brought to the nest, feeding habits, and vocal mimicry of other birds’ calls during the study period.