

Round *in litt.*).

Published information on the Black-tailed Crake is sparse, and the species appears to have been reported very little in the past fifty years; this is evidently due in some degree to the inaccessibility (on political grounds) of certain parts of its range, but also possibly to confusion with the Brown Crake *Amaurornis akool*.

There are a few specimens from unspecified localities in Nepal, some others possibly being from an adjacent site in northern India (Inskipp and Inskipp 1985). Baker (1929) recorded the species from Sikkim, where it nests 'between 4,000 and 6,000 feet' (1,200 and 1,800m). He also described it as common in the North Cachar Hills, Khasi Hills, 'Assam' (now in Meghalaya), 'a dozen birds breeding in a small patch about 100 yards long by 600 wide' at one unspecified locality. Baker (1935) added that the species never nested below 3,000 feet (900m) except in the Lakhimpur district.

In Burma, Smythies (1953) reported that 'a nest was taken by Osmaston near Mogaung on the 18 July' and 'Harington records that Tancock obtained a nest with 6 eggs at Sinlum Kaba on the 9 May'. The species is known throughout the higher hills of the country from the Chin Hills in the west (where one observer found it common) to Karenni in the east (one specimen obtained at Nattaung), and it is described as not uncommon in the Shan states (Smythies 1953).

In China, the Black-tailed Crake is recorded from south-east Sichuan east to Wa Shan and south to the Likiang Mountains in north Yunnan (Meyer de Schauensee 1984). In Viet Nam, Delacour and Jabouille (1931) considered it scarce, two birds having been collected in the High Tonkin; they also record it from Cha Pa, central Annam. In Laos, David-Beaulieu (1941) noted it in the marshes of Xieng Khouang and Nong Het. Delacour and Jabouille (1931) mention it as occurring in Siam but it is not listed for Thailand by Deignan (1963), Lekagul and Cronin (1974) or King *et al.* (1975). Our observations thus seem to be the first for Thailand.

The Black-tailed Crake is typical of mountain areas, seldom seen below 1,000m; Baker (1929) found it near 'small streams, especially those which had plenty of cover on one side and open grassland on the opposite one', and we found it in such habitat in Doi Inthanon. Delacour and Jabouille (1931) also noted that it frequents open meadows mainly in the mornings and evenings. Baker (1935) gives its breeding season as apparently from mid-May to the end of August; the behaviour of the Thai birds suggests that breeding might occur at Doi Inthanon, perhaps earlier than Baker's dates.

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Status of wintering Black-necked Cranes *Grus nigricollis* in Bhutan

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The Black-necked Crane *Grus nigricollis* has been described as the least known of all crane species (Walkinshaw 1973, King 1978-1979, Archibald and Oesting 1981, Johnsgard 1983) with incomplete knowledge available on its status and distribution. During the last ten years researchers have shown increasing interest in the species and the habitats it occupies for breeding and wintering.

The Black-necked Crane is a central Asian species, with a breeding range now known to include Ladakh and areas of southern China bordering the Tsangpo river (Xizang province), and in Sichuan and Qinghai provinces (Johnsgard 1983). Meyer de Schauensee (1984) also reports it breeding from north-west Kansu southwards, but his source for this is unknown. It is probable that there are unknown breeding areas in the central plateau of Xizang (Tibet) (Walkinshaw 1973). The main wintering areas used by this species are reported to include parts of south-central Xizang, south-west Sichuan and Yunnan provinces in China and the northern Viet Nam lowlands, while a few birds have been reported in Bhutan, Arunachal Pradesh in north-east India, and in the Kamon range in northern Burma (Archibald and Oesting 1981, Khacher 1981a,b, Archibald 1983).

Recently, teams of Indian researchers under the auspices of the World Wildlife Fund have been studying Black-necked Cranes at the Indian breeding grounds in Ladakh (Gole 1981a, Hussain 1985), and more casually where the species winters in Bhutan. Wintering cranes have been known

from Bhutan for some years and two recent reports from the WWF project have suggested that 70 birds may be present (Gole 1981b,c).

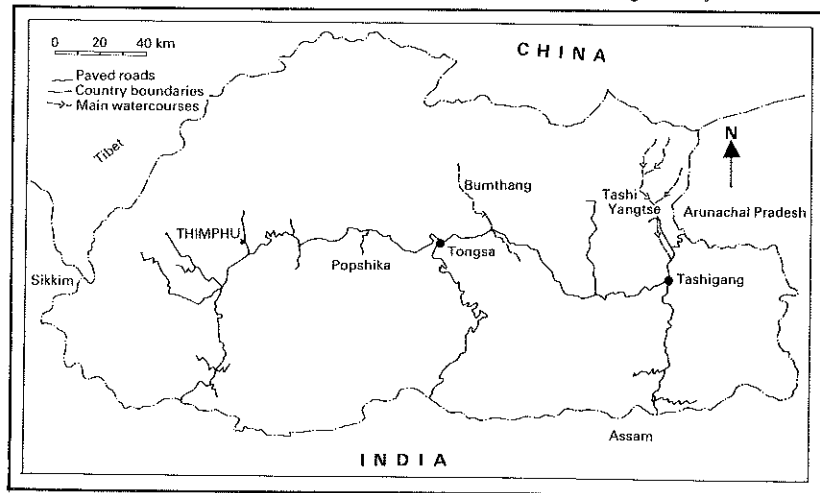
In March 1986, at the invitation of the Royal Government of Bhutan, we had the opportunity to visit the country. In addition to the official purpose of our visit, we were able to make observations in known Black-necked Crane wintering areas, and to discuss with local ornithologists the wintering status of this species in Bhutan.

Bhutan is a small, sparsely populated, east Himalayan kingdom situated in the north-east of the Indian subcontinent and bordered to the north by the great Himalayan range and Xizang (Tibet). Of the 1.2 million population 90% are dependent on subsistence agriculture, and 60% of the land is still covered by primary forest.

Black-necked Crane wintering grounds in Bhutan are high-altitude, large U-shaped valleys with wide valley bottoms consisting of undrained mires and small-field agricultural land. Wintering cranes have been reported from three areas in Bhutan: Popshika, Bumthang, and Tashi Yangtse (Gole 1981b, Khacher 1981a). Working from west to east, the Popshika and Bumthang valleys are situated in central Bhutan at altitudes between 3,000 and 3,400 m. Tashi Yangtse is in the extreme east of Bhutan and is lower, at approximately 2,400 m (Figure).

The Popshika valley lies to the south of the main lateral road to Tongsa, approximately half a day's drive east of the capital, Thimphu. The valley is completely surrounded by forested mountain slopes and access is via a narrow pass at 3,700 m. In the centre of the valley is a small hill on which is situated the seasonally occupied village and monastery known as Gangte Gumpa. Agricultural field systems are situated around the village and along

Figure. Map of Bhutan, showing the Popshika, Bumthang and Tashi Yangtse valleys.



the valley sides on the lower slopes. The whole extent of the valley floor is one vast mire. Cranes were present in this valley despite the rather late date of our visit (12 March). In total, 77 birds were seen in three main flocks scattered across the valley floor. We were present in the afternoon during which time most birds were resting and feeding, the latter taking place in fields as well as on marshy ground. Some flight and restless activities were observed, presumably prior to departure for the breeding grounds. Approximately 20% of birds present were juvenile.

The Bumthang valley, equivalent in extent to Popshika but more populous and agriculturally developed, is situated two hours drive east from Tongsa; the journey involves crossing the Yotong-La pass at approximately 4,000 m. A Swiss development programme has been present in the area for many years. We did not visit land at the head of the valley, but in 24 hours we only encountered two Black-necked Cranes feeding on a small area of dry, rough grassland adjacent to the main village. As mentioned by Gole (1981b), the favoured marsh in the centre of the valley has been drained and improved for agriculture, causing cranes wintering here to be widely dispersed.

We were unable to visit the extreme east of Bhutan and the valley of Tashi Yangtse. The road east of Tongsa to Tashigang is not surfaced and is often impassable.

From our own observations and from communication with ornithologists and local people, it would appear that many more birds are wintering in Bhutan than was previously thought. Other foreign researchers who had visited the Popshika valley have reported the presence of only a few birds (Gole 1981b). We had been informed that up to 140 Black-necked Cranes had been wintering here, and our encounter with 77 individuals in March when some birds would already have left for the breeding grounds confirmed this verbal information. The Popshika valley is therefore a most important wintering ground, comparable with the Sea of Grass in western Guizhou province, China (Archibald 1983).

Despite our encounter with only two individuals in the Bumthang valley, we were informed that upwards of 40 birds still use the valley during winter. Owing to some agricultural improvement and disturbance they are apparently more widely scattered, and are found towards the head of the valley.

It is unfortunate that we were unable to visit Tashi Yangtse because it is likely that this valley harbours the largest numbers of Black-necked Cranes in the whole of Bhutan. We were told of the discovery there of more than 300 individuals, present during winter 1984/1985 and 1985/1986; our information came from two separate sources, both of whom had seen the birds.

It therefore seems possible that 500–600 Black-necked Cranes are present in Bhutan in most winters. With so little information available on Black-necked Crane in general, and in particular on its winter status in Bhutan, it is vital that while verbal reports are treated warily, their potential importance is realised. We believe that estimates of numbers are likely to be correct for the following reasons. At least one government official in Bhutan

is committed to Black-necked Crane conservation and has been studying these birds in Bhutan and China for some time. The information given to us by him for the Popshika valley is likely to be correct judging from numbers we encountered after migration north had started. The Tashi Yangtse valley has been mentioned only briefly in previous literature (Khacher 1981a,b) and to our knowledge has not yet been visited by foreign ornithologists. The size and isolation of this valley suggest that it could indeed support considerable numbers of cranes. One must be wary of the possibility of duplication in numbers between valleys, and of confusion with other crane species, although the latter is most unlikely.

Our tentative conclusions on the numbers of birds wintering in Bhutan should not be taken as evidence that the population of this least known of cranes is safe. Wintering areas outside China have suffered markedly over the last 30 years. Bombing during the Viet Nam war reduced the habitat available and directly disturbed birds, some of which have now returned (Archibald and Oesting 1981). The wintering flock in the Apa Tani valley, Arunachal Pradesh, India, is no longer present as a result of the shooting of birds and direct disturbance by local people (Khacher 1981b). In Bhutan, too, there is evidence that wetland habitat is being lost, as in the Bumthang valley, so it is fortunate that birds here are wintering in more than one area. The continued presence of necessary marshland habitat in high-altitude, isolated valleys depends upon the denial of agricultural improvement to poor, rural communities.

The Royal Government of Bhutan is committed to gradual development with a strong conservation strategy, and is unwilling to allow large numbers of foreigners into the country. It is hoped that information made available in this article will indicate the need for close co-operation with the Royal Government of Bhutan so that conservationists can work together to safeguard the sites used by Black-necked Cranes in winter.

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