APPENDIX 1

DESCRIPTION OF THE LIKHU KHOLA AND TRIBUTARIES

Dee Khola - open, very few alders, little riparian vegetation - either grazed, cut or cultivated to edges; some steep rocky dry hilly sides with mix of scrub tree growth; side tributaries with narrow strip of alder canes. Many irrigation channels diversing water from streams and much sandy sediments on stream bed. Large boulders in streams, but only two or three small (1 m high) waterfalls. South-facing.

Mahadev Khola - similar to Dee but riparian vegetation in patches by wooded sections and narrow gorge with cliffs and waterfalls up to 4 m high, for 300-400 m. Lower section with many rocks and stones. Wetted area reduced to trickle through irrigation diversions; much sediment and very turbid water. Hillsides usually in upper reaches. Channel width in lower section c. 10-15 m but stream reduced to 5-8 m. Gorge only 6-8 m wide. South-facing.

Bire Khola - narrow stream mainly with steep banks with shrubs and trees overhanging much of stream and adjacent flat forest in patches. Elsewhere the fields. Rocks and boulders abundant but no true waterfalls. Many irrigation channels and much sediment on stream bed. Highest section more open. North-facing.

Sunduli - broader (50 m) of tributaries surveyed with good flow. Some banks, many with fringe of trees and shrubs; some waterfalls; numerous rocks and boulders. North-facing.

Chhupi Khola - a tributary of the Sunduli through woodland for much of survey; meandering and rocky, narrow 4-6 m. More open in upper stretch.

Bhondiara and Jogi - two narrow tributaries, 2-8 m wide; the lower part of the Jogi through cultivation; little bankside cover, some high rocks and waterfalls at upper end of stretch surveyed; the Bhondiara through cultivation too but in a narrower rocky channel with thick vegetation on stream sides, cliffs and waterfalls; a small trickle only in upper section.

Likhu Khola - Upper 2 km surveyed rocky, open flat lying, 20-40 m wide, mainly 1 m deep; many shoals, riffles, some deep pools with river side cliffs. Little riparian vegetation except odd patches and degraded forest along one bank for 500 m below the Sunduli confluence. Alluvial terraces cultivated up to river edge. Much disturbance by boat people and stock. Two bridges across the river and easily fordable elsewhere. Lower section in broad open valley, extensive shoals and river much banded, channel up to 500 m across. Greatest reduction of upper section.

WINTER RECORDS OF THE MANCHURIAN REED-WARBLER

Acrocephalus (agricola)
tangorum from Thailand

PHILIP D. ROUND

Non-breeding season records of the Manchurian Reed-Warbler Acrocephalus (agricola) tangorum are reported from Thailand. These are the only observations of this taxon away from north-east China and Amurland, Russia where it both breeds and has been recorded on passage. A. tangorum shows some distinct differences from nominate A. a. agricola and its taxonomic and conservation status should be examined anew, particularly as it may be severely threatened by habitat destruction in its Thai winter quarters.

INTRODUCTION

The Manchurian Reed-Warbler Acrocephalus (agricola) tangorum is a little known taxon which breeds in both Heilongjiang province and the Nei Mongol Autonomous Region in north-east China (Cheng 1987, Alström et al. 1991) and in Russian Amurland (Shibnev and Gluschenko 1977, Stepansian 1978, Gluschenko 1989). It has also been recorded on passage, in the western part of Liaoning, Liaoning Province (Cheng 1987) and at Qinhuangdao, Hebei Province from which it was first described (La Touche 1912). Kennerley and Leader (1992), Williams et al. (1992) and Williams and Hsu (1992) have recently detailed a number of sightings of migrant tangorum at the nearby sites of Beidaihe and Dali in both spring and autumn.

This paper documents the first records of tangorum away from north-east Asia, in its presumed winter quarters in Thailand.

THE FIND

The author, together with Dr Boomsong Lekagul, was netting migrant passerines in a freshwater marsh at Khao Sam Roi Yot, Prachuap Khiri Khan Province, south-western Thailand (12°10'N 99°54'E) on 6 May 1981, when he noticed an unusually rufous warbler with only a slight blackish brow among a number of Black-browed Reed-Warblers A. bistrigiceps trapped. This was immediately recognised as being similar to a skin labelled A. agricola which the author had previously examined at the Centre for Thai Reference Collections, Thailand Institute of Scientific and Technological Research, Bangkok. That specimen (number 53-2875), a first autumn female, had
been collected by Dr J. T. Marshall at Bang Phra Red Cross Horse Farm, Chon Buri Province, south-eastern Thailand (13°11′N 100°59′E) on 9 October 1967. The Khao Sam Roei Yot bird (Field number ACW 14) was collected for deposition at the Centre for Thai National Reference Collections.

The presence of a slight, but noticeable, black brow in both specimens indicated, according to Vaurie (1959), that the birds might be *A. (agricola) tangorum* and this was confirmed when the Khao Sam Roei Yot skin was compared with a series of eleven specimens of *tangorum* held at the British Museum (Natural History) in August 1982.

Subsequent observations of *tangorum* at Khao Sam Roei Yot were sight records of single birds by the author, Ben King and a King Bird tour group on 17 January 1985, and by the author and J. Dunn on 15 February 1985. A number of other sightings of *tangorum* at Khao Sam Roei Yot have been reported in subsequent years up to the present.

One further *tangorum* was netted in a marsh at Rangsit, Pathum Thani Province, on the northern outskirts of Bangkok (13°59′N 100°38′E) by Kevin Baker on 3 March 1987. After examination, it was photographed and released.

These appear to be the only records of this taxon away from north-east Asia.

**DESCRIPTION**

The two Thai specimens of *tangorum* showed fresh to slightly worn body plumage, having warm rufous-brown upperparts, with the rufous tinge being strongest on the rump and upper tail coverts, and rufous-edged tertials. The crowns of both birds appeared slightly mottled, the individual feathers having blackish-brown centres and olive-brown edges. The blackish feather centres were particularly prominent on the lateral crown, above the supercilium, forming a slight blackish brow which extended from the anterior margin to just behind the hind margin of the eye. The broad, buffy supercilium extended from the base of the bill to roughly half way between the rear margin of the eye and the nape. There was a blackish-brown line through the eye.

The throat was clear white while the breast, flanks and under tail coverts were a bright rufous tawny-buff. On the specimen examined live by the author, the maxilla was blackish-grey and the lower mandible entirely pale flesh. The legs were flesh-coloured and the iris muddy-brown. The label of the Bang Phra specimen gave the iris colour as grey.

The upperparts of the October specimen were slightly paler and more evenly rufescent than those of the May (Khao Sam Roei Yot) bird and the rectrices showed slight to moderate wear. On the May bird, the rufescent tint on the upperparts was somewhat reduced, particularly on the upper back, as the rufescent tips and edges of the body feathers had begun to abrade, revealing the darker feather centres. In contrast, the rectrices of the May bird were fresher with darker centres and deeper more intense rufous edges than those of the October specimen and had been recently moulted, together with all three tertials on both wings. The innermost secondary on the left wing had also been renewed but the primaries and all remaining secondaries were unmoulted and the primaries, in particular, showed moderate to heavy wear.

Both specimens were similar in plumage colouration to a series of seven skins collected by J. D. D. La Touche in August and September 1912 and September 1913 from Qinhuangdao, Hebei Province, North-east China, held at BMNH. Four further skins at BMNH, collected at the same locality during 30 May to 2 June 1913, differed markedly in being more worn, and are duller and greyer, appearing olive-brown above, and whiter on the underparts. Although Williamson (1968) surmised that *tangorum* probably underwent a complete moult in its winter quarters, the Khao Sam Roei Yot bird, though it had renewed body and coverts feathers, tertials and tail, had clearly not moulted most remiges suggesting that a partial moult on the wintering grounds, rather than a complete moult, may be the norm. Although the body plumage may perhaps be expected to wear or bleach, losing its markedly rufescent tint over most of the upperparts and underparts, somewhat paralleling the seasonal change in hue of nominate *A. agricola*, all rectrices of

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**Table 1. Biometrics and wing formula of Thai specimens of Acrocephalus (agricola) tangorum**

| Specimen no. | 53-2875 ACW 14 | | |
|--------------|----------------|-----------------|
| Wing (mm)    | 53             | 52              | 55 |
| Tail (mm)    | 50             | 53              | 56 |
| Bill length (mm) | 16.4      | 16.4            | 16.0 |
| Bill width (mm) | 4.1        | 4.6             | n.t. |
| Wing point (mm) | p8-p7/p6 = -1mm | p8-p7/p6 = -1mm | p6=p7=p6 |
| p9           | -4mm (=4/5)    | -4mm (=3/4)     | -5mm |
| Notch p8     | 10.7           | 11.5            | n.t. |
| Notch p9     | 12.1           | 13.0            | n.t. |
| Weight (g)   | 9.9            | 7.9             | 9.1 |
the four spring tangorum at BMNH appeared so heavily worn that they could not have been moulted as recently as those of the Khao Sam Roi Yot bird and had either not been moulted since the previous year, perhaps while still on the breeding grounds (if adult) or perhaps not moulted at all (for birds in their first calendar year). Photographs of two spring individuals in Kennerley and Leader (1992) showed similar, heavily worn rectrices. The Khao Sam Roi Yot bird, therefore, may have undergone an uncharacteristically extensive partial moult. The third bird, from Rangsit in March, had not yet undergone any pre-breeding moult and the overall colouration appeared closer to that of A. bistriiceps, being only slightly more rufous on the upperparts (K. Baker in litt. 1993). Some biometrics and wing formula data for all three birds are given in Table 1.

STATUS AND HABITAT IN THAILAND

All but two of the Thai records come from a single locality, Khao Sam Roi Yot, the site of possibly the largest remaining Phragmites swamp in Thailand, covering roughly 50 sq km. The marsh is fringed with some Typha angustifolia Linn. together with other lower growth (probably Eleocharis dulcis (Burm.f.) Trin. ex Hensch. and Scirpus mucronatus Linn.), around its drier margins. Rangsit is a Typha marsh of less than 1 sq km area. Bang Phra is a water storage reservoir in relatively dry country which, at the time of capture of the tangorum specimen (October, in the late wet-season) would probably have supported a number of shallow flooded areas around its margins. The bird was said to have been caught in a grass field (Pantusawatana et al. 1969).

Notwithstanding the potential difficulty in separating tangorum in the field from the commoner and more widespread Blunt-winged Warbler A. concinns, or from the similarly scarce and local nominate race of the Paddyfield Warbler A. a. agricola (so far known only from two specimens from marshy areas in the far north of the country (King 1966, Round 1983) and a few probable sight records) it is surprising that more tangorum have not yet been recorded, especially considering the large number of birdwatchers visiting Thailand. This may indicate its genuine scarcity: ten A. bistriiceps were trapped to only one tangorum at Khao Sam Roi Yot during 4-6 May 1991. The combination of sight records in January and February, and the specimen in May strongly suggests that tangorum winters at Khao Sam Roi Yot, whereas the Bang Phra bird, taken in October, seems more likely to have been on migration. (The author mist-netted Acrocephalus warblers at Bang Phra in September and December 1982 without locating any tangorum). The situation at Rangsit is unclear but it is indeed surprising that there are no sight records of tangorum from there, since it is one of the most heavily watched sites anywhere in the lowlands of Thailand. As far as we know, therefore, tangorum may be mainly or entirely restricted to Khao Sam Roi Yot in winter though it is possible that increased mist-netting could unearth further birds in other areas.

THE CONSERVATION AND STATUS OF A. (a.) tangorum

Notwithstanding the inherent difficulty of separating smaller Acrocephalus warblers, tangorum appears to be genuinely scarce in its winter quarters. Furthermore, its only known wintering site, in the reedswamp at Khao Sam Roi Yot National Park, Thailand, has been very adversely affected by drainage and conversion to shrimp and fish ponds since 1986 (Parr et al. 1993), leading the IUCN Commission on National Parks and Protected Areas to list the site as one of the most threatened parks in the world. Khao Sam Roi Yot is probably the last major reedswamp in Thailand. Elsewhere, such minor freshwater swamps as remain, around the margins of major rice-growing areas, especially within a 150 km radius of Bangkok, are dominated by Typha and lack any expanses of Phragmites: all are imminently threatened by reclamation and urbanisation. Other than at Khao Sam Roi Yot, no freshwater swamp habitat has ever been incorporated within the boundary of any national park or wildlife sanctuary in Thailand.

The taxonomic position of tangorum still needs further clarification. Alström et al. (1991) clearly demonstrated that Williamson's (1968) placement of tangorum as a race of the Black-browed Reed-Warbler A. bistriiceps - an arrangement subsequently followed by Watson et al. (1986) - was spurious. Although they continued to treat tangorum as a subspecies of A. agricola, as previously considered by Vaurie (1959), on the basis of its territorial response to song playback from nominate A. agricola, this was never tested by playback of any other Acrocephalus as a control and may therefore be inconclusive. Indeed, Alström and Olsson (1992) subsequently suggested that a positive response to playbacks may be of little or no taxonomic value because of known instances where taxa have responded to the songs of both close congeners and even unrelated species.

A. tangorum has a significantly larger bill than nominate agricola and, in addition, in worn plumage shows consistently darker, browner upperparts (Alström et al. 1991, Kennerley and Leader 1992). These slight but consistent differences and the large range-gap between the breeding ranges of the two might still suggest that tangorum is better treated as a distinct species which, especially in view of its probable threatened status, deserves renewed attention. A. tangorum is already considered rare or threatened in Gluschenko (1989) who recommended measures to prevent its reedbed breeding habitat from burning or reclamation for agriculture. Further efforts should be made to determine its precise distribution and the size of breeding
populations from singing males. Pressure should also be placed upon the
Thai government to ratify the RAMSAR convention, demarcate and protect
the boundary of Khao Sam Roi Yot National Park as well as to create or
rehabilitate reedswamps elsewhere in central Thailand.

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Birds recorded during the third
BirdLife/Forest Birds Working Group
expedition in Viet Nam

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Between 12 April and 5 July 1991, surveys of forest birds were undertaken at a selection of sites, including
protected areas, in Viet Nam. These surveys were part of the Viet Nam Forest Project of BirdLife
International and provided information on the status and distribution of 16 globally threatened and 13
near-threatened species (Collar and Andrew 1988) and other endemic species. Information was obtained
on Orange-necked Partridge Arborophila davidi, Green Peafowl Pavo muticus, White-orange
Duck Cairina scutulata, Pale-capped Pigeon Columba punica, White-shouldered Ibis Pseudibis davidi
and Black-headed Laughingthrush Garrulax meliis. In addition, an undescribed taxon of subaltissimus
albipennis was discovered on Mount Bi Doep near Da Lat, Lam Dong Province (South Annam).

Between 12 April and 5 July 1991 surveys for globally threatened and other endemic forest birds were undertaken at a selection of sites in Viet Nam. These surveys formed part of the Viet Nam Forest Project of BirdLife International and the Forest Birds Working Group of the Centre for Natural Resources Management and Environmental Studies (CRRES) and the Institute of Ecology and Biological Resources, Hanoi.

The main aims of this fieldwork were to undertake surveys for four globally threatened endemic species; Orange-necked Partridge, Edwards's Pheasant Lophura edwardsii, Black-headed Laughingthrush Garrulax meliis and Grey-crowned Crocias Crocias bailloni and to identify core areas for their protection. Other objectives were to undertake further surveys for White-winged Duck Cairina scutulata and Green Peafowl Pavo muticus in Nam Bai Cat Tien National Park and to conduct more detailed faunal surveys at Cong Toal and other remaining forest areas on the Da Lat plateau. For a full account of the results of these surveys, including the implications for conservation, see Eames et al. (1992).

During fieldwork, new distributional data were obtained on Vietnamese birds and are presented in this paper. Of particular note was the discovery of Orange-necked Partridge Arborophila davidi and White-shouldered Ibis Pseudibis davidi in Nam Bai Cat Tien N.P. Information was obtained on the status of 14 other globally threatened species, namely Siamese Fireback Lophura diardi, German's Peacock-Pheasant Polyplectron bernardi, Crested Argus Rheinauda cecilia, Green Peafowl, White-winged Duck, Blyth's Kingfisher Alcedo hercules, Pale-capped Pigeon Columba punica, Chinese Egret Egretta eulophotes, Lesser Adjuttant Lepiziptris javanicus, Bar-bellied Pitta Pitta albonata, Yellow-billed Nuthatch Sitta solangiae, Short-tailed Scimitar-