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Chinese Crested Tern: observations on juveniles in the Matsu Archipelago of Taiwan

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On the afternoon of 17 July 2006, and again on the morning of 19 July 2006, as a speaker attending the Chinese Crested Tern Conference (sponsored by the Taiwan International Birding Association) on the Matsu island of Nangan in Taiwan, I was fortunate to visit the small rocky islets off the Fujian coast where the Chinese Crested Tern *Sterna bernsteini* was first found breeding in 2000 (Liang *et al.* 2000). As the boat motored off the island where the main tern breeding colony was located, a few adult Chinese Crested Terns were spotted on the ground, and I took a series of digital pictures (Canon Digital Rebel XT camera with Canon EF 100–400 mm f4.5/5.6L IS USM lens). Subsequent analysis of these photographs revealed 5–7 Chinese Crested Terns, including a pair of adults with a juvenile. The term “juvenile” is used here to refer to a bird bearing the first coat of true contour feathers following the natal down (Humphrey & Parkes 1959).

Prior to 2000 no nesting sites of the Chinese Crested Tern had been described, and the breeding biology of this species was unknown (Harrison, 1985, del Hoyo *et al.* 1996). Although a film showing Chinese Crested Terns with downy young and older chicks was released in 2003 (Liang 2003) no descriptions of the juvenile plumage have been published to date.

On the basis of photographs I describe here the appearance of Chinese Crested Tern juveniles, compared to those of the Greater Crested Tern *S. bergii*, which form the main breeding species in this colony. The photographs have been cropped, but are otherwise unaltered.

Plates 1–5. Chinese Crested Terns *Sterna bernsteini*, Islets off Fujian Coast, July 2006. See text for details.



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A photograph taken on 17 July (Plate 1) shows a juvenile with a single adult, presumably its parent, well separated from other birds nearby. The juvenile has a dark, diffuse bar running horizontally through the eye, contrasting with a whitish chin and throat. The feathers on the mantle appear dark-centred. Most of the wing appears white, although the scapulars or lesser coverts may be dark or dark-centred. However, the resolution in this photograph is insufficient to show much detail.

On 19 July a series of pictures (Plates 2, 3 and 4) taken in the same general area show a pair of adult Chinese Crested Terns with a juvenile (A), next to an adult Greater Crested Tern with its juvenile (B). The bird at the bottom centre in these frames is another adult Chinese Crested Tern, apparently alone, i.e. without young. The Chinese Crested Tern juvenile (A) shown in Plate 5 is the same individual as in the above series, with only a single parent present. Again, an adult Greater Crested Tern and juvenile (B) are nearby for comparison. The ages of these juveniles are not known, but the young of the two species appear to be roughly the same size, and to have similar feather development. In these pictures, a number of field marks of the Chinese Crested Tern juvenile are visible:

1. Bill colour

Bluish-grey, clearly different from that of Greater Crested Tern juvenile, which is yellow or orangish-yellow; best seen in Plates 3, 4 and 5. Bill colour of Chinese Crested Tern thus changes from dull bluish-grey in the early stage juvenile to orangish-yellow (for the basal two-thirds) in adults, while that of Greater Crested Tern goes from orangish-yellow in the juvenile to a paler yellow in the adult.

2. Leg colour

Poorly visible owing to obstruction by vegetation. Left foot and part of tarsus visible in Plate 5 A; these appear dark, perhaps bluish-grey, like the bill. Legs of Greater Crested Tern juvenile are not visible in these pictures, but in other photographs are yellow or orangish-yellow, like the bill.

3. Mouth lining

Appears pinkish (Plate 4), while that of the Greater Crested Tern is orangish-yellow (Plates 4 and 5).

4. Head markings

A dark diffuse bar runs horizontally through the eye, curving downward and back to the nape (Plate 5). In contrast, the head markings of Greater Crested Tern juvenile are more complex, with a "spur" usually branching off behind the eye, curving downward (Plate 2).

5. Mantle and wing-coverts

The most obvious and striking differences between the young of these two tern species are seen in the wings. Greater Crested Tern juvenile shows a dark U-shaped bar running around the bend of the wing, apparently formed by blackish lesser coverts and outer primary coverts (Plates 3B, 4B, 5B); the greater coverts also have dark markings, as do the scapulars. In contrast, the wing of Chinese Crested Tern juvenile appears whitish overall, owing to the lack of dark markings on the wing-coverts; dark markings are present on the scapulars, but they appear widely spaced (Plates 3A, 5A). A dark edge near the scapular region (e.g. Plate 3A) may be due to the presence of markings on the first row of lesser coverts as well, but this is difficult to determine for certain from the photographs. Both juveniles appear to be similarly marked with blackish spots on the mantle, although those of Chinese Crested Tern appear slightly lighter and smaller.

The number of Chinese Crested Terns in existence is unknown, but is certainly very small. In 1999 and 2002 the tern colonies in the Matsu Islands experienced extensive nest failure, apparently owing to disturbance by mainland Chinese fishermen landing on the islands to collect shellfish and tern eggs (Liang 2003). It is hoped that the designation of the Matsu tern colonies as a wildlife reserve (since 1999) and the ongoing international publicity generated by the Chinese Crested Tern will lead to effective enforced protection of these colonies. The presence of breeding Chinese Crested Terns in the Matsu Islands provides a unique opportunity to fill in some of the gaps in our knowledge of this Critically Endangered species. The field marks described here should be of assistance in the future for locating and following the young in the crowded mixed colonies.

References

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