SOME NOTES ON THE STATUS, FIELD IDENTIFICATION AND FORAGING CHARACTERISTICS OF NORDMANN'S GREENSHANK *TRINGA GUTTIFER*

by John Howes and Frank Lambert

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INTRODUCTION

Nordmann's Greenshank *Tringa guttifer* is included in the IUCN/ICBP Red Data Book (King 1977) under the category of "Status indeterminate". Breeding has only been confirmed from two sites in the USSR, both on Sakhalin Island, though it is possible that the species breeds in Kamchatka, the Bering Islands (King 1977), Schastye Bay in the Gulf of Okhotsk (Nechaev 1982) and Khabarovsk Territory (Vaurie 1965). The breeding record from eastern Tibet (Baker 1929) is regarded as doubtful (Dement'ev *et al.* 1951). The former breeding site in south Sakhalin (Aniva Bay) has been developed and is no longer used by the birds, leaving Chaivo Bay and Dagy Bay in north-east Sakhalin as the only definite breeding sites (Nechaev 1982). Austin and Kuroda (1953) report seeing 50-60 birds here, but during 1975/76 only fourteen breeding pairs were located in this area. The birds were nesting in low trees in sparse, marshy larch forest (Nechaev 1982).

Although known to occur in winter in coastal Peninsular Thailand in small numbers (Bain & Humphrey 1982), recent intensive fieldwork by INTERWADER in Thainland, West Malaysia, Sabah, Sarawak, Sumatra, Java and Timor has failed to locate any substantial numbers of wintering birds (D.Parish pers. comm.).

This paper is based primarily on observations of Nordmann's Greenshank made by the authors at Ko Libong, south Peninsular Thailand (7°15'N, 99°25'E) during December 1985, and by F.R.L. at Khao Sam Roi Yot, north Peninsular Thailand (12°08'N, 99°58'E) in January 1981.

FIELD IDENTIFICATION

Nordmann's Greenshank has always been considered a difficult species to distinguish from Common Greenshank *T. nebularia* in winter plumage. In summer plumage it has been compared to summer plumage Great Knot *Calidris tenuirostris* (Hayman *et al.* 1986). In the opinion of the authors, it is unmistakable in winter plumage and has an appearance very different from that of Common Greenshank.

All birds seen by the authors were notably paler and appeared stockier than the latter species. This could easily be picked out by a combination of shorter, bright yellow legs and a distinctly upturned appearance of the bill which, when clean, had a yellow basal half. These two features give Nordmann's Greenshank an overall appearance like a stocky Terek Sandpiper *Xenus cinereus*, though the bill is more upturned in the latter species.

FIELD DESCRIPTION OF WINTER PLUMAGE ADULT IN LATE DECEMBER

The mantle was uniform pale grey, recalling the colour of Marsh Sandpiper *T. stagnatilis* rather than the darker grey of accompanying Common Greenshanks. From a long distance all Nordmann's Greenshanks appeared overall very pale and could be picked out in the scattered mixed feeding flocks even with the naked eye.

The upper wing coverts and scapulars were the same colour as the mantle, with the bend of the wing and primaries slightly darker. The crown and nape were the same colour as the mantle, but with fine darker streaks throughout. The sides of the neck were faintly smudged with brown. The birds had indistinct off-white supercilia, more prominent in front of than behind the eye. The lores and ear coverts were pale grey with indistinct fine streaking. The underparts were very clean white with some faint brown smudging on the sides of the breast. The tail appeared all white at rest.

In flight, the tail appeared white with indistinct pale grey barring, whilst the upper tail coverts, rump and lower back were white and the feet projected slightly beyond the tail tip. The underwing coverts and axillaries were clean white, contrasting with greyer flight feathers.

The bill length was approximately 1.5 times the distance from bill-base to nape, appearing basally relatively thicker and stockier than that of Common Greenshank and distinctly upturned. In good light, the basal half of the bill was distinctly yellow and contrasted with the dark brownish distal half.

The legs were proportionally much shorter than on nearby Common Greenshanks and bright yellow on all Nordmann's Greenshanks observed. When walking away from the observer on hard sandy substrates the characteristic toe webbing was often noticeable.

DESCRIPTION OF THE FORAGING AREAS

At Ko Libong the birds were feeding in two areas; in close proximity to the village of Ban Patu Pute, and around Ko Hard Toop (Figure 1).

The former area consists of intertidal flats with up to 1 km of sandy mudflat exposed at low tide interspersed with low rocky outcrops. The rocky area contains shallow pools of standing water whilst the muddier areas, on the seaward edge of the flats, have small depressions holding water and sea grasses (*Halophila*

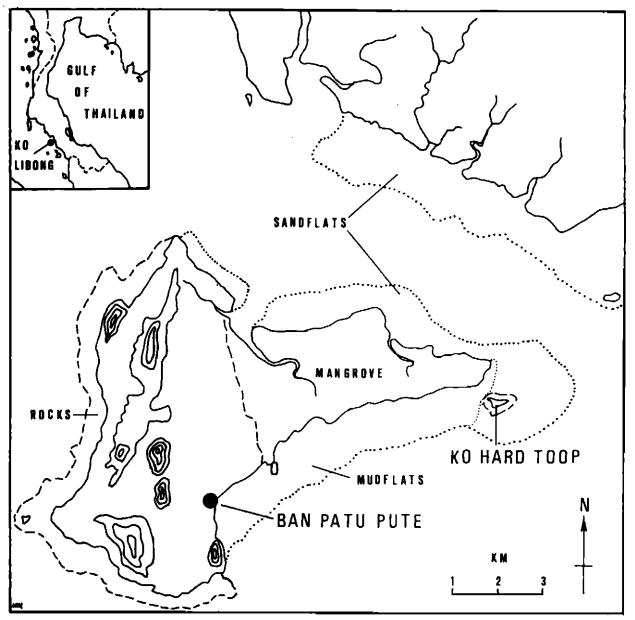

Figure 1. Ko Libong, showing substrate types and shorebird foraging areas.

ovalis, Thalassia hemprichii, Enhalus acroides and Cymodocea rotundata). Some corals were present on the rocky outcrops. Four Nordmann's Greenshanks were seen foraging during the incoming tide, in the rocky outcrop area closest to the village. Due to the very flat nature of the intertidal zone and the speed of the tidal surge, time for observations was limited.

Ko Hard Toop, a small islet south east of Ko Libong, is composed of a high sand ridge, mangrove fringe and extensive sandflats (Swennen & Marteijn 1985). Wader flocks were observed foraging at low tide on the wind intertidal flats fringing the islet. At high tide Ko Hard Toop is used by up to 2600 roosting waders (Swennen *et al.* 1986). Seven Nordmann's Greenshanks were seen roosting there at high tide on a raised sand bar. As the tide receded they began feeding on the water's edge.

The site at Khao Sam Roi Yot is a pure coarse sand beach, with a sandflat area near the rivermouth and some muddier areas to the south along the beach. Two Nordmann's Greenshanks were observed on muddy sandflats at the southern end of the beach and one was later seen feeding at the water's edge on a sand bar adjacent to the river. The state of the tide was not noted.

CHARACTERISTICS OF FORAGING BEHAVIOUR

Although Bijlsma & de Roder (1986) consider that the foraging behaviour of Nordmann's and Common Greenshanks at Ko Libong do not differ greatly, our own observations showed that the foraging of these two species was distinctly different. Common Greenshanks were observed chasing small fish (<40 mm in length) whilst running rapidly through the shallows. Nordmann's Greenshanks moved slowly and made continuous multiple pecks in the sandy bottom of the pools with an open bill, moving the head from side to side in the manner of an Avocet *Avosetta recurvirostra*. Between pools the birds usually moved faster with single pecks.

Between 7 and 11 Nordmann's Greenshanks were watched feeding at Ko Libong on three consecutive days for a total of approximately three hours. Quantitative details were collected during 18 one - minute intervals. The method of data collection follows Swennen & Marteijn (1985).

Whilst foraging, the birds walked an average 62.4 (s.d. 19.1) paces per minute. Birds stopped a mean 7.5 (s.d. 3.0) times per minute for 1.3 secs per stop. A foraging bird made an average number of 3.9 (s.d. 5.0) single pecks per minute and 6.7 (s.d. 5.8) multiple pecks per minute; feeding activity lasted on average 50.1 secs per minute.

Nordmann's Greenshanks were less active feeders than Common Greenshanks; at Pattani, Thailand and Jeram, West Malaysia Swennen (pers. comm.) estimated that the latter species made 9.3 single pecks and 0.5 multiple probes per minute, whilst walking continuously at a rate of 121.5 paces per minute. During observations at Ko Libong Nordmann's Greenshanks were never seen to feed in the quick chasing manner of the Common Greenshank.

Nine prey items were seen during the period of data collection. Seven of these were swimming crabs of the Family Portunidae (probably *Portunis sanguirolentus and P. pelagicus* (Swennen *et al.* in prep.)) whilst the other two were fish. The crabs were all caught in pools and varied in carapace width from about 5-40 mm, judged against the bill length of 48-58 mm (Hayman *et al.* 1986). Small crabs (less than 15 mm carapace width) were swallowed almost immediately, the larger ones being carried to the pool edge and shaken until some or all of the legs were broken off. The body was then swallowed whole, followed by the legs. This process lasted up to 24 seconds. Two fish of length 30 and 40 mm were captured during periods of multiple pecking in the shallow pools and were immediately swallowed head first.

At Khao Sam Roi Yot, Nordmann's Greenshanks were foraging near the water's edge on a coarse sand substrate, running fast in the manner of a Terek Sandpiper. Although their prey items were not identified at the time, recent sampling of the site by INTERWADER suggest that crabs of the Family Oxipodidae were the most likely prey (J. Howes pers. obs.).

In the vicinity of their breeding grounds, the food of Nordmann's Greenshank consists primarily of Sticklebacks *Pungitius pungitius sinensis*, Polycheate worms, small crustaceans and insects (Nechaev 1982). Feeding methods on the breeding grounds is decribed in Nechaev (1982).

ATTEMPTED KLEPTO-PARASITISM

During the foraging observations at Ko Libong, Nordmann's Greenshanks were observed feeding solitarily, sometimes in pairs, in close proximity to Common Greenshank, Common Redshank *T. totanus*, Terek Sandpiper, Whimbrel *Numenius phaeopus*, Common Sandpiper *T. hypoleucos*, Ruddy Turnstone *Arenaria interpres*, Mongolian Plover *Charadrius mongolus* and Grey Plover *Pluvialis squatarola*. Within the foraging area a number of inter- and intra-specific interactions took place.

On one occasion, whilst a Nordmann's Greenshank was handling a crab exceeding 30 mm carapace width at the edge of a pool, a Grey Plover ran

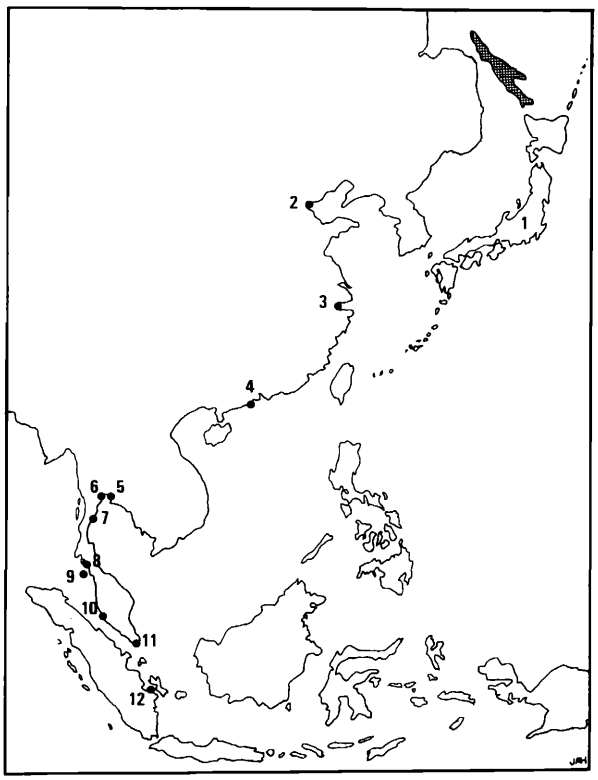

Figure 1. localities of recent records of Nordmann's Greenshank in South-east Asia, and the breeding area on Sakhalin Island, USSR (stippled). Sites are: 1 unknown sites in Japan; 2 Bedaihe, China; 3 Chongming Island/Hang Zhou Bay (Yangtze River delta), China; 4 Mai Po and Deep Bay, Hong Kong; 5 Bangpoo, Thailand; 6 Samut Sakhon, Thailand; 7 Khao Sam Roi Yot, Thailand; 8 Krabi, Thailand; 9 Ko Libong, Thailand; 10 Selangor, West Malaysia; 11 Changi, Singapore; 12 Jambi, Sumatra.

towards the Nordmann's Greenshank and attempted to steal the prey. The Nordmann's Greenshank ran a distance of about 5 m and consumed the prey.

On another occasion, a Common Redshank feeding in the same pool as a Nordmann's Greenshank ran and flew towards it immediately after it had caught a crab of 40 mm carapace width. The Nordmann's Greenshank ran with the prey and was pursued by the Common Redshank, but eventually the prey was dropped into another pool and neither bird secured it.

Two Nordmann's Greenshanks foraging within 10 m chased each other on three occasions when a crab of about 30 mm or more was taken by one of the birds.

RECENT RECORDS AND STATUS

Historically, Nordmann's Greenshank has been recorded as a migrant in small numbers in the South-east Asian region (Figure 2). Despite increased, though still limited coverage, relatively few records exist for recent years. Old records of the species exist from China (de Schauensee 1984), Hainan (Styan 1894), Thailand (Bain & Humphrey 1982), Taiwan (Chang 1980), Burma (Smythies 1954), Bangladesh, Assam (Ripley 1982), Korea (Fennell & King 1964) and West Malaysia (Medway & Wells 1976). However, some identifications are open to doubt. Records from 1973 until October 1986 derive almost entirely from three areas; Japan, Peninsular Thailand and Hong Kong.

Although the largest flock of Nordmann's Greenshank seen in recent years was of 29 birds observed in West Malaysia in March 1978 (Wells 1984), this is the only record there since 1973. The only recent confirmed record for Singapore was a single bird in November and December 1981 (C. Hails, pers. comm.). Until 1986, when Silvius (1986) saw 8 Nordmann's Greenshanks in south-east Sumatra, there were no records from Indonesia.

Information from China is difficult to obtain, but the authors know of the following records from Chongming Island in the Yangtze Delta. Nordmann's Greenshank was observed there in June 1981 (Zhou Shi-e 1984). Three birds were collected by local hunters between November 1981 and May 1983 (Cui Zhixing *et al.* 1985). Three specimens seen at the Museum of the Nanjing Institute of Forestry in June 1984 D. Parish pers. comm.) may have been the same birds. A single bird was caught at Hang Zhou Bay in the Yangtze Delta in September 1986 and five were observed at the same locality in October 1986 (Wang Tian Hou pers. comm.). A further recent record from China was of a juvenile observed in September 1986 at Bedaihe in Hebei Province (Bakewell 1986).

Nationwide wader counts in Japan between 1973 and 1985 produced single records of Nordmann's Greenshank in three springs, and a total of 38 birds in 10 of the twelve autumn counts (Wild Bird Soc. Japan 1985).

In Hong Kong there were no records between 1973 and 1982, but at least 17 individuals were seen in the period 1983 to 1985 at Mai Po Marshes and Deep Bay. The largest number seen on any one day was 12 on 14 April 1985 (Chalmers 1986). These records undoubtedly refer to migrants, occurring in April, May and September. Three birds seen on 7 June 1986 (P. Kennerley pers. comm.) may have been non-breeding birds, since Nechaev (1982) states that Nordmann's Greenshanks start nest building in late May and early June.

Since 1979, records from Thailand have been annual, with the majority of records coming from two sites in the peninsula, Ko Libong and Khao Sam Roi Yot. There are also records from Krabi Province (Bain and Humphrey 1982) and Pattani Province (Ruttanadakul and Ardseungnurn 1987). The only non-peninsular record in recent years is of a single bird seen at Bangpoo, in the Gulf of Thailand, in December 1980 (F. Lambert pers. obs.), although there is an unconfirmed record from Samut Sakhon in November 1984 (Parish 1985).

Although a number of observers have visited Khao Sam Roi Yot on the east coast of the peninsular in recent years, Nordmann's Greenshank has only been recorded in two years. Two birds were seen there in January 1980 (F. Lambert pers. obs.) and at least one in January 1982 (Parish 1985).

Nordmann's Greenshank was first identified at Ko Libong in April 1982 (Parish 1985), and has since been recorded there every year. Birds have now been seen by six groups of visiting ornithologists between December and March, with at least 10 birds present in March 1983 (Parish 1985) and 7-11 in December 1985 (authors pers. obs.). However, an intensive wader survey during late October 1985 failed to locate any Nordmann's Greenshanks (Swennen *et al.* 1986), suggesting that birds do not arrive before November.

Ko Libong, and possibly Khao Sam Roi Yot, are

to date the only identified areas where Nordmann's Greenshank appears to winter. Most shorebird surveys in the region have been conducted at sites where extensive areas of mudflats predominate. Few surveys have been carried out in habitat similar to that of the wintering area at Ko Libong (i.e. sandy mudflats).

Future fieldwork among the islands off the west coast of the Malay Peninsula or in Sumatra, where suitable habitat could exist, may locate more wintering areas for Nordmann's Greenshank. However, considering the restricted known breeding range of Nordmann's Greenshank, it seems certain that this species is very rare with perhaps a world population of less than 1000 birds.

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Postscript

INTERWADER is currently producing a detailed Species Status Report on Nordmann's Greenshank and would welcome all records and any information. Full acknowledgement will be given for all information.