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Nesting Records of Chestnut-capped Thrush *(Zoothera interpres)* from Peninsular Thailand

The Chestnut-capped Thrush *(Zoothera interpres)* is a scarce and little known species which is distributed from about 10° 30'N in peninsular Thailand, south through the Malay Peninsula to the Greater Sundas and Philippines (KING ET AL., 1975; MEDWAY & WELLS, 1976). During 1990, a large series of observations of Chestnut-capped Thrush was made at Thung Tieo, near the mountain of Khao Nor Chuchi (in the Khao Pra-Bang Khram Wildlife Sanctuary), Krabi Province. These included one sighting of a pair with newly fledged young, a nest and eggs, a previously used, but empty, nest, and a third nest in the process of being built. These appear to be the first documented breeding records for the species.

Chestnut-capped Thrush was first recorded in peninsular Thailand from lowland forest at Thale Song Hong (Lay Song Hong), Trang (7° 51'N; 99° 29'E) on 20 December 1896 (RILEY, 1938). A second specimen was obtained from Thasan, Chumphon (ca. 10° 29'N; 98° 55'E) in March 1919 by ROBINSON & KLOSS (1924). Most subsequent records came from what is now the northern end of the Khao Banthad Wildlife Sanctuary: from Khao Pub Pa, Phatthalung (ca. 7° 35'N; 99° 48'E), where there is a specimen dated 6 January 1955 in Dr. Boonsong Lekagul's collection; and from nearby Khao Chong. At the latter site four specimens were collected by Royal Forest Department: two on 28 April 1968 and single birds on 17 May 1969 and 19 May 1969, (data supplied by D.R. Wells from specimens in RFD collection). Two more were banded at Khao Chong during 1968 (MCCLURE & LEELAVIT, 1972). (The coordinates for Khao Chong (Namtok Khao Kachong), read from Royal Thai Survey Department (1973; Edition 2, Series L7017, Sheet 4924 II; scale 1:50,000) are 7° 33'N; 99° 47'E. MCCLURE & LEELAVIT (1972) gave the coordinates for the banded birds as 7° 55'N; 99° 40'E, presumably in error, since this would place them over 40 km to the north of Khao Chong). A further specimen, a speckled juvenile, was collected from Ban Plai Nam, near Ban Na San District, Surat Thani (ca. 8° 53'N; 99° 27'E), on 22 December 1984 by the Ecological Research Division, Thailand Institute of Scientific and Technological Research, and is in the National Reference Collection.

The first reported sighting of Chestnut-capped Thrush at Khao Nor Chuchi was from near Ban Rai Khok, Lam Thap District, Krabi (ca. 8° 00'N; 99° 20'E), on 11 May 1988 by J. McLoughlin. A tape-recording of an unidentified bird made at Thung Tieo by U.T. on 12 June 1986 has been re-examined and subsequently identified as Chestnut-capped Thrush, and a singing bird was seen by J. Eames in the same general area, in August 1988.

During the period 6 May to 2 September 1990, there were at least 48 sightings or aural records of adult Chestnut-capped Thrushes at Thung Tieo. On at least four occasions a minimum of two birds (assumed to be males from two different pairs) were heard singing simultaneously along no more than 200 m of trail, and on one occasion three, possibly four, birds were heard singing simultaneously. The song was melodious, rich and varied, and somewhat reminiscent of a White-rumped Shama *Copsychus malabaricus,* but with

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more high-pitched notes. Altogether, birds were seen at about 13 different locations, representing 11 possible breeding territories in no more than about 4 sq. km of forest on level lowlands and foothills at roughly 80–200 m elevation. Most of these sightings were made along the trail network which (since 1991) has been known as the Thung Tieo Nature Trail or Tina Jolliffe Nature Trail, (ca. 7° 55'N; 99° 16'E).

On 5 June, a male bird was seen to present food to its presumed mate fifteen times during one hour. The only food items identified were three earthworms. On 17 June, a pair was seen with two recently fledged young. These were smaller than the adults (only half to two-thirds the size), shorter-tailed, with prominent brown streaking or spotting on the scapulars. The young shared the white shoulder patch of the adults, but the head, nape and upper back were dull rufous-brown and they lacked any black on the throat or breast. These parts were instead mottled buffy (whiter on the throat than on the breast). They showed a black cheek bar and a black bar at the hind margin of the ear coverts. This head pattern was similar to that shown by juveniles of some other *Zoothera* thrushes, such as Orange-headed Thrush *Z. citrina.* One was perched on a horizontal vine, about 1 m above the ground and a second juvenile was flushed from the forest floor about 12 m away. The bird which was thought to be the female was seen carrying food on two occasions and the single item seen appeared to be a small blackish fruit. The presumed male came in with a dangling object (probably an earthworm) in the bill. One juvenile coughed up the remains of two small food items. One of these, recovered from beneath the perch, was found to be a blackish, ovoid seed, about 1 cm long and 0.3–0.4 cm in diameter. Both young were heard calling with a short, grating rattle. The adult female was heard calling with harsh, hard *tac* notes and a very thin, high-pitched falling-tone *tsi-i-i-i* sound. When not carrying food, the male spent most time singing from a perch about 2 m off the ground.

On 23 June a nest containing three eggs was found at a site about 200 m from where the brood of two nestlings had earlier been found. The nest was situated about 3 m off the ground in a bamboo, *Schizostachyum zollingeri,* and was placed at the side of the culm above a node, where some small lateral branches diverged. The nest was an ovoid cup, built of moss and bamboo leaves, and lined with unidentified plant fibers (Fig. 3). The heads of two well-grown young could be seen protruding above the nest-rim on the morning of 6 July. Later that morning, one of the juveniles flew out of the nest, but when the nest was checked again in the late afternoon, at 1750 h, there were again two young present in the nest-cup.

On 9 July, two recently fledged juveniles were seen at a third site and, on 15 July, a used but empty nest was found. It was in almost exactly the same kind of situation as the first nest, and only ca. 150 m distant, situated at the side of the culm of a large bamboo, 2.0–2.5 m above the ground. On 12 July a pair was seen building a nest at a fourth location some 500 m distant from the area in which most other sightings were concentrated. The partly built nest was situated 4 m above the ground in a small understorey tree. When checked again one week later, this nest had been abandoned.

These sightings, including the nest records, were all made in disturbed primary forest. Larger trees in the area included *Pometia pinnata, Irvingia malayana,* and *Dipterocarpus kerrii.* Mean canopy height measured along 800 m of transect placed in the forest (following the method described in BROCKELMAN, in press) was 21.6 m (W.Y. Brockelman, *in litt*). The canopy height of undisturbed primary forest from other sites in S. Thailand measured

Figure 1. Two adult Chestnut-capped Thrushes, a presumed pair, Thung Tieo, May 1990 (U. Treesucon)

Figure 2. Fledged juvenile Chestnut-capped Thrush, Thung Tieo, June or July 1990 (U. Treesucon)

Figure 3. Nest and three eggs of Chestnut-capped Thrush, Thung Tieo, 23 June 1990 (U. Treesucon)

by the same method is generally around 30 m (W.Y. Brockelman, pers comm.). This, and the fairly high frequency of bamboo in the area, suggests that the forest had been subject to a previous high level of disturbance (though it had never been actually logged by a timber company). Two subsequent sightings of Chestnut-capped Thrush, in May 1992, were made in secondary, regenerating forest.

The timing of these sightings indicates that Chestnut-capped Thrush is a wet-season breeder. This is not surprising since it mainly forages on the ground, taking earthworms as part of its diet, along with other items such as fruit. Other *Zoothera* thrushes for which there is data (e.g., *Zoothera marginata* and *Z. citrina* in northern Thailand) also nest during the wet season, as do pittas which share the ground-feeding habit (ROUND, 1983; ROUND & TREESUCON, 1983, 1986).

Although no effort was made to standardize coverage from year to year, a similarly high level of coverage of the Thung Tieo area was attained during 1986–1989 and subsequently from 1991–1995. In spite of this, there were only eight sightings of Chestnut-capped Thrush recorded during the period 1991–1995 (compared with 48 during 1990 alone: Table 1). This presents a paradox, especially since Chestnut-capped Thrush is thought to be resident (MEDWAY & WELLS, 1976). One possible explanation is that numbers of Chestnut-capped Thrushes remained roughly constant throughout the study period, but that during 1986–1989 and 1991–1995 they were not able to breed, seldom

Table 1. Seasonal breakdown of sightings (number of individuals either seen or heard singing) during 1990-1995

	1990	1991	1992	1993	1994	1995	Total
April		1		2			3
May	13		2	1	1		17
June	16						16
July	16						16
August	1	1					2
Sept	2						2
Total	48	2	2	3	1	0	

Table 2. Dimensions of two nests of Chestnut-capped Thrush

	Nest 1 (23 June 1990)	Nest 2 (15 July 1990)
Diameter - external	115 x 110 mm	120 x 115 mm
- internal	80 x 75 mm	85 x 82 mm
Depth - external	88 mm	60 mm
- internal	50 mm	48 mm

sang, and remained largely undetected. Although some year-to-year fluctuations in productivity of Sundaic forest birds, as measured by the proportion of juvenile birds netted, has been observed in a Malaysian study plot (D.R. Wells, *in litt.*), it seems unlikely that a population would fail to nest for as long a period as five successive seasons. A possible alternative explanation is that there was an influx of Chestnut-capped Thrushes from elsewhere during 1990. Nomadism apparently occurs among some other Sundaic frugivorous forest birds, such as Black-and-white Bulbul *Pycnonotus melanoleucos* (MEDWAY & WELLS, 1976). The only other possibility would be that the Chestnut-capped Thrush population has suffered a mysterious collapse in numbers since 1990. This seems unlikely, especially as the habitat in the core study area has remained more or less unchanged. The year 1990 was unusual, however, in that it was a major masting year for some trees of the Family Dipterocarpaceae, especially *Dipterocarpus kerrii,* the most abundant dipterocarp in the forest, *Parashorea stellata,* and for the swamp-forest tree *Ganua motleyana* (Fam. Sapotaceae). No comparable mass fruiting of these species was subsequently observed during 1991–1995. One possibility might be that an unknown factor which triggered dipterocarp masting also influenced either the distribution or behaviour of Chestnut-capped Thrushes, causing them to breed in the study area during that year. Although dipterocarps produce few, if any, foods for birds (MEDWAY, 1972) other plant species may follow the dipterocarp masting cycle (WHITMORE, 1984) and some of these might produce fruits which are consumed by bird species, or induce changes in populations of invertebrates on which birds might feed.

While 1996 was another masting year for *Dipterocarpus* spp. it did not bring about major resurgence in observations of Chestnut-capped Thrush in the Thung Tieo Study Area. Nonetheless, there was one sighting of the species in mid-May (Wiphaphan Nakphaen, pers. comm.) and a speckled, fledged juvenile was seen on 12 July (Kampol Sukhumalind, pers. comm.). Interestingly, however, a chance visit to the mountain of Khao Lak Kai, (7° 53'; 99° 15'E), which is contiguous with the forest around Thung Tieo, on 4 July 1996, revealed three, probably four different singing Chestnut-capped Thrushes in tall primary forest on steep slopes at *ca.* 300 m elevation, in an area of only ca. 3–4 ha. Such a high concentration of birds in a relatively small area, as observed both in 1990 and 1996, suggests that, for reasons unknown, breeding Chestnut-capped Thrushes show a highly clumped distribution.

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