

Production of this second issue of *Forktail* has proceeded as rapidly as possible in order to bring it to 1986 Oriental Bird Club members before the year is out. Regrettably the pressure of time means that the circulation of texts amongst the Editorial Committee has been incomplete. The editor always takes final responsibility, but should there be any complaint over this issue the Editorial Committee can in no way be held to account. On the other hand, I have to thank R. F. Grimmett and T. P. Inskipp who, through their proximity at work, have kindly reviewed most of the papers in this issue at short notice and high speed. Tim Inskipp's help has been of particular importance: the combination of his voluminous knowledge and meticulous attention to detail has been vital to the entire editorial process. I must also thank T. H. Johnson and T. M. Reed for acting as referees of certain contributions, and P. Creed and D. Steel of Pisces Publications for their painstaking commitment to *Forktail* over the past six months.

It will be observed that the paper on Philippine conservation priorities is not strictly ornithological. However, birds form a component of the analysis, and the interest and value of this analysis appear very obvious; early publication such as *Forktail* could provide was therefore considered entirely justified. We expect to continue to carry a proportion of such important, more general papers. In this particular case, the Oriental Bird Club was requested by the authors to waive copyright, so that the paper can be reproduced in journals in the Philippines without delay. We have willingly complied, but hope that those who subsequently publish it will at least be ready to indicate that it first appeared in *Forktail*.

Finally as we go to press, two of ornithology's most distinguished leaders, Salim Ali and Zheng Zuoxin, prepare to turn 90 and 80 respectively. The Oriental Bird Club most respectfully salutes them.

22 October 1986

N. J. C.

On the bird migration at Beidaihe, Hebei province, China, during spring 1985

MARTIN D. WILLIAMS, DAVID N. BAKEWELL,
GEOFFREY J. CAREY and STEPHEN J. HOLLOWAY

We wish to dedicate this paper to the memory of the late Axel Hemmingsen.

A survey of the bird migration at Beidaihe, Hebei province, China, was conducted during spring 1985. Changes in habitats since 1945, when bird migration was last studied at the town, are briefly described. Short-term effects of weather on migration are noted. Records which may be considered to be of interest are summarised, or given in full, for 18 species. These include totals of 244 Red-crowned Cranes *Grus japonensis*, 309 Hooded Cranes *G. monacha*, 652 Siberian Cranes *G. leucogeranus* and 132 Great Bustards *Otis tarda* and two sightings of a swift which may be of a species new to science.

A Danish scientist, Axel Hemmingsen, studied birds at Beidaihe from 1942 to 1945. The two papers which are based on his studies (Hemmingsen 1951, Hemmingsen and Guildal 1968) present a wealth of information on the birds in the area. The first of these (Hemmingsen 1951) is of a general nature and discusses topics such as the habitats at Beidaihe, the effects of weather on bird migration and factors affecting the timing of the migrations of birds. The second paper (Hemmingsen and Guildal 1968) gives accounts of the occurrence of each of the species which Hemmingsen recorded in Hebei province, particularly at Beidaihe. There are also notes on the identification of many of the species he recorded. Together, the two papers form a superb reference work which is, perhaps, yet to receive the attention it deserves.

In spring 1985 the eight-member Cambridge Ornithological Expedition to China 1985 surveyed bird migration at Beidaihe from 15 March to 1 June. The survey was primarily intended to produce data which could be of value in present and future assessments of population changes.

This paper is, in large part, an attempt to update the material in the papers by Hemmingsen and by Hemmingsen and Guildal, so repetition of their information has largely been avoided. A full account of the expedition is now available (Williams 1986).

In this paper, the Chinese names for localities at Beidaihe are, as in the papers by Hemmingsen (1951) and Hemmingsen and Guildal (1968), in the form given by the Wade-Giles system for romanisation of Chinese characters. Beidaihe, however, is the form of the town name given by the recently introduced pinyin system (it was written Peitaiho by Hemmingsen).

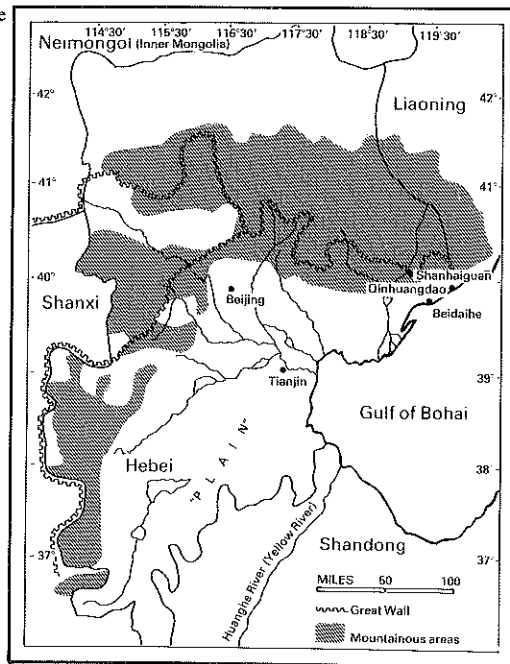
BEIDAIHE AS A LOCALITY FOR A MIGRATION SURVEY

Beidaihe (strictly Beidaihe Haibin - North Dai River Beach) is a seaside

resort, lying approximately 280 km to the east of Beijing (Peking). The town is on the northern part of a plain which occupies much of Hebei province. Approximately 15 km inland of Beidaihe is the south-eastern extent of a mountain range, the southern flank of which extends westwards for over 300 km. The eastern flank of the range runs roughly parallel to the coast and bounds a northward extension of the plain (see Figure 1); the resultant coastal strip runs approximately north-east–south-west and acts as a ‘funnel’ for many of the birds whose migration routes are believed to cross in the area (Tugarinov 1931, Zheng 1976). This, together with the wide variety of habitats in the environs of the town, makes Beidaihe an excellent place for studying migration. (Additionally, the small hills at Beidaihe contrast with the flat land around, and especially to the south of, the town and probably act as good landmarks for migrating birds.)

Previous studies – by La Touche (1920, 1921) at nearby Qinhuangdao from 1910 to 1917 and by Axel Hemmingsen (Hemmingsen 1951, Hemmingsen and Guildal 1968) at Beidaihe from 1942 to 1945 – together with occasional observations by Wilder and Hubbard between 1894 and 1940 (Wilder 1924, 1940, Wilder and Hubbard 1924) have yielded a considerable amount of information on bird migration in the area and have shown that certain rare species (notably the Oriental White Stork *Ciconia (ciconia) boyciana* and the

Figure 1. Map of Hebei Province (after Wilder and Hubbard 1924).



Siberian Crane *Grus leucogeranus*) passed through in large numbers. More recent visits – by A. Galsworthy (*in litt.*), W. W. Thomas (*in litt.*) and J. Boswall (1983) – between 1976 and 1983 indicated that development had not drastically affected the habitats and good numbers of migrants were still to be found. It appears that there has been little work on bird migration in China since Hemmingsen's study, Chinese ornithologists having, until recently, tended to study landbirds at their breeding and wintering grounds; some attention is now being paid to migration studies (Wei-shu Hsu verbally, Chang Fuyuen verbally, Zhang *et. al.* 1985, Mao 1985). Hence, prior to spring 1985, Hemmingsen's study provided the most recent information on the numbers of those species (other than raptors: Zhang *et. al.* 1985) which pass through the area.

HABITATS AND LOCALITIES: DIFFERENCES SINCE HEMMINGSEN

The considerable expansion of Beidaihe since the time of Hemmingsen seemed to have had little detrimental impact on the range and types of habitats available. However, the Heng-Ho mudflats (the 'Sandflats' of Hemmingsen, described by him as the area 'par excellence' for waders) held disappointingly few birds – perhaps because the damming of the Heng-Ho had reduced the supply of nutrients and the area was more prone to disturbance than before; and the 'Grassy Sands' of Hemmingsen (formerly used as a resting area by birds such as storks, cranes and Great Bustards *Otis tarda*) had been planted with trees. Moreover, development was continuing apace (for example, an area of open fields in mid-March had become a small housing estate by the end of May) and may well lead to the damage or destruction of certain areas; the Tai-Ho (Daihe) estuary, Tai-Ho pool and Yang-Ho estuary appeared to be particularly at risk.

A reservoir, which we named the Heng-Ho reservoir, had been created since Hemmingsen's study. This is a narrow reservoir (c.1 km long) formed by the damming of the Heng-Ho just upstream of the mudflats. During late May good numbers of herons, cranes, and *Acrocephalus* and *Locustella* warblers occurred in the dense vegetation on the margins of the reservoir and in adjacent, disused paddyfields.

The following three localities were rarely, or never, visited by Hemmingsen.

The Tai-Ho estuary attracted waders such as Whimbrels *Numenius phaeopus*, Rufous-necked Stints *Calidris ruficollis* and Terek Sandpipers *Xenus cinereus*, usually in lower numbers than occurred at the larger and less disturbed Yang-Ho estuary.

The Tai-Ho pool was partially tidal, and connected to the Tai-Ho by a narrow channel. Considering its size (< 70 m across at its widest point), this was an excellent area for waders, including several, largely freshwater species

such as Wood Sandpipers *Tringa glareola*, Marsh Sandpipers *T. stagnatilis*, Black-winged Stilts *Himantopus himantopus* and Long-toed Stints *Calidris subminuta*.

The Yang-Ho estuary lay approximately 4 km to the south-west of Beidaihe and attracted the largest numbers of waders (e.g. up to 78 Grey Plovers *Pluvialis squatarola*, 54 Eastern Curlews *Numenius madagascariensis* and 154 Whimbrels).

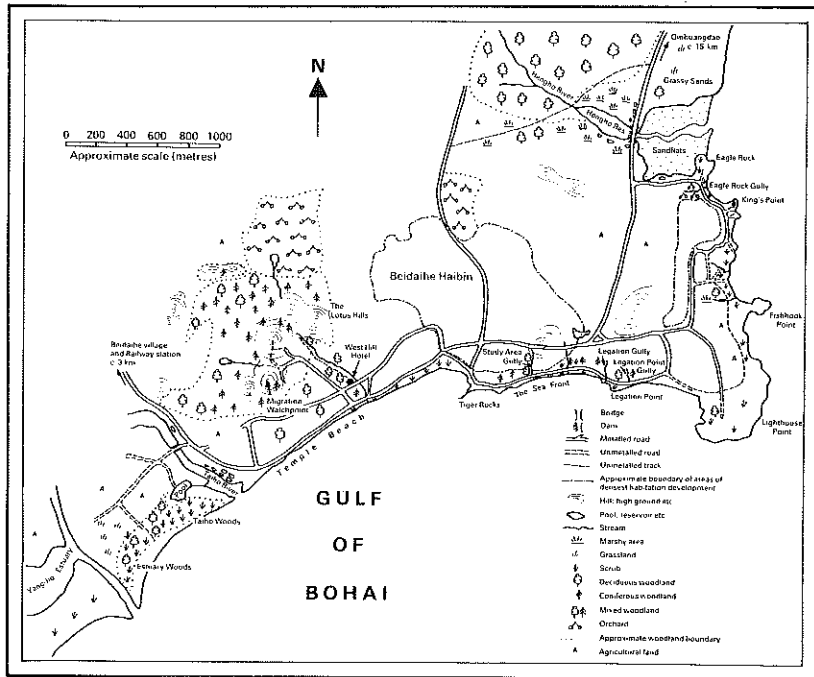
The Lotus Hills, which are at the western edge of Beidaihe, were found to be an excellent vantage point for recording diurnal migration (it appears that Hemmingsen made only a few casual observations of passing migrants from this locality, despite his notes on grounded migrants there).

The positions of the main localities at which we recorded migrants are indicated in Figure 2.

METHODS

Observation (using binoculars and telescopes) provided the means of data

Figure 2. Sketch map of the area surveyed by the Cambridge Ornithological Expedition to China 1985 (after Hemmingsen 1951).



collection. The most useful sources of information on the identification of the species recorded were Sonobe (1982) and Meyer de Schauensee (1984) (we did not have Etchécopar and Hùe 1978–1983). The survey techniques may be broadly categorised into those used to record passing (i.e. overflying) migrants and those used to record migrants present (i.e. grounded) in the area.

Methods used to record passing migrants

The great majority of passing migrants noted during the survey were recorded during periods of prolonged observation from suitable vantage points. The main migration watchpoint was the top of one of the Lotus Hills: a total of 453 hours (not man-hours) observation was made from this locality. Observers counting waders at the Yang-Ho estuary frequently noted passing birds such as raptors and waders: comparison of flock sizes and times of passage of species seen from more than one locality allowed the discrimination of individuals which had been recorded from two or more places and hence prevented erroneously high counts being entered in the daily log.

Initially, counts from the Lotus Hills were made daily (weather permitting) and, at minimum, covered the periods from 08h00 to 15h30 (the majority of the cranes passed at around 12h00–15h00). From mid-April these counts were found to produce little information considered pertinent to population dynamics and the duration of the minimum daily coverage was accordingly shortened, observations typically beginning by 07h00 and, if few birds were noted, ending by 14h00, until the daily observations were curtailed on 20 May. The majority of the birds were located by scanning the horizon with binoculars, attention concentrating on the region south-west of Beidaihe since this proved to be the most productive sector for initial detection of passing birds.

Temple Beach was the main locality from which offshore movements were recorded.

Methods used to record migrants present in the area

Daily counts of migrants present at areas representing the various habitats in and around Beidaihe were made. Particular attention was paid to recording waders at the Yang-Ho estuary and the Tai-Ho pool, since the resultant data would be of value to Interwader (a project concerned with the migrations and wintering areas of waders in South-East Asia).

Variation in the degree of daily coverage

At least three factors influenced the degree of daily coverage.

Number of observers. Four observers were present from 15 March to 8 April. Five to seven observers were present from 9 April to 23 May. There were four observers on 24 and 25 May and three observers from 26 May to 1 June.

Discovery of 'new' areas. Initial recording areas were largely selected on the basis of information given in Hemmingsen (1951). As the survey progressed we discovered several localities which attracted good numbers of migrants – most notably Tai-Ho Pool and the Yang-Ho estuary. These were included among the recording areas. Hence, even disregarding changes in the number of observers, the coverage of the area tended to improve as the survey progressed.

Variation in weather and numbers of birds grounded or passing. The weather was rather rarely solely responsible for affecting the degree of coverage of the area: counts from the Lotus Hills were sometimes precluded or curtailed by fog, rain or excessively strong winds, and similar weather reduced or prevented observations of grounded birds. The extent and nature of coverage was also influenced by the numbers of birds grounded or passing: on days when visible migration was very evident we concentrated on counting birds from observation points such as the Lotus Hills watchpoint; similarly on days when there were influxes of migrants we concentrated on counting birds at the various recording areas.

Time-independent factors affecting comparability of results between studies

At least four factors, excluding changes in habitats and numbers of birds occurring, led to the expedition's results differing from those of Hemmingsen.

Number of observers. Hemmingsen worked mainly alone (he notes a few records by other observers).

Optical equipment. Hemmingsen first used 'not too good field glasses'. From June 1943 he used his 18× and 8× binoculars. Each expedition member had binoculars and a telescope.

Watchpoint used for, and degree of concentration on, passing bird counts. Hemmingsen made most of his observations in the eastern part of Beidaihe: we found that many of the birds following the coastal plain northwards passed to the west of the town, and hence relatively few would have been readily visible from eastern Beidaihe. He appears to have relied heavily on hearing calls in order to detect passing birds such as geese and cranes (though to minimise the numbers missed he paid his servant or his servant's children for each flock which they pointed out) and to have made only rather casual observations of passing (overflying) migrants from early April onwards. Hence, even during periods in which Hemmingsen made a special effort to record passing migrants, it is extremely likely that the proportion of the passing birds he recorded will have been significantly lower than the proportion recorded by the expedition.

Localities visited. Hemmingsen made most of his observations in the eastern part of Beidaihe (particularly at Lighthouse Point, Eagle Rock and the Sand Flats). He mentions visits to other localities such as the Lotus Hills but makes no reference to birds in the Tai-Ho/Yang-Ho area. The greater range of habitats covered during the survey led to several species which

Hemmingsen rarely or never recorded in spring being recorded in some numbers: examples are Goldcrests *Regulus regulus*, Eurasian Siskins *Carduelis spinus* and Chestnut Buntings *Emberiza rutila* (mainly noted in the West Hill/Lotus Hills area) and Long-toed Stints, Marsh Sandpipers and Wood Sandpipers (most were recorded at Tai-Ho Pool).

RESULTS

A total of 284 species was recorded. The results suggest that the abundances and passage periods of most birds have altered little since Hemmingsen's time (certain of the species for which population changes are indicated are given below).

The timing of migration

We arrived at Beidaihe on 15 March, by which date the sea-ice had largely melted (ice was strewn along the tideline and over the mudflats). Winter visitors such as Siberian Accentors *Prunella montanella* and Rustic Buntings *Emberiza rustica* were departing (other winter visitors recorded by Hemmingsen, such as Pine Buntings *E. leucocephalos* and Lapland Buntings (Lapland Longspurs) *Calcarius lapponicus*, had presumably already gone), the migrations of Bean Geese *Anser fabalis* and Daurian Jackdaws *Corvus dauuricus* were well underway and the passage periods of Hoopoes *Upupa epops*, Daurian Redstarts *Phoenicurus aureoreus* and Yellow-throated Buntings *Emberiza elegans* were beginning. During the period to 3 April, 2,607 Bean Geese and over 7,000 cranes of four species passed north, Common Goldeneye *Bucephala clangula* numbers peaked and declined, the first rush of dabbling ducks on 23 March closely followed the opening of ice-bound areas (thus according with Hemmingsen's observations), and there was a general increase in the numbers of species recorded each day as birds such as Grey Herons *Ardea cinerea*, Black Kites *Milvus migrans*, Kentish Plovers *Charadrius alexandrinus*, White Wagtails *Motacilla alba*, Orange-flanked Bush-Robins *Eriothacus (Tarsiger) cyanurus* and Lemon-rumped (Pallas's Leaf) Warblers *Phylloscopus proregulus* appeared. Flocks of Bohemian Waxwings *Bombycilla garrulus* and Pallas's Reed Buntings *Emberiza pallasi* lingered throughout much of April and, in the second week of the month, there was the first wave of grounded migrants. The tide became higher than in mid-March – presumably because of the retreat of the continental anticyclone which lies over northern China in winter – and the resultant deposition of silt at the Tai-Ho pool, in particular, led to there being rich feeding areas for the waders which began to arrive in numbers from the middle of April.

The overall migration peaked around the middle of April/early May, when Pied Harriers *Circus melanoleucos*, Little Curlews *Numenius minutus*, Oriental Pratincoles *Glareola maldivarum*, Olive Tree (Olive-backed) Pipits *Anthus*

hodgsoni, Stonechats *Saxicola torquata*, Inornate (Yellow-browed) Warblers *Phylloscopus inornatus* and Little Buntings *Emberiza pusilla* were among the common migrants. By mid-May, the numbers of migrating birds had declined, though the numbers of some birds – notably Curlew Sandpipers *Calidris ferruginea*, Brown Shrikes *Lanius cristatus*, Siberian Blue Robins *Eriothacus cyane*, Asian Brown Flycatchers *Muscicapa latirostris*, Chestnut-flanked White-eyes *Zosterops erythropleura* and Chestnut Buntings – were at, or approaching, their peaks. Schrenck's Bitterns *Ixobrychus eurhythmus*, Baillon's Crakes *Porzana pusilla*, Pallas's Warblers *Locustella certhiola* and Thick-billed Warblers *Phragmaticola (Acrocephalus) aedon* were among the freshwater marsh species which passed in the latter half of May – their late migrations presumably timed to coincide with the fresh growth of emergent vegetation.

Very little passage was evident at the end of May, when the most notable observation was of two Streaked Reed-Warblers *Acrocephalus sorgophilus* at the reservoir on 31 May (the species is known to breed in only one or two provinces in China: Meyer de Schauensee 1984).

The routes used by migrants observed passing Beidaihe

The majority of the passing cormorants, herons, storks, geese, raptors, cranes, Great Bustards, waders, swifts and hirundines were observed to follow the coastal plain northwards. These birds appeared to show little preference for the exact routes followed within the 'corridor' bounded by the coastline and mountain flanks – hence many birds (> 70%) passed to the west of the Lotus Hills and relatively few overflew the town.

On several occasions crane flocks were observed passing at distances which precluded any plumage features being discerned, even with good visibility and the use of telescopes (the flocks were probably over 6 km from the Lotus Hills).

Birds were also observed to arrive from the sea and either head inland (a re-orientation towards the north was sometimes evident) or make landfall. Such arrivals/passages usually coincided with weather conditions which hindered migration (e.g. strong winds, drizzle and rain) and presumably involved birds which had been heading north over the Bay of Bohai before encountering adverse weather. Passerines predominated among the birds seen to arrive in this manner; there were also small numbers of herons, raptors (many raptors pass over the Bay of Bohai in autumn: Zhang *et. al.* 1985), owls and hirundines.

Offshore movements, involving ducks and, on one occasion, waders passing east along the south coast of Beidaihe, were sometimes recorded. These movements were associated with inclement weather (low cloud and mist) and may have involved birds which were following the coast in order to avoid becoming disoriented.

Figure 3 indicates the routes which migrants passing Beidaihe were observed to use.

Correlations between weather and migration

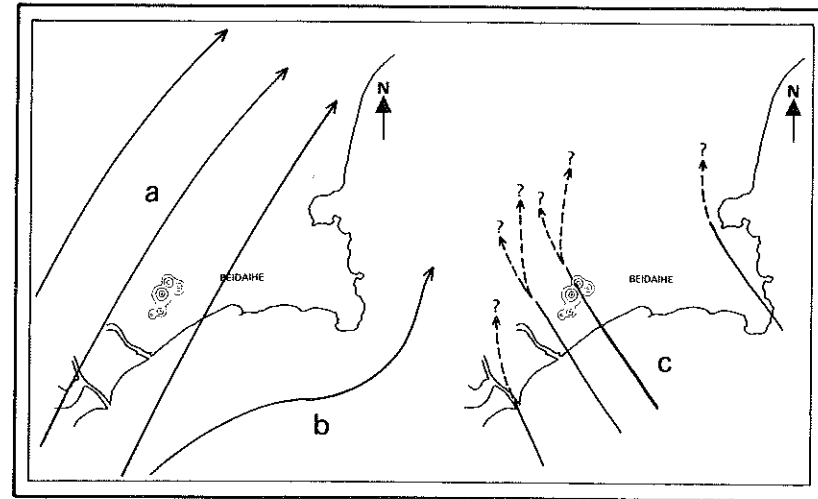
A strong correlation between the weather and the number of passing cranes is apparent in the data, large numbers of these birds being associated with the pressure starting to decrease as high pressure systems moved away to the east of Beidaihe (this correlation is also evident in Hemmingsen's data: Hemmingsen 1951). The weather-dependence of the numbers of passing geese seems to be similar (only one wave of goose migration was recorded – this coincided with large movements of cranes – Hemmingsen noted a similar association). For movements of other migrants, a combination of factors seems to have been involved (including rain and, probably, the weather elsewhere), though they are again associated with decreasing pressure. The results are thus in broad agreement with studies of the short-term effects of weather on spring bird migration on the east coast of the U.S.A. (Nisbet and Drury 1968) and on the coast of Jiangsu Province (Mao 1985).

We found, as had Hemmingsen (1951), that influxes (as opposed to movements) of migrants were associated with low pressure. This accords with the finding that spring bird migration on the east coast of the U.S.A. is inhibited when the pressure is low (Nisbet and Drury 1968).

Species of interest

Our records of the following species may be considered to be particularly

Figure 3. The routes used by migrants observed passing Beidaihe: (a) followed by the majority of the cormorants, herons, storks, geese, raptors, cranes, Great Bustards, waders, swifts and hirundines; (b) followed by ducks and waders which passed offshore; (c) followed by migrants (predominantly passerines) which arrived from over the sea (observations suggested that these birds tended to orient towards, and pass over or near, the Lotus Hills).



noteworthy. Summaries of the spring records of La Touche and Hemmingsen, augmented where appropriate by records of other observers and by autumn records of La Touche and Hemmingsen, are given for those species which have previously been recorded in the Beidaihe/Qinhuangdao district.

Abbreviations used are as follows: H – Hemmingsen and Guidal (1968); LT – La Touche (1920, 1921); WH – Wilder and Hubbard (1924); Wa – Wilder (1924); Wb – Wilder (1940).

ORIENTAL WHITE STORK *Ciconia (ciconia) boyciana* LT – no spring records. Wb – a flock of 50 flew north on 18 March 1940 and was followed by a single bird four days later. H – only two spring records (six on 6 March 1940 and nine on 12 March 1943) in marked contrast to the large flocks noted in autumn (Hemmingsen recorded over 1,000 birds in three of the four autumns which he spent at Beidaihe: Hemmingsen 1951). The species has suffered a severe decline in recent years (Archibald and Luthin 1985) and is listed as Endangered in the ICBP/IUCN Red Data Book (King 1978–1979).

A total of 12 flew north, the records being as follows: four on 18 March, four on 28 March, one on 29 March, two on 16 April and a late individual on 17 May.

Evidently a scarce spring migrant at Beidaihe, with passage predominantly occurring from early March to the end of the month.

BAIKAL TEAL *Anas formosa* LT – extremely abundant on passage. WH – erratic spring migrant in Hebei. Wb – large flocks 16 – 25 March 1940. H – dense flocks (once probably 1,000 – 2,000) spring 1944; otherwise one in May 1945 and no records 1943.

Despite the erratic nature of the species's occurrence in spring, it seems surprising that the intensive coverage at Beidaihe during spring 1985 produced only one record (five on 20 March).

STELLER'S EIDER *Polysticta stelleri* A male flew north on 16 April. This may be only the second record for China, the species having previously occurred in Heilongjiang (Meyer de Schauensee 1984).

EIDER *Somateria* Four females on 5 April were either Common Eiders *S. mollissima* or King Eiders *S. spectabilis*. Neither species is listed by Meyer de Schauensee (1984); both winter on the Kamchatka Peninsula (Cramp and Simmons 1977).

MANDARIN DUCK *Aix galericulata* LT – one record. H – 24 birds recorded in spring. We recommend this as a candidate species for the third edition of the ICBP/IUCN Red Data Book.

Approximately 22 – 23 Mandarin Ducks were recorded from 9 April to 3 May. Fourteen flew north on 9 April (a large passage of ducks and waders occurred on this date); otherwise birds were noted at small pools or the reservoir, with records as follows: a pair on 10 April, a male on 18 and 19 April, a female on 22 April, probably remaining until 3 May, and two pairs

on 28 April.

WHITE-TAILED EAGLE *Haliaeetus albicilla* LT – common spring and autumn migrant at Qinhuangdao. H – no spring records. Listed as Vulnerable in the ICBP/IUCN Red Data Book (King 1978 – 1979).

The only record, despite the relatively intensive coverage, was an immature which flew north on 31 March.

MOUNTAIN HAWK-EAGLE *Spizaetus nipalensis* LT and H – no records. Those breeding in Heilongjiang and, presumably, adjacent U.S.S.R. winter in Taiwan (Meyer de Schauensee 1984).

A total of 85 was recorded from 27 April to 25 May. All birds passed north. It is surprising that the species has not previously been recorded in the Beidaihe/Qinhuangdao district.

COMMON CRANE *Grus grus* LT – 'immense flocks pass over during March and early in April'. H – main passage in March; spring totals of 1,028 (1943), 426 (1944) and 2,796 (1945).

A total of 4,409 passed north from 15 March to 7 May. The majority (4,321) passed from 21 March to 5 April, with the highest day total being 1,424 on 31 March (see below under 'Cranes').

RED-CROWNED CRANE *Grus japonensis* H – noted from 12 – 25 March, with a total of 90 (additionally, 125 probable Red-crowned Cranes seen by another observer) recorded in three springs (at the time, Hemmingsen's Beidaihe records constituted the only field observations for north China). Listed as Vulnerable in the ICBP/IUCN Red Data Book (King 1978 – 1979).

A total of 244 – almost half of those known to winter in China (G. W. Archibald *in litt.*) – was recorded flying north from 15 – 31 March. The highest day total was 128 on 21 March; 50 on 22nd and 21 on 23 March were other notable day totals. Since the species is an early migrant (13 were recorded on our first day at Beidaihe) it is possible that some passed prior to our arrival at Beidaihe.

HOODED CRANE *Grus monacha* WH – three cranes with white necks on 21 April 1923 seem likely to have been this species. H – 10, plus 50 – 100 probable, in 1943 were the only spring records. Listed as Vulnerable in the ICBP/IUCN Red Data Book (King 1978 – 1979).

This is the latest of the migrant cranes, with 309 birds recorded from 25 March to 20 April (representing a majority of the known Chinese wintering population: G. W. Archibald *in litt.*). Two hundred and fifty-seven flew north on 2 April.

SIBERIAN CRANE *Grus leucogeranus* LT – great numbers March, April. WH – large flocks of from 50 to 300 were flying north-east on 6 April 1916. Despite later doubt (Wilder 1924) these were surely Siberian Cranes (Wilder described them as 'great white birds with black tipped wings and necks straight out in the characteristic crane fashion . . . too high in the haze for certain identification'. The description does not fit the Red-crowned Crane,

which has mainly white wings, and it seems very unlikely that Wilder would have mistaken flocks of storks, which do not fly in V-formation or soar in a coordinated manner, for flocks of cranes). H – possible on 17 March 1943, none spring 1944 and 628 – 728 spring 1945. Listed as Endangered in the ICBP/IUCN Red Data Book (King 1978 – 1979).

Between 20 March and 1 April, 652 birds – approximately 44% of the known Chinese wintering population (Archibald 1985) – flew north, with all except 12 passing from 20 – 26 March.

The records of La Touche, Wilder and Hemmingsen suggest that the species declined from 1917 to 1942. A further, less marked decline is suggested by the total we recorded (as indicated above, we believe that the proportion of passing birds recorded during the 1985 study exceeded the proportion which was recorded by Hemmingsen).

The inferred decline over the course of this century accords with the change in known status and distribution of wintering birds in China – from common in the lower valley of the Chang Jiang (Yangtze Kiang) River (Styan 1891) to 1,482 birds (in winter 1984 – 1985: Archibald 1985) restricted to Lake Poyang, Jiangxi province.

CRANES *Grus* Approximately 1,785 unidentified cranes were recorded from 22 March to 2 April; two late birds passed north on 20 April. It is probable that the overwhelming majority of these birds were Common Cranes (which, in addition to being the most abundant of the cranes, appears featureless at a distance). Hence the total number of Common Cranes observed passing north probably exceeded 6,000.

GREAT BUSTARD *Otis tarda* LT – passes from early March to the beginning of May. H – largest flying flock of 60 birds; a flock of 210 was present on 12 April 1944.

A total of 132 flew north from 17 March to 23 April; the largest flying flock numbered 15 birds. There were two slight peaks of passage around the beginning and middle of April. This strongly suggests a sharp decline in the species since the time of Hemmingsen (who did not give spring or autumn passage totals).

ASIAN DOWITCHER *Limnodromus semipalmatus* LT and H – no records. WH – one 30 July 1923; they cite seven specimens taken at Tientsin (c.200 km south of Beidaihe) end of April – May. Listed as Rare in the ICBP/IUCN Red Data Book (King 1978 – 1979).

We had only three records of this species: two at the Yang-Ho estuary on 18 April and a single flew north on 28 April.

EASTERN CURLEW *Numenius madagascariensis* LT – passes 12 April to 3 May. WH – recorded 11 April 1916 and 21 April 1923. H – no spring records but as common as the Eurasian Curlew *N. arquata* in autumn.

Recorded from 26 March to 16 May, with a total of 661 bird-days (compared to 280 bird-days for the Eurasian Curlew). Most birds occurred at the Yang-Ho estuary, with numbers reaching a peak of 54 on 19 April and

declining gradually thereafter.

Given that the world population of the species is estimated to be c.12,000 (Parish 1985), and that the estuaries at Beidaihe are too small to hold major concentrations of waders, it appears that a good proportion of the world population migrates through the Beidaihe area.

SAUNDERS'S GULL *Larus saundersi* LT, WH and H – no records. A little known species (the breeding grounds have yet to be discovered) which favours estuarine areas in winter when it is regularly recorded from Hong Kong and Japan (B. F. King *in litt.* to J. Boswall); there are a few recent records from the coast of China (Melville 1984).

A total of 23 bird-days was logged from 2 April to 22 May, with records as follows: 2 April – two (one adult summer, one 1st winter); 16 and 17 April – two (both 1st winter); 18 April – seven (two adult, three 2nd summer and two 1st winter); 19 April – one (1st winter); 20 April – one (1st summer); 21 April – three (two adult winter and one 1st summer); 22 April – one (1st summer); 27 April – one (1st winter); 1 May – one (1st summer); 7 May – one (1st summer) and 22 May – one (1st summer).

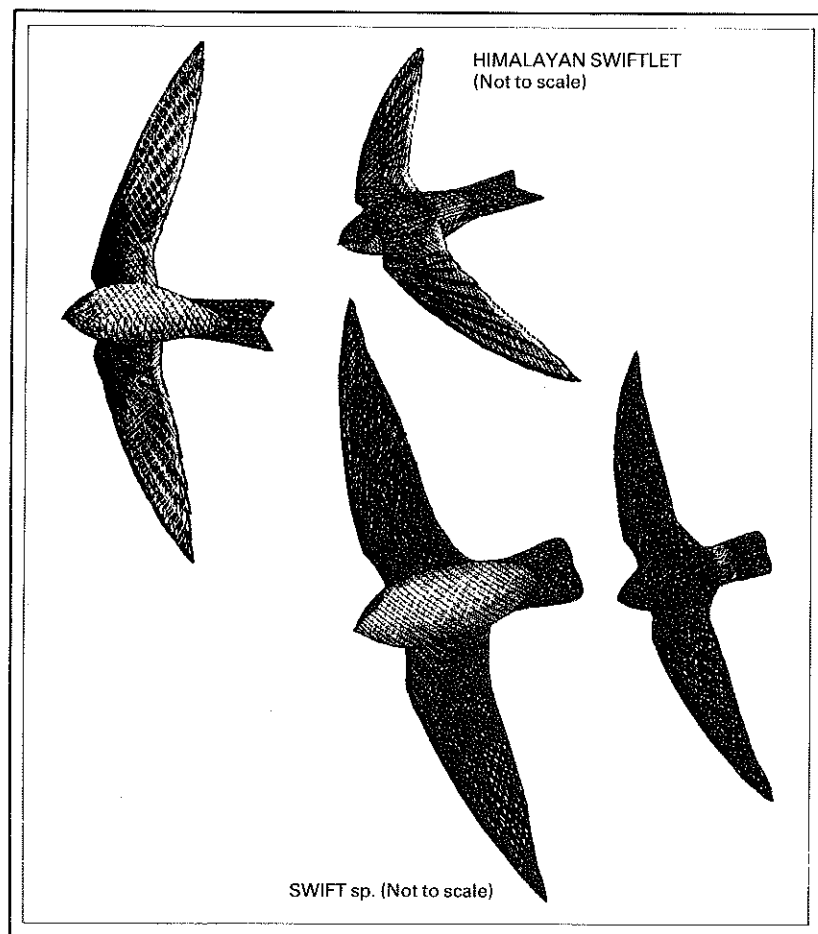
A maximum of 19 and a minimum of 10 birds seem to have been involved; the actual figure was probably 14 or 15. The main passage occurred during the period 16 – 22 April.

SWIFT Apodidae On 26 April, after a day of above average migration, a swift showing characteristics associated with the genus *Collocalia* was watched by D.N.B., G.J.C. and M.D.W. over c.17h00 – 17h30. It approached the Lotus Hills watchpoint from the south and fed over the north-facing slope before moving off northwards with numerous hirundines, Common Swifts *Apus apus* and Pacific Swifts *A. pacificus*. This, or a second bird, was seen on 29 April, again flying north, by G.J.C.

The following description was compiled from field notes taken on 26th. Size slightly larger than House Martin *Delichon urbica* or similar to Chimney Swift *Chaetura pelagica*. Body: upperparts dark brown, except for pale brown squarish rump patch; prominent dark-capped appearance; underbody pale brown, throat possibly palest. Flight weak and fast-flapping, rather reminiscent of Chimney Swift, but perhaps not as flickery and bat-like. Wings short, broad-based and triangular but not quite as short and rounded as Chimney Swift; held almost at rightangles to body and when gliding appeared to be pressed slightly forward; uniform in colour – looked dark brown above and below, contrasting with pale brown underbody. Tail short and almost square, but at times appeared to have a slight notch.

This description agrees to some extent with the descriptions of Himalayan Swiftlet *Collocalia brevirostris*, Black-nest Swiftlet *C. maxima* and Edible-nest Swiftlet *C. fuciphaga* (King *et. al.* 1975). However, many Himalayan Swiftlets were watched by D.N.B., G.J.C. and M.D.W. over 7 – 9 June at the summit of Emei Shan, in central Sichuan province (the birds were identified on range – the Himalayan Swiftlet is the only *Collocalia* to have occurred on Emei Shan: Meyer de Schauensee 1984). The species showed

similarities to the bird(s) seen at Beidaihe (hereafter referred to as 'Beidaihe Swift'), but clearly differed from it on several counts (see below and Figure). Size larger than Beidaihe Swift – though without a size comparison it is difficult to say to what extent. Upperparts smoky grey with paler rump and a less dark-capped appearance than Beidaihe Swift. Underbody pale grey-brown, some birds having pale throats, others darker – the latter characteristic leading to a less contrasting head pattern; underbody contrasted less with underside of wings than did the underbody of Beidaihe Swift. Flight less flickery, more like Common Swift. Wings slightly 'spade-ended', i.e. trailing edge of primaries slightly convex but overall longer and narrower than Beidaihe Swift; not uniform in colour – underwing-coverts clearly



darker than remiges, while on upperside a pale trailing edge to the secondaries and, on over 70% of birds, pale edges to some inner primaries. Tail longer than that of Beidaihe Swift and the fork a noticeable feature at all times.

We have not seen Black-nest or Edible-nest Swiftlets. They are, apparently, very difficult to distinguish in the field from Himalayan Swiftlet (King *et. al.* 1975). Of the two species, only the Black-nest Swiftlet has been recorded in China (breeding in south-eastern Xizang at the Bhutan border – over 2,500km from Beidaihe: Meyer de Schauensee 1984); the nearest to Beidaihe that the Edible-nest Swiftlet occurs is northern Viet Nam and the Philippines (King *et. al.* 1975). Neither of these species is known to be a long distance migrant. Hence, we do not believe that the bird (or birds – the records may well involve two individuals) seen at Beidaihe was a Himalayan Swiftlet and it is perhaps unlikely that it was a Black-nest or Edible-nest Swiftlet. It must, therefore, be possible that it (or they) belonged to a previously undescribed species.

PECHORA PIPIT *Anthus gustavi* LT – passes in May. H – no records.

Two on 10 May and a single on 11 May were the only definite passage individuals. Six at disused paddyfields by the reservoir on 20 May were probably the first sighting of up to four pairs which, from 29 May to 1 June (our last day at Beidaihe), were holding territories (birds were observed in song-flight and, on one occasion, a bird flew around an observer, calling anxiously, when intrusion into a territory occurred). The nearest known breeding grounds would seem to be well to the north of Beidaihe, at Lake Khanka, south-eastern U.S.S.R. (J. Boswall verbally).

PENDULINE TIT *Remiz pendulinus* LT – passes in spring, but not common. H – three spring records (26 April, 6 and 10 May).

With just over 1,000 bird-days recorded from 28 April to 28 May, the numbers were substantially higher than might have been expected from the records of previous observers (Hemmingsen's records, together with his analysis of the literature, suggest that the species was rather uncommon in Hebei). This may indicate that the range expansion currently being undertaken by western populations (Anon. 1982, 1983, 1984) is also taking place in the east. The main passage was over 6–11 May, with 274 birds being recorded on the 8th and 276 on the 9th.

BRAMBLING *Fringilla montifringilla* We found, as had previous observers, that the species was a common to abundant migrant; however a flock of c.33,700 in fields by the Tai-Ho on 4 April was exceptional.

CONCLUDING REMARKS

We believe that bird migration has been studied more in the Beidaihe/Qinhuangdao district than in any other area in China. For many species, the

data yielded by the studies of La Touche and, particularly, of Hemmingsen are among the most accurate information available on their previous abundance in China. Hence there exists an excellent, and probably unparalleled, opportunity for further studies of bird migration in the area to be carried out and enable population changes over the course of the last 60 years to be inferred.

The results of the survey in spring 1985 are of some value in such inferences of population changes. Given that, since Hemmingsen's study, China has suffered widespread environmental damage (Vermeer 1984) and there was a campaign to eradicate the Eurasian Tree Sparrow *Passer montanus* in China, which led to many passerines being killed (Boswall in prep. and Forktail, this issue), it is heartening that our results generally indicated that the populations of most of the species recorded seem to have changed little (Williams 1986). Those species for which the difference in abundance noted by Hemmingsen and by the expedition appear to reflect a change in population are noted above under 'Species of interest'.

Ideally, however, the migration studies will cover several years, since year-to-year fluctuations in numbers which are due to factors such as variations in the weather, rather than to population changes, may then be assessed. It is likely that counts of passing birds will prove to be of most value to population studies. Counts of this nature can provide useful information on the populations of large diurnal migrants which regularly overfly a recording area in relatively high numbers, since they are usually scattered over breeding and wintering areas. The Bean Goose, the four species of crane recorded during the survey and the Great Bustard are examples of such migrants which pass Beidaihe in spring.

The studies should also help elucidate the effects of weather on migration. Hemmingsen believed Beidaihe to be a particularly good locality for such work, as successive air masses pass eastwards over the area at fairly regular intervals and lead to the weather exhibiting a periodic nature. The waves of migration which occur at Beidaihe (particularly the waves of cranes and geese) show strong correlations with the nature and movements of these air masses.

Additionally, the town has the potential to become a centre for promoting birds and bird conservation since it is a popular resort within easy reach of Beijing and many birds may be seen during spring and autumn.

A follow-up study will take place during autumn 1986. This will again concentrate on recording diurnal migration. The British and Chinese ornithologists who will co-operate in the venture will assess the possibilities for establishing Beidaihe as a centre for the study of bird migration and for the promotion of conservation.

Axel Hemmingsen's excellent work on the birds at Beidaihe formed the basis for the expedition. Without this, together with advice and encouragement from Roger Balsom, Operations Manager of SCT-China, and Jeffery Boswall, the expedition would not have

taken place. We also wish to thank Dr Joseph Needham, and Dr Christopher Perrins and Dr Derek Ratcliffe, who acted as Patron, and Scientific Advisers, respectively. The encouragement of Dr George Archibald was timely, and boosted a somewhat battered morale.

Ron Appleby, Roger Beecroft, Simon Stirrup and Andrew Webb joined the survey for short periods. Their visits to Beidaihe, which lasted between three and four weeks, added substantially to the coverage of the area (timed as they were to the peak of overall migration).

Many thanks are owed to the following for their assistance to the expedition (through donations, discounts on equipment/services etc.): The Ancient House Bookshop, The British Ornithologists' Union, The Cambridge Photographers, Chang Fuyuen, Charles Frank Ltd., Darwin College (Cambridge), Norman Elkins, Ed Keeble, The Ernest Kleinwort Charitable Trust, Fagus Anstruther Memorial Trust, The Fauna and Flora Preservation Society, Field and Trek (Equipment) Ltd., Anthony Galsworthy, Gilchrist Educational Trust, I.C.I. Plant Protection Ltd., Interwader, Jessop of Leicester Ltd., John Swire Charitable Trust, Kodak Ltd., The Meteorological Office, Oxford University Press, Pakistan International Airlines, The Percy Sladen Memorial Fund, The Royal Geographical Society, Royal Insurance, St. Regis International, The Scientific Exploration Society Ltd., SCT-China, Tan Yaokuang, Wei-shu Hsu, William Thomas Jr. and the West Hill Hotel, Beidaihe.

REFERENCES

- Anon. (1982) European news. *Brit. Birds* 75: 573.
 Anon. (1983) European news. *Brit. Birds* 76: 570.
 Anon. (1984) European news. *Brit. Birds* 77: 242.
 Archibald, G. W. (1985) The cranes at Poyang Lake. *ICF Bugle* 11(2): 1-3. Unpublished.
 Archibald, K. and Luthin, C. S. (1985) Final report: Eastern White Stork (*Ciconia boyciana*) working group. International stork conservation symposium 14-17 October Walsrode, W. Germany. Unpublished.
 Bakewell, D. N., Carey, G. J. and Williams, M. D. (1986) Notes on a swift of undertermined species. Pp.111-113 in M. D. Williams ed. *Report on the Cambridge Ornithological Expedition to China 1985*. Unpublished.
 Boswall, J. (1983) Some observations on the birds of north-east China, April/May 1983. Copy deposited in the Alexander Library, Oxford.
 Boswall, J. (in prep.) Bird conservation in the People's Republic of China.
 Cramp, S. and Simmons, K. E. L., eds. (1977) *The birds of the western Palearctic*, 1. Oxford: Oxford University Press.
 Etchécopar, R. D. and Hüt, F. (1978-1983) *Les oiseaux de Chine, de Mongolie et de Corée*, 1-2. Paris: Boubée.
 Hemmingsen, A. M. (1951) Observations on birds in north eastern China, I. *Spolia Zoologica Musei Hauniensis* 11: 1-227.
 Hemmingsen, A. M. and Guildal, J. A. (1968) Observations on birds in north eastern China, II. *Spolia Zoologica Musei Hauniensis* 28: 1-326.
 King, B. F., Dickinson, E. C. and Woodcock, M. W. (1975) *A field guide to the birds of South-East Asia*, London: Collins.
 King, W. B. (1978-1979) *Red data book, 2: Aves*. Second edition, Morges, Switzerland: International Union for Conservation of Nature and Natural Resources.
 La Touche, J. D. D. (1920) Notes on the birds of north-east Chihli (Hebei) in north China. *Ibis* (11)2: 629-671, 880-920.
 La Touche, J. D. D. (1921) Notes on the birds of north-east Chihli in north China. *Ibis* (11)3: 3-48.
 Mao Ying (1985) Wader migration in Haizhou Bay, eastern China. *Interwader Newsletter* 6: 10-11.

- Melville, D. S. (1984) Seabirds of China and the surrounding seas. Pp. 501–511 in J. P. Croxall, P. G. H. Evans and R. W. Schreiber, eds. *Status and conservation of the world's seabirds*. Cambridge, U. K.: ICBP Techn. Publ. no. 2.
- Meyer de Schauensee, R. (1984) *The birds of China*. Oxford: Oxford University Press.
- Nisbet, I. C. T. and Drury Jr., W. H. (1968) Short term effects of weather on bird migration: a field study using multivariate statistics. *Animal Behaviour* 16: 496–526.
- Parish, D. (1985) Southeast Asia. *World Birdwatch* 7(3): 8–9.
- Sonobe, K. (1982) *A field guide to the birds of Japan*. Tokyo: Wild Bird Society of Japan.
- Styan, F. W. (1891) On the birds of the lower Yangtze basin—part II. *Ibis* (6)3: 481–510.
- Tugarinov, A. J. (1931) Die Wanderungen der nordasiatischen Vögel. *Vogelzug* 2: 55–56.
- Vermeer, E. B. (1984) Agriculture in China—a deteriorating situation. *Ecologist* 14(1): 6–13.
- Wilder, G. D. (1924) Migration notes. *China J. Sci. Arts* 2: 61–63.
- Wilder, G. D. (1940) Migration notes. *China J.* 32: 199–204.
- Wilder, G. D. and Hubbard, H. W. (1924) List of the birds of Chihli province. *J. North China Branch Royal Asiatic Soc.* 55: 156–239.
- Williams, M. D., ed. (1986) *Report on the Cambridge Ornithological Expedition to China 1985*. Unpublished.
- Zhang, Y. S., Zhao, T. A. and Wang, S. J. (1985) Bird of prey migration in the Tangshan district. *Chinese J. Zool.* 20(1): 17–21 (in Chinese).
- Zheng, Z. (1976) *A distributional list of Chinese birds*. Beijing: Beijing Institute of Zoology. (In Chinese).

Martin Williams, 398 Scalby Road, Scarborough, North Yorkshire.
 David Bakewell, Gringle Cottage, Snow Street, Roydon, Diss, Norfolk.
 Geoffrey Carey, 60 Sherborne Avenue, Ipswich, Suffolk.
 Stephen Holloway, 4 Woolhams, Tupwood Lane, Caterham, Surrey.

The avifauna of the Suru River Valley, Ladakh

P. R. HOLMES

This paper presents a compilation of all bird records from the Suru Valley, Ladakh. The list of 128 species is likely to be extended by further work. The avifauna is found to be generally similar to that of the Upper Indus Valley around Tikse, approximately 100–140 km to the east, which has been intensively studied in recent years. Possible migration routes of some species, in particular Inornate (Yellow-browed) Warbler *Phylloscopus inornatus*, are discussed.

During the second half of the last century and the first part of this century, a great deal of interest was expressed in the ornithology of Ladakh, in the north-western Himalayas (Figure 1). This was largely because Ladakh was

Figure 1. Sketch map of Ladakh showing the main rivers and mountain ranges. The stippled area is the dominant mountain range, the Karakoram.

