

Neither are there any orange-coloured larvae or worms on Java with which I might have confused the arils.

The Oriental White-eye is one of the few birds that can survive perfectly well in the urbanized parts of Java. Foraging flocks can be observed in trees in the busiest places, such as bus terminals or shopping streets (pers. obs.). Whereas white-eyes did not occur fifty years ago in the city of Jakarta (Hoogerwerf and Siccama 1938, Hoogerwerf 1948), they have been observed near Blok M (Jakarta City) in May 1988 (pers. obs.) and certainly have a much wider distribution now. Their adaptability is proved again as they take the exotic *Acacia auriculiformis* as food. The tree is native to the Key Islands, New Guinea and Australia, and is locally cultivated as an ornamental tree in gardens (Backer and van den Brink 1963), but in the past few decades more and more are being used to line roads and furnish city parks. Ironically, the municipality of Jakarta decided against continuing to plant acacia trees

because it was presumed that they were unattractive to birds.

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S. (Bas) van Balen, BirdLife International – Indonesia Programme, P.O. Box 310/Boo, Bogor 16003, and Department of Nature Conservation, Wageningen Agricultural University, P.O. Box 8080, 6700 DD, Wageningen, the Netherlands

Unusual food item and declining numbers at only known regular wintering site of Relict Gull *Larus relictus*

NIAL C. MOORES, W. (TED) HOOGENDOORN, JIN HAN KIM and JIN YOUNG PARK

On 23 February 1995, between 13h30 and 16h00, we observed six Relict Gulls *Larus relictus* (four adults in winter plumage and two first-winters) in the Nakdong estuary, Pusan City, Republic of Korea. The birds were feeding on a tidal mudflat c. 500 m north of Daema island and were observed from this island, which is located c. 1 km south of the part of the mainland between the Nakdong and Jukrim rivers.

Being aware of the scarcity of documentation of Relict Gull feeding behaviour in winter, we were particularly interested in observing the feeding strategy and diet items of the species. Typically, the birds walked slowly over the drier areas of mudflat, occasionally entering the water, apparently taking small crustaceans and other miscellaneous items. Their walking pace was noticeably slower and more careful than of the other gulls feeding on the mudflat, particularly Black-headed Gulls *L. ridibundus* and Saunders's Gulls *L. saundersi*, but at range it was difficult to identify food items. In order to obtain better views of Relict Gull feeding behaviour, we approached by boat within 80 m of one of the adults. Much to our amusement, this individual started to peck at an apple core, as if to serve us hand and foot. Perhaps considering it a crustacean, the bird picked up the apple core, flew up to a height of c. 6 m, and dropped it. It then swooped down and quickly pecked at several of the remains, apparently taking these as food. This prey-dropping behaviour had been observed on previous visits by NCM to the same site

in February 1992, and it was also noted by Chalmers (1992). The observation described here appears to be the first documented incidence of a Relict Gull feeding on fruit.

Until now this particular site is the only known regular wintering site of Relict Gull in the world (cf. Duff *et al.* 1991, Sonobe 1993). Unfortunately, recently it has become extremely difficult to approach this site from the mainland side, due to land reclamation works. David Diskin (pers. comm.) observed seven individuals at the same site in early February 1995. Apparently, numbers of wintering Relict Gulls have declined here after the onset of land reclamation, since Chalmers (1992) and NCM recorded at least 36 on 4 February 1992 and 32 on 12 February 1992. This is a most alarming situation.

The importance of this site is further enhanced by its wintering flock of Saunders's Gulls, of which we observed c. 125 individuals here, and on the south side of Daema island. Saunders's Gull is one of the rarest gull species of the world and both its known breeding colonies and its known major wintering sites are either being reclaimed or under threat of reclamation (Brazil and Moores 1993, Collar *et al.* 1994).

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Nial C. Moores, Kyushu / Japan Wetlands Action Network, Maison Trianon #101, 3-27 Kashii Jingu, 6-Chome, Higashi-ku, Fukuoka 813, Japan

W. (Ted) Hoogendoorn, Notengaard 32, 3941 LW Doorn, Netherlands

Jin Han Kim, Wildlife Management Division, Forestry Research Institute, 207 Cheongyangni-dong, Tongdaemun-gu, Seoul 130-012, Republic of Korea

Jin Young Park, Sl. Chong Nyang, P.O.Box 223, Seoul 130-650, Republic of Korea

Aerial casque-butting in the Great Hornbill *Buceros bicornis*

T. R. SHANKAR RAMAN

Recently, Cranbrook and Kemp (1995) drew attention to the phenomenon of aggressive interactions among Asian hornbills (Bucerotidae) involving individuals (males) clashing their casques in mid-air flight. Among the six genera and 31 species of Asian hornbills now recognized (Poonswad and Kemp 1993, Kemp 1995), such aerial casque-butting has been reliably reported only in a single species of large hornbill, belonging to the genus *Buceros*. This is the Helmeted Hornbill, *Buceros* (subgenus *Rhinoplax*) *vigil*, which was only recently placed in this genus (Kemp 1955). A reference to the existence of aerial casque-butting behaviour in the Great (Pied) Hornbill, *B. bicornis*, was made in Poonswad and Kemp (1993, p. 104); this was, however, later reported to be an error (Cranbrook and Kemp 1995). All species of *Buceros* are territorial as adults when breeding, and it is of much interest, particularly in the face of cladistic changes in the taxonomy, to see which aspects of behaviour are shared among the species.

Here, I report field observation of the rare aerial casque-butting behaviour in the Great Hornbill. During a six-month study of the impact of shifting cultivation on tropical rainforest bird communities (Raman 1995), aerial casque-butting was observed in this species in a rainforest region in northeast India. The study area, Dampa Tiger Reserve (c. 500 km², 23°20'–23°47'N and 92°15'–92°30'E), in western Mizoram state, contains an extensive tract of tropical evergreen forest vegetation. Two other species of hornbills, the Wreathed Hornbill, *Rhyticeros* (= *Aceros*) *undulatus* and the Oriental Pied Hornbill *Anthracoseros albivostri* (incorrectly called *A. malabaricus* in Ali and Ripley 1987) also occur in the study area and were seen on a regular basis in the rainforest.

On 11 April 1995, while walking a transect in mature rainforest in the Tuichar valley near the Chawrpialtlang range (altitude c. 450 m), four Great Hornbills were spotted. Three of the birds were males and were perched on an emergent *Tetrameles nudiflora* tree. A female was also perched nearby. At 06h21, one of the males took off from the branch where it was perched, flew out just above another perched male, and while still in flight, clashed its

casque loudly with that of the perched male. Flying past the perched male, it then settled on another branch. After a few seconds, it took off from the perch and repeated the behaviour, clashing its casque with the perched male. This performance was repeated several times, until 06h30, when all the birds took off and flew away in the same direction. To all appearances, the other male and the female did not participate in the above interaction. It also should be noted that this observation, where one of the interacting males was perched, is different from that reported for Helmeted Hornbills, where both individuals clashed their casques in mid-air flight (Cranbrook and Kemp 1995).

The observed behaviour may have been a territorial interaction among the hornbills, which had the enhanced yellow plumage colouration developed during the breeding season (Ali and Ripley 1987, R. Kannan pers. comm.). It is intriguing that the interaction was seen between only two of the three males present. It is not known, however, whether the other male joined in the interaction after the hornbills disappeared from view (chased by one male?). Could the male-male aggression have been a form of competition or display for securing the female, as two of the males appeared to be unpaired? Unfortunately, the exact breeding season of Great Hornbills could not be determined during the study. Judging from the observation of plumage and vocalizations, however, it appeared that some initiation of breeding activity may have occurred between late February and May and breeding may have continued after the onset of the monsoon (mid-May to June) after I left the study area. Ali and Ripley (1987) report April–May as the (onset of?) breeding season of this species in the Himalayas. Preliminary observations from Pakhui Wildlife Sanctuary in Arunachal Pradesh also seem to indicate that breeding in the Great Hornbill begins around April–May (A. Datta pers. comm.). While more definitive evidence is required, it seems likely that the observed behaviour is thus a pre-breeding interaction between adults.