

This is the first issue of *Forktail* without Nigel Collar as an editor. He, unfortunately, has had to resign through pressure from other commitments. The quality of the content and style of the first six issues is largely due to the high standards that he set, and then inspired others to follow. His outstanding editorial abilities will be sorely missed by the Club.

This issue was planned to be out in December, 1991, and I apologise for its delayed appearance.

Thanks are due to E. C. Dickinson and M. Kelsey for acting as referees of certain contributions.

12 February 1992

T.P.I.

CORRECTION
to *Forktail 2*

On p. 13 the entry for Mountain Hawk-Eagle should be deleted. The birds referred to were misidentified Oriental Honey-Buzzards *Pernis ptilorhynchus*.

Autumn bird migration at Beidaihe, China, 1986-1990

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An account of autumn migration at Beidaihe, summarising the main habitats of the area; recording methods; the timing of migrants in 1986; routes used by the different groups of migrant birds; correlations between weather and migration, including accounts of days of spectacular migration. Also details of 71 species of particular interest; these comprise 16 internationally threatened species, including movements of substantial numbers of Oriental Storks *Ciconia (ciconia) boyciana* and four species of cranes *Grus*; 33 species that have apparently undergone significant population declines during this century (of which four are also internationally threatened); 11 species that have apparently increased in numbers; the Pied Harrier *Circus melanoleucos*, of which a substantial proportion of the world population passes Beidaihe; and 14 species for which the records are of local significance, including the following reported for the first time from Hebei: Short-toed Eagle *Circus gallicus*, Parasitic Jaeger *Stercorarius parasiticus*, Great Black-headed Gull *Larus ichthyaetus*, Black Tern *Chlidonias niger*, Brown Accentor *Prunella fulvescens* and Chaffinch *Fringilla coelebs*. The population declines and increases are discussed, suggesting some possible causes.

Beidaihe (strictly Beidaihe Haibin-North Dai River Beach: 39°47'N, 119°27'E), a seaside resort approximately 280 km east of Beijing, is one of the world's finest migration watchpoints. Until the mid-1980s, the migration was mainly known from studies by Axel Hemmingsen from 1942-1945 (Hemmingsen 1951, Hemmingsen and Guildal 1968) and by John D. D. La Touche at nearby Qinhuangdao from 1910-1917 (La Touche 1920, 1921), together with occasional observations by others including H. W. Hubbard (1923), G. D. Wilder and H. W. Hubbard (1924), Wilder (1924a, 1924b, 1925, 1940) and other papers cited by Hemmingsen, which showed that many migrants, including substantial numbers of cranes and Oriental Storks *Ciconia (ciconia) boyciana* passed through the area each year. Recent studies began with a survey in spring 1985 (Williams 1986). This was highly successful - the results included 652 Siberian Cranes *Grus leucogeranus*, around 40% of the world population known at that time.

The 1985 study was followed by China Cranewatch 1986, a survey of the autumn migration. This was also successful, and observations have since been made each migration season, especially in the autumn. But though some reports have been produced (e.g. Hornskov 1988, Holt 1989), few of the post-1985 results have been published.

This paper summarises the results of autumn migration surveys at Beidaihe from 1986 to 1990; a full report (including all species recorded) is in preparation (Williams in prep.). For more information on crane migration at Beidaihe, see Williams *et al.* (in press); for storks, see Williams *et al.* (1991).

Results are included from the following:

1986: China Cranewatch 1986 (led by MDW; eight members, some for

less than the full period), 20 August to 20 November.

1987: observations from 18 August to 30 November; 12 people (most for less than the full period) contributed to the log; data collection co-ordinated by Jesper Hornskov, Stig Jensen and John Palfery.

1988: observations from 8 September to 18 November by Jesper Hornskov (Hornskov 1989); survey of late autumn migration by Earthwatch teams led by MDW and XW (often helped by JH, though logs kept separately), 8 October to 16 November.

1989: survey of late autumn migration by Earthwatch teams led by MDW, XW and GJC, 8 October to 16 November; includes observations by seven visiting British birdwatchers present for much of this period.

1990: log kept by Jan Hjort Christensen from 19 August to 22 October, after which JHC contributed to log kept by Earthwatch teams led by MDW, XW and Steve Holloway, 23 October to 16 November.

HABITATS

There have been considerable changes to the area since spring 1985 (see Holloway 1986 for a description of the habitats in spring 1985 and a summary of changes from the time of Hemmingsen to spring 1985). These largely result from the rapid expansion of Beidaihe and the creation of a new town, Nandaihe (= 'South [of the] Dai River') between the Daihe (= Tai-Ho) and the Yanghe (= Yang-Ho). [Note that in previous reports, including Williams (1986), the Wade-Giles form of romanisation of Chinese names was used for localities at Beidaihe. Here, we adopt the pinyin system in which, e.g., Peking becomes Beijing and Peitaiho becomes Beidaihe.] The changes were most marked between spring 1985 and autumn 1986; it appears that the pace of development has slowed considerably since 1986 (partly, we believe, through tighter control of building in the area).

The following are among the localities affected by developments.

The Henghe (= Heng-Ho) reservoir [or Xinde (New River) reservoir; it seems locals do not know the name Henghe, though it was used by Hemmingsen]. In 1987, work began on creating fish ponds and shrimp ponds to the south of the reservoir. These are now in operation. Most of the land they occupy was disused paddy fields in spring 1985; these were productive for freshwater marsh birds such as bitterns *Ixobrychus*, crakes and *Locustella* warblers. The ponds are not especially productive for birds. They are classed as temporary, and are included in the area of a proposed migratory birds reserve (Ounsted 1990): it is hoped that future landscaping and management may make them more attractive to birds, perhaps while fish and shrimp farming continue. More fish/shrimp ponds have been created in a marshy area north of the reservoir (this area was relatively unproductive in spring 1985).

Eagle Gully, a small gully to the south of Eagle Rock, is a very good place for watching passerines such as buntings, warblers and thrushes. The

orchards at the upper part of the gully have been destroyed to make way for a large building.

The fields near *Fish-Hook Point* were partly transformed into a hotel compound during spring 1985. Much of the remainder of the land is now occupied by buildings; there is also an excavation of an old summer retreat for Chinese emperors. Trees have been planted above the shore, but most are pines and do not hold numbers of birds for long.

The *Daihe Pool* (Tai-Ho Pool), which held good numbers of shorebirds in spring 1985, has been transformed into a fish or shrimp pond, and latterly a boating pond, which attracts few birds.

A road bridge has been built over the *Yanghe estuary*. This has increased disturbance of the area, which was the best habitat for shorebirds in spring 1985. It does, however, enable easy access to the southern shore of the estuary – notably to extensive fish and shrimp ponds, which offer good views of the mouth of the river (where ducks and gulls may be seen in good numbers).

A positive change, presumably resulting from the mostly higher tides (and increased siltload of rivers because of higher rainfall?) in summer, was the much higher amount of silt on the *Sandflats* in early autumn than in spring 1985 (the silt layer was gone from most of the Sandflats by late autumn). This made the area far more attractive to shorebirds than in spring 1985.

METHODS

The methods were similar to those of the 1985 survey (Williams 1986), with observation (using binoculars and telescopes) providing the means of data collection. The great majority of passing migrants noted during the surveys were recorded during periods of prolonged observation from suitable vantage points, notably the Lotus Hills. Daily counts were made of migrants present at areas representing the various habitats in and around Beidaihe.

The 1986 and Earthwatch surveys placed special emphasis on recording actively migrating birds, through maintaining near-continuous daytime observations from vantage points at the Lotus Hills, at the western edge of town. This was because the totals of passing migrants recorded at Beidaihe can be significant, and comparison of results from different seasons is relatively straightforward.

During the other survey periods, there was also good coverage from the Lotus Hills watchpoints, though this was less systematic.

During the 1986 and Earthwatch surveys, birds passing localities in and around Beidaihe were individually logged according to locality. Otherwise, totals of birds present in or migrating over the Beidaihe area were recorded.

Methods used to record passing migrants

The main locality for recording passing migrants was the Lotus Hills. In spring 1985, observations were made from the south-eastern hill. This is a

little lower than the 'main' hill, to the north-west, and views to the west and north-west are obscured. However, there are excellent views in other directions. Soon after members of the 1986 team began observations here in autumn 1986, soldiers said they could not stay at the watchpoint (it is near a military area). Other sites on the main hill were tried, but none proved satisfactory – trees obscured views and there were too many visitors, and a rocky outcrop west of the main hill was chosen as the watchpoint for much of the autumn. This is lower than the south-eastern hill, and views to the east are poor as they are blocked by the main hill (most of Beidaihe cannot be seen), but views over the plain are excellent.

This outcrop proved a good vantage point, but in 1986 most cranes passed to the east of the Lotus Hills, with flocks disappearing behind the main hill for long periods, or only located as they appeared over the southern slope of the hill, often too distant for identification. Largely to obtain better views of the cranes (and possibly record more, and identify a higher proportion), observations were made from the south-eastern hill in late autumn 1987, and during the Earthwatch surveys (there was no trouble from soldiers). The rocky outcrop was regularly used as a watchpoint in 1987 until 20 October and in 1988 to around mid-October, and occasionally thereafter; Hornskov (1989) considers it better than the south-east hill for recording migrating small passerines. It is perhaps also better for recording the birds which mainly pass over the plain, e.g. raptors and storks.

Greater care was taken with counts and estimates of numbers of birds in flocks of cranes and storks than, say, Rooks *Corvus frugilegus* or Carrion Crows *C. corone*. Thus flocks of Rooks or Carrion Crows were typically 'counted' by one observer, who might make a fairly quick estimate of, say, 60 birds (perhaps by counting ten birds, then estimating how many tens the flock contained), which was entered in the log. Crane and stork flocks were often counted by more than one observer, the figures only being announced once all counts were complete. In some cases, perhaps after re-counts, the figures agreed exactly and so gave the figure entered in the log. In others, a 'best' figure was chosen, or an average was entered. We found that counts might produce the same figure for even the larger flocks of cranes, perhaps with over 300 birds (the largest 'flocks' are usually groups of crane formations, each of which can be counted separately). This suggests that even the largest crane flocks can be counted accurately. Problems can arise, however, on 'wave' days, when flocks may pass in quick succession, not allowing time to repeat counts.

Whenever possible, flocks of birds which use thermals to gain height and so minimise energy use during migration were not counted as they 'thermalled', as the circling birds are probably impossible to count with any accuracy (cranes, storks, raptors, swifts and crows all use thermals in this manner). If the birds were in a thermal when they were located, we found it best to wait until they began heading off from the top of the thermal (as raptors do), or re-grouped into the flock formation (e.g. cranes) before we began counting.

To minimise over-recording of passing large birds such as storks, cranes

and raptors by entering records in the log for the same birds seen from more than one locality, numbers of birds, flight paths and times were compared. If it appeared that birds had been seen from more than one locality, only one observation was entered in the log. For small birds, especially passerines, all observations were logged as, for example, it was assumed that the great majority of those seen from the Sandflats would be different to those seen from the Lotus Hills.

During the 1986 and Earthwatch surveys, totals entered in the log were simply the sums of all counts. In 1987 and 1988 (Hornskov 1989) the totals were rounded up or down somewhat arbitrarily if it was felt this better reflected the true accuracy of the figure, which might be largely derived from approximate counts, e.g. a total of 232 might be rounded down to 230.

Variations in the degree of daily coverage

The following factors influenced the degree of daily coverage:

Number of observers. The number of observers during the surveys fluctuated, ranging from one to ten or more (typically three to seven). The main periods with one observer were 8 September to 7 October 1988 and 19 August to 22 October 1990 (though, especially in 1990, there was some help from birdwatchers who visited during these periods), and the last ten days of November 1987.

Variation in weather and numbers of birds grounded or passing. As in spring 1985, the weather was rarely solely responsible for affecting the degree of coverage of the area: there were a few days when heavy rain or snow prompted observers to shelter in hotel rooms (considerable migration was sometimes evident once the weather began clearing – i.e. a cold front was moving away to the east).

In 1986, the Lotus Hills observations were made daily, weather permitting. The watchpoint was manned on a rota basis, with rarely less than two observers present; observation periods totalled 853.6 hours (2,624 man-hours) – an average of around 9.25 hours per day. Initially, observations typically began by 07h30; the starting time became earlier as Pied Harriers *Circus melanoleucos* could be passing in numbers soon after dawn, and several watches in September began at 06h30 (Beijing summer time; just before sunrise). The observations typically ended by 15h00–16h00 (rarely 12h00–13h00 on very quiet days), once continuing to 18h40 (on 12 September, a day of heavy migration). Later in the autumn, observations tended to start and finish later (often 06h30–07h00 to 16h00–17h00, winter time). This was because fewer birds were passing in the early morning, and cranes, especially, were mainly seen in the afternoon. Again, observations were cut short if there was very little passing, prolonged if there was heavy migration, and began earlier than normal if the weather seemed promising.

Lotus Hill observations during the Earthwatch surveys roughly followed this late autumn pattern, though were more likely to be abandoned if little was passing and conditions were not promising, and there were no

observations at Beidaihe on a few days when other localities were visited (on all these days, the weather seemed poor for migration).

RESULTS

The timing of the migration in autumn 1986

The timing of the migration noted by each of the autumn surveys was broadly similar. The following account is based on the autumn 1986 survey, and indicates the birds seen as the autumn progressed.

During the initial part of the survey, in late August, the daily maximum temperature remained at around 30°C (the range was 28.5–33°C), and minimum temperatures were between 21.2 and 24°C. Shorebirds are among the earliest autumn migrants at Beidaihe (the records of La Touche 1920, 1921 and Hemmingsen and Guildal 1968 suggest that the peak of autumn shorebird migration at Beidaihe occurs around the end of July and early August), and occurred in numbers, with over 2,000 individuals of 34 species recorded on the 27th. White-winged Terns *Chlidonias leucopterus* were also common, the maximum count being 900 on 30 August (Hemmingsen had noted 'countless numbers' passing down the coast as early as the end of June). Over 9,000 Fork-tailed Swifts *Apus pacificus* were logged between 20 August and the end of the month, almost half this total passing in just two hours in the afternoon of the 30th. The survey's first Relict Gull *Larus relictus* – and the only adult of this species seen during the autumn – was at the Sandflats on 23 August. Arctic Warblers *Phylloscopus borealis*, Yellow-rumped Flycatchers *Ficedula zanthopygia*, Dark-sided Flycatchers *Muscicapa sibirica*, Grey-streaked Flycatchers *M. griseisticta* and Asian Paradise-Flycatchers *Terpsiphona paradisi* were among the early passerine migrants.

Counts of passing migrants were rewarding during the first half of September, when notable totals included 2,874 Pied Harriers on 10th, and 2,978 Pied Harriers, 152 Japanese Sparrowhawks *Accipiter gularis* and 916 Oriental Pratincoles *Glareola maldivarum* on 12th. In the early mornings, actively migrating passerines were evident, with counts including 483 Richard's Pipits *Anthus (novaeseelandiae) richardi* on 13th, 1,438 Yellow Wagtails *Motacilla flava* on 6th and 189 Yellow-billed Grosbeaks *Coccothraustes (Eophona) migratorius* on 7 September.

The variety of passerines increased as September progressed, with the first sightings of species such as Siberian Rubythroat *Eriothacus (Luscinia) calliope*, Orange-flanked Bush Robin *Tarsiger cyanurus*, Chestnut-eared Bunting *Emberiza fucata* and Black-faced Bunting *E. spodocephala* during the second half of the month. There were two first-winter Relict Gulls at the Sandflats on 8 September; sightings of first-winter birds were to continue to the end of the survey.

For much of the period between mid-September and the second week of October the weather was stable (anticyclonic) and observations from the

Lotus Hills were rather unproductive. Songbird movements continued, e.g. 238 Olive Tree-Pipits *Anthus hodgsoni* were logged on 24 September and 951 Chestnut-flanked White-eyes *Zosterops erythropleurus* headed south on 20 September, and there were good numbers of Barn Swallows *Hirundo rustica* and Red-rumped Swallows *H. daurica*, with totals of over 950 and 2,700, respectively, on 4 October. However, the numbers of raptors were generally disappointing, the highest tally being 500 Pied Harriers on 20 September. On 23 September, 3,504 Grey-headed Lapwings *Vanellus cinereus* were recorded from the watchpoint.

A sizeable influx of Radde's Warblers *Phylloscopus schwarzi* was noted on 28 September, when 159 were recorded. Though this was the main species involved in the 'fall', there were good numbers of other grounded passerines, including six Siberian Rubythroats, eight Bluethroats *Eriothacus (Luscinia) svecicus*, five Scaly Thrushes *Zoothera dauma*, 28 Lanceolated Warblers *Locustella lanceolata*, 114 Inornate (Yellow-browed) Warblers *Phylloscopus inornatus*, 21 Red-throated Flycatchers *Ficedula parva* and 209 Black-faced Buntings. A cold front moved eastwards over Beidaihe late on 9 October, and there was a flurry of migration the next day, when 146 Grey Herons *Ardea cinerea*, 160 Purple Herons *A. purpurea* and 16 species of raptors – including 56 Northern Goshawks *Accipiter gentilis*, 319 Common Buzzards *Buteo buteo* and five Greater Spotted Eagles *Aquila clanga* – moved south. From this date to the end of the survey period, the weather reverted to the periodicity which appears typical of north-east China (Hemmingsen 1951), and successive arrivals of northerly airstreams, usually preceded by cold fronts, stimulated further 'waves' of migration. Cranes and geese began to occur in some numbers, and Upland Buzzards *Buteo hemilasius* were fairly common, the maximum count being 102 on 28 October. The first large Oriental Stork flock – numbering ca. 280 birds (over one-quarter of the known world population prior to the survey) – was seen at dusk on 29 October. The highest day totals of Common Cranes *Grus grus* and Hooded Cranes *G. monacha* – 1,269 and 438, respectively – were logged on 5 November. The next day, Oriental Stork numbers peaked, with a total of 742 resulting from just three sightings (flocks of ca. 360 and ca. 380, and two).

The overall migration declined markedly in November, when most winter visitors, including the Common Goldeneye *Bucephala clangula* and the Siberian Accentor *Prunella montanella*, became established. Late records included a Red-throated Flycatcher on 17 November.

The Henghe Reservoir and the Sandflats were largely frozen over on 16 November, by which date there were relatively low numbers of passing birds, even on days with apparently good migration weather. Common Mergansers *Mergus merganser* were the last of the waterfowl to occur in numbers; 400 were recorded from the Lotus Hills watchpoint in the last week of the survey. Red-crowned Cranes *Grus japonensis*, which seem to be the most cold tolerant of the genus, continued to occur in small numbers, and the peak count of Great Bustards *Otis tarda* – 70 birds – was made on 17 November.

The routes used by migrants observed passing Beidaihe

Most migrants observed passing Beidaihe followed the trend of the coast – i.e. flew from the north-east towards the south-west (to avoid unnecessary repetition, this has hereafter been simplified to ‘south’). Many overflew the town, rather than fly around the roughly triangular headland Beidaihe occupies.

La Touche (1914) also found that birds tended to follow the coast in the autumn: ‘The birds when bound south appear generally to follow the coast line, and many species may be observed by day, skirting the coast or passing overhead, either over Chinwangtao [= Qinhuangdao] or not far inland.’ Wilder (1924a) observed smaller birds ‘coming across the gulf [of Bohai]’, and suggests that: ‘Probably the migration route for them follows the China coast only approximately, cutting off the gulf by flights across rather than going around, as the waterfowl seem to do, so that their line of flight is southwest.’ He says La Touche also found that smaller birds crossed the gulf, yet it seems that La Touche only found this was the case in spring (La Touche 1914). From our observations, it may be that the birds arriving from across the gulf – which may include raptors, cranes and others, as well as passerines – may have only taken a short cut from somewhere near Shanhaiguan, over the sea to Beidaihe, rather than following the curve of the coast. Radar studies should help with determining routes of birds passing through the area – and show to what extent the migration is concentrated over Beidaihe.

Waders and terns were good examples of birds taking the short cut over Beidaihe. From observations at the Sandflats (few were seen from the Lotus Hills, as they passed too far to the east); it appeared they tended to pass down the coast to the Sandflats, then head over Beidaihe before continuing on down the coast.

Cranes also mainly passed over Beidaihe, or even out over the sea. Some 3,091 (65%) of the 4,779 cranes for which routes were noted in 1986 passed to the east of the Lotus Hills (much to the frustration of the observers, since the highest Lotus Hill severely restricted views in this direction from the 1986 watchpoint). Though routes were not noted in later autumns, the majority of cranes again passed to the east of the watchpoint. (This contrasts with the spring, when it seems the tendency is for the birds to pass over the plain, perhaps accounting for Hemmingsen’s autumn crane totals mostly well exceeding his spring totals.) The larger flocks were especially prone to pass over the town or sea, perhaps as they were led by birds well used to travelling down the coast (smaller flocks, as they have fewer birds, are less likely to have ‘old hands’).

By contrast to the cranes, the majority of Oriental Storks passed over the plain inland of Beidaihe: 1,565 (66%) of the 2,358 birds for which routes were noted in 1986 passed to the west of the Lotus Hills, and most of the rest passed over the hills themselves; 624 flew over the hills and just four flocks, totalling 169 birds, passed to the east of the hills. The Black Storks *Ciconia nigra* showed an even higher tendency to pass over the plain; several flocks

were seen well to the west of Beidaihe (appearing distant even through telescopes): this may reflect the species’ liking for roosting in mountains as well as in lowland fields and wetlands (which are probably the preferred roosting habitats of the Oriental Stork).

Raptors also mainly passed over the plain, though their routes were perhaps affected more by wind direction than those of the above species. North-west winds were usually the most productive for raptors, suggesting that the birds had been drifted eastwards from a more typical route to the west of Beidaihe. Further evidence for a more westerly route is provided by occasional observations at Shanhaiguan, ca. 30 km north of Beidaihe. Raptors, and Black Storks, have been noted passing in fair numbers over the mountains east of Shanhaiguan on days when little migration was evident at Beidaihe, or the weather conditions were much as on very quiet days for migration at Beidaihe. There was perhaps a tendency for raptors to pass over the town and the Lotus Hills more in the morning than the afternoon, when the main route was over the plain: e.g. on 11 October 1988, when ca. 1,100 Common Buzzards were logged, birds passed over the town and Lotus Hills in the morning, the route was roughly centred over the Lotus Hills by midday, and birds seen in mid afternoon were mostly passing well to the west. This may result from thermal developments during the day. So, presumably, does the tendency for raptors to be lower during early morning than around mid-morning to early afternoon, when Pied Harriers, especially, were sometimes so high that they could only be detected with binoculars.

Small passerines migrated over a broad front, overflying Beidaihe (the Sandflats was a good locality for recording early-morning passerine movements) and the plain, though there were no records of any numbers passing over the sea east of town. As with several other birds, it appeared there was a tendency for them to arrive from over the sea to the east of town, and fly westwards or south-westwards overland. This may reflect the use of the Beidaihe headland, and especially the Lotus Hills, as landmarks in an otherwise flat coastline. As noted above, the rocky outcrop at the Lotus Hills may be a better watchpoint for recording actively-migrating small passerines than the south-eastern hill. The passerine migration on a given day may not be over a broad front, and there may be great differences in numbers recorded at different localities. Good examples are 11 October 1988, when 2,715 Chinese Penduline-Tits *Remiz (pendulinus) consobrinus* were recorded from Daihe, yet only 50 from the Lotus Hills, and 13 October 1988, when 4,500 Eurasian Skylarks *Alauda arvensis* were recorded from Daihe, and only 144 from the Lotus Hills. The wind was force 4-5 on both these days, north-west to west on 11th and westerly on 13 October, and the birds may have been flying low as a result (substantial numbers of actively migrating small passerines have been recorded from the Lotus Hills on other days).

Correlations between weather and migration

Hemmingsen (1951) notes that, in north China, weather variables such as temperature and air pressure show periodic fluctuations, with typical intervals

between highs and lows of the variables of five to seven days. The numbers of migrants seen at Beidaihe are strongly dependent on these fluctuations in weather, and some birds, e.g. cranes, have apparently evolved migration strategies which involve them waiting for optimum migration conditions before undertaking the stage of their journey which passes Beidaihe.

These optimum conditions typically include winds with a northerly component, especially after a cold front has passed east over the area, and may lead to spectacular 'waves' of visible migration.

Thousands, or tens of thousands, of birds may also occur during 'falls' – arrivals of grounded migrants, typically with very little visible migration. These falls apparently mainly coincide with falling air pressure.

The periodic changes in weather thus serve to stimulate migration, and migration waves and influxes are fairly frequent, though may differ strongly in the numbers of birds involved. However, stable, anticyclonic weather can result in little evident migration, even though skies are normally clear (i.e. birds would not experience navigation problems). It may be that this is partly because winds are light and variable, and birds prefer to wait for a wind with a more consistent northerly component (e.g. following a cold front); also, the typically warm weather will help ensure that food is still available.

Weather stimulating migration waves. As mentioned, waves of visible migration were sometimes noted after the passage of cold fronts – i.e. in classic autumn migration weather (Elkins 1983). Typically, conditions become more hazy prior to the arrival of a front, it may be warm, and there is little migration (there may be good numbers of grounded birds; see below). The arrival of the front is marked by the sky becoming overcast and, as the front passes over, heavy rain or snow may fall, and the wind swings towards west to north, and becomes fresh or strong. The rain or snow eventually eases, and the visibility becomes good or very good, and the sky eventually clears (sometimes, the wind may not freshen until the cloud has passed to the east).

An excellent example of a cold front which stimulated a migration wave passed Beidaihe during 14 and 15 October 1989. The front arrived late on 14 October, and it was raining, with a fresh north wind, in the early morning of 15 October. Observations from the Jin Shan Hotel, eastern Beidaihe, produced over 200 unidentified ducks heading south over the sea, but few other passing migrants while it was raining. However, as soon as the rain eased at around 09h00, Grey Heron migration was evident; 1,417 were recorded by observers at the east coast of Beidaihe from this time to 11h30. Two White Spoonbills *Platalea leucorodia* and 135 Great Cormorants *Phalacrocorax carbo* were also of note during the morning. There was something of a lull around midday, but with the sky clearing and the wind from the north (cold), the afternoon produced most of the day's totals of 21 Black Storks, 26 Northern Sparrowhawks *Accipiter nisus*, 26 Northern Goshawks, 427 Common Buzzards, 1,167 Daurian Jackdaws *Corvus dauuricus* and 2,693 Rooks or Carrion Crows.

The following day, the wind remained northerly, fresh, in the early

morning (became light by 08h00, and westerly from mid-morning onwards), the sky was clear, and the wave continued, with 52 Northern Sparrowhawks, 41 Northern Goshawks, 740 Common Buzzards, three Saker Falcons *Falco cherrug*, 33 Great Bustards and 2,303 Rooks or Carrion Crows.

Another cold front arrived on 7/8 November 1990. It cleared Beidaihe by dawn on 9 November; during the day, the sky was clear, the visibility excellent, and the wind moderate north-north-east in the early morning, becoming north-west by mid-morning, and westerly by mid-afternoon. The day was especially notable for birds of prey, with 13 species including three White-tailed Eagles *Haliaeetus albicilla*, six Cinereous Vultures *Aegypius monachus* (in a party, flying north), 190 Upland Buzzards, four Rough-legged Buzzards *Buteo lagopus*, one Greater Spotted Eagle, one Steppe Eagle *Aquila nipalensis* and one Imperial Eagle *A. heliaca*. There were also 135 Oriental Storks, four Black Storks, 491 Common Cranes (441 were seen from 15h00-17h00), ten Red-crowned Cranes and 14 Great Bustards.

The next day, the sky was again clear, and the wind north-north-east at first. But the wind soon became light, and variable after 10h00, becoming southerly by midday, by which time only rather low numbers of migrants had been seen; the only cranes were 20 Common and five which were unidentified. But, soon after, 28 Common Cranes flew north, and a flock of 85 of the same species flying south at 12h40 marked the start of the best crane passage in recent years (with all birds seen flying south). The day's crane totals were 2,728 Common, 328 Hooded, 135 Red-crowned, and 111 Siberian Cranes, six White-naped Cranes *G. vipio* and 396 unidentified cranes.

A third example of a cold front stimulating migration is one which passed Beidaihe over 13 November and 14 November 1986, clearing the area by the morning of 14 November. The weather on 13 November was typical for the approach of a cold front – the visibility was under 1 km in the morning (reaching 4 km at best), the sky was clear and the wind was west, force 2-4. Visible migration was at a virtual standstill: the only non-passerine noted passing the LH watchpoint during 7.25 hours of observations was a Hen Harrier *Circus cyaneus*. By 07h00 on 14 November, the cold front had passed over – the cloud line was already lying to the east of Beidaihe, the visibility was good (estimated at over 20 km), and the wind was north-east, force 3, from mid-morning. Though rather late in the autumn, 14 November produced a fair migration wave, with totals including 277 Oriental Storks, 43 Upland Buzzards, three White-tailed Eagles, 111 Common and 61 Red-crowned Cranes, 31 Great Bustards, 344 Daurian Jackdaws and 1,042 Rooks or Carrion Crows.

Hemmingsen's records indicate that he similarly observed migration waves after cold fronts had passed, e.g. 'the big goose climax in the autumn of 1943 [ca. 2,400 geese; also ca. 1,000 cranes] came after a strong East storm which brought with it the temperature fall, but on the day of the maximum migration the weather was calm and thus appeared mild' (Hemmingsen 1951: 87).

Fast moving cold fronts as on 14/15 October 1989, 7-9 November 1990 and 13/14 November 1986 mainly occur in late autumn, from mid-October onwards (they may move from north-west China to the south-east of the country in only two or three days). They are not the only weather features to give rise to substantial migration wave conditions at Beidaihe, though it appears waves mostly occur as the air pressure rises, i.e. on the eastern flanks of high pressure cells, where winds have a northerly component (the opposite of the case in spring, when migration waves are associated with the western flanks of high pressure cells). An example is the wave on 12 September 1986, when totals included 2,978 Pied Harriers, 152 Japanese Sparrowhawks and 916 Oriental Pratincoles. Though no active front was noted, weather conditions were as for the arrival of a high pressure cell: the air pressure rose from 11-12 September; the minimum temperature fell from 22°C over 10-11 September to 15°C over 11-12 September; visibility improved from less than 8 km with increasing haze on 11 September to over 15 km on 12 September; and the sky was partly cloudy on 11 September, clear on 12 September. The wind on 12 September was north-westerly, force 2, in the early morning and became westerly, force 2, for much of the day from mid-morning onwards.

A wave similarly occurred with rising air pressure on 29 October 1986, when totals included 359 Oriental Storks, 590 Bean Geese *Anser fabalis*, two White-tailed Eagles, 412 Common, 35 Red-crowned, nine Hooded, two White-naped and 49 Siberian Cranes and 13 Great Bustards. The wind was north-west, force 2, in the early morning, becoming north-east, force 4, by mid-morning, then east, force 4, by early afternoon, and south, force 4, by mid-afternoon; the sky was clear, and visibility was good (estimated at over 15 km). Though the weather remained fine the next day, the wind was light, force 1, from the west for much of the morning, becoming south-west, force 4-5 from midday; by then the visibility had fallen to perhaps 10 km and little migration was evident: there were totals of just three Oriental Storks, three Bean Geese and 11 Common Cranes (no White-tailed Eagles or cranes other than Common). The weather synopsis for this day is much as for crane wave days in spring, so the low numbers of migrants presumably reflect the strong influence of wind direction on crane migration.

Often on wave days, the sky is clear or partly cloudy and there is no rain. But waterfowl, especially, may pass in numbers during rain (they are better insulated, and so experience less heat loss, than most land birds). The most notable example was a wave of geese, ducks and waders on 29 October 1987, when totals included 2,150 Bean Geese and 10,500 Northern Lapwings *Vanellus vanellus*. It was overcast, calm in the early morning; there was a fresh north-east wind from around 07h30 and rain began around 09h00, lasting until 15h30. Though some migration was noted in the morning, it was not until around 11h00 that birds began passing in numbers, with large flocks of geese and Northern Lapwings heading towards the south-west over the southern coast of Beidaihe (most were seen from the Diplomatic Personnel Guest House).

Even with weather which may be far from optimum for migration, there are usually some actively migrating birds to be seen. We have found that, as on 30 October 1986, days with south-west winds produce little visible migration. This agrees with the hawk trappers who told Hemmingsen (1951) that few birds pass on days with south-west winds.

A hawk trapper we spoke to said north-west winds are best for raptor migration at Beidaihe, in agreement with our observations. Such winds will stimulate migration as they have a component in the migration direction; as noted above, they may produce the highest raptor numbers at Beidaihe as the west component drifts birds eastwards from a more westerly route. Our observations indicate that cranes, and perhaps Oriental Storks, geese and other birds, prefer north-east winds – i.e. winds close to, or exactly in, the migration direction.

The weather which prompts visible migration may result in large 'clearouts' of migrants present in the area, which can be all the more obvious as there may be falls as cold fronts approach (see below). A good example was 15 October 1989, when, although attention largely focussed on visible migration, there were no records of Orange-flanked Bush-Robins (37 were logged on 14 October), only one Black-browed Reed-Warbler *Acrocephalus bistrigiceps* (26 on 14 October) and no Dusky Warblers *Phylloscopus fuscatus* (13 on 14 October). Several species had been fairly common before this date, but were recorded in far smaller numbers afterwards, e.g. Black-browed Reed-Warbler, Radde's Warbler, Red-throated Flycatcher and Chestnut-flanked White-eye.

Weather leading to influxes. Influxes of migrants appear to mainly coincide with falling, or low, air pressure (low pressure tends to inhibit migration: Nisbet and Drury 1968), sometimes as a cold front approaches. Though it may not rain, or even become cloudy, when the pressure falls, the visibility falls as the air becomes increasingly hazy (humidity is inversely correlated with air pressure).

There was a substantial fall as the 15 October 1989 cold front approached. Numbers included 68 Orange-flanked Bush-Robins, 35 Black-browed Reed, 45 Dusky and 18 Radde's Warblers and 395 Lemon-rumped (Pallas's Leaf) Warblers *Phylloscopus proregulus* on 13 October. Other falls associated with low pressure in 1989 included 210 Orange-flanked Bush-Robins and 285 Pallas's Reed Buntings *Emberiza pallasi* on 24 October and 80 Orange-flanked Bush-Robins, 148 Dusky Thrushes *Turdus naumanni eunomus*, 302 Rustic Buntings *Emberiza rustica* and 290 Yellow-throated Buntings *E. elegans* on 27 October.

Hemmingsen (1951) apparently also recorded falls of migrants as fronts approached: 'Days marked down as special "migration days" were e.g. 11 September and again 5 October 1942 and both these occurred immediately before a storm from E or NE.'

The largest documented fall at Beidaihe was observed by Wilder and Hubbard. Wilder (1924b) rather casually relates that 'On September 10 the

Siberian blue chat [= Siberian Blue Robin] (*Larvivore cyane* [= *Erythacus cyane*]) was in the fields and on the grassy hillside among small pines in thousands, and the brown flycatcher (*Muscicapa latirostris*) in almost equal numbers. The next morning the former but not the latter had all disappeared, and other forms had come in on the wings of a rainy northeaster. It may well be that this is another example of a fall as a cold front (the 'rainy northeaster') approaches, and the passage of the front prompted the departure of the Siberian Blue Robins.

An influx of ducks followed the passage of the front: 'Green wing teal [Common Teal *Anas crecca*], pintail [*A. acuta*] and other ducks were in great numbers on the 12th at Peitaiho.' The largest duck influx of recent autumns coincided with the passage of a cold front. Sleet and snow fell as the front moved over during the morning of 27 October 1986, and in the afternoon ducks on the sea off Eagle Rock included 2,140 Common Teal, 222 Gadwall *Anas strepera*, 25 Eurasian Wigeon *A. penelope* and 90 Northern Shoveler *A. clypeata*.

Species of interest

Around 345 species were recorded during the survey. Below, we give records for species selected as being of particular interest. The list includes all species recorded in recent autumns which are treated in Collar and Andrew (1988) (annotated with an asterisk), others which are scarce or restricted in range (e.g. the population of Black-headed Ibis *Threskiornis melanocephalus* breeding in north-east Asia, Eastern Curlew *Numenius madagascariensis*), species for which recent records indicate population changes during this century, or might represent substantial proportions of the world population (Pied Harrier), and species for which records in the area are evidently unusual.

Summaries of the autumn records of La Touche and Hemmingsen, augmented where appropriate by records of other observers and by spring records of La Touche and Hemmingsen, are given.

Note that survey periods and intensities differed, as discussed above. The dates were: 1986 – 20 August to 20 November; 1987 – 18 August to 30 November; 1988 – 8 September to 18 November; 1989 – 8 October to 16 November; 1990 – 19 August to 16 November.

The 1987 data are from Palfery (1987); 1988 data are mainly from Hornskov (1989), sometimes together with records from the Earthwatch survey from 8 October to 16 November; 1989 data to 22 October were supplied by J.H. Christensen (in litt.); other data are from logs kept by M. D. W. and G. J. C.

Abbreviations used are as follows:

References Ch – Cheng (1987); COE – Williams (1986); H – Hemmingsen and Guildal (1968); Ho – Hornskov (1989); LT – La Touche (1920, 1921); P – Palfery (1987); Sh – Shaw (1936); WH – Wilder and Hubbard (1924, 1926).

Localities at Beidaihe LH – Lotus Hills; Re-Henghe reservoir; Se – seafront along the southern coast of Beidaihe (from Legation Point west to

near the Lotus Hills); SF – Henghe Sandflats (an estuarine area on the northern edge of town); YH – Yanghe estuary (ca. 5 km south of town).

CHINESE POND-HERON *Ardeola bacchus* LT, H – no records. WH – first specimen shot about 1908, subsequently records (in Hebei) in five years of no more than six birds in a day. COE – common, 22 April to 1 June; breeding at Re. Ch – summers in Hebei.

1986: 147 bird-days were logged from 22 August to 16 October. The maximum day count was 42 on 27 August, when the main passage commenced, and this lasted until 6 September. During this period, 102 bird-days were logged, including 10 coming in from over the sea on 6 September. Most records were from Re, though birds were occasionally seen migrating over SF.

1987 (P): 644 bird-days, beginning of survey to 27 September. The highest day totals were 61 on 19th and 96 on 30 August, 55 on 1st, 50 on 7th and 70 on 16 September: most or all of these were counts of birds at Re at dusk.

1988 (Ho): 64 bird-days, 11 September to 5 October.

1990: 434 bird-days were logged before 23 October; highest day total 40 on 29 August.

***CHINESE EGRET** *Egretta eulophotes* LT – no records. Wilder (1941) – specimen collected, 5 September 1941. H – eight on 1 June 1944, one on 6 June 1945. COE – no records. Ch – no records from Hebei; status: very rare elsewhere.

1987 (P): single birds at Re on 27 and 28 August and 12 September.

1990: one was at SF on 21 September.

GREAT EGRET *Egretta alba* LT – one record, 5 November. WH – once very common in Hebei, but population greatly decreased as a result of plume hunting. H – two certain records of *E. a. alba* – three on 31 March and one on 22 October; one probable *E. a. modesta* on 4 August 1944. *E. a. alba* records in China are in late autumn, winter or early spring; summer records of Great Egrets are of *E. a. modesta*. COE – 14 birds, 9 April to 21 May. Ch – occasionally recorded from Hebei.

1986 five individuals were recorded; all were seen from LH, flying south. There were singles on 10 and 23 September and three on 17 September.

1987 (P): singles flew south on 20, 22 and 31 August, 2 September and 30 October.

1988 (Ho): 11 flew south, 7-17 November.

1988 (Earthwatch): ten birds seen in November, flying south: seven on 4th, two on 9th and one on 14th.

1989: singles flew south on 19 and 31 October.

1990: before 23 October, 32 bird-days were logged (20 individuals?); the highest count was nine at SF on 5 September. From 23 October, nine were recorded flying south: seven on 2nd and singles on 9 and 10 November.

It seems likely that birds seen in early autumn are *E. a. modesta*, late birds are *E. a. alba* (Hemmingsen and Guildal 1968).

*ORIENTAL STORK *Ciconia (ciconia) boyciana* LT – four birds probably this species, 20 November 1910. H – seen between 22 October and 16 November (possibly on 28 November). Autumn totals of 1,000-1,500 (1942), 687-887 (1943), at least 1,466 (1944) and 1,000-4,000 (1945). At least 1,000 birds recorded on three days: 1,000-1,500 over 12-13 November 1942 (arrived in the evening at Grassy Sands, remained because of fog) and 1,000-4,000 on 12 November 1945. On the latter date, 'one huge flock after the other passed GS in the course of 4 hours in the morning without settling for long, or some perhaps not settling at all.' COE – 12 birds, mostly in the latter half of March. Ch – migrates through Hebei; status: rare.

1986: about 2,729 individuals were recorded flying south, from 11 October to 16 November. The main passage was from 28 October to 10 November; 2,395 birds (87.8% of the total) were recorded during this period. The maximum day total was 742 (360, 380 and two) on 6 November; 359 on 29 October and 567 on 3 November were other notable day totals.

1987 (P): 1,531 were recorded flying south from 15 October to 21 November; highest day totals 300 on 30 October, 368 on 2 November and 430 on 10 November.

1988 (Ho): 1,796 birds flew south, mid-October to 17 November.

1988 (Earthwatch): 1,789 birds were recorded flying south from 11 October to 13 November. Additionally, one was at YH on 20 October. Six flew south before 26 October, when the main passage began. The highest day total was 1,104 birds on 13 November; 156 on 29 October, 200 on 11 November and 136 on 12 November were other notable tallies.

1989: 1,113 flew south, 15 October to 13 November; 1,101 flew south from 27 October to 11 November; highest day totals 329 on 7 November and 480 (469 and 11) on 11 November.

1990: before 23 October, one was recorded on 15 October. From 23 October, 848 were recorded flying south from 2-14 November; the highest day totals were 135 on 9th, 234 on 10th and 240 (one flock) on 11 November.

BLACK-HEADED IBIS *Threskiornis melanocephalus* LT – one on 5 October 1913. H – three flying west on 19 September 1943. COE – no records. Ch – migrates through Hebei; status: very rare.

1987 (P): one flew south on 30 October.

1989: one flew south on 15 October.

BEAN GOOSE *Anser fabalis* LT – geese (mainly this species) pass from the end of August or beginning of September to 5 or 6 November. H – more common in autumn than in spring, 21 August to 23 November; totals of 3,913 (1942), 10,044 (1943), 2,438 (1944) and 3,196 (1945). COE – 2,607 birds, 15-31 March. Ch – migrates through Hebei; status: fairly common.

1986: 1,904 birds were recorded flying south from 17 October to 16 November. The first record, of eight birds, was not followed until 26 October, when main passage began, lasting until 10 November. During

this period, 1,848 birds were recorded. The great majority of birds were seen migrating past LH. The maximum day total was 590 on 29 October (when three flocks were heard passing over the town after dusk); 395 on 4 November and 342 on 7 November were other notable tallies.

1987 (P): 3,588 flew south from 16 October to 16 November; 2,150 flew south on 29 October.

1988 (Ho): at least 366 birds, 1 October to 15 November.

1988 (Earthwatch): 420 birds were recorded flying south, and two flying north, from 28 October to 15 November. The highest day total was 105 birds on 10 November.

1989: 903 bird-days (900 flew south), 9 October to 13 November; highest day totals 259 on 5 November and 128 on 6 November.

1990: 178 were recorded flying south, 24 October to 15 November; highest day total 68 on 5 November. A bird with near white wing-tips was seen on 9 November.

Even were all the unidentified geese (see below) this species, all the recent autumn totals are less than half Hemmingsen's highest total.

Unidentified geese *Anser* spp.

1986: 761 unidentified geese were recorded from 10 October to 14 November. Flocks of 35 on 10 October, 41 on 14 October and 40 on 21 October were the only records until the 26 October. A total of 642 birds was then recorded during the main period of Bean Goose migration making it likely that most of the unidentified geese were this species. Most birds were seen from LH; the maximum day total was 281 on 29 October, the same date as the peak of Bean Goose migration.

1987 (P): 692 were recorded flying south.

1988 (Ho): at least 157 were recorded.

1988 (Earthwatch): 247 were recorded flying south.

1989: 530 bird-days (519 flew south, 11 flew north), 15 October to 12 November; 357 flew south on 15 October.

1990: before 23 October, 185 were recorded flying south on 14 October. From 23 October, 439 were recorded flying south, 3-11 November; highest day totals 206 on 7 November and 74 on 9 November.

NORTHERN PINTAIL *Anas acuta* LT – perhaps the most abundant of the larger ducks, mid-September to the end of October. Wilder (1924b) – in great numbers, 12 September 1924. H – noticeably less common than in spring; six dates in one autumn, 19 July and 23 September to 11 October. COE – 167 bird-days, 16 March to 30 April. Ch – migrates through Hebei; status: abundant on passage.

1986: 35 or 36 bird-days were logged from seven dates over 1-27 September. The first record was of 18 flying south past LH, and the remaining 17/18 birds were recorded during the last ten days of the passage period at SF, YH and Re.

1987 (P): one on 25 September and 137 flew south over 26-29 October (including 133 on 29 October).

1988 (Ho): 40 bird-days, 4-10 October; flock of 38 on 10 October.

1989: 51 bird-days, 15 October to 5 November; 45 flew south on 15 October.

1990: before 23 October, 53 bird-days, highest day total 43 on 29 September. From 23 October, 55 flew south on 8 November.

The recent studies do not support La Touche's assertion that this may be the most abundant of the larger ducks.

COMMON TEAL *Anas crecca* LT – very abundant, beginning of September to the end of October. Wilder (1924b) – in great numbers, 12 September 1924. H – less common in autumn than in spring, 16 September to 25 October. COE – 1,175 bird-days, 19 March to 20 May. Ch – migrates through Hebei; status: very common.

1986: a total of 2,161 bird-days was logged. The great majority were seen on 27 October, when ca. 2,140 were on the sea off SF in the afternoon, after a cold front had arrived. Otherwise, only single figures recorded on seven days: one from LH on 1 September; at Re, one on 15 September, two on 21 September, four on 27 September, two on 29 September and seven on 6 October, also one at SF over 30-31 October.

1987 (P): 51 bird-days, 21 September to 1 November.

1988 (Ho): 14 bird-days, 7-12 October.

1989: 72 bird-days, 8 October to 1 November; 45 flew south on 15 October.

1990: before 23 October, 32 bird-days, highest day total 15 on 29 September. From 23 October, one was at SF on 3 November and three flew south on 8 November.

***BAIKAL TEAL** *Anas formosa* LT – extremely abundant on passage, beginning of September to the end of October. WH – erratic spring migrant in Hebei, less conspicuous in autumn by far. H – only one in autumn, but dense flocks seen spring 1944. COE – five birds on 20 March. Ch – migrates through Hebei; status: fairly common during migration and in winter.

1986: the only record was of a female or immature at Re on 15 September, with a small flock of Common Teal and Falcated Duck.

1987 (P): singles on 13 and 16 September.

1988 (Ho): one flew south, 14 September.

1990: two records of a female (same bird?), at Re on 25 August and SF on 30 August.

The few recent records contrast markedly with earlier observations, especially by La Touche, substantiating reports that there has been a marked decline in the population of the Baikal Teal.

FALCATED TEAL *Anas falcata* LT – extremely abundant during the latter half of September, remaining during October and occasionally until November. H – only one autumn record, 23 September 1942. COE – 355 bird-days, 21 March to 31 May. Ch – migrates through Hebei; status: fairly common, declining in recent years.

1986: 32 bird-days were logged from 25 August to 16 October. Only seen on 11 dates: at Re, singles on 25 and 27 August, nine on 14 September, two on 21 September, four on 27 September, five on 29 September and one on 7 October; also one seen passing LH on 30 September, six at SF on 14 October and two at YH on 16 October.

1987 (P): 21 bird-days, beginning of survey to 25 October; 10 were recorded flying south.

1988 (Ho): 24 bird-days, 10 September to 7 October.

1989: 14 were at Re on 15 October.

1990: 306 bird-days, highest day totals 39 on 15 September, 71 on 22 September and 45 on 29 September; all before 23 October, and mainly recorded at Re.

***BAER'S POCHARD** *Aythya baeri* LT – extremely abundant during the latter half of September and beginning of October, remaining until the end of October. H – four possibly seen, 30 April 1943. COE – ca. 20 individuals, 23 March to 1 June; a pair remained at Re to the end of the survey period. Ch – migrates through Hebei; status: fairly common.

1986: recorded at Re on three dates: one on 1 October, 10 on 5 October and one on 10 October.

1988 (Ho): five birds flew south and one was seen at Re on 24 September.

1990: two records at SF: six on 2 October and one on 14 October.

Only La Touche has found this species extremely abundant in the area – more recent work has found it to be rather scarce, suggesting a substantial decline since early this century.

MANDARIN DUCK *Aix galericulata* LT – one record, 17 April 1913. H – a flock of 17 on 11 October 1944 was the only autumn record. COE – 22-23 individuals, 9 April to 3 May. Ch – migrant in Hebei; status: fairly common, declining in recent years.

1986: 23 bird-days were logged from 9 September to 19 October. It appears that 13-14 individuals were involved – a little over half as many as in spring 1985. Records were as follows: a female or immature at LH on 9 September, 13 September and 17 September, one at Re on 28 September, one at Re on 7 October, three at LH 7 October and 8 October, one at SF on 10 October, two at LH over 12-15 October, one at LH on 18 October and three at Re on 19 October.

1987 (P): 11 bird-days (three birds?), 18 September to 18 October; two birds were seen on five days.

1988 (Ho): four bird-days, first half of October.

1989: a pair on the sea off Temple Beach on 11 October.

1990: before 23 October, 47 bird-days; highest counts flocks of 18 on 8 October and 16 on 17 October, overflying LH (heading north-east). From 23 October, two records: a pair at Re on 23 October and one at LH on 2 November.

HARLEQUIN DUCK *Histrionicus histrionicus* LT, H – no records. COE – immature male present from 6 April to 5 May. Ch – recorded at three localities, in Heilongjiang, Liaoning and Shandong; status: very rare.

1989: a female was on the sea off Lighthouse Point on 4 November.

RED-BREASTED MERGANSER *Mergus serrator* LT – no records. H – three records in November 1943; less common than in spring. COE – 372 bird-days, 16 March to 13 May. Ch – migrates through Hebei; status: fairly common along fresh-water courses and on lakes.

1986: 218 bird-days were logged from 30 September to 19 November. There were 27 bird-days from seven dates to, and including, 25 October. The main passage began on 27 October and lasted until 2 November: during this period, 120 bird-days were logged, and the maximum day count – 47 birds – was made on 27 October. There were 56 bird-days over 8-13 November, followed by 15 on 18 November and the last record of one flying north the following day. Just over half the records were from the sea east of Lighthouse Point, and most of the remainder were from Se and the sea off YH. Five birds were seen from LH.

1987 (P): 388 bird-days, 11 October to 29 November; 126 birds were recorded flying south.

1988 (Ho): 12 bird-days, 14 October to 17 November.

1989: 184 bird-days (39 flew south), 10 October to 11 November; highest day total 36 on 4 November.

1990: before 23 October, eight bird-days. From 23 October, 134 bird-days (32 flew south), 29 October to 16 November; highest day totals 48 (22 at SF, 26 flying south offshore) on 31 October, 20 (at SF) on 3 November and 25 (at YH) on 15 November.

BLACK KITE *Milvus migrans* LT – ‘An important migration...especially in the autumn...The autumn passage goes on throughout September and until the middle of October. Numbers of these birds are taken at this season by the hawk-catchers... A few summer here in suitable spots.’ WH – occurs in every month of the year, least common in June, July and August. ‘At other times they act as scavengers in the cities and gather in great “rookeries” in the palace grounds for winter nights, going to the country through the day to hunt.’ Sh – ‘This is a permanent resident. Mollendorf’s (1877) statement that it was the commonest bird of prey seems to be not quite true nowadays. It is also a migrant which passes the plain from the end of February to April and from September to October.’ H – common migrant, largest numbers last part of September and first part of October, e.g. ‘in numbers passing over LH from E to W 15.IX, 10.X 1944’. Some dates throughout the summer months. Latest date 19 November. COE – 67 birds, 18 March to 17 May. Ch – resident in Hebei; status: common.

1986: 74 birds were recorded from 20 August to 20 October, mostly from LH. Six were seen in August, and four more to 6 September. The main passage was during 8-13 September, when 33 birds were seen and there was

the highest day total – 15 birds on 12 September; 19 were seen during the rest of the month and a further 12 in October.

1987 (P): 68 bird days, 24 August to 5 November; highest day total 18 on 26 September. All but two were recorded flying south.

1988 (Ho): 28 bird-days, 13 September to 15 October.

1989: 14 flew south, 13-16 October.

1990: before 23 October, 43 bird-days, highest day totals nine on 17 September and 18 on 6 October. From 23 October, two were recorded from LH, flying south, on 24 October.

As in spring 1985, the records hardly suggest an ‘important migration’ of the species, as found by La Touche; nor did we see the species passing over LH ‘in numbers’ as had Hemmingsen, or any birds which appeared to be summer residents. It appears that there has been a considerable decline in the species over the past forty years, a decline which has been far sharper than that noted by Shaw, from late last century (when Mollendorf found this the commonest bird of prey in Hebei) to around 1936.

***WHITE-TAILED EAGLE** *Haliaeetus albicilla* LT – common spring and autumn migrant; may winter in the area (specimens 6th or 7 March and from near Great Wall towards the middle of December). ‘The local hawk-catchers use this Eagle as a decoy, pegging the bird down at their nets. The owner of two of these birds told me that he fed them in summer on fish and in winter on puppy dogs!’ Sh – passing migrant, rare. H – three sea-eagles with white tails seen and assumed to be this species: 4, 6 and 23 November 1943. COE – an immature flew north on 31 March. Ch – migrates through Hebei; status: uncommon.

1986: 15 were recorded from LH, flying south, from 26 October to 18 November. Five were seen from 26-29 October; five were seen during the first ten days of November, and a further five were seen from 11-19 November, including three – the highest day total – on 14 November. Of 14 birds aged, two were considered to be juveniles, one was immature, two were first- or second-year birds, one was second-year, two were second- or third-year, one was sub-adult and five were adults.

1987 (P): five flew south, 30 October to 21 November.

1988 (Ho): nine flew south, 2-17 November.

1989: four flew south: one on 26 October and three on 13 November.

1990: four were recorded from LH, flying south: three on 9 November and one on 10 November. All were juvenile or immature.

SHORT-TOED EAGLE *Circaetus gallicus* LT, H, COE – no records. Sh, Ch – twice recorded by David in Beijing municipality; otherwise only recorded in China in Xinjiang Uygur Aut. Region, Gansu province and Shaanxi province (Cheng). Goodwin (1987) recorded this species at Zhaohe, Nei Mongol Autonomous Region, 29 May to 2 June 1987.

1987 (P): one flew south on 21 October.

1989: one flew south on 15 October.

It appears that this species is a scarce migrant at Beidaihe; William S. Clark (in litt. to M. D. W, 30 November 1991) reported one passing Beidaihe on 6 October 1991.

PIED HARRIER *Circus melanoleucos* LT – by far the most abundant of the harriers, passing from the end of August to mid-October. H – recorded on 21 dates in four autumns, 11 August to 12 October. Mainly only certainly identified adult males; noted that peak occurrences of these, 25 August to 18 September, coincided with peak occurrences of unidentified harriers. Regarding unidentified harriers, notes that 'I have never seen so many as on 4.IX 1944 when they almost swarmed, with tendency to WSW movement'. COE – 504 birds, 1 April to 25 May. Ch – migrates through Hebei; status: fairly common.

1986: 14,534 birds were recorded flying south from 20 August to 7 October. Occurrences in seven-day periods were as follows: 589 from 20-26 August, 2,151 from 27 August to 2 September, 2,662 from 3-9 September, 7,521 from 10-16 September, 1,360 from 17-23 September, 295 from 24-30 September and eight from 1-7 October. Over half the total – 7,371 birds – passed during 10-14 September. The highest day totals were 868 on 7 September, 2,874 on 10 September, 2,978 on 12 September and 703 on 13 September.

1987 (P): 2,240 bird-days, 21 August to 22 October; all but 11 were recorded flying south; highest day totals 338 on 1st and 260 on 7 September; only records after 8 October were one with a damaged wing on 20 and 21 October and two flying south on 22 October.

1988 (Ho): 4,738 bird-days, 8 September to 13 October; highest day total 2,033 on 12 September.

1989: two immature harriers at YH on 9 October may have been this species.

1990: 1,917 bird-days, highest day totals 556 on 4 September, 238 on 13 September and 193 on 14 September; all before 23 October.

Rather unusually for a raptor, passed in numbers during early morning.

COMMON BUZZARD *Buteo buteo* LT – passes abundantly in September and October, probably also in November. H – noted on six dates, 5-26 October; also several on 5 December 1945, believed to be migrating down the coast on account of the very severe winter. COE – approximately 85 birds, 16 March to 10 May. Ch – migrates through Hebei; status: common generally.

1986: 1,119 bird-days were logged from 16 September to 19 November; around 1,075 individuals were probably involved. The great majority were seen from LH, flying south. Fourteen birds were seen during September, and passage picked up at the beginning of October. The main passage was from 8 October to 1 November, when 966 bird-days were logged, with peak counts of 321 on 10 September, 190 on 11 September and 98 on 26 October. During November, 127 bird-days were logged, though no

records after 15 November refer to birds flying south: up to four 'local birds' were seen at LH during this month, with two present on the 19 November, the last day of the survey.

Four birds, which were either this species or Oriental Honey-Buzzards *Pernis ptilorhynchus* were seen: two on each of 24 and 27 September.

1987 (P): 3,162 bird-days, 15 September to 27 November; all but 86 were recorded flying south, 2,462 bird-days were logged from 12-21 October; highest day totals 585 on 12 October, 992 on 14 October, 211 on 17 October and 224 on 20 October.

1988 (Ho): 1,861 bird-days, 20 September to 18 November; at least 1,100 flew south on 11 October.

1989: 1,534 bird-days (1,496 flew south), 8 October to 14 November; highest day totals 427 and 740 flying south on 15 and 16 October, respectively.

1990: before 23 October, 2,210 bird-days, highest day totals 1,048 on 6 October, 470 on 8 October and 459 on 9 October. From 23 October, 253 bird-days (233 were recorded flying south), 24 October to 15 November; highest counts of birds flying south 44 on 24 October and 76 on 25 October, 35 on 6 November and 20 on 9 November; after latter date, only one recorded flying south and up to two birds present.

The records suggest this species is common in autumn, not abundant as reported by La Touche.

***IMPERIAL EAGLE** *Aquila heliaca* LT, H, COE – no records. Sh – passing migrant. Ch – migrant in Hebei; status: uncommon.

1986: ten birds were recorded from LH, flying south: two immatures on 15 September, an adult on 26 September, an immature (second-year?) on 10 October, and six juveniles (or immatures) on 28 October.

1987 (P): three flew south, 20 October to 4 November.

1988 (H): five flew south, 11 October to 12 November.

1989: singles flew south on 16, 25 and 28 October.

1990: before 23 October, one was seen on 18 and 19 October (same bird). From 23 October, single immatures flew south on 6th and 9 November.

***LESSER KESTREL** *Falco naumanni* LT – no records. Sh – summer visitor. H – a pair, 7 April 1943. COE – no records. Ch – breeds in northern and central parts of Hebei; status: uncommon.

1986: 108 bird-days were logged from 20 August to 19 November, mainly from LH. Five were recorded to 16 September, when the main passage period began, with 61 birds seen during the second half of the month and the highest day count – 23 birds – on 22 September. Ten were seen in the first half of October and 15 in the second half, and there were a further 15 in November (late for this species; at least some of the records may have been misidentified Common Kestrels *F. tinnunculus*, though observers believed themselves familiar with the two kestrel species, and logged 294 bird-days for the Common Kestrel).

1987 (P): 14 were recorded flying south, 7 September to 3 October; highest day total seven on 25 September.

1988 (Ho): 20 bird-days, 21 September to 11 October.

1989: singles flew south on 28 October and 9 November.

1990: five were recorded before 23 October.

Unidentified kestrels *Falco naumanni*/*F. tinnunculus*

1986: 55 unidentified kestrels were recorded from 8 September to 3 November. Around half were seen during the latter half of September, coinciding with the peak passage periods of the two kestrel species.

1987 (P): 57 bird-days, 8 September to 4 November.

1988 (Ho): at least two.

1990: four were recorded before 23 October.

AMUR FALCON *Falco amurensis* LT – very common summer visitor, seen until the end of October. On 16 September 1915, saw ‘numbers travelling along the seashore, hovering and feeding on the dunes as they passed by’. H – a few seen throughout the summer; in the beginning of September of the years 1942-1944, larger parties, evidently on migration, were seen, and ‘at the end of September flocks of 10, 20, 30, in which only a few adult males were seen, moved slowly in migration direction over GS [Grassy Sands] or SF, often stopping to hover and hunt’. COE – 34 birds, 22 April to 20 May. Ch – summer visitor to Hebei; status: fairly common.

1986: 465 bird-days were logged from 21 August to 26 October, involving about 450 individuals. To the end of the first week of September 33 bird-days were logged. Significant passage then began, and lasted until 21 October. The main sustained passage period lasted for three weeks, from 16 September to 6 October, with 72-79 bird-days logged each week, and the highest day count – 41 birds – on 23 September. The week from 14-20 October saw heavier passage, with 83 bird-days logged and a high count of 40 birds on 18 October.

1987 (P): 892 bird-days, 28 August to 29 October; highest day totals 243 on 3 October, 50 on 16 October and 106 on 17 October. All but 13 were recorded flying south.

1988 (Ho): 343 bird-days, 9 September to 24 October; highest day total 116 on 11 October (99 passed before 07h00, presumably reflecting continuation of passage from the previous day, when at least 79 had been seen).

1989: 152 bird-days (128 flew south), 7-29 October; 40 flew south on 12 October.

1990: 95 bird-days, highest day totals 17 on 6 October and 33 on 15 October; all before 23 October.

Recent records suggest the species is no longer as common as reported by Hemmingsen.

JAPANESE QUAIL *Coturnix japonica* LT – very abundant during October

and the early part of November; also passes August and September. H – seen throughout the autumn, mainly in October. COE – 81 bird-days, 28 March to 27 May. Ch – migrates through Hebei; status: fairly common.

1986: 48 bird-days were logged from 2 September to 31 October. Only three were seen to 17 September, after which passage began to pick up and 12 bird-days were logged to the end of the month. Minor peak in passage occurred during 3-11 October, when 21 bird-days were logged; a further 10 bird-days were logged during the second half of October. Records were distributed through the area, with YH and LH being slightly the favoured localities.

1987 (P): 84 bird-days, 8 September to 9 November; highest day total ten on 23 October.

1988 (Ho): nine bird-days, 11 September to 23 October.

1989: 106 bird-days, 7 October to 5 November; 61 bird-days from 8-14 October.

1990: before 23 October, 17 bird-days, highest day total four on 2 October. From 23 October, four were at Re on 29 October.

This species is now uncommon in autumn, not very abundant as reported by La Touche.

COMMON CRANE *Grus grus* LT – immense flocks of cranes, believed to be mainly this species, pass over during October. H – more common in autumn than in spring; main autumn passage mid-October to early November; totals of 3,059 (1943), 4,448 (1943), 4,228 (1944) and 8,404 (1945). Extreme dates 17 September to 24 November. COE – 4,409 birds, 15 March to 7 May. Ch – migrates through Hebei; status: fairly common.

1986: 4,428 birds were recorded from 7 October to 18 November. All but 79 were seen from LH; 4,385 flew south, 43 flew north. Additionally, five flocks were heard passing over Se after sunset: one on 29 October and four on 5 November. The main passage was from 25 October to 10 November; 3,690 birds were recorded during this period. The highest day count was 1,263 on 5 November; other notable totals were 412 on 29 October, 680 on 1 November and 485 on 6 November. Of 871 birds aged, 733 (84.2%) were adults, three (0.3%) were sub-adults and 135 (15.5%) were juveniles.

1987 (P): 4,678 were recorded flying south, 8 October to 21 November; 4,139 were recorded between 1 and 15 November; highest day totals 675 on 10 November, 1,466 on 11 November and 830 on 12 November.

1988 (Ho): 4,040 were recorded, 14 October to 18 November.

1988 (Earthwatch): 3,766 were recorded from 15 October to 16 November; 3,693 flew south, 73 flew north. The main passage was from 11-16 November, when 3,331 were recorded and there was the highest day total – 2,578 birds on 14 November. Of 278 birds aged, 51 (18.3%) were juveniles.

1989: 3,693 bird-days (3,559 flew south, 80 flew north), 15 October to 14 November; highest day totals were 1,125 on 4 November, 447 on 5 November, 458 on 9 November and 447 on 10 November; flocks heard

passing after dusk on two days (at around 18h30 on 31 October and at 19h30 on 9 November). Of 324 birds aged, 267 were adults and 57 (17.6%) were juveniles.

1990: before 23 October, 11 were recorded. After 23 October, 4,177 were recorded flying south, and 122 north, 25 October to 16 November; highest totals of birds flying south were 194 on 2 November, 167 on 7 November, 468 on 9 November, 2,695 on 10 November, 387 on 11 November and 146 on 14 November. Birds were still passing in numbers at dusk on 10 November, and judging by flocks heard a considerable number passed after dark (these may well have included rarer cranes, which were also seen in numbers on this date). Of 61 birds aged, 52 were adults and nine (14.8%) were juveniles.

As discussed above, the autumn migration path tended to be over or near the eastern part of Beidaihe, which may at least partly account for Hemmingsen recording substantially more birds in autumn than in spring, when (at least in 1985) the birds tend to pass to the west of the town.

See also 'unidentified cranes'.

*HOODED CRANE *Grus monacha* LT – no records. Sh – seems to be very rare, passes in October. WH – see under 'White-naped Crane'. H – 155-185 birds over three autumns from 12 October to 7 November, plus about 115 more 'possible' or 'probable' Hooded Cranes. COE – 309 birds, 25 March to 20 April; 257 passed on 2 April. Ch – migrates through Hebei; status: uncommon.

1986: 527 birds flew south from 11 October to 7 November. The first record, of a single bird, was not followed until 29 October. The main passage occurred over 5-7 November: 446 were recorded during this period, with 436 on 5 November. This marked concentration of passage into just one day was also a notable feature of the species' occurrence in spring 1985. Of 309 birds aged, 257 (83.2%) were adults and 52 (16.8%) were juveniles.

1987 (P): 45 were recorded flying south, 21 October to 16 November; highest day totals 15 on 5 November and 11 on 9 November.

1988 (Ho): 92 were recorded, 29 October to 14 November.

1988 (Earthwatch): 94 were recorded flying south from 29 October to 14 November. The highest day total was 68 birds on 14 November, coinciding with the peak numbers of Common and Red-crowned Cranes. None was aged.

1989: 115 flew south, 26 October to 10 November; 86 flew south from 2-7 November; highest day total 51 on 5 November. Of 30 birds aged, 24 were adults and six (20%) were juveniles.

1990: 452 were recorded flying south: 59 on 2 November, 328 on 10 November, 56 on 11 November and nine on 15 November. Of nine birds aged, seven were adults and two were juveniles.

COMMON x HOODED CRANE hybrid

1987 (P): one flew south on 12 November.

1989: one flew south on 23 October.

*RED-CROWNED CRANE *Grus japonensis* LT – only heard of two captured in seven years; records of flocks seen probably refer at least partly to the Siberian Crane as some were described as having black primaries. H – considerably more common than in spring, from 22 October to 23 November; totals of six (1942), 151 (1943), 92 (1944) and 98 (1945). COE – 244 birds, 15-31 March. Ch – migrates through Hebei; status: formerly rare, steadily increasing in recent years.

1986: 501 birds were recorded from 13 October to 19 November, mostly from LH, flying south. The main passage was from 5 November to the end of the survey; 423 birds were recorded during this period. The maximum day count was 180 on 7 November and the next highest 61 on 14 November. Of 206 birds aged, 158 (76.7%) were adults, 45 (21.8%) were juveniles; two were considered to be second-winter and one sub-adult.

1987 (P): 320 were recorded flying south from 12 October to 21 November; 174 were recorded between 6 and 15 November; highest day totals 53 on 10 November, 55 on 12 November and 44 on 13 November.

1988 (Ho): 281 were recorded from 25 October to 18 November.

Earthwatch 1988 (Ho): 256 were recorded flying south from 25 October to 16 November. The highest day totals were 69 on 29 October and 107 on 14 November, the latter coinciding with the peak numbers of Common and Hooded Cranes. Of 149 birds aged, 133 were adults, six (4%) were juveniles or immatures and 10 (6.7%) were juveniles.

1989: 630 flew south, 19 October to 14 November; highest day totals 119 on 4 November, 121 on 6 November, 90 on 7 November and 110 on 10 November. Of 273 birds aged, 212 were adults and 61 (22.3%) were juveniles.

1990: before 23 October, 11 were recorded on 9 October. From 23 October, 542 were recorded flying south, 25 October to 14 November; highest day totals were 74 on 7 November, 135 on 10 November, 102 on 11 November and 100 on 14 November. Of 99 birds aged, 74 were adults and 15 (15.1%) were juveniles.

*WHITE-NAPED CRANE *Grus vipio* LT – no records. Wilder (1924a) records a flock passing 6-9 October 1923 (exact date not specified); identified as this species by the snow white necks ('easily visible in the sunlight, but probably in shadow would not be noticed, and the birds would be easily confused with the common grey crane.'), and so could have been Hooded Cranes (though these are less similar to Common Cranes) (Wilder 1924b). Confusingly, Wilder and Hubbard (1924) report 'Oct. 8th and 9th, at Peitaiho (Beidaihe) flocks of from 20 to several hundreds were flying south.' H – 46 birds very probably this species seen over three dates in four autumns, 25 October to 2 November, standing on Grassy Sands. COE – no records. Ch – migrates through Hebei; status: uncommon.

1986: 152 flew south from 17 September to 6 November. The main passage was from 25-29 October, when 29 birds passed. The early records were widely spaced: 17 September (two), 28 September (five) and

16-18 October (19). Of 25 birds aged, 21 (84%) were adults and 4 (16%) were juveniles.

1987 (P): recorded on three days – three birds on 19 October, 53 on 20 October and seven on 22 October; all flew south.

1988 (Ho): 46 were recorded from 14 October to 9 November.

1988 (Earthwatch): 48 were recorded from 14 October to 11 November; 46 flew south, two flew north. The highest day total was 29 birds on 14 October. Four were aged, and were all adults.

1989: 17 bird-days (13 flew south, four flew north), 28 October to 10 November. Only two birds – both adults – were aged.

1990: before 23 October, three were recorded on 9th and 17 October. From 23 October, 63 were recorded flying south, 26 October to 11 November; highest day totals 32 (one flock) on 3 November and 19 on 11 November. None was aged.

*SIBERIAN CRANE *Grus leucogeranus* LT – Specimen from Hsieh Chia Ying marshes, some 15 miles south of Beidaihe. At least some of his records under Red-crowned Crane refer to this species, judging by description of plumage (white with black wings, or black wing tips) and call (shrill 'coo-kee'). Notable dates were 12 October and 2 November 1913 and 30 March 1915. La Touche evidently realised his error, as he later (1925) noted that the species passes in great numbers in October and November. Wilder (1924a) recorded flocks of 100 with one grey crane (presumably Common) and 40, including six presumed Common Cranes, passing south during 6-9 October 1923. Also notes that 'the hunters at Ch'ang Li, a little further from the sea, report having shot these white cranes and found them good eating.' H – autumn totals of 15 (1942), 227 (1943), 80 (1944) and 34 (1945), 12 October to 11 November. COE – 652 birds, 20 March to 1 April. Ch – migrates through Hebei; status: uncommon.

1986: 192 birds were recorded flying south from 11 October to 10 November. Passage was somewhat irregular but was concentrated to a certain extent during 29 October to 10 November, when 99 birds were seen. Of 155 birds aged, 121 (78%) were adults and 34 (22%) were juveniles.

1987 (P): 143 were recorded flying south, 21 October to 12 November; highest day totals 26 on 5 November, 43 on 7 November and 19 on 12 November.

1988 (Ho and Earthwatch): 344 birds were recorded flying south from 29 October to 12 November. The highest day totals were 208 on 29 October and 97 on 3 November. Of 312 birds aged, 26 (8.3%) were juveniles.

1989: 181 flew south, 7 October to 12 November; first record – of a party of eight birds – was not followed until 20 October; highest day totals were 77 on 4 November and 33 on 6 November. Of 167 birds aged, 137 were adults and 30 (18%) were juveniles.

1990: 577 were recorded flying south, 26 October to 10 November; highest day totals 30 on 26 October, 389 on 2 November and 141 on 10 November. Of 321 birds aged, 271 were adults and 50 (18.5%) were juveniles.

DEMOISELLE CRANE *Anthropoides virgo* LT, H, COE – no records. Sh – no definite records, but assumed to pass. Ch – migrant in Hebei; status: fairly common in its breeding range.

1986: 14 birds flew south: one on 7 November, 12 on 14 November and one on 15 November. Three birds were aged: two were adults and one was a juvenile.

1989: a grey crane in a flock of Common Cranes on 8 November appeared around half the size of the other birds in the flock, and may have been this species.

Unidentified cranes *Grus* spp.

1986: 1,557 unidentified cranes were recorded from 1-18 November. Of these, seven were considered to be Common or Demoiselle, 260 were Common or White-naped and 478 were Common or Hooded (the last were seen on 5 November, when both species were passing in numbers).

1987 (P): 364 unidentified cranes were recorded; 15 were considered to be Common or White-naped Cranes.

1988 (Ho): 338 unidentified cranes were recorded.

1988 (Earthwatch): of 376 unidentified cranes recorded, 32 were considered to be Common or White-naped, and 267 were considered to be Common or Hooded.

1989: three Common or White-naped Cranes flew north on 1 November, and three unidentified grey cranes flew south on 5 November.

1990: 521 were recorded flying south, and four north, 24 October to 11 November; highest day total of birds flying south 391 on 10 November (mostly over sea, at dusk). It is likely that most were Common Cranes, and the remainder mainly Hooded or White-naped.

BAILLON'S CRAKE *Porzana pusilla* LT – passes from the beginning of August to the last week in October; extremely abundant during autumn. Stresemann (1924) – on 5 August, near Beidaihe (in translation) 'about two dozen were in the single still damp, room-size reedbed.' H – autumn numbers similar to those in spring; 11 August to 16 October. COE – 98 bird-days, 14 May to 1 June. Ch – breeds in Hebei; status: fairly common in most places.

1986: 16 bird-days were logged from 2 September to 9 October; it may be that 16 birds were involved. There were records on eight dates, and it appeared that the main passage was from mid-September to the first week of October. The first was one at Re; five more were seen at Re, and one at YH, from 14-30 September, and a further eight were at YH and one at Re over 3, 4 and 9 October, with the highest day total – six birds at YH – on 4 October.

1987 (P): 13 bird-days; two on 20 August, the remainder from 24 September to 6 October.

1988 (Ho): ten bird-days, other than late bird 5 November, 19 September to 15 October.

1989: singles at Re on 13 and 14 October and Daihe estuary on 17 October.

1990: 13 bird-days, highest day total four on 3 October; all at Re and before 23 October.

The autumn surveys thus found the species less common than in spring 1985, in marked contrast to La Touche's assertion that it is extremely abundant in autumn, and disagreeing with Hemmingsen's near parity of spring and autumn records.

*SWINHOE'S RAIL (Siberian Crane) *Coturnicops exquisitus* LT, H – no records. COE – singles on 20 and 27 May. Ch – doubtful migrant in Hebei; status: uncommon.

1987 (P): singles on 28 and 29 September and two on 30 September; one or two on 2 October and singles on 6, 8, 9 and 14 October.

1990: singles were at Re on 2 and 7 October.

COMMON COOT *Fulica atra* LT – extremely abundant during most years in September and October. WH – 'Very common summer visitor, nesting in the marshes on the plain'. H – no records but reported by hunters. COE – 24 bird-days, 9 May to 1 June. Ch – breeds in Hebei; status: fairly common.

1986: 59 bird-days were logged from 27 August to 8 October. All except three birds were seen at Re. The first record was of a pair with four young and about one-third of all records apparently involved family parties of from three to six birds, with the last such group seen on 29 September. From 26 September to the end of the passage 32 bird-days were logged, making this the period of main occurrence.

1987 (P): 63 bird-days, 10 October to 21 November (only two birds seen in November); a flock of ca. 50 was on the sea on 29 October.

1989: one at Re on 13 October.

1990: seven bird-days, highest day total two on 15 and 30 September; all before 23 October.

It appears the Common Coot is now rather scarce, not 'extremely abundant' in autumn as reported by La Touche, or 'very common' in summer as reported by Wilder and Hubbard. It may be that numbers had fallen by the 1940s, as Hemmingsen did not see this species at Beidaihe.

GREAT BUSTARD *Ovis tarda* LT – passes from October until about 10 November. 'These Bustards fly in flocks which occasionally contain from 40 to 50 birds but, as a rule, 10 to 20 individuals is the usual number... The natives shoot the Eastern Great Bustard on passage, by means of decoys, both in spring and autumn after the crops have been cut. [Notes that he has been told the birds are also taken with nets]... The Chinwangtao [= Qinhuangdao] market is stocked with Bustards in spring and autumn, and in winter many birds are brought from inland... Young birds are not bad eating, but old males are very rank in flavour.' H – over four autumns, recorded on 17 dates in October and 31 in November. The largest flocks seen flying numbered up to ca. 60 birds; the largest numbers were 'more or less scattered on the ground' at Grassy Sands, e.g. 83 on 6 November 1942,

400-500 on 5 November and 377 on 6 November 1943. On 16 November 1944 'numerous flocks migrated across GS mostly without settling, and those I counted on this occasion, amounted to a total of 324 birds.' Mentions hunting techniques as described by La Touche, also 'On the vast plains (e.g. near Tangku) they are shot from motor-cars... but this sort of "sport" is not practicable at PTH [Beidaihe].' COE – 132 birds, 17 March to 23 April. Ch – migrates through Hebei; status: fairly common, decreasing in recent years.

1986: 452 birds were recorded flying south, from 19 October to 18 November; most birds were seen from LH. Twenty birds were seen during 19-22 October and 84 during 25-29 October. These, together with a further two on 31 October, brought the October total to 106. The first eleven days of November brought 185 birds and 161 were recorded from 14-18 November, making this the period of most concentrated passage. The highest day totals were 71 on 10 November and 63 on 17 November, and the largest flock numbered 26 birds. It seems likely that more birds passed after our departure.

1987 (P): 203 were recorded flying south, 19 October to 24 November; the highest day totals were 26 on 21 October and 67 on 16 November.

1988 (Ho): 62 were recorded, 8 October to 18 November.

1988 (Earthwatch): 67 were recorded flying south from 27 October to 16 November. The highest day totals were 25 on 9 November and 15 on 16 November.

1989: 308 flew south, 15 October to 14 November; highest day totals 66 on 4 November and 41 on 9 November.

1990: 154 were recorded flying south, and five north, 24 October to 14 November; highest day totals 61 on 5 November and 37 (32 south, five north) on 10 November.

LITTLE CURLEW *Numenius minutus* LT – extremely abundant on passage during September. H – recorded on 16-18 dates, 13 August (or possibly as early as 24 July) to 12 October; all but three of these dates in 1944. Largest flock 51 on 21 August 1944. Favoured pools at the Grassy Sands. COE – 337 bird-days, 18 April to 19 May; 276 flew north and 30 were at YH on 6 May. Ch – rare migrant on east coast.

1986: ten were at SF on 27 August, and singles were seen on 14 and 18 September.

1987: singles were recorded on 20 and 28 September.

1988 (Ho): one on 23 September.

1989: no records.

1990: three were recorded on 1 September and one flew south on 21 September.

This species has been rare to scarce in recent autumns, not extremely abundant as La Touche reported, nor as regular as Hemmingsen found (though the Grassy Sands, where he mainly saw Little Curlews, is now not suitable for the species as it has been covered by a plantation).

EASTERN CURLEW *Numenius madagascariensis* LT – 'It is very probable that the birds heard at night in summer are of this species. I have seen them in September.' Wilder (1925) – during visit to Beidaihe 12-30 June 1925, all curlews seen were this species; mentions hearing curlews flying south on the 'dark and rainy' night of 20 June. H – perhaps heard 29 June; recorded on 15-17 dates from 11 July to 8 September. COE – 661 bird-days, 26 March to 16 May. Ch – migrates through Hebei; status: uncommon.

1986: 558 bird-days, beginning of the survey to 8 November; high day totals early in the period were 15 on 22 August, 15 (ten present, five flying south) on 28 August and 17 on 31 August, after which day totals did not exceed single figures until 25 September, when 28 were recorded. High day totals after this date were 24 on 28 September, 30 on 3 October, 17 on 4 October, 28 on 25 October and 17 on 31 October. These mainly resulted from high counts at YH, the favoured locality – 17 on 28 September, 24 on 3 October, 14 on 4 October, 22 on 25 October and 16 on 31 October; the highest count at SF was 17 on 31 August. The only records in November were singles at SF on 1 November and 2 November, and three on 8 November.

1987: 325 bird-days, beginning of the survey to 24 October. To the end of August, 42 were recorded flying south (maximum 21 on 30 August). Only nine bird-days for birds present to 27 August, after which more regularly present and only eight were recorded flying south (five on 10 September, three on 14 September); 178 bird-days were logged for birds present from 28 August to 25 September (highest day totals 14 on 1 September and 8 September), after which there were no more than four in a day until 13 October with 17 birds; there were 22 on 14 October, 16 on 15 October and six on 16 October, after which there were four records of singles.

1988 (Ho): 110 bird-days, beginning of the survey until October/November (last date uncertain; 2 October given in report is almost certainly wrong); YH, the favoured locality, covered only erratically – high counts here were 28 on 8 October and 25 on 17 October.

1989: five were at YH on 9 October.

1990: before 23 October, 115 bird-days, highest day totals 14 on 24 August, 12 on 31 August and 11 on 2 October. The only record thereafter was one at SF on 23 October.

***NORDMANN'S GREENSHANK** *Tringa guttifer* LT, H, COE – no records. Ch – no records from Hebei; status: very rare.

1986: a juvenile was at SF over 4-6 September (Kennerley and Bakewell 1987).

1990: three birds were recorded at SF: two on 13 and 14 September, one on 28 September.

GREY-TAILED TATTLER *Heteroscelus brevipes* LT – two grey sandpipers which appeared to be this species seen on 13 September 1915. H – recorded on 25 autumn dates, 19 July to 30 September; 'Only in small numbers, 10 or

usually less, often 2 differing a little in size, prob. male and female'. COE – 39 bird-days, 10-26 May. Ch – migrates through Hebei; status: fairly common.

1986: 1,381 bird-days, beginning of the survey to 10 September; 1,270 bird-days were logged to 10 September, after which there were no more than ten in a day. Mainly recorded at SF, where there were 100 or more on five dates to 31 August (including 189 on 22 August, the highest day total), and the highest count thereafter was 89 on 6 September. There were no more than five in a day from 17 September; the only records in October were four on 1st and singles at SF on 2, 3, 6, 7 and 8 October.

1987: 1,066 bird-days, beginning of the survey to 8 October; 985 bird-days to 14 September, after which there were no more than ten in a day. The highest day totals were 51 on 19 August, 50 on 25 August, 58 on 27 August and 54 on 30 August, 60 on 2 September, 57 on 3 and 6 September, and 59 on 9 September. There were 321 bird-days (no more than four in a day) in October.

1988 (Ho): 117 bird-days, beginning of the survey to 17 October; highest day total 12 on 19 September.

1989: one was at Daihe estuary on 10 October.

1990: 410 bird-days, highest day totals 40 on 21 August and 42 on 24 August.

The recent records show that this is a common migrant, if maybe somewhat erratic in its occurrence, and numbers in 1986 and 1987, especially, were well above those recorded by Hemmingsen.

***ASIAN DOWITCHER** *Limnodromus semipalmatus* LT, H – no records. Wilder and Hubbard (1938) – specimen, 30 July 1923. COE – two on 18 April and one on 28 April. Ch – migrates through Hebei; status: rare.

1987: single adults were seen over 22-24 August and on 10 September.

1990: one was at SF on 1 September.

SANDERLING *Calidris alba* LT – no autumn records. H – recorded on 46-48 dates in autumn, 5 July to 16 November; 'At the beginning and end of passages often in smaller numbers... end of Sept.-beg. Oct. I have found it more numerous in flocks of, say, 30-100. It is then one of the more common waders on SF'. COE – 28 bird-days, 5 April to 23 May. Ch – migrates through Hebei; status: rather common along the coast.

1986: 28 bird-days, 22 August to 2 November; 17 bird-days were logged from 22-27 August (highest day total five on 27 August), after which there were two on 31 August and 1 September, two on 7 September, three on 24 September, one on 24 October and one on 2 November.

1987: 54 bird-days, beginning of the survey to 6 October. Records in August were one on 18 August and three on 27, 30 and 31 August; 27 bird-days were logged over 2-15 September (highest day total six on 5 and 10 September), after which there were singles on seven dates, eight on 29 September and two on 6 October.

1988 (Ho): six bird-days, 12-23 September.

1989: no records.

1990: 17 bird-days, highest day total five on 24 September; all before 23 October.

This species has been scarce in recent years, not common as Hemmingsen found; a similar reduction is evident in spring (Williams 1986, Williams and Dorner 1991).

PARASITIC JAEGER (Arctic Skua) *Stercorarius parasiticus* LT, H, COE – no records. Not listed in Cheng (1987).

1990: a first-year bird was seen at SF on 3 October; apparently the first record from the Chinese coast, though there have been reports offshore (e.g. Hopkin 1990).

GREAT BLACK-HEADED GULL *Larus ichthyaetus* LT, H, COE – no records. Ch – breeds Qinghai and Inner Mongolia; migrates through western half of the country; status: fairly common in breeding areas.

1986: a first-winter bird was at YH on 7 October. This is probably the first record for the east coast of China (the species has been recorded as a vagrant in Japan: Brazil 1991).

1987 (P): one, 13 October.

1989: a first-winter bird was seen at Daihe estuary on four dates from 9-17 October.

1990: eight individuals were recorded, 29 August to 1 October; two in August, three in first half of September and three in first half of October; all but a third-year on 6 and 7 September were first-year birds.

BROWN-HEADED GULL *Larus brunnicephalus* H, LT, COE – no records. Ch – migrates through Hebei; status: uncommon or rare. Previous records by Wilder and Hubbard (1924) may be of Relict Gulls (see below).

1990: an adult was at SF on 22 October.

***RELICT GULL** *Larus relictus* H, LT, COE – no records; though Hemmingsen may have misidentified some as Common Gulls, as features he noted on some 'Common Gulls' are characters of Relict ('narrow black tail band... dark legs'). Ch – cites letter from Ben King telling of three specimens in Leningrad, all from 'Tangzing' (Daku, Tanggu), southern Hebei coast; singles collected 28 October 1934 and 8 and 9 April 1935. They had been originally identified as Brown-headed Gulls *Larus brunnicephalus*. Similarly, two 'Brown-headed Gull' specimens in Academia Sinica, Beijing, have been found to be this species; they were also collected at Daku (Duff *et al.* 1991). These specimens, the westerly distribution of most certainly identified Brown-headed Gulls in China, and drawings of 'Brown-headed Gull' specimens in Shaw (1935) – which appear to show Relict Gulls – strongly suggest that many, perhaps all, literature references to Brown-headed Gulls in Hebei actually refer to Relict Gulls. Shaw states that the 'Brown-headed

Gull' (= Relict?) is a regular passage migrant, and a summer visitor. 'It comes from the south in April, and remains to stay here until October.' WH – a 'Brown-headed Gull' specimen taken, some 15 having been seen, 18 January 1923 (Hubbard 1923). On 21 April 1923, one was seen, but with some doubts as to its identity.

1986: 112 bird-days were logged from 23 August to 20 November. All were seen at SF and – apart from the first record, an adult moulting out of summer plumage – all were first-winter birds. The first of these immatures was seen on 8 September, and numbers peaked at seven birds on 25 September. The birds tended to linger in the area (a bird with its breast stained, perhaps by oil, was seen from 19 October to at least 2 November) and it could be that as few as 17 individuals were involved. Thirty-two bird-days were logged over 12 dates in September. The first week of October produced only one record, a single bird on 2 October, but records were again frequent from 8 October, with 41 bird-days recorded over 16 dates to the 31 October (maximum five on 19 October). Four were seen on 1 and 2 November, one on 4 November, three on 9, 11, 13 and 18 November, two on 19 November, and three on 20 November (Bakewell *et al.* 1989).

1987 (P): 92 bird-days, throughout the survey; 44 bird-days 27 September to 21 October, not seen first half of November but eight bird-days (two individuals?) 17-29 November. Highest day totals five on 1 October and seven on 18 October (Bakewell *et al.* 1989).

1988 (Ho): 10 bird-days (four individuals), 19 September to 11 October.

1989: a first-winter bird was at SF on 20 October.

1990: before 23 October, 13 individuals, all but an adult on 14 September were first-years; seen from 24 August, with highest count three on 21 September and 16 October, otherwise singles. From 23 October, three first-year birds were seen: one at SF on 23 October, one recorded from Lighthouse Point, flying south offshore, on 30 October and one at YH on 15 and 16 November.

For more information on Relict Gulls at Beidaihe in autumn see Bakewell *et al.* (1989); Duff *et al.* (1991) present the most recent account of distribution of the species.

***SAUNDERS'S GULL** *Larus saundersi* LT, H – no records. Sh – not common; passes April and September. COE – 10-19 birds, 2 April to 22 May.

1986: perhaps surprisingly, in view of the species' occurrence in spring 1985, there was only one record: a first-winter bird at SF on 31 October.

1987 (P): singles on 15, 16 and 18 October, five on 21 October and two on 31 October and one on 1 November.

1988 (Ho): one, 15 October.

1989: an adult in winter plumage was at SF on 20 October, and two second-winter birds were on the shore at Grassy Sands on 23 October.

1990: four records at SF: single first-years on 30 September and 16 October, two first-winter birds on 25 October and an adult on 8 November.

BLACK-LEGGED KITTIWAKE *Rissa tridactyla* LT, H, COE – no records. Ch – recorded in winter in Liaoning (Lushun), Hebei and Jiangsu (Shaweishan Island) provinces; status: very rare.

1989: an immature flew past Lighthouse Point on 8 November.

1990: a first-winter bird was seen at SF on 31 October, when a large influx of gulls was noted at this locality.

BLACK TERN *Chlidonias niger* LT, H, COE – no records. Ch – breeds in Xinjiang Aut. Reg., stragglers recorded at Tianjin in June, Beijing in August, and Hong Kong (though there are no certain Hong Kong records – the first is insufficiently supported and the second appears to be a misidentification: Chalmers 1986).

1989: one at Re on 4 October (Ben King, pers. comm.).

PALLAS'S SANDGROUSE *Syrrhaptes paradoxus* LT – of very irregular occurrence at Qinhuangdao; believed it was seen in great numbers in the winter of 1905, but after that it was not apparently recorded until the autumn of 1912. In that year, on 10 November, 'I met several flocks flying very swiftly towards the north-east... During that month a great number appeared to have passed, some from west to east, others in an opposite direction... Mr C.B. Rickett wrote to me in the spring of 1913 that great numbers of Sand-Grouse were imported that season into England from Russia, so that 1912-13 must have been a great Sand-Grouse year.' WH – influx to Hebei in November 1922 due to heavy snowstorms in Mongolia 'where they usually winter'; recorded 8 November 1922 to 6 (not 8?) April 1923 at Beijing 'in enormous flocks', and two flocks seen at Beidaihe on 8 May 1923 (Wilder 1923). H – commonly seen in the severe winter of 1944-45; 'The flocks were sometimes numbering from one hundred to several hundreds.' COE – no records. Ch – erratic in winter in Hebei.

1989: one circled over SF and headed towards Re on 2 November.

Though this species is of erratic occurrence at Beidaihe, its rarity in recent years perhaps suggests that numbers have fallen – much as they have in the western parts of its range.

LONG-EARED OWL *Asio otus* LT – very common migrant, 'seen throughout October and November.' H – one autumn record. COE – 8-11 birds. Ch – migrant and winter visitor in Hebei; status: fairly common.

1986: 139 bird-days were logged from 7 October to 20 November. Most of these derived from counts of birds leaving or returning to a roost in trees beside our hotel building (there is a regular roost here in winter, according to hotel staff). The roost may have been first established as early as 20 October; numbers increased during the last week of the survey period and the highest count made was 25 birds on 19 November. The total of 109 bird-days which accrued on and after 9 November were derived solely from this roost, and it may be that as few as 35 individuals were seen during the survey. Also seen at LH and YH.

1987 (P): 57 bird-days, 15 October to the end of the survey; 50 bird-days after 5 November (mainly/wholly birds using the roost at the Diplomatic Personnel Guest House); highest day totals eight on 18 November and 20 on 21 November.

1988 (Ho): singles on 16 September and 13 November; the roost at the hotel was not checked.

1989: ten bird-days, 12 October to 5 November; singles only; no records from DP Guest House, even though there were observers staying here and occasionally watching for roosting birds.

1990: before 23 October, one seen. From 23 October, singles at LH on 24, 26 and 31 October, and at the Daihe estuary on 4 November.

In recent years, this species has been uncommon, not a very common migrant as reported by La Touche.

SAND MARTIN *Riparia riparia* LT – passes in great numbers from about 10 August to early or mid-October. Most pass by mid-September. 'Without doubt, this bird breeds in the vicinity'. H – 11 dates in two autumns, 3-25 August, plus probable on 2 October; only noted commonly in autumn 1944, sometimes in flocks up to 20 but mostly only a few. COE – at least 2,097 birds, 30 March to 29 May. Ch – migrates through Hebei; status: not uncommon but sporadic.

1986: 730 bird-days were logged from 20 August to 31 October; the number of individuals seen will have been only a little less than this total, as most were recorded flying south. Eighty bird-days were logged to the end of September. The maximum day total – 195 birds – was recorded on 8 September, which heralded the beginning of the main passage period. This continued for two weeks and produced 542 bird-days. A further 96 bird-days were logged to 5 October, and there were only two more records – singles on 9 and 31 October. Around 90% of the birds were recorded from the LH watchpoint, flying south.

1987 (P): 891 bird-days, 19 August to 25 October; only seven bird-days after 3 October; 860 were recorded flying south. Highest day totals 165 on 20 August and 430 on 28 August.

1988 (Ho): 157 bird-days, 8 September to 8 October.

1989: five at YH and one south past LH on 9 October, and singles south on 19, 20 and 25 October.

1990: 69 bird-days, highest day totals 17 on 22 August and 15 on 17 September; all before 23 October.

Though the Sand Martin is common, it does not pass in 'great numbers' as reported by La Touche.

LIGHT-VENTED BULBUL *Pycnonotus sinensis* LT, H, COE – no records. Sh – one record, an adult female taken at Tanggu on 6 May 1935. Ch – 'occasionally... to Hebei'.

1986: two were seen at YH on 25 October and one was at Se on 19 and 20 November.

1987 (P): two birds seen on 11 and 12 November.

1988 (Ho): one bird seen on four days, 14-18 November.

1989: 84 bird-days, 8 October to 16 November; highest count four until 27 October, when six at Se; numbers peaked at ten on 7 November; there were nine on 3 November and eight on 11 November; at least three were present on 16 November.

1990: before 23 October, eight bird-days. From 23 October, recorded at Se on four dates: two on 30 and 31 October, heard (number not known) on 1 November, and eight birds on 4 November.

Our records suggest a northward extension of the species' range, perhaps resulting from milder winters.

BLACK DRONGO *Dicrurus macrocercus* LT – one on 24 August; extremely abundant during September. 'Sometimes it forms huge noisy parties on some solitary tree in the fields... The birds when passing fly in very scattered order, and appear to come from an easterly or north-easterly direction.' Breeds in mountains north of Qinhuangdao. H – recorded from 16 August to 18 September, no more than four to seven in a day, absent in autumn 1942. 'It thus seems, that, like many other birds, the bulk of the drongos in autumn passes toward W far N of PTH [Beidaihe], only a few, occasionally, appearing there as in 1944 and 1945.' COE – 77 bird-days, from 7 May. Ch – breeds north-eastern provinces; status: common in eastern China.

1986: 464 bird-days were logged from 21 August to 12 October. Main passage was from 6-17 September, when 442 bird-days were logged and there were counts of 94 on 7 September, 65 on 10 September and 50 on 15 September. The only record after 21 September was of a late bird on 12 October. A total of 455 birds was recorded from LH, flying south.

1987 (P): 189 bird-days, 20 August to 23 September (155 flew south); the highest day totals of birds flying south were 33 on 6 September, 43 on 7 September and 38 on 12 September; only seven bird-days were logged after 16 September.

1988 (Ho): 90 bird-days, 9-13 September; highest day totals 51 on 9 September and 26 on 11 September.

1990: 365 bird-days, highest day totals 105 on 11 September, 53 on 14 September and 38 on 17 September; all before 23 October.

Hemmingsen had found this species more common in spring than in autumn, the opposite of La Touche's experience and the findings of the spring 1985 and recent autumn surveys. This apparently largely results from him not seeing actively migrating birds in autumn. Unlike La Touche, we did not find the species extremely abundant, or see huge noisy parties. This may, as Hemmingsen suggests, result from the bulk of the drongos heading towards the west (inland) to the north of Beidaihe, or may indicate a substantial decrease in numbers.

BLUE (RED-BILLED) MAGPIE *Urocissa erythrorhyncha* LT – common in hilly parts near Qinhuangdao; breeds. Wilder (1940) had secondhand reports

of birds at Beidaihe in autumn and winter. H, COE – no records. Ch – breeds in Hebei; status: fairly common, especially in hilly country.

1986: 48 bird-days were recorded from 8 September to 12 November. Ten bird-days were logged from four dates to 4 October and 17 from 8-13 October. There were six more bird-days from three dates before the final record and highest day total of 15 birds on 12 November. Most records were from LH, and it is possible that birds were lingering in the area. Hemmingsen made rather few observations at LH, and this may account for his lack of records.

1987 (P): 87 bird-days, 16 September to 21 November; highest day totals eight on 1 November, 11 on 5 November and ten on 10 November.

1988 (Ho): at least 73 bird-days, beginning of the survey to 15 November; seen at LH and around D.P. Guest House; highest day total six birds.

1989: 177 bird-days, 8 October to 14 November; mainly at LH, where highest count 14 on 11 October.

1990: before 23 October, 13 on 23 August (highest count in the early autumn?). From 23 October, 96 bird-days, throughout the period; other than two at Se on 4 November, all records from LH, where noted on 19 dates (sometimes heard only), and highest counts 18 on 5 November and 15 on 6 November – otherwise eight or less seen.

This species has become regular at Beidaihe, suggesting a (local) population increase.

ROOK *Corvus frugilegus* LT – passes in immense flocks, October and November. Mentions large rookeries being established at Qinhuangdao. H – 'Rookeries are common... From about the last third of July and throughout the autumn flocks of some hundreds were often seen (and also the huge cloud-like flocks of 10,000 or more were noted) both at dawn... and at dusk... 2.XI 1945 toward evening I saw from ER [Eagle Rock] the largest migrations of rooks and jackdaws I have ever seen, extending as a cloud-like band across the whole bay of CHT [Qinhuangdao] apparently from long inland back of CHT and past King's Point at EC [East Cliff]. What looked like young rooks passed ER for some time with slightly opened bills in scattered formation. Later many adult rooks passed.' COE – 11 birds identified from 10 April to 1 May.

1986: 377 birds were identified from 29 August to 17 November. All except the first bird, seen at Re, were recorded from LH, flying south. The first record was not followed until 8 October; the highest counts were 103 on 3 November and 116 on 7 November. It seems likely that many of the 31,938 Rooks/Carrion Crows were this species (see below). However, even if all were Rooks, our total would still seem considerably smaller than may be expected on the basis of La Touche's and Hemmingsen's records; we did not see any flocks which could be described as 'cloud-like'. This evidence of a considerable decline accords with the results of the 1985 study. Further, neither this nor the 1985 study suggested birds were breeding in the area, yet both La Touche and Hemmingsen reported rookeries.

1987 (P): 314 flew south, 8 October to 18 November; highest day totals 72 on 14 October and 75 on 30 October.

1988 (Ho): 425 bird-days, 13 October to 15 November; highest day total 110 on 13 October and 27 October.

1989: 1,195 flew south, 13 October to 12 November; highest day totals 173 on 17 October and 384 on 31 October.

1990: before 23 October, 175 bird-days. From 23 October, 1,121 were recorded flying south, 23 October to 14 November; highest day totals 110 on 24 October, 392 on 25 October, 100 on 2 November and 313 on 9 November.

The increase in numbers during recent surveys is due to observers distinguishing more Rooks and Carrion Crows.

See also Rook/Carrion Crow.

ROOK/CARRION CROW *Corvus frugilegus/C. corone* COE – 1,286 bird-days, 16 March to 10 May.

1986: most of the Rooks/Carrion Crows recorded were not specifically identified as the vast majority were seen in flocks passing south, and were often rather distant: 31,946 bird-days were recorded from 10 October to 19 November; 709 were recorded on 10 October, 2,387 from 11-20 October, 9,238 (the peak day count) on 21 October and a further 24,623 to 5 November. All were recorded from LH; 31,931 passed south and 15 flew north.

1987 (P): 6,148 flew south, 17 October to 14 November; highest day totals 3,000 on 30 October and 1,075 on 4 November.

1988 (Ho): 5,660 bird-days, 11 October to the end of the survey.

1989: 16,793 flew south, 8 October to 14 November; highest day totals 2,693 on 9 October, 2,303 on 16 October, 1,058 on 28 October and 4,613 on 31 October and 1,088 on 1 November.

1990: before 23 October, 856 bird-days. From 23 October, 4,998 bird-days (all but seven were recorded flying south), throughout the period; highest day totals of bird flying south 1,216 on 24 October, 550 on 26 October, 713 on 1 November and 992 on 9 November.

It is likely that the majority of the unidentified birds were Rooks. Both La Touche and Hemmingsen reported this species to be abundant in autumn, passing in large or immense flocks, whilst La Touche noted that the Carrion Crow migrates in small parties. We also found that Carrion Crows were in small scattered parties, less compact than the flocks of Rooks; when large flocks passed nearby, it was generally Rooks that were heard calling (e.g. in 1986, largely because of calls heard from flocks passing overhead – which numbered up to 900 or more, we felt that most of the 9,238 birds recorded on 21 October were Rooks).

LONG-TAILED TIT *Aegithalos caudatus* LT – probably resident in wooded parts. H – three birds in November 1943. COE – one *A. c. caudatus*, 30 April. Ch – *A. c. vinaceus* resident and winter visitor in Hebei, *A. c.*

caudatus winter visitor to the province; status: fairly common.

1986: 104 bird-days were logged from 12 October to 16 November; all except 17 birds were seen at LH, often in flocks of 5-11 birds. There was a slight concentration of records during the last week of October and first week of November. Birds of the subspecies *A. c. vinaceus* and *A. c. caudatus* were seen, and several individuals showed intermediate characters.

1987 (P): 122 bird-days, 6 September to 17 November; only 12 bird-days to 17 October, after which more regularly seen; highest day totals 12 on 21 October, 14 on 25 October and 12 on 3 November.

1988 (Ho): 39 bird-days, 20 October to 14 November.

1989: 258 bird-days, 9 October to 12 November; highest day total 41 on 16 October (birds seen well were all *A. c. vinaceus*).

1990: before 23 October, 167 bird-days (*A. c. caudatus*), highest day total 39 on 15 October. From 23 October, 241 bird-days (again all *A. c. caudatus*), throughout the period; highest day totals 30 on 23 October, 29 on 24 October, 23 on 25 October, 22 on 26 October and 19 on 15 November. These are the highest numbers of this race yet recorded at Beidaihe, perhaps suggesting an irruption (interestingly, one was seen in Hong Kong in late December – well south of the known range, and possibly an escape though it showed no signs of this). The switch from all *A. c. vinaceus* in 1989 to all *A. c. caudatus* in 1990 is curious (the races are readily separable).

The species has been fairly common at Beidaihe in recent years, suggesting that the population has increased, perhaps as a result of mild winters.

CHINESE PENDULINE-TIT *Remiz (pendulinus) consobrinus* LT – not common; in autumn one on 25 October 1911, a flock 5-7 or 8 October 1915 and a party on 16 October 1916. Wilder (1924a) – two small flocks, 6-9 October 1923; 'These were the first I had ever noticed wild, though I had bought them in the Peking market several times.' H – once seen and twice probably heard in spring, two or three seen 26 October 1944. COE – just over 1,000 bird-days, 28 April to 28 May. Ch – migrates though Hebei; status: uncommon in the north of China.

1986: 1,292 bird-days were logged from 24 September to 19 November. There was significant passage throughout October, with the main passage from 3-17 October when 1,051 bird-days were logged. Most passed south: 1,026 were recorded from LH, including the highest day count, 530 birds on 15 October.

1987 (P): 2,570 bird-days, 24 September to 9 November; 2,491 bird-days from 7-26 October, including 2,158 birds recorded flying south; highest day total 1,190 (1,150 flew south) on 13 October.

1988 (Ho): 4,187 bird-days, 30 September to 16 November; 2,715 were recorded on 11 October, mainly/wholly passing south (recorded at Daihe estuary; only 50 were recorded from LH on this day).

1989: 1,577 bird-days (1,431 flew south), 8 October to 16 November; 1,448 bird-days over 12-19 October; highest totals 321 flying south on 12 October and 707 flying south on 19 October.

1990: before 23 October, 245 bird-days, highest day total 130 on 13 October. From 23 October, 88 bird-days (60 were recorded flying south), 23 October to 5 November; highest day total 23 (all flying south) on 25 October.

As in spring 1985, the species was common to abundant at Beidaihe during the autumn surveys, rather than uncommon as previously reported. It thus seems that the population migrating through the area has substantially increased in recent years.

YELLOW-BELLIED TIT *Parus venustus* LT, H – no records. COE – 21 bird-days, 21 April to 19 May. Ch – resident Beijing Municipality, Hebei (midpart); status: common locally.

1986: 74 bird-days were logged from 27 September to 20 November. Twenty bird-days were logged to mid-October and seven in the second half of the month. There were a further 11 bird-days from 1-6 November and 28 from 10-13 November, and another eight during the last five days of the survey. Over half the records were from LH; seven were logged from the watchpoint, flying south.

1987 (P): 377 bird-days, 1 September to the end of the survey; only three bird-days to 5 October; on most days from late October to late November up to 15 were present around the D.P. Guest House.

1988 (Ho): at least 57 bird-days, 18 September to 3 November.

1989: 103 bird-days, 12 October to 16 November; highest day totals 14 on 6 November, and ten on 27 October and 7 November.

1990: before 23 October, 13 bird-days, highest day total eight on 4 October. From 23 October, singles were at LH on 24 and 29 October.

It seems surprising that this species had not been recorded at Beidaihe prior to spring 1985. Perhaps there has been a range expansion, with a migratory population now breeding to the north of the range given by Cheng.

VINOUS-THROATED PARROTBILL *Paradoxornis webbiana* LT – common in mountains. Wilder (1932) noted it on mountains north of Beidaihe. H, COE – no records. Ch – resident in northern Hebei; status: locally common.

1986: ten were at Re on 19 and 30 October, and 11 were seen at the same locality on 13 November. The records may all refer to the same flock, which could be surprisingly elusive.

1987 (P): 414 bird-days, 24 September to 24 November; total perhaps results from two flocks being seen several times; highest day total 28 on 2 October.

1988 (Ho): a flock of 25 birds was seen at Re on eight dates from 16 September to 17 October.

1989: 574 bird-days, 8 October to 10 November; up to 20 at Re to 24 October, when 40 were present; 16 at Re, 25 at Lighthouse Point and one at Study Gully the following day; one 28 October, 40 at Lighthouse Point and 35 at Re; the highest day total was 105 (35 at Re, 20 at Lighthouse

Point, 30 at LH and 25 at EG) on 1 November, after which day totals did not exceed 35.

1990: before 23 October, four bird-days. From 23 October, 15 were at Re on 31 October and seven at Eagle Rock on 4 November.

The records suggest a local population increase, maybe as a result of lower mortality during recent mild winters.

SIBERIAN RUBYTHROAT *Eriothacus (Luscinia) calliope* LT – very abundant in autumn, passing from about 10 September to the end of September. H – seen from 31 August to 5 October over three years; similar numbers to spring. COE – 56 bird-days, 18 April to 24 May. Ch – migrates through Hebei; status: common.

1986: 48 bird-days were logged from 21 September to 13 October. Seventeen bird-days were logged during the first week of passage, 19 in the second, and 12 in the last nine days. The highest day count was seven on 24 September. Seen at a wide variety of localities. Of 44 birds aged/sexed, 25 were adult males (with flame-red throats) and 19 females or immatures. The comparable number of bird-days to spring 1985 accords with the pattern recorded by Hemmingsen, though his spring and autumn figures are nearly equal (15 bird-days in spring, 17 in autumn).

1987 (P): 117 bird-days, 18 September to 2 November; 103 bird-days between 27 September and 11 October; highest day totals 25 on 7 October and 24 on 8 October; only four records of single birds after 15 October.

1988 (Ho): ten bird-days, 12 September to 3 October.

1989: five bird-days, 8-24 October.

1990: 26 bird-days, highest day totals four on 18 September, five on 3 October and four on 5 October; all before 23 October.

Our records suggest that this species is now rather uncommon at Beidaihe, not very abundant as reported by La Touche.

TWO-BARRED WARBLER *Phylloscopus (trochiloides) plumbeitarsus* LT – abundant, 'generally travels with *P. borealis* [Arctic Warbler], but remains much later in autumn.'; observed from the latter half of August to about 22 September – must remain later as one shot 4 October. 'At the beginning of September 1913 and 1914 this bird swarmed for a few days on some jujube-bushes behind our house.' H – none identified. COE – less than 69 bird-days (total includes some misidentified Arctic Warblers), 5 May to June.

1986: 35 bird-days were logged from 24 August to 10 October. The main passage followed that of the Arctic Warbler, with 20 bird-days logged from 26 September to 4 October. The highest day total was five on 4 October. This species is very similar to the Arctic Warbler, and records of both may be somewhat unreliable.

1987 (P): 30 bird-days, 5 September to 10 October; highest day total four on 8 and 9 October.

1988 (Ho): five bird-days, 11 September to 3 October.

1989: one was at LH on 9 October.

1990: four bird-days, highest day total four on 16 September; all before 23 October.

We found the Two-barred Warbler rather uncommon – not abundant as reported by La Touche.

PADDYFIELD/BLUNT-WINGED WARBLER *Acrocephalus agricola concinens* LT – birds La Touche described as the North China Reed Warbler *A. tangorum* were very common in the millet fields around Qinhuangdo from about 18 August to the latter half of September; only met with on a few occasions in spring. 'It is probable that this Reed-Warbler breeds in the marshes of the district.' (The taxonomy of this bird was discussed by Alström *et al.* 1991, who considered it to be a race of *A. agricola*). Blunt-winged Warbler evidently a rare migrant, as in seven years' collecting only one specimen, 10 June 1914. WH – Hebei records for Blunt-winged Warbler in one year, 15–24 May; Hemmingsen cites Wilder and Hubbard as having collected specimens of *A. tangorum* at Beidaihe on 30 August and 2 September, and that (like La Touche) they found it in millet fields. H – no records. COE – two birds.

1986: a bird identified as Blunt-winged Warbler was seen on 2 October, and singles identified as Paddyfield Warbler were seen on 4 and 15 October.

1987 (P): a Blunt-winged or Paddyfield Warbler was seen on 27 September, and a bird thought to be a Paddyfield Warbler on 29 September.

1989: three Paddyfield Warblers – one at Daihe on 12 and 13 October, and two at Re on 14 October.

PALLAS'S WARBLER (Pallas's Grasshopper Warbler) *Locustella certhiola* LT – very abundant, last week of August to mid-September. H – recorded in one autumn, from 25 August to 22 September. COE – 42 bird-days, 5 May to 1 June. Ch – migrates through Hebei; status: more common on migration.

1986: 28 bird-days were logged from 28 August to 14 October. Only seven birds were recorded to 17 September, when the main passage period began; during the ensuing two weeks, 18 bird-days were logged. Singles on 1, 3 and 14 October were the last records. The main passage period seems to be later than recorded by La Touche and Hemmingsen.

1987 (P): 52 bird-days, 5 September to 2 November; highest day total 12 on 27 September; only one – on 2 November – after 8 October.

1988 (Ho): 19 bird-days, 17 September to 5 October.

1989: 14 bird-days, 8–14 October; highest day total five birds on 13 October.

1990: 58 bird-days, highest day totals six on 19 September, eight on 22 September and nine on 27 September; before 23 October.

We found this species uncommon, not very abundant as reported by La Touche.

LANCEOLATED WARBLER *Locustella lanceolata* LT – very abundant, last 10 days of August until October (last records 8th and 10 October). WH – common during 3–12 September 1924. H – one doubtful autumn record. COE – 292 bird-days, 9 May to 1 June. Ch – migrates through Hebei; status: uncommon.

1986: 238 bird-days were logged from 29 August to 19 October; highest day totals, 28 on 28 September and 36 on 29 September. Thirteen bird-days were logged to 17 September, when significant passage began. The main passage was during the two weeks beginning 24 September, when 179 bird-days were logged. After 9 October, four were seen on 13 October and one on 19 October. As with the Pallas's Warbler, the passage of this species was rather later than noted by La Touche and Hemmingsen, with birds not occurring in numbers until mid-September.

1987 (P): 251 bird-days, 22 August to 28 October; highest day totals 15 on 20 September, 35 on 27 September, 26 on 28 September and 30 on 29 September.

1988 (Ho): 38 bird-days, 11 September to 17 October.

1989: eight bird-days, 8–24 October; highest day total two birds on 14 October; only one bird after 16 October.

1990: 113 bird-days, highest day totals 25 on 10 September and 13 on 3 October; all before 23 October.

We found the Lanceolated Warbler was common, not very abundant as reported by La Touche.

JAPANESE MARSH WARBLER (Japanese Marshbird) *Megahurus pryeri* LT – one shot on 19 October 1911; on 18 October 1914, at marshes, 'swarming on the grassy banks and among the sedgy grass of the locality'. H, COE – no records.

1989: four individuals were seen – singles at Re from 12 to 14 October, at Lighthouse Point on 14 and 23 October and at Re on 24 October.

1990: one was at Fishhook Point on 31 October.

WHITE-BROWED CHINESE WARBLER *Rhopophilus pekinensis* LT – very common in the mountains. H – no records. COE – five birds, 7 April to 19 May. Ch – resident on Xiao-Wutai Mt., Chengde, Hebei; status: uncommon.

1986: there were six records of single birds: in September, at YH on 25 September and TH on 30 September, and in October at YH on 1 October, Se on 2 October, EG on 13 and 14 October, and Re on 19 October.

1987 (P): 70 bird-days, 24 August to 2 November; two on 24 August and 5 September; more frequent from 13 September; highest day total six on 6 October. Mainly recorded at Daihe estuary/YH.

1988 (Ho): nine bird-days, 8–18 October.

1989: 30 bird-days, 12 October to 15 November; five bird-days to 28 October; highest day total four on 30 October.

1990: one on 26 September.

It appears that records of this species earlier this century were only from the mountains, and the numbers of birds recorded at Beidaihe in recent years suggest a population increase, perhaps because of mild winters.

BROWN ACCENTOR *Prunella fulvescens* No previous records for Hebei. Cheng maps the nearest area of occurrence as the north-western strip of Nei Mongol Aut. Reg. (Inner Mongolia) during the summer.

1986: one was at the LH watchpoint on 21 October. This appears to be the first record for Hebei.

YELLOW WAGTAIL *Motacilla flava* LT – ‘immense flocks’ pass from the latter half of August to late September. H – seen from 17th and 18 August to 13 October and 11 September during two years. COE – 1,502 bird-days, 8 April to 1 June. Ch – migrates through Hebei; status: fairly common.

1986: 6,719 bird-days were logged from 20 August to 13 October. The main passage was during the three-week period 27 August to 16 September, when 2,368, 2,098 and 1,188 bird-days were logged in successive weeks, making 5,654 bird-days in total. The peak day count was 1,438 on 6 September. Seventy-seven bird-days were logged during October. Most birds were seen flying south, with about 53% of the records from the LH watchpoint. Only eleven birds were racially identified. Of these, seven were *M. f. simillima* – singles on 29 and 30 August, 8, 12, 15 and 24 September and 2 and 3 October (same bird on last two dates); two were *M. f. macronyx* – singles on 18th and 22 September, and one *M. f. plexa* was seen on 26 September.

1987 (P): 7,779 bird-days, beginning of the survey to 23 October; 7,294 were recorded flying south, including 6,389 from 18 August to 16 September. Highest day totals 910 on 30 August and 740 on 10 September.

1988 (Ho): 2,066 bird-days, 8 September to 18 October; 530 were recorded on 12 September; only 71 bird-days in October.

1989: 35 bird-days (26 flew south, 8-26 October); highest day total 24 (all flying south) on 12 October.

1990: 2,275 bird-days, highest day totals 382 on 24 August and 227 on 31 August; all before 23 October.

We did not see ‘immense flocks’ as La Touche reported passing Qinhuangdao.

CHINESE GREY SHRIKE *Lanius sphenocercus* LT – ‘found sparingly in spring, but much more commonly on the return passage, when it may be seen from the beginning of September, throughout October, and in November. A number winter in the district’. H – one record, 14 September 1944. COE – no records. Ch – migrates through Hebei; status: uncommon.

1986: there were seven records of singles at YH on 20 August (probably adult), 25 September, 4, 7 (adult male) and 9 October and 17 November.

Another was seen flying south over Lighthouse Point on 5 September. It may be that five individuals were involved. On 4 October, an impaled Eurasian Tree Sparrow *Passer montanus* seen at Daihel Yanghe (Nandaihe) was probably the prey of a Chinese Grey Shrike seen nearby.

1987 (P): two on 13 October, one on 24 October, one flew south on 8 November and one on 15 and 16 November.

1989: one at Re on 8 November.

1990: one was seen from 7-10 September.

It appears this species is scarcer than in La Touche’s time. However, it may be that rather few land at Beidaihe; we have regularly found ones and twos on late autumn visits to estuarine areas south of Beidaihe.

CHAFFINCH *Fringilla coelebs* LT, H, COE – no records. Ch – only two sites given for the species, with record(s) in winter in Xinjiang Uygur Aut. Reg., and a female at Shenyang, Liaoning Province, on 16 December 1963.

1990: one was at LH on 14 October.

Four individuals were seen at Beidaihe from 22 March to 10 April 1989, and two were seen around Beijing during the winter 1988/1989 (Holt 1989).

COMMON REDPOLL *Carduelis flammea* LT – common migrant, October and November, seen in winter. H – one record, 16 November 1942 (a few). COE – three birds on 2 May. Ch – migrant and winter visitor; status: fairly common.

1986: 84 bird-days were logged from 28 October to 18 November. The first record was of two at LH, 31 bird-days were logged in the week from 29 October and 24 in the following week. Twenty-seven bird-days were logged during the last nine days of passage. Most records were from LH, with 17 recorded flying south.

1987 (P): two on 7 October, and singles on 20 October and 9 November.

1988 (Ho): 58 bird-days, 25 October to the end of the survey.

1989: no records.

1990: one was at LH on 24 October.

The records suggest the species is rather erratic in occurrence, and rare to uncommon, not a common migrant as reported by La Touche.

ASIAN ROSY-FINCH *Leucosticte arctoa* LT, H, COE – no records. Ch – breeds in far north-east of China, perhaps winters south to Hebei; status: uncommon.

1986: on 18 October, two birds arrived from the north, landed briefly at the LH watchpoint, then flew off southwards.

LAPLAND LONGSPUR *Calcarius lapponicus* LT – appears in numbers in late autumn and occurs on the plain in late winter and early spring in immense flocks. H – in numbers in winter, e.g. ‘large flocks of hundreds flying about GS [Grassy Sands]’ 16th and 18 November 1944; earliest autumn date 22 October. COE – no records. Ch – migrant and winter visitor to Hebei; status: rare.

1986: 54 bird-days were logged from 20 October to 18 November. Four were recorded before 30 October, from which date to 1 November nine bird-days were logged. The highest day count was 17, recorded from LH, flying south, on 7 November, and there was a flurry of records, totalling 18 bird-days, from 14-18 November. Twenty-seven birds were recorded flying south, at LH or SF.

1987 (P): 92 bird-days (88 were recorded flying south), 13 October to 24 November; highest day totals 19 on 23 and 28 October; only one bird after 7 November.

1988 (Ho): eight bird-days, 18 October to the end of the survey.

1989: 199 bird-days, 19 October to 16 November (65 flew south); 56 flew south over 31 October and 1 November; 100 were at YH on 16 November.

1990: the only record before 23 October was two on 18 October. From 23 October, 41 bird-days (28 were recorded flying south), throughout the period; highest day totals eight flying south) on 8 November and 11 (at YH) on 15 November.

This species has not been abundant in recent years, in contrast to the observations of La Touche and Hemmingsen. This may be because recent winters have been relatively mild.

CONCLUDING REMARKS

The observations in 1986-1990 further demonstrate that Beidaihe is an excellent migration watchpoint. Around 345 species were recorded, of which perhaps only 14 are year-round residents at Beidaihe. For several species the numbers are higher than recorded anywhere else – notably the total of 2,729 Oriental Storks in 1986, more than double the previous estimate of 900-1,000 birds (Archibald and Luthin 1985) for the known world population.

A notable difference between spring and autumn at Beidaihe is that visible migration is considerably heavier in autumn than in spring: 262,970 passing migrants were recorded from the Lotus Hills watchpoint during the 1986 survey. Shorebird numbers are also substantially higher in autumn, and for many species the autumn is generally similar to, or better than, the spring; dabbling ducks are notable exceptions, being generally commoner in spring.

Population declines outnumber increases

One of our main aims in conducting the surveys was to provide data to help show population changes, initially by comparisons with observations made earlier this century. Such comparisons are not always easily made: difficulties include differences in localities (La Touche studied birds at nearby Qinhuangdao, Beidaihe has changed considerably since Hemmingsen's time); in numbers of observers and survey techniques; lack of data – e.g. for scarcer species, and for passerines, which Hemmingsen gives few numbers for (cf. his counts of Bean Geese and cranes). Also, La Touche seems rather generous in describing birds as 'common' or 'abundant', and writing of

'great' or 'enormous' flocks, or 'streams' of birds; if he was conservative in his use of these words, it would seem that the migration today is but a shadow of the past.

Yet, even without guessing whether La Touche would differ from us in describing abundances, it is clear that there have been some marked declines during this century. Just from the drop in Rook numbers, the autumn migration we have recorded is poorer by tens, even hundreds, of thousands of migrants than the migration Hemmingsen knew. (The conclusion to the spring 1985 survey – 'it is heartening that the results indicate that the populations of most of the species recorded seem to have changed little': Williams 1986 – now seems too rosy, though stemmed from initial fears that the situation could be far worse than was found.)

Comparison of recent and past records suggests the following 33 species have declined: Oriental Stork, Bean Goose, Northern Pintail, Common Teal, Baikal Teal, Falcated Duck, Baer's Pochard, Black Kite, White-tailed Eagle, Common Buzzard, Amur Falcon, Japanese Quail, Common Crane, Baillon's Crake, Common Coot, Great Bustard, Little Curlew, Sanderling, Pallas's Sandgrouse, Long-eared Owl, Sand Martin, Black Drongo, Rook, Siberian Rubythroat, Two-barred Warbler, Paddyfield Warbler, Pallas's Warbler, Lanceolated Warbler, Japanese Marsh Warbler, Yellow Wagtail, Chinese Grey Shrike, Common Redpoll and Lapland Longspur.

The following five species are residents in the area and may have increased because of mild winters, perhaps resulting from the 'greenhouse effect': Light-vented Bulbul, Blue Magpie, Vinous-throated Parrotbill, White-browed Chinese Warbler, Long-tailed Tit and, perhaps, Yellow-bellied Tit (though it may be that at least some of the latter which occur at Beidaihe are migrants, which move south for winter). Professor Tu Qipu, Vice President of the Nanjing Institute of Meteorology, quoted in Anon. (1991), pointed out that 'In the last 100 years, there have been ten years with abnormally high temperatures [in China] – four of them between 1981 and 1990 – and the year 1990 was the warmest.'

It may be that the milder winters are responsible for recent downward trends in the numbers of some late autumn migrants such as the Common Goldeneye (Williams in prep.), the White-tailed Eagle, the Hen Harrier (Williams in prep.) and the Great Bustard, and could be the reason for the relative scarcity of the Lapland Longspur; maybe these birds are lingering, and even wintering, further north than normal.

The Great Egret may have recovered a little from plume-hunting late last century, but is still far from its past numbers. Recent records, especially in spring, suggest a similar increase in the population of the Little Egret *Egretta garzetta*, though again it is not common.

This leaves the following four species which have shown substantial increases in numbers, but which are neither possible by-products of climatic warming nor recoveries from slaughter: Chinese Pond-Heron, Red-breasted Merganser, Grey-tailed Tattler and Chinese Penduline-Tit.

Environmental damage in China (see, e.g. Smil 1983, Vermeer 1984, Burton 1991) will have significantly contributed to the downward trend in numbers of migrants. More specific reasons for declines include:

Wetland damage and destruction. Evidently a serious problem; 14 of the species we suggest are scarcer are wetland birds (and the Sand Martin is closely associated with freshwater). So also are three notable 'absentees' from the autumn surveys: Dalmatian Pelican *Pelecanus crispus*, Tundra Swan *Cygnus columbianus* and Streaked Reed-Warbler *Acrocephalus sorghophilus*. The Dalmatian Pelican was 'formerly common around Beijing', but had become rare by the 1930s (Shaw 1936; Hemmingsen and Guildal 1968 report '30 years ago breeding in Peking according to old residents'). The only Beidaihe records are one (specimen?) and two to three reports by friends (Wilder and Hubbard, cited in Hemmingsen and Guildal 1968). Hemmingsen (Hemmingsen and Guildal 1968) recorded 2-13 Tundra Swans on eight autumn dates. La Touche (1920) found the Streaked Reed-Warbler was common from about 22 August to 7 September 1912 and 1913. Spring records also suggest declines in the latter two species (Williams 1986, Williams and Dorner 1991).

Wetland drainage along the Yangtze valley, an important wintering area for many waterfowl (e.g. Stryan 1891) could have contributed to several declines. But for the Baikal Teal, which has apparently suffered a population crash throughout east Asia (Anon. 1990), the main problem may be on the breeding grounds in the USSR (C. Poole *in litt.* July 1990). Similarly, for the Streaked Reed-Warbler, the main reason for the apparent decline may lie outside China – in this case in its winter haunts in the Philippines.

Destruction of tropical and sub-tropical forests in their Central and South American wintering areas has been blamed for declines in several North American songbirds (Terborgh 1989). A similar situation may be expected in Asia, where there is also a large landmass in the north, and relatively little land with already depleted tropical forests in the south. Perhaps this is the reason for the reductions in the Siberian Blue Robin – suggested by spring studies (Williams 1986, Williams and Dorner 1991) – and in the Two-barred Warbler.

The Black Kite and the Rook, which are usually very tolerant of man, may have suffered from pesticides, which may be used with little care in China. Other birds of prey, perhaps including the White-tailed Eagle and the Common Buzzard, will probably have also been affected by pesticides.

Hunting and trapping will also contribute to declines. Hunting may be a serious threat to the Great Bustard, which probably faces severe problems just from shrinking habitat.

Plans for future work; visitors welcome

With the survey results showing that the migration in Beidaihe is much reduced, if still impressive, we are shifting the focus of our attentions from study to conservation work.

In autumn 1988, XW and MDW helped found the Beidaihe Bird Conservation Society. Through the society's efforts, the western part of the Lotus Hills has been declared a reserve, and China's first reserve for migrating birds has been established beside the Henghe reservoir. There are plans to transform this reserve into a lagoon overlooked by a visitor centre (Ounsted 1990); however, funds for the work have not yet been found. The society has organised talks to local schoolchildren, and a televised competition on conservation.

Visits by birdwatchers have helped stimulate work at the town – Beidaihe is probably the most visited (if not the best) of China's destinations for eco-tourism. Visiting birdwatchers are welcome; copies of any reports would be appreciated (please send to MDW or XW).

Dr George Archibald and Jeffery Boswall have continued to encourage the work at Beidaihe.

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