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The rhiniceros on the cover presents a nearly complete specimen of the Pleistocene *Coelodonta antiquitatis*, excaved in ozocerite layers at Starunia (Eastern Carpathians), 1929. This unique exhibit is shown in the Natural History Museum (Institute of Systematics and Evolution of Animals), Cracow.

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The birds of North Korea. Non-Passeriformes

Teresa TOMEK

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Abstract. The occurrence of all, i.e. 220 species of birds of the group Non-Passeriformes in North Korea is presented on the basis of complete literature, most of the existing collections and the author's own unpublished observations. The dates and sites of observations recorded so far and maps illustrating the situation of these places are given for each species. The species are also provided with commentaries, in which their status in North Korea is discussed against their occurrence in the Far East. The species found in North Korea include, among other taxa, those whose world populations are characterized by small sizes and are endangered or vanishing (e.g. *Egretta intermedia*, *Egretta eulophotes*, *Ciconia boyciana*, *Nipponia nippon*, *Mergus squamatus*, *Grus japonensis*, *Grus vipio*, *Eurynorhynchus pygmeus*, *Larus saundersi*, *Dryocopus javensis*). Data presented show that the boundaries of the breeding grounds (*Anas platyrhynchos*, *Accipiter soloensis*, *Accipiter gularis*, *Cuculus fugax*, *Halcyon pileata*) and those of the wintering areas of many species (mainly members of the orders Anseriformes and Charadriiformes) extend across North Korea. Moreover, the standard measurements (lengths of wings, tarsus, bill and tail) of birds collected in the territory of North Korea are given.

Key words: birds, North Korea, endangered species.

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CONTENTS

I. INTRODUCTION

The Korean Peninsula, which forms the south-eastern border of the Palaearctic, divides into two parts, a northern and a southern, differing in climate and land configuration. This leads to a differentiation of the avian communities living in this area (breeding and, to a greater extend, wintering communities). The bird fauna of the Korean Peninsula, particularly that of its northern part, was very poorly investigated. AUSTIN (1948) presented nearly complete knowledge acquired up to 1948 and covering the birds of the whole peninsula. However, he had at his disposal mainly the data concerning the southern part of the peninsula. Until the Second World War scarcely ten investigators or collectors carried out observations of birds in the northern part of the peninsula, i.e. within the frontiers of the present Democratic People Republic of Korea refered here as North Korea. Similairly, Republic of Korea is here named South Korea. In the second half of the twentieth century the situation has not undergone a major improvement. For this reason the characterization of the occurrence of particular species in the northern part of the peninsula on the basis of the data derived from the southernmost part may induce erroneous inferences. As the reports on the occurrence of birds in the northern part of the peninsula are not very numerous and, what is more, they are scattered and partly inaccessible, it is expedient to gather them together and recapitulate the up-to-date knowledge of the subject. The present work is an attempt at such a recapitulation. It is based on 1) the collections of birds coming from North Korea, 2) available literature and 3) the author's own unpublished materials.

A c k n o w l e d g e m e n t s. Here I wish to express my heartfelt thanks to the Korean Academy of Sciences in Pyongyang, especially to the late Director of the Zoological Institute PAEK Jon-Hwang, the curator of the collection O Hung-Dam, and the remaining workers of the Institute for making it possible for me to carry out studies in North Korea, organizing field trips and giving access to the collection; my thanks are due to Prof. Z. BOCHEŃSKI for critical remarks made during my preparing the work in typescript and to the workers of the ISEA taking part in the expeditions to North Korea for their help with collecting materials and generally extending kindness to me. I am also indebted to Mr Andrzej HAMAN for correcting the maps.

II. MATERIAL

A. Collections

The collection of the Zoological Institute Korean Academy of Sciences in Pyongyang (abbr. ZIP) was set up after the division of the peninsula into two states (more exactly following the Ko-

rean War that is after 1953) and now it comprises somewhat above 5000 specimens (skins, several nests). The bulk of the collection consists of specimens gathered by WON Hong-Koo and his co-workers in the fifties and sixties. In later years single specimens were added to it. This collection is not catalogued, part of the original labels have been rewritten and exchanged for new ones, while part of the specimens possess no labels at all. In the case of these last it is only known that they have been collected in the territory of North Korea in the last 45 years (i.e. after Korean War).

The collection of the Zoological Institute, Russian Academy of Sciences, in Saint Petersburg (ZISP) numbers 144 specimens coming from the area of North Korea. It is for the most part YANKOVSKII's collection from 1897 (119 skins) and single birds (25 specimens of 16 species) collected by various investigators, mostly by WON Hong-Koo.

The collection of the Institute of Systematics and Evolution of Animals (ISEA) in Kraków consists of 143 skins and mummies, 11 nests with clutches and 104 skeletons, collected during the expeditions of ISEA workers to North Korea in 1978-1991. It also includes 18 skins donated by the ZIP collection. Altogether 62 species are represented.

The collection of the Museum of Zoology in Berlin (MZB) comprises 40 skins gathered in the fifties and described by MAUERSBERGER (1981) and 280 skins collected by FIEBIG in 1987-1990 and described by him (FIEBIG 1993, 1995).

In addition to the foregoing collections there are still some others, not taken into consideration or taken only in part in the present publication:

The collection of 1200 skins gathered by BERGMAN in 1935-1936 and now stored in the Swedish Museum of Natural History in Stockholm.

The collection at the Kim Il-Sung University in Pyongyang numbers probably several hundred specimens. From one to several representatives of most species living in North Korea are displayed at the Museum exposition. These birds are not provided with labels. I found it impossible to reach the documentation of the collection (even to receive information as to what part of the collection was exhibited) and so the size of the collection is not known, nor whether its documentation exists at all. Small "collections" of birds put up for sale in shops or used as decorations at hotels for foreigners, described by GŁOWACIŃSKI et al. (1989). The specimens in such collections are of no major scientific importance since they are not labelled. Significant may only be the birds belonging to rare or vanishing species (nearly all members of the order Falconiformes). The presence in the collection of a shop or hotel points at the occurrence of the given species in the territory of North Korea, while the number of individuals may roughly indicate their numerousness.

B. Literature

Data on the occurrence of birds in the territory of North Korea up to 1948 have been drawn on the monograph by AUSTIN (1948) "The birds of Korea", mentioned in the introduction. Further in the present work it is referred to by the acronym (AUST), irrespective of the source of information (publication, collection) except for WON Hong-Koo's data, which are now singed with their author's name (see below). The publications by TACZANOWSKI (1887, 1888), GIGLIOLI & SALVADORI (1887), and KURODA (1918) are also cited separately, because, owing to a change in the territorial division, some observation places of these authors now belong to different provinces from those given by AUSTIN. The data coming from their publications are designated with the acronyms: (TACZ), (G&S) and (KUR).

AUSTIN did not take into consideration SOWERBY's (1923) observations from the valley of the river Amnok (former name: Yalu), which makes the frontier with China, nor the information provided by YANKOVSKII and BERGMAN. YANKOVSKII gathered a collection of birds, now stored in Saint Petersburg (see above), and published his journal of observations (YANKOVSKII 1898). YANKOVSKII's observations cover the breeding season in poorly explored regions of the Hamgyong

North, Ryanggang and Chagang Provinces and the season of autumn migrations in the Hamgyong South and Kangwon Provinces. Because the names of localities, rivers, mountain ranges, summits, passes etc. have been changed since then and it is impossible to reconstruct the boundaries of villages of those times, YANKOVSKII's data have been localized to an accuracy of district or conspicuous physiographical units (higher peaks or passes). The present-day spelling is applied in the text and the dates of observations are given by the Gregorian calendar (the Julian calendar, binding in Russia at that time, was used in the journal-book) and marked with acronym (YANK.).

In the past fifty years studies in North Korea have been carried out by Korean ornithologists and some ornithologists from the countries of the former so-called eastern block. Among the Korean ornithologists conducting investigations was, above all, WON Hong-Koo, who crowned his study with a three-volume monograph, "The Birds of Korea", published in 1963-1965. Volume I (1963) comprises the orders from Podicipediformes to Galliformes, Volume II (1964) those from Gruiformes to Piciformes and Volume III (1965) the order Passeriformes (and supplements to the Non-Passeriformes). As AUSTIN (1948) has already mentioned, WON Hong-Koo's data, coming from various publications, are not always consistent with each other. And so: in WON Hong-Koo's (1963-1965) monograph some reports concerning the occurrence of species, published in his earlier work from 1956 are left out and vice versa (some earlier observations are given though not mentioned in 1956) or the data published in the fifties and sixties do not agree with WON Hong-Koo's publications from the thirties cited by AUSTIN. There are also some divergences in the dates and places of observations cited by WON Hong-Koo from other sources, among others those given in AUSTIN's work or in publications of Korean authors. Similarly, in the monograph "The Birds of Korea" (1963-1965) the items of information based on the collection of the Zoological Institute Academy of Sciences, do not always conform to the data placed on the labels attached to the specimens. Most of these discordancies (assuming that we are concerned with one and the same case) have been marked in the text. WON Hong-Koo's observations from 1948-1956 published only in 1956 are marked: (WON 1956). WON Hong-Koo's observations from the pre-war period and quoted only in 1956 (not mentioned by AUSTIN nor in the 1963-1965 monograph) have been omitted in the present work. Differences between the data cited by WON Hong-Koo and AUSTIN from other sources are also left out without marking in the text; now these data have been given after AUSTIN (they are mainly the dates of observations).

Apart from WON Hong-Koo's (1963-1965) monograph, the number of publications by Korean authors is small. Except for HO Hon (1960) and some short reports on observations of species rare in or new to Korea (e.g. RIM Chun-Hun 1963a, b, RIM Chu-Yon 1983), the remaining publications are either lists of birds species from a small region (giving, at the best, the places of observations, e.g., HO Hon & RIM Chu-Yon 1975, CHON Gil-Pyo 1988, JIN Dok-Jun & O Hung-Dam 1990) or lists of species of the whole Korean Peninsula (KIM Ri-Thae & O Hung-Dam 1982, O Hung-Dam 1988), presenting only the general status of the birds discussed (without any details).

There are, besides, two publications by Korean authors, which appeared out of North Korea. One of them, dealing with rare and endangered species (edit. SONOBE 1987), is probably a reported interview given by Dr PAK U-Il, Vice President of the Academic Zoological Research Center of North Korea. Unlike first several chapters, the part on particular bird species and areas protected in North Korea does not bear the name of the author. The chapters devoted to particular species contain, in addition to concrete observations also a lot of generalities. On the other hand, the statements in the part dealing with the occurrence of birds in the protected areas give the impression of not being reliable enough (e.g. "Breeding area for Egrets and Grey Herons. More than 1000 Egrets and Grey Herons have been breeding in twelve mongolian oak trees for more than 500 years", or: " There are thousands of birds gregariously inhabiting the pine forest extending for approximately 0.02 km", "several tens of thousands of Mew Gulls, Thin-billed Murres, Spectacled Guillemots, Great Cormorants, Temminck's Cormorants, Saunder's Gulls and Shearwaters visit the island in

the breeding season"). The other work (O Myong-Sok 1984) will be discussed in more detail in the entry given to the Crested Shell-duck, for it refers only to this species.

Investigations carried out by non-Korean ornithologists were limited to several regions of North Korea. They were conducted in 1978-1991 and with the exception of FIEBIG's studies were mainly expeditions taking from 2 to 6 weeks and their results were published (BOCHEŃSKI, OLEŚ & TOMEK 1981, MAUERSBERGER 1981, TOMEK 1984, 1985, TOMEK & DONTCHEV 1986, KOLBE 1988, GŁOWACIŃSKI, PROFUS & JAKUBIEC 1989, BÁLDI & WALICZKY 1992). All these ornithologists visited mostly the same places (i.e. places accessible to foreigners), and the differences between their names used by various authors resulted from their incorrect usage by Koreans. The place names applied here have been adopted on the basis of my knowledge of places visited by foreigners, while the names used by the authors of particular works are included as synonyms in the index of places.

C. Unpublished materials

The results of my visual observations made during the expeditions to North Korea have been assembled and stored in the form of a card-index in the Institute of Systematics and Evolution of Animals in Kraków. My own so far unpublished observations come from the following periods and regions:

– 18 Sep – 26 Oct 1986; provinces: Pyongyang, Pyongan South, Pyongan North, Ryanggang, Hwanghae South, Kaesong;

– 12 May – 19 Jun 1987; provinces: Pyongyang, Pyongan South, Pyongan North, Chagang, Hamgyong South, Hwanghae North;

– 27 Sep – 10 Oct 1988; mainly studies of the ZIP collection and short trips to the provinces: Pyongyang, Hwanghae North, Kaesong;

– 20 Sep – 16 Oct 1991, provinces : Pyongyang, Ryanggang, Hamgyong North, Kangwon.

Furthermore, the results of observations conducted by Nicholas PERTWEE in 1995 and 1996 are comprised in the present work. They are included in the above-mentioned card-index of birds of North Korea in the Institute of Systematics and Evolution of Animals in Kraków. The itinerary of Nicholas PERTWEE's expeditions, delivered to us in the form of a letter, covers the observations of birds in the periods: 29 Jan-4 Feb 1995 (provinces: Pyongyang, Pyongan South, Pyongan North) and 9-11 Apr 1996 (Hamgyong North Province).

III. PRESENTATION OF MATERIALS

The discussions of particular species contain all the observations of the given species made hitherto, arranged in growing numerical order of provinces (Roman numerals), inside a province according to the growing numeration of localities (Arabic numerals) and in the given place in chronological order. The time and place of observation are followed by the source of information. After all the items of information drawn on a given source is placed the abbreviated name of the collection or the author (authors) of the publication. The following abbreviations of sources are used:

AUST – information contained in AUSTIN's (1948) work, including that author's own observations, data cited from all accessible collections and publications, excepting WON Hong-Koo's;

BÁLDI – data from BÁLDI & WALICZKY's (1992) publication;

GŁOW – data from GŁOWACIŃSKI, PROFUS & JAKUBIEC's (1989) publication;

G & S – data from GIGLIOLI and SALVADORI (1887) publication;

HO – data from HO Hon's (1960) and HO Hon & RIM Chu-Yon's (1975) publications;

ISEA – collection in the Institute of Systematics and Evolution of Animals Polish Academy of Sciences, Kraków;

KOLBE – data from KOLBE (1988) publication;

KUR – data from KURODA (1918) publication;

MAUERS – data from MAUERSBERGER (1981) publication;

MZB – materials from the collection of the Museum of Zoology in Berlin;

PERT – PERTWEE's unpublished data;

SOWERBY – data from SOWERBY (1923) publication;

TACZ – data from TACZANOWSKI (1887, 1888) publications;

TOM – data from the publications by BOCHEŃSKI, OLEŚ & TOMEK (1981), TOMEK (1983, 1984), TOMEK & DONTCHEV (1986) and also own unpublished materials;

WON – data from WON Hong-Koo's publications (see above);

YANK – data from YANKOVSKII's (1898) publication, compared with YANKOWSKI's collection stored in Saint Petersburg (ZISP) and revised;

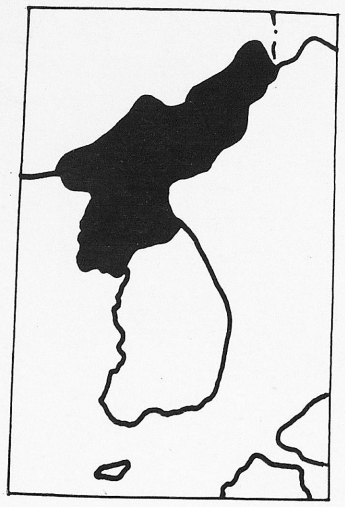
ZIP – materials from the collection of the Zoological Institute in Pyongyang;

ZISP – materials from the collection of the Zoological Institute in Saint Petersburg.

The degree of accuracy of the records and the manner in which their location are presented both in the text and on the maps of distribution need discussing. Not all the localizations of records (both in publications and in collections) were equally exact: in some cases the information was limited to the mentioning of district or the province, in others to the route between two towns. Observations localized only to an accuracy of province have no place-names given in the text, while on the maps are marked with an asterisk (★) put in the area of the appropriate province (approximately in its central point). Records of birds given to an accuracy of district are mentioned under the name of the district town and marked with dots for these towns on the map (it is often impossible to tell whether the given localization refers to the town itself or to the district area). As regards observations of birds reported from a route connecting two towns, the names of both towns and their numerical symbols are presented, e.g. Wonsan-Kosong (VIII-3-6), and a dot is placed between these towns on the map. Serious difficulties in localizing observation points turned up in connection with many data derived from the ZIP collection and WON Hong-Koo's publications. It appeared impossible to localize precisely the places named as the sites of observations of species (owing to the inaccessibility of detailed maps with all the villages plotted, the change of place-names, etc.), although the district and province in which they lay were known. Not to lose this piece of information (especially in a case of observations made in several places in the same district) the place-name is retained in the text but provided with the numerical symbol of the district town preceded with an asterisk, e.g. (*II-10) and marked with a district-town on the map. In several cases this numerical symbol with an asterisk was used to mark places which were not district towns but the nearest exactly localized places. Such markings were applied if places were situated close to each other so that it was impossible to mark them with two discrete dots.

The distribution of closely localized places (with numerical symbols) in North Korea, from which there exist reports on the occurrence of birds, is shown on a map (Fig. 1). The same map illustrates the extent to which that country has been explored: so far there is no information about birds living in the large northern and central areas. A full list of places in North Korea for which we possess information about birds is given below. In addition to the numerical symbols applied in the text (and corresponding with the dots on the map), the exact locations are defined by means of their geographical coordinates. The present names are adopted after the "Administrative Map of Korea"

Fig. 1. Distribution of localities providing the data on the North Korean birds. Roman numerals – particular provinces; arabic numerals – localities (for each provinces separately). The names of provinces and localities are given in the text (pp.:7-20).



128°E 129°E 130°E 131°E

126°E 127°E

124°E 125°E

42N°

41°N

40°N

39°N

38°N

I II III IV V VI VII VIII IX X XI

(1:1 100 000 issued by Kwahak, Paek Kwajason Chulpansa, Pyongyang, 1983). Spelling applied in this paper follows the system of Romanization employed in the English version of the "Map of Korea" (1:1 500 000) published by the Foreign Languages Publishing House, Pyongyang. Other (synonymous) names of the same places are given in square brackets (different from those on the labels of the specimens in the ZIP collection owing to the changes carried out in North Korea and the improper of differently spelled place-names in publications by European ornithologists).

IV. LIST OF LOCALITIES

I. Pyongyang City

1. Pyongyang	39°01'N	125°44'E	[Phjòngjang]
2. Sungho	39°02'N	125°58'E	[Syngho]
*2 Sidok			
*2 Sonbongri			
*2 Songmunri			
*2 Taechonri			
3. Kangdong	39°08'N	126°06'E	
*3 Namsanri			
*3 Kuponri			
*3 Ransanri			
*3 Rinsanri			
*3 Samdung			
*3 Ryongammyon			
4. Ponghwari	39°13'N	126°00'E	
5. Samsok	39°06'N	125°54'E	
*5 Sijok			[Sidshok]
6. Taesongsan	39°04'N	125°50'E	
7. Ryongsong	39°07'N	125°47'E	
8. Sunan	39°10'N	125°41'E	
*8 Hachari			
*8 Hari			
*8 Maram			
*8 Masanri			
*8 Tongpukri			
9. Hyongjesan	39°09'N	125°41'E	
10. Ryongaksan	39°02'N	125°34'E	[Rjongaksan, Jongak-san Mts]
11. Mankyongdae	39°00'N	125°35'E	[Mangjòngdä]
*11 Phaldongkyo			
12. Kangnam	38°53'N	126°05'E	
*12 Nansanri			
13. Chunghwa	38°51'N	125°48'E	[Tschunghwa]
14. Sangwon	38°50'N	126°05'E	
*14 Rodongri			
*14 Ryongdori			
15. Sogam	39°13'N	125°41'E	[Sokam, Sokamho]
16. Tongmyongwang	38°54'N	125°56'E	
17. Sadong	39°02'N	125°52'E	

Unknown district:

Amisan
Juamsan
Miamri
Misando
Moamsan
Paldongkyo
Ryonghungri
Ryongnamdong
Samchon
Samsin
Sokmunri
Sunfakan

II. Pyongan South Province

1. Rangrimri	40°17'N	126°58'E	
2. Huksuri	40°08'N	127°03'E	
3. Taehung	40°06'N	126°54'E	
*3 Choksuri			
*3 Phyonghwari			
*3 Sopaekri			
4. Kumsongri	39°56'N	127°02'E	
5. Tungpaeksan	39°53'N	126°51'E	
6. Ryongunri	39°32'N	126°37'E	
7. Namsangri	39°41'N	126°19'E	
8. Sinsongchon	39°21'N	126°14'E	
9. Songchon	39°15'N	126°13'E	
*9 Tohari			
10. Unsan	39°24'N	126°21'E	[Ynsan]
*10 Sunghwari			
11. Sunchon	39°26'N	125°54'E	[Suntchòn]
*11 Ankukri			
*11 Jehyonri			
*11 Kochonri			
*11 Namri			
*11 Nohari			
*11 Othanri			
*11 Paesanjom			
*11 Ponghakri			
*11 Ponghwa			
*11 Singhangri			
12. Jasan	39°21'N	125°54'E	[Tschasan]
13. Paeksongri	39°19'N	125°53'E	[Päksongri]
14. Pyongsong	39°15'N	125°52'E	
*14 Sainjang	39°15'N	125°53'E	
15. Jamosan	39°18'N	125°52'E	
16. Anju	39°37'N	125°39'E	
17. Pyongwon	39°19'N	125°36'E	
*17 Janghungri			

*17 Kongdokmyon			
*17 Namkyori			
*17 Opha			
*17 Paegkol			
*17 Songmaeri			
*17 Sori			
*17 Wolphyong			
*17 Yongyuri			
18. Raksaengri	39°07'N	125°20'E	
19. Chungsan	39°06'N	125°22'E	
*19 Chuponri			
*19 Hamjongri			
*19 Janganri			
*19 Jangkongri			
*19 Joksongri			
*19 Jungkonri			
*19 Mupongri			
*19 Ochonri			
*19 Ochongdong			
*19 Palsanri			
*19 Pansokri			
*19 Sijyok			
20. Sajonri	39°05'N	125°25'E	
21. Taedong	39°04'N	125°32'E	[Tädong]
*21 Hyongsanri			
*21 Kumjongri			
*21 Pusanri			
*21 Taesongri			
*21 Tochon			
*21 Wondang			
22. Pungjongri	39°01'N	125°14'E	
23. Ansokri	38°57'N	125°12'E	
24. Onchon	38°54'N	125°13'E	
*24 Kuryong			
*24 Onchonri			
*24 Okdokri			
*24 Pyongnam			
*24 Ryonggang			
*24 Sakju			
*24 Sohari			
*24 Taekyedo			
25. Tokto	38°44'N	124°59'E	
26. Nampho	38°44'N	125°23'E	[Nampo, Laudo, Taedonggang–Mündung]
27. Usanri	38°49'N	125°20'E	
28. Taesong-ho	38°55'N	125°25'E	[Taesongho, Tesŏng-ho]
*28 Kangso			
*28 Taeposan			
29. Ryongori	39°44'N	125°28'E	
*29 mouth of Chongchon			
*29 Tongrimri			

30. Yonpung-ho	39°39'N	125°48'E	[Jŏnphung-ho]
31. Kaechon	39°42'N	125°53'E	
32. Maengsan	39°39'N	126°30'E	
*32 Pukchang			
33. Tokchon	39°46'N	126°18'E	
34. Mundok	39°29'N	125°36'E	
35. Hwajin	39°12'N	125°24'E	
*35 Hanchon			

Unknown district:

Huthan
Kwangryongmun
Ryongyang
Sansokri
Taedongho
Unchon
Yangdok

III. Pyongan North Province

1. Pakchon	39°44'N	125°34'E	
*1 Soksanri			
2. Unjon	39°41'N	125°30'E	
*2 Maryongri			
3. Jongju	39°41'N	125°13'E	[Chongju]
*3 Posanri			
*3 Wonhari			
4. Kwaksan	39°41'N	125°05'E	
*4 Kohyonri			
5. Rohari	39°44'N	125°00'E	
6. Sonchon	39°48'N	124°54'E	[Sontchòn]
*6 Jangmori			
*6 Jongkongri			
*6 Mugido			
*6 Musanri			
*6 Namkyongri			
*6 Rapdo			
*6 Ryonganri			
*6 Ryonghyonri			
*6 Samsongri			
*6 Uido			
*6 Yongpongri			
7. Sinmido	39°33'N	124°54'E	
8. Sambongri	39°42'N	124°54'E	
9. Cholsan	39°47'N	124°40'E	
*9 Chaekdo			
*9 Dongsankos			
*9 Jangsongri			
*9 Padukisom			

*9 Rakdo			
*9 Ryongsando			
*9 Sangsokri			
*9 Tongchangri	39°47'N	124°42'E	
*9 Wondo			
10. Yomju	39°54'N	124°35'E	[Jòmdshu]
*10 Chongpalri			
*10 Haksori			
*10 Hasokri			
*10 Juari			
*10 Kachado			
*10 Kwankungri			
*10 Namsi			
*10 Pankungri			
*10 Songhwari			
*10 Tatari			
*10 Tongpalri			
11. Tasari	39°51'N	124°22'E	
12. Tasado	39°49'N	124°21'E	[Tasa]
13. Ryongchon	39°59'N	124°27'E	
*13 Jinghungri			
*13 Joho			
*13 Kusonri			
*13 Songrimri			
*13 Yangsi			
14. Sindo	39°50'N	124°14'E	
*14 Sindori			
*14 Maando			
*14 Pidansom			
*14 Mumyongpyong			
15. Ryongampho	39°56'N	124°22'E	
16. Uiju	40°12'N	124°32'E	
17. Sujinri	40°15'N	124°36'E	
18. Kumgwangri	40°16'N	124°37'E	
19. Pyokdong	40°36'N	125°19'E	
20. Chonmasan	40°12'N	125°02'E	
*20 Unrimri			
21. Taegwan	40°13'N	125°13'E	
*21 Unchangri			
*21 Suwanri			
22. Taechon	39°55'N	125°28'E	
*22 Singwangri			
23. Hyangsan	40°02'N	126°11'E	[Hangsan]
*23 Rimhungri			
*23 Thaepyongri			
24. Myohyangsan	40°01'N	126°19'E	[Mjohjang]
25. Sinhungri	40°57'N	126°06'E	
26. Panghyondong	39°53'N	125°14'E	
27. Kusong	39°58'N	125°14'E	

28. Synuiju	40°06'N	124°23'E	
29. Tegam-do	39°26'N	124°37'E	
*29 Sogam-do			
*29 Aedo			
30. Nyongbyon	39°49'N	125°48'E	

Unknown district:

Jongchon
Munsanri
Riuganpo
Sundo or Suundo
Sabekdo
Unmudo

IV. Chagang Province

1. Chasong	41°27'N	126°38'E	
2. Hwapyong	41°17'N	126°52'E	
*2 Karimri			
3. Okasan	41°25'N	127°02'E	
4. Karungryong	41°06'N	126°05'E	
5. Rangnim	40°58'N	127°07'E	
6. Myongmun	40°23'N	127°21'E	[Kekoge]
7. Paeksanri	40°22'N	126°30'E	
8. Wongungri	40°13'N	126°30'E	[Tongsin]
9. Masonri	40°09'N	126°22'E	
10. Huichon	40°11'N	126°17'E	
*10 Chongsan			
11. Manpho	41°09'N	126°17'E	

Unknown district:

Sambang
Kambang

V. Ryanggang Province

1. Huchang	41°31'N	127°16'E	
2. Ryongjori	41°23'N	127°03'E	
3. Sinpha	41°25'N	127°45'E	
*3 Hunghari			
*3 Kimjongsukup			
4. Samsu	41°17'N	128°01'E	
5. Hyesan	41°24'N	128°10'E	[Hjesan]
6. Pochon	41°33'N	128°19'E	[Počhon-bo]
*6 Chimbong			
*6 Hungsongri			
*6 Jongbong			[Chong-pong]
*6 Sinhungri			

*6 Thongnamri			
7. Naegokri	41°34'N	128°24'E	[Onsupiong]
8. Photae	41°42'N	128°19'E	
*8 Namphothae	41°44'N	128°24'E	
*8 Photaesan			
*8 Hongkyesu			
9. Rimyongsu	41°47'N	128°15'E	
*9 Konjang	41°44'N	128°16'E	[Kon-chang]
10. Samjiyon	41°50'N	128°19'E	[Samji-see, Samdžijon]
*10 Hohangryong			
*10 Hongnamri			
*10 Kanpaegsan			
*10 Nangsari			
*10 Pekebong			
*10 Yangsakol			
11. Sobaeksan	41°52'N	128°11'E	
12. Paekdusan	42°00'N	128°05'E	[Paektusan, Pektu-san]
*12 Kansambong			
*12 Nongsari			
*12 Nongsadong			
*12 Sansangbong			
*12 Soyonjibong			
*12 Taehongdan			
13. Mutubong	41°57'N	128°11'E	
14. Sinmusong	41°57'N	128°18'E	
15. Taehungdan	41°59'N	128°48'E	
*15 Yukok			
*15 5 hohonjang			
16. Paegam	41°34'N	128°48'E	
*16 Hwangbong			
*16 Pukkyesu			
*16 Taethaekhosu			
17. Pakchon	41°26'N	128°47'E	
18. Paegam	41°15'N	128°47'E	
19. Kapsan	41°05'N	128°16'E	
20. Mupo	42°01'N	128°36'E	
21. Homultang	41°46'N	128°08'E	

Unknown district:

Jungamsan
Mupong

VI. Hamgyong North Province

1. Undok	42°32'N	130°20'E	
2. Manpo	42°22'N	130°31'E	
3. Sobonpho	42°22'N	130°35'E	
*3 Tongbonpho			
4. Kulphori	42°20'N	130°34'E	
*4 Unsang			[Chosan Bay]

5. Sosura	42°16'N	130°36'E	
6. Alsom	42°14'N	130°31'E	[Rando]
*6 Pipa			
7. Unggi	42°21'N	130°23'E	[Sonbong]
*7 Josanri			
*7 Kumgangri			
*7 Manphori			
*7 Ryongphori			
*7 Sapho			
*7 Taeamri			
*7 Thori			
*7 Thowonri			
*7 Yoppori			
8. Taechodo	42°09'N	130°17'E	
9. Hoeryong	42°27'N	129°46'E	
10. Hungsanri	42°23'N	129°35'E	
11. Obongsan	42°19'N	129°42'E	
12. Musan	42°14'N	129°14'E	
*12 Jolkol			
*12 Samjangmyon			
13. Chayuryong	42°09'N	129°29'E	
14. Chayuri	42°07'N	126°26'E	
*14 Dongsakol	42°12'N	129°25'E	
15. Mayang	42°04'N	129°30'E	
*15 Sinchamri			
16. Puryong	42°04'N	129°43'E	
17. Ryongje-ho	41°56'N	129°55'E	
18. Koanjuryong	41°54'N	129°48'E	
19. Chongjin	41°48'N	129°45'E	[Ch'ongjin]
20. Yonsa	41°55'N	129°01'E	
*20 Jinhungri			
*20 Nongsadong			
*20 Nongsari			
21. Samphori	41°54'N	129°07'E	[Samdori]
22. Kwanmobong	41°42'N	129°16'E	
23. Onphori	41°39'N	129°30'E	
24. Ryongsanri	41°38'N	129°30'E	
25. Kyongsong	41°36'N	129°37'E	
*25 Chonpol			
*25 Ondori			
*25 Osangri			
*25 Pukhaso			
*25 Sanmori			
26. Kwanmori	41°33'N	129°30'E	
27. Mehyangri	41°33'N	129°24'E	
28. Orang	41°25'N	129°39'E	
29. Jangyon-ho	41°23'N	129°40'E	[Changyon-ho]
*29 Mugyeho			
*29 Mayonho			

*29 Ryongchacho			
30. Hwadae	40°50'N	129°29'E	
*30 Janghungri			
*30 Jongmunri			
*30 Jungsanri			
31. Hapyongri	40°50'N	129°32'E	
32. Kilju	40°56'N	129°20'E	
33. Oyuri	41°47'N	129°35'E	
34. Kumgangri	41°56'N	129°42'E	
35. Ryongchonri	41°54'N	129°54'E	
36. Ryonghyonri	41°32'N	129°31'E	
37. Chilbosan	41°02'N	129°30'E	
38. Kimchaek	40°39'N	129°11'E	
*Solban-san			
39. Rajin	42°13'N	130°17'E	
*Muchangri			

Unknown district:

Myongchon
Pakan-kori
Tumen-ula
Yuson

VII. Hamgyong South Province

1. Pukdae-chon riv.	40°59'N	128°47'E	
2. Kumdok	40°56'N	128°47'E	
3. Ripha	40°50'N	128°52'E	
4. Pogo	40°52'N	128°45'E	
5. Machonryong	40°37'N	129°04'E	
6. Kwangchon	40°33'N	128°59'E	
*6 Tongdokri			
7. Sangryong	40°31'N	129°01'E	
8. Tanchon	40°27'N	128°54'E	[Tanch'on, Tanchŏn]
*8 Sophyongri			
*8 Jongjungri			
9. Kawonri	40°27'N	128°46'E	
10. Kiam	40°23'N	128°47'E	
11. Riwon	40°20'N	128°38'E	
12. Jongdongri	40°22'N	128°36'E	[Songryong]
13. Yomsongdok	40°36'N	128°40'E	
14. Hochon	40°41'N	128°36'E	
15. Pukchong	40°15'N	128°19'E	
*15 Sinthaeri			
16. Sinpho	40° 02'N	128°10'E	
*16 Tonghori			
17. Ryongmu	40°03'N	128°08'E	[Phungdong]
18. Ryongsinri	40°11'N	128°01'E	
19. Kuryongri	40°10'N	127°48'E	
20. Hongwon	40°01'N	127°56'E	

*20 Jungsori			
21. Honamri	39°59'N	127°53'E	
22. Pujon	40°29'N	127°38'E	
*22 Hopanri			
23. Chailbong	40°38'N	127°44'E	
24. Hantaeri	40°40'N	127°32'E	
25. Jangjinho	40°31'N	127°12'E	
26. Jangjin	40°23'N	127°14'E	
27. Hwangchoryong	40°14'N	127°17'E	
28. Jonggwang	40°02'N	127°26'E	
29. Toksan	40°01'N	127°36'E	
30. Hamhung	39°56'N	127°31'E	
*30 Hungnam			[Hyngnam]
31. Jonphyong	39°48'N	127°23'E	
*31 Hungsanri			
*31 Tongpongri			
*31 Kwangpo			
32. Sinhungri	39°43'N	127°24'E	
33. Sinsang	39°40'N	127°24'E	
34. Chowonri	39°40'N	127°29'E	[Chowonsan, Chowonryong]
35. Ryondongri	39°30'N	127°30'E	[Yondongri]
36. Pomphori	39°31'N	127°25'E	
37. Inhung	39°31'N	127°21'E	
38. Kumya	39°32'N	127°14'E	
*38 Chonphyongri			
*38 Haejungri			
*38 Kwangdokri			
*38 Pandongri			
*38 Togkumari			
39. Hungsang	39°42'N	126°56'E	
40. Taesukri	39°48'N	126°50'E	
41. Ripsokri	39°46'N	126°49'E	
42. Yodok	39°37'N	126°50'E	
43. Jangdong	39°24'N	126°55'E	
44. Kowon	39°29'N	127°14'E	
45. Hamju	39°52'N	127°26'E	
46. Ryonghung riv.	39°24'N	127°26'E	

Unknown district:

?Anchon
Annong
Chaho
Juhung
Kapsan
Myongchon
Yongan

VIII. Kangwon Province

1. Chonnae	39°22'N	127°12'E	
*1 Yomjonri			
2. Munchon	39°22'N	127°20'E	
*2 Othanri			
*2 Ryongori			
3. Wonsan	39°09'N	127°25'E	[Genzan, Võnsan]
4. Sokwangsa	39°01'N	127°22'E	[Sok-vang-sa]
5. Sijungho	39°00'N	127°48'E	[Siyung-ho, Sidshungho]
6. Kosong	38°45'N	128°10'E	
7. Samil-pho	38°41'N	128°18'E	[Samilpo]
8. Kumgangsan	38°39'N	128°07'E	[Kymgang]
*8 Onjongri	38°41'N	128°12'E	[Kosong, Ondshongri]
*8 Manmulsan	38°43'N	128°08'E	
*8 Kuryong	38°38'N	128°10'E	
9. Kumgang	38°38'N	127°59'E	
*9 Naekangri			
10. Sambang	38°43'N	127°21'E	
11. Ichon	38°28'N	126°53'E	
*11 Mukungri			
*11 Sanjiri			
12. Pankyo	38°46'N	127°00'E	[Pangyo]
*12. Kujangri			
13. Popdong	38°58'N	127°04'E	
14. Yonghung	39°21'N	127°24'E	[Lazarev]
15. Tongchon	39°00'N	128°07'E	[Alsom]
16. Kukdo	39°09'N	127°43'E	
17. Anbyon	39°02'N	127°31'E	
18. Tongjongho	39°06'N	127°45'E	[Tongchon-ho]

Unknown district:

Gumbong riv.
Gumbangyang
Masingryong
Nohori
Tongchon
Ribsokri

IX. Hwanghae North Province

1. Sinpyong	38°55'N	126°43'E	[Sinphjŏng]
2. Tongsanri	38°49'N	126°50'E	
3. Koksan	38°48'N	126°40'E	
*3 Kupongsan			
4. Taegaksan	38°51'N	126°35'E	
5. Suan	38°47'N	126°20'E	
6. Yonthan	38°38'N	125°58'E	
7. Sohungho	38°25'N	125°57'E	[Sohyng-ho]

8. Rinsan	38°19'N	126°07'E	
*8 Chuamri			
*8 Paekchonri			
*8 Ryongpunri			
*8 Techonri			
9. Sohung	38°26'N	126°13'E	
*9 Raengjongri			
10. Singye	38°30'N	126°30'E	
11. Pyongsan	38°19'N	126°22'E	
*11 Nuchonri			
*11 Pongtanri			
*11 Sangamri			
*11 Taehungri			
12. Thosan	38°19'N	126°42'E	
13. Kumchon	38°09'N	126°28'E	
*13 Kangpukri			
*13 Kumkyo (= bridge)			
*13 Wangkol			
*13 Yangham			
*13 Ungyesan			
14. Sansongri	38°06'N	126°36'E	
15. Wolamri	38°07'N	126°28'E	
16. Sariwon	38°30'N	125°48'E	[Sariwŏn]
17. Yonsan	38°52'N	126°15'E	

Unknown district:

Janghyong
Chodo
Chonmasan
Kaedong

X. Hwanghae South Province

1. Jedo	38°41'N	125°22'E	
2. Unchon	38°33'N	125°25'E	
*2 Mangryong			
3. Anak	38°31'N	125°29'E	
*3 Kangchongri			
4. Kumsanri	38°36'N	125°09'E	
5. Unryul	38°32'N	125°10'E	
6. Kuwolsan [mts]	38°30'N	125°16'E	
7. Woljiri	38°28'N	125°19'E	
8. Woljongri	38°30'N	125°15'E	
9. Talchonri	38°24'N	125°14'E	
10. Samchon	38°20'N	125°18'E	
*10 Jambongri			
*10 Kohyonri			
*10 Kumchonri			
*10 Namri			

*10 Onchon
*10 Paekhyonri
*10 Tonghyongri
*10 Unchon
*10 Ungyesan

11. Sinchon	38°21'N	125°29'E	[Sinčhŏn]
12. Songhwa	38°21'N	125°08'E	
*12 Sakiri			
*12 Kasari			
13. Kwail	38°28'N	125°01'E	
*13 Phunghaeri			
14. Ryongyon	38°09'N	124°53'E	
15. Samsanri	37°58'N	125°14'E	
16. Sunwiri	37°43'N	125°16'E	[Sunwido]
*16 Sohaeri			
17. Tongamri	37°43'N	125°21'E	
18. Sangkyori	37°45'N	125°25'E	
19. Kangryong	37°55'N	125°30'E	
*19 Koangchonri			
*19 Kumsuri			
20. Hyongchesom	37°58'N	125°44'E	
21. Pyoksong	38°02'N	125°32'E	
*21 Jangkongri			
22. Haeju	37°02'N	125°44'E	[Hedžu]
23. Chongdan	37°58'N	125°56'E	
24. Suyangsan	38°09'N	125°42'E	[Sujang-san]
25. Changsu	38°11'N	125°46'E	
26. Ongjin	37°56'N	125°22'E	
*26 Namhaeri			
27. Changyon	38°15'N	125°05'E	
28. Chaeryong	38°24'N	125°37'E	
29. Paechon	38°00'N	126°19'E	
30. Yonan	37°55'N	126°09'E	
31. Pyongchon	38°07'N	126°12'E	
*31 Unchonri			
*31 Paeksongri			

Unknown district:

Dongpori
Guranri
Haebangri
Yonpaek

IX-X. Hwanghae

Unknown district:

Chodo
Sodo
Yonpaek

XI. Kaesong City

1. Kaesong	37°58'N	126°33'E	[Käsòng, Songdo]
2. Jangphung	38°04'N	126°41'E	
3. Pagyon	38°04'N	126°34'E	[Tschonmasan, Pagjon]
4. Haesonri	37°59'N	126°30'E	
5. Kaepung	37°57'N	126°28'E	
*5 Haepyongri			
6. Panmunjom	37°57'N	126°40'E	[Phanmundshom, Panmunchom]
7. Kongminghang	38°03'N	126°36'E	

Province unknown:

Chonpansok
Huthan
Hungkyesu
Ryomchang
Sayukpun
Yangju
Yonan

The taxonomic arrangement of birds and nomenclature were adopted after HOWARD & MOORE (1991). Serial numeration was applied for the species whose occurrence in North Korea had been ascertained, while those found only in South Korea were also included in the text but with no serial numbers affixed to them; instead, a note about their not having been observed was provided. They are mentioned here because they figure in a lists of species presented by North-Korean authors (KIM Ri-Thae & O Hung-Dam 1982, O Hung-Dam 1988), which may wrongly suggest that they belong under the avifauna of North Korea.

The species name of a bird is followed only by these of its synonyms under which it occurs in the works cited in the text. Further come all the places in which the species was found, uncertain and doubtful observations being indicated with a question mark "?". The places where the birds were observed in the territory of North Korea are shown on maps – separately for each species. The following symbols are used on the maps:

empty – data from before 1950:
- ○ exact localization, found only in one year
- ○ exact localization, found at least in two years
- ☆ found in the province area only in one year
- ☆ found in the province area found at least in two years

solid – data gathered after 1950
- • exact localization, found only in one year
- ● exact localization, found at least in two years
- ★ found in the province area only in one year
- ★ found in the province area found at least in two years

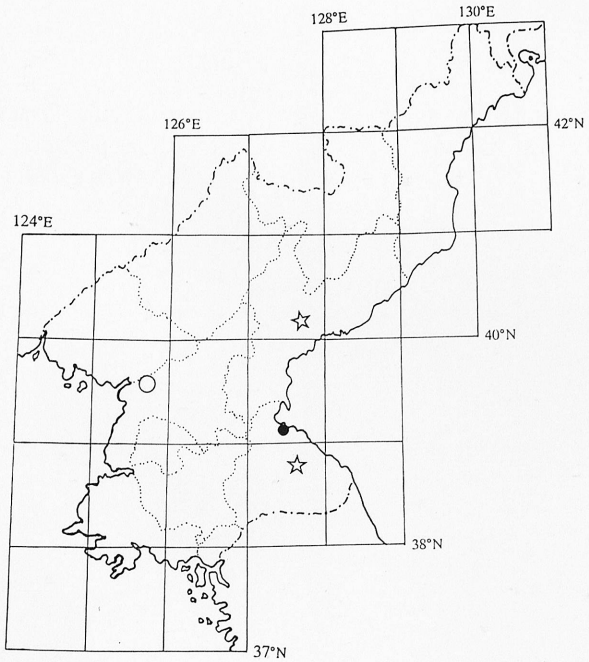
After the presentation of data, each species is supplied with a commentary comprising a discussion of its occurrence in North Korea on the basis of these data and against a background of its presence in the adjoining areas. The occurrence of species whose status was uniform throughout the region and as to which all the authors' opinions were concordant was not discussed or compared with the situation in the neighbouring countries.

The standard measurements (in mm) of the folded wing, tarsus, bill (measured from the feathered area, in birds of prey and owls also from the cere) and tail of specimens stored in ZIP, ISEA and MZB collections are given for most species. The measurements of birds from the ZIP collection (now copied from the labels) were taken at the time when these birds had been obtained, with the exception of the members of the order Falconiformes. The measurements of the wing, tarsus and bill of the birds of prey did not always agree with those given on the labels and for this reason they were measured again. In some cases the number of specimens measured exceeds the number of records, because some specimens were collected at the same time (the same date and place of acquisition).

V. THE DETAILED PART – SURVEY OF SPECIES

GAVIIFORMES

1. *Gavia stellata* PONTOPPIDAN, 1763



Data:

Pyongan South (II): Anju (II-16): 22 May 1931, 18 Jun 1932 (WON or 18 Nov 1932 WON cited by AUST);

Hamgyong South (VII): 17 Nov 1914 (AUST);

Kangwon (VIII): 10 Nov 1911 (AUST), Wonsan (VIII-3): May 1970 (ZIP);

Measurements (1 specimen of the ZIP collection): wing 272, tarsus 61, bill 56, tail 65 mm.

Observed sporadically on E and W coasts; so far 5 records, of which only one in last 50 years.

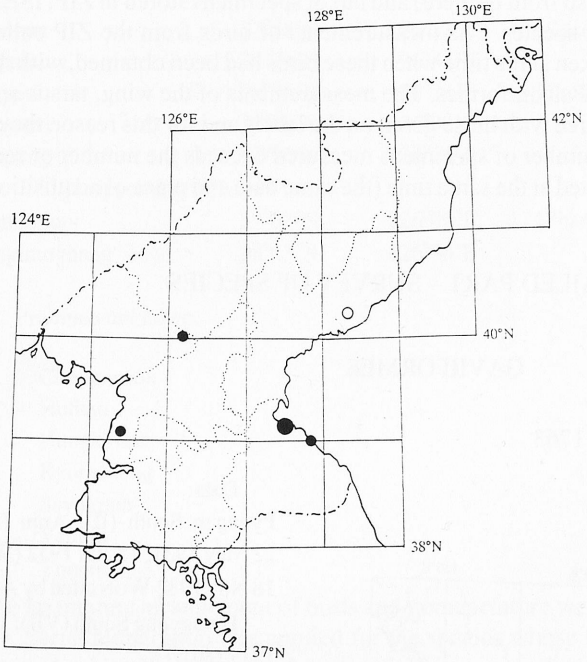
2. *Gavia arctica* (LINNAEUS, 1758)

Data:

Pyongan South (II): Chungsan (II-19): 29 Jul 1957 (ZIP);+

Pyongan North (III): Hyangsan (III-23): 16 Jun 1990 (FIEB);

Hamgyong South (VII): Pukchong (VII-15): 20 Nov 1914 (AUST);



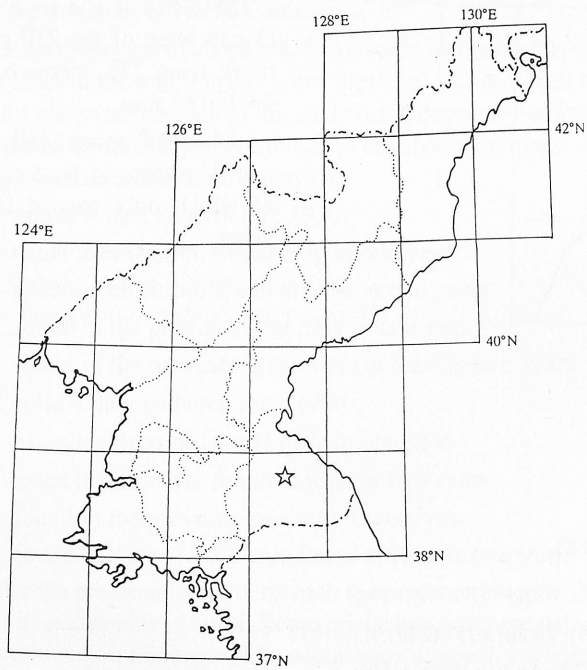
Kangwon (VIII): Wonsan (VIII-3): May 1970 (ZIP), 17, 18 Dec 1988, 11 Dec 1989, Sijungho (VIII-5): 9 Dec 1989 (FIEB).

Measurements (2 specimens of the ZIP collection):

	♀	?sex
wing	296	272
tarsus	73	79
bill	67	61
tail	48	52

Observed on E and W coasts (7 records) and sporadically inland (1 record). According to FIEBIG (1993), winters regularly on the waters of the eastern coast. Once observed also in breeding season, there being no information about nesting. Black-throated Diver's nearest breeding grounds are on Sakhalin (FLINT 1982, NECHAEV 1991).

3. *Gavia adamsii* (GRAY, 1858)
[*Gavia immer adamsii*]



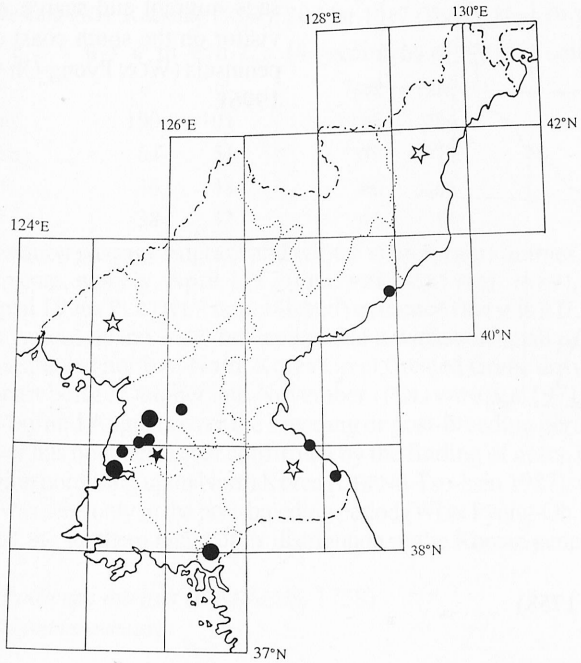
Data:

Kangwon (VIII): 7 Apr 1914 (AUST).

Observed only once on E coasts. The mentions of its probable frequent wintering on the Korean coasts (AUSTIN 1948, GORE & WON 1971) have not been confirmed yet.

PODICIPEDIFORMES

4. *Tachybaptus ruficollis* (PALLAS, 1764)
[*Colymbus ruficollis*, *Podiceps ruficollis*]



Data:

Pyongyang (I): Aug 1991 (BÁLDI), Pyongyang (I-1): 30 Jan, 1 Feb 1995 (PERT), Mankyongdae (I-11): 16 Apr 1987, Sogam (I-15): 17 Apr 1987 (GŁOW), winters 1987-90 (FIEB);

Pyongan South (II): Sinsongchon (II-8): 15 Nov 1961 (ZIP), Nampho (II-26): 5, 22 Oct, 5 Nov 1988, 4, 31 Aug, 20 Nov 1989 (FIEB), Taesong-ho (II-28): 24 Apr 1987 (GŁOW);

Pyongan North (III): Sep (AUST); Hamgyong North (VI): 15 Oct 1912 (AUST);

Hamgyong South (VII): Tanchon (VII-8): 17 Sep 1989 (FIEB); Kangwon (VIII): 1 Dec 1914 (AUST), Sijungho (VIII-5): 19 Apr 1987, Kosong (VIII-6): 24 Apr 1987 (GŁOW);

Kaesong (XI): Kaesong (IX-1): 1,2,6 Nov 1956; 2 Jan, 2 Feb, 7 Mar, 3 Apr, May 1957, 20 Oct, 2 Nov 1958, Jan, Feb 1959 (WON), 20 Sep 1960 (ZIP).

M e a s u r e m e n t s (two specimens of the ZIP collection):

	♀	? sex
wing	108	106
tarsus	37	29
bill	17	18

Most frequently observed in migration season and in winter. Family parties present also towards the end of August and in September (FIEBIG 1993). Since the autumn passage of this species begins in September (KUROCHKIN 1982), it well be that those already nomadic parties and the statement of their nesting in North Korea (WON Hong-Koo 1963, GORE & WON Pyong-Oh 1971) needs confirmation.

5. *Podiceps grisegena* (BODDEART, 1738)
[*Colymbus griseigena*]

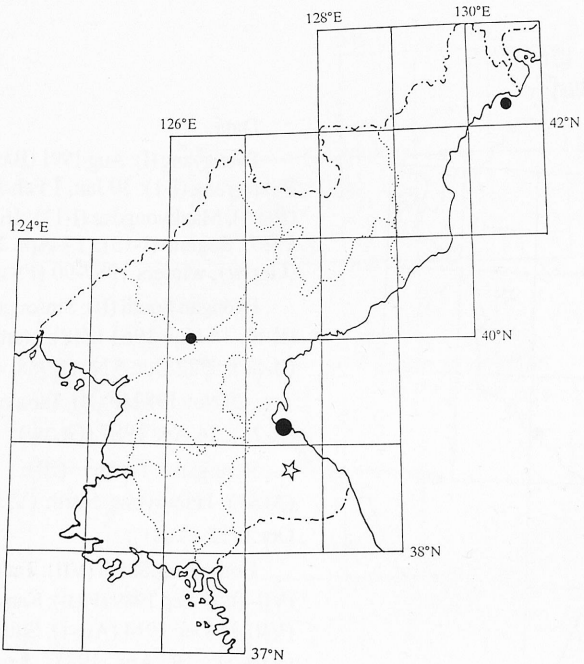
Data:

Pyongan North (III): Myohyangsan (III-24): 10-12 May 1990 (FIEB);

Hamgyong North (VI): Pipa (*VI-6): 10 Apr 1996 (PERT);

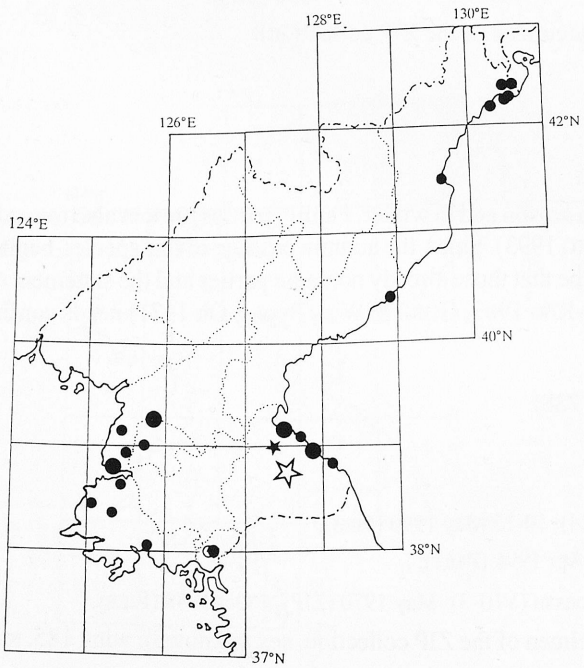
Kangwon (VIII): 9 Apr 1914 (AUST), Wonsan (VIII-3): May 1970 (ZIP), 1 Oct 1988 (FIEB).

M e a s u r e m e n t s (1 specimen of the ZIP collection, sex unknown): wing 185, tarsus 57, bill 53, tail 40.



Very rare bird of passage. Lack of observations may testify its scarcity, but more probably a poor state of study of the migratory fauna, for this species is a passage migrant and scarce winter visitor on the south coast of the peninsula (WON Pyong-Oh 1993, 1996).

6. *Podiceps cristatus* (LINNAEUS, 1758)
[*Colymbus cristatus*]



Data:

Pyongyang (I): Mankyongdae (I-11): 8, 16 Apr 1987 (GŁOW), Sogam (I-15): 6 Aug 1979, 24 Oct 1984 (TOM), 17 Apr 1987 (GŁOW);

Pyongan South (II): Janganri (*II-19): 8 Nov 1958 (ZIP), Nampho (II-26): 17 Apr 1987 (GŁOW), 27 Nov, 7 Dec 1988, 24 Aug, 10, 19 Oct, 24 Sep 1989, 23 Jan, 2, 6 Mar, 2 Apr 1990 (FIEB), 31 Jan 1995 (PERT), Taesong-ho (II-28): 27 Nov 1988 (FIEB);

Hamgyong North (VI): Manpo (VI-2): 9 Apr 1996, Tongbonpho (*VI-3): 9 Apr 1996, Alsom (VI-6): 11 Apr 1996, Pipa (*VI-6): 10 Apr 1996 (PERT), Ryonghyonri (VI-36): 5 Oct 1991 (TOM), Rajin (VI-39): 10 Apr 1996 (PERT);

Hamgyong South (VII): Tanchon (VII-8): 23 May 1987 (TOM);

Kangwon (VIII): 23 Nov 1909, 14 Feb 1914, Apr (AUST), 24 Apr 1987, Wonsan (VIII-3): 19, 24 Apr 1987 (GŁOW), 14, 17 Dec 1988, 2, 3, 28 Feb 1990 (FIEB), 9 Oct 1991 (TOM), Sijungho (VIII-5): 24 Apr 1987 (GŁOW), 9 Dec 1990 (FIEB), Sijungho-Kosong (VIII-5-6): 24 Apr 1987 (GŁOW), Tongjongho (VIII-18): 8 Dec 1989 (FIEB);

Hwanghae South (X): Mangryong (X-2): 22 Oct 1962, Samchon (X-10): 21 Jan 1961 (ZIP), Kwail (X-13): 2 Dec 1988 (FIEB), Haeju (X-22): 5 May 1970 (ZIP);

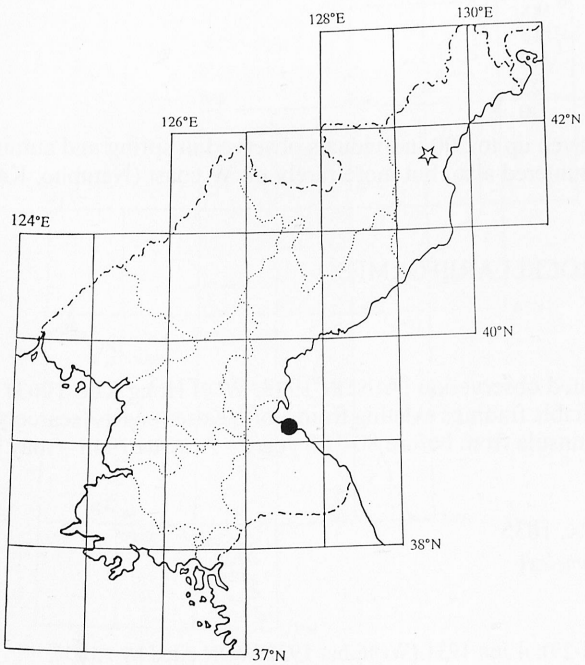
Kaesong (XI): Kaesong (XI-1): 20 Mar 1917 (WON), May 1970 (ZIP).

M e a s u r e m e n t s (4 specimens of the ZIP collection):

	♂	♂	?sex	?sex
wing:	190	191	198	186
tarsus	64	54	59	72
bill	36	43	46	46
tail	38	42	45	39

Common passage migrant and winter visitor, rare summer visitor. Numerous observations from recent years, namely, April 1987 (GŁOWACIŃSKI et al. 1989), winters of 1987-1990 (FIEBIG 1993) and April 1996 (PERTWEE unpublished) evidence that it is a frequent bird on passage both on coasts and on various inland water bodies and that it winters in small parties of several individuals each. In the regions situated north of North Korea Great Crested Grebe arrive in breeding grounds in April and do not depart before October and November (POLIVANOVA 1971, PANOV 1973). And so observations from May and August cover the breeding or post-breeding period and would indicate nesting, which however has not been as yet confirmed by the finding of nests. Great Crested Grebe nests in China in the region bordering upon North Korea (CHENG Tso-hsin 1987), whereas in the southern part of the peninsula was seen only in the post-breeding period (WON Pyong-Oh 1981a, 1993, 1996). It is therefore probable that the southern range of its distribution in the Korean peninsula extends across North Korea.

7. *Podiceps auritus* (LINNAEUS, 1758)
[*Colymbus auritus*]



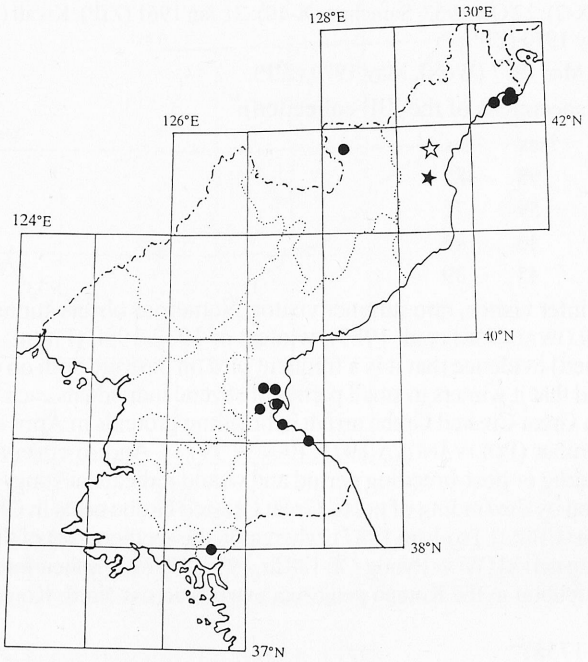
Data:

Hamgyong North (VI): 6 Oct 1929 (AUST);

Kangwon (VIII): Wonsan (VIII-3): 3 Oct, 17 Dec 1988, 9, 11 Feb 1990 (FIEB).

Scarce passage migrant, winters in small numbers on E coast. As this species winters in the southern part of the peninsula (GORE & WON Pyong-Oh 1971, WON Pyong-Oh & HAM Kyu-Hwang 1984, 1985, WON Pyong-Oh 1986b), there is some possibility of more frequent meetings with Horned Grebe in North Korea. Lack of observations from W coast despite investigations conducted there in winters 1987-1990 (FIEBIG 1993) indicates that the wintering areas of this species do not include the territory of North Korea.

8. *Podiceps nigricollis* BREHM, 1831
[*Colymbus caspicus*, *Colymbus nigricollis*]



Data:

Ryanggang (V): Samjiyon (V-10): 13 Oct 1959 (ZIP);

Hamgyong North (VI): 26 Sep 1917 (AUST), 26 Oct 1960, Kulphori (VI-4): 6 Apr 1959 (ZIP), 28 Oct 1959 (WON), Alsom (VI-6): 11 Apr 1996, Pipa (*VI-6): 10 Apr 1996, Rajin (VI-39): 10 Apr 1996 (PERT);

Hamgyong South (VII): Inhung (VII-37): 4 Nov 1960, Haejungri (*VII-38): 4, 14 Nov 1960 (ZIP);

Kangwon (VIII): Chonnae (VIII-1): 4 Nov 1969 (ZIP), Wonsan (VIII-3): 24 Apr 1987, Sijungho (VIII-5): 19 Apr 1987 (GŁOW), Yonghung (VIII-14): 19 Oct 1897 (YANK), 9 Oct 1960 (ZIP);

Kaesong (XI): Kaesong (XI-1): 15 Nov 1957 (WON);

no data: 1 subad (ZIP).

M e a s u r e m e n t s (7 specimens of the ZIP collection):

	6 ♂♂	$\bar{x}$	? sex
Wing	121-135	130.5	118
tarsus	39-42	41.0	40
bill	21-25	22.7	23
tail	26-40	33.5	30

Passage migrant; flocks numbering even up to 200 individuals observed in spring and autumn (FIEBIG 1993), chiefly on E coast. Encountered also, but more rarely on W coast (Nampho, Kaesong) or inland (Samjiyon).

PROCELLARIIFORMES

Diomedea albatrus PALLAS, 1769

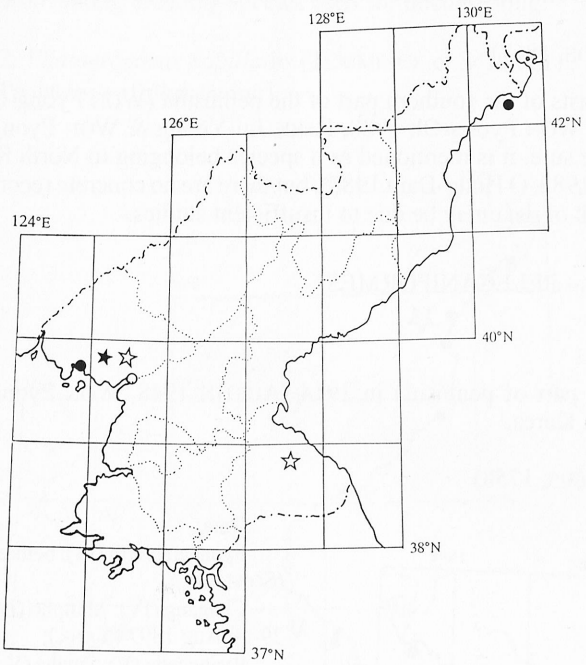
There is only one doubtful and undated observation (AUSTIN 1948, WON Hong Koo 1963) of this species from Sindo I. (III-14). No reliable findings existing from North Korea coasts (scarcely 3 reports from the southern part of the peninsula from before 80-100 years – AUSTIN 1948 – may be regarded as dependable).

9. *Calonectris leucomelas* TEMMINCK, 1835
[*Puffinus leucomelas*, *Procellaria leucomelas*]

Data:

Pyongan South (II): Chongchon riv. (*II-29): 4 Jun 1931 (WON, but 1932 WON cited by AUST);

Pyongan North (III): 9 Jul 1917, 10 Jun 1917 (AUST), 14 May 1967 (ZIP), Rapdo (*III-6): Jun 1959 (WON);



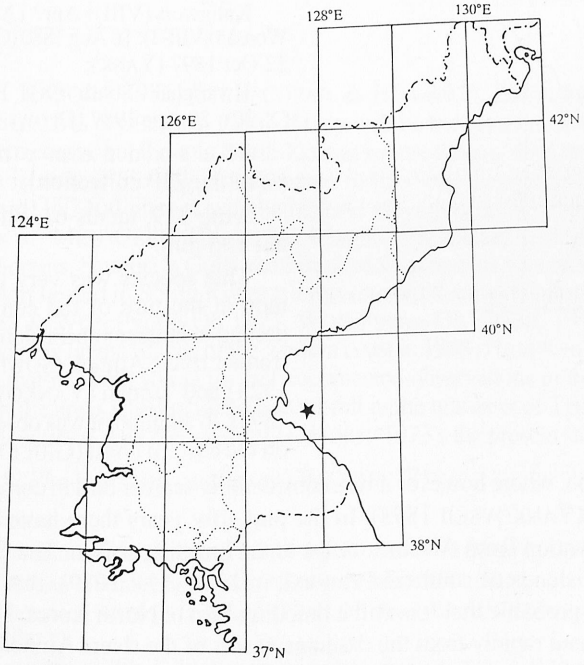
Hamgyong North (VI): Alsom (VI-6): 5 May (CHONG 1974 cited by NEUFELDT & WUNDERLICH 1984).

Kangwon (VIII): 20 May 1949 (WON).

Measurements (1 specimen of the ZIP collection): wing 319, tarsus 45, bill 47.5, tail 156.

Rare breeding birds on island situated along W and E coasts, more frequent on W coast. This birds is probably more frequent than might be judged from the number of observations, for in the southern part of the peninsula it was and is a common bird (SOWERBY 1923, GORE & WON Pyong-Oh 1971, WON Pyong-Oh 1987a, 1993, 1996, WON Pyong-Oh et al. 1993b), and its breeding grounds are known from all the neighbouring regions (SHUNTOV 1982, NEUFELDT & WUNDERLICH 1984).

10. *Puffinus tenuirostris* (TEMMINCK, 1835)



Data:

Kangwon (VIII): 20 Jun 1963 (RIM Chun-Hun 1963b).

Measurements (after RIM Chun-Hun): wing 263, 287; tarsus 56, 52; bill 32, 29.

Only once a flock was observed off North Korean coast. The birds were fishing in the wake of a vessel at a distance of 40 miles from Wonsan (VIII-3). Eleven of them were caught. This was the first record of a number of Slender-billed Shearwaters in the proximity the Korean coasts; there were, besides, two observations of single birds in the southern part of the peninsula (GORE & WON Pyong-Oh 1971). This species nests by the coasts of Australia and migrates to wintering grounds in the northern hemisphere (SHUNTOV 1982). The small number of records from the coastal region of the Korean Peninsula indicates that the mi-

gration route of this birds keeps clear of it. On the other hand, the Slender-billed Shearwater is a bird often met with off the coasts Sakhalin and the Japanese islands (KURODA 1975, NECHAEV 1991).

Oceanodroma monorhis (SWINHOE, 1867)

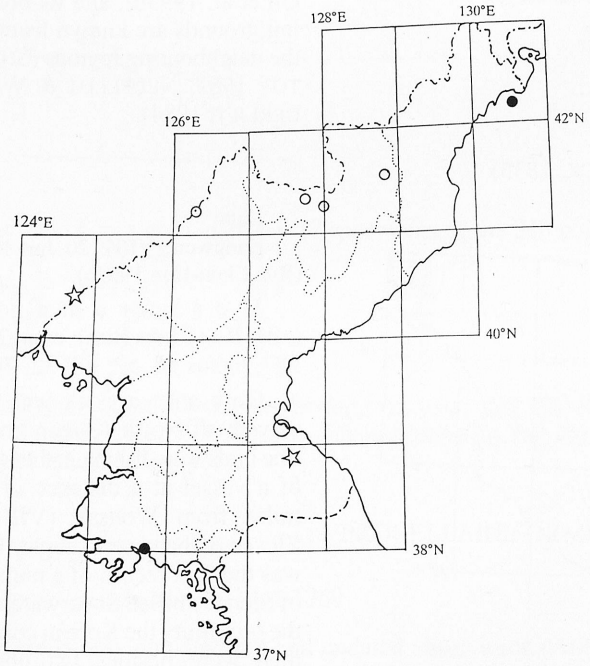
It is a breeding species on the coasts of the southern part of the peninsula (WON Pyong-Oh & LEE Han-Soo 1986, LEE Ki-Seop & WON Pyong-Oh 1988, PARK Jin-Young & WON Pyong-Oh 1993b, WON Pyong-Oh 1996). To be sure, it is mentioned as a species belonging to North Korea fauna (KIM Ri-Thae & O Hung-Dam 1982, O Hung-Dam 1988), but there are no concrete records as yet. Its nesting is probale and the lack of data may be due to insufficient studies.

PELECANIFORMES

Pelecanus crispus BRUCH, 1832

Observed only once in southern part of peninsula in 1914 (AUSTIN 1948, WON Pyong-Oh 1981a), hitherto unobserved in North Korea.

11. *Phalacrocorax carbo* (LINNAEUS, 1758)



Data:

Pyongan North (III): before 1932 (SOWERBY);

Chagang (IV): Manpho (IV-11): 29-30 Aug 1897 (YANK);

Ryanggang (V): Sinpha (V-3): 19 Aug 1897, Samsu (V-4): 24 Jul 1897, Paegam (V-16): 22 Jun 1897 (YANK);

Hamgyong North (VI): Alsom (VI-6): 19 June 1959 (ZIP);

Kangwon (VIII): Apr? (AUST), Wonsan (VIII-3): 16 Aug 1880 (G&S), 22 Oct 1897 (YANK);

Hwanghae South (X): Haeju (X-22): 29 Apr 1987 (GŁOW).

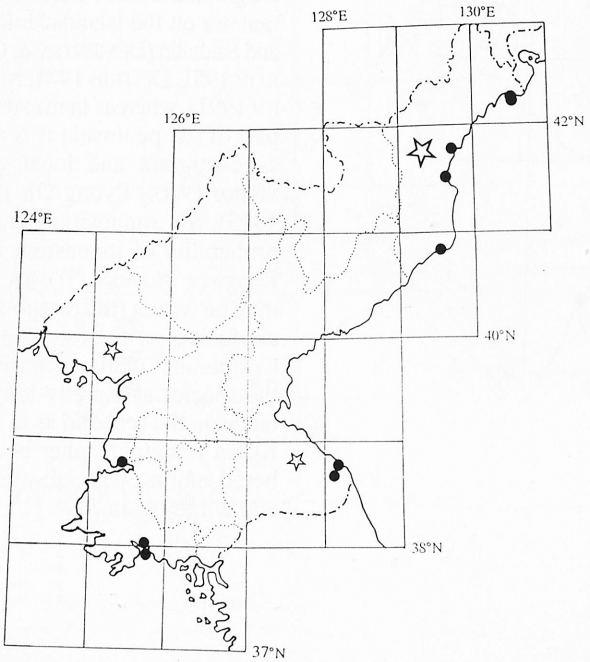
Measurements (♀ of the ZIP collection):

wing 319, tarsus 61, bill 64, tail 136 mm.

This species was very common at the turn of the century, nesting in large numbers along the frontier rivers Amnok (SOWERBY 1923) and Tuman (YANKOVSKII 1898). In addition, it was observed on the eastern coast (GIGLIOLI & SALVADORI 1887) in the Wonsan region, where however it was considerably scarcer bird in comparison with its abundance on the rivers (YANKOVSKII 1898). In the past fifty years there have been hardly two reports, but only the observation from Alsom I. refers to the breeding season. The Great (Common) Cormorant nested on the islands of southern Primorsk in 1984 (LER 1989), that is, a short distance away Alsom I. and it is probable that it is still a breeding bird in North Korea. However, seeing that this species has retreated rapidly from the drainage basins of the rivers Amnok and Tuman (the nesting of the Great Cormorant in this region is not confirmed by the current Chinese sources, e.g. ETCHECOPAR & HÜE 1978; CHENG Tso-hsin 1987, MEYER DE SCHAUENSEE 1984, nei-

ther was it observed by FIEBIG or the members of the ornithological expeditions in 1978-1991), its inclusion among breeding species calls for documenting.

12. *Phalacrocorax capillatus* (TEMMINCK et SCHLEGEL, 1850)
[*Phalacrocorax filamentosus*]



Data:

Pyongan South (II): Nampho (II-26): Aug 1991 (BÁLDI);

Pyongan North (III): 5 Jun 1917 (AUST);

Hamgyong North (VI): 29 Aug 1917, 2, 20 Oct 1929 (AUST), Alsom (VI-6): 11 Apr 1996, Pipa (*VI-6): 10 Apr 1996 (PERT), Chongjin (VI-19): Aug 1991 (BÁLDI), Hapyongri (VI-31): 15 Sept 1959 (ZIP), Ryonghyonri (VI-36): 5 Oct 1991 (TOM);

Kangwon (VIII): 18 Dec 1926 (AUST), Kosong (VIII-6): 9 Oct 1991 (TOM), Kumgangsan (VIII-8): Aug 1991 (BÁLDI);

Hwanghae South (X): Hyongchesom (X-20): 13 Oct 1984 (TOM), Haeju (X-22): 29 Apr 1987 (GLOW).

Measurements (2 specimens of the ZIP collection):

wing 304, 340; tarsus 63, 68; bill 60, 72; tail 165, 185.

Species rarely come upon all year round. According to many authors, it nests on Korean coasts (WON Hong-Koo 1963, VAURIE 1964, KURODA 1975, ETCHECOPAR & HÜE 1978, MEYER DE SCHAUENSEE 1984, SONOBE 1982, KNYSTAUTAS & SHIBNEV 1986). It may well be that it nests on the islands situated along the eastern and western coasts, but the sole North-Korean source dealing with the present nesting of some rare species on these islands is too vague and seems to be virtually unreliable ("The circumference of this island [Alsom] is 2400 meters and the highest elevation in the island is 111 meters. Several tens of thousands of Mew Gulls, Thin-billed Murres, Spectacled Guillemots, Great Cormorants, Temminck's Cormorants, Saunder's Gulls and Streaked Shearwaters visit the island in the breeding season" – SONOBE 1987). It nested in South Korea till the seventies, now it is there a passage migrant and winter visitor (GORE & WON Pyong-Oh 1971, WON Pyong-Oh 1986b, 1993) and in the breeding season was observed only on the islands of the western coast in 1988 (HAM Kyu-Hwang & BAEK Un-Gi 1988). Considering that in North Korea the last documented observations in the breeding season come from 1959 and that in the areas situated in the north a fall in the numbers of Temminck's Cormorants was observed till the seventies (LABYZUK et al. 1971, PANOV 1973), the present status of this species needs explanation.

13. *Phalacrocorax pelagicus* PALLAS, 1811

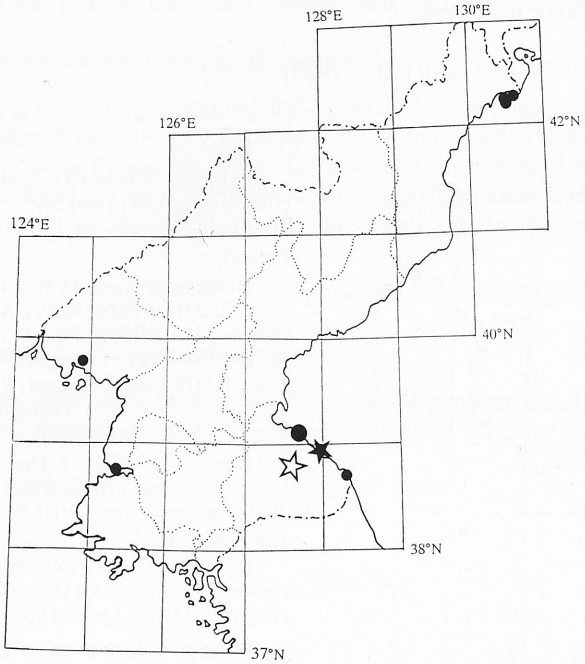
Data:

Pyongan South (II): Nampho (II-26): 31 Jan 1995 (PERT);

Pyongan North (III): Rapdo (*III-6): 17 May 1967 (ZIP);

Hamgyong South (VI): Sosura (VI-5): 27 Mar 1959 (ZIP), Alsom (VI-6): 11 Apr 1996, Pipa (*VI-6): 10 Apr 1996 (PERT);

Kangwon (VIII): 1, 30 Apr 1914, 1 Dec 1924 (AUST), 7, 9 Oct 1978, 10 June 1980, Samilpho (VIII-7): 10 Aug 1979 (TOM), Tongjongho (VIII-18): 20 Aug 1989, 31 Jan, 2 Apr 1990 (FIEB).

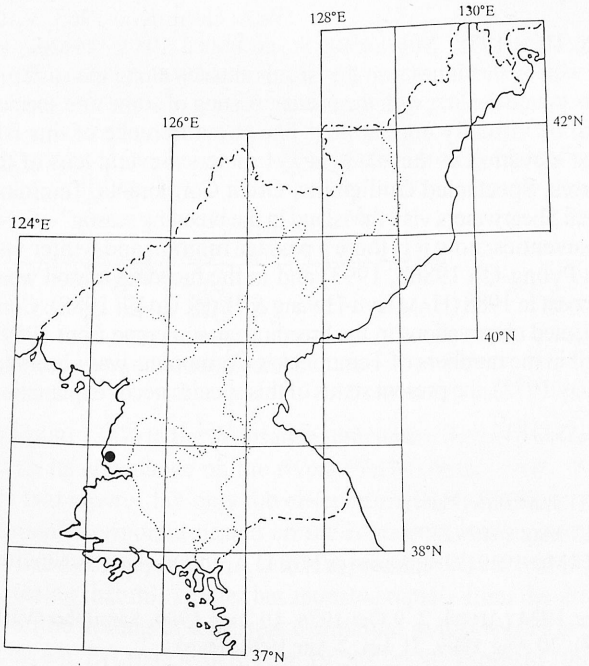


Measurements (2 ♀♀ of the ZIP collection):

wing 255, 263; tarsus 50, 51; bill 45.5, 48; tail 120, 137.

Species rarely observed, mostly in post-breeding period. The nearest grounds of the Pelagic Cormorant are on the islands Hokkaido and Sakhalin (DEMENTEV & GLADKOV 1951, DISTRIB 1981, NECHAEV 1991), whereas in the southern part of the peninsula it is a passage migrant and local winter visitor (WON Pyong-Oh 1987a, 1993). My supposition as to the probability of its nesting in the Kangwon Province (TOMEK 1983) may be wrong (the possibility of confusing with the Japanese Cormorant while determining the species at a pretty long distance on the sea) and as in South Korea it should rather be numbered among passage migrants and winter visitor.

14. *Fregata ariel* (GRAY, 1845)



Data:

Pyongan South (II): Onchon (II-24): 2 May 1961 (WON).

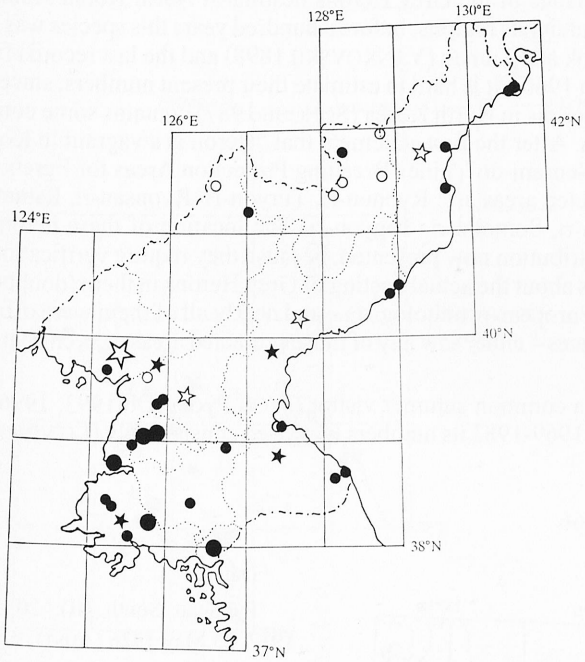
Measurements (cited by WON Hong-Koo 1965):

wig 543, tarsus 23 (sic!), bill 99.2, tail 341 mm.

Since it was only once observed near the a place named Onchon, this species is to be included in the category of "stragglers". Also as a straggler it occurs in the neighbouring regions, e.g. Russia (OMELKO & OMELKO 1974), China (MEYER DE SCHAUENSEE 1984, CHENG Tso-hsin 1987), Japan (KURODA 1975) and South Korea (WON Pyong-Oh 1981a, 1993, 1996).

CICONIIFORMES

15. *Ardea cinerea* LINNAEUS, 1758
[*Ardea brag*]



Data:

Pyongyang (I): Pyongyang (I-1): 6 Aug 1984 (KOLBE), Aug 1991 (BALDI), Mankyongdae (I-11): 7 May 1980 (MAUERS), 19 Sep 1986 (TOM);

Pyongan South (II): 3 Aug 1932 (AUST), Sunchon (II-11): 15 Jun 1950, Paesanjom (*II-11): 9 May 1950 (WON), Jasan (II-12): 5 May 1954 (ZIP), Anju (II-16): 30 Jul 1932 (WON 1956), Nampho (II-26): 28 Sep 1978 (TOM), 10 Aug 1984 (KOLBE), Apr 1987 (GŁOW), Aug 1991 (BÁLDI), Taesong-ho (II-28): 3 Aug 1978 (TOM);

Pyongan North (III): 7 Jun 1917; 9, 20 Apr 1929 (AUST), Kwaksan (III-4): 29 Jun, 21 Sep 1951 (WON);

Pyongan South and North (II-III): Pyongyang – Synuiju (I-1-III-28): 16 Jul 1980 (TOM);

Chagang (IV): Huchang (IV-1) 29-30 Aug 1897 (YANK), Okasan (IV-3): 3 Jun 1958 (HO);

Ryanggang (V): Samsu (V-4): 13, 20 Jul, 20 Aug 1897, Hyesan (V-5): 27 Jul 1897, Samjiyon (V-10): no date (HO), Paegam (V-16): 23 Jun 1897, Kapsan (V-19): 10 Aug 1897 (YANK);

Hamgyong North (VI): 24, 29 Sep 1929 (AUST), Manpo (VI-2): 10 Oct 1969 (ZIP), Tongbonpho (*VI-3): 9 Apr 1996 (PERT), Chongjin (VI-19): Aug 1991 (BÁLDI), Jangyon-ho (VI-29): 9 Jul 1983 (TOM);

Hamgyong South (VII): 4 Nov 1919 (AUST), Juhung (VII-?): 21 Jun 1960, Sangryong (VII-7): 16 Jul 1960 (ZIP), Tanchon (VII-8): 24, 27 May 1987 (TOM);

Kangwon (VIII): Wonsan (VIII-3): 16 Aug 1880 (G&S), 3 May 1980 (MAUERS), Sijungho-Kosong (VIII-5-6): 10 Jun 1980 (TOM), Apr 1987 (GŁOW), Samil-pho (VIII-7): 7 May 1980 (MAUERS), Kumgangsan (VIII-8): Aug 1991 (BÁLDI);

Probably Kangwon Province (?VIII): Gumbangyang: 17 Oct 1989, Ribsokri: 15 Dec 1989 (FIEB);

Hwanghae North (IX): Koksan (IX-3): 25 May 1980 (MAUERS), Sohung-ho (IX-7): 25 Sep 1978 (TOM);

Hwanghae South (X): Talchonri (X-9): 2 Aug 1957 (ZIP or 8 Nov – WON after ZIP), Unchon (*X-10): 31 Mar 1958 (WON), Pyoksong: (X-21): 16 Dec 1989 (FIEB), Changsu (X-25): 14 Oct 1984 (TOM), Apr 1987 (GŁOW), Haebangri: (X-?): 17 Dec (FIEB);

Kaesong (XI): Kaesong (XI-1): 8 Jun, 8 Aug, 25 Nov 1955; Jan, Feb, Mar-Dec 1957; 4-12 Jun, 25 Aug 1958 (WON), 1 Aug 1969 (ZIP).

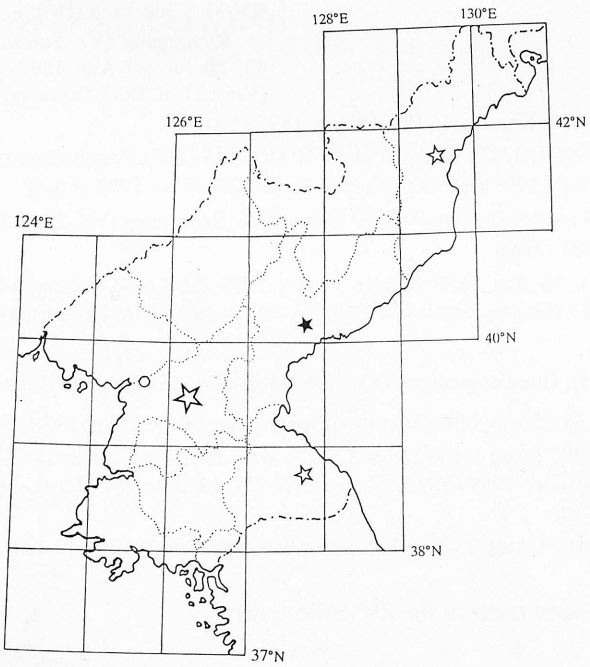
M e a s u r e m e n t s (8 specimens of the ZIP collection):

	5♂♂	$\bar{x}$	♀	♀	?sex
wing	442-487	463	458	445	440
tarsus	143-168	157	150	140	152
bill	114-132	124	112	105	128
tail	188-210	196	212	180	180

Breeding species, met with from March till November, more frequent on E and W coasts than in inland. Besides, single individuals winter in Kaesong region and Kangwon Province (WON Hong-Koo 1963, FIEBIG 1993). These provinces probably make up northern border of the wintering area, which covers the whole southern part of the Korean Peninsula, as evidenced by the findings of WON Pyong-Oh et al. (1986), WON Pyong-Oh (1986b, 1988a), CHO Sam-Rae (1994), YU Jae-Pyoung & HAHM Kyu-Hwang (1994). The abundance of the Grey Herons nesting in North Korea seems to have shrunk, particularly so in the mountainous regions: before a hundred years this species was frequently seen in the valleys of the Amnok and Tuman (YANKOVSKII 1898) and the last records from these regions come from 1958 (HO Hon 1960). It is hard to estimate their present numbers, since the newest report on the nesting of Grey Herons in North Korea (SONOBE 1987) contains some contradictions and little concrete information. After the first statement that "Heron is a vagrant in Korea, but some of species seem to winter in Senram-do", nine "Breeding Protection Areas for Egrets and Grey Heron" are described. The protected areas are: Ryonun-ri, Turyon-ri, Ryonsan-ri, Kimmya-gun, Honghyon-ri, Sondok-ri, Sahyon-ri, Somoku-ri, Togyon-ri. The location of these heronries have not been shown on the map of distribution now presented, because they require verification or the presentation of more reliable details about the actual nesting of Grey Herons in them (doubts are reinforced by the fact that none of the European ornithologists – and nearly all of them were official guests of the Korean Academy of Sciences – either saw any of those protected areas or even heard of their existence).

In South Korea the Grey Heron is a common summer visitor (WON Pyong-Oh 1993, 1996); it nests in the south of Primorsk where in 1969-1982 its numbers increased considerably (LITVINENKO 1982).

16. *Ardea purpurea* LINNAEUS, 1766



Data:

Pyongan South (II): 20 May 1917, 25 May 1926 (AUST), ? Anju (II-16): 7 Oct 1931 (WON 1956, but 17 Oct 1931 WON cited by AUST);

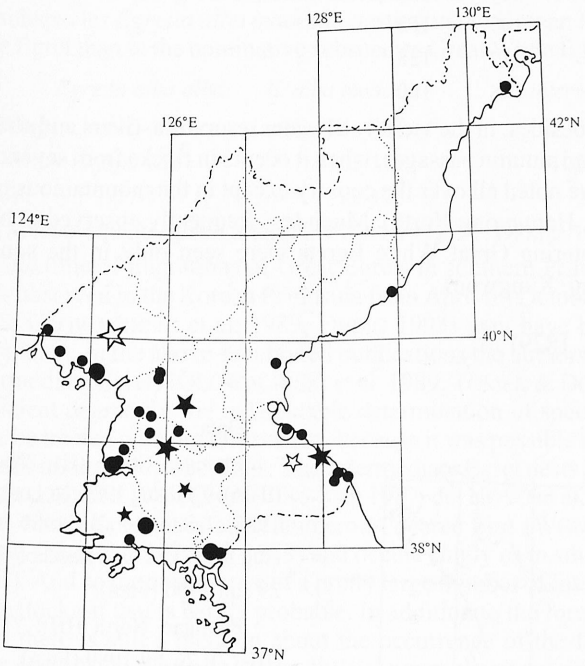
Hamgyong North (VI): 24 Sep 1929, 1 Oct 1929 (AUST);

Hamgyong South (VII): 10 May 1985 (ZIP);

Kangwon (VIII): 10 Nov 1914 (AUST).

Seven times observed hitherto. Apart from the skin in the collection of the Zoological Institute (from 1985), the previous observations come from the beginning of the century, The appearance of the Purple Heron in the migration season is probable, for it nests to the north of North Korea (KNYSTAUTAS & SHIBNEV 1986) and in the south of the peninsula is a passage migrant and rare winter visitor (WON Pyong-Oh 1987, 1993, 1996). A single record from North Korea in the past 60 years makes us number this species among very rare passage migrants.

17. *Egretta alba* (LINNAEUS, 1758)
[*Casmerodius albus*, *Egretta syrmatophora*]



Data:

Pyongyang (I): Apr 1987 (GŁOW), Aug 1991 (BÁLDI), Kangdong (I-3): 4 Jun 1987, Ryongaksan (I-10): 20 Sep 1986 (TOM), Sogam (I-15): 30 Apr 1987 (GŁOW), Pyongyang-Jasan (I-1-II-12): 23 Sep 1991 (TOM);

Pyongan South (II): 11 Aug 1979, 22 Sep 1986, 6 Jun 1987 (TOM), 13 Sep 1987 (FIEB), Pyongwon (II-17): 11 May 1951 (WON), Nampho (II-26): 9-11 Aug 1984 (KOLBE), 22 Sep 1986 (TOM), 31 Aug; 7,9 Sep 1989 (FIEB), Aug 1991 (BÁLDI), Usanri (II-27): 12 Apr 1958, Taesong-ho (II-28): 5 Mar 1946 (WON), Yonpung-ho (II-30): 7 Jun 1987, Kaechon (II-31): 19 May 1987 (TOM);

Pyongan North (III): before 1923 (SOWERBY), 19 Jun 1917, 22 Apr 1929, 18 May 1933 (AUST), Kwaksan (III-4): 19 May 1954, 16-29 Sep 1958 (WON), Ryonganri (*III-6): 18 May 1958 (ZIP), Yomju (III-10): 18 Apr 1958 (WON), Synuiju and surroundings (*III-28): 20 Sep 1991 (TOM);

Hamgyong North (VI): Manpo (VI-2): 9 Apr 1996 (PERT);

Hamgyong South (VII): Tanchon (VII-8): 3 Jun 1987 (TOM), Kwangpo (*VII-31): 15 Sep 1989 (FIEB);

Kangwon (VIII): 7 Apr 1916 (AUST), Wonsan (VIII-3): 17 Aug 1885 (G & S), 19 Jun 1917 (AUST), 20 May 1980, Kosong (VIII-6): 20 May 1980 (MAUERS), Wonsan – Kosong (VIII-3-6): 7 Oct 1978; 10, 14 Jun 1980 (TOM); 17, 20 Aug 1984 (KOLBE), 14 Oct 1991 (TOM), Sijungho – Kosong (VIII-5-6): 24 Apr 1987 (GŁOW); Samil-pho (VIII-7): 22 May 1980 (MAUERS), 10 Jun 1980 (TOM), Kumgangsan (VIII-8): Aug 1991 (BÁLDI), Yonghung (VIII-14) 13 Sep 1897 (YANK), Tongjongho (VIII-18): 10 Dec 1989, Nohori (VIII-?): 17 Dec 1989 (FIEB);

Hwanghae North (IX): 14, 16 Aug 1984 (KOLBE), Koksan (IX-3): 25 May 1980 (MAUERS);

Hwanghae South (X): 12 Oct 1984 (TOM), Pyoksong (X-21): 18 Feb 1957 (ZIP), Changsu (X-25): 17 May 1980 (MAUERS), 30 Apr 1987 (GŁOW);

Kaesong (XI): Kaesong (XI-1): 10 Jan 1956, 30 Nov 1957, 1-2 Mar 1958 (WON), 12 Apr 1961, 29 May 1962 (ZIP), Panmunjom (XI-6): 14 Aug 1984 (KOLBE).

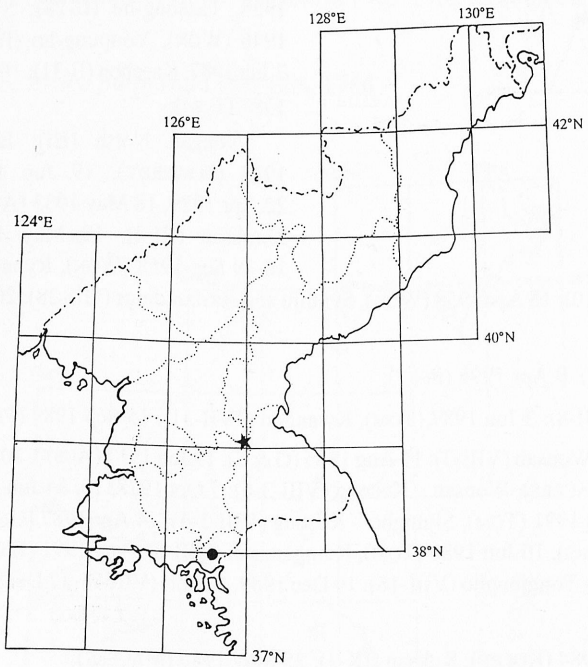
Two subspecies occur in North Korea: nominative *Egretta alba alba* LINNAEUS, 1758, on passage and in winter, and much smaller *Egretta alba modesta* GRAY, 1831, which is a nesting subspecies. This is confirmed by remarkable differences in measurements between the birds from the breeding season and those from the post-breeding period.

Measurements (4 specimens of the ZIP collection):

	Egretta alba alba		*Egretta alba modesta*	
	no date	12 Apr	29 May	8 May
wing	472	430	360	350
tarsus	205	188	155	152
bill	132	126	112	128
tail	200	190	148	100

Species met mostly in rice fields; besides, in the vicinity of water reservoirs, rivers and streams. Particularly abundant during spring and autumn passages, when it occurs in flocks from several tens of individuals. Great White Egret were noted all over the country except in the mountainous northern provinces (Ryanggang, Chagang, Hamgyong North). Much less frequently observed in breeding seasons and in winter. The wintering Great White Egrets were seen only in the southern provinces (Hwanghae South, Kaesong, Kangwon).

18. *Egretta intermedia* (WAGLER, 1829)
[*Mesophoyx intermedia*]



Data:

Pyongan South (II): ?Nampho (II-26): 9-11 Aug 1984 (KOLBE), 5 Oct 1988, 7 Sep, 19 Oct 1989 (FIEB), Aug 1991 (BÁLDI), ?Kaechon (II-31): 29 Jun 1990 (FIEB);

Pyongan North (III): ?Tasado (III-12): 26 Jul 1989 (FIEB);

Hamgyong South (VII): ?Tanchon (VII-8): 17 Sep 1989, ?Kwangpo (*VII-31): 12, 15 Sep 1989 (FIEB);

Kangwon (VIII): ?Samil-pho (VIII-7): 10 Aug 1979 (TOM), ?Yonghung (VIII-14): 13 Aug 1932 (WON);

Hwanghae South (X): ?Changsu (X-25): 30 Apr 1987 (GŁOW);

Kaesong (XI): Kaesong (XI-1): 26 May 1970 (ZIP), ?Aug 1991 (BÁLDI);

no locality: 3 Jul 1965 (ZIP).

Measurements (2 specimens of the ZIP collection):

	♀	?sex
wing	313	308
tarsus	114	111
bill	74	71
tail	122	118

Very rarely come upon in breeding season. However, only two ascertainments of the presence of this species in North Korea represented by specimens in the ZIP collection are reliable. All the remaining statements based on field observations raise doubt, for under field conditions. Great and Intermediate Egrets differ mainly in body dimensions and so their certain identification is possible while one is watching both species simultaneously (HANCOCK, ELLIOT 1978). In its measurements the subspecies *Egretta alba modesta*, nesting in the Korean Peninsula, comes closer to the Intermediate Egret than to the nominative subspecies Great White Egret, noted in the post-breeding period:

	Egretta alba alba	*E. alba modesta*	*E. intermedia*
Wing	410-485	343-385	290-316
Tarsus	160-215	135-172	102-131
Bill	117-130	92-125	70-96

(Measurements given after: HARTERT 1912-21, DEMENTEV & GLADKOV 1951, VAURIE 1965).

The time of migrations of Great Egrets in southern Primorsk (PANOV 1973) indicates that the birds observed in the Korean Peninsula from April till October (TOMEK & DONTCHEV 1987, KOLBE 1988, GŁOWACIŃSKI et al. 1989, FIEBIG 1993) may have belonged to a breeding or a migrating population. In the above-mentioned publications the authors did not give the diagnostic features of Intermediate Egrets (GŁOWACIŃSKI et al. 1989, TOMEK & DONTCHEV 1987) or they did but to an insufficient degree for the indisputable determination of species. These observations should, therefore, be treated with big reservation, because it was possible to make a mistake while identifying the species under field conditions. The Intermediate Egret nests in larger numbers to the south of North Korea (DISTRIB 1981, CHENG Tso-hsin 1987, del HOYO et al. 1992), but in the regions neighbouring upon North Korea it is a not numerous, scarce bird (WON Pyong-Oh 1987a, 1993, 1996, WON Pyong-Oh et al. 1997, LER 1989) and occurs singly or in small parties of up to 10 individuals (LER 1989). And so the appearance of a pretty large number of Intermediate Egrets in North Korea and in large flocks at that is hardly probable. In addition to the foregoing published but doubtful observations there is still a mention about the occurrence of the Intermediate Egret in a publication by SONOBE (1987). However, it is so little concrete that it cannot be taken into consideration (..."Egrets including Intermediate Egret are summer migrants flying over in great numbers to Korea, forming flocks of hundreds of birds – sometimes even numbering more than one thousand"...). Summing up, two dependable records of the presence of this species in May and in July evidence the possibility of its nesting, but its inclusion in the breeding fauna should be better documented.

19. *Egretta garzetta* (LINNAEUS, 1766)

Data:

Pyongyang (I): Sogam (I-15): 4 Sep 1989 (FIEB);

Pyongan South (II): Nampho (II-26): 11-12 Aug 1984 (KOLBE), 4 Oct 1988, 31 Aug, 7 Sep 1989 (FIEB), Aug 1991 (BÁLDI);

Pyongan North (III): Kwaksan (III-4): 18 Sep 1951 (WON), Sindori (*III-14): 21 Oct 1961 (ZIP);

Kangwon (VIII): Sijungho (VIII-5): 15 Apr 1990 (FIEB), Sijungho – Onjongri (VIII-5-8): 24 Apr 1987 (GŁOW); Kosong (VIII-6): 17 Aug 1984 (KOLBE);

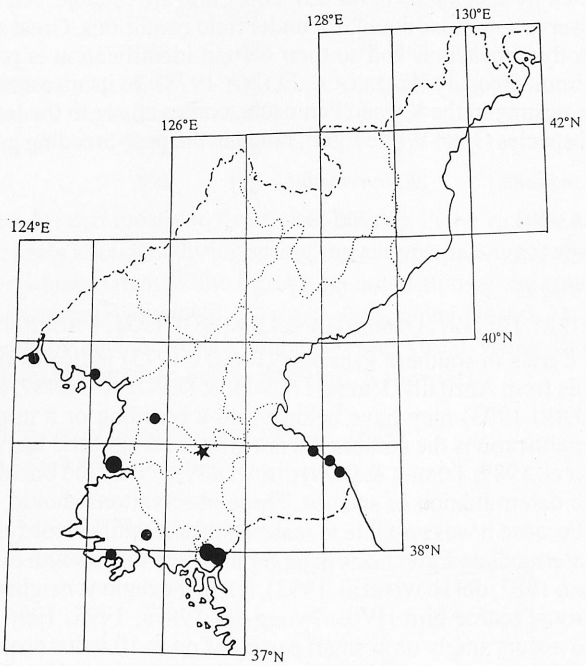
Hwanghae South (X): Haeju-Changsu (X-22-25): 30 Apr 1987 (GŁOW), Sohari-Ongjin:(*X-16-26): 5 Dec 1989 (FIEB);

Kaesong (XI): Kaesong (XI-1): 12 Jun 1956 (WON), Aug 1991 (BÁLDI), Panmunjom (XI-6): 14 Aug 1984 (KOLBE), 15 May 1989 (FIEB);

Southern Provinces: Pyongyang-Wonsan route (I-1 – VIII-3): 17 Aug 1984 (KOLBE).

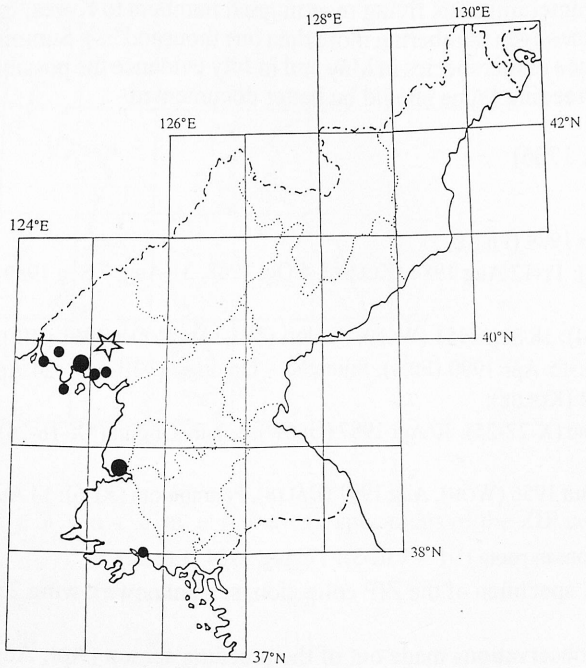
M e a s u r e m e n t s (1 specimen of the ZIP collection, sex unknown): wing 254, tarsus 78, bill 76, tail 91.

Observed twelve times; most of observations made out of the breeding season (Apr, Aug-Oct) and only two in the breeding season (May and Jun in Kaesong Prov.), nesting however unascertained. The Little Egret nests in the regions situated to the south of North Korea, i.e. in southern China



(ETCHECOPAR & HÜE 1978) and Japan (KURODA 1975, DISTRIB 1981, SONOBE 1982). The nearest breeding grounds lie in South Korea (GORE & WON Pyong-Oh 1971, PARK Jin-Young & WON Pyong-Oh 1993a, WON Pyong-Oh 1993, 1966, WON Pyong-Oh et al. 1997, MUN Hyeong-Tae, CHO Sam-Rae 1996, MUN Hyeong-Tae, NAM Mi-Sook, CHO Sam-Rae 1996, YU Jae-Pyoung, HAHM Kyu-Hwang 1997). Consequently, the northern range of the breeding grounds of this species runs across the Korean Peninsula. The nesting of the Little Egret also in the southern provinces of North Korea is probable but since it is not confirmed by the presence of nests, this bird is to be regarded as nomadic in that country.

20. *Egretta eulophotes* (SWINHOE, 1860)



Data:

Pyongan South (II): ?Onchon (II-24): no date (SONOBE 1987), Nampho (II-26): 12, 13 May 1980 (MAUERS), 5 Oct 1988, 4 Aug 1989, 26 Apr, 15 May, 2 Jun 1990 (FIEB), Aug 1991 (BÁLDI), ? Tokto (II-25): no date (SONOBE 1987);

Pyongan North (III): 5, 12, 30 Jun 1917, 2 Jul 1918, 30 Apr 1929 (AUST), ?Jongju (III-3): no data (SONOBE 1987), Posanri (*III-3): 29-30 Jul 1989 (FIEB), Kwaksan (III-4): 19 May 1955 (ZIP), 7-30 Sep 1955 (WON), no date (SONOBE 1987), Sonchon (III-6): 8 May 1959 (WON), Ryonghyonri (*III-6): 6 May 1958, Uido (*III-6): 11, 14 Jun 1967 (ZIP), Rapdo (*III-6): 9 May 1980 (PAK U-Il et al. 1981), ?Cholsan (III-9): no date (SONOBE 1987), Pankungri (*III-10): 20 Apr 1958 (ZIP), Tasado (III-12): 15 May, 8 Aug, 13 Sep 1959 (WON), ?Synuiju (III-28): no date, Sogam-do (*III-29): no date, ?Tegam-do (III-29): no date

(SONOBE 1987), Aedo (*III-29): 30 Jul 1989 (FIEB);

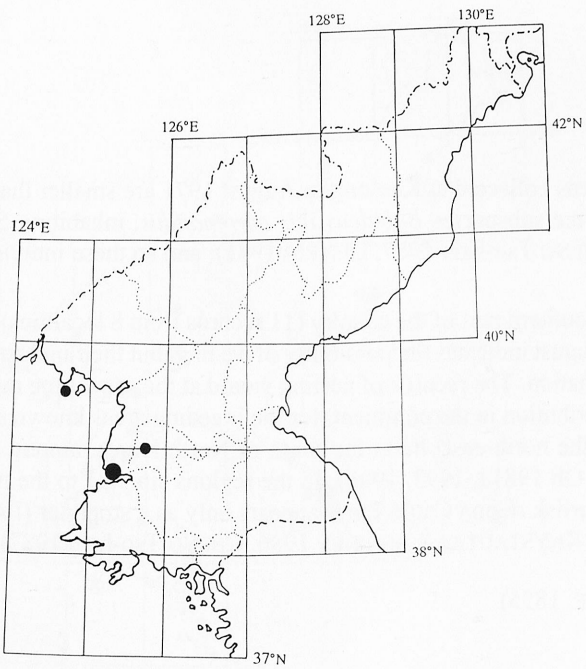
Hwanghae South (X): Haeju (X-22): 29 Apr 1987 (GŁOW).

M e a s u r e m e n t s (3 males and 2 females of the ZIP collection):

	♂	♂	♂	♀	♀
wing	262	275	270	242	250
tarsus	87	96	91	95	78
bill	86.5	82	81	91	73
tail	80	112	116	78	95

Breeding species, nesting along W coast, observed from Apr till Sept. Apart from the above mentioned 27 records, the nesting of this species is discussed in the publication entitled "Endangered birds..." (SONOBE 1987), illustrated with photographs of adult birds, chicks and eggs in the nest and presenting observations concerning the breeding season as well as a map showing the location of 9 breeding colonies (Synuiju, Cholsan, Kwaksan, Chongju, Rapdo, Tegam-do, Sogam-do, Onchon, Tokto). At the same time only two nesting sites are mentioned in the text ("breed only in limited areas.... Rap-do.... Sogam-do"). Thus, it is difficult to estimate the actual number of colonies and the abundance of Chinese Egrets in North Korea on the basis of that publication. Probably from 100 (PAK U Il – oral comm. cited by GŁOWACIŃSKI et al. 1989, FIEBIG 1995) to several hundred pairs nest here (...fly over every year to these breeding islands in groups each approximately 200 to 250.."). Outside North Korea it nests in the islands belonging to South Korea also in a number of several hundred pairs (WON Pyong-Oh 1988b, SWENNEN & WON Pyong Oh 1993) and very rarely in South China (HANCOCK & ELLIOTT 1978, ETCHECOPAR & HÜE 1978, CHENG Tso-hsin 1987) and Primorsk, where it belongs to endangered birds (LER 1989). In Japan it does not nest and is a straggler (KURODA 1975, DISTRIB 1981). The Korean Peninsula is therefore the main area of its occurrence and its number probably does not exceed 1000 breeding pairs (del HOYO et al. 1992).

21. *Egretta sacra* (GMELIN, 1789)
[*Demigretta sacra*]



Data:

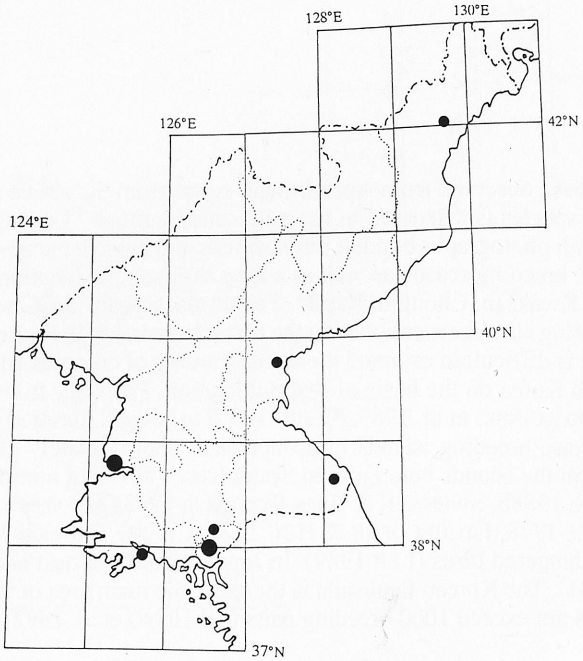
Pyongyang (I): Pyongyang (I-1): 30 Aug 1987 (FIEB);

Pyongan South (II): Nampho (II-26): 9-11 Aug 1984 (KOLBE), 4, 6 Oct 1988 (FIEB);

Pyongan North (III): Sogam-do (*III-29): 29 Jul 1989 (FIEB).

Vagrant, so far observed only five times at three localities in North Korea. It nests in the south of the peninsula (GORE & WON Pyong-Oh 1971, WON Pyong-Oh 1993, 1996). Observations from July and August indicate the possibility of its nesting also in North Korea (it would be the northernmost place of the nesting of the Eastern Reef Heron, see: HANCOCK & ELLIOTT 1978, DISTRIB 1981, del HOYO et al. 1992).

22. *Bubulcus ibis* (LINNAEUS, 1758)



Data:

Pyongan South (II): Nampho (II-26): 22 Sep 1986 (TOM), no date (FIEB);

Hamgyong North (VI): Puryong (VI-16): 30 May 1985 (ZIP);

Hamgyong South (VII): Kwangpo (*VII-31): 12, 15 Sep 1989 (FIEB);

Kangwon (VIII): 10 Jun 1980 (TOM), Onjongri (*VIII-8): 24 Apr 1987 (GŁOW);

Hwanghae South (X): Hyongchesom (X-20): 13 Oct 1984 (TOM);

Kaesong (XI): Kaesong (XI-1): 20 Oct 1963, Aug 1971 (ZIP), Pagyon (XI-3): 15 Aug 1984 (KOLBE).

M e a s u r e m e n t s (2 specimens of the ZIP collection):

	♀	?sex
wing	249	230
tarsus	88	87
bill	58	56
tail	88	75

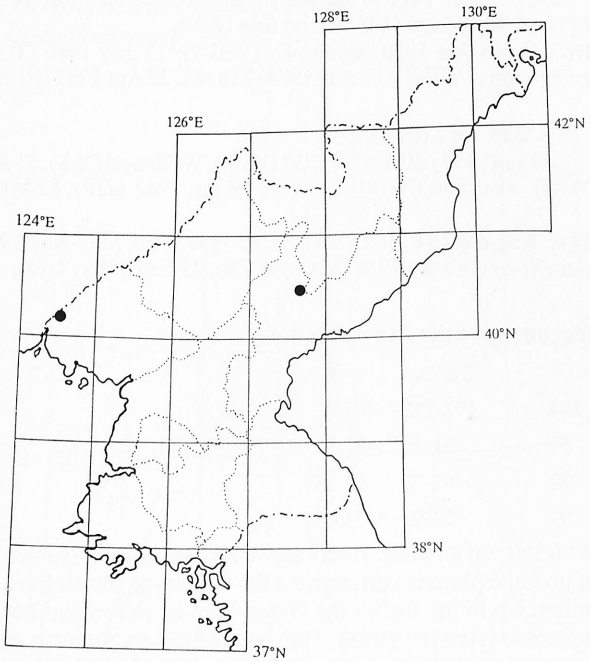
The bill measurements of both birds collected at Kaesong in August 1971 are smaller than the values given by VAURIE (1965) for the subspecies *Bubulcus ibis coromandus*, inhabiting South China and Japan (KURODA 1975, CHENG Tso-hsin 1987, DISTRIB 1981), and so these individuals were probably juveniles.

The species was observed in the southern part of the country (11 records from 8 localities). The presence of these birds in June and August indicates the possibility of nesting, but their inclusion in the breeding fauna calls for a confirmation. The records of nesting would at the same time mean a shift of the northern boundary of distribution in the continent, for the breeding areas known so far (except for Hokkaido I., situated to the north-east) lie to the south of North Korea, among other places in South Korea (WON Pyong-Oh 1981a, 1993, 1996). In the regions situated to the north, namely, in China, Primorsk and Ussuriisk region Cattle Egret appears only as a straggler (PANOV 1973, KURODA 1975, DISTRIB 1981, KNYSTAUTAS & SHIBNEV 1986, CHENG Tso-hsin 1987).

23. *Ardeola bacchus* (BONAPARTE, 1855)

Data:

Pyongan North (III): Uiju (III-16): 20 Jun 1979 (ZIP);



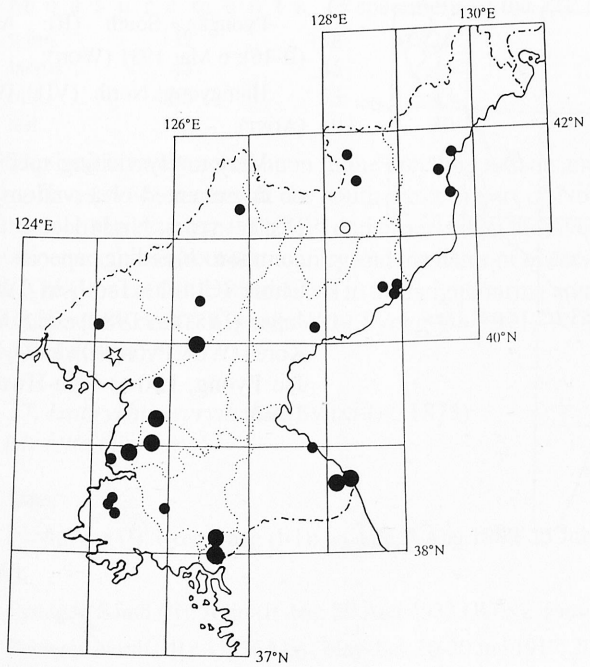
Hamgyong South (VII): Hopanri (*VII-22): 19 Jun 1963 (RIM Chun-Hun 1963a).

Measurements (cited by RIM Chun-Hun):

wing 210, tarsus 56, bill 85.5, tail 77 mm.

Species found only twice in breeding season. The Chinese Pond Heron nests in north-eastern China, i.e. in the provinces bordering upon North Korea (MEYER DE SCHAUENSEE 1984, CHENG Tso-hsin 1987) and in South Korea (WON Pyong-Oh 1993, 1966). And so it very probably nests also in North Korea, but its inclusion in the breeding fauna requires a confirmation (finding of nests).

24. *Butorides striatus* LINNAEUS, 1766
[*Butorides macrorhynchus*]



Data:

Pyongyang (I): Pyongyang (I-1): 6 Aug 1984 (KOLBE), Aug 1991 (BÁLDI), 22 May 1987, Sogam (I-15): 24 Jun 1983 (TOM), 17 Apr 1987 (GŁOW);

Pyongan South (II): Pyongnam (*II-24): 6 Jun 1987, Taesong-ho (II-28): 24 May, 8 Jun 1980, 15 Jul 1983, Yonpung-ho (II-30): 7 Jun 1987 (TOM);

Pyongan North (III): 26 May 1917 (AUST), Unrimri (*III-20): 6 Jun 1961 (ZIP), Myohyangsan (III-24): 12 Aug 1979, 18 Jun 1983 (TOM), Aug 1991 (BÁLDI);

Chagang (IV): Okasan (IV-3): 24 Sep 1959 (HO), Myongmun (IV-6): 18 May 1987 (TOM);

Ryanggang (V): Naegokri (V-7): 14 Oct 1986 (TOM), Samjiyon (V-10): no date (HO), Kapsan (V-19):10 Aug 1897 (YANK);

Hamgyong North (VI): Chongjin (VI-19): Aug 1991 (BÁLDI), Ryongsanri (VI-24): 5 Jul 1983, Jangyon-ho (VI-29): 4, 9 Jul 1983 (TOM);

Hamgyong South (VII): Tongdokri (*VII-6): 2 Jun 1987, Tanchon (VII-8): 27, 29, 30 May 1987, Tanchon-Hochon (VII-8-14): 25 May 1987 (TOM), Kuryongri (VII-19): no date (ZIP);

Kangwon (VIII): Wonsan-Kosong (VIII-3-6): 14 Jun 1980, Samil-pho (VIII-7): 13 Jun 1980 (TOM), 17 Aug 1984 (KOLBE), 23 Apr 1987 (GŁOW), Onjongri (*VIII-8): 17 Aug 1984 (KOLBE), 22 Apr 1987 (GŁOW), Aug 1991 (BÁLDI);

Hwanghae North (IX): Sohung-ho (IX-7): 3 May 1987 (GŁOW);

Hwanghae South (X): Kuwolsan (X-6): 12, 17 Jun 1957 (ZIP), 6 Jul 1957 (WON), Woljongri (X-8): 21 Aug 1957 (ZIP, or 21 Apr 1957 ZIP cited by WON), Samchon (X-10): 17 May, 19 Jun 1962 (ZIP), Kohyonri (*X-10): 16 May 1957 (WON);

Kaesong (XI): 15, 17 May 1980 (MAUERS), Kaesong (XI-1): 25 Aug, 15, 19 Nov 1956, May-Nov 1957, 17 Jun -17 Nov 1958, 20 Sep (WON), Pagyon (XI-3): 16 May 1980 (MAUERS), 26, 27 Sep 1986 (TOM);

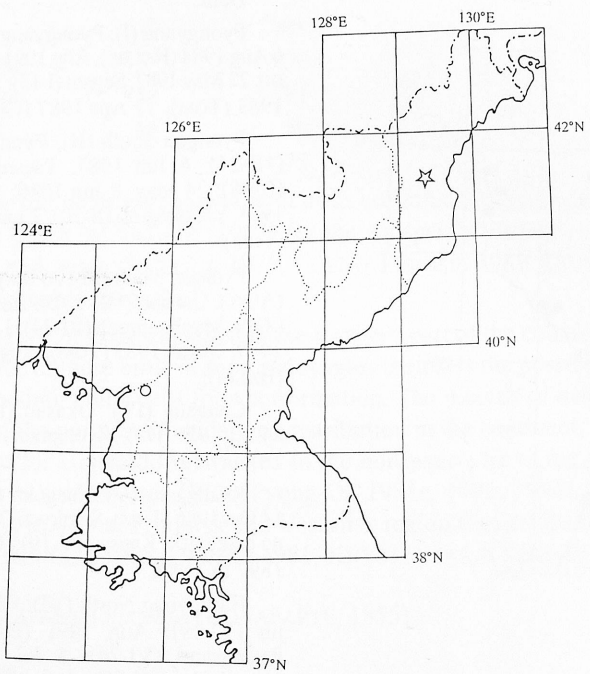
no data: 4 specimens (ZIP).

M e a s u r e m e n t s (10 specimens of the ZIP collection):

	4 ♂♂	$\bar{x}$	♀	5 ?sex	$\bar{x}$
wing	203-211	206	204	192-219	205.8
tarsus	51-52	51.7	53	51-53	51.8
bill	62-69	66	72	62-72	66.5
tail	72-93	79.5	92	72-93	73.8

Common breeding bird occurring in vicinity of streams, rivers and water reservoirs. Numerous observations of adults and individuals in juvenile plumage throughout the country in the eighties indicate that this species increased in number. Up to the forties the Green-backed Heron had been a scarce bird and its nesting was not documented (AUSTIN 1948). The dates of observations in April and even in November markedly widen the period of its stay in the sites of nesting: the hitherto gathered findings from southern Primorsk speak of spring passage in the first half of may and autumn passage from mid-August to mid-September (PANOV 1973).

25. *Nycticorax nycticorax* (LINNAEUS, 1758)



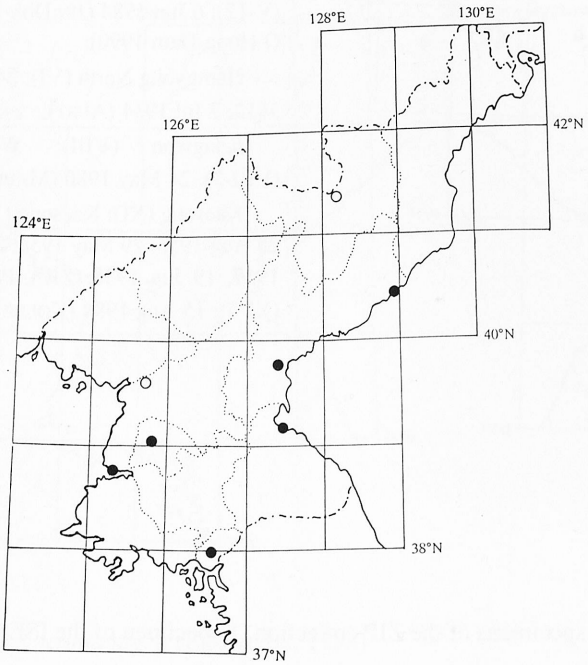
Data:

Pyongan South (II): Anju (II-16): 6 Mar 1931 (WON);

Hamgyong North (VI): 1925 (AUST).

Very rarely visiting species, no documented observations in past 60 years, Night Heron is a common breeding species in China (CHENG Tso-hsin 1987, Japan (DISTRIB 1981) and South Korea (WON Pyong-Oh 1993, YU Jae Pyong, HAHM Kyu-Hwang 1997).

26. *Ixobrychus sinensis* (GMELIN, 1789)
[*Ardetta sinensis*]



Data:

Pyongyang (I): Pyongyang (I-1): 20 Aug 1958 (ZIP);

Pyongan South (II): Anju (II-16): May 1940 (WON), Nampho (II-26): 4, 9 Aug, 19 Oct 1989 (FIEB);

Ryanggang (V): Hyesan (V-5): 30 Jul 1897 (YANK);

Hamgyong South (VII): Tanchon (VII-8): 16 Sep 1989, Kwangpo (*VII-31): 12, 15 Sep 1989 (FIEB);

Kangwon (VIII): Wonsan (VIII-3): May 1960 (ZIP);

Kaesong (XI): Kaesong (XI-1): 4 Apr 1957 (WON);

no data: 1 specimen (ZIP).

M e a s u r e m e n t s (3 specimens of the ZIP collection, sex unknown):

wing	132	138	126
tarsus	43	45	45
bill	47.5	53	45
tail	48	60	50

The bird is rarely come upon in the breeding season and during migration. According to WON Hong-Koo (1964) it nests in the south-western part of North Korea, but the individuals taken at Wonsan on the eastern coast (ZIP) and observed on the river Amnok (YANKOVSKII 1898) evidence that it occurs throughout the country and the dates of observations indicate that it is a breeding species. The Chinese Little Bitter nests in the neighbouring areas, i.e. in China (CHENG Tso-hsin 1987) and in South Korea (GORE & WON Pyong-Oh 1971, WON Pyong-Oh 1981a, 1987b, 1993, LEE Woo-Shin 1994).

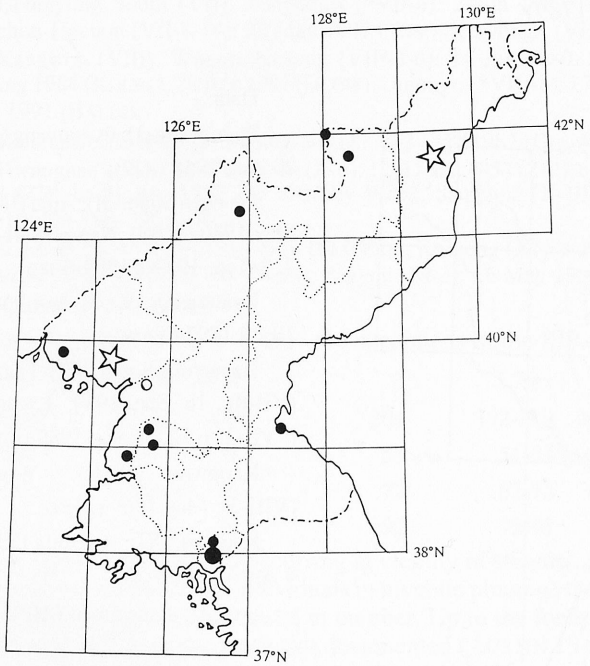
27. *Ixobrychus eurythmus* (SWINHOE, 1873)
[*Ardetta eurythma*]

Data:

Pyongyang (I): Pyongyang (I-1): no date, 3 Aug 1986, 25 Jul 1989 (ISEA), Maram (*I-8): 20 May 1957 (ZIP);

Pyongan South (II): Anju (II-16): 29 Aug 1933 (WON), Taesong-ho (II-28): 3 Aug 1979 (TOM);

Pyongan North (III): 17, 26 May, May-Jun, 10-20 Jun 1917, 20-24 May 1929, Jan 1929 (AUST), Tongpalri (*III-10): 17 May 1958 (ZIP);



Chagang (IV): Karimri (*IV-2): 9 Sept 1958 (ZIP);

Ryanggang (V): Samjiyon (V-10): no date (HO), Paekdusan (V-12): 6 Jun 1984 (JIN Dok-Jun & O Hung-Dam 1990);

Hamgyong North (VI): 24 May 1912, 7 Jul 1934 (AUST);

Kangwon (VIII): Wonsan (VIII-3): 24 May 1980 (MAUERS);

Kaesong (XI): Kaesong (XI-1): 25 Aug 1955, 29 May 1956, 2 May 1957, 19 Jun 1958 (ZIP), Pagyon (XI-3): 15 Aug 1984 (KOLBE).

M e a s u r e m e n t s (5 specimens of the ZIP collection, 1 specimen of the ISEA collection):

	♂	♂	♂	♀	?sex	?sex
wing	153	140	142	–	152	142
tarsus	49	46	45	49.5	45	51
bill	48	44	44	47.5	43	49
tail	59	51	49	50	51	–

Breeding species throughout the country. More often reported from southern lowland parts of the country, but its presence was also found in the mountainous region (HO Hon 1960, HO Hon & RIM Chu-Yon 1975, JIN Dok-Jun & O Hung-Dam 1990). Its nesting was confirmed by the finding of a nest with eggs in the Pyongyang area (O Hung-Dam, pers. comm., now the bones of a female from this nest are stored in the ISEA collection). In the past 40 years this species has been observed much more frequently than before and, according to AUSTIN (1948), it was already a "common summer resident" in the northern part of the peninsula, whereas in the southern part it was and still is a "scarce summer visitor" – WON Pyong-Oh 1993).

28. *Botaurus stellaris* (LINNAEUS, 1758)

Data:

Pyongan South (II): 10 Apr 1932, Anju (II-16): Jan, Apr 1934 (WON);

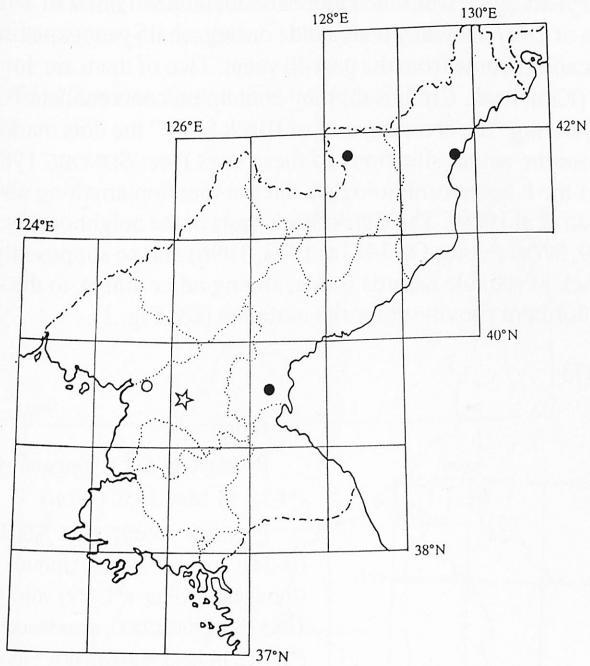
Ryanggang (V): Samjiyon (V-10): no date (HO);

Hamgyong North (VI): Chongjin (VI-19): 21 Apr 1958 (WON);

Hamgyong South (VII): Haejungri (*VII-38): 14 Nov 1960 (ZIP);

no locality: 4 Apr 1965 (ZIP);

no data: 1 male (ZIP).

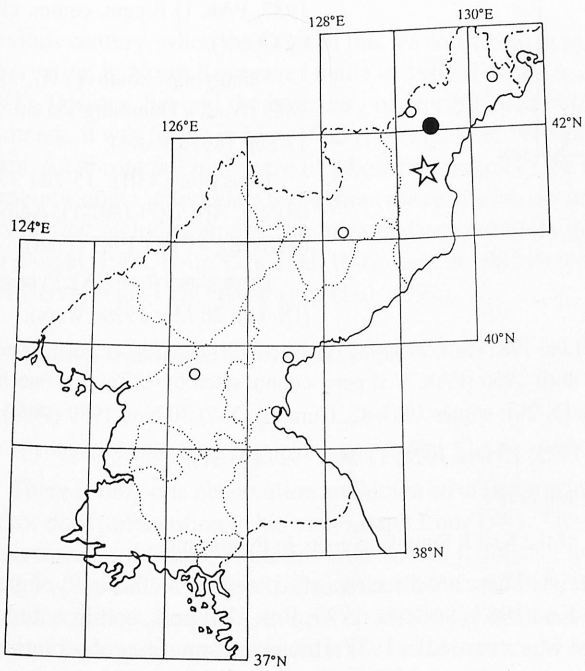


Measurements (2 specimens of the ZIP collection):

	♀	♂
wing	338	347
tarsus	100	98
bill	72.8	72
tail	115	112

Scarce species throughout the country in spring and autumn. Apart from the passage season there is only one winter record (Jan 1934). The Bittern nests in areas lying to the north of North Korea (CHENG Tso-hsin 1987, LER 1989), while in the Korean Peninsula it is known only as a passage migrant and winter visitor (WON Hong-Koo 1963, O Hung-Dam 1988, WON Pyong-Oh 1981a, 1993, 1996).

29. *Ciconia nigra* (LINNAEUS, 1758)



Data:

Pyongan South (II): Tokchon (II-33): until 1945 (WON);

Ryanggang (V): Kapsan (V-19): 12 Aug 1897 (YANK);

Hamgyong North (VI): 17 Sep 1917, 25 Aug 1920 (AUST), Undok (VI-1): 26 May 1897, Musan (VI-12): 11 Jun 1897 (YANK), Mayang (VI-15): 1983, 1984 (SONOBE 1987), no date (RIM Chu Yon, pers comm), ?Chilbosan (VI-37): no date, ?Kimchaek (VI-38): no date (SONOBE 1987);

Hamgyong South (VII): Hamhung (VII-30) 12 Sep 1897 (YANK);

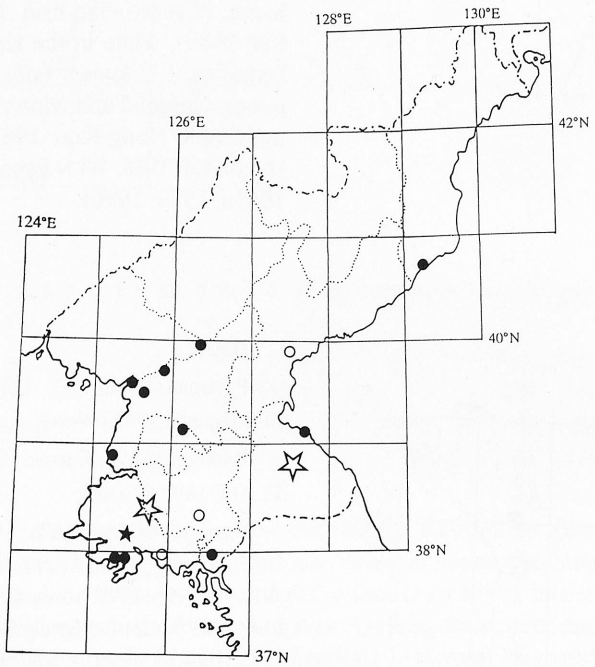
Kangwon (VIII): Yonghung (VIII-14): 20 Oct 1897 (YANK);

no data: 1 specimen of the collection KIM Il Sung University in Pyongyang.

Breeding species, nesting mainly in provinces: Hamgyong

North and Hamgyong South. A hundred years ago it was much more abundant: nearly half of all observations are from one breeding season of 1897, and they were made during a half-year expedition (YANKOVSKII 1898). Record of three localities come from the past 40 years. Two of them are doubtful, for apart from geographical names (Kimchaek, Chilbosan) they contain no concrete details, to say nothing of the fact that on the map showing "the breeding area of Black Stork" the dots marking the nest sites are about 50 km away from the actual situations of these sites (see: SONOBE 1987). Doubts are strengthened by the fact that the Korean ornithologists did not mention anything about these nesting sites in 1987 (GŁOWACIŃSKI et al 1989). The Black Stork nests in the neighbouring regions (CHENG Tso-hsin 1987, LER 1989, WON Pyong-Oh 1981a, 1993, 1996) and so supposedly it is still nesting in North Korea and the lack of reliable records is due, among other things, to the unsatisfactory state of exploration of the northern provinces for the avifauna (see Fig. 1).

30. *Ciconia boyciana* SWINHOE, 1873



Data:

Pyongyang (I): Ryongammyon (*I-3): 11 May 1950 (WON);

Pyongan South (II): Onchon (II-24): winter 1985, mouth of Chongchon river (*II-29) mid-Oct 1985 (SONOBE 1987), near Kaechon (*II-31): 14 Jun 1985 (KOLBE), Mundok (II-34): winter 1985 (SONOBE 1987);

Pyongan North (III): Myohyangsan (III-24): 14 Jun 1985 (KOLBE);

Hamgyong North (VI): Solbansan (*VI-38): until 1977 (SONOBE 1987, PAK U Il pers. comm. cited by GŁOW);

Hamgyong South (VII): Sept 1889 (AUST), Hamhung VII-30: 12, 13 Sep 1897 (YANK);

Kangwon (VIII): 15 Jan 1919 (AUST), Apr 1931 (AUST), Anbyon (VIII-18): 17 Oct 1989 (FIEB);

Hwanghae North (IX): Pyongsan (IX-11): 20 Mar 1929 (WON);

Hwanghae South (X): Kangryong (X-19) Jan 1981 (SONOBE 1987) or Dec 1981-Jan 1982 (PAK U Il pers. comm. cited by GŁOW), Chongdan (X-23): until 1950 (PAK U Il pers. comm. cited by GŁOW) or Paechon (X-29): before 1950 (SONOBE 1987), Ongjin (X-26): winter 1981-82, Guranri: (X-?) 30 Nov 1989 (FIEB);

Hwanghae (IX-X): 6 Jan 1917, 15 Nov 1923, 15 Dec 1926, 17 Mar 1927 (AUST);

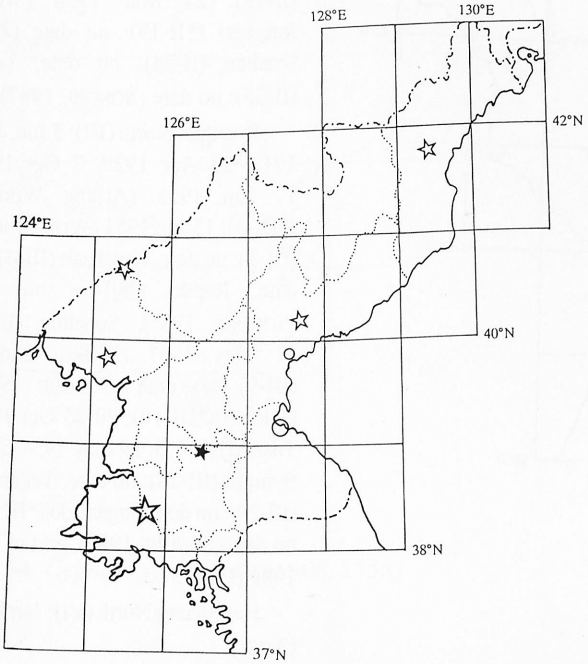
Kaesong (XI): Kaesong (XI-1): 8 Aug 1966 (ZIP);

no data: 1 specimen from the collection of the KIM Il Sung University in Pyongyang.

Very scarce and sporadic nesting species. There are three reports of nesting so far: in Pyongsan, Chongdan and Solban-san (WON Hong-Koo 1963, SONOBE 1987, PAK U-Il pers. comm. cited by GŁOWACIŃSKI et al. 1989). The latest nest was recorded in 1977. However, some later observations, from June 1985 (KOLBE 1988) indicate that the Oriental White Stork probably nested also in next

years. In winter seasons it was observed in larger numbers, in parties of several individuals each. The last record comes from 1989 (FIEBIG 1993).

31. *Nipponia nippon* (TEMMINCK, 1835)



Data:

Pyongan North (III): Feb 1930 (AUST);

Pyongan North-Chagang (III-IV): before 1923 (SOWERBY);

Hamgyong North (VI): Sep (AUST);

Hamgyong South (VII): 1, 3 Apr 1929 (AUST), Hamhung (VII-30): 12-13 Sep 1897 (YANK);

Kangwon VIII: Wonsan (VIII-3): Dec 1887, Jan 1888 (TACZ), 6 Oct 1897 (YANK);

Hwanghae (IX-X): Nov, Dec 1911, 7 Dec 1913 (AUST);

no locality: 1965 (FISHER et al 1969 cited by ARCHIBALD & LANTIS 1981).

So far the observations have been made out of the breeding season (from August till April). Most of them come from the previous century, when the Crested Ibis was observed in small flocks (YANKOVSKII 1898). The last observation in North Korea was made in 1965 (FISHER et al. 1969 cited by ARCHIBALD & LANTIS 1981). Besides, beyond the boundary of North Korea but in its close neighbourhood, in southern Primorsk, it was found in May 1963 (NEUFELDT & WUNDERLICH 1978). Unreported in the past 30 years. An abrupt fall in the size of whole population of the Crested Ibis and the fact of observations of merely single individuals throughout the area of its occurrence are the reasons for which this species is now included among the most endangered birds in the world (FLINT 1985, LER 1989, del HOYO et al. 1992, HANCOCK et al. 1992), and in 1989 its world population numbered 49 individuals (del HOYO et al. 1992, HANCOCK et al. 1992).

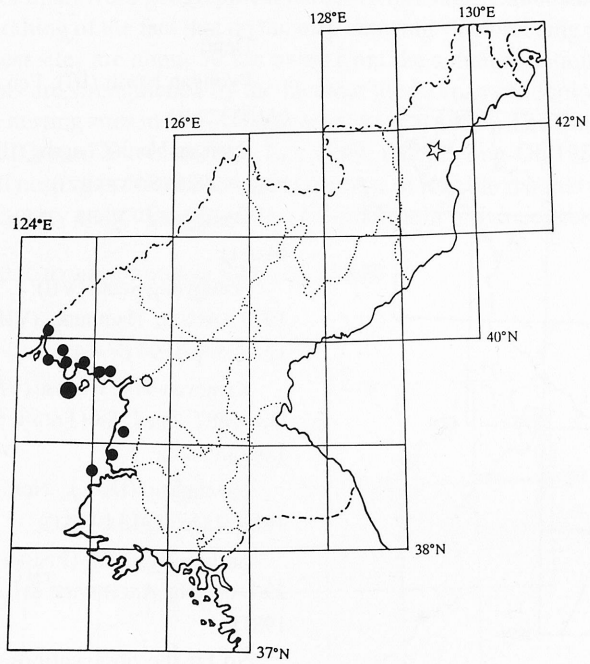
Platalea leucorodia LINNAEUS, 1758

Data:

?Pyongan South (II): Kongdokmyon (*II-17): 23 Mar 1949 (WON 1956).

There is only one observation and doubtful at that made by WON Hong-Koo in 1949, which that author does not mention in his monograph from 1963. This species nests in southern Primorsk and in north-eastern China, while in South Korea it appears during migration and in winter (GORE & WON Pyong-Oh 1971, CHENG Tso-hsin 1987, LER 1989, WON Pyong-Oh 1981a, 1993, 1996, CHO Sam- Rae 1994). Probably, it turns up also in the northern part of the Korean Peninsula. However, without finding this species present for certain, it should not be entered in the list of birds of North Korea.

32. *Platalea minor* TEMMINCK et SCHLEGEL, 1849



Data:

Pyongan South (II): 14 May 1917, 10 Dec 1929, (AUST), Anju (II-16): 15 Oct 1931 (WON), Chungsan (II-19): 27 Mar 1958 (WON), Janganri (*II-19): no date (ZIP), Onchon (II-24): no date, Tokto (II-25): no date (SONOBE 1987);

Pyongan North (III): 5 Jun, 3 Jul 1917, 23 Apr 1929, 7 Oct 1931, 17 Jun 1933 (AUST), Wonhari (*III-3): 15 Jun 1951 (WON), Jongju (III-3): no date, Kwaksan (III-4): no date, Rapdo (*III-6): no date (SONOBE 1987), Sonchon (III-6): 31 May 1957 (WON), Cholsan (III-9): no date (SONOBE 1987), Haksori (*III-10): 20-25 Oct 1955, Tasado (III-12): 19 May 1954 (ZIP), Synuiju (III-28): no date, Tegam-do (III-29): no date, Sogam-do (*III-29): no date (SONOBE 1987), end of July 1989 (FIEB);

Hamgyong North (VI): Jan 1910 (AUST).

Breeding species, nesting in small numbers along west coast; only once observed on eastern coast, in 1910. Ornithologists give 9 breeding areas in North Korea at the present time: Synuiju, Cholsan, Kwaksan, Rapdo, Tegam-do, Sogam-do, Jongju, Onchon and Tokto; the number of birds of this species is estimated at 30 individuals (SONOBE 1987). On the other hand, FIEBIG (1993) found the nesting of ten pairs altogether on four islands (among them on Sogam) in the Pyongan North Province. In discussing the occurrence of the Black-faced Spoonbill, the authors (GORE & WON Pyong-Oh 1971, CHENG Tso-hsin 1987, SONOBE 1987, del HOYO et al. 1992) emphasize a rapid fall in its abundance in last decades. Today the above-mentioned islands are the only known nesting place of the Black-faced Spoonbill in the world. The size of the whole population of this species is estimated at about 285 birds (HANCOCK et al. 1992, del HOYO et al. 1992).

ANSERIFORMES

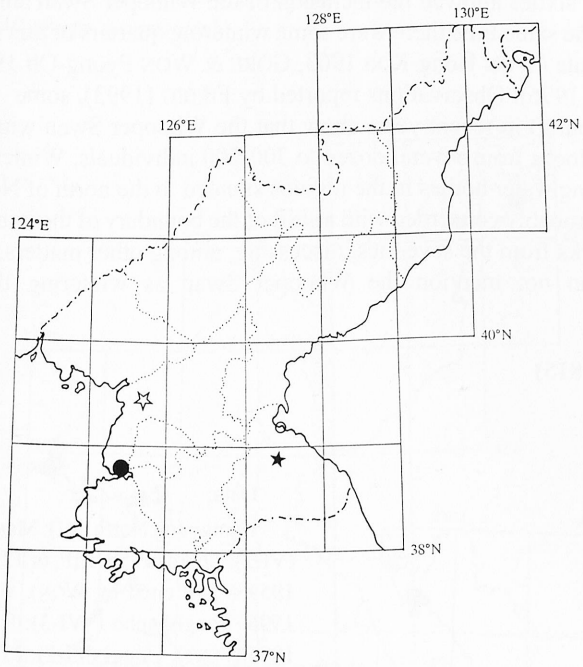
33. *Cygnus olor* (GMELIN, 1789)

Data:

Pyongan South (II): Kwangryongmun (II-?): Jan 1947 (WON), Nampho (II-26): 19 Dec 1989, 23 Jan, 3 Feb 1990 (FIEB);

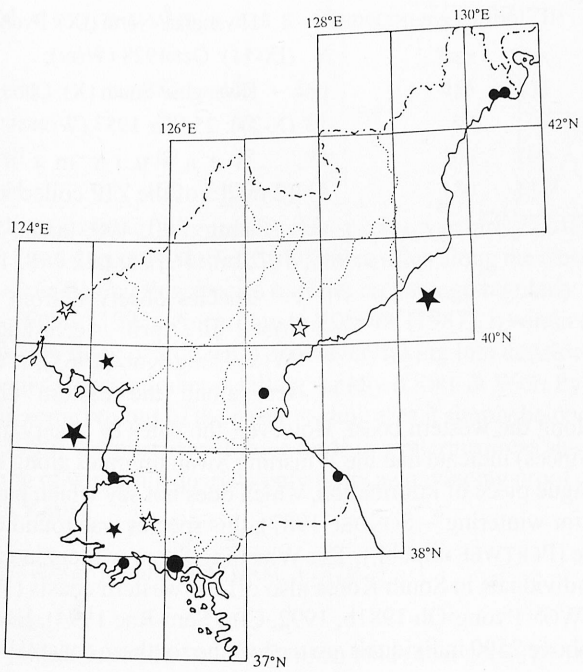
Kangwon (VIII): Wonsan (VIII-3): 27 Feb 1888 (TACZ);

Probably Kangwon Province (?VIII): Ribsokri: 15 Dec 1989 (FIEB).



Observed six times in winter, the last four records coming from 1989-1990. In South Korea it was seen in 1968, 1974, 1977 and 1980 (WON Pyong-Oh 1981b) and is regarded as a scarce winter visitor (WON Pyong-Oh 1993, 1996). In connection with the complete disappearance of the Mute Swan from the Russian regions in the Far East (LER 1989) and the fact that its nearest breeding areas lie in north-eastern China (CHENG Tso-hsin 1987), the probability of coming upon this bird in North Korea will be decreasing.

34. *Cygnus cygnus* (LINNAEUS, 1758)



Data:

Pyongan South (II): Nampho (II-26): 31 Jan 1995 (PERT);

Pyongan North (III): before 1923 (SOWERBY), 5 Apr 1934 (WON 1956);

Hamgyong North (VI): Manpo (VI-2):: 3 Oct 1989 (FIEB), Unggi (VI-7): 17 Oct 1959 (WON);

Hamgyong South (VII): 7 Nov 1914 (AUST), ? distr Kumya (VII-38): no data (SONOBE 1987);

Kangwon (VIII): distr. Kosong (VIII-6): no data (SONOBE 1987);

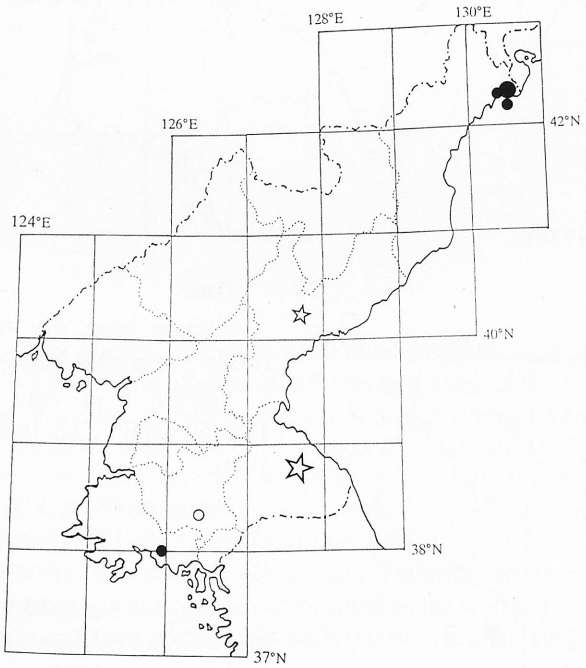
Hwanghae South (X): Mar (FIEB), Kangryong (X-19): Jan 1985 (SONOBE 1987), Yonan (X-30): 5 Mar 1956, 22 Nov 1957 (WON);

Hwanghae (IX-X): Apr 1921 (AUST);

Coasts of northern Korea: from autumn to early spring (FIEB).

The dates of its observations up to sixties allowed the inclusion of the Whooper Swan among migrants (WON Hong-Koo 1963). At the same time there were some wintering quarters of this species in the southern part of the peninsula (WON Hong-Koo 1963, GORE & WON Pyong-Oh 1971, SONOBE 1982, WON Pyong-Oh 1993, 1996). Observations reported by FIEBIG (1993), some Korean ornithologists and PERTWEE (unpubl.) in recent years show that the Whooper Swan winters also off the coasts of North Korea in flocks from several dozen to 300-500 individuals. Wintering birds were also watched on non-freezing water bodies in the regions situated to the north of North Korea (LER 1989) and so here we are probably concerned with a shift of the boundary of the wintering areas further to the north. The works from the seventies, discussing, among other matters, the occurrence of birds in Primorsk, do not mention the Whooper Swan as wintering there (POLIVANOVA 1971, PANOV 1973).

35. *Cygnus columbianus* (ORD, 1815)
[*Cygnus bewickii*]



Data:

Hamgyong North (VI): Manpho (VI-2): 12 Apr 1959 (ZIP, or 12 Dec 1959 – ZIP cited by WON), 9 Apr 1996, Tongbonpho (*VI-3): 9 Apr 1996 (PERT), Unggi (VI-7): 17 Oct 1959 (ZIP);

Hamgyong South (VII): 11 Jan 1919 (AUST);

Kangwon (VIII): Dec, 22 Nov 1914, Dec 1928 (AUST);

Hwanghae North (IX): Pyongsan (IX-11): Oct 1928 (WON);

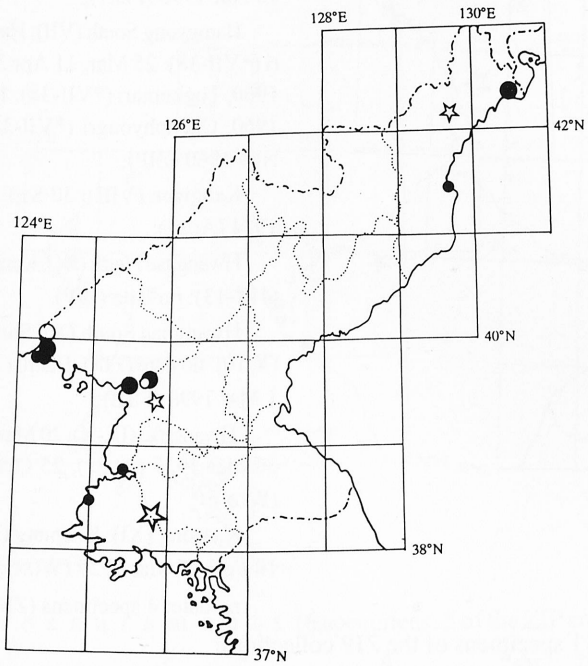
Hwanghae South (X): Chongdan (X-23): 25 Mar 1957 (WON).

Measurements (2 males of the ZIP collection):

wing: 500, 490; tarsus 108, 102; bill: 99, 75; tail: 178, 185.

Species observed from October till April. According to WON Hong-Koo (1963), it winters along the eastern coast, whereas its route of migration leads along the western coast. However, the dates of observations (from October till April in eastern provinces) indicate that the Whistling Swan migrates along both coasts. After 1959, except for a very vague piece of information, which does not say which part of the peninsula it refers to ("visit Korea for wintering"– SONOBE 1987), this species was found only once, in the Hamgyong North Province (PERTWEE unpubl.). The Whistling Swan winters in small flocks from several to several dozen individuals in South Korea also off the western coasts (WON Pyong-Oh & HAM Kyu-Hwang 1984, WON Pyong-Oh 1981b, 1992, CHO Sam-Rae 1994). Exceptionally, very large flocks, numbering above 2500 individuals are met off the southern coast (HAHM Kyu-Hwang 1992).

36. *Anser cygnoides* (LINNAEUS, 1758)
[*Cygnopsis cygnoides*]



Data:

Pyongan South (II): 21 Mar 1933 (AUST), Anju (II-16): 19, 21 Mar 1932 (WON), ?winters (SONOBE 1987), Nampho (II-26): 2 Apr 1990, Chongchon riv (*II-29): 11 Nov 1989, 9-12 Mar 1990 (FIEB);

Pyongan North (III): mouth of Amnok riv. (III-?): no date (KUR), 7, 10 Apr 1929 (AUST), Sindo (III-14): 9 Apr 1961, Mumyongpyong (*III-14): 24 Oct 1954 (ZIP), ?Ryongampho (III-15): winters (SONOBE 1987);

Hamgyong North (VI): 29 Sep 1929 (AUST), Manpo (VI-2): 2 Oct 1989 (FIEB), 9 Apr 1996 (PERT), Orang (VI-28): 23 Sep 1989 (FIEB);

Hwanghae South (X): Kwail (X-13): 23 Oct 1980 (FIEB);

Hwanghae (IX-X): Mar (AUST), 20 Mar 1949 (WON);

no locality: 11 Oct 1961 (ZIP);

no data: 1 specimen (ZIP).

M e a s u r e m e n t s (6 specimens of the ZIP collection):

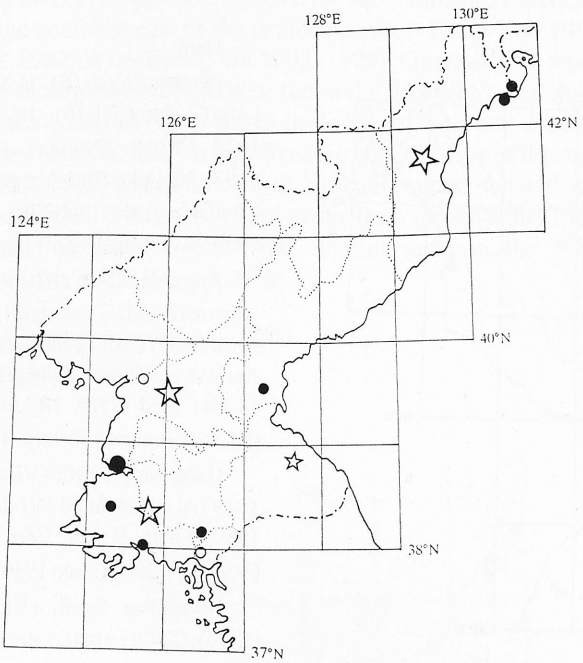
	♂	♂	♂	?sex	?sex	?sex
wing	385	445	460	455	455	450
tarsus	74	88	84	90	77	65
bill	82	93	93	100	100	90
tail	161	130	144	180	137	133

Up to sixties of this century this species was rarely observed during spring and autumn migration (7 and 4 records, respectively), more often along the western coast than the eastern. More recent data indicate that this species appears on passage regularly in numbers from several to about 120 birds (FIEBIG 1993). According to SONOBE (1987), it winters also in the Anju and Ryongampho regions ("in flock of a dozen"). However, taking into consideration the fact that the Swan Goose is a species whose number is falling rapidly (GORE & WON Pyong-Oh 1971, CHENG Tso-hsin 1987), and in some regions of the past breeding area it simply belongs to the endangered taxa (FLINT 1985, LER 1989), the presence of these birds in wintering areas should be documented in more detail. The naming of wintering quarters only is not a convincing proof of the actual wintering of these birds in North Korea.

37. *Anser fabalis* (LATHAM, 1787)

Data:

Pyongan South (II): Dec 1935, 17 Mar 1946 (AUST), Anju (II-16): 20 Mar 1932 (WON), Nampho (II-26): 5, 27 Nov 1988, 19 Oct, 20, 30 Nov; 1, 19 Dec 1989 (FIEB), 31 Jan 1995 (PERT);



Hamgyong North (VI): 20 Sep, 12 Oct 1929 (AUST), Tongbonpho (*VI-3): 9 Apr 1996, Pipa (*VI-6): 10 Apr 1996 (PERT);

Hamgyong South (VII): Haejung-ri (*VII-38): 25 Mar, 11 Apr 30 Oct 1960, Togkumari (*VII-38): 12 Apr 1960, Chonphyongri (*VII-38): 18 Nov 1960 (ZIP);

Kangwon (VIII): 30 Sep, 1 Oct 1914 (AUST);

Hwanghae North (IX): Kangpukri (*IX-13): no date (ZIP);

Hwanghae South (X): Samchon (X-10): no date (ZIP), Haeju (X-22): 1 Mar 1990 (FIEB);

Hwanghae (IX-X): 20 Mar 1914, 30 Mar 1927 (AUST), 25 Oct 1930 (WON);

Kaesong (XI): Kaepung (XI-5): 18 Feb, 15 Mar 1929 (WON);

no date: 4 specimens (ZIP).

M e a s u r e m e n t s (11 specimens of the ZIP collection):

	♂	♂	♀	8 ?sex	$\bar{x}$
wing	420	439	450	380-510	457.8
tarsus	78	70	75	71-85	80.1
bill	62	59	60	63-78	69.4
tail	132	129	147	106-215	160.0

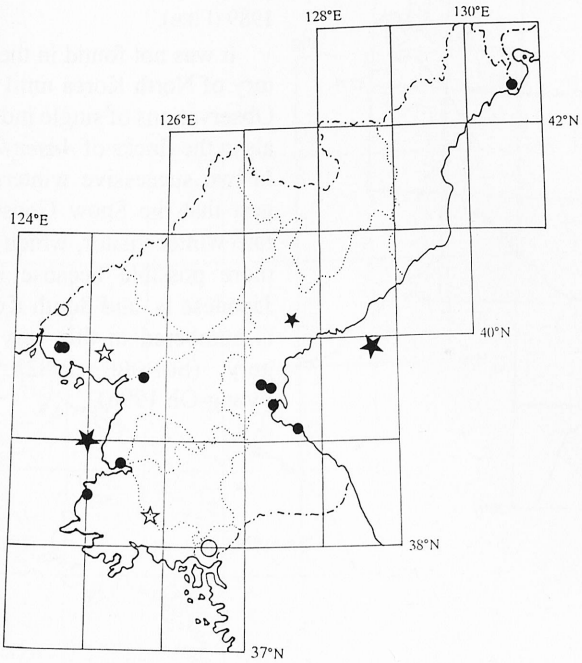
Species observed on western and eastern coasts during spring (March-April 9 records) and autumn (September-November – 12 records) migration and in winter. According to FIEBIG (1993), the Bean Goose was the most abundantly represented species among the geeses wintering off the coasts of North Korea in 1987-1990, its flocks reaching 1000 individuals. It belongs to bird wintering in numbers of several thousand individuals off the coasts of South Korea (WON Pyong-Oh 1988a, 1990a, WON Pyong-Oh et al. 1993b, CHO Sam-Rae 1994, HAHM Kyu-Hwang 1992, HAHM Kyu-Hwang & YU Jae-Pyoung 1993, PAE Seong-Hwan et al. 1995). Taking into consideration FIEBIG's observations, one should include at least the southern provinces of North Korea in the wintering area of this species. At the same time, however, the northern boundary of the wintering area of the Bean Goose extends across the Korean Peninsula, for in the regions situated to the north of North Korea this species is present only as a passage migrant (PANOV 1973, CHENG Tso-hsin 1987).

38. *Anser albifrons* (SCOPOLI, 1769)

Data:

Pyongan South (II): Anju (II-16): 28 Apr 1956 (WON), Nampho (II-26): 20 Nov 1989 (FIEB);

Pyongan North (III): 4-15 Apr 1929 (AUST), Yomju (III-10): 20 Mar 1954 (MAUERS), Haksori (*III-10): 10 Mar 1954 (ZIP), Pyongwon (*III-17): 28 Mar 1949 (WON);



Hamgyong North (VI): Tongbonpho (*VI-3): 9 Apr 1996 (PERT);

Hamgyong South (VII): Yongan (VII-?): 7 Mar 1959 (WON), Inhung (VII-37): 12 Apr 1960 (WON), Haejungri (*VII-38): 13 Nov 1960 (ZIP);

Kangwon (VIII): Yonghung (VIII-14): 26 Mar 1959 (WON), Tongjongho (VIII-18): 10 Dec 1989 (FIEB);

Hwanghae South (X): Phunghaeri (*X-13): 26 Mar 1962 (ZIP);

Hwanghae (IX-X): Mar (AUST), 25 Oct 1930 (WON cited by AUST); Kaesong (XI): Kaesong (XI-1): 3 Feb 1922, 15 Oct 1925 (WON 1956);

Eastern and western see-coasts: from late autumn to early spring in 1987-1990 (FIEB);

no data: 3 specimens (ZIP).

M e a s u r e m e n t s (6 specimens: 5 of the ZIP collection, one of the MZB collection):

	♂	♂	♀	?sex	?sex	?sex
wing	415	420	415	380	410	406
tarsus	76	75	79	62	67	72
bill	52	48	–	45	47	48
tail	140	124	160	135	138	179

Up to the end of the sixties this species was observed during migration along the eastern and western coasts, more often in spring (March-April – 9 records) than in autumn (October-November – 3 records). It was also seen in winter (2 records). FIEBIG's (1993) observations show that in North Korea this species winters in flocks approaching 1000 birds in number. The White-fronted Goose winters also in large flocks on waters of the southern part of the peninsula, among other places, on the estuaries of big rivers and on coastal lakes (PARK Jin-Young & WON Pyong-Oh 1993b, HAHM Kyu-Hwang 1992, 1994, CHO Sam-Rae 1994, PAE Seong-Hwan et al. 1995).

Anser erythropus (LINNAEUS, 1758)

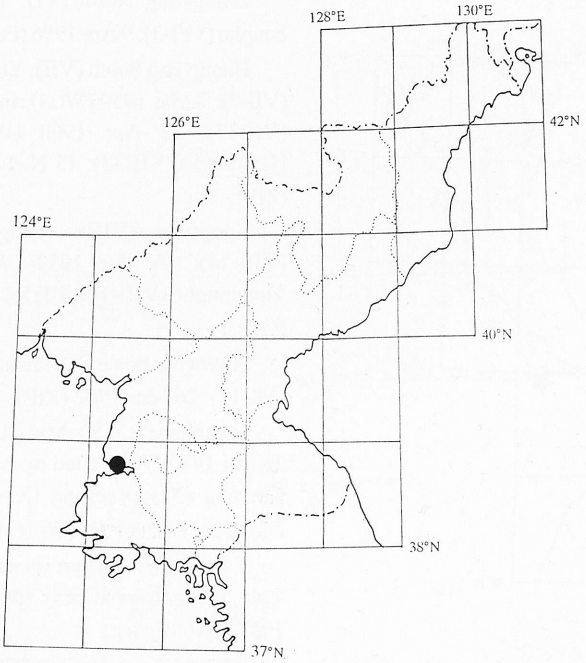
Has not been recorded from North Korea so far (vagrant in the southern part of the peninsula – WON Pyong-Oh 1993, 1996).

Anser anser (LINNAEUS, 1758)

Has not been recorded from North Korea so far (vagrant in the southern part of the peninsula – WON Pyong-Oh 1993, 1996).

39. *Anser caerulescens* (LINNAEUS, 1758)

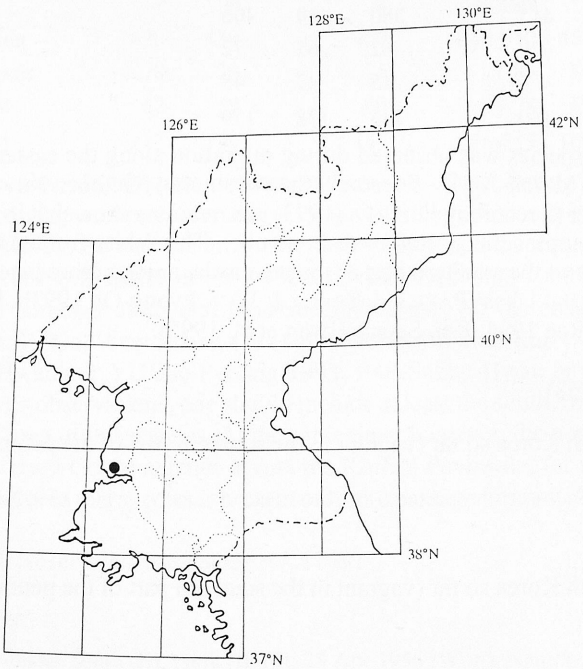
Data:



Pyongan South (II): Nampho (II-26): 5, 27 Nov 1988, 19 Dec 1989 (FIEB).

It was not found in the territory of North Korea until 1988. Observations of single individuals in the flocks of *Anser fabalis* in two successive winters suggest that the Snow Goose is a rare winter visitor, which is the more possible because in the Japanese Is. and South Korea it is numbered in this very category (SONOBE 1982, WON Pyong-Oh 1996).

Branta canadensis (LINNAEUS, 1758)

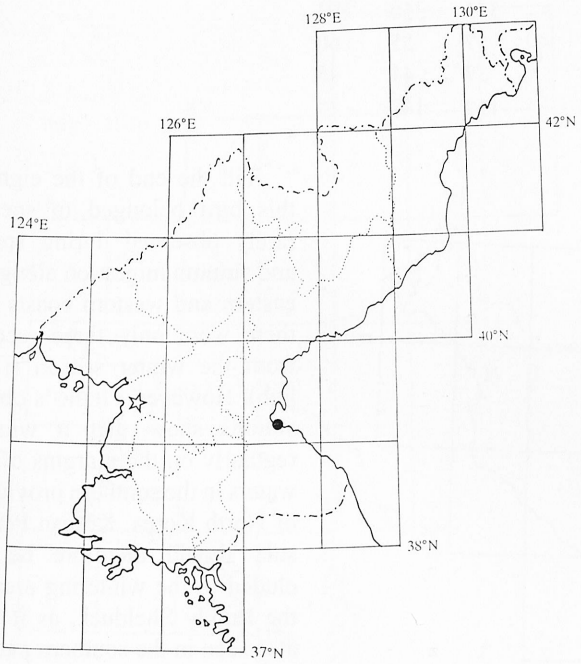


Data:

Pyongan South (II): Onchon (II-24): 21 Nov 1989 (FIEB).

The presence of a single bird in a large flock of other goose species remains unexplained. It is possible that this bird escaped from captivity. In Asia this species was reported from the Bering Is. at the beginning of the 20th century (DEMENTEV & GLADKOV 1952), but to the south of this archipelago it has not been observed yet.

40. *Branta bernicla* (LINNAEUS, 1758)



Data:

Pyongan South (II): 24 Mar 1910 (AUST);

Kangwon (VIII): Wonsan (VIII-3): 16 Dec 1988 (FIEB).

There are only two records of this species, one from the beginning of the century and the other from 1989. It is therefore hard to determine the status of this species in North Korea. In the Korean Peninsula it was placed among rare winter visitors (GORE & WON Pyong-Oh 1971, MEYER DE SCHAUENSEE 1984, WON Pyong-Oh 1987a, 1993, 1996) or among migratory birds (ETCHECOPAR & HÜE 1978), possibly also under both these categories at the same time. According to WON Hong-Koo (1963) Brent Goose migrated along the western coasts and wintered in the southern part of the peninsula. At present, owing to a rapid decrease in the size of the whole population (CHENG Tso-hsin 1987, LER 1989) the occurrence of this species in the Korean Peninsula will become less and less probable. The observation of a flock of 14 birds in December (FIEBIG 1993) still permits the inclusion of the Brent Goose among rare winter visitors.

41. *Tadorna ferruginea* (PALLAS, 1764)
[*Casarca ferruginea*]

Data:

Pyongyang (I): Pyongyang (I-1): winters 1986-88 (CHON Gil-Pyo 1988), Nov-Mar 1987-90 (FIEB), 30 Jan, 1 Feb 1995 (PERT);

Pyongan South (II): Ryongori (II-29): 10 Mar 1958 (ZIP), Chongchon Riv (*II-29): Nov-Dec 1987-90 (FIEB);

Pyongan North (III): Pankungri (*III-10): 18 Apr 1958, Sindo (III-14) no date (ZIP);

Hamgyong North (VI): 23 Dec 1924 (AUST);

Hamgyong South (VII): 2 Mar 1919 (AUST), 19 Oct 1978 (TOM), Haejungri (*VII-38): 17 Nov 1960, Kwangdokri (*VII-38): 18 Nov 1960 (ZIP);

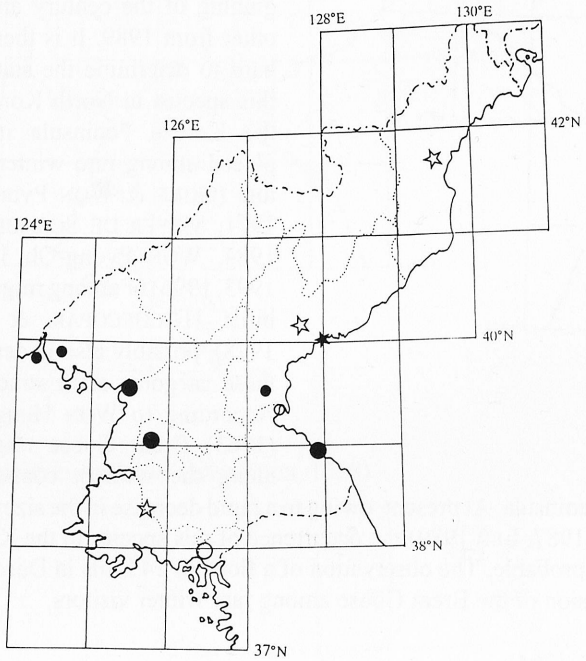
Kangwon (VIII): Yonghung (VIII-14): 1-8 Nov 1897 (YANK), Anbyon (VIII-17): Nov-Dec 1987-90 (FIEB);

Hwanghae (IX-X): 20 Jan 1912 (AUST);

Kaesong (XI): Kaepung (XI-5): 18 Nov 1929, 5 Mar 1931 (WON).

M e a s u r e m e n t s (6 specimens of the ZIP collection):

	♂	♂	♂	♀	♀	?♀
wing	326	385	345	352	350	393
tarsus	64	58	55	57	55	60
bill	41	45	–	39	44	45
tail	135	142	157	130	142	–



Till the end of the eighties this bird belonged to species rarely observed during spring and autumn migration along the eastern and western coasts and there were only three records from the winter season (Dec-Feb). However, FIEBIG's observations show that it winters regularly on the margins of the waters in the southern provinces of North Korea. Korean Peninsula should therefore be included in the wintering area of the Ruddy Shelduck, as it was also seen in the southern part of the peninsula (WON Pyong-Oh et al. 1993b, HAHM Kyu-Hwang 1992, CHO Sam-Rae 1994) and, according to WON Pyong-Oh (1993), it is an uncommon winter visitor there.

42. *Tadorna tadorna* (LINNAEUS, 1758)

Data:

Pyongan South (II): Onchon (II-24): 7 Dec 1988 (FIEB), Nampho (II-26): 13 May 1980 (MAUERS), Chongchon riv (*II-29): 11 Nov 1989 (FIEB);

Pyongan North (III): 17 Apr 1929 (AUST), Haksori (*III-10): 30 Mar 1958 (ZIP);

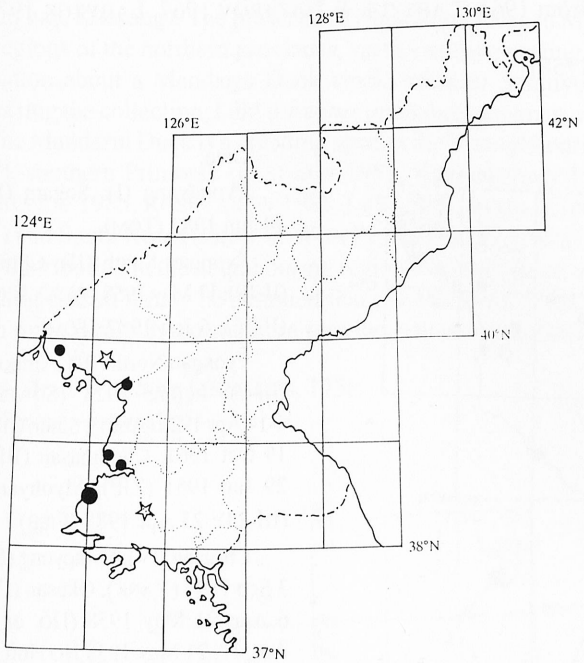
Hwanghae South (X): Kwail (X-13): 12 Dec 1988, 28 Nov 1989 (FIEB);

Hwanghae (IX-X): 10 Mar 1911 (AUST).

M e a s u r e m e n t s (female of the ZIP collection):

wing 308, tarsus 47, bill 49, tail 134 mm.

There are 8 records of this species from North Korea so far: three from the season of spring (Mar-Apr) migration and one from the breeding season, for it comes from mid-May. In mid-May the Shelduck begins laying eggs (DEMENTEV & GLADKOV 1952, HARRISON 1977), but the bird observed was staying in the flock of other ducks, far from the breeding area of its species. Since the



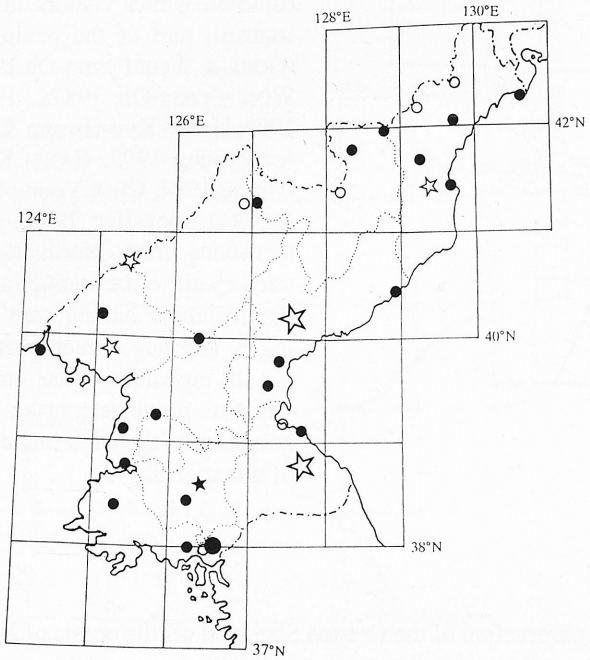
Shelduck starts mating in the 4th and even 5th year of life (HARRISON 1977), it was probably a non-breeding nomadic individual. In winter this species was recorded scarcely four times, although it belongs to common winter visitors in the southern part of the peninsula (GORE & WON Pyong-Oh 1971, WON Pyong-Oh 1987a, 1993, 1996, HAHM Kyu-Hwang & YU Jae-Pyoung 1993, HAHM Kyu-Hwang 1994, CHOI Young-Bok & JUNG Sook-Hee 1995). Observations from North Korea territory allow the numbering of the Shelduck among rare migrants and rare winter visitors. In all probability, the south-western provinces make the boundary of the wintering areas of this species.

Tadorna cristata (KURODA, 1917)

Literature provides a report on an observation of the Crested Shelduck off the coasts of North Korea (O Myong-Sok 1984). Summing up the present knowledge of the occurrence of this species, NOWAK (1987) writes that was the latest reliable observation of its living members. This statement however raises serious doubts. Starting from 1984 during my five visits to North Korea, I attempted to find out precise details about the Crested Shelduck and about the above-mentioned observation. It turned out impossible (for unknown reasons) to get in touch with O Myong-Sok, the author of the publication, or with any of his fellow observers; O Myong-Sok himself, according to my interlocutors, "did not work any longer as an ornithologists". In addition, my observations from North Korea are as follows: in that country I did not come across any keys to birds or moderately faithful colourful illustrations of birds; I did not see anyone using field glasses to observe birds (on the contrary, the field glasses gave rise to suspicion, for I was several times halted and interrogated as a potential spy by military men in uniforms). The identification of a bird species by, for the most part, inexperienced ornithologists ("group of students") without a field-guide, probably also without field glasses, at the distance of 40-50m, seems unreliable. Suspicion is besides aroused by the time that passed between the day of observation and its publication (13 years), whereas the reports of observations of rare species (chiefly new to Korea) were published in the periodicals Saengmul [Biology] and Kwahak Tongbo [Bull. of the Academy of Sciences] mostly in the year in which the observation was made (see WON Hong-Koo 1960, 1962, RIM Chun-Hun 1962, 1963a, b). In view of the fact that in his publication O Myong-Sok (1984) gives no diagnostic features of this birds observed and bearing in mind my above-mentioned experiences in North Korea, I think that his publication should not be taken into consideration in discussing the occurrence of the Crested Shelduck. To be sure, North Korean ornithologists took part in the action of searching for Crested Shelducks (see

NOWAK 1987) but there are still no reliable evidences of the occurrence of this species in North Korea. Anyway, after the rejection of O Myong-Sok's (1984), observation the probably last reliable record of a Crested Shelduck comes from 1964 (LABYZUK & NAZAROV 1967, LABYZUK 1972).

43. *Aix galericulata* (LINNAEUS, 1758)



Data:

Pyongyang (I): Sogam (I-15): 24 Jun 1983 (TOM);

Pyongan South (II): Chungsan (II-19): 11 May 1958 (WON), Nampho (II-26): 6 Jun 1987 (TOM);

Pyongan North (III): Amnok riv. (III-?): before 1923 (SOWERBY), 4-14 Apr 1929 (AUST), Sindo (III-14): 19 Oct 1961, Chonmasan (III-20): 29 Jun 1961 (ZIP), Myohyangsan (III-24): 23 Apr 1988 (FIEB);

Chagang (IV): Hwapyong (IV-2): 3 Sep 1897 (YANK), Okasan (IV-3): 6 Apr, 21 May 1958 (HO, or 6-28 Apr, 17, 21 May 1958 HO HON 1960 cited by WON).

Ryanggang (V): Hyesan (V-5): 24 Jul 1897 (YANK), Samjiyon (V-10): no date (HO), ?16 Jul 1965 (ZIP cited by FIEBIG), Nangsari (*V-10): no date, Yukok (*V-15): no date (HO);

Hamgyong North (VI): 16 Apr, 23 May 1912 (AUST), Sosura (VI-5): 23 Apr 1959 (WON), Hoeryong (VI-9): 28 May 1897, Musan (VI-12): 9, 10 Jun 1897 (YANK), 14 Aug 1929 (WON), Puryong (VI-16): May 1988 (ZIP), Kwanmobong (VI-22): 22 Jun 1959 (WON), Orang (VI-28): 25 Sep 1989 (FIEB);

Hamgyong South (VII): 17 Sep 1912, 26 Mar 1914, 20 Jan 1927 (AUST), Tanchon (VII-8): 16 Sep 1989, Kwangpo (VII-31): 12 Sep 1989 (FIEB), Kumya (VII-38): 7, 17 Apr 1960 (WON);

Kangwon (VIII): Sept 1887 , Dec 1915 (AUST), Wonsan (VIII-3): 18 Sep 1897 (YANK), Tongjongho (VIII-18): 17 Oct 1989 (FIEB);

Hwanghae North (IX): Sohung (IX-9): 25 Sep 1978 (TOM), Pongtanri (IX-?): 27 May 1989 (FIEB);

Hwanghae South (X): Samchon (X-10): 5 Nov 1957, Paechon (X-29): 20-21 Mar, 11 Nov 1955 (WON);

Kaesong (XI): Kaesong (XI-1): 17 Jan, 1 Apr, 25 Oct 1956, Jul, 5-11 Oct 1958 (WON), Kaepung (XI-5): 4 Feb 1929 (WON or 4 Feb, 14 Aug, 24 Sep 1929 – WON cited by AUST);

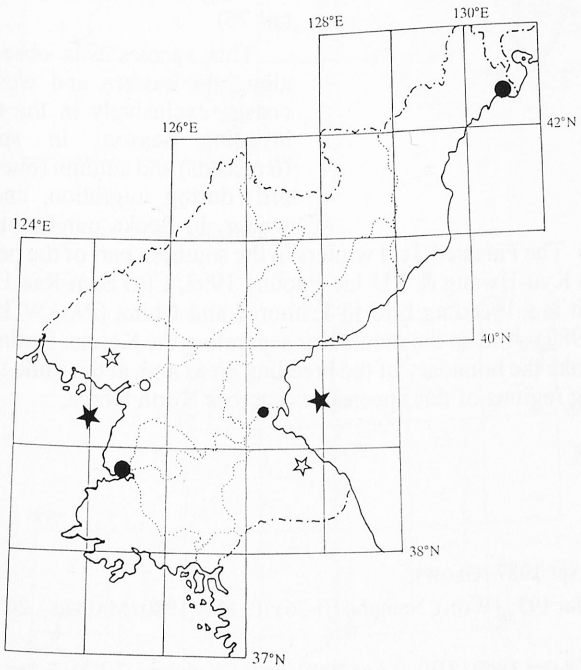
no data: 1 specimen (ZIP).

Measurements (3 specimens of the ZIP collection):

	♂	♀	?sex
wing	229	228	240
tarsus	37	35	34
bill	29	29	29
tail	107	101	115

This species is met with all over the country, most often during migration, less frequently in the breeding season. In winter (Nov-Feb) it was observed only in the southern provinces (Kangwon, Hwanghae, Kaesong). The presence of Mandarin Ducks in May and June, particularly in mountainous regions of the northern provinces, speaks of their nesting. And so does also FIEBIG's (1993) information about a Mandarin Duck chick, taken at Samjiyon and kept in the ZIP collection (in inspecting the collection, I did not come upon this specimen, which was probably temporarily out of it). The Mandarin Duck is a breeding species in the neighbouring countries: China (CHENG Tso-hsin 1987), southern Primorsk (ELSUKOV 1985, KOLOMIITSEV 1985, LABYZUK 1985, SHIBNEV 1985, ANDRONOV 1985, ROSLYAKOV 1985, LER 1989), Japan (KURODA 1975, DISTRIB 1978, KAKIZAVA 1981) and South Korea (GORE & WON Pyong-Oh 1971, WON Pyong-Oh 1987a, 1993). On the basis of its distribution in the neighbouring regions and the places of its observation in North Korea in the breeding season it may be assumed that the Mandarin Duck nests throughout the country, though much more rarely in the southern provinces than in the northern ones.

44. *Anas penelope* LINNAEUS, 1758
[*Mareca penelope*]



Data:

Pyongan South (II): Anju (II-16): 21 Mar 1933 (WON), Nampho (II-26): 12-13 May 1980 (MAUERS), 18 Apr 1987 (GLOW), 19 Oct, 20 Nov 1989, 2 Apr 1990 (FIEB), 31 Jan 1995 (PERT);

Pyongan North (III): 22 Apr 1929 (AUST);

Hamgyong North (VI): Manpo (VI-2): 2-3 Oct 1989 (FIEB), 9 Apr 1996 (PERT);

Kangwon (VIII): Apr, 3 Mar 1916 (AUST), Yomjonri (*VIII-1): 2 Nov 1960 (ZIP);

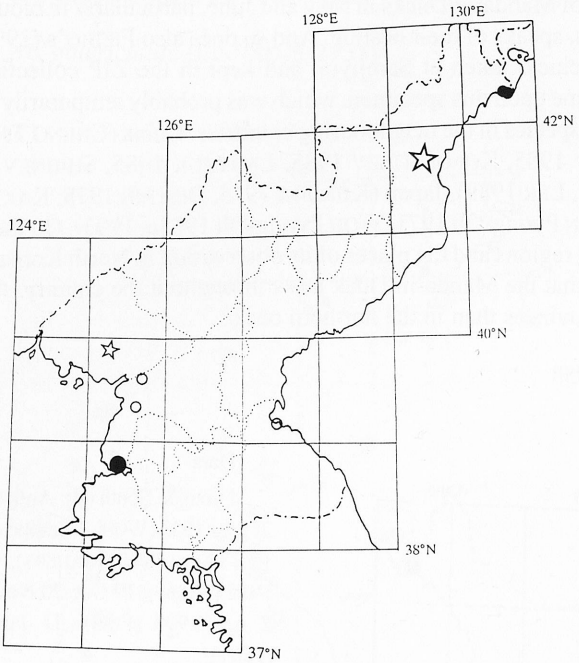
no locality: autumn-winter in 1987-1990 (FIEB).

Measurements (1 female of the ZIP collection):

wing 246, tarsus 38, bill 35, tail 104.

Observed along eastern and western coasts during spring and autumn migration, also in winter. In FIEBIG's (1993) opinion, it belongs to the most abundant and most frequently encountered ducks during the autumn passages and in winter, and its flocks may consist of as many as several thousand individuals. The Wigeon was a species wintering off the southern coast of the Korean Peninsula (HAHM Kyu-Hwang 1992, 1994, HAHM Kyu-Hwang & KIM Chang-Sook 1993, HAHM Kyu-Hwang & YU Jae-Pyoung 1993, CHO Sam-Rae 1994, WON Pyong-Oh 1993, 1996), whereas in the areas situated in the north it belonged to the migratory fauna (PANOV 1973, CHENG Tso-hsin 1987). The presence of these birds in North Korea indicates a shift of the boundary of their wintering areas to the northern part of the peninsula. Unfortunately, FIEBIG did not fix the situation of the wintering places precisely, so it is not known how far to the north the wintering areas extend.

45. *Anas falcata* GEORGI, 1775



Data:

Pyongan South (II): Anju (II-16): 21 Mar 1933 (WON), Pyongwon (II-17): 13 Mar 1949 (WON 1956), Nampho (II-26): Nov-Apr 1987-90 (FIEB), 31 Jan 1995 (PERT);

Pyongan North (III): 22 Apr 1929 (AUST);

Hamgyong North (VI): 29 Apr 1912, 24 Sep 1929 (AUST), Manpo (VI-2): 9 Apr 1996 (PERT), Kulphori (VI-4): 11 Apr 1959 (ZIP);

Kangwon (VIII): Wonsan (VIII-3): no date (TACZ).

Measurements (1 male of the ZIP collection):

wing 260, tarsus 35, bill 42, tail 75)

This species was observed along the eastern and western coasts, exclusively in the non-breeding season: in spring (6 records) and autumn (one record) during migration, and in winter, in flocks numbering as many as 100 individuals (FIEBIG 1993). The Falcated Teal winters in the southern part of the peninsula (HAHM Kyu-Hwang 1992, HAHM Kyu-Hwang & YU Jae-Pyoung 1993, CHO Sam-Rae 1994, WON Pyong-Oh 1993, 1996), while it is a breeding bird in Primorsk and China (PANOV 1973, ROSLYAKOV 1984, CHENG Tso-hsin 1987). And so the mountains separating the Korean Peninsula from the continent of Asia probably make the boundary of the breeding areas and, at the same time, the northern boundary of the wintering regions of this species runs across North Korea.

46. *Anas strepera* LINNAEUS, 1758
[*Chaulelasmus streperus*]

Data:

Pyongyang (I): Taedong riv.(I-?): 16 Apr 1987 (GŁOW);

Pyongan South (II): Anju (II-16): 21 Mar 1933 (WON), Nampho (II-26): 13 May 1980 (MAUERS), 20 Nov, 19 Dec 1989 (FIEB), 31 Jan 1995 (PERT);

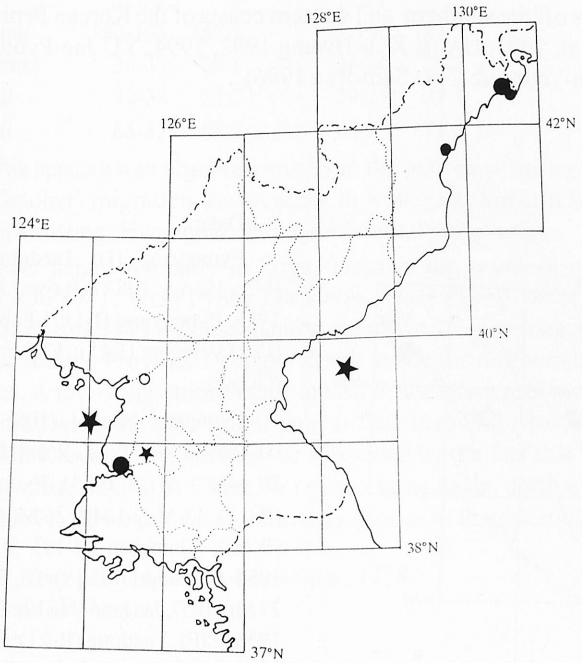
Hamgyong North (VI): Manpo (VI-2): 8 Oct 1959 (ZIP), 9 Apr 1996 (PERT), Kulphori (VI-4): 5 Apr 1959 (ZIP), Chongjin (VI-19): 9 Jul 1955 (WON);

no locality: winters 1987-90 (FIEB);

no data: 3 specimens (ZIP).

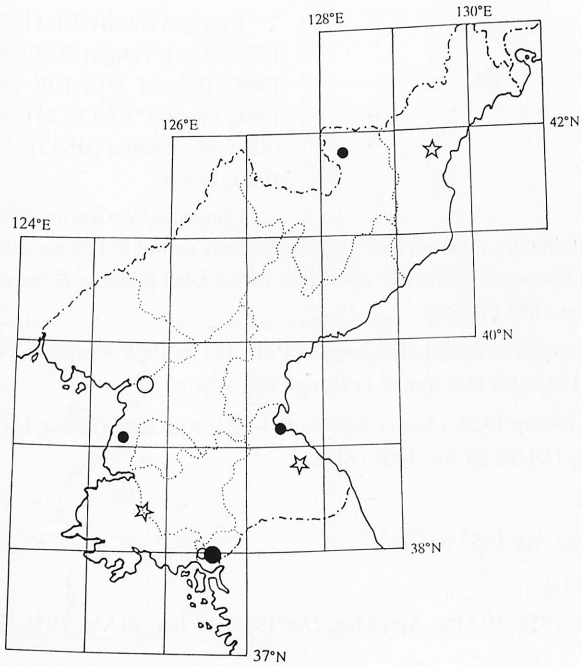
Measurements (5 specimens of the ZIP collection):

	♂	♂	?sex	?sex	?sex
wing	270	258	270	250	255
tarsus	39	40	41	41	34
bill	41	47	51	48	41
tail	83	90	100	130	87



Up to the end of the eighties it had been found scarcely several times (5 reports and 3 specimens in a collection without any data, and then all together, at the most, 8 records). However, according to FIEBIG's (1993) observations, it belongs to the most frequently met ducks in the season of migration. One observation from the breeding season (9 July 1955) suggest that it may belong to the breeding fauna, but no data concerning its nesting have been collected so far. The breeding grounds occur to the north of the Korean Peninsula, in China (CHENG Tso-hsin 1987) and single pairs nest on Hokkaido I. in Japan (KURODA 1975, DISTRIB. 1981).

47. *Anas formosa* GEORGI, 1775



Data:

Pyongan South (II): Anju (II-16): 23, 25 Mar 1932, 22 Mar 1939, Chungsan (II-19): 28 Mar 1955 (ZIP);

Ryanggang (V): Samjiyon (V-10): no date (HO);

Hamgyong North (VI): 11 Nov 1929 (AUST);

Kangwon (VIII): 23, 29 Sep 1914 (AUST), Wonsan (VIII-3): 14 Dec 1988 (FIEB);

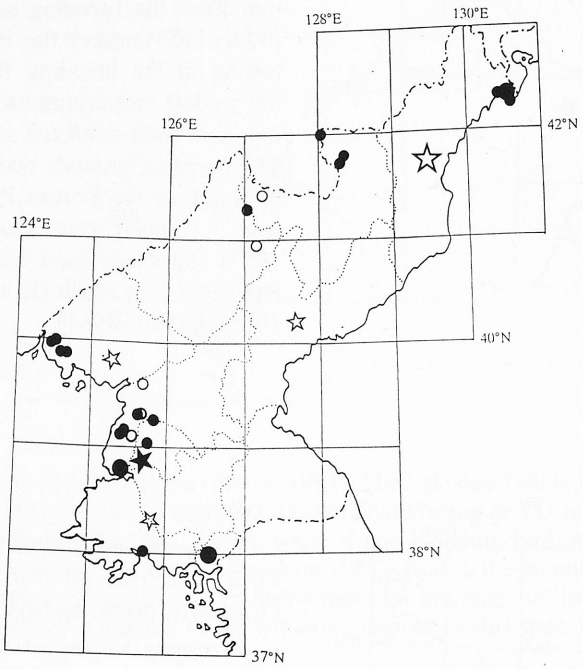
Hwanghae (IX-X): Mar (AUST);

Kaesong (XI):Kaesong (XI-1): 1, 28 Mar 1957, 6 Mar 1958, Kaepung (XI-5): 28 Mar 1929 (WON);

Species observed during spring and autumn migration (respectively, 9 and 3 records), mainly at the beginning of the century. Only once seen in winter, in 1988. The lack of any more observations in recent

years has probably been caused by a rapid fall in the numbers of Baikal Teals in the Far East (KURODA 1975, ROSLYAKOV 1984, LER 1989, del HOYO et al. 1992). On the other hand, however, it is a species wintering in large numbers off the southern and western coasts of the Korean Peninsula (WON Pyong-Oh 1987c, ALLPORT et al. 1991, HAHM Kyu-Hwang 1992, 1994, YU Jae-Pyoung & HAHM Kyu-Hwang 1994, KANG Heui-young & CHO Sam-Rae 1996).

48. *Anas crecca* LINNAEUS, 1758
[*Querquedula crecca*]



Data:

Pyongyang (I): Taedong riv. (I-?): 16 Apr 1987 (GŁOW), 30 Jan 1995, Pyongyang (I-1): 1 Feb 1995 (PERT), Sogam (I-15): 17 Apr 1987 (GŁOW);

Pyongan South (II): Anju (II-16): 25 Mar 1932 (WON 1956 or 20 Mar – WON 1963), Pyongwon (II-17): 13 May 1949, 26 Mar 1951 (WON), Chungsan (II-19): 30 Mar 1958, Mupongri (*II-19): 23, 24, 26, 27 Mar 1957, Janganri (*II-19): 29 Mar 1958 (ZIP), Taedong (II-21): 13 Oct 1949 (WON), Nampho (II-26): 13 May 1980 (MAUERS), winters 1987-90 (FIEB), 31 Jan 1995 (PERT);

Pyongan North (III): 11, 21 Apr 1929 (AUST), Yomju (III-10): 29 Mar 1968, Haksori (*III-10): 29 Apr 1958, Yangsi (*III-13): 24 Oct 1954 (ZIP), Ryongchon (III-13): 24 Mar 1950 (WON);

Chagang (IV): Karimri (*IV-2): 6 Apr 1958 (ZIP), Okasan (IV-3): 6 Apr 1958 (HO; note: probably this is the same record as that proceding it, i.e. the specimen taken by HO Hon on Mt Okasan is in the ZIP collection with a label pointing at the nearest village of Karimri), Rangnim (IV-5): 9 Sep 1897 (YANK);

Ryanggang (V): Huchang (V-1): 22 Aug 1897 (YANK), Rimyongsu (V-9): 15 Oct 1958, Samjiyon (V-10): no date (HO), Paekdusan (V-12): 15 Oct 1983 (JIN Dok-Jun & O Hung-Dam 1990);

Hamgyong North (VI): 26 Sep 1917, 16 Sep 1929, (AUST), Manpo (VI-2): 9 Apr 1996 (PERT), Kulphori (VI-4): 14 Apr 1959, 10 Apr 1969, Sosura (VI-5): 23 Jun 1963 (ZIP);

Hamgyong South (VII): Sept (AUST);

Hwanghae South (X): Haeju (X-22): 29 Apr 1987 (GŁOW);

Hwanghae (IX-X): 24 Apr 1917 (AUST);

Kaesong (XI): Kaesong (XI-1): 27 Jan 1956, 10 Mar, Apr, May, Dec 1957, 22 Jan, 30 Mar 1958 (WON), Mar 1970 (ZIP);

no data: 4 specimens (ZIP).

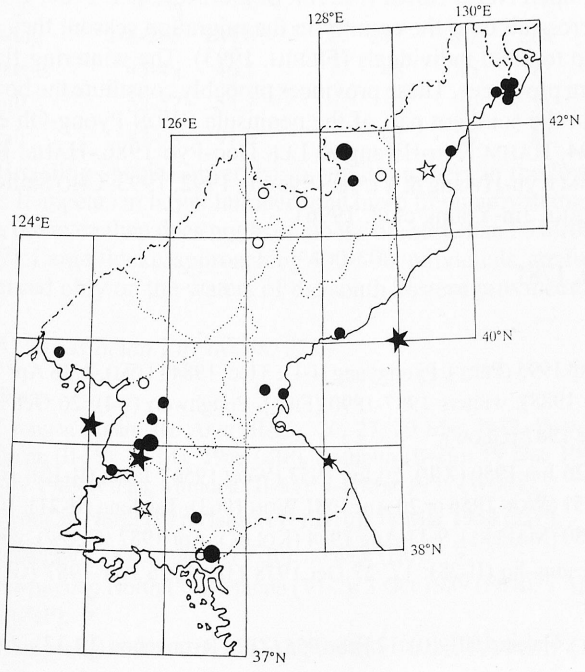
Measurements (21 specimens of the ZIP collection):

	10 ♂♂	$\bar{x}$	11♀♀	$\bar{x}$
wing	180-195	187.7	173-190	181.9
tarsus	26-37	29.1	24-30	28.2
bill	32-38	35.2	34-37	35.3
tail	65-82	69.9	60-87	71.0

This species was observed mostly in the periods of spring (March, April) and autumn (September, October) migration. Its presence in winter has hitherto been found in the south-western provinces (Kaesong, Hwanghae, Pyongan South, Pyongyang).

Teals winter regularly in large flocks in the southern part of the peninsula (GORE & WON Pyong-Oh 1971, WON Pyong-Oh 1990a, WON Pyong-Oh et al. 1993b, HAHM Kyu-Hwang 1992, CHO Sam-Rae 1994). Consequently, the provinces Kaesong and Hwanghae, bordering upon South Korea, and the Province Pyongan South make the northern boundary of the wintering area of this species. A few observations made in the north-eastern provinces in May, June and August, and so in the period when the birds usually stay in their breeding areas, indicate that these ducks may also nest in North Korea. This possibility is supported by the fact that Teals' breeding grounds are situated, among other places, in China, in regions lying to the north of the Korean Peninsula (CHENG Tso-hsin 1987). However, we still have no data as to their nesting in North Korea.

49. *Anas platyrhynchos* LINNAEUS, 1758
[*Anas boschas*]



Data:

Pyongyang (I): Taedong riv (I-?): 16 Apr 1987 (GŁOW), 30 Jan 1995 (PERT), Pyongyang (I-1): 3 Aug 1979, 24 Oct 1986 (TOM), winters 1986-88 (CHON Gil-Pyo 1988), winters 1987-90 (FIEB), 30 Jan 1995 (PERT), Mankyongdae (I-11): 8 Apr 1987, Sogam (I-15): 17 Apr 1987 (GŁOW);

Pyongan South (II): Singhangri (*II-11): 25 Dec 1959 (ZIP), Anju (II-16): 20 Mar 1932 (WON), Nampho (II-26): 31 Jan 1995 (PERT);

Pyongan North (III): Haksori (*III-10): 19 Mar 1954 (ZIP);

Chagang (IV): Rangnim (IV-5): 9 Sep 1897 (YANK);

Ryanggang (V): Huchang (V-1): 22 Aug 1897, Kimjongsukup (*V-3): 19 Aug 1897 (YANK), Naegokri (V-7): 16 Oct 1986 (TOM), Samjiyon (V-10): 12 Jun 1965 (ZIP), 23-25 Oct 1978, 4 Jun 1980 (TOM), no date (HO), Paegam (V-16): 24 Jun 1897 (YANK);

Hamgyong North (VI): 8, 12 Oct 1929 (AUST), Manpo (VI-2): 9 Apr 1996, Tongbonpho (*VI-3): 9 Apr 1996, Alsom (VI-6): 11 Apr 1996, Pipa (*VI-6): 10 Apr 1996 (PERT), Yoppori (*VI-7): 11 Apr 1959 (ZIP), Chongjin (VI-19): 9 Jan 1955 (WON);

Hamgyong South (VII): Sinpho (VII-16): 12 Oct 1969, Ryondongri (VII-35): 8 Nov 1960, Haejungri (*VII-38): 11 Nov 1960 (ZIP);

Kangwon (VIII): Wonsan (VIII-3): 18 Sep 1897 (YANK), Onjongri-Sijungho (VIII-8-5): 24 Apr 1987 (GŁOW);

Hwanghae North (IX): Pyongsan (IX-11): 10 Jan 1954 (WON);

Hwanghae (IX-X): Jan, 17 Dec 1926 (AUST);

Kaesong (XI): Kaesong (XI-1): Jan, Feb 1957, 28 Jan, 6 Feb 1959, Kaepung (XI-5): 30 Mar 1928 (WON);

E and W coasts: Nov, Dec, Feb 1987-90 (FIEB);

no data: 2 specimens (ZIP).

M e a s u r e m e n t s (11 specimens of the ZIP collection):

	5 ♂♂	$\bar{x}$	6 ♀♀	$\bar{x}$
wing	268-290	278.9	247-272	264.5
tarsus	43-47	43.8	37-45	41.7
bill	53-59	54.8	51-55	52.7
tail	97-126	110.7	83-110	102.4

Breeding species. Small numbers of these birds have been nesting in the northern part of the country, chiefly in the Paekdusan region since, at least, the previous century. Small flocks of young birds were observed there in August 1897 (YANKOVSKII 1898) and in June 1980 (TOMEK 1983). The southern boundary of the range of their breeding grounds runs therefore across North Korea, for they nest in China, in areas bordering upon North Korea (MEYER DE SCHAUENSEE 1984, CHENG Tso-hsin 1987). Mallards are come across all over the country in the migration season; they also winter in a large flocks, numbering up to 2500 individuals (FIEBIG, 1993). The wintering flocks were observed only in the south-western provinces. These provinces probably constitute the boundary of the wintering areas extending in the southern part of the peninsula (WON Pyong-Oh et al. 1993b, HAHM Kyu-Hwang 1992, 1994, HAHM Kyu-Hwang & LEE Doo-Pyo 1986, HAHM Kyu-Hwang & KIM Chang-Sook 1993, HAHM Kyu-Hwang & YU Jae-Pyoung 1992, 1993, CHO Sam-Rae 1994, PAE Seong-Hwan et al. 1995, PARK Jin-Young et al. 1996).

50. *Anas poecilorhyncha* FORSTER, 1781

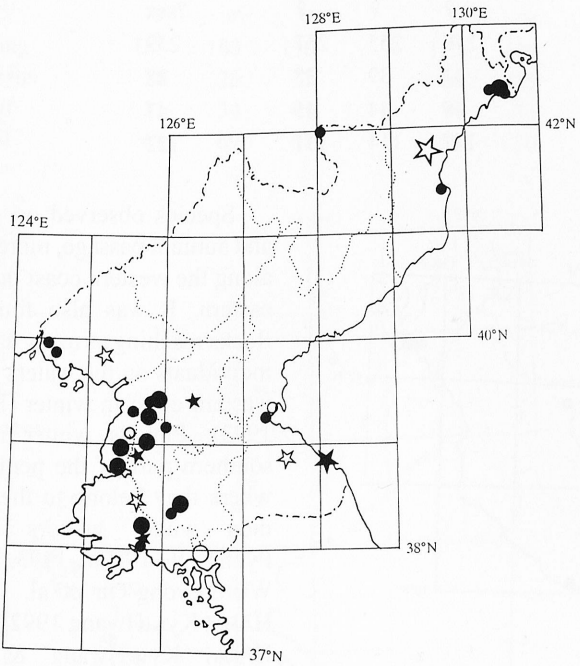
Data:

Pyongyang (I): Taedong riv (I-?): 30 Jan 1995 (PERT), Pyongyang (I-1): 3 Oct 1984 (TOM), 8, 18 Apr 1987 (GŁOW), winters 1986-88 (CHON Gil-Pyo 1988), winters 1987-1890 (FIEB), Ponghwari (I-4): 26 Oct 1984, Sogam (I-15): 24 Oct 1984 (TOM), 17 Apr 1987 (GŁOW);

Pyongan South (II): Sunchon (II-11): 26 Jun 1950 (ZIP), 20 Jun 1953 (WON 1956), Jasan (II-12): 10 Oct 1953 (WON), Pyongwon (II-17): 20 Jun 1951 (WON 1956 or 20 Apr 1951 WON 1963), Taedong (II-21): 10 Oct 1949 (WON), Nampho (II-26): 12 May 1980 (MAUERS), 9-11 Aug 1984 (KOLBE), Apr 1987 (GŁOW), winters 1987-90 (FIEB), 31 Jan 1995 (PERT), Taesong-ho (II-28): 17, 27 Oct 1978 (TOM), 26 Apr 1987 (GŁOW), Taedongho (II-?): 5 Nov 1988 (FIEB);

Pyongan North (III): 6 Apr 1929 (AUST), Haksori (III-10): 12 Feb 1955 (ZIP), Ryongchon (III-13): 25 Mar 1950 (WON);

Ryanggang (V): Taehongdan (*V-12): 22 Mar 1966 (ZIP);



Hamgyong North (VI): 9 Oct 1915, 10 Oct 1929 (AUST), Manpho (VI-2): 8 Oct 1959 (ZIP), 9 Apr 1996 (PERT), Kulphori (VI-4): 7 Apr 1959, Thori (VI-7): 24 Jun 1959 (ZIP), Jangyon-ho (VI-29): 4, 9 Jul 1983 (TOM);

Kangwon (VIII): 25 Jun 1929 (AUST), Ryongori (*VIII-2): 6 Mar 1955 (ZIP), Sijungho-Kosong (VIII-5-6): 20 Aug 1984 (KOLBE), 19, 24 Apr 1987 (GŁOW), Yonghung (VIII-14): 15 Oct 1897 (YANK);

Hwanghae North (IX): Paekchon-ri (*IX-8): 25 Apr 1972, Sohung (IX-9): 27 Jan 1957 (ZIP), 3 May 1987 (GŁOW);

Hwanghae South (X): Haeju (X-22): 29 Apr 1987 (GŁOW), Changsu (X-25): 14 Oct 1984 (TOM), 30 Apr 1987, Haeju-Changsu (X-22-25): 30 Apr 1987 (GŁOW);

Hwanghae (IX-X): Mar (AUST);

Kaesong (XI): Kaepung (XI-5): 11 Oct 1930, 4 Nov 1931 (WON 1956);

no data: one downy chick (ZIP).

M e a s u r e m e n t s (9 specimens of the ZIP collection):

	6 ♂♂	$\bar{x}$	♀	♀	♀
wing	276-295	284.8	292	267	288
tarsus	45-49	46.3	48	45	43
bill	52-57	54.3	52	49	51
tail	87-98	91.6	97	87	88

Breeding species observed in small numbers in the lowlands of North Korea all through the year. It appears in larger numbers and more frequently in the migration season (March-April, October), but even then does not from flocks of more than 50 birds (AUSTIN 1948, TOMEK & DONTCHEV 1987). Large flocks, approaching 400-500 individuals, are formed in winter. Such large flocks were observed only on the waters of the south-eastern provinces (FIEBIG 1993).

51. *Anas acuta* LINNAEUS, 1758

Data:

Pyongan South (II): Anju (II-16): 20, 27, 29 Mar 1932, Pyongwon (II-17): 23 Mar 1932 (WON 1956), Chungsan (II-19): 20 Mar 1969 (ZIP), Nampho (II-26): 19 Dec 1989, 23 Jan 1990, Chongchon riv (*II-29): 10 Nov 1989 (FIEB), Mundok (II-34): 4-8 Mar 1955 (WON);

Pyongan North (III): Haksori (*III-10): 18 Mar 1958 (ZIP);

Ryanggang (V): Samjiyon (V-10): no date (HO);

Hamgyong North (VI): Manpo (VI-2): 3 Oct 1989 (FIEB), 9 Apr 1996 (PERT), Ryongphori (*VI-7) 5 Apr 1959 (ZIP);

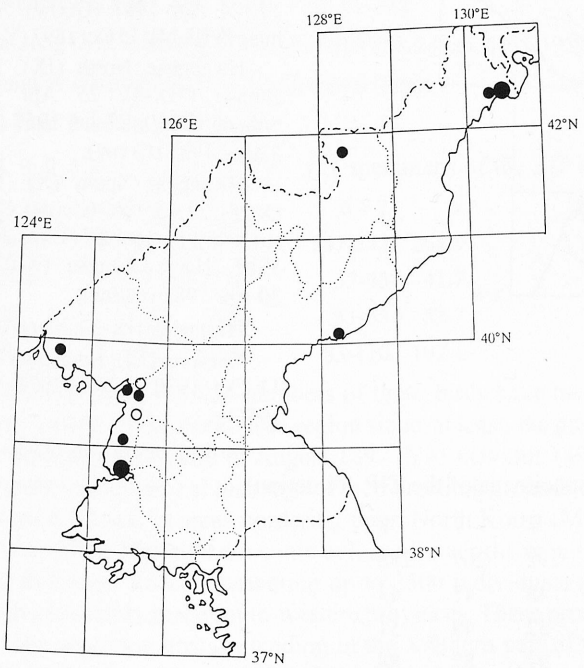
Hamgyong South (VII): Sinpho (VII-16): 10 Oct 1969 (ZIP);

no locality: 12 Mar 1967 (ZIP);

no data: 2 specimens (ZIP).

Measurements (7 specimens of the ZIP collection):

	♂	♂	♂	♀	♀	♀	?sex
wing	256	285	275	270	255	257	252
tarsus	41	43	40	41	39	38	38
bill	47	57	50	49	44	45	47
tail	168	125	99	141	114	111	122



Species observed on spring and autumn passage, more often along the western coast than the eastern. It was also found in flocks reaching as many as 2000 individuals on the waters of the western coast in winter (FIEBIG 1993). Pintails winter in the southern part of the peninsula, where they belong to the common winter visitors (WON Pyong-Oh 1987a, 1993, 1996, WON Pyong-Oh et al. 1993b, HAHM Kyu-Hwang 1992, 1994, HAHM Kyu-Hwang & KIM Chang-Sook 1993, CHO Sam-Rae 1994). The south-western provinces of North Korea bordering upon South Korea are also included in the wintering areas of this species. These areas are the northernmost winter quarters, because both in north-eastern China and in Primorsk this species occurs only on passage (PANOV 1973, CHENG Tso-hsin 1987).

52. *Anas querquedula* LINNAEUS, 1758

Data:

Pyongyang (I): Taedong riv. (I-?): 16 Apr 1987 , Sogam (I-15): 17 Apr 1987 (GŁOW);

Pyongan South (II): Anju (II-16): 15 Apr 1931 (WON 1963, but: 1935 – WON 1956, or 1932 WON cited by AUST), Mupongri (II-19): 23 Mar 1957 (ZIP), Nampho (II-26): 13 May 1980 (MAUERS), 2, 26 Apr, 28 Jun 1990 (FIEB);

Pyongan North (III): 17, 20 Apr 1929 (AUST), Sambongri (III-8): 2 May 1958, Haksori (*III-10): 13, 15 Apr 1958 (ZIP);

Ryanggang (V): Samjiyon (V-10): 28 Sep 1962, Taethaekhosu (*V-16): 12 Sep, 13 Nov 1958 (ZIP);

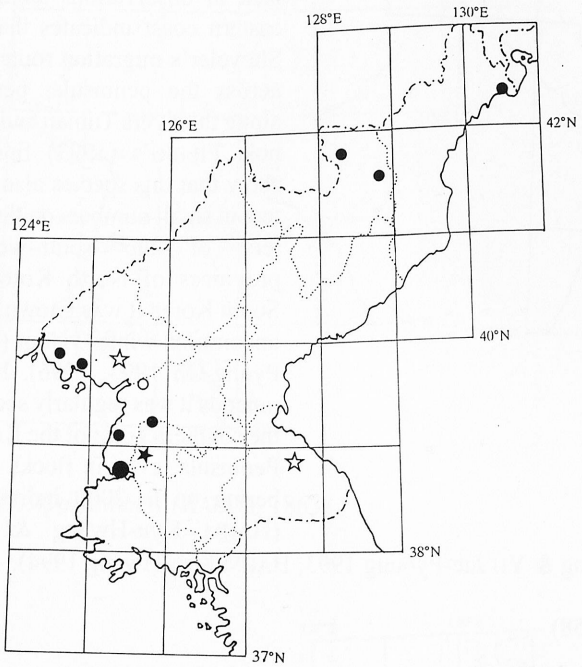
Hamgyong North (VI): Manpo (VI-2): 9 Apr 1996 (PERT);

Kangwon (VIII): 17 Sep 1914 (AUST);

no data: 1 specimen (ZIP).

Measurements (8 specimens of the ZIP collection):

	♂	♂	♂	♀	♀	♀	?sex	?sex
wing	185	180	190	173	170	193	193	196
tarsus	28	26	27	26	25	30	25	27
bill	35	34	41	34	34	36	35	37
tail	69	69	61	59	70	67	80	87



Species observed several times during spring migration along the west coast (8 records) and only once on the eastern coast (PERTWEE unpubl). In autumn it is met with inland, in mountainous regions (Ryanggang Province, 3 records). Since this species was not noted on autumn passage in southern Primorsk (PANOV 1973), the presence of birds in mountainous regions, at a distance of 75-120 km from the coast, indicates that they do not fly to their winter quarters in Central and southern China (CHENG Tso-hsin 1987) along the coasts, but over the land, which rises even above 1000 m a.s.l. (Samjiyon, Taethaekhosu).

53. *Anas clypeata* LINNAEUS, 1758
[*Spatula clypeata*]

Data:

Pyongyang (I): Taedong riv. (I-?) 16 Apr 1987 (GŁOW);

Pyongan South (II): Anju (II-16): 30 Apr 1932 (WON 1956 or 20, 27, 29 Mar 1932 WON 1963), Pyongwon (II-17): 27 Mar 1932 (WON), Nampho (II-26): 13 May 1980 (MAUERS), 19 Dec 1989, 2 Apr 1990 (FIEB);

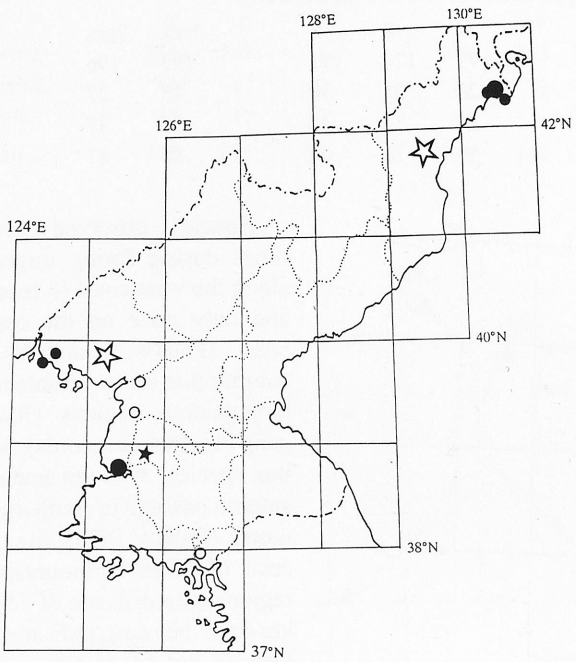
Pyongan North (III): 3 May 1917, 23 Apr 1929 (AUST), Haksori (*III-10): 26-31 Mar, 12 Apr 1958, Tasado (III-12): 21 Mar 1958 (ZIP);

Hamgyong North (VI): 26 Sep 1917, 12, 13 Oct 1929 (AUST), Manpo (VI-2): 8 Oct 1959 (ZIP), 9 Apr 1996 (PERT), Kulphori (VI-4): 16 Apr 1969 (ZIP), Unggi (VI-7) : 16 Apr 1959, 8 Sep 1959 (WON);

Kaesong (XI): Kaepung (XI-5): 9 May 1949 (WON).

Measurements (8 specimens of the ZIP collection):

	6 ♂♂	$\bar{x}$	♀	♀
wing	216-259	235.4	230	215
tarsus	38-45.5	41.6	35	35
bill	63-78	70,6	64	65
tail	78-91	83.0	82	72



Species recorded during spring and autumn migration, mainly along the western coasts. It has been observed on the eastern coast only in the Hamgyong North Province, the northernmost region of North Korea. The lack of observations along the eastern coast indicates that the Shoveler's migration route runs across the peninsula, perhaps along the rivers Tuman and Amnok. FIEBIG's (1993) findings show that this species also winters in small numbers on the waters of the south-western provinces of North Korea. In South Korea it was known as an uncommon winter visitor (WON Pyong-Oh 1993, 1996). In the nineties it was regularly seen off the southern coast of the Korean Peninsula, even in flocks numbering up to 2000 individuals (HAHM Kyu-Hwang & KIM Chang-Sook 1993, HAHM Kyu-Hwang & YU Jae-Pyoung 1993, HAHM Kyu-Hwang 1994).

54. *Aythya ferina* (LINNAEUS, 1758)

Data:

Pyongyang (I): Sogam (I-15): 17 Apr 1987 (GŁOW);

Pyongan South (II): Nampho (II-26): 18 Apr 1987 (GŁOW), 2 Mar 1990, Oct (FIEB), 31 Jan 1995 (PERT);

Hamgyong North (VI): 5 Jan 1914 (AUST), Manpo (VI-2): Oct 1989 (FIEB), 9 Apr 1996, Tongbonpho (*VI-3): 9 Apr 1996 (PERT);

Kangwon (VIII): 25 Oct 1926 (AUST), Sijungho-Onjongri (VIII-5-8): 24 Apr 1987 (GŁOW);

Hwanghae South (X): 11 Feb 1930 (WON);

Hwanghae (IX-X): Jan (AUST);

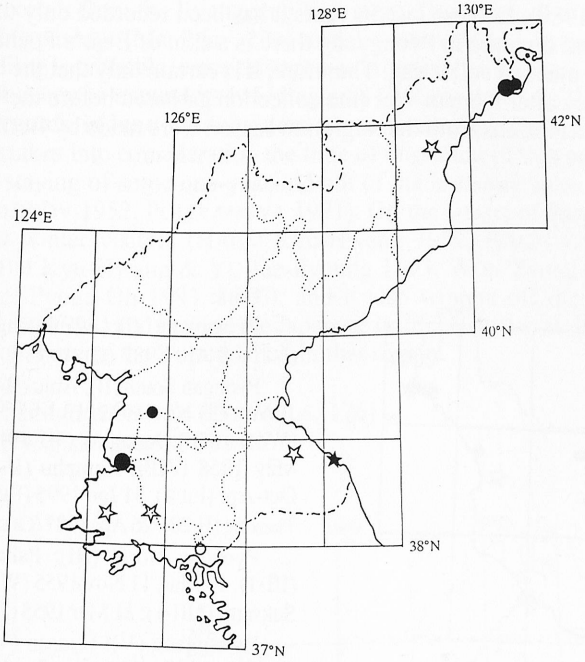
Kaesong (XI): Kaepung (XI-5): 5 Nov 1927 (WON);

no locality: 16 Mar 1964 (ZIP).

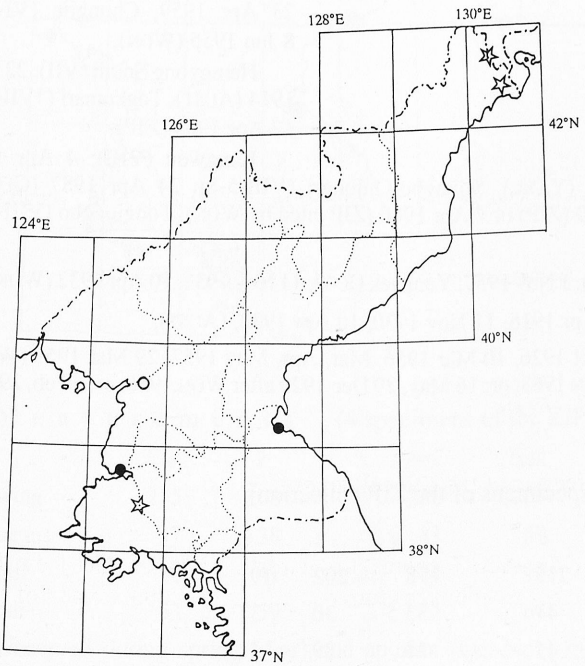
M e a s u r e m e n t s (1 female of the ZIP collection):

wing 208, tarsus 38, bill 53, tail 57.

Species met with during its spring (Mar-Apr: 7 records) and autumn migration (Oct-Nov: 4 records) and also in winter (4 records). All observations but four come from the southern part of North Korea. Pochard is a species observed in the south of Primorsk (PANOV 1973), and commonly wintering in the southern part of the peninsula (HAHM Kyu-Hwang & KIM Chang-Sook 1993, HAHM Kyu-Hwang & YU Jae-Pyoung 1993, HAHM Kyu-Hwang 1994, WON Pyong-Oh 1993, 1996, PAE



55. *Aythya baeri* (RADDE, 1863)



Seong-Hwan et al. 1995). And so it probably appears along the coasts of North Korea much more frequently than it follows from the past findings.

Data:

Pyongan South (II): Anju (II-16): 17 Oct 1931 (WON), Nampho (II-26): 26 Apr 1990 (FIEB);

Hamgyong North (VI): Pakan-kori (VI-?): 21 Jun 1927, Tumen-ula (VI-?): 22 Jun 1927 (ZISP);

Kangwon (VIII): Wonsan (VIII-3): 2,3 Oct 1988 (FIEB);

Hwanghae (IX-X): 29 Dec 1916 (AUST);

no data: 1 specimen (ZIP).

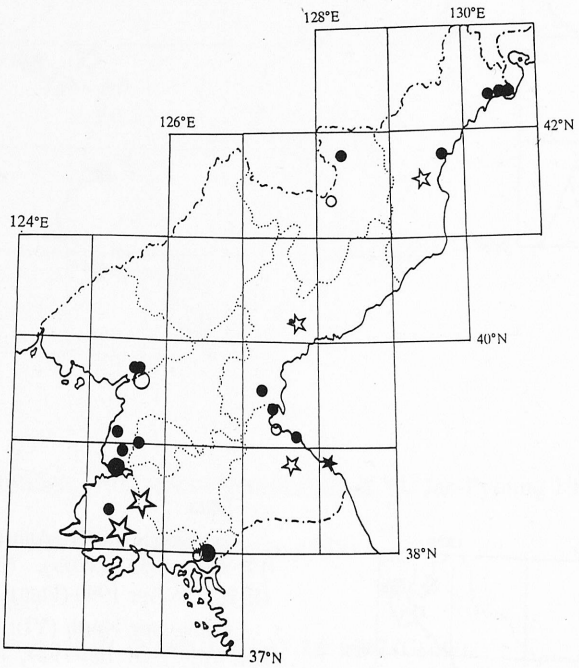
Measurements (1 specimens of the ZIP collection):

wing 205, tarsus 32, bill 55, tail 75.

Species observed very rarely. There are only 4 records from the territory of North Korea so far and two from the borderland of Korea and Russia. These last come from the breeding season and suggest the possibility of the

nesting of Bear's Pochard in the north-eastern outskirts of North Korea, the more so since breeding was found in southern Primorsk (LER 1989). In these last 50 years it has been recorded only three times: in the collection of the Zoological Institute in Pyongyang there is a skin of Bear's Pochard, without information about the data and place of collecting. Therefore, it is certain only that the bird was taken in the territory of North Korea after Korean War (the collection gathered before the war was stored in Seoul). The other two observations from the migration season were made by German ornithologists in 1988-1990 (FIEBIG 1993).

56. *Aythya fuligula* (LINNAEUS, 1758)
[*Fuligula cristata*]



Data:

Pyongyang (I): Mankyongdae (I-11): 8 Apr 1987 (GŁOW);

Pyongan South (II): Anju (II-16): 10 Apr-23 Nov 1932, 13 Mar 1933 (WON 1956), Janganri (*II-19): 11 May 1958 (ZIP), Nampho (II-26): Oct-Apr (FIEB), 31 Jan 1995 (PERT), Taesong (II-28): 26 Apr 1987 (GŁOW);

Pyongan North (III): Pakchon (III-1): 10 Mar, 11 Nov 1955 (WON), Soksanri (*III-1): 21 Mar 1955 (ZIP);

Ryanggang (V): Hyesan (V-5): 31 Jul 1897 (YANK), Samjiyon (V-10): no date (HO);

Hamgyong North (VI): 14 Oct, 12 Nov 1929 (AUST), Manpo (VI-2): 9 Apr 1996, Tongbonpho (*VI-3): 9 Apr 1996 (PERT), Unggi (VI-7): 23 Apr 1959, Chongjin (VI-19): 8 Jun 1955 (WON);

Hamgyong South (VII): 22 Nov 1914 (AUST), Togkumari (*VII-38): 17 Apr 1960 (ZIP);

Kangwon (VIII): 4 Apr 1914 (AUST), Wonsan (VIII-3): 19 Sep 1897 (YANK), Sijungho-Onjongri (VIII-5-8): 24 Apr 1987 (GŁOW), Yonghung (VIII-14): 11 Apr, 12 Nov 1960 (ZIP) or 7 Apr 1960 (ZIP cited by WON), Tongjongho (VIII-18): 10 Dec 1989 (FIEB);

Hwanghae South (X): Samchon (X-10): 5 Nov 1957, Yonpaek (X-?): 11 Nov 1931, 10 Apr 1932 (WON);

Hwanghae (IX-X): 20 Mar 1914 , 3 Apr 1916, 11 Nov 1930, 10 Apr 1932, (AUST);

Kaesong (XI): Kaesong (XI-1): 17 Oct 1926, 10 Mar 1956, Mar, Apr, May 1957, 29 Mar 1959 (WON), Kaepung (XI-5): 6 May, 29 Dec 1928 (WON 1963, or: 16 May, 29 Dec 1929 after WON 1956, or: 6 Feb, 29 Dec 1929 – WON cited by AUST);

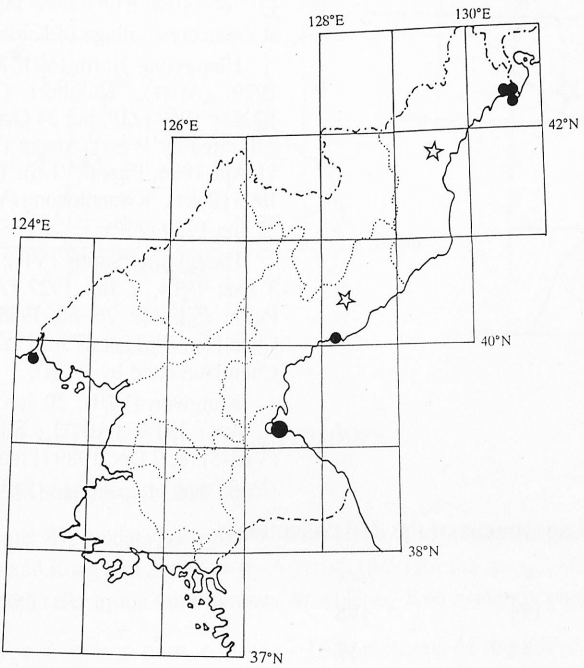
no data: 2 specimens (ZIP).

M e a s u r e m e n t s (7 specimens of the ZIP collection):

	♂	♂	♂	♂	♀	♀	♀
wing	208	190	200	215	198	202	191
tarsus	36	39	44	41	33.5	30	37
bill	40	40	45	45	38	39	41
tail	54	64	58	81	58	–	64

Frequently observed, mostly along the eastern and western coasts and, exceptionally, inland (2 records from the Ryanggang Province). Observed all through the year, most frequently during spring passage (Mar-May, 27 records), somewhat less frequently in autumn (Sep-Nov, 13 records). Nesting is probable, since this species breeds in the regions of Lake Khanka in Primorsk, and shows a tendency to expend its breeding area (POLIVANOVA 1971). The presence in the breeding season (2 records, in June and July) does not suffice by itself to prove its indisputable nesting, especially if one takes into consideration the time of migration of this species extending over a long period and the staying of some one-year-old out of the breeding areas in the breeding season (DEMENTEV & GLADKOV 1952, POLIVANOVA 1971). On the coasts of South Korea this species belongs to abundant winter visitors (HAHM Kyu-Hwang 1992, HAHM Kyu-Hwang & KIM Chang-Sook 1993, HAHM Kyu-Hwang & YU Jae-Pyoung 1993, WON Pyong-Oh et al. 1993b, CHO Sam-Rae 1994, WON Pyong-Oh 1993, 1996), and it also winters off the south-western coasts of North Korea (FIEBIG 1993) and beyond the Japanese Is. (del HOYO et al. 1992) these being the northernmost winter quarters of the Tufted Duck in that region.

57. *Aythya marila* (LINNAEUS, 1761)
[*Fuligula marila*]



Data:

Pyongan North (III): Sindo (III-14): 23 Apr 1961 (ZIP);

Hamgyong North (VI): 12 Nov 1929 (AUST), Manpo (VI-2): 9 Apr 1996, Tongbonpho (*VI-3): 9 Apr 1996 (PERT), Sosura (VI-5): 21 Apr 1959 (ZIP);

Hamgyong South (VII): Nov 1917 (AUST), Sinpho (VII-16): 9 Oct 1969 (ZIP);

Kangwon (VIII): Wonsan (VIII-3): 26 Apr 1917 (KUR), 17 Dec 1988, 9 Jan 1990 (FIEB);

no locality: 10 Oct 1969 (ZIP).

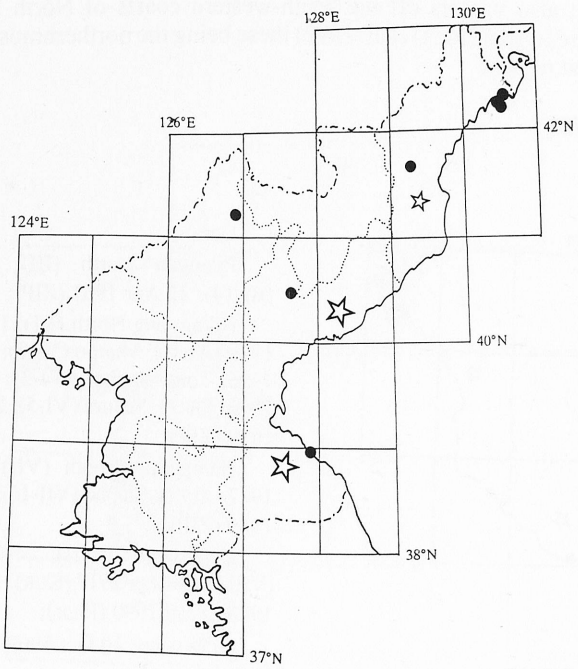
Measurements (4 specimens of the ZIP collection):

	♂	♀	?sex	?sex
wing	215	208	226	228
tarsus	37	38	41	39
bill	40	41	41	42
tail	53	59	73	60

Observed during spring (Apr) and autumn (Oct-Nov) migration. It was probably much more frequent than might be expected on the basis of past records (scarcely 12 records from North Korea),

for the Greater Scaup was a species common on passage both to the north (PANOV 1973, MEYER DE SCHAUENSEE 1984, CHENG Tso-hsin 1987, NECHAEV 1991) and to the south (GORE & WON Pyong-Oh 1971, WON Pyong-Oh 1987a) of the study area and it also wintered in the Japanese Is. (KURODA 1975, del HOYO et al. 1992). The small number of records is rather indicative of our still insufficient knowledge of the migratory and wintering faunas. On the other hand, the small number of records in 1987-1990 (FIEBIG 1993) may have been due to a fall in the abundance of Greater Scaups wintering off the coasts of the Korean Peninsula (HAHM Kyu-Hwang & LEE Doo-Pyo 1986, HAHM Kyu-Hwang 1992, WON Pyong-Oh et al. 1993b, CHO Sam-Rae 1994).

58. *Histrionicus histrionicus* (LINNAEUS, 1758)



Data:

Chagang (IV): Karimri (*IV-2): 15 May 1960 (ZIP); ?Okasan (IV-3) 15 May 1960 (HO; note: probably this is the same record as that proceding it, i.e. the specimen taken by HO Hon on Mt Okasan is in the ZIP collection with a label pointing at the nearest village of Karimri);

Hamgyong North (VI): 24 Oct 1929 (AUST), Kulphori (VI-4): 17 Nov 1959 (ZIP, but 24 Oct 1959 ZIP cited by WON), Alsom (VI-6): 11 Apr 1996, Pipa (*VI-6): 10 Apr 1996 (PERT), Kwanmobong (VI-22): 22 Jun 1959 (ZIP);

Hamgyong South (VII): Nov, 3 Dec 1914, 2 Jan 1927 (AUST), Pujon (VII-22): 26 Jul 1958 (RIM Chun-Hun 1961) or 27 Jul 1957 (RIM Chun-Hun cited by WON);

Kangwon (VIII): 20 Jan 1913, 1 Apr 1914 (AUST), Sijungho (VIII-5): 8, 9 Dec 1989 (FIEB);

no data: 1 specimen (ZIP).

Measurements (4 specimens of the ZIP collection):

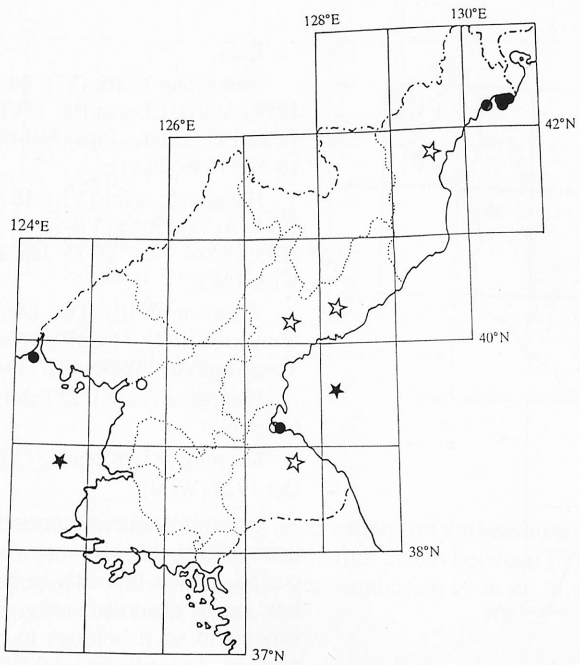
	♂	♀	♀	?sex
wing	199	197	194	198
tarsus	36	36	41	37
bill	28	26	27	26
tail	96	80	73	–

Species observed all through the year, most frequently in winter (Nov-Jan, 5 records).

The Harlequin is a species whose breeding ground in East Asia is not quite well known. According to same authors it covers the northern part of the Ussuriisk Krai (DEMENTEV & GLADKOV 1952, VAURIE 1965, KNYSTAUTAS & SHIBNEV 1986), while single pairs nest on Honshu I. (DISTRIB 1982). According to VOROBEV (1954), this species nested on the islands in the Gulf of Peter the Great; RIM Chun-Hun (1961) and, after him, WON Hong-Koo (1963) claimed that it nested in the northern provinces of North Korea. However, neither VOROBEV nor the Korean authors give any concrete data about nesting. The Harlequin is a species which stays very long outside the breeding

ground (in May, even in June) (TACZANOWSKI 1891-1893, DEMENTEV & GLADKOV 1952, LABYZUK et al. 1971). Having no concrete data concerning nesting and taking into consideration the possibility of observation of non-breeding individuals, one cannot assign this species to the breeding fauna in North Korea (i.e. at a distance of 800-1000 km south of the known sites of nesting).

59. *Clangula hyemalis* (LINNAEUS, 1758)
[*Harelda glacialis*]



Data:

Pyongan South (II): Anju (II-16): 26 Apr 1931 (WON 1956 or 26 Jun 1931 WON cited by AUST);

Pyongan North (III): Sindo (III-14): Mar 1961 (ZIP);

Hamgyong North (VI): 2 Jan 1917 (AUST, but 24 Oct 1929 cited by WON), Sosura (VI-5): 25-29 Mar 1959 (ZIP), Alsom (VI-6): 11 Apr 1996, Pipa (*VI-6): 10 Apr 1996, Rajin (VI-39): 10 Apr 1996 (PERT);

Hamgyong South (VII): undated, 15 Nov 1926 (AUST, but: Nov, 3 Dec 1914, 2 Jan 1927 cited by WON), Soho (VII-?): 10 Jan 1942 (WON 1963 or Ryoho: 2 Jan 1942 after WON 1956);

Kangwon (VIII): 7-8 Apr 1914 (AUST but 20 Jan 1913, 1 Apr 1914 cited by WON), Wonsan (VIII-3): 26 Apr 1917 (KUR), 11 Dec 1989 (FIEB);

East Sea (VI-VII-VIII?): May 1970 (ZIP);

West sea-shore: no date (FIEB).

Note: All the data presented by WON Hong-Koo (1963) from the provinces Hamgyong North, Hamgyong South and Kangwon are given by AUSTIN (1948) for the species *Histrionicus histrionicus*, and what is more, they both refer to the same sources. WON Hong-Koo evidently copied AUSTIN's data incorrectly.

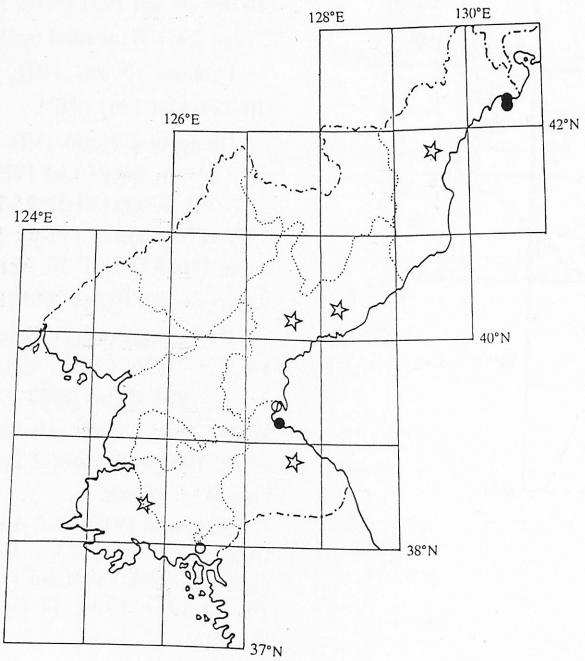
Measurements (6 specimens of the ZIP collection):

	♂	♂	♂	♀	♀	?sex
wing	217	228.5	230	224	211	244
tarsus	34	35	39	33	43	31
bill	28	25.5	26	28	29.5	28.5
tail	143	220	260	219	175	242

Species observed along eastern and western coasts. If the data evidently misquoted by WON Hong-Koo (1963) are left out, this species has been recorded 13 times from North Korea so far, and more than half these records fall in the period of spring migration (Mar-May), three in the autumn-winter period (Nov-Jan) and one of the remaining two is undated, while the date of the other is unreliable. In the last 50 years it has been observed 6 times.

The Long-tailed Duck belongs to uncommon (or rare) winter visitor off the coast of South Korea (GORE & WON Pyong-Oh 1971, WON Pyong-Oh 1987a, 1993, 1996), it was also rarely recorded on the coasts of southern Primorsk (PANOV 1973) and very rarely in China (CHENG Tso-hsin 1987). The small number of records, especially from winter periods, and also the unfrequent occurrence in the neighbouring areas cause the inclusion of the Long-tailed Duck in the group of rare winter visitors and rare passage migrants.

60. *Melanitta nigra* (LINNAEUS, 1758)
[*Melanitta americana*]



Data:

Hamgyong North (VI): 24 Oct 1929 (AUST), Chosan Bay (*VI-4): 3 Oct 1989 (FIEB), Pipa (*VI-6): 9, 10 Apr 1996 (PERT);

Hamgyong South (VII): 16 Nov 1914 (AUST), Soho (VII-?): 15 Feb 1945 (WON 1956 or 15 Jan after WON 1963);

Kangwon (VIII): Dec (AUST), Wonsan (VIII-3): 7 Dec 1989 (FIEB), Yonghung (VIII-14): Dec 1887 (TACZ);

Hwanghae (IX-X): 22 Feb 1916 (AUST);

Kaesong (XI): Kaepung (XI-5): Oct 1920 (WON).

So far it has been reported 11 times from the autumn-winter period. In the last fifty years it has been observed only four times and so it belongs to rare species. According to del HOYO et al. (1992) this species winters off the coasts of the Korean Peninsula, GORE & WON Pyong-Oh (1971) and WON Pyong-Oh (1993) numbered it among common winter visitor in the southern part of the peninsula. However, the winter censuses of birds carried out in the eighties and nineties on many rivers and water bodies in South Korea (WON Pyong-Oh & HAM Kyu-Hwang 1985, HAHM Kyu-Hwang & LEE Doo-Pyo 1985, 1986, WON Pyong-Oh 1986b, 1988a, 1990a, HAHM Kyu-Hwang 1992, HAHM Kyu-Hwang & YU Jae-Pyoung 1992, 1993, WON Pyong-Oh et al. 1993b, HAHM Kyu-Hwang & KIM Chang-Sook 1993, CHO Sam-Rae 1994, YU Jae-Pyoung & HAHM Kyu-Hwang 1994) showed that the Black Scoter is a very scarce species all over the peninsula.

61. *Melanitta fusca* (LINNAEUS, 1758)
[*Melanitta deglandi*, *Fuligula fusca*, *Melanitta* (*fusca*) *stejnegeri*]

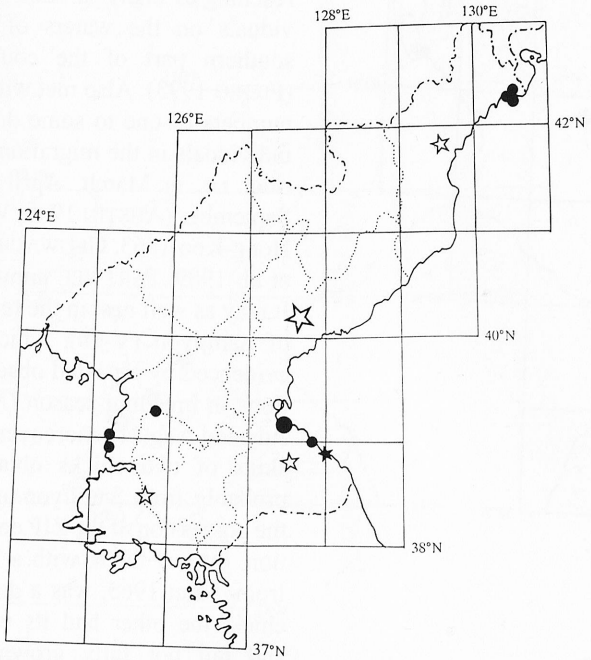
Data:

Pyongyang (I): Sogam (I-15): 17 Apr 1987 (GŁOW);

Pyongan South (II): Pungjongri (II-22): 19 Apr 1958 (ZIP), Ryonggang (*II-24): 15 May 1956 (WON);

Hamgyong North (VI): 24 Oct 1929 (AUST), Manpo (VI-2): 11 Nov 1959 (ZIP), Alsom (VI-6): 11 Apr 1996, Pipa (*VI-6): 10 Apr 1996 (PERT);

Hamgyong South (VII): 26 Apr 1917 (AUST), Soho (VII-?): 10 Jan 1942 (WON);



Kangwon (VIII): 8, 23 Dec 1914, 1 Dec 1914, Dec (AUST), Wonsan (VIII-3): 24 Apr 1987 (GŁOW), 7, 11 Dec 1989, 9 Feb 1990 (FIEB), Sijungho (VIII-5): 19 Apr 1987, Onjongri-Sijungho (VIII-8-5): 24 Apr 1987 (GŁOW), Yonghung (VIII-14): 19 Oct 1897 (YANK);

Hwanghae (IX-X): 22 Feb 1916 (AUST).

Measurements (2 specimens of the ZIP collection, sex unknown):

wing: 256, 282; tarsus 52, 46; bill 49, 48; tail 83, 83.

Species observed along eastern and western coasts during spring and autumn migration, and in winter; recorded 19 times hitherto. It is probably considerably more frequent in the time of passage than might be judged from the records known at present. This is suggested by the observations made by GŁOWACIŃSKI et al. (1987). Carrying out scarcely several-hour-long observations on the seashore or on water bodies, these authors found the presence of 46 birds altogether in four places between 17 and 24 Apr. In FIEBIG's (1993) opinion this species winters in large flocks, numbering even up to several thousand individuals along the eastern coast of North Korea.

62. *Bucephala clangula* (LINNAEUS, 1758)
[*Clangula clangula glaucion*]

Data:

Pyongyang (I-1): winters 1986-88 (CHON Gil-Pyo 1988), winters 1987-90 (FIEB), 30 Jan, 1 Feb 1995 (PERT);

Pyongan South (II): Anju (II-16): 24 Mar 1937 (WON), Nampho (II-26): 31 Jan 1995 (PERT);

Ryanggang (V): Samjiyon (V-10): no date (HO), 1 Jul 1958, 11 May 1962 , 8 Jul 1965, 26 Jul 1965 (ZIP), 12 Aug 1989 (FIEB), 25, 29 Sep 1991 (TOM);

Hamgyong North (VI): Manpo (VI-2): 9 Apr 1996, Tongbonpho (*VI-3): 9 Apr 1996 (PERT), Chongjin (VI-19): 16 Jun 1960 (WON);

Hamgyong South (VII): 3 Nov 1914 (AUST);

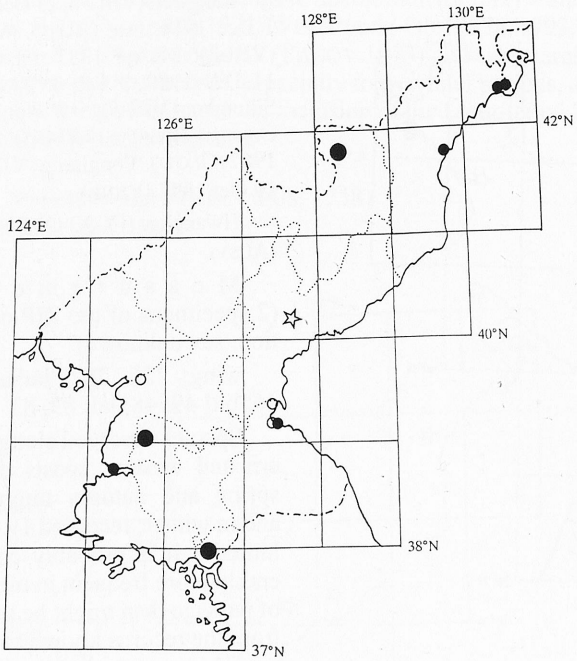
Kangwon (VIII): Wonsan (VIII-3): 26 Apr 1917 (KUR), 24 Apr 1987 (GŁOW), Yonghung (VIII-14): 2 Dec 1887 (TACZ);

Kaesong (XI): Kaesong (XI-1): 2 Jan, 21 Nov 1956 (WON), 5 Feb 1970 (ZIP);

no data: 1 specimen (ZIP).

Measurements (5 specimens of the ZIP collection):

	♀	♀	♀	♀	?sex
wing	200	199	200	216	194
tarsus	34	34	32	36	32
bill	29	29	32	32	29
tail	70	77	–	–	97



It winters in large flocks, reaching as many as 1200 individuals on the waters of the southern part of the country (FIEBIG 1993). Also met with in numbers of one to some dozen individuals in the migration period, i.e. in March, April and September (AUSTIN 1949, WON Hong-Koo 1963, GŁOWACIŃSKI et al. 1989, PERTWEE unpubl.). It may as well nest in the region of Samjiyon (V-10), which is evidenced by repeated observations in breeding season (May, July and August); moreover, the skins of two chicks obtained probably from Samjiyon are in the possession of the ZIP collection. One of them, with a label from 7 Jun 1965, was a downy chick, the other had its wings and tail not fully grown yet (measurements: wing 67, tarsus 33, bill 26, tail 65). The label of the other skin was wrong (wrong from the beginning? miscopied? coming from quite a different individual?), because the measurements given on it (wing 189, tarsus 128, bill 37, tail 112) departed from the actual ones. Neither was the date of the collecting of the young bird real (11 May 1962). Doubts as to the nesting of the Golden-eye in North Korea are aroused by the large distance from the known breeding areas (see: DEMENTEV. GLADKOV 1952, CHENG Tso-hsin 1987, del HOYO et al. 1992), the unreliability of the label of one of the chicks and the incomformity of the data from ZIP collection with WON Hong-Koo's (1963) monograph based on that collection. WON Hong-Koo not only does not mention of nesting but omits all records from the Samjiyon region (at least one of them, of 1 Jul 1958, was prior to the appearance of the above-mentioned monograph). Therefore the recognition of this species as breeding in North Korea needs a genuine and reliable confirmation.

63. *Mergus albellus* LINNAEUS, 1758

Data:

Pyongyang (I-1): winters 1986-88 (CHON Gil-Pyo 1988), winters 1987-90 (FIEB), 30 Jan 1995 (PERT);

Pyongan South (II): Anju (II-16): 25 Mar 1932, 23 Mar 1933, Pyongwon (II-17): 13 Mar 1949 (WON), Mupongri (*II-19): 25-27 Mar 1957 (ZIP), Nampho (II-26): 23 Jan 1990 (FIEB), 31 Jan 1995 (PERT), Taedong riv (II-?): winters 1987-90 (FIEB);

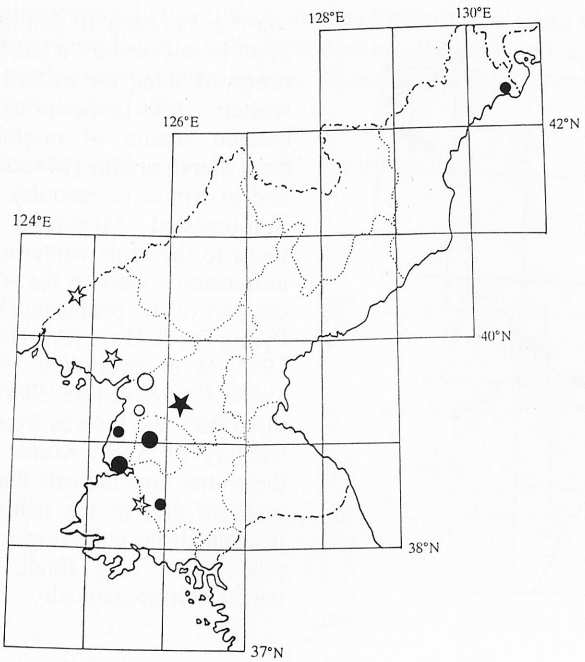
Pyongan North (III): 5-9 Apr 1915 (AUST), Amnok riv. (III-?): before 1923 (SOWERBY);

Hamgyong North (VI): Manpo (VI-2): 9 Apr 1996 (PERT);

Hwanghae North (IX): Sohung-ho (IX-7): 22 May 1987 (TOM);

Hwanghae (IX-X): Mar (AUST);

no data: 1 specimen (ZIP).



Measurements (2 ♀♀ of the ZIP collection):

wing: 180, 195; tarsus: 29, 34; bill: 27, 32; tail: 88, 73.

Passage migrant and winter visitor. Observed in small parties up to 20 individuals in the western part of the country (FIEBIG 1993), besides, found mainly along the western coast (6 records) in the time of spring migration (March-May). On the eastern coast encountered only once during spring passage (PERTWEE, unpubl.). The observation from 22 May shows that some individuals may stop of the route of migration considerably longer than it would follow from the time-limits of migration given in literature (POLIVANOVA 1971, PANOV 1973). Thereby the period of migration would be stretched in time just as it is in the European population, where Smews stay outside the breeding grounds even in the first days of June (CRAMP & SIMMONS 1977).

64. *Mergus serrator* LINNAEUS, 1758

Data:

Pyongyang (I): Pyongyang (I-1): 19 Apr 1949 (WON);

Pyongan South (II): Nampho (II-26): 31 Jan 1995 (PERT);

Pyongan North (III): Ryongampho (III-15): 12 May 1949 (WON);

Chagang (IV): Hwapyong (IV-2): 3-4 Sep 1897, Rangnim (IV-5): 8 Sep 1897 (YANK);

Ryanggang (V): Kimjonsukup (V-3): 19 Aug 1897 (YANK);

Hamgyong North (VI): Tongbonpho (*VI-3): 9 Apr 1996, Alsom (VI-6): 11 Apr 1996, Pipa (*VI-6): 9, 10 Apr 1996 (PERT), Musan (VI-12): 10 Jun 1897 (YANK), Rajin (VI-39): 10 Apr 1996 (PERT);

Hamgyong South (VII): Sinpho (VII-16): 17 Apr 1969 (ZIP);

Kangwon (VIII): Apr 1914, Mar, 17 Apr 1916 (AUST), Wonsan (VIII-3): 26 Apr 1917 (KUR), 16, 17 Dec 1988 (FIEB);

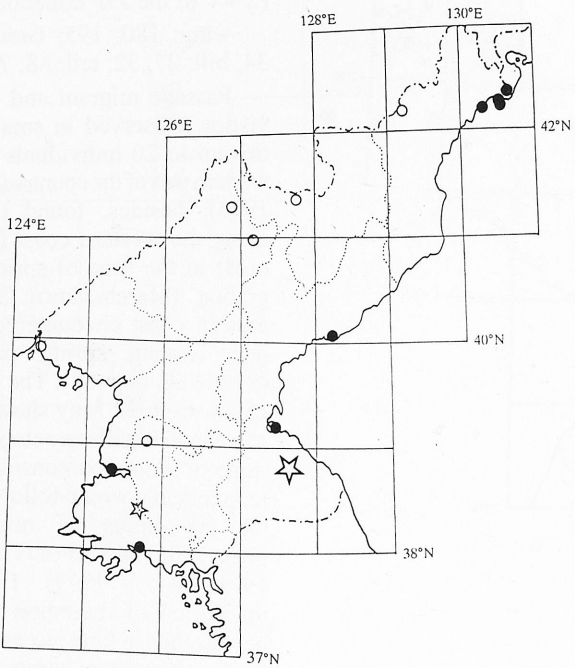
Hwanghae South (X): Haeju (X-22): 24 Apr 1987 (GŁOW);

Hwanghae (IX-X): 23 May 1949 (WON).

Measurements (2 specimens of the ZIP collection):

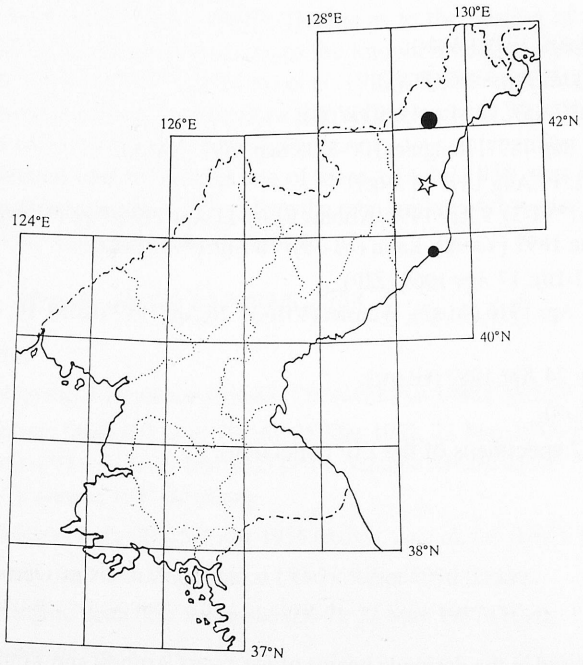
	♀	?sex
wing	225	259
tarsus	40	44
bill	52	56
tail	70	85

In the 19th century it probably nested in the drainage basins of the rivers Amnok and Tuman, as indicated by YANKOVSKII's (1898) reports; he repeatedly observed these birds in the breeding sea-



son (i.e. between 10 Jun and 8 Sep). In this century it has been observed along the eastern and western coasts in the spring and autumn season of migration, from March to May (14 records) and in winter (2 records). The Red-breasted Merganser belongs to the birds wintering on unfreezing waters in the southern part of the peninsula (WON Pyong-Oh & HAM Kyu-Hwang 1985, WON Pyong-Oh 1986b, 1988a, CHO Sam-Rae 1994). No more than two records from the territory of North Korea from the winter time indicate that the northern part of the peninsula lies outside the wintering area of this species; only single birds winter here sporadically.

65. *Mergus squamatus* GOULD, 1864



Data:

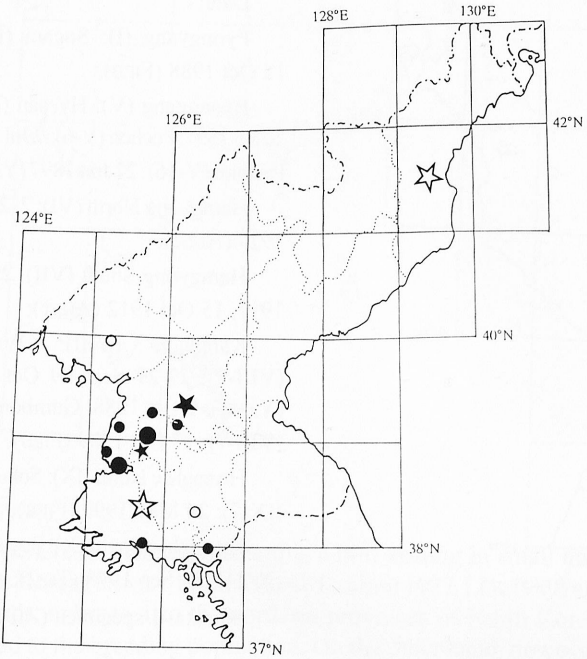
Hamgyong North (VI): 16 Apr 1912 (AUST), Mayang (VI-15): May 1986 (SONOBE 1987), 20 Sep 1989 (FIEB), Janghungri (*VI-30): 29 Mar 1958 (WON).

Measurements (♀ cited by WON Hong-Koo 1960): wing 210, tarsus 180 (!), bill 60, tail 112.

This species probably nests in the north-eastern part of the country. To be sure, there are no direct evidences of nesting, but two observations of the presence of males and females in the same region in two breeding seasons at the distance of 100-200 km away from the unquestionable breeding sites (CHENG Tso-hsin 1987, LER 1989) seem to be sufficiently cogent. The boundaries of the area of the occurrence of

this species should therefore be moved further to the south so as to include also the northern provinces of North Korea. The so far known breeding sites of Chinese Merganser occupy a small area in the north-eastern China and in Primorsk (SHIBNEV 1985, CHENG Tso-hsin 1987, LER 1989, BOCHARNIKOV 1990).

66. *Mergus merganser* LINNAEUS, 1758



Data:

Pyongyang (I): Pyongyang (I-1): winters 1987-90 (FIEB), 30 Jan, 1 Feb 1995 (PERT), Kuponri (*I-3): 18 Feb 1957 (ZIP), Sogam (I-15): 17 Apr 1987, Sunfakan (I-?): 8, 16 Apr 1987 (GŁOW);

Pyongan South (II): Chungsan (II-19): 30 Mar 1958 (WON), Onchonri (*II-24): 30 Mar 1959 (ZIP, but 1958 ZIP cited by WON), Sohari (*II-24): 30 Mar 1958 (ZIP), Nampho (II-26): 18 Apr 1987 (GŁOW), winters 1987-90 (FIEB), 31 Jan 1995 (PERT), Taedong riv (II-?): winters 1987-90 (FIEB);

Pyongan North (III): Kusong (III-27): 5 Jan 1931 (WON);

Hamgyong North (VI): Nov, 15 Jan 1915, 28 Nov 1929, 15 Oct, 20 Nov 1926 (AUST);

Hwanghae North (IX): Pyongsan (IX-11): 21 Mar 1925 (AUST);

Hwanghae South (X): Haeju (X-22): 29 Apr 1987 (GŁOW);

Hwanghae (IX-X): 15 Nov 1926, Dec 1929, 1 Dec 1930 (AUST), ?25 Mar 1933 (WON cited by AUST, but WON Hong Koo does not give these data in his publications from 1956 and 1963);

Kaesong (XI): Kaesong (XI-1): 27 Jan, 7 Feb, 15, 20 Mar 1956 (WON).

M e a s u r e m e n t s (3 specimens of the ZIP collection):

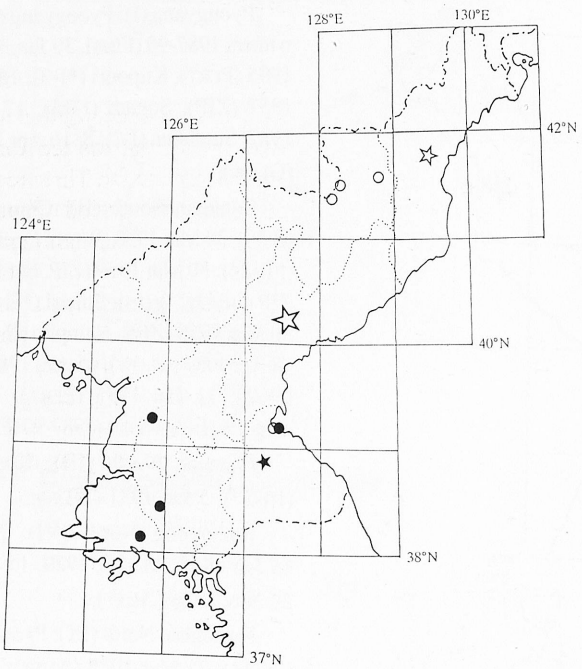
	♂	♀	?sex
wing	283	256	276
tarsus	52	42	49
bill	59	50	50
tail	114	102	110

Species found repeatedly, chiefly in the south-western part of the country from October to April. The observations of big flocks, numbering even 400 birds, during consecutive winters of 1987-1990 (FIEBIG 1993) evidence that, in addition to South Korea (WON Pyong-Oh 1993, 1996 CHO Sam-Rae 1998), the Goosander's wintering areas encompass the coasts of the south-eastern provinces of North Korea (Hwanghae South, Pyongan South). However, now the eastern part of the

country lies probably out of the area of passage and winter quarters, for the last observations from the eastern coast come from the twenties of this century.

FALCONIFORMES

67. *Pandion haliaetus* (LINNAEUS, 1758)



Data:

Pyongyang (I): Sogam (I-15): 15 Oct 1988 (FIEB),

Ryanggang (V): Hyesan (V-5): 20 Jul 1897, Pochon (V-6): 7 Jul 1897, Paegam (V-16): 22 Jun 1897 (YANK);

Hamgyong North (VI): 2, 25 Oct 1929 (AUST);

Hamgyong South (VII): 25 Oct 1911, 15 Oct 1912 (AUST);

Kangwon (VIII): Wonsan (VIII-3): 27-29 Sep, 29 Oct 1897 (YANK), 1 Oct 1988, Gumbong riv. (VIII-?): 17 Oct 1989 (FIEB),

Hwanghae North (IX): Sohung-ho (IX-7): 24 May 1990 (FIEB);

Hwanghae South (X): Suyangsan (X-24): 28 Sep 1978 (TOM);

no data: 1 specimen (ZIP).

M e a s u r e m e n t s (1 specimen of the ZIP collection):
wing 491, tarsus 55, bill 37, without cere 31.5, tail 212.

Species rarely observed (10 records from the season of autumn migration). Three observations made in the Ryanggang Province in the breeding season (Jun-Jul) at the end of the previous century indicate that it nested in that region. Its nesting is still possible, as the Osprey's sites are known from the northern slopes of the Paekdusan Massif (CHENG Tso-hsin 1987, WON Pyong-Oh 1990b). There is only one observation made in North Korea terrain in the breeding season in recent years (24 May 1990 Hwanghae North Province). Since it may have been a non-breeding juvenile bird, this species should be numbered among rare passage migrants.

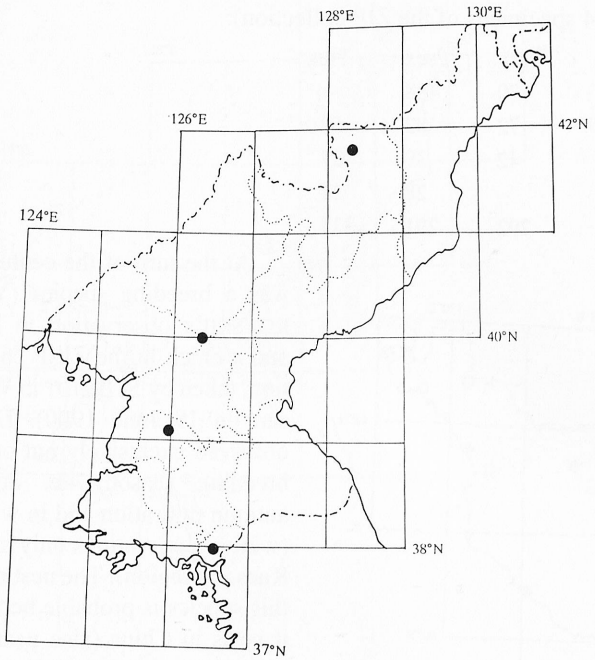
68. *Pernis ptilorhyncus* (TEMMINCK, 1821)
[*Pernis ptilorhynchus*]

Data:

Pyongyang (I): Samsok (I-5): 12 Sep 1968 (ZIP);

Pyongan North (III): Myohyangsan (III-24): 11 Jun 1983 (TOM);

Ryanggang (V): Samjiyon (V-10): 5 Jun 1980 (TOM);



Kaesong (XI): Kaesong (XI-1): 24, 29 Sep 65 (ZIP).

Measurements (2 specimens of the ZIP collection):

	♀	?sex
wing	499	390
tarsus	55	52
bill	35	35
without cere	22	20
tail	270	215

It has been recorded scarcely five times from the territory of North Korea so far. Three records come from the period of autumn migration, the remaining two (5 and 11 June) probably fall in the breeding season, for in the regions situated to the north (i.e. in southern Primorsk), these birds start building nests in the last decade of May (PANOV 1973) and as early as the first decade of June they lay eggs (LER 1989).

The Crested Honey-buzzard is a bird nesting in small numbers in the close neighbourhood of North Korea (PANOV 1973, CHENG Tso-hsin 1987, LER 1989) and it is very probable that the breeding grounds embrace also the northern provinces of North Korea and the birds observed in June belonged to the breeding population. On the other hand, however, it should be kept in mind that some of the individuals return to their breeding sites very late, e.g. passage migrants observed in eastern China as late as 13 June (LATUSH 1932 cited by DEMENTEV & GLADKOV 1951). And so the assignment of the Crested Honey-buzzard to the breeding fauna of North Korea needs to be previously documented; for the time being it may only be included among very rare passage migrants.

69. *Milvus migrans* (BODDEART, 1783)
[*Milvus korschun*, *Milvus melanotis*, *Milvus lineatus*]

Data:

Pyongan South (II): Oct 1908 (AUST);

Pyongan North (III): Haksori (*III-10): 20 Oct 1955 (WON);

Ryanggang (V): Photaesan (*V-8): no date (HO);

Hamgyong North (VI): 18 Sep 1917 (AUST), Unggi (VI-7): 24 May 1897, Hoeryong (VI-9): 28, 29 May 1897 (YANK), Chongjin (VI-19): 28 Sep 1987 (FIEB);

Hamgyong South (VII): Tanchon (VII-8): 18 Sep 1989 (FIEB), Hamhung (VII-30): 12-13 Sep 1897 (YANK), Kwangpo (*VII-31): 12 Sep 1989 (FIEB);

Kangwon (VIII): Wonsan (VIII-3): 18 Sep 1897 (YANK), 19 Jun 1900 (ZISP);

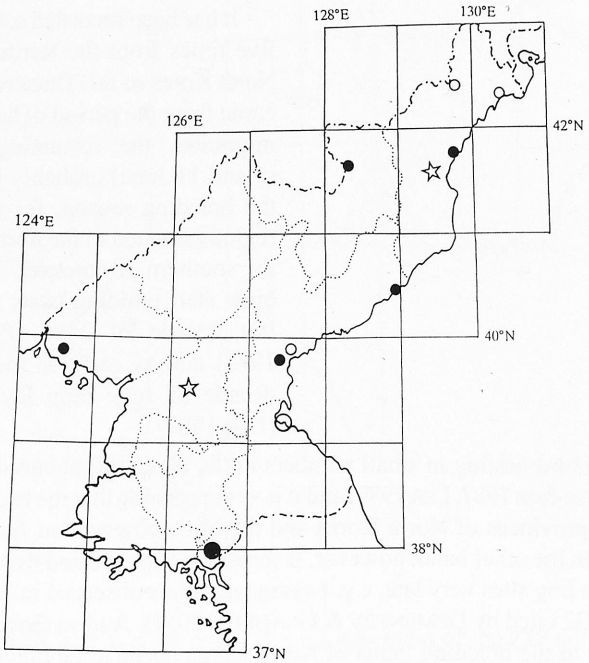
Kaesong (XI): Kaesong (XI-1): 20 Oct 1930, 25 Aug 1957 (WON), 24 Dec 1963, no date 1970 (ZIP);

no locality: 4 Sep 1960, 14 Dec 1963 (ZIP);

no data: 1 specimen (ZIP).

M e a s u r e m e n t s (4 specimens of the ZIP collection):

	♂	?sex	?sex	?sex
wing	480	470	488	–
tarsus	55	72	82	60
bill	37	42	39	37
without cere	27	–	28	27
tail	267	292	291	335



At the turn of the century it was a breeding species (YANKOVSKII's observation in May and a chick in the ZISP collection, taken by SCHMIDT in Wonsan on 19 June 1900). Later, observed exclusively out of the breeding season, i.e. during autumn migration and in winter (winter observations only in the Kaesong region). The nesting of this species is probable because it nests in China (also near the boundary with North Korea – CHENG Tso-hsin 1987), Japan (KURODA 1975, DISTRIB 1981, SONOBE 1982) and, though very rarely, in South Korea (WON Pyong-Oh 1993, 1996).

70. *Haliaeetus albicilla* (LINNAEUS, 1758)

Data:

Pyongyang (I): Pyongyang (I-1): 12 Dec 1955 (ZIP or Jan 1957 ZIP cited by WON), Nov-Mar 1987-1990 (FIEB), 30 Jan 1995 (PERT);

Pyongan South (II): Nampho (II-26): 4 Feb 1990 (FIEB);

Ryanggang (V): Hyesan (V-5): 22 Jul, 1, 2 Aug 1897, Pochon (V-6): 8 Jul 1897, Paegam (V-16): 21 Jun 1987 (YANK);

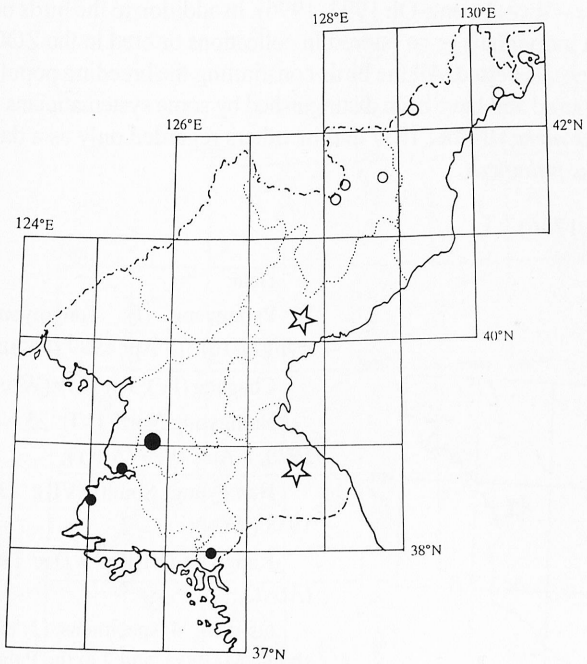
Hamgyong North (VI): Unggi (VI-7): 24 May 1897, Musan (VI-12): 7 Jun 1897 (YANK);

Hamgyong South (VII): 1885-87 (TACZ), 5 Dec 1912, Dec 1916 (AUST);

Kangwon (VIII): 18, 21 Dec 1918, 24 Mar 1927 (AUST);

Hwanghae South (X): Kwail (X-13): 12 Dec 1988 (FIEB);

Kaesong (XI): Kaesong (XI-1): 25 Mar 1956 (WON).

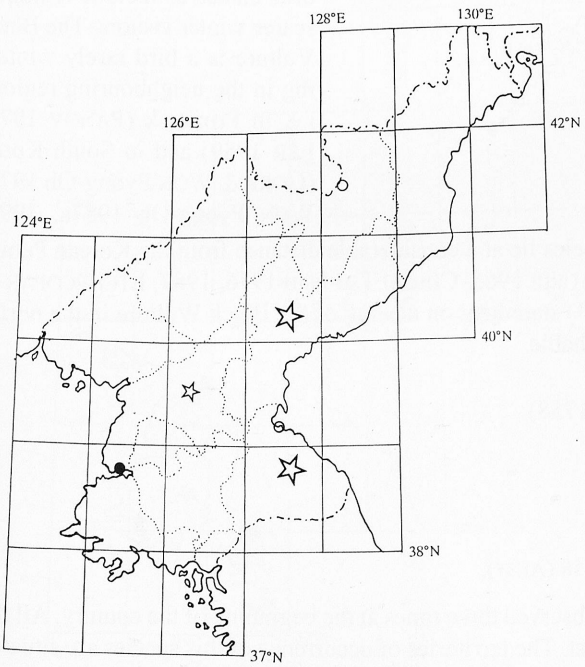


Measurements (2 specimens of the ZIP collection):

	♂	?sex
wing	615	650
tarsus	95	95
bill	65	68.5
without cere	53	54
tail	348	260

It was observed in the breeding season in the Hamgyong North and Ryanggang Provinces towards the end of the 19th century. In the present century it was noted only in winter on the eastern and western coasts. According to FIEBIG (1993) it especially occurs in the proximity of large flocks of ducks and does not belong to rare birds ("nicht seltener Wintergast").

71. *Haliaeetus pelagicus* (PALLAS, 1811)
[*Haliaetus Branickii*]



Data:

Pyongan South (II): 24 Mar 1910 (AUST), Nampho (II-26): 23 Jan, 3-4 Feb 1990 (FIEB);

Ryanggang (V): Pochon (V-6): 4 Jul 1897 (YANK);

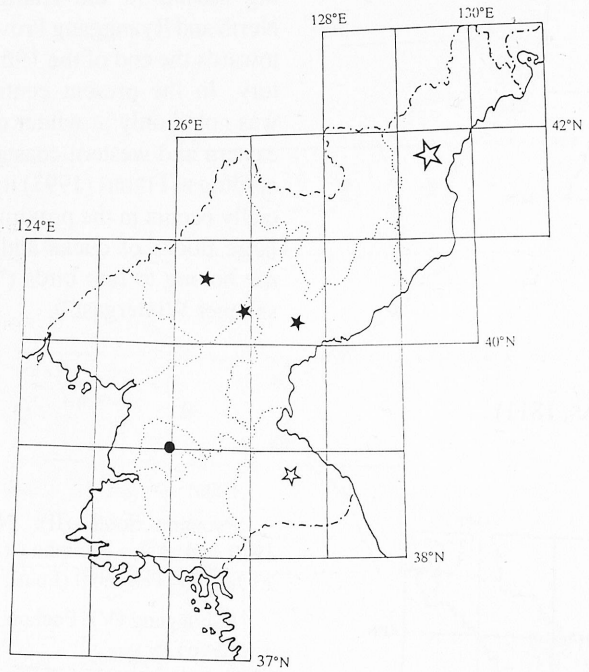
Hamgyong South (VII): 28 Feb 1885, 1912, 7 Jan 1927 (AUST);

Kangwon (VIII): Apr 1913, 14 Feb 1918 (AUST), Wonsan (VIII-3): Jan, Feb 1917 (KUR).

This species has been observed very rarely: most records come from the end of the 19th century and the beginning of the 20th (i.e. up to 1927), later was observed only twice by FIEBIG (1993). Except for an observation from 1897, the other records of Steller's Sea Eagle come from winter and now this bird may be considered to be a rare in North

Korea (its status in South Korea is similar – WON Pyong-Oh 1993, 1996). In addition to the birds observed, AUSTIN (1948) mentions a dozen individuals or so (stored in collections or bred in the ZOO) taken in the territory of Korea where this species nested. All the birds constituting the breeding population of the Korean Peninsula are dark coloured and have been distinguished by some systematicians as a separate subspecies *Haliaeetus pelagicus niger* HEUDE, 1887 and by others regarded only as a dark coloured variety of the species *Haliaeetus palagicus*.

72. *Aegypius monachus* (LINNAEUS, 1766)



Data:

Pyongyang (I): Tongmyong-wang (I-16): 13 Apr 1989 (FIEB);

Chagang (IV): Jan 1959 (WON);

Hamgyong North (VI): 25 Nov 1928, 8 Aug 1929 (AUST);

Hamgyong South (VII): Dec 1958 (WON);

Kangwon (VIII): 15 Dec 1818 (AUST);

no data: 4 specimens (2 in a shop – MAUERS and 2 in the Palace of Young Pioneers – FIEB).

The species has been noted scarcely several times, most observations being made in winter (4). The small number of records makes us include it among scarce winter visitors. The Black Vulture is a bird rarely wintering in the neighbouring regions i.e. in Primorsk (PANOV 1973, LER 1989) and in South Korea (GORE & WON Pyong-Oh 1971, WON Pyong-Oh 1987a, 1993, 1996). The breeding grounds of this species lie at a considerable distance from the Korean Peninsula (DEMENTEV & GLADKOV 1951, VAURIE 1965, CHENG Tso-hsin 1976, 1987, ETCHECOPAR & HÜE 1978) and WON Hong-Koo's (1963) statement on nesting of the Black Wulture in the north-eastern part of the country is hardly probable.

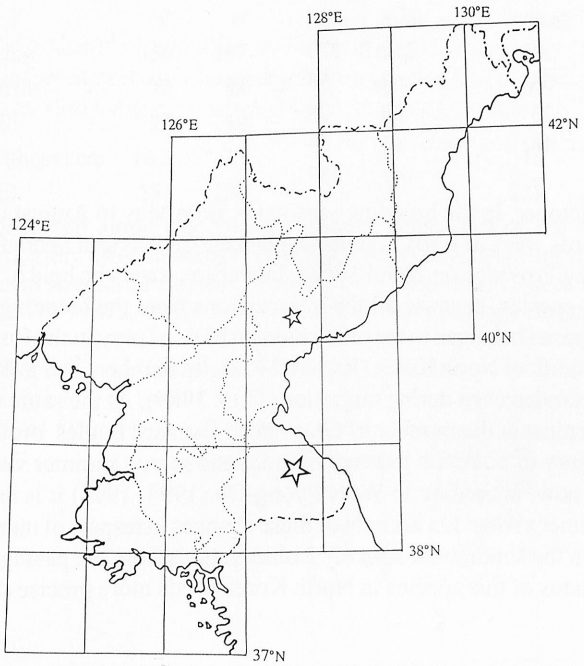
73. *Gypaetus barbatus* (LINNAEUS, 1758)

Data:

Hamgyong South (VII): 1912 (AUST);

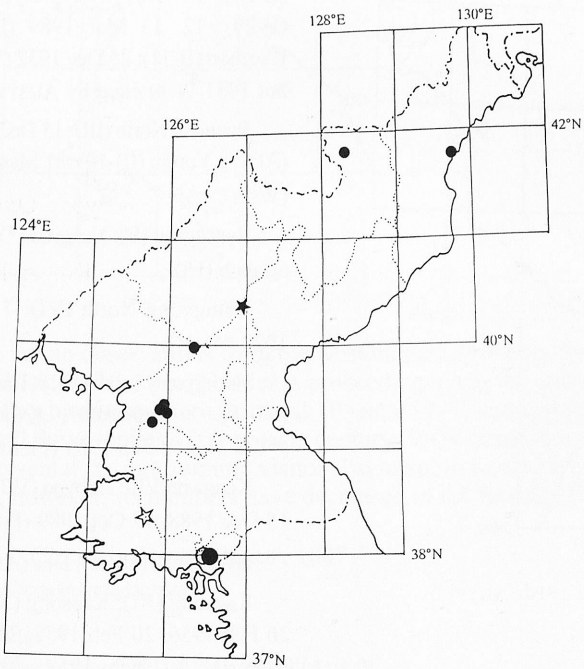
Kangwon (VIII): 21 Dec 1916, 6 Jan 1918 (AUST).

Vagrant. The Bearded Vulture was observed three times at the beginning of the country. All the three records come from the eastern coast. The territories of occurrence of this species are situated far from the Korean Peninsula (DEMENTEV & GLADKOV 1951, VAURIE 1965, GROSSMAN &



HAMLET 1965, ETCHECOPAR, HÜE 1978, CHENG Tso-hsin 1987, del HOYO et al. 1992) and no doubt the birds observed belonged to vagrants.

74. *Butastur indicus* (GMELIN, 1788)



Data:

Pyongyang (I): Sogam (I-15): 24 Oct 1984 (TOM);

Pyongan South (II): Sunchon (II-11): 26 May, 3 Jun 1953 (WON), Jasan (II-12): 26 May 1956, Jamosan (II-15): 7 Jul 1961 (ZIP);

Pyongan North (III): Myohyangsan (III-24): 20 Jul 1956 (WON);

Ryanggang (V): Kanpaegsan (*V-10): 20 Jul 1962 (ZIP);

Hamgyong North (VI): Chongjin (VI-19): 28 Sep 1989 (FIEB);

Hwanghae (IX-X): 12 Sep 1908 (AUST);

Kaesong (XI): Kaesong (XI-1): 2 Sep 1932; 6, 13, 18 Apr 1946, 15 Apr 1956, Aug 1957, 16 Apr 1958 (WON);

Province unknown: Sayukpun: 2 Sep 1956 (ZIP);

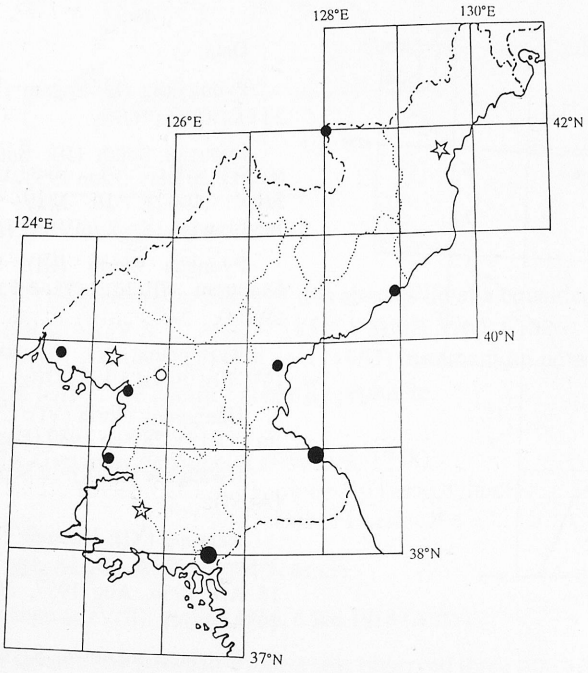
no data: 1 specimen (ZIP).

M e a s u r e m e n t s (5 specimens of the ZIP collection):

	♂	?sex	?sex	imm	imm
wing	335	355	–	210	273
tarsus	55	65	56	64	58
bill	27	27	23	20	25
without cere	20	19	18	13	19
tail	195	197	–	141	157

Species observed from April till October. In the breeding season i.e. from May to August it was recorded seven times, of which two records were of birds in juvenile plumage (in Pyongan South Province on 7 Jul 1961 and in the Ryanggang Province on 20 Jul 1962). Therefore, it may be held to have been a very rarely occurring breeding species, because all the observations from the breeding season come from the sixties, when this species belonged to the most common birds of prey in the Russian Primorsk, i.e. in the area situated to the north of North Korea (PANOV 1973). Its numbers had fallen so rapidly by the nineties that it was not recorded even during migrations (LER 1989). At the same time, however, in the southern part of the peninsula the number of Gray-faced Buzzard Eagles probably increased: it was included in the category of common passage migrant and scarce summer visitors (GORE & WON Pyong-Oh 1971) and now, according to WON Pyong-Oh (1993, 1996) it is an uncommon passage migrant and rare summer visitor. On account of those changes in respect of numbers in areas situated both in the north and in the south, with scarcely 2 observations from the passage period in the last ten years, the present status of this species in North Korea needs more precise determination.

75. *Circus cyaneus* (LINNAEUS, 1766)



Data:

Pyongan South (II): Onchon (II-24): 21 Nov 1989, Ryongori (II-29): 12, 13 Mar 1989 (FIEB), Kaechon (II-31): 25 Dec 1932 (WON, but 1931 WON cited by AUST);

Pyongan North (III): 15 Dec 1912 (AUST), Yomju (III-10): 31 Mar 1958 (WON);

Ryanggang (V): Nongsari (*V-12): no date (HO);

Hamgyong North (VI): 7 Nov 1929 (AUST);

Hamgyong South (VII): Tanchon (VII-8): 8 Sep 1989, Kwangpo (*VII-31): 12 Sep 1989 (FIEB);

Kangwon VIII: Anbyon (VIII-17): 15 Dec 1988, 17 Oct 1989 (FIEB);

Hwanghae (IX-X): Dec (AUST);

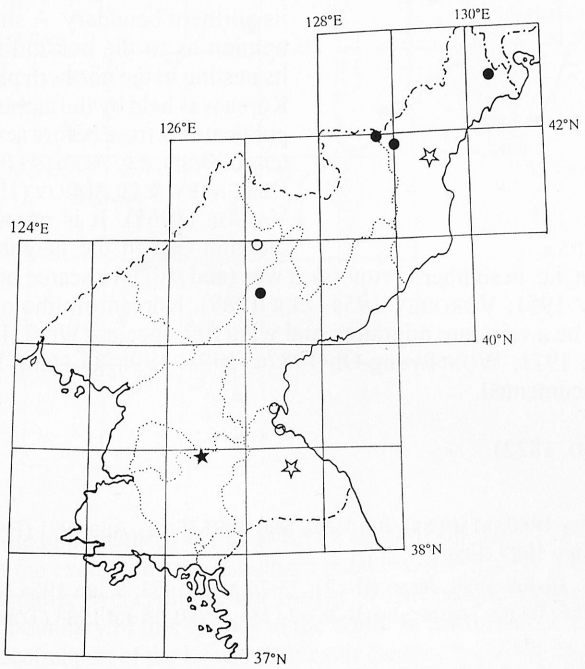
Kaesong (XI): Kaesong (XI-1): 26 Feb 1956, 20 Feb 1957, 22 Feb 1958 (WON), Feb 1959, 20 Oct 1969, 2 Feb 1970 (ZIP).

M e a s u r e m e n t s (4 specimens of the ZIP collection):

	♂	♂	♀	?sex
wing	356	397	352	348
tarsus	70	88	80	69
bill	23	30	25	–
without cere	16.5	19	16	16
tail	223	282	228	228

Observed along eastern and western coasts out of the breeding season, from September till March, more often in winter (10 records) than during spring and autumn migration (7 records). So it is, just as in southern Primorsk (PANOV 1973) and South Korea (GORE & WON Pyong-Oh 1971, WON Pyong-Oh 1987a, 1993, 1996), an uncommon passage migrant and winter visitor.

76. *Circus melanoleucos* (PENNANT, 1769)



Data:

Chagang (IV): Rangnim (IV-5): 9 Sep 1897 (YANK);

Ryanggang (V): Yukok (*V-15): no date (HO);

Hamgyong North (VI): 25 Jul-29 Aug, 15 Sep 1929 (AUST), 28 Jul 1929 (WON), Undok (VI-1): 2 Oct 1989 (FIEB), Nongsari (*VI-20): no date (HO);

Hamgyong South (VII): Jangjinho (VII-25): 21 Jun 1956 (WON);

Kangwon (VIII): Jun 1909 (AUST), Wonsan (VIII-3): 19 Sep 1897, Yonghung (VIII-14): 15 Oct 1897 (YANK);

no locality: Aug 1991 (BÁLDI).

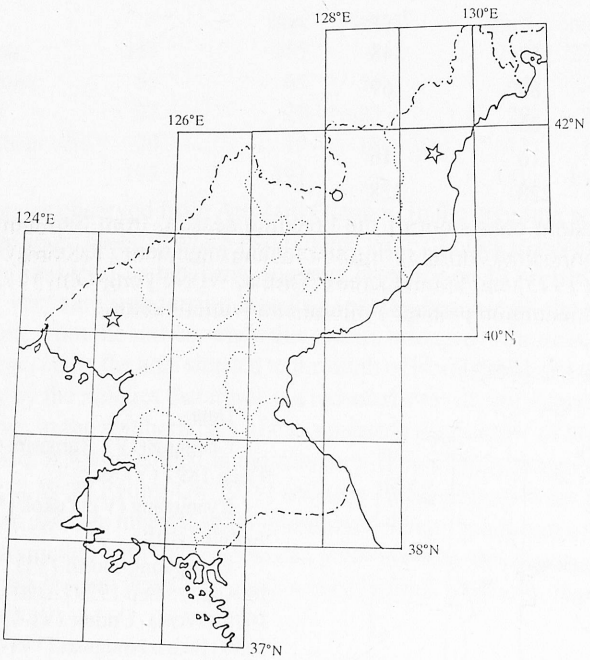
Breeding species; its nesting was ascertained on the basis of the observations of chicks (YAMASHINA cited by AUSTIN 1948) and nests with eggs (WON Hong-Koo 1963). All the observations made so far concern the eastern and north-eastern (mountainous) parts of the country, whereas there are no observations from the western part. Probably the shift of the southern boundary of the distribution of the Pied Harrier is proceeding along the eastern coast. This species was a common breeding bird in southern Primorsk (PANOV 1973) and nested only in the northern part of the peninsula till the seventies of the present century (WON Hong-Koo 1961, GORE & WON Pyong-Oh 1971). At present it is a rare summer visitor also in South Korea (WON Pyong-Oh 1993, 1996). At the same time, however, its numbers have decreased in the Russian Far East (LER 1989).

77. *Circus spilonotus* KAUP, 1847
[*Circus aeruginosus*]

Data:

Pyongan North (III): 21 Apr 1929 (AUST);

Ryanggang (V): Pochon (V-6): 8 Jul 1897 (YANK);



Hamgyong North (VI): 13 Sep, 12 Oct 1929 (AUST).

Observed only four times hitherto. All the records come from the northern part of the country, one before 100 years, the other three before 70 years. Two of these record, i.e. from 21 Apr and 8 Jul, fell in the breeding season of this species (cf. DEMENTEV & GLADKOV 1951, VOROBEV 1954, PANOV 1973). It is therefore very probable that at the beginning of the 20th century the Eastern Marsh Harrier nested in North Korea, close to its northern boundary. A similar opinion as to the possibility of its nesting in the northern part of Korea was held by the authors of publications from before several tens of years, e.g. AUSTIN (1948), DEMENTEV & GLADKOV (1951), VAURIE (1965). It is proper to mention that in the neighbouring terrains to the north of North Korea, i.e. in southern Primorsk it was (and still is) a scarce breeding species (DEMENTEV & GLADKOV 1951, VOROBEV 1954, LER 1989). Korean ornithologists consider the Eastern Marsh Harrier to be a very rare migratory and wintering species (WON Hong-Koo 1963, GORE & WON Pyong-Oh 1971, WON Pyong-Oh 1987a, 1993, 1996, O Hung-Dam 1988), whose nesting has not been documented.

78. *Accipiter soloensis* (HORSFIELD, 1822)

Data:

Pyongyang (I): Pyongyang (I-1): 25 May 1980 (MAUERS), Jun 1990, May 1991 (FIEB), Aug 1991 (BÁLDI), Taesongsan (I-6): 30 Jun 1975 (ZIP), 13 May 1989 (FIEB);

Pyongan South (II): Ryongunri (II-6): 16 Jun 1980, Jasan (II-12): 23-26 May 1953, 8 Jun 1954 (ZIP), Paeksongri (II-13): 13 May 1953, 8 Jun 1954 (WON), Taesong-ho (II-28): 24 May 1980, 15 Jul 1983 (TOM), no date (FIEB);

Pyongan North (III): Chonmasan (III-20): 5 Jul 1961 (ZIP), Myohyangsan (III-24): 17 Jun 1950 (WON), 26-28 May 1980, 6-19 Jun 1983 (TOM);

Chagang (IV): Karimri (*IV-2): 12 Apr, 3 Jul 1958, 23 May 1960 (ZIP), 3 Jun 1958 (WON), Okasan (IV-3): 12 Jun, 3 Jul 1958, 23 May 1960 (HO; note: probably this is the same record as that proceding it, i.e. the specimen taken by HO Hon on Mt Okasan is in the ZIP collection with a label pointing at the nearest village of Karimri);

Hamgyong North (VI): Mayang (VI-15): 29 Jun 1983, Ryongsanri (VI-24): 5 Jul 1983, Mehyangri (VI-27): 27 Jun 1983, Oyuri (VI-33): 3 Oct 1991 (TOM);

Hamgyong South (VII): Jongdongri (VII-12): 14 Jul 1960 (ZIP);

Hwanghae North (IX): Pongtanri (*IX-11): 25 May 1990 (FIEB);

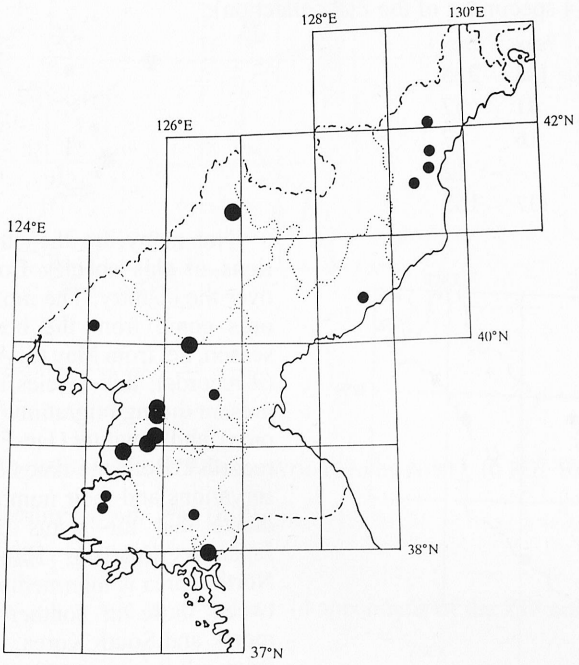
Hwanghae South (X): Kuwolsan (X-6): 8 Jul 1957, Talchonri (X-9): 17, 18, 26 Jun 1957 (ZIP);

Kaesong (XI): Kaesong (XI-1): 1 Jul 1929, 19 Sep 1956, 14 May 1957, 5 Apr 1958, 19 Mar 1959 (WON), 27 May 1960 (ZIP);

no data: 1 specimen (ZIP).

Measurements (16 specimens of the ZIP collection):

	7 ♂♂	x̄	7 ♀♀	x̄	?sex	?sex
wing	186-201	193.4	190-213	198.5	200	188
tarsus	41-47	44.6	43-46	44.5	39	46
bill	18-20	19.4	18-24	20.3	17.5	19
without cere	11-14	12.0	12-14	13.0	11	12
tail	133-151	143.0	130-158	143.8	139	142



The Chinese Sparrowhawk was observed in North Korea territory mainly from May to July, single birds were however seen also in March and April as well as in October (in the northern part of the peninsula they stay from May to September – GORE & WON Pyong-Oh 1971, KWON Ki--Chung & WON Pyong-Oh 1975).

Breeding species occurring all over the country, more often reported from the lowland regions than from the mountains. The distribution area of the Chinese Sparrowhawk has somewhat obscure boundaries. And so, according to SHIBNEV (in LER 1989) the boundary of its range includes southern Primorsk. At the same time other authors claim that it reaches the southern provinces of North Korea (SONOBE 1982, WON Pyong-Oh 1987a, 1993, 1996) or that it nests to the south of the Korean Peninsula, i.e. in middle and southern China (MEYER DE SCHAUENSEE 1984, CHENG Tso-hsin 1987). At any rate, with the exception of the southern outskirts of Primorsk it has not been noted as yet to the north of the frontier rivers Amnok and Tuman. We are probably concerned here with the shift of the distribution boundary of this species to the north. In the forties of this century this species was observed in the central part of the Korean Peninsula (in the area of the present South Korea – AUSTIN 1948); until the beginning of the sixties its presence was observed throughout the peninsula except north-eastern provinces: Ryanggang, Hamgyong North and the northern part of Hamgyong South (WON Hong-Koo 1963). In the eighties it was already present in the Hamgyong North Province (TOMEK 1985); in that very time the nesting of the Chinese Sparrowhawk was found in Primorsk (KNYSTAUTAS & SHIBNEV 1986), where it was first observed in 1967 (LABYZUK et al. 1971). Since till the present time the Chinese Sparrowhawk has not been recorded from the Chinese (northern) side of the Paekdusan Massif (WON Pyong-Oh 1990b), whereas on the southern side it nested as early as 1960 (HO Hon 1960), its expansion to the north is probably proceeding over the lowland regions situated along the eastern coast.

79. *Accipiter gularis* (TEMMINCK et SCHLEGEL, 1844)
[*Accipiter virgatus*]

Data:

Pyongyang (I): Pyongyang (I-1): Sep 1973 (ZIP);

Pyongan South (II): Anju (II-16): 9 Jan 1931 (WON);

Pyongan North (III): 29 Sep 1915, 14 May 1929 (AUST), Myohyangsan (III-24): Aug 1991 (BÁLDI), Kusong (III-27): 7 Jan 1952 (WON);

Ryanggang (V): Samjiyon (V-10): 22 May 1965 (ZIP);

Hamgyong North (VI): 6 Sep 1929 (AUST), Chongjin (VI-19): Aug 1991 (BÁLDI);

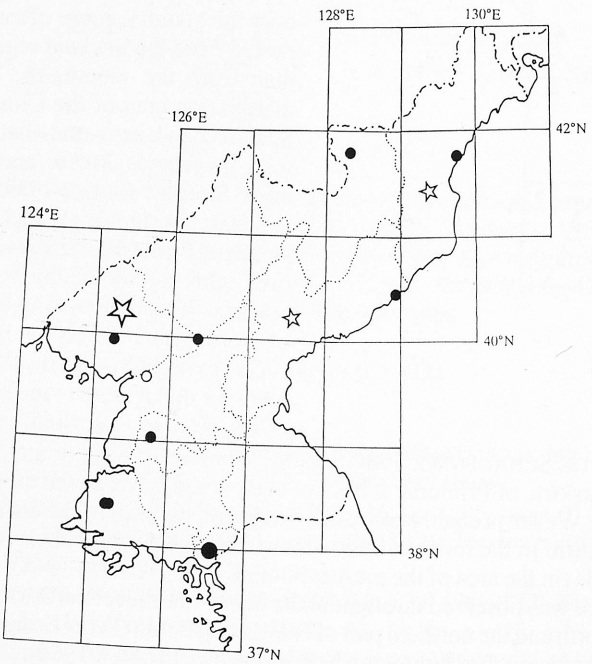
Hamgyong South (VII): 20 Sep 1912 (AUST), Tanchon (VII-8): 14 Jul 1960 (WON);

Hwanghae South (X): Talchonri (X-9): 17, 30 Jun 1957 (WON), Kohyonri (*X-9): 16 Sep 1957 (ZIP);

Kaesong (XI): Kaesong (XI-1): 22 Mar 1955, 14 Sep 1956, 8 Feb 1957, 18 Jun 1958, 2 Mar 1959 (WON), 25 May 1970 (ZIP).

Measurements (4 specimens of the ZIP collection):

	♂	♂	?sex	?sex
wing	162	183	188	225
tarsus	45	37	41	57
bill	14.5	16.5	16	17
without cere	9.5	10.5	–	12
tail	120	135	137	165



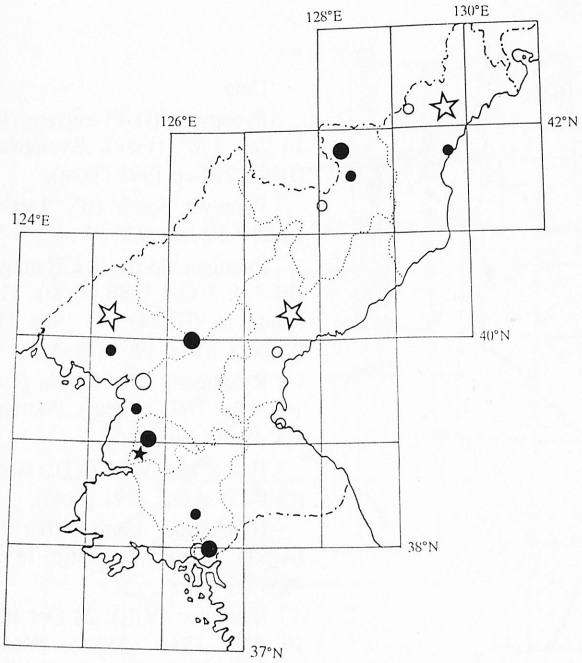
Not many are the observations of this species from all over the country. The most records come from the breeding season, i.e. from May till August (9 records); this species is also present during migration (8 records), and in winter (Jan-Feb – 3 records). Both the dates of observations and their number indicate that the status of the Japanese Sparrow Hawk in North Korea is intermediate between those in southern Primorsk and South Korea, viz. in Primorsk it is a common breeding species and whole population takes part in migration (PANOV 1973). In North Korea it is not as frequent as in Primorsk, a part of the breeding population leave for their winter quarters and the remaining birds stay in winter. On the other hand in the southern part of the Korean Peninsula the Japanese Sparrow Hawk is included in the category of scarce or uncommon birds and it is a resident species (WON Pyong-Oh 1987a, 1993, 1996).

80. *Accipiter nisus* (LINNAEUS, 1758)

Data:

Pyongyang (I): 16 Oct 1978 (TOM), Pyongyang (I-1): spring 1987 (GŁOW), winters 1986-88 (CHON Gil-Pyo 1988);

Pyongan South (II): Anju (II-16): 16 Jan, 27 May 1932 (WON, but 28 May WON cited by AUST), 31 Oct 1933, Pyongwon (II-17): 23 Apr 1951 (WON);



Pyongan North (III): 10 Apr 1929 (AUST), 21 Mar 1914 (WON), Myohyangsan (III-24): 27 Aug 1984 (KOLBE), 10 Apr 1987 (GŁOW), Aug 1991 (BÁLDI), Panghyondong (III-26): 4, 6 Dec 1951 (WON);

Ryanggang (V): Samsu (V-4): 19 Jul 1897 (YANK), Naegokri (V-7): 17 Oct 1986 (TOM), Samjiyon (V-10): no date (HO), 30 Sep 1991 (TOM);

Hamgyong North (VI): 24 Aug (AUST), 10 Oct 1929 (WON), Musan (VI-12): 15 Jun 1897 (YANK), Chongjin (VI-19): Aug 1991 (BÁLDI);

Hamgyong South (VII): 25 Dec 1914 (AUST), 2 Jan 1917, Hamju (VII-45): 19 Oct 1942 (WON);

Kangwon (VIII): Wonsan (VIII-3): 19 Sep, 23, 29 Oct 1897 (YANK);

Hwanghae North (IX): Pyongsan (IX-11): 21 Oct 1955 (ZIP);

Kaesong (XI): Kaesong (XI-1): 19 Nov 1956, 14 May 1957, 5 Apr 1958, 19 Mar 1959 (WON), 23 Dec 1966 (ZIP), Kaepung (XI-5): 19, 29 Feb 1928 (WON, but: 19, 29 Nov – WON cited by AUST), 10 Feb, 10 May 1929, 30 Jan 1931 (WON);

no locality: 12 Apr 1961 (ZIP);

no data: 1 specimen (ZIP).

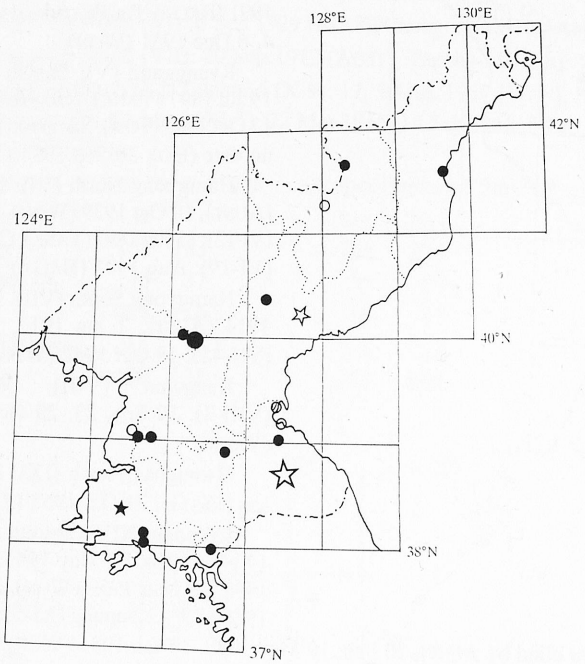
M e a s u r e m e n t s (4 specimens of the ZIP collection):

	♀	♀	♀	?sex
wing	265	245	253	220
tarsus	65	64	61.5	53
bill	19	19	–	16
without cere	14	13.5	14.5	11
tail	198	172	193	161

The species is encountered throughout the country, less frequently in the breeding season (6 records) than in other phenological periods (12 records in winter and 18 during migrations).

The Sparrow Hawk is a migratory species in the great part of its breeding area, among other regions, in eastern Siberia and northern China (DEMENTEV & GLADKOV 1951, ETCHECOPAR & HÜE 1978, MEYER DE SCHAUENSEE 1984, CHENG Tso-hsin 1987). At the same time, the birds living in the south-eastern part of the area, i.e. in Japan and South Korea are resident (KURODA 1975, SONOBE 1982, GORE & WON Pyong-Oh 1971, WON Pyong-Oh 1987, 1993). On the basis of a small number of records obtained from North Korea it is difficult to establish which population (resident or migratory) inhabits the northern part of the peninsula. Probably, there lives a small resident population there, whose range does not go beyond the Paekdusan Massif, for no nesting of the Sparrow Hawk has been pointed out from Primorsk situated to the north (DEMENTEV & GLADKOV 1951, PANOV 1973). On the other hand, more numerous specimens observed out of the breeding season belong to the migratory northern population, part of which winter.

81. *Accipiter gentilis* LINNAEUS, 1758
[*Astur palumbarius*]



Data:

Pyongyang (I): Pyongyang (I-1): 14 Jan 1989 (FIEB), Ryongaksan (I-10): 21 Sep 1991 (TOM);

Pyongan South (II): Taedong (II-21): 29 Jan 1936 (WON);

Pyongan North (III): Hyangsan (III-23): 5 Oct 1986 (TOM), Myohyangsan (III-24): 11 Apr 1987 (GŁOW), 2 Feb 1995 (PERT);

Ryanggang (V): Samsu (V-4): 14-15 Jul 1897 (YANK), Photaesan (*V-8): no date (HO);

Hamgyong North (VI): Osangri (*VI-25): 4 Oct 1991 (TOM);

Hamgyong South (VII): Aug (AUST), Jangjin (VII-26): 13 Jan 1957 (WON);

Kangwon (VIII): 24 Oct 1911, 19 Dec 1919 (AUST), Wonsan (VIII-3): 18-19 Sep, 29 Oct 1897 (YANK), Sokwangsa (VIII-4): 11 Oct 1978 (TOM), Yonghung (VIII-14): 12 Nov 1897 (YANK);

Hwanghae North (IX): Sinpyong (IX-1): 13 Oct 1978 (TOM);

Hwanghae South (X): 15 Dec 1989 (FIEB), Haeju (X-22): Jan 1986 (ZIP), Suyangsan (X-24): 23 Sep 1978 (TOM), Haebangri (X-?): 17 Dec 1989 (FIEB);

Kaesong (XI): Kaesong (XI-1): 10 Jan 1970, no date (ZIP);

no data: 1 specimen (ZIP).

M e a s u r e m e n t s (2 ♂♂ of the ZIP collection):

wing: 351, 343; tarsus: 78, 75; bill: 29, 32 (without cere: 23, 23.5); tail: 228, 261.

This species is observed throughout the country out of the breeding season (Sept-Apr, 23 records), while in the breeding season it was noted only once, in the Ryanggang Prov. in the previous century (YANKOVSKII 1898). Most often found in winter (Dec-Jan – 8 records), mainly in the southern provinces of North Korea. It therefore belongs to migratory and wintering birds.

82. *Buteo buteo* (LINNAEUS, 1758)

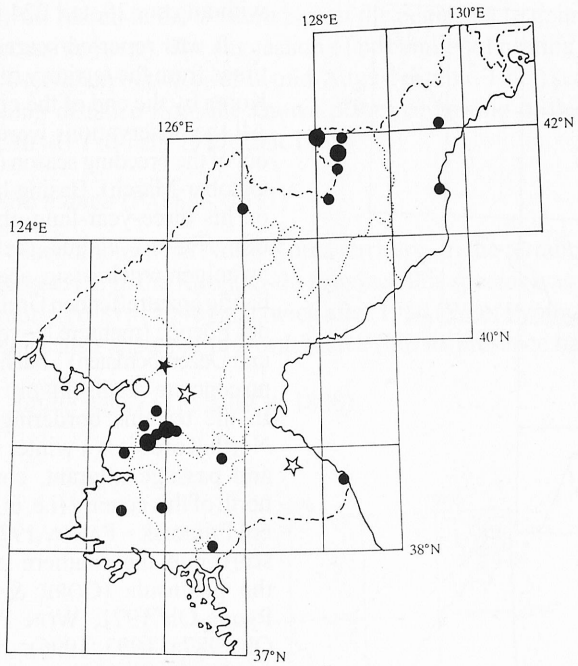
Data:

Pyongyang (I): Pyongyang (I-1): 26 Oct 1986 (TOM), winters 1986-88 (CHON Gil-Pyo 1988), 26 Nov 1988, 14 Jan 1989 (FIEB), Rinsanri (*I-3): 19 Mar 1957, Ponghwari (I-4): 26 Oct 1984, 5 Jun 1987, Taesongsan (I-6): 3 Oct 1984 (TOM), Sunan (I-8): 2 Feb 1964 (ZIP);

Pyongan South (II): 26 Dec 1926 (AUST), Jasan (II-12): 5, 31 Dec 1953, Anju (II-16): 27 Oct 1932, 10 Jan, 24 Nov 1935 (WON), Taesong-ho (II-28): 1 Oct 1986 (TOM);

Pyongan (II-III-?): 4 Feb 1995 (PERT);

Chagang (IV): Okasan (IV-3): no date (HO);



Ryanggang (V): Hyesan (V-5): 1 Jun 1980 (TOM), Photae (V-8): 24 Nov 1965, Samjiyon (V-10): 21 Jun 1958 (ZIP), no date (HO), Paekdusan (V-12): Jul 1981, 18 Aug 1984, 20 Apr, 7 Aug 1986, Aug 1987, 8 Jul 1988 (JIN Dok-Jun & O Hung-Dam 1990), Mutubong (V-13): no date (HO);

Hamgyong North (VI): Puryong (VI-16): May 1988 (ZIP), Orang (VI-28): 9 Jul 1983 (TOM);

Kangwon (VIII): 26-28 Nov 1929 (AUST), Samil-pho (VIII-7): 13 Oct 1991 (TOM);

Hwanghae North (IX): Sinpyong (IX-1): 13 Oct 1978, Sohung-ho (IX-7): 25 Sep 1978 (TOM);

Hwanghae South (X): Sinchon (X-11): 5 Feb 1964 (ZIP);

Kaesong (XI): Kongminghang (XI-7): 7 Oct 1991 (TOM);

no locality: 18 Feb 1980 (ZIP).

Measurements (8 specimens of the ZIP collection):

	5 ♂♂	$\bar{x}$	♀	?sex	?sex
wing	367-418	382.8	386	370	371
tarsus	68-83	75.6	75	65	80
bill	27-32.5	29.6	–	30	34
without cere	19-24.5	21.0	–	–	–
tail	204-233	215.0	235	217	227

So far numbered among passage migrants and winter visitors in the southern provinces of North Korea and in South Korea (WON Hong-Koo 1963, GORE & WON Pyong-Oh 1971, WON Pyong-Oh 1987a, 1993, 1996). However, 6 observations (five of them from the provinces Ryanggang and Hamgyong North) made from May till July indicate the possibility of nesting. The probability of nesting in the northern provinces of North Korea is strengthened by the fact that some breeding sites of this species have been found in the region of the Paekdusan Massif in the territory of China (CHENG Tso-hsin 1987). The assignment of the Buzzard to the breeding fauna of North Korea however needs supporting by the observations of its nesting.

83. *Buteo lagopus* (PONTOPPIDAN, 1763)

Data:

Pyongyang (I): Sijok (*I-5): 13 Nov 1949 (WON);

Pyongan South (II): Anju (II-16): 21 Oct 1938 (WON), Taesong-ho (II-28): 16 Oct 1978 (TOM), Kaechon (II-31): 10 Dec 1935 (WON);

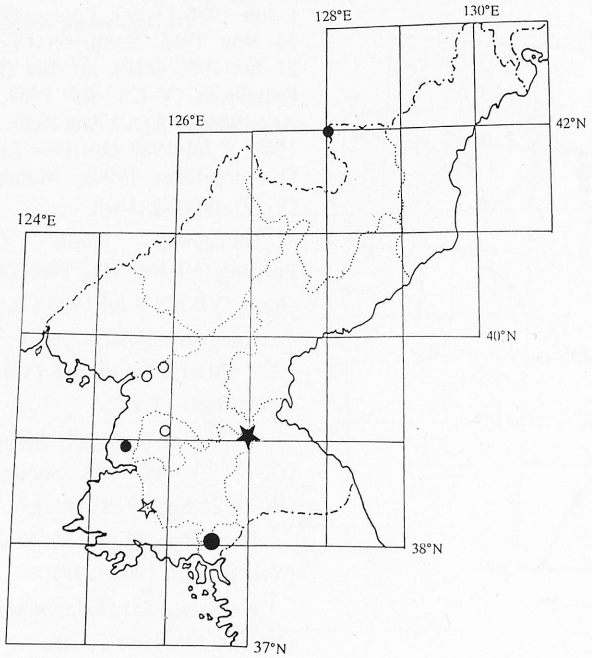
Ryanggang (V): Paekdusan (V-12): 22 Oct 1978 (TOM);

Hwanghae (IX-X): 12 Nov 1918 (AUST);

Kaesong (XI): Kaesong (XI-1): 20 Feb 1929, 21 Mar 1956, 1 Feb 1959 (WON), 24 Dec 1963 (ZIP);

Unknown Province ("Ebenen"): Nov-Dec 1987-1990 (FIEB).

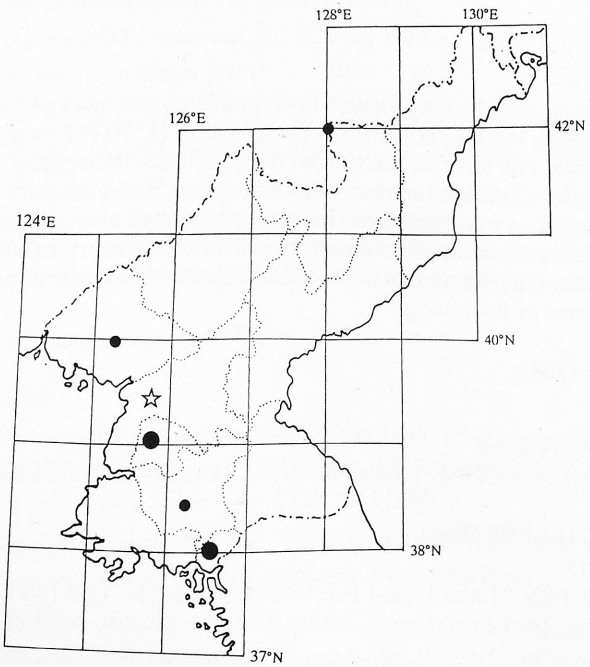
Measurements (1 ♂ of the ZIP collection):



wing 435, tarsus 70, bill 30, without cere 20, tail 224 mm.

It was reported scarcely ten times from the territory of North Korea by the end of the eighties. All the observations were made out of the breeding season (that is, October-March). Basing himself on his three-year-long observation, FIEBIG claims that it is "wenigen regelmassig, aber nicht haufig anzutreffenden Greivogeln der Ebenen (mehrere November– und Dezemberdaten)", but he gives no concrete details (FIEBIG 1993). In the terrains bordering upon North Korea it is a winter visitor and passage migrant, common north of this country (i.e. in southern Primorsk – PANOV 1973) and scarcer in the southern part of the peninsula (GORE & WON Pyong-Oh 1971, WON Pyong-Oh 1987a, 1993, 1996).

84. *Buteo hemilasius* TEMMINCK et SCHLEGEL, 1844
[*Buteo rufinus hemilasius*]



Data:

Pyongyang (I): Pyongyang (I-1): 13 Dec 1987; 29 Oct, 6, 13 Nov 1988 (FIEB);

Pyongan South (II): 28 Dec 1926 (AUST);

Pyongan North (III): Kusong (III-27): 15 Mar 1952 (WON);

Ryanggang (V): Paekdusan (V-12): 13 Aug 1989 (FIEB);

Hwanghae North (IX): Sohung (IX-9): 15 Jan 1955 (WON);

Kaesong (XI): Kaesong (XI-1): 15 Aug 1955, 15 Jan 1956, 15 Dec 1957, 26 Jan 1958, 15 Mar 1959 (WON), 1 Feb 1970 (ZIP).

Measurements (2 ♂♂ of the ZIP collection):

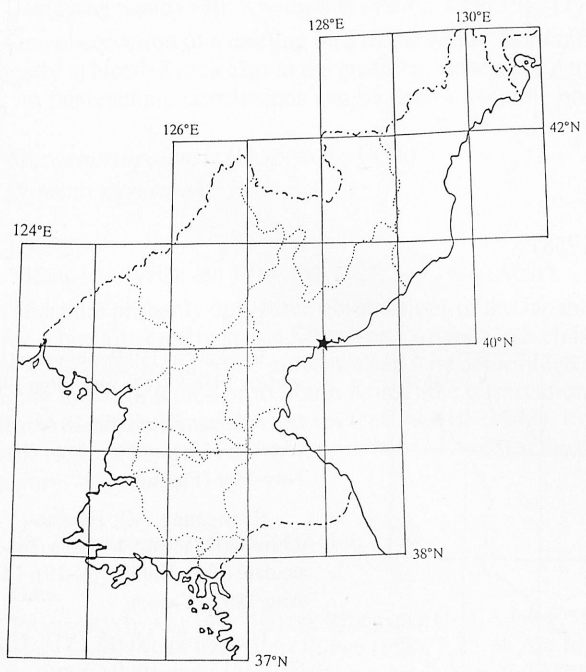
wing: 487, 443; tarsus 85, 80; bill: 36.5, 30; without cere 26.5 20.5; tail: 238, 222.

Observed rarely but regularly out of the breeding season, namely in August and from the end of October till March in the western part of the peninsula (e.g. in Kaesong in five or in Pyongyang in two successive years). The suggestion of possibility of nesting in the Paekdusan region on the basis of the observation of two birds in mid-August (FIEBIG 1993) seems to be hardly probable on account of the long distance from the known places of nesting of this species (see ETCHECOPAR & HÜE 1978, CHENG Tso-hsin 1987, LER 1989).

Aquila clanga (PALLAS, 1811)

No observations from North Korea territory. In the terrains of South Korea neighbouring upon North Korea, i.e. in the Kyonggi-do Province this species was recorded six times in the first half of this century (AUSTIN 1948) and twice after 1950 (WON Pyong-Oh 1987b). And so it is possible that this species also appeared in North Korea (but its presence has not been confirmed so far).

85. *Aquila rapax* (TEMMINCK, 1828)



Data:

Hamgyong South (VII): Dec 1959 (WON).

Vagrant. There is a record of only one individual, which was caught on the coast and next kept in the ZOO in Pyongyang (WON Hong-Koo 1965).

86. *Aquila heliaca* SAVIGNY, 1809

Data:

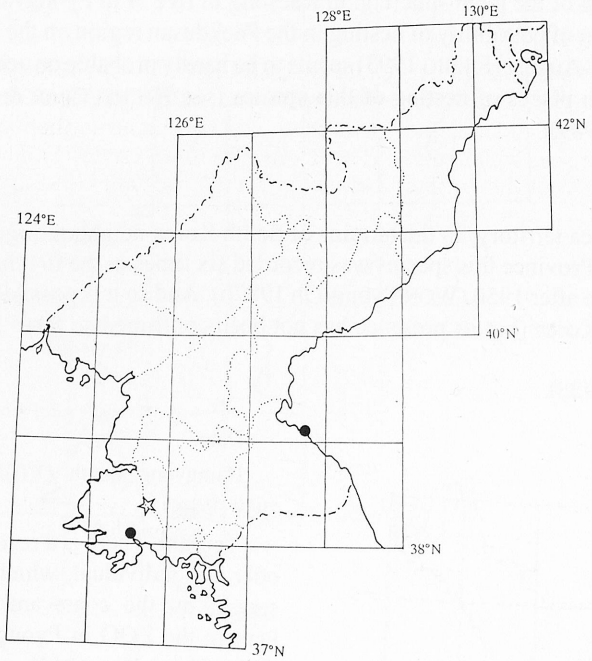
Kangwon (VIII): Tongchon-ho (VIII-18): 9 Dec 1989 (FIEB);

Hwanghae South (X): Pyoksong (X-21): 10 Dec 1960 (WON);

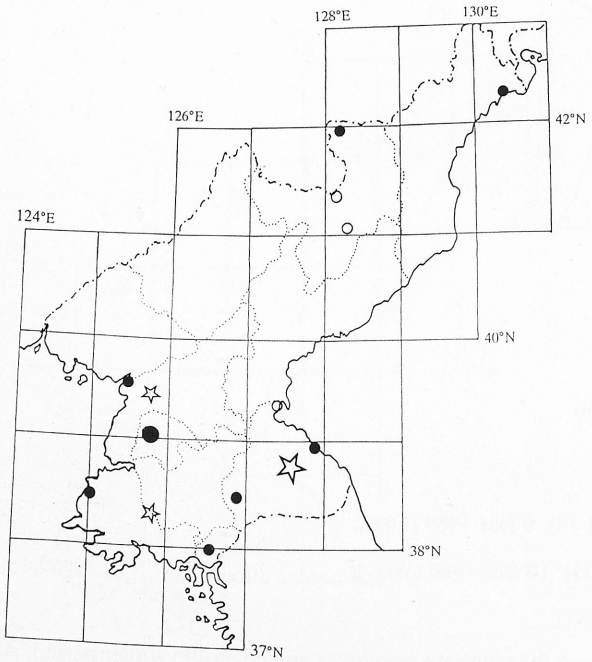
Hwanghae (IX-X): 21 Feb 1916 (AUST).

All the past observations come from the southern provinces and cover the winter period. As this species winters in the southern part of the peninsula (it has been included there among rare winter visi-

tors – WON Pyong-Oh 1993, 1996), its wintering area probably embraces also the southern provinces of North Korea.



87. *Aquila chrysaetos* (LINNAEUS, 1758)
[*Aquila nobilis*, *Aquila fulva*]



Data:

Pyongyang (I): Pyongyang (I-1): winters 1986-88 (CHON Gil-Pyo 1988);

Pyongan South (II): 18 Nov 1912 (AUST), Chongchon riv (II-29): Nov-Mar (FIEB);

Ryanggang (V): Hyesan (V-5): 27 Jul 1897 (YANK), Mupong (*V-13): no date (HO), Kapsan (V-19): 14-15 Aug 1897 (YANK);

Hamgyong North (VI): Unggi (VI-7): 15 Feb 1960 (WON);

Kangwon (VIII): 15 Jan 1911, 2 Dec 1929 (AUST), Ichon (VIII-11): 8 Dec 1957 (WON), Yonghung (VIII-14): 12 Sep 1897 (YANK), Anbyon (VIII-17): Nov-Mar (FIEB), Note: data cited by WON Hong Koo were not included here because they were wrongly placed in Kangwon Province. According to AUST they come from Kyonggido Province;

Hwanghae South (X): Kwail (X-13): Nov-Mar (FIEB);

Hwanghae (IX-X): 22 Jan 1919 (AUST);

Kaesong (XI): Kaesong (XI-1): 5 Jan 1957 (WON);

no data: in shops in Nampho, Pyongyang, Kaesong (KOLBE).

Observed chiefly in winter (in recent years rather regularly – see CHON Gil-Pyo 1988, FIEBIG 1993). In the breeding season was recorded only towards the end of the previous century (YANKOVSKII 1898). In the Far East the Golden Eagle is a migratory species in the northern part of its breeding area and partly resident in the southern part (DEMENTEV & GLADKOV 1951). The Korean Peninsula was the wintering area of the northern population (AUSTIN 1948, GORE & WON Pyong-Oh 1971) and at the same time there lived a small number of resident birds there (WON Hong-Koo 1964). In the case of rapid fall in the numbers of resident birds in the neighbouring terrains of the Russian Far East (LER 1989) and no observations from the breeding season in North Korea in this century, their nesting at present is doubtful and needs a confirmation (acc. to WON Pyong-Oh 1993, 1996, it is still a rare resident in South Korea).

Aquila sp. BRISSON, 1860

Data:

Hamgyong South (VII): Kwangchon (VII-6): 1 Jun 1987 (TOM).

One observation of a circling bird of the genus *Aquila* in June evidences that eagles appear sporadically in North Korea also in the breeding season. As it may have been a nomadic young individual, no far-reaching conclusions can be drawn from the observation of one bird.

Spizaetus nipalensis (HODGSON, 1836)
[*Nisaetus nipalensis*]

Data:

? Kangwon (VIII): Jan 1914, Feb 1925, Sep 1934 (AUST).

There are probably only three observations of the Japanese Hawk-eagle in the Korean Peninsula so far. They all come from the Kangwon Province, which is now divided between two states. Since there is no close localization given nor can it be determined from which part of the province (that belonging to North Korea or to South Korea) the observations come, and in view of doubts as to the correct identification of the species (see AUSTIN 1948), it is hardly possible to place the Japanese Hawk-eagle in the list of the species of North Korea (at the best, it could be only numbered under the category "vagrant").

88. *Falco tinnunculus* LINNAEUS, 1758

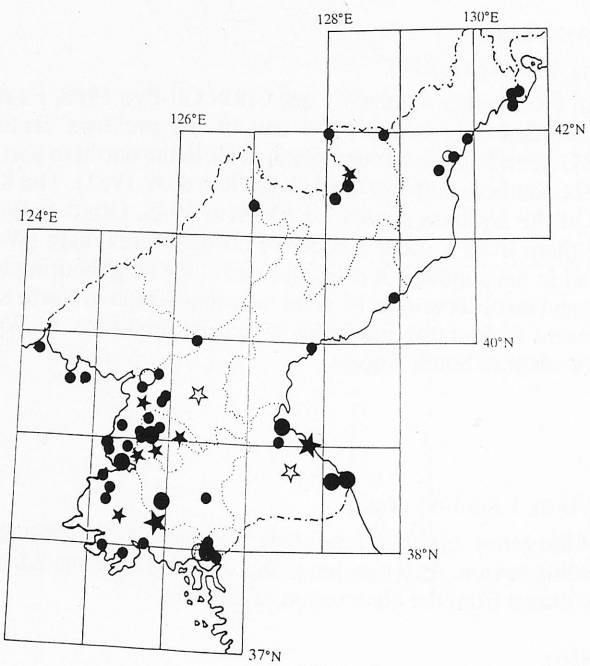
Data:

Pyongyang (I): Aug 1991 (BÁLDI), Pyongyang (I-1): 8 Jan 1958 (WON), 8 May 1980 (MAUERS), Aug 1984 (KOLBE), winters 1986-88 (CHON Gil-Pyo 1988), 7, 25, 30 Apr 1987 (GŁOW), 1987-1990 (FIEB), 6, 8 Jun 1987, 22 Sep 1991 (TOM), 1 Feb 1995 (PERT), Pyongyang-Tongmyongwang (I-1-16): 16 Oct 1991 (TOM), Taesongsan (I-6): 1 Jan, Dec 1954 (WON), Sunan (I-8): 17 Apr 1987 (GŁOW), Ryongaksan (I-10): 21 Sep 1991 (TOM), Mankyongdae (I-11): 8 Apr 1987 (GŁOW);

Pyongan South (II): 23 Oct 1932 (AUST), Pyongyang-Yonpung (I-1 – II-30): 1 Oct 1978, Pyongyang-Nampho (I-1-II-26): 22 Sep 1986 (TOM), Jehyonri (*II-11): 22 Oct 1954 (ZIP but 22 Nov ZIP cited by WON), Jasan (II-12): 23 Feb 1954 (ZIP), Anju (II-16): 13 Feb 1931 (WON but 13 Nov WON cited by AUST), 27 Nov 1935 (WON but 29 Nov WON cited by AUST), Hamjongri (*II-19): 23 Apr 1958, Ansokri (II-23): 13, 23 Apr 1958, Taekyedo (*II-24): 6 Apr 1956 (ZIP), Nampho (II-26): 22 Sep 1986 (TOM), 1987-1990 (FIEB), 31 Jan 1995 (PERT), Taesong-ho (II-28): 3 Aug 1979, Yonpung-ho (II-30): 7 Jun 1987 (TOM), Mundok (II-34): 30 Mar 1990 (FIEB);

Pyongan North (III): Sinmido (III-7): 13 Dec 1958, Sindo (III-14): 24 Mar, 31 Oct 1961 (ZIP), Myohyangsan (III-24): Aug 1991 (BÁLDI), Aedo – Sogam-do (*III-29): 29-30 Jul 1989 (FIEB);

Chagang (IV): Okasan (IV-3): no date (HO);



Ryanggang (V): Hyesan (V-5): 29 Sep 1991, Hyesan-Samjiyon (V-5-10): 1 Oct 1991 (TOM), Pochon (V-6): no date (HO), Paekdusan (V-12): 13 Aug 1989 (FIEB), Yukok (*V-15): no date (HO);

Hamgyong North (VI): Manpo (VI-2): 26 Sep 1959 (ZIP), Tongbonpho (*VI-3): 9 Apr 1996, Pipa (*VI-6): 9 Apr 1996 (PERT), Ryongchaeho (VI-17): 28 Jun 1983 (TOM), Chongjin (VI-19): 21 Oct 1929, 20 Mar 1957 (WON), Onphori (VI-23): 27 Jun 1983 (TOM);

Hamgyong South (VII): Tanchon (VII-8): 23 May-3 Jun 1987 (TOM), Honamri (VII-21): 24 Jun 1960 (ZIP);

Kangwon (VIII): 29 Nov, 24 Dec 1929 (AUST), Wonsan (VIII-3): 7 Aug 1979 (TOM), 1987-1990 (FIEB), Wonsan-Kosong (VIII-3-6): 7 Oct 1978 (TOM), 20 May 1980 (MAUERS), Sokwangsa (VIII-4): 12 Oct 1978 (TOM), Samil-pho (VIII-7): 22 May 1980 (MAUERS), 10 Jun 1980, 13 Oct 1991, Kumgangsan (VIII-8): 12 Jun 1980 (TOM), 17 Jun 1984 (KOLBE), Apr 1987 (GŁOW), Aug 1991 (BÁLDI), 11-14 Oct 1991 (TOM);

Hwanghae North (IX): Sohung-ho (IX-7): 25 Sep 1978 (TOM), 24 May 1990 (FIEB), Singye (IX-10): 22 May 1962 (ZIP);

Hwanghae South (X): Mar 1956 (WON), Kumsanri (X-4): 15 Mar 1962, Kuwolsan (X-6): 25 Jun, 23 Jul 1957, Talchonri (X-9): 5 Jul, 23 Dec 1957, Samsanri (X-15): 3 Feb 1959, Kangryong (X-19): 28 Oct 1962 (ZIP), Haeju (X-22): 29 Apr 1987 (GŁOW);

Hwanghae (IX-X): Sariwon-Haeju (IX-16-X-22): 24 Sep 1978 (TOM), 27 Apr, 4 May 1987 (GŁOW);

Kaesong (XI): Kaesong (XI-1): 9 Nov 1929, 29 Dec 1930, 12 Nov, 25 Dec 1955, 16 Jan 1956, 11 Dec 1957, 5 Jan, Sep 1958, 4 Jan 1959 (WON), Pagyon (XI-3): 27 Sep 1986, Panmunjom (XI-6): 30 Oct 1984 (TOM);

no data: 2 specimens (ZIP).

Measurements (21 specimens of the ZIP collection):

	10 ♂♂	$\bar{x}$	11 ♀♀	$\bar{x}$
wing	245-260	251.9	245-275	257.1
tarsus	39-48	41.3	39-45	41.7
bill	18-20	18.6	17-21	19.1
without cere	14-17	15.3	15-17	15.8
tail	156-186	168.8	164-185	175.9

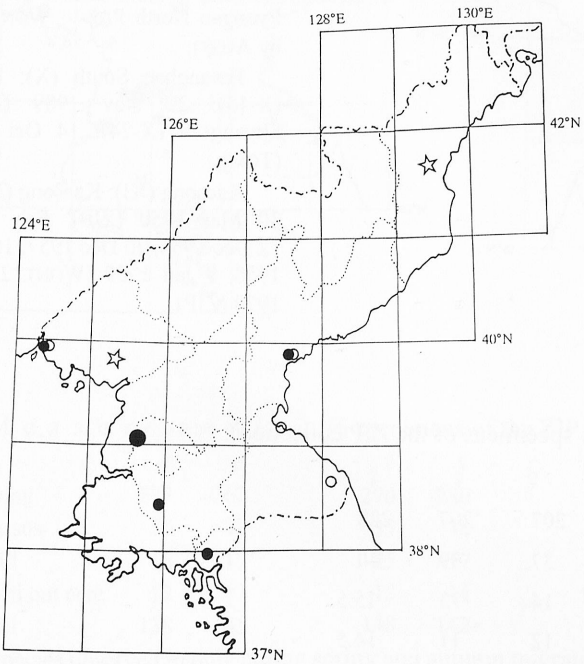
In the ZIP collection there are specimens with light and dark plumage and so belonging to the subspecies *Falco tinnunculus tinnunculus* LINNAEUS, 1758 and *Falco tinnunculus interstictus* HORSFIELD, 1840.

From among all the species representing birds of prey this one is most frequently met with throughout the country both in and out of the breeding season. In all larger towns in which investigation was carried out in breeding seasons, these birds were found to be nesting (FIEBIG 1993, TOMEK unpubl. observations from 1987). Here we are concerned with a phenomenon hard to explain, namely, the settling of predators and a rise in their numbers in an environment destroyed and poi-

soned to a great extend (wide application of DDT as a plant protection agent until the nineties), for 50 years ago this species was a passage migrant or it stayed winter only in the central and southern parts of the peninsula (AUSTIN 1948), or "probably" occurred in northern Korea (VAURIE 1965). Up to sixties, it was supposed to be nesting only in the Hamgyong South Prov. and Kaesong region (WON Hong-Koo 1965). In the neighbouring terrains it is still "a possibly not numerous breeding species" (Primorsk – PANOV 1973), or uncommon resident (South Korea – WON Pyong-Oh 1987a, 1993, 1996).

89. *Falco amurensis* RADDE, 1863

[*Falco vespertinus*, *Erythropus amurensis raddei*]



Data:

Pyongyang (I): Ryongaksan (I-10): 19 Sep 1978, 5 Aug 1979 (TOM), 29 Sep 1988 (FIEB);

Pyongan North (III): 19 Jun 1917, Jun 1917 (AUST), Ryongampho (III-15): 11 May 1949, 22 May 1950 (WON);

Hamgyong North (VI): 6 Sep, 11 Oct 1929 (AUST);

Hamgyong South (VII): Hamhung (VII-30): 13 Sep 1897 (YANK), 15 Sep 1989 (FIEB);

Kangwon (VIII): Wonsan (VIII-3): 4 Oct 1897 (YANK), Kumgangsan (VIII-8): 12 Jun 1949 (WON);

Hwanghae North (IX): Sohung-ho (IX-7): 25 Sep 1978 (TOM);

Kaesong (XI): Kaesong (XI-1): 30 Oct 1965 (ZIP).

Measurements (♀ of the ZIP collection):

wing 225, tarsus 32, bill 14, without cere 11, tail 121.

Species rarely observed, mainly during migration (Sep-Oct, 9 records). It probably also nests, as indicated by the observations made in the breeding season (May-Aug, 6 records). To be sure, nesting has not been confirmed, but a breeding site was found in the nearest neighbourhood of North Korea (CHENG Tso-hsin 1976, 1987). And so the view that the northern part of the Korean Peninsula belongs to the breeding rounds of the Eastern Red-footed Falcon seems well-grounded (WON Hong-Koo 1963, VAURIE 1965, GORE & WON Pyong-Oh 1971, ETCHECOPAR & HÜE 1978, WON Pyong-Oh 1993). At the same time, in the southern part of the peninsula this bird is a rare passage migrant (WON Pyong-Oh 1987a, 1993, 1996).

90. *Falco columbarius* LINNAEUS, 1758

[*Falco insignis*, *Falco aesalon*, *Tinnunculus alaudarius*]

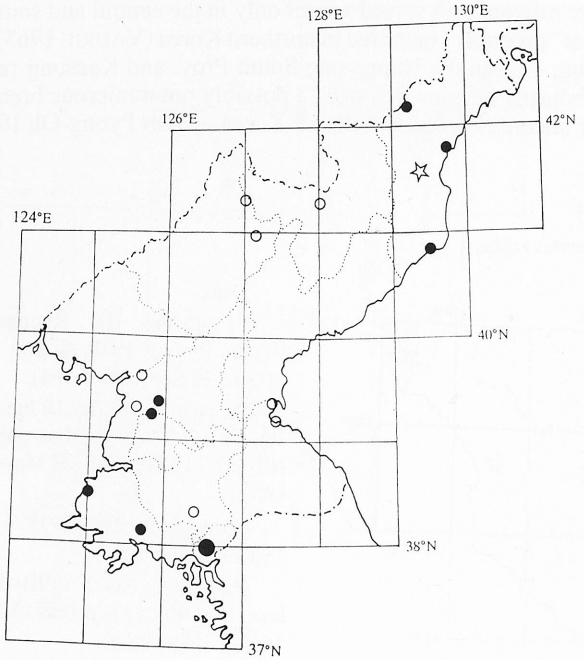
Data:

Pyongyang (I): Sogam (I-15): 24 Oct 1984 (TOM);

Pyongan South (II): Jasan (II-12): 8 Apr, 20 Mar 1954 (ZIP), Anju (II-16): 12 Oct 1935 (WON, but 10 Nov WON cited by AUST), Pyongwon (II-17): 10 Feb 1933 (WON, but 10 Nov WON cited by AUST);

Chagang (IV): Okasan (IV-3): 28 Aug 1897, Rangnim (IV-5): 9 Sep 1897 (YANK);

Ryanggang (V): Samsu (V-4): 17-18 Aug 1897 (YANK);



Hamgyong North (VI): 18 Oct 1929 (AUST), Musan (VI-12): 3 Nov 1955 (WON), Chongjin (VI-19): 2 Oct 1991 (TOM), Hapyongri (VI-31): 26 Jul 1959 (ZIP, or 26 Oct ZIP cited by WON);

Kangwon (VIII): Wonsan (VIII-3): 19 Sep, 4 Oct 1897, Yonghung (VIII-14): 1-8 Nov, 12 Nov 1897 (YANK);

Hwanghae North (IX): Pyongsan (IX-11): 9 Nov 1930 (WON, but Pyongan North Prov – WON cited by AUST);

Hwanghae South (X): Kwail (X-13): 29 Nov 1989 (FIEB), Suyangsan (X-24): 14 Oct 1984 (TOM);

Kaesong (XI): Kaesong (XI-1): 30 Mar 1950 (ZIP), Feb 1955, 12 Dec 1956, 30 Dec 1957, 10 Mar 1958, 9 Jan 1959 (WON), 21 Jan 1970 (ZIP).

Measurements (5 specimens of the ZIP collection):

	♂	♀	♀	♀	♀
wing	209	210	207	207	228
tarsus	37	38	37	39	40
bill	15	14	14	13	15.5
without cere	12	12	12	11	14.5
tail	148	123.5	127	126	142

Species observed during spring and autumn migration, and also in winter (altogether 25 records, of which about nine from winter months, i.e. from November to February). In the winter period these birds were encountered chiefly in the south-western provinces (mostly in Kaesong). The Merlin is an uncommon or scarce winter visitor in the southern part of the peninsula (WON Pyong-Oh 1987a, 1993, 1996) and the south-western provinces of North Korea, adjoining South Korea, lie probably within the range of winter quarters of this species.

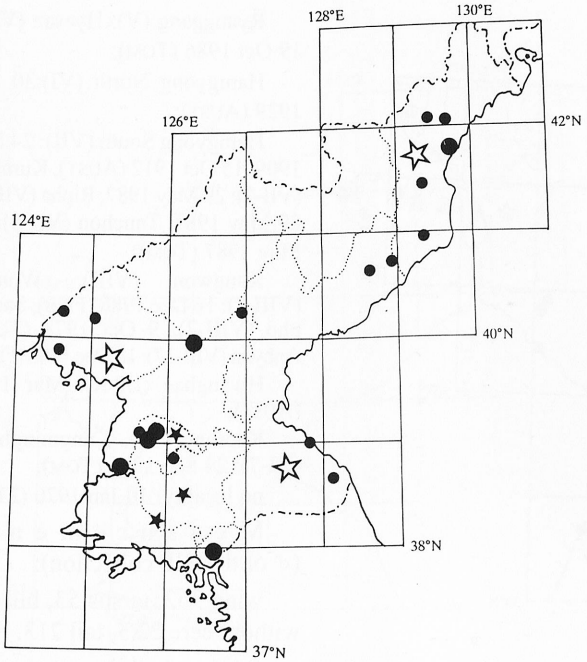
91. *Falco subbuteo* LINNAEUS, 1758

Data:

Pyongyang (I): Aug 1991 (BÁLDI), Pyongyang (I-1): 1987-1990, Taesongsan (I-6): 1987-1990, Ryongaksan (I-10): 29 Oct 1988 (FIEB), Sangwon (I-14): 21 Sep 1986 (TOM);

Pyongan South (II): Rangrimri (II-1): 11 Jun 1960 (WON), 13 Jun 1960 (ZIP), Nampho (II-26): 9 Aug 1984 (KOLBE), 22 Sep 1986 (TOM);

Pyongan North (III): 26 May 1917, 11-28 May 1929 (AUST), Haksori (*III-10): 14 May 1958 (WON), Sujinri (III-17): 6 Jun 1982, Chonmasan (III-20): 7 Jul 1961 (ZIP), Myohyangsan (III-24): 11 Sep 1956 (WON), 6-17 Jun 1983 (TOM), Aug 1991 (BÁLDI);



Hamgyong North (VI): 24 May 1912, 13 Sep 1917 (AUST), Chayuri (VI-14): 1 Jul 1983 (TOM), Puryong (VI-16): 2 Jun 1985 (ZIP), Chongjin (VI-19): 7 Jul 1983 (TOM), Aug 1991 (BÁLDI), Mehyangri (VI-27): 27 Jun 1983, Kilju (VI-32): 26 Jun 1983 (TOM);

Hamgyong South (VII): Pogo (VII-4): 1 Jun 1987, Hochon (VII-14): 25 May 1987 (TOM);

Kangwon (VIII): 21 Oct 1911, 1 Oct 1914 (AUST), Sijungho (VIII-5): 27 Sep 1988 (FIEB), Kumgangsan (VIII-8): Aug 1991 (BÁLDI);

Hwanghae (IX-X): routes: Haeju-Sariwon (X-22 – IX-16): 24 Sep 1978 (TOM), Kaesong-Pyongyang (XI-1 – I-1): 14, 16 Aug 1984 (KOLBE);

Kaesong (XI): Kaesong (XI-1): 13, 30 Feb 1962 (ZIP), Aug 1991 (BÁLDI).

M e a s u r e m e n t s (6 specimens of the ZIP collection):

	♂	♂	♀	♀	?sex	?sex
wing	273	262	270	280	255	257
tarsus	35	33	35	34	23	28
bill	16	17	25	17	15	–
without cere	12	13	15	14	11.5	11.8
tail	138	145	148	142	148	131

Species observed mainly during spring and autumn migration and in breeding season, exceptionally in winter (2 records from the Kaesong Prov.). The presence of Hobbies found during several-day-long observation in the breeding season (TOMEK 1985 and unpubl. data, FIEBIG 1993) gives evidence that now it is not a very rare breeding species in North Korea. It is interesting in so far as it very rarely nests in the neighbouring regions both to the north (PANOV 1973, LER 1989) and to the south (GORE & WON Pyong-Oh 1971, WON Pyong-Oh 1987a, 1993, 1996) of the area discussed. In earlier publications (AUSTIN 1948, WON Hong-Koo 1963 and also VAURIE 1965) it was not mentioned as a breeding species in the Korean Peninsula.

Falco cherrug GRAY, 1834

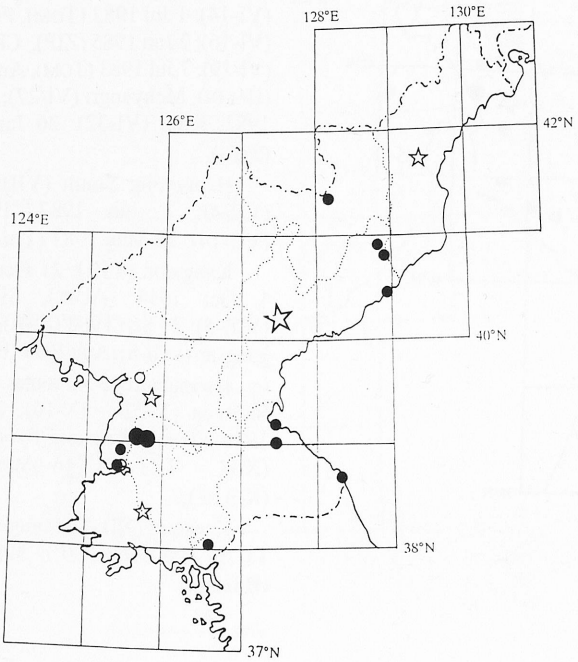
No data from North Korea.

92. *Falco peregrinus* TUNSTALL, 1771

Data:

Pyongyang (I): Pyongyang (I-1): winters 1986-88 (CHON Gil-Pyo 1988), 9 Oct 1987, 17 Jun 1988, 29 Aug 1989 (FIEB), Ryongaksan (I-10): 20 Oct 1986, 21 Sep 1991 (TOM);

Pyongan South (II): Mar 1909 (AUST), Anju (II-16): 27 Jul 1935 (WON 1963, but 23 Jul – WON cited by AUST), Nampho (II-26): 27 Jul 1932 (WON 1963, but 24 Jul – WON cited by AUST), 22 Oct 1988 (FIEB), Taesong-ho (II-28): 6 Oct 1984 (TOM);



Ryanggang (V): Hyesan (V-5): 19 Oct 1986 (TOM);

Hamgyong North (VI):30 Sep 1929 (AUST);

Hamgyong South (VII): 24 Mar 1909, 15 Oct 1912 (AUST), Kumdok (VII-2): 29 May 1987, Ripha (VII-3): 29 May 1987, Tanchon (VII-8): 26 May 1987 (TOM);

Kangwon (VIII): Wonsan (VIII-3): 16 Dec 1988 (FIEB), Samilpho (VIII-7): 9 Oct 1978 (TOM), Anbyon (VIII-17): 18 Dec 1988 (FIEB);

Hwanghae (IX-X): Mar 1915 (AUST);

Kaesong (XI): Kongminghang (XI-7): 24 Sep 1986 (TOM);

no locality: 10 Jan 1970 (ZIP).

Measurements (♂ of the ZIP collection):

wing 362, tarsus 53, bill 28, without cere 22.5, tail 213.

Observed all the year round, most frequently during autumn passages (Aug-Oct, 11 records). It is probably a breeding species (May-Jul, 6 records). Its nesting has not been documented, it is however a species nesting, though rarely, in the adjacent terrains, both to the north (PANOV 1973, LER 1989) and to the south (GORE & WON Pyong-Oh 1971, WON Pyong-Oh 1987a, 1993, 1996) of the area under discussion.

GALLIFORMES

93. *Tetrao tetrix* LINNAEUS, 1758

[*Lyrurus tetrix*]

Data:

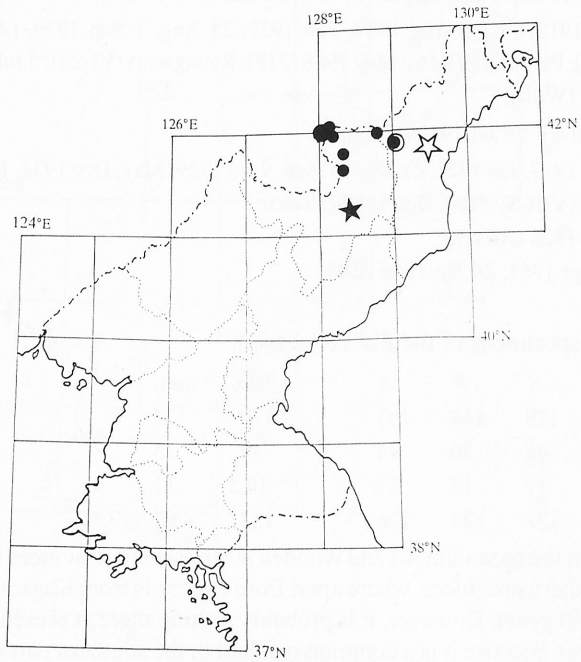
Ryanggang (V): 24 Aug 1964, 25 Jan, 11 Feb 1976, Photae (V-8): 1 Mar 1963, Samjiyon (V-10): 21 Mar 1963, Paekdusan (V-12): 5 Jul, Sep 1961, 30 Mar 1963, 24 Aug 1964, Kansambong (*V-12): 26, 28 Jul 1960, Mutubong (V-13): 5 Aug 1958, 27 Jun 1960 (ZIP), Yukok (*V-15): no date (HO);

Hamgyong North (VI): 11, 16 Aug, 25 May 1912, 24 Oct 1927, 10 Aug 1929, winter 1932 (AUST), Nongsadong (*VI-20): 5, 10 Aug 1927 (WON 1963, but 1929 WON 1956 and 10 May 1929 WON cited by AUST), 21 Jan 1930 (WON), Jinhungri (*VI-20): 17 Jul 1959 (ZIP);

no data: 7 specimens (ZIP).

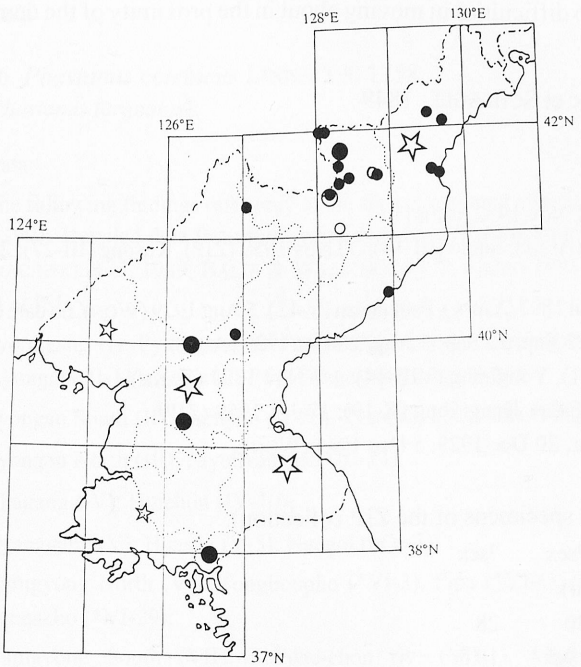
Measurements (21 specimens of the ZIP collection):

	12 ♂♂	$\bar{x}$	7 ♀♀	$\bar{x}$	?sex	imm
wing	237-289	267.6	218-253	236.0	243	144
tarsus	50-67	57.4	45-54	48.4	53	58
bill	21-27	24.5	19-22	20.7	20.5	37
tail	113-227	190.4	98-162	131.0	145	–



Species found only in the mountainous and wooded regions of the northern provinces Ryanggang and Hamgyong North. In the ZIP collection there are at least 10 skins from the area of Paekdusan (8 ♂♂ i 2 ♀♀); they were collected between 5 Aug 1958 and 24 Aug 1964. Another 10 specimens without labels (5 ♂♂ and 5 ♀♀) were probably collected in the same Ryanggang Province. The Black Grouse is a resident species (JOHNSGARD 1983); consequently, 20 birds obtained from a small area (9 of them were taken outside the mating season) indicate a relative abundance of this species. The Black Grouse has not been reported from the remaining provinces of North Korea so far, neither does it occur in South Korea. Therefore, the south-eastern boundary of its distribution runs through the Ryanggang and Hamgyong North Provinces.

94. *Bonasa bonasia* (LINNAEUS, 1758)
[*Tetrastes bonasia, Bonasia betulina*]



Data:

Pyongan South (II): 10 Jan 1937, 6-14 Feb 1949, Taehung (II-3): 17 Jun 1960, Songchon (II-9): 9 Feb 1951, 9 Feb 1954 (WON);

Pyongan North (III): 24 Mar 1910 (AUST), Myohyangsan (III-24): 14 Jun 1950, 20 Jun 1954, 22 Apr 1957 (WON), 10 Oct 1956, 21 Jun 1957 (ZIP), 7-20 Jun 1983, 4-8 Oct 1986 (TOM), 11-12 Apr 1987 (GLOW), no date (FIEB);

Chagang (IV): Okasan (IV-3): 2 Feb-16 Nov 1958 (HO, but: 6 Feb-16 Dec – HO Hon cited by WON)

Ryanggang (V): Hyesan (V-5): 8 Aug 1897 (YANK), 1, 2 Nov 1931 (WON), 10 Oct 1986 (TOM), Pochon (V-6): 17 Jun-16 Oct 1958 (WON), Naegokri (V-7): 13-16 Oct 1986 (TOM), Photae (V-8): 10 Nov 1963, Samjiyon (V-10): 15 Apr 1965 (ZIP),

22 Oct 1978, 2, 4 Jun 1980 (TOM), Paekdusan (V-12): 20 Jul 1960 (WON), Nongsari (*V-12): no date (HO), Paegam (V-16): 23 Jun 1897 (YANK), 18-19 Sep 1958, Kapsan (V-19): 20 Jan 1931 (WON);

Hamgyong North (VI): 15, 30 Apr 1912, 14, 15 Aug 1917, Feb 1927, 25 Aug, 1 Sep 1929, (AUST), Chayuryong (VI-13): 7, 10 Jul 1983 (TOM), Puryong (VI-16): May 1988 (ZIP), Ryongsanri (VI-24): 5 Jul 1983 (TOM), Kyongsong (VI-25): 16 Jun 1959 (WON);

Hamgyong South (VII): Tanchon (VII-8): 15 Jul 1960 (WON);

Kangwon (VIII): 3 Nov 1914, 20 Mar 1917, Jan 1921, 28 Mar 1928, 6, 9 Jul 1929, May, Dec 1934, 10 Jan, May 1934, 1 May 1934 (AUST), Wonsan (VIII-3): Nov, Dec 1887 (TACZ);

Hwanghae (IX-X): 18 Nov – 23 Dec 1926 (AUST);

Kaesong (XI): Kaesong (XI-1): 30 Apr 1961, 26 Jan 1966 (ZIP);

no data: 1 specimen (ZIP).

Measurements (9 specimens of the ZIP collection):

	4 ♂♂	$\bar{x}$	♀	♀	♀	?sex	imm
wing	162-178	171	179	158	161	170	133
tarsus	32-43	38	42	30	44	40	33
bill	16-19	17.1	17	17	21	14.5	13
tail	112-132	123.5	121	125	126	133	68

Breeding species, nesting mainly in the mountainous and wooded north-eastern provinces of the country. Considerably rarer in the southern provinces, where apart from 2 records from Kaesong, no birds have been observed for the last 60 years. However, it is probably nesting there at present (despite the lack of records of its presence), because it is a common resident in the southern part of the peninsula (WON Pyong-Oh 1993, 1996). The hilly configuration of the land and the relatively high degree of the forest cover of the southern provinces of North Korea provide an environment favourable for Hazel Hen and it would be difficult to explain the disjunction in their distribution in the peninsula. A more probable cause of the lack of observations is the unsatisfactory state of investigation of the country (in the last 50 years also difficulties in moving about in the proximity of the demilitarized zone).

95. *Coturnix japonica* TEMMINCK et SCHLEGEL, 1849
[*Coturnix coturnix*]

Data:

Pyongan South (II): 12 May 1917, 21 Nov 1932, (AUST);

Pyongan North (III): 4, 11 May 1929 (AUST), Sindo (III-14): 30 Nov 1959 (ZIP), Kusong (III-27): 28 Dec 1927 (WON);

Ryanggang (V): Samsu (V-4): 14-15 Jul 1897 (YANK), Paekdusan (V-12): 5 Aug 1929 (WON), no date (HO);

Hamgyong North (VI): 15, 18 Aug, 22 Sep, 22 Sep, 5 Aug, 20 Oct 1929 (AUST);

Kangwon (VIII): 3, 8 Oct 1914 (AUST), Yonghung (VIII-14): 1-8 Nov 1897 (YANK);

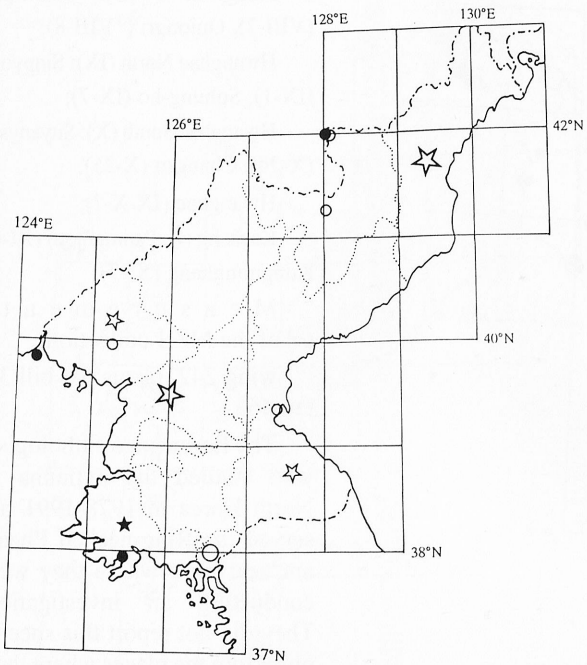
Hwanghae South (X): 15 Dec 1989 (FIEB), Kangryong (X-19): 17 Jan 1959 (ZIP);

Kaesong (XI): Kaesong (XI-1): 4 Mar, 20 Dec 1929, 5 Dec 1945 (WON);

no locality: 22 Jan 1973 (ZIP).

Measurements (4 specimens of the ZIP collection):

	♂	♂	?sex	?sex
wing	99	98	101	–
tarsus	25	27	30	28
bill	10.5	11	9.5	10.5
tail	35	40	43	–



Species observed all over the country. In the northern provinces found present all the year round, but mainly in the breeding season (from May to September), whereas in the southern provinces only in the post-breeding period (from October to the beginning of March). And so the view that this species nested in the northern part of the Korean peninsula and wintered in its southern part was correct (DEMENTEV & GLADKOV 1952, WON Hong-Koo 1963, GORE & WON Pyong-Oh 1971, SONOBE 1982, WON Pyong-Oh 1993, 1996), all the more so since it belonged to the birds breeding in the regions situated to the north of North Korea (PANOV 1973, MEYER DE SCHAUENSEE 1984, CHENG Tso-hsin 1987, POTAPOV 1987). In the last 50 years this species has not been noted in the breeding season and at present the nesting of the Quail needs a confirmation (particularly so, because the common application of plant protection agents in North Korea exerts an influence on the decrease in the numbers of phasianids, which fact is generally well known).

96. *Phasianus colchicus* LINNAEUS, 1758
[*Phasianus torquatus*]

Data:

The following findings refer only to the sites of repeated observations made by European ornithologists in 1978-1991. Detailed data from this period are given in publications by MAUERSBERGER 1981, KOLBE 1988, GŁOWACIŃSKI et al. 1989, BÁLDI & WALICZKY 1992, FIEBIG 1993 and in the Card Index of Birds of North Korea at ISEA.

Pyongyang (I): Pyongyang (I-1), Ponghwari (I-4), Taesongsan (I-6), Sunan (I-8), Ryongaksan (I-10), Mankyongdae (I-11), Sogam (I-15), Tongmyongwang (I-16);

Pyongan South (II): Nampho (II-26), Taesong-ho (II-28), Yonpung-ho (II-30),

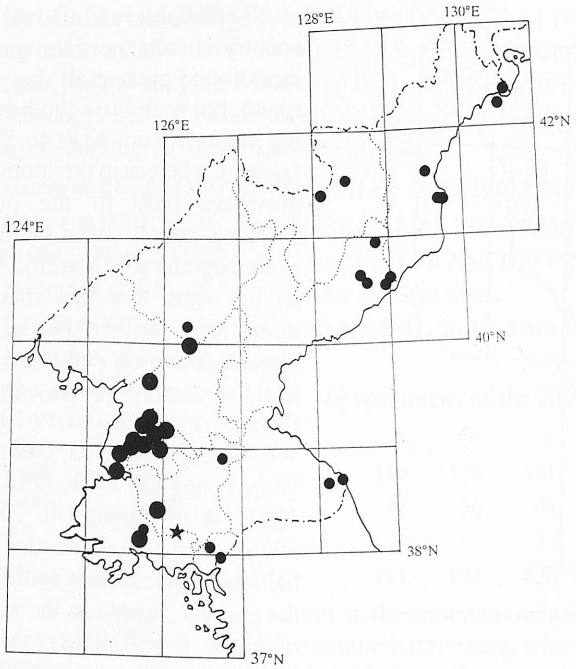
Pyongan North (III): Myohyangsan (III-24),

Chagang (IV): Huichon (IV-10);

Ryanggang (V): Hyesan (V-5), Naegokri (V-7);

Hamgyong North (VI): Tongbonpho (*VI-3), Pipa (*VI-6), Ryongsanri (VI-24), Jangyon-ho (VI-29), Ryongchaeho (*VI-29);

Hamgyong South (VII): Pukdae-chon riv. (VII-1), Machonryong (VII-5), Tongdokri (*VII-6), Yomsongdok (VII-13), Hochon (VII-14);



Kangwon (VIII): Samil-pho (VIII-7), Onjongri (*VIII-8);

Hwanghae North (IX): Sinpyong (IX-1), Sohung-ho (IX-7);

Hwanghae South (X): Suyangsan (X-24), Changsu (X-25);

Hwanghae (IX-X-?);

Kaesong (I): Panmunjom (XI-6), Kongminghang (XI-7).

M e a s u r e m e n t s (♂ of the MZB collection):

wing 242, tarsus 68, bill 31, tail 463.

The European ornithologists who studied the avifauna of North Korea in 1978-1991 observed the Ring-necked Pheasant nearly anywhere they were conducting an investigation. They did not report this species only from the places where their study was carried out in environments alien to the phasianids, such as sea coast, high mountains or dense forest complexes. In addition to the places of observation of the European ornithologists, they undoubtedly occur in other places, for both AUSTIN (1948) and WON Hong-Koo (1963) found this species to be very common throughout the country, so common that they saw no point in mentioning the sites of its occurrence. According to my observations from 1978-1991, they were most numerous and most frequently watched in the south-western part of the country, mainly in the Pyongyang and Pyongan South Provinces.

The specimens kept in the ZIP collection have very variable plumage: from light to dark. These specimens support the view held by AUSTIN (1948) and WON Hong-Koo (1963) that two subspecies (*Phasianus colchicus karpovi* BUTURLIN, 1904 and *Ph. c. pallasi* ROTHSCHILD, 1903) and some intermediate forms between these subspecies occur in the Korean Peninsula.

GRUIFORMES

97. *Turnix tanki* BLYTH, 1843

Data:

Pyongan South (II): 26 Sep (AUST), Anju (II-16): 2 Sep 1932, Chungsan (II-19): 5 Jul 1959 (WON);

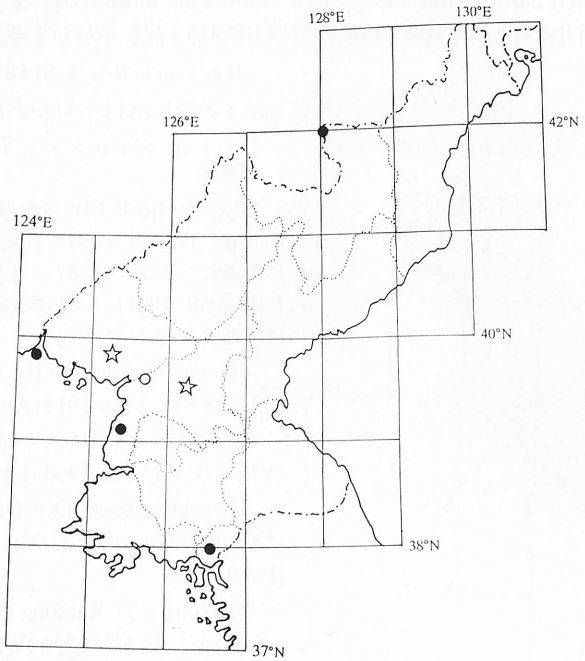
Pyongan North (III): 23, 24 May 1929 (AUST), Sindo (III-14): no date (ZIP);

Ryanggang (V): Nongsari (*V-12): no date (HO);

Kaesong (XI): Kaesong (XI-1): 12 Oct 1955 (WON).

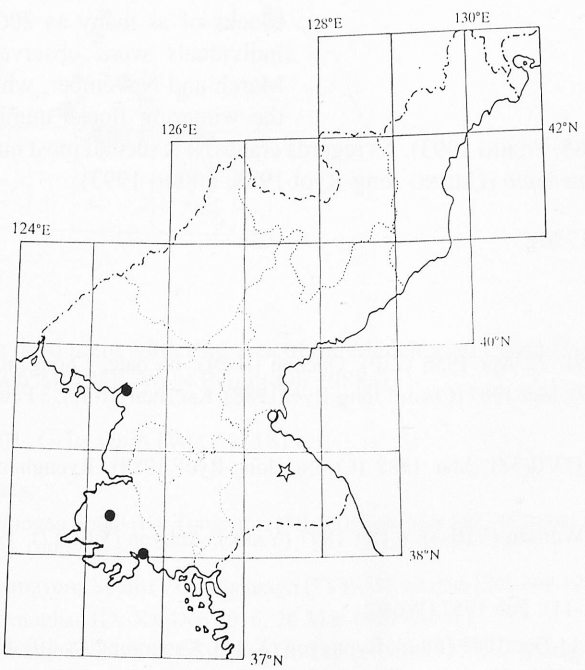
M e a s u r e m e n t s (1 specimen of the ZIP collection):

wing 96, tarsus 27, bill 12, tail 30.



Species rarely observed from the second half of May to the first half of October (8 records). The last dated observations come from the fifties. The finding of its presence in May and July suggests that it may nest in the northern part of the country, which, however, has not as yet been documented. The probability of nesting is strengthened by the fact that this bird is a breeding species in southern Primorsk (KUROCHKIN 1987, LER 1989) and in north-eastern China (ETCHECOPAR & HÜE 1978, MEYER DE SCHAUENSEE 1984, CHENG Tso-hsin 1987) and South Korea (WON Pyong-Oh 1996).

98. *Grus grus* (LINNAEUS, 1758)
[*Grus cinerea*]



Data:

Pyongan South (II): Chongchon riv (*II-29): 12 Mar 1990 (FIEB);

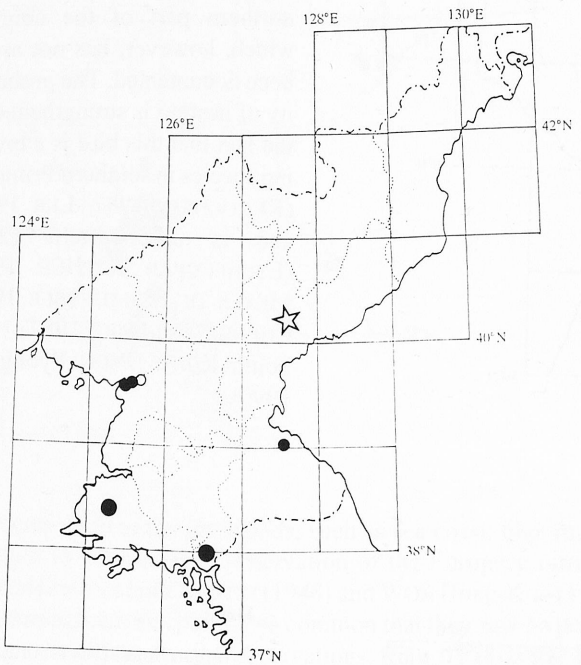
Kangwon (VIII): 10 Nov 1914 (AUST), Yonghung (VIII-14): 20 Oct 1897 (YANK).

Hwanghae South (X): Onchon (*X-10): 21 Nov 1989, Haeju (X-22): 28 Feb 1990 (FIEB).

Rarest and least numerous of cranes (genus *Grus*), observed on migration and in winter.The Common Crane is a common winter visitor and passage migrant in China (ETCHECOPAR & HÜE 1978) but very rarely noted in the Korean Peninsula (AUSTIN 1948, GORE & WON Pyong-Oh 1971, WON Pyong-Oh 1986a, 1980, 1993, PAE et al. 1996). Despite special attention given to cranes also in North Korea

(SONOBE 1987, CHUNG Jong-Ryol 1988, PAK U-Il et al. 1983, ornithologists of ZIP – oral comm.), in the last 50 years it has been recorded hardly three times there. Somewhat more frequently the Common Crane occurred in Japan, but there, too, it was a rare bird (KURODA 1975, WON Pyong-Oh 1986a, NISHIDA 1987).

99. *Grus monacha* TEMMINCK, 1835



Data:

Pyongan South (II): Anju (II-16): 8 Apr 1932 (WON), Tongrimri (*II-29): Mar 1987 (CHUNG Jong-Ryol 1988), Chongchon riv (*II-29): no date (FIEB);

Hamgyong South (VII): 4 Jan 1911, 23 Nov, 2 Dec 1913 (AUST);

Kangwon (VIII): Anbyon (VIII-17): 9-13 Feb 1990 (FIEB);

Hwanghae South (X): Onchon (*X-10): 7 Dec 1988, 21 Nov 1989 (FIEB);

Kaesong (XI): Kaesong (XI-1): 2 Feb 1955, 29 Mar 1956 (WON).

Observed along eastern coast from November till April. More numerous on spring and autumn passage than in winter. Flocks of as many as 200-400 individuals were observed in March and November, whereas the wintering flocks numbered about 30 birds (CHUNG Jong-Ryol 1988, FIEBIG 1993). As regards cranes, it is second most numerously observed in North Korea to *Grus vipio* (CHUNG Jong-Ryol 1988, FIEBIG 1993).

100. *Grus japonensis* (MÜLLER, 1776)
[*Grus viridirostris*]

Data:

Pyongan South (II): Janganri (*II-19): 22 Apr 1958 (ZIP), Onchon (II-24): no date, Chongchon riv (*II-29): no date (FIEB), Tongrimri (*II-29): Mar 1987 (CHUNG Jong-Ryol 1988), Kaechon (II-31): 3 Feb 1955 (WON);

Hamgyong South (VII): Haejungri (*VII-38): Mar 1987 (CHUNG Jong-Ryol 1988), Ryonghung riv (VII-46): no date (FIEB);

Kangwon (VIII): Apr 1931 (AUST), Wonsan (VIII-3): 6 Oct 1897 (YANK), Anbyon (VIII-17): 19 Dec 1989, 11 Feb 1990 (FIEB);

Hwanghae North (IX): Pyongsan (IX-11): Feb 1957 (WON);

Hwanghae South (X): Kwail (X-13): 11 Dec 1988 (FIEB), Ryongyon (X-14), Kangryong (X-19), Ongjin (X-26): winters 1979-82 (PAK U-Il et al., 1983), Changyon (X-27): 21 Nov 1955, Chaeryong (X-28): 4 Nov 1955, 1 Apr 1957, Paechon (X-29): 3 Feb 1955 (WON);

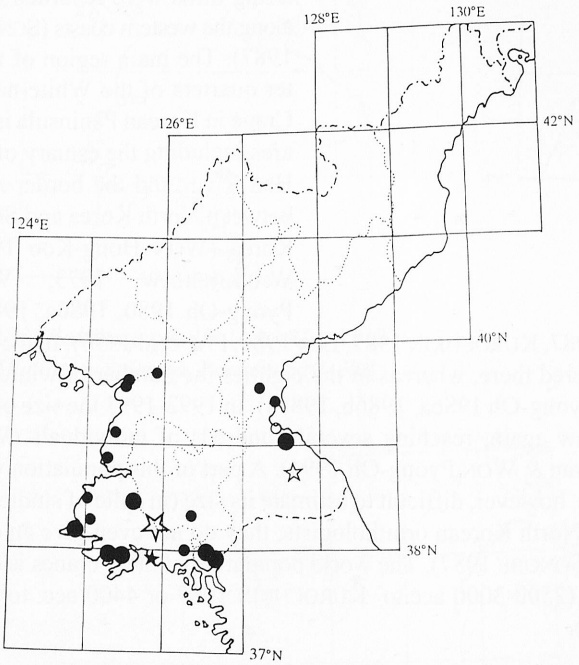
Hwanghae (IX-X): 2 Jan 1916, 3 Jan 1917, 5 Jan, 25 Feb, 10 Mar 1927, Mar, 1 Dec 1930 (AUST), southern coast: 17 Dec 1989 (FIEB);

Kaesong (XI): Kaesong (XI-1): 19 Jan, 19 Dec 1956, 1 Apr 1957 (WON), Panmunjom (XI-6): winters 1979-82 (PAK U-Il et al. 1983);

no locality: 3 Dec 1950, 3 Aug 1957, 9 Feb 1958 (ZIP).

M e a s u r e m e n t s (4 specimens of the ZIP collection):

	♂	♂	♂	♀
wing	710	690	685	567
tarsus	272	295	300	200
bill	155	149	149	153
tail	260	320	330	302



Observed in the maritime belt of western and southern provinces from October to April. Many years' studies (devoted to cranes, carried out since the seventies show that a total of about 250-300 Manchurian Cranes winter in North Korea (WON Pyong-Oh 1986a, CHUNG Jong- Ryol 1988, PAK U-Il et al. 1983, FIEBIG 1993). This is about 1/5 of its world population, which is estimated at about 1000-1500 individuals (KUROCHKIN 1987, LER 1989, PAE Seong-Hwan & WON Pyong-Oh 1994). This number has kept up with some fluctuations since the end of the seventies: about 200 on the western coast and 50-100 on the eastern (CHUNG Jong-Ryol 1988, FIEBIG 1993). The middle part of the Korean Peninsula is, next to eastern China and Hokkaido I., the third main wintering area of the Manchurian Crane (SONOBE 1987, ZHOU 1988, MOMOSE & MASATOMI 1988, WON Pyong-Oh 1988a).

101. *Grus vipio* PALLAS, 1811

Data:

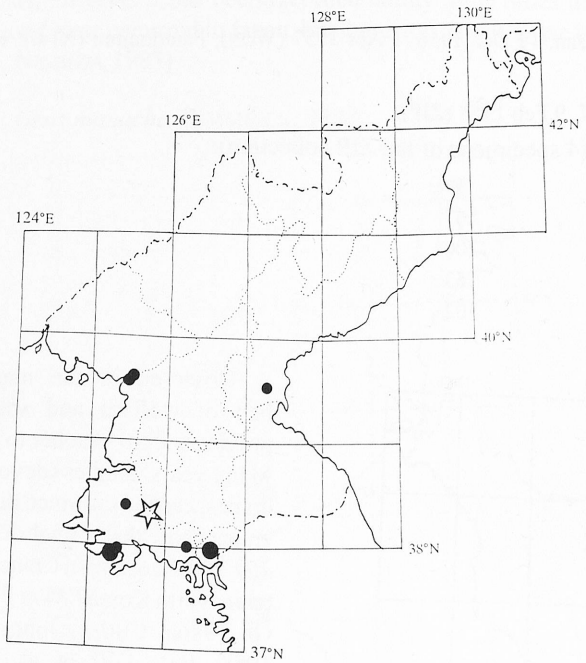
Pyongan South (II): Tongrimri (*II-29): Feb, Mar 1987 (CHUNG Jong-Ryol 1988), Chongchon riv (*II-29): 12 Mar 1990 (FIEB);

Hamgyong South (VII): Haejungri (*VII-38): no data (SONOBE 1987), Mar 1987 (CHUNG Jong-Ryol 1988),

Hwanghae (IX-X): Dec 1916, 20 Mar 1929 (AUST);

Hwanghae South (X): Sinchon (X-11): 20 Nov 1955 (ZIP), Ongjin (X-26): 2 Feb 1957, 3 Feb 1958 (WON), Namhaeri (*X-26): no date, Paechon (II-29): no date (SONOBE 1987);

Kaesong (XI): Kaesong (XI-1): 2 Feb 1955, 16 Dec 1956, 14 Mar, 10 Nov 1957 (WON).



Measurements (1 specimen of the ZIP collection):

wing 615, tarsus 250, bill 132, tail 250.

Species observed on migration, and in winter, i.e. from November to March. Migration watched along coasts, more abundant in western than in eastern part of the country (CHUNG Jong-Ryol 1988). Wintering birds were recorded only along the western coasts (SONOBE 1987). The main region of winter quarters of the White-naped Crane in Korean Peninsula is the area including the estuary of the Han River and the border-zone between North Korea and South Korea (WON Hong-Koo 1964, WALKINSHAW 1973, WON Pyong-Oh 1980, 1986a, 1986b, 1988a, KOO Tae-Hoe 1986, SONOBE 1987, KUROCHKIN 1987, LER 1989, PAE et al 1996). In the sixties as many as 2300 individuals wintered there, whereas in the eighties the number of wintering birds decreased to several tens (WON Pyong-Oh 1986a, 1986b, 1988a). In 1992-1993 the size of the population of White-naped Crane grew again, reaching several hundreds of individuals (WON Pyong-Oh et al. 1993b, PAE Seong-Hwan & WON Pyong-Oh 1994). A part of this population winters in the territory of North Korea; it is, however, difficult to estimate its size (in spite of studies on the wintering of cranes carried out by North Korean ornithologists; they do not even give an estimate number of White-naped Crane – SONOBE 1987). The world population of these cranes is estimated at several thousand individuals (2500-3000 acc.to KUROCHKIN 1987 or 4400 acc. to PAE Seong-Hwan & WON Pyong-Oh 1994).

102. *Rallus aquaticus* LINNAEUS, 1758

Data:

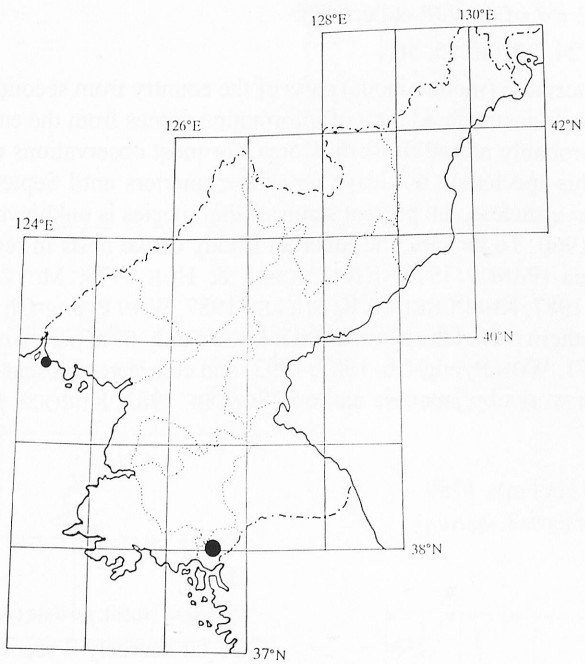
Pyongan North (III): Tasado (III-12): 17 Apr 1959 (WON);

Kaesong (XI): Kaesong (XI-1): 31 Oct 1955, 3, 20 Nov 1958 (WON), 20 Jan 1960 or 20 Oct 1965 (ZIP – this is one specimen bearing uncertain date, because it is provided with two labels).

Measurements (1 specimen of the ZIP collection):

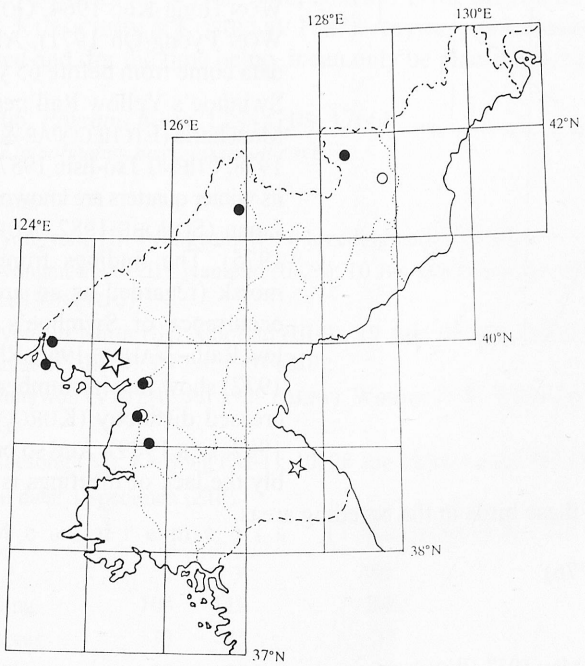
wing 130, tarsus 42, bill 37, tail 44.

Till now found scarcely five times in the post-breeding period (from the October to mid-April) on the western coasts. The Water Rail nests in the regions bordering upon the Korean Peninsula, both in China (ETCHECOPAR & HÜE 1978, MEYER DE SCHAUENSEE 1984, CHENG Tso-hsin 1987), and in the northern part of Japan (SONOBE 1982, KURODA 1975, DISTRIB 1981) as well as in Russia (PANOV 1973, KUROCHKIN & KOSHELEV 1987, NECHAEV 1991). Primorsk probably constitutes the southern border of its breeding area; on the one hand, it is much scarcer there than in terrains situ-



ated farther to the north (KUROCHKIN & KOSHELEV 1987, NECHAEV 1991), and, on the other hand, the Water Rail has not been found present in the Korean Peninsula in the breeding season yet (WON Hong-Koo 1964, GORE & WON Pyong-Oh 1971, O Hung-Dam 1988). And so in North Korea it is a rare passage migrant and rare winter visitor (just as it is in South Korea – WON Pyong-Oh 1993, 1996).

103. *Rallina paykullii* (LJUNGH, 1813)
[*Rallina mandarina*, *Porzana paykullii*]



Data:

Pyongyang (I): Pyongyang (I-1): Aug 1960 (WON);

Pyongan South (II): Anju (II-16): 16 Sep-26 Oct 1932, 16 Jun 1957, Pyongwon (II-17): Aug 1927 (WON), Paegkol (*II-17): 6 Jun 1955 (ZIP);

Pyongan North (III): 31 May 1917, 26 May 1929 (AUST), Tasado (III-12): Aug 1959, Ryongchon (III-13): 23 May 1950 (WON);

Chagang (IV): Karimri (*IV-2): 16 Sep 1958 (ZIP), Okasan (IV-3): 16 Sep 1958 (HO; note: probably this is the same record as that proceding it, i.e. the specimen taken by HO Hon on Mt Okasan is in the ZIP collection with a label pointing at the nearest village of Karimri);

Ryanggang (V): Samjiyon (V-10): no date (HO), Paegam (V-16): 24 Jun 1897 (YANK);

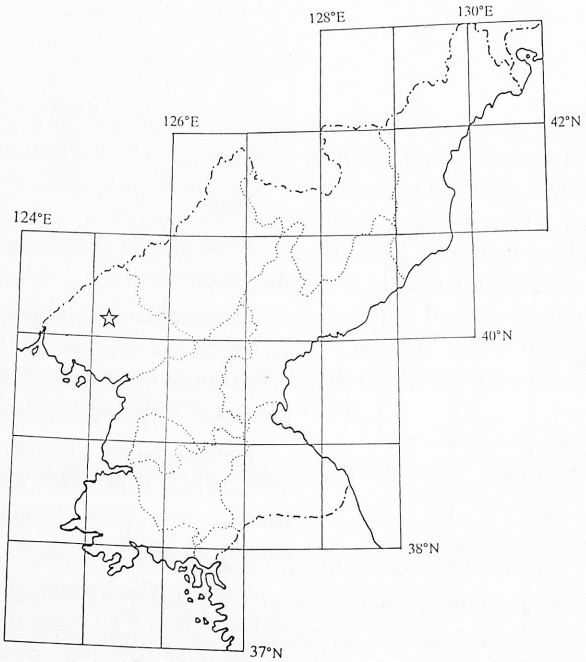
Kangwon (VIII): no date (AUST).

Measurements (2 ♂♂ of the ZIP collection):

wing 131, 134; tarsus 39, 41; bill 24, 23; tail 55, 56.

Species observed in western and northern (mountainous) parts of the country from second half of May throughout October. Only one undocumented item of information comes from the eastern coast (see AUSTIN 1948). This bird probably nested in North Korea, for most observations come from the breeding season (birds of this species do not leave for winter quarters until September (KUROCHKIN & KOSHELEV 1987). Nevertheless, the present status of this species is unknown, because the latest observation is from 1960. To be sure, the Siberian Ruddy Crake nests in regions situated to the north of North Korea (PANOV 1973, ETCHECOPAR & HÜE 1978, MEYER DE SCHAUENSEE 1984, CHENG Tso-hsin 1987, KUROCHKIN & KOSHELEV 1987, WON Pyong-Oh et al. 1993a), but at the same time in the southern part of the peninsula it is known only from period of migration (GORE & WON Pyong-Oh 1971, WON Pyong-Oh, 1987, 1993) and completely absent from Japan (it is a species unmentioned in works by japanese authors: SONOBE 1982, KURODA 1975, DISTRIB 1981).

104. *Coturnicops noveboracensis* GMELIN, 1789
[*Porzana exquisita, Porzana noveboracensis equisita*]



Data:

Pyongan North: no date (AUST).

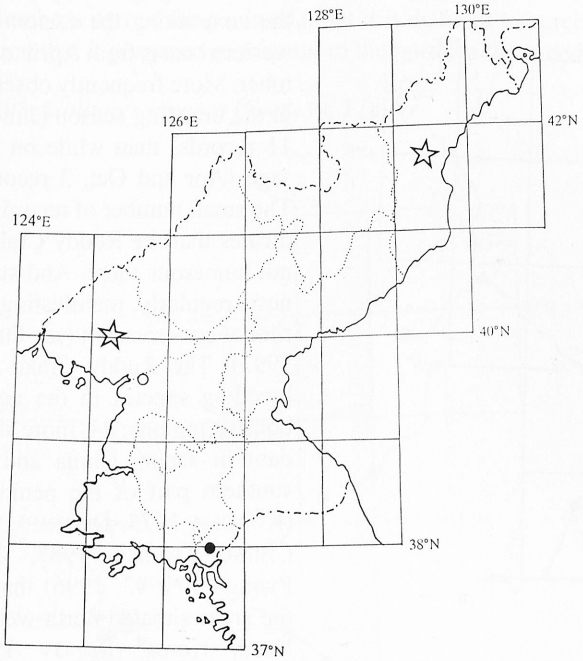
So far scarcely 7 records of Swinhoe's Yellow Rail exist from the whole Korean Peninsula, but only one from the territory of North Korea (AUSTIN 1948, WON Hoŋ-Koo 1964, GORE & WON Pyong-Oh 1971). All the data come from before 65 years. Swinhoe's Yellow Rail nests in Manchuria (ETCHECOPAR & HÜE 1978, CHENG Tso-hsin 1987) and its winter quarters are known from Japan (SONOBE 1982, KURODA 1975). The findings from Primorsk (regarded as an area of occurrence of Swinhoe's Yellow Rail – VAURIE 1965, RIPLEY 1977) show that its numbers decreased distinctly (KUROCHKIN 1987, LER 1989). And so probably the lack of meetings is connected with a drop in the numbers of these birds in the breeding areas.

105. *Porzana pusilla* (PALLAS, 1776)

Data:

Pyongan South (II): Anju (II-16): 13 May 1933 (WON);

Pyongan North (III): 26 May 1917, 30 May 1929 (AUST);



Hamgyong North (VI): 26 Sep 1917, 16 Oct 1929 (AUST);

Kaesong (XI): Kaesong (XI-1): 15 May 1957 (WON);

no data: 1 specimen (ZIP).

Measurements (1 specimen of the ZIP collection):

wing 85, tarsus 25, bill 16, tail 41.

Species reported only 6 or 7 times hitherto, of which once or twice in the last 50 years (a record mentioned by WON Hong-Koo from Kaesong as an assemblage of the Academy of Sciences is probably identical with the specimen stored, without any data, in the ZIP collection; there is however no certainty whether we are concerned here with one or two records). It probably nested, but very rarely, in the western part of the country, which may be suggested by observations in mid-May and the fact it is a breeding species in the neighbouring regions: north-eastern China, Japan and Primorsk (PANOV 1973, ETCHECOPAR & HÜE 1978, DISTRIB 1981, MEYER DE SCHAUENSEE 1984, CHENG Tso-hsin 1987, KUROCHKIN & KOSHELEV 1987). Anyway, its inclusion in the breeding fauna must be documented and, for the time being, it can only be placed among very rare passage migrants.

106. *Porzana fusca* (LINNAEUS, 1766)
[*Limnobaenus fusca erythrotorax*]

Data:

Pyongyang (I): Pyongyang (I-1): breeding period (FIEB);

Pyongan South (II): Nampho (II-26): 10 Jun 1985 (KOLBE), breeding period (FIEB), Taesong-ho (II-28): 17 Oct 1978 (TOM);

Pyongan North (III): Cholsan (III-9): 19 Apr, 19 Jun 1959 (WON), Tongchangri (*III-9): 4 Jun 1970, Chonmasan (III-20): 29 Jun 1961 (ZIP);

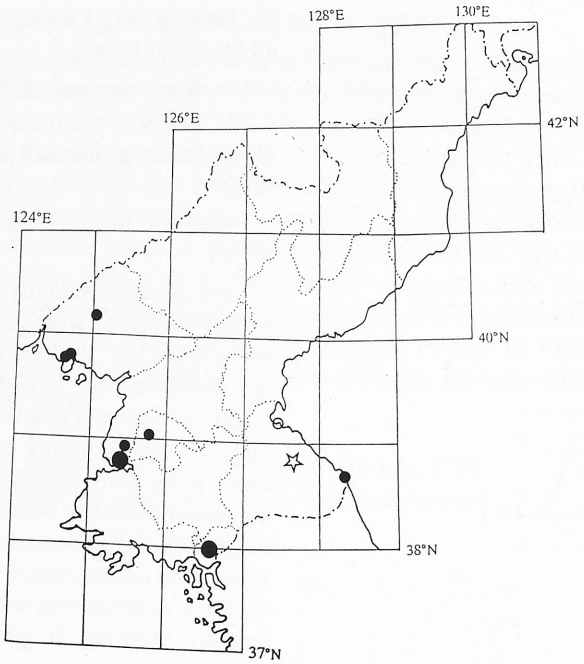
Kangwon (VIII): 13 Jul 1929 (AUST), Wonsan (VIII-3): 26 Apr (KUR), Samil-pho (VIII-7): 13 Jun 1980 (TOM);

Kaesong (XI): Kaesong (XI-1): 10, 28 Jun 1956, 3 Jun 1957 (WON);

no data: 1 specimen (ZIP).

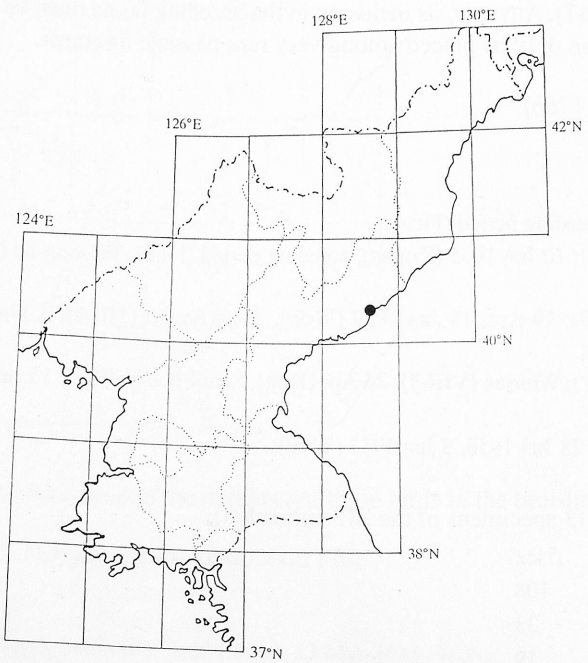
Measurements (3 specimens of the ZIP collection):

	♀	♀	?sex
wing	104	110	108
tarsus	33	35	33
bill	19	20	19
tail	49	53	47



Breeding species, present in the zone along the eastern and western coasts from April to October. More frequently observed in the breeding season (Jun-Jul, 11 records) than while on passage (Apr and Oct, 3 records). The small number of records indicates that the Ruddy Crake is not numerous there. And still it nests regularly, manifesting territorial conservatism (see FIEBIG 1993). The Ruddy Crake is a breeding species in the neighbouring regions; it is more abundant in Japan, China and the southern part of the peninsula (KURODA 1975, DISTRIB 1981, CHENG Tso-hsin 1987, WON Pyong-Oh 1993, 1996) than in the areas situated north-west of North Korea (PANOV 1973, KUROCHKIN & KOSHELEV 1987, LER 1989, NECHAEV 1991).

107. *Amaurornis phoenicurus* PENNANT, 1769



Data:

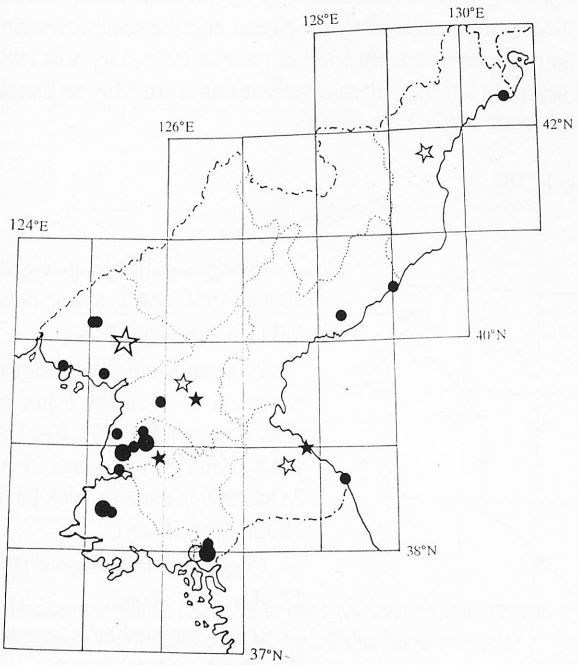
Hamgyong South (VII): Riwon (VII-11): 19 May 1984 (ZIP).

Measurements wing 172, tarsus 54, bill 38,5, tail 70.

Straggler, seen only once, during migration. The White-breasted Waterhen is resident, it inhabits terrains lying to the south of the Korean Peninsula, among other places, in southern China and Ryukyu Is (SONOBE 1982, KURODA 1975, RIPLEY 1977, ETCHECOPAR & HÜE 1978, MEYER DE SCHAUENSEE 1984, CHENG Tso-hsin 1987). Its appearance in the Korean Peninsula was either accidental or due to its nomadizing in the post-breeding period; so far there are no signals of the spreading of

the White-breasted Waterhen's area of occurrence to the north. It may well be that it more appears in the southern part of the peninsula, but it is difficult to agree with WON Pyong-Oh's (1987, 1993) opinion that it is a passage migrant to the north of the breeding area.

108. *Gallicrex cinerea* (GMELIN, 1789)



Data:

Pyongyang (I): 15 Jun 1990 (FIEB), Pyongyang (I-1): 5 Sep 1954 (ZIP) or 5 Jul 1954 (ZIP cited by WON), 4 Jun 1955 (WON), 28 Jun 1956, Hyongjesan (I-9): 30 Jun 1956 (ZIP), Mankyongdae (I-11): 21 Jun 1959 (WON);

Pyongan South (II): ? 22 Oct 1932 and 13 May 1933 (WON cited by AUST, but WON Hong-Koo does not give these data in his publications from 1956 and 1963), 6, 9 Jun 1980 (TOM), Sunchon (II-11): 2 Jul 1952, Chungsan (II-19): Jun (WON), Nampho (II-26): 28 Jun 1990 (FIEB), Taesong-ho (II-28): 8 Jun 1980 (TOM), 28 Jun 1990 (FIEB);

Pyongan North (III): 19 Jun 1917, 31 May, 3 Jun 1929 (AUST), Jongju (*III-3): 7 Aug 1951, Cholsan (III-9): 21, 22 Jun 1959 (WON), Chonmasan (III-20): 16 Jun 1961, Unrimri (*III-20): 7 Oct 1961 (ZIP);

Hamgyong North (VI): 16 Jul 1894 (AUST), Kulphori (VI-4): 10 Nov 1959 (ZIP);

Hamgyong South (VII): Sangryong (VII-7): 16 Jul 1960, Sinthaeri (*VII-15): 24 Jun 1960 (ZIP);

Kangwon (VIII): 25-29 Jun 1929 (AUST), Wonsan-Onjongri (VIII-3-6): 10 Jun 1980, Samil-pho (VIII-7): 16 Jun 1980 (TOM);

Hwanghae South (X): Talchonri (X-9): 9, 14-17, 26 Jun 1957 (ZIP), 2-23 Jun 1960 (WON), Samchon (X-10): 16, 30 Jun 1962 (ZIP);

Kaesong (XI): Kaesong (XI-1): 15 Nov 1955, 15 Jun 1956, 20 Jun 1957, 5 Nov 1958 (WON), Pagyon (XI-3): 17 Jun 1963 (ZIP), Kaepung (XI-5): 13 May 1923; 20, 25 Jun 1927; 20, 22 Jun 1929 (WON);

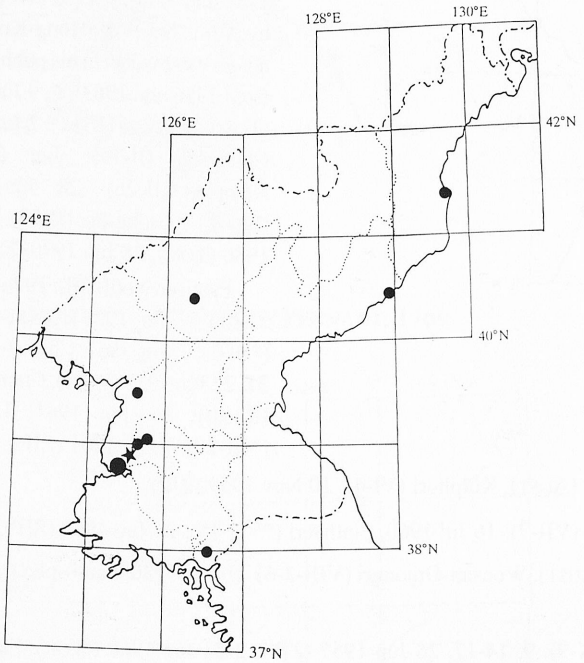
no data: 3 specimens (ZIP).

M e a s u r e m e n t s (20 specimens of the ZIP collection):

	12 ♂♂	$\bar{x}$	5 ♀♀	$\bar{x}$	3 ?sex	$\bar{x}$
wing	186-225	208.4	175-207	184.0	187-212	203.7
tarsus	60-78	69.7	59-71	63.0	65-72	67.3
bill	27-31	28.6	25-34	29.0	26-32	30.0
with shield	58-65	61.4	34-42	38.2	63-60	61.5
tail	70-86	80.2	72-86	77.0	78-92	87.0

Species observed in rice fields in the lowland part of the country, mainly in the maritime belt. It usually appeared as early as the second decade of May (the earliest observation on 13 May 1923 in Kaepung and 13 May 1933 in the Pyongan South Prov.). It stayed in North Korea even to the first days of November (the latest observation on 10 Nov 1959 in Kulphori). It was most frequently observed in the breeding season, i.e. in June and July. The number of observations entitles us to assume that the Watercoock is not a rare breeding species in the northern part of the Korean Peninsula. Its status in China is similar ("fairly common" – CHENG Tso-hsin 1987). At the same time, however, the north-eastern boundary of its distribution extends across North Korea and the southern strip of Russian Primorsk, for it nests only in southern Japan (SONOBE 1982, KURODA 1975, DISTRIB 1981), whereas the nesting of only one pair and scarcely a dozen or so observations from May to October have been reported from Primorsk (KUROCHKIN 1987, LER 1989).

109. *Gallinula chloropus* (LINNAEUS, 1758)



Data:

Pyongyang (I): Pyongyang (I-1): 20 Jun 1956 (ZIP), Mankyongdae (I-11): 5 Jun 1990 (FIEB);

Pyongan South (II): Pyongyang-Nampho (*I-1 – II-26): 6 Jun 1987 (TOM), Nampho (II-26): 10-11 Aug 1984, 10 Jun 1985 (KOLBE), 31 Aug, 7 Oct 1989 (FIEB), Mundok (II-34): 28 Jun 1956 (WON);

Chagang (IV): Myongmun (IV-6): 17 May 1987 (TOM);

Hamgyong North (VI): Jangyon-ho (VI-29): 4 Jul 1983 (TOM):

Hamgyong South (VII): Tanchon (VII-8): 16 Sep 1989 (FIEB);

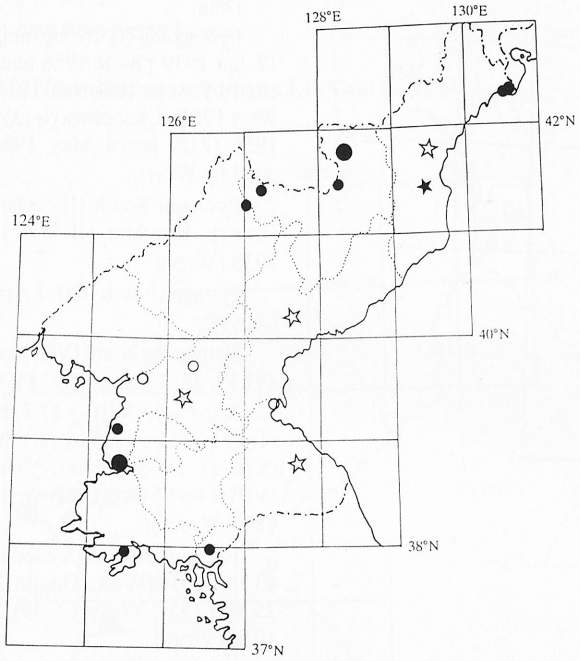
Kaesong (XI): Kaesong (XI-1): 22 Jun 1957 (WON).

Measurements (1 specimen of the ZIP collection):

wing 175, tarsus 45, bill 40, tail 65.

Species observed from mid-May to the first decade of October. Most observations come from the eighties. In a preceding period these birds were seen much more rarely: there were hardly 3 records till the forties (AUSTIN 1948), and WON Hong-Koo (1964), who was gathering materials in the territory of North Korea in the fifties and sixties, mentions another 3 observations. It is possible that, as in Primorsk (KUROCHKIN 1987), the colonization of the Korean Peninsula by the Moorhen did not start until the twentieth century. It is probably still a not very abundant species, occurring in environments suiting it all over the country (in the last 25 years few studies have been carried out in the lowland areas inland, which accounts for a small number of observations made out of the maritime belt). In the southern part of the peninsula the numbers of Moorhen seems to increase as well (GORE & WON Pyong-Oh 1971, WON Pyong-Oh 1993, 1996).

110. *Fulica atra* LINNAEUS, 1758



Data:

Pyongan South (II): 29 Apr 1917 (AUST), Anju (II-16): 17 Oct 1934 (WON), Janganri (*II-19): 20 Apr 1958 (ZIP), Nampho (II-26): 11-12 May 1980 (MAUERS), 24 May 1980 (TOM), 18 Apr 1987 (GŁOW), 28 Jun, 4, 31 Aug, 7 Sep, 19, 22 Oct, 5, 15 Nov, 1 Dec 1989, 2, 26 Apr 1990 (FIEB), Tokchon (II-33): 30 Sep 1945 (WON);

Chagang (IV): Okasan (IV-3): 6 Oct 1958 (HO);

Ryanggang (V): Huchang (V-1): Oct 1958 (ZIP), Pochon (V-6): 12 Oct 1958 (WON), Samjiyon (V-10): no date (HO), 12 Oct 1958, 25 Apr 1962 (ZIP);

Hamgyong North (VI): 5, 10 Sep 1929 (AUST), 9 Oct 1959 (WON), Manpho (VI-2): 2 Oct 1989 (FIEB), Sobonpho (VI-3): 9 Apr 1996 (PERT);

Hamgyong South (VII): 3 Nov 1913, Oct (AUST);

Kangwon (VIII): 29 Sep 1914 (AUST), Yonghung (VIII-14): 20 Oct 1897 (YANK);

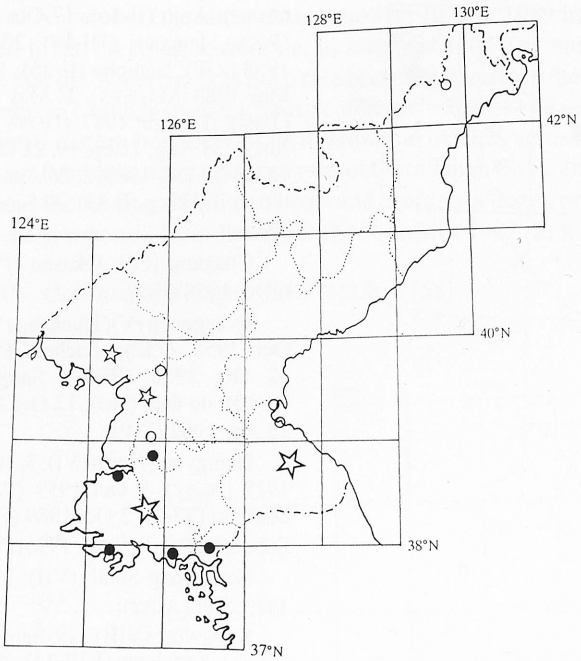
Hwanghae South (X): Kangryong (X-19): no date (ZIP);
Kaesong (XI): Kaesong (XI-1): 17 Oct 1956 (WON);
no data : 1 specimen (ZIP).

M e a s u r e m e n t s (6 specimens of the ZIP collection):

	♂	♂	♀	?sex	?sex	?sex
wing	232	210	213	197	210	210
tarsus	65	52	56	47	60	54
bill	29	32	32	24	30	24
with shield	47	43	47	42	46	44
tail	64	57	70	54	–	58

Species observed from second half of April to December. In the breeding season, i.e. from May till August recorded scarcely five times, exclusively on the estuary of the Taedong River and, as FIEBIG (1993) has pointed out, it nests there. During migration it is observed not only on the coasts (where it occurs in large flocks, reaching even 500 individuals – FIEBIG 1993), but also in the mountainous regions (provinces Chagang and Ryanggang). FIEBIG's findings show that large flocks of Coots also winter off the coasts of North Korea, mainly on the estuary of the Taedong River. The Coot is a breeding bird in China, Primorsk and northern Japan (PANOV 1973, SONOBE 1982, KURODA 1975, ETCHECOPAR & HÜE 1978, DISTRIB 1981, MEYER DE SCHAUENSEE 1984, CHENG Tso-hsin 1987, KUROCHKIN 1987). On the other hand, in the Korean Peninsula it is considered to be a passage migrant and winter visitor, admitting the possibility of its nesting (AUSTIN 1948, GORE & WON Pyong-Oh 1971). The status of the Coot in the Korean Peninsula has probably been changing in recent years, for, according to later publications, it was an "uncommon resident" (WON Pyong-Oh 1987a) and still later even a "common resident" (HAHM Kyu-Hwang & KIM Chang-Sook 1993, WON Pyong-Oh 1993, 1996).

111. *Otis tarda* LINNAEUS, 1758
[*Otis Dybowskii*]



Data:

Pyongyang (I): Pyongyang (I-1): 12 Jan 1939 (WON 1956 and WON cited by AUST, but: Jan 1935 after WON 1964), Chunghwa (I-13): 4 Feb 1956 (ZIP, but 4 May 1956 ZIP cited by WON);

Pyongan South (II): Mar 1909 (AUST), Kaechon (II-31): 15 Jan 1938 (WON);

Pyongan North (III): 1 Apr 1921 (AUST);

Hamgyong North (VI): Hoeryong (VI-9): 28, 29 May 1897 (YANK);

Kangwon (VIII): 27 Feb 1887 (TACZ), 20 Dec 1926 (AUST), Wonsan (VIII-3): 30 Sep 1897, Yonghung (VIII-14): 15 Oct, 1-8 Nov, 12 Nov 1897 (YANK);

Hwanghae South (X): Jedo (X-1): 23 Nov 1959 (WON), Ongjin (X-26): 25 Mar 1957, Yonan (X-30): 25 Jan 1956 (WON);

Hwanghae (IX-X): Jan, 29 Dec 1916, 12 Jan, 20 Mar 1927, 1 Feb 1928 (AUST);

Kaesong (XI): Kaesong (XI-1): 19 Jan 1956 (WON).

Measurements (♀ of the ZIP collection): wing 565, tarsus 144, bill 53, tail 146.

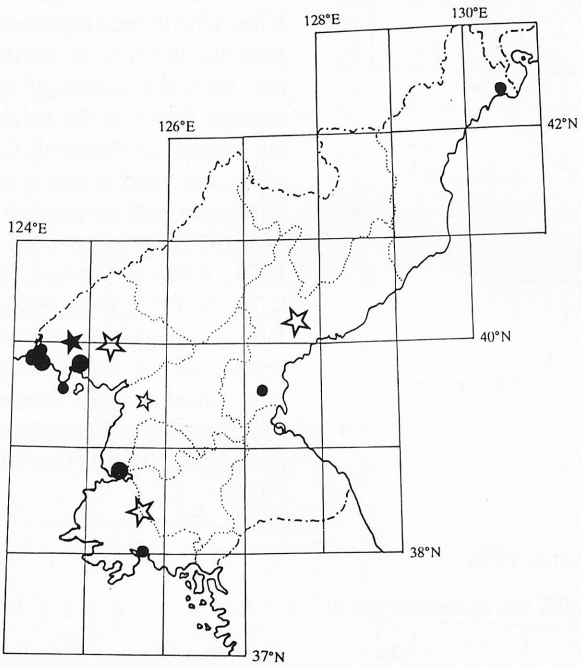
The Great Bustard was rather a common bird in the previous century, when flocks numbering as many as several tens of birds were not rarities (YANKOVSKII 1898, AUSTIN 1948). In the 20th century the size of the Primorsk population of Great Bustards began to shrink (PONOMAREVA 1985, LER 1989), which was also reflected in the situation in the Korean Peninsula. No longer were large flocks observed and fewer and fewer became reports on the birds observed (AUSTIN 1948, GORE & WON Pyong-Oh 1971). The Great Bustard was found for the last time in the territory of North Korea in 1959 (WON Hong-Koo 1964). At present Great Bustards are still nesting in Mongolia and China (CHENG Tso-hsin 1987, KUROCHKIN 1987), and small population in the region of Khanka Lake (LER 1989). And so perhaps they appear in North Korea during migration; at least they should stop there in view of the body wieght of these birds and the capability, connected with it, of covering rather large distances, for they still winter in South Korea (WON Pyong-Oh 1979, 1993, 1996). At the same time, the problem of wintering remains open. According to North-Korean ornithologists, the provinces Hamgyong North and South, Pyongan South, Hwanghae North and South and Kaesong constituted an area of wintering sites of Great Bustards (WON Hong-Koo 1964, SONOBE 1987). I think they are historical wintering sites, since in recent years no Great Bustards were observed even in these regions in which investigations of wintering birds were conducted (i.e. wintering cranes in the provinces Hwanghae North and South – PAK U-Il et al. 1983), and in a publication dealing with the bird species endangered in North Korea only the data from the southern part of the peninsula are quoted (SONOBE 1987). So, they cannot be included among birds wintering in North Korea without being found present.

CHARADRIIFORMES

Rostratula benghalensis (LINNAEUS, 1758)

No data from North Korea

112. *Haematopus ostralegus* LINNAEUS, 1758



Data:

Pyongan South (II): Jun 1917 (AUST), Nampho (II-26): 18 Apr 1987 (GLOW), 9 Apr, 5 Nov 1989, 6 Mar 1990 (FIEB);

Pyongan North (III): 5, 12, Jun, 1 Jul 1917, 18 Mar 1927, 23 Apr 1929 (AUST), Sonchon (III-6): 31 May 1957 (WON), 6 May 1958, Tasado (III-12): 30 May 1959 (ZIP), 26 Jun, Jul 1959 (WON), 26 Jul 1989 (FIEB), Sindo (III-14): 20-30 Mar, 11-15 Apr 1961, Mumyongpyong (*III-14): 5 Apr 1965 (ZIP), Ryongampho (III-15): 6 Jul 1957 (WON), ? Tegamdo (III-29): no date, ? Unmudo (III-?): no date (SONOBE), Wondo (III-?): 26 Jul 1959 (WON), Sabekdo (III-?): 29 Jul 1989 (FIEB);

Hamgyong North (VI): Manpo (VI-2): 9 Apr 1996 (PERT);

Hamgyong South (VII): 18 Apr 1912, 1 Jul 1917 (AUST), Haejungri (*VII-38): 31 Mar 1960 (ZIP);

Kangwon (VIII): Wonsan (VIII-3): 30 Sep 1897 (YANK);

Hwanghae South (X): Haeju (X-22): Apr 1987 (GLOW);

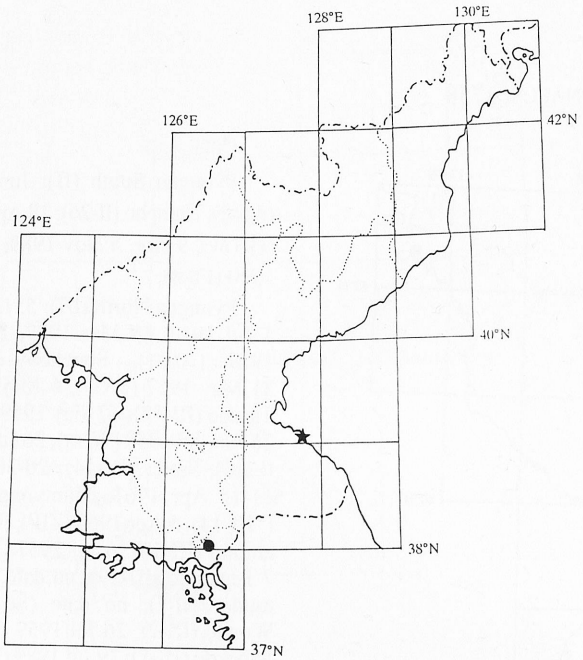
Hwanghae (IX-X): Mar 1912, 13 Jun 1917 (AUST).

M e a s u r e m e n t s (11 specimens of the ZIP collection):

	6 ♂♂	$\bar{x}$	3 ♀♀	$\bar{x}$	?sex	?sex
wing	250-272	258.0	261-278	270.3	260	267
tarsus	49-63	54.5	51-57	54.3	50	60
bill	89-98	92.6	90-100	95.6	90	–
tail	100-126	116.6	101-148	117.3	111	109

Species observed mainly on the western coast from March to the beginning of November. There are only 2 records from the periods of autumn passage (30 Sep, 5 Nov), the remaining ones concern spring migration (Mar-Apr, 16 records) and the breeding season (May-Jul, 14 records). According to North Korean ornithologists, this species nests on the islands Tegamdo and Unmudo which belong to the Pyongan North Prov. (SONOBE 1987). Although that publication does not comprise concrete data (and as has already been mentioned, some items of information given in it seem hardly reliable), nevertheless the number of observations made in the breeding season indicates that Oystercatcher does nest along the western coasts of North Korea. This is the more probable because it nests in the territory of China, not far from the Pyongan North Prov. (ETCHECOPAR & HÜE 1978, CHENG Tso-hsin 1987).

113. *Himantopus himantopus* (LINNAEUS, 1758)



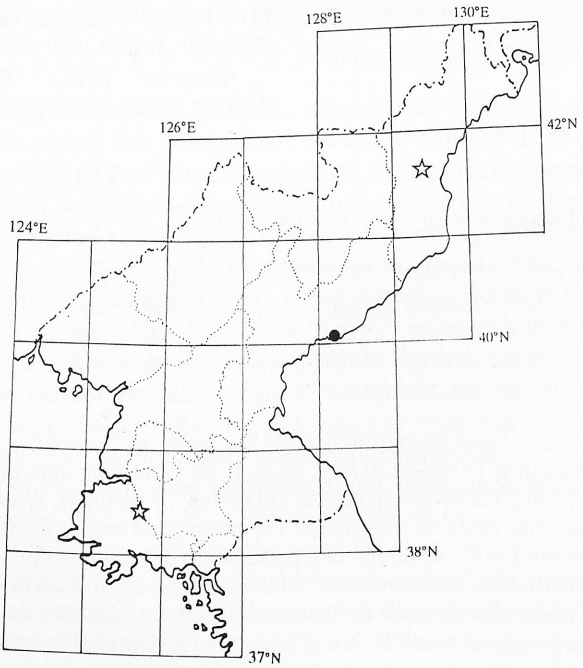
Data:

Kangwon (VIII): Wonsan-Kosong (VIII-3-6): 19 Apr 1987 (GŁOW);

Kaesong (XI): 16 Apr 1975 (ZIP cited by FIEB).

Species observed very rarely. It has hitherto been reported twice from the territory of North Korea, from the season of spring passage (Apr). In the neighboring regions, i.e. Primorsk, China, Japan and South Korea it is also rarely met with on passage (PANOV 1973, ETCHECOPAR & HÜE 1978, CHENG Tso-hsin 1987, KURODA 1975, WON Pyong-Oh 1981a, 1993, 1996) with the exception of the surroundings of Lake Khanka, where lives an insular breeding population, not exceeding 15-20 pairs (LER 1989).

114. *Recurvirostra avosetta* LINNAEUS, 1758



Data:

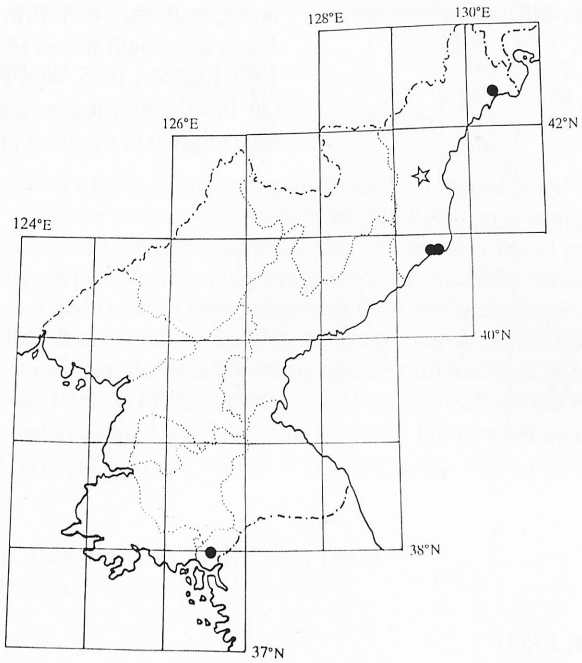
Hamgyong North (VI): 15 Oct 1912 (AUST);

Hamgyong South (VII): Sinpho (VII-16): 10 Apr 1990 (FIEB);

Hwanghae (IX-X): Yonpaek (?): Oct 1929 (WON).

Species found so far only 3 times, of which 2 observations come from the beginning of the century. Till now it has appeared also very rarely in the neighboring areas (PANOV 1973, KURODA 1975, WON Pyong-Oh 1993, 1996). There is therefore little probability of the fairly frequent occurrence of the Avocet in this region and it should be placed under the category of vagrants.

115. *Phalaropus lobatus* (LINNAEUS, 1758)
[*Lobipes lobatus*]



Data:

Hamgyong North (VI): 15-17 Sep 1929 (AUST), Taeamri (*VI-7): 20 Sep 1963, Jongmunri (*VI-30): 8 Sep 1959, Hapyongri (VI-31): 15 Sep 1959 (ZIP);

Kaesong (XI): no date (ZIP).

M e a s u r e m e n t s (6 specimens of the ZIP collection):

	♂	♀	♀	♀	♀	?sex
wing	106	99	102	110	106	99.4
tarsus	22	20	21	21	20	20.0
bill	22	20	22	22	22	17.6
tail	49	45	49.5	55	54	43.4

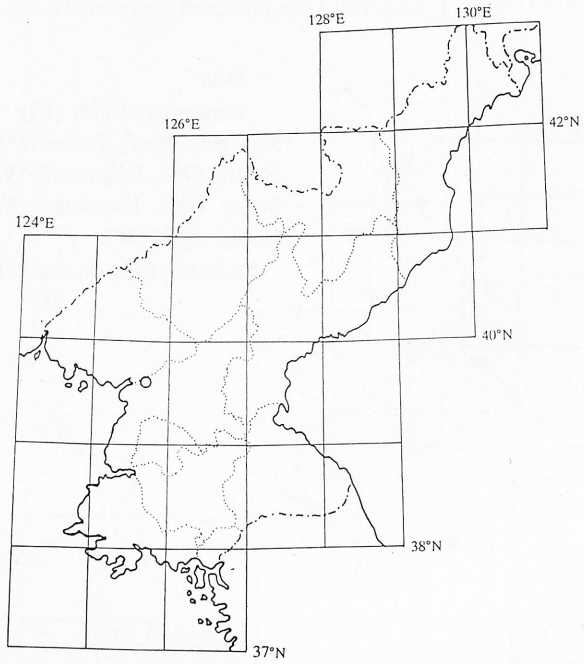
So far recorded 6 times. With the exception of one specimen in the ZIP collection, taken in the Kaesong area, all the remaining data come from the north-eastern border province of North Korea, i.e. from the Hamgyong North Prov. All of them, besides, refer to the autumn season of migration (Sep).

The Red-necked Phalarope belongs to rare passage migrants in the region situated to the north and west of North Korea, namely, in Primorsk and China (PANOV 1973, CHENG Tso-hsin 1987). At the same time it is counted among common birds in areas situated to the north-east and to the south, e.g. in Sakhalin, Japan and south-eastern part of South Korea (NECHAEV 1991, KURODA 1975, WON Pyong-Oh 1993, 1996). It may be supposed therefore that the main route of migration of this species leads via Sakhalin, Japanese Islands and the southern end of the Korean Peninsula, avoiding the lane along the peninsula itself, where, just as in China, it should be qualified as a rare passage migrant.

116. *Glareola pratincola* LINNAEUS, 1766
[*Glareola pratincola maldivarum*, *Glareola maldivarum*]

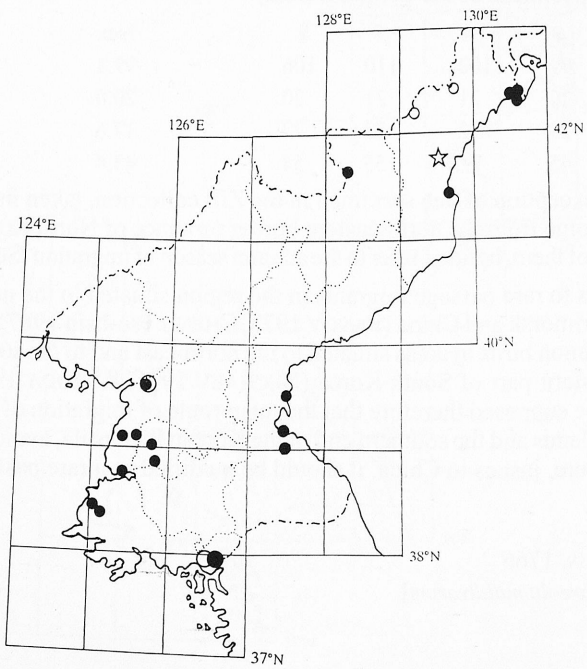
Data:

Pyongan South (II): Anju (II-16): 7 Oct 1931 (WON, but 17 Oct – WON cited by AUST).



The sole record existing let us include this species in the category "vagrant". Perhaps it appears more often, for in the neighboring regions, i.e. in Primorsk, Japan and South Korea (PANOV 1973, KURODA 1975, WON Pyong-Oh 1993, 1996) it is a rare passage migrant or irregular visitor.

117. *Vanellus vanellus* (LINNAEUS, 1758)
[*Vanellus cristatus*]



Data:

Pyongyang (I): Pyongyang (*I-1): 2 Apr 1989 (FIEB), Chunghwa (I-13): 7 Nov 1969 (ZIP);

Pyongan South (II): Anju (II-16): 23 Mar, 12 Apr 1932, 30 Apr 1934 (WON), 2 Apr 1989 (FIEB), Chungsan (II-19): Mar 1958 (ZIP), Taedong (II-21): 23 Apr 1956 (WON), Nampho (II-26): 22 Oct 1988 (FIEB);

Ryanggang (V): Photae (V-8): no date (HO);

Hamgyong North (VI): 13 Oct, 1 Nov 1929 (AUST), Manpo (VI-2): 2 Oct 1989 (FIEB), Tongbonpho (*VI-3): 9 Apr 1996 (PERT), Kulphori (VI-4): 12 Apr 1959 (ZIP), Hoeryong (VI-9): 28 May 1897, Musan (VI-12): 8, 11 Jun 1897 (YANK), Orang (VI-28): 23, 25 Sep 1989 (FIEB);

Hamgyong South (VII): Ryondongri (VII-35): 8 Nov 1960 (ZIP);

Kangwon (VIII): near Wonsan (*VIII-3): 31 Oct 1989, Anbyon (VIII-17): 17 Oct 1989 (FIEB);

Hwanghae South (X): Sakiri (*X-12): 25 Mar 1962 (ZIP), Kwail (X-13): 2 Mar 1990 (FIEB);

Kaesong (XI): Keasong (XI-1): 17 Jan 1956, 25 Jan 1958, 12 Feb 1959 (WON), 25 Dec 1960 (ZIP), Kaepung (XI-5): 15 Nov 1928, 21 Oct 1930 (WON);

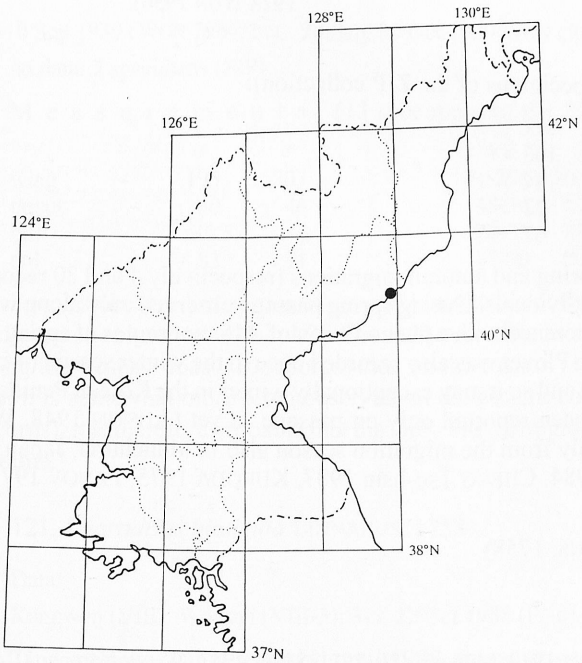
no locality: 10 Apr 1962 (ZIP).

M e a s u r e m e n t s (6 specimens of the ZIP collection):

	♂	♂	♀	♀	?sex	?sex
wing	207	222	217	231	217	218
tarsus	47	50	55	50	49	46
bill	23	28	24	24	27	24
tail	91	107	114	–	104	102

Observed mainly during spring (Mar-Apr, 12 records) and autumn migration (Sep-Nov, 12 records) along the eastern and western coasts. It is also a winter visitor in the south-western part of North Korea: in the Kaesong Prov. this species was found present (5 records) from December to February. In past Northern Lapwings were also breeding birds and nested in the northern part of the country: YANKOVSKII (1898) observed them in the drainage area of the River Tuman in May and June 1897. It may well be that they nest at present for some breeding sites of this species are known from China, from the area bordering upon North Korea (CHENG Tso-hsin 1987) and from southern Primorsk (PANOV 1973, NASAROV, LABZYUK 1975, GLUSCHENKO & SHIBNEV 1984). However, the inclusion of the Lapwing in the breeding fauna requires a confirmation, the more so, because both AUSTIN (1948) and FIEBIG (1993) think that it is a rare (uncommon, spärlicher) passage migrant.

118. *Vanellus cinereus* (BLYTH, 1842)
[*Microsarcops cinereus*]



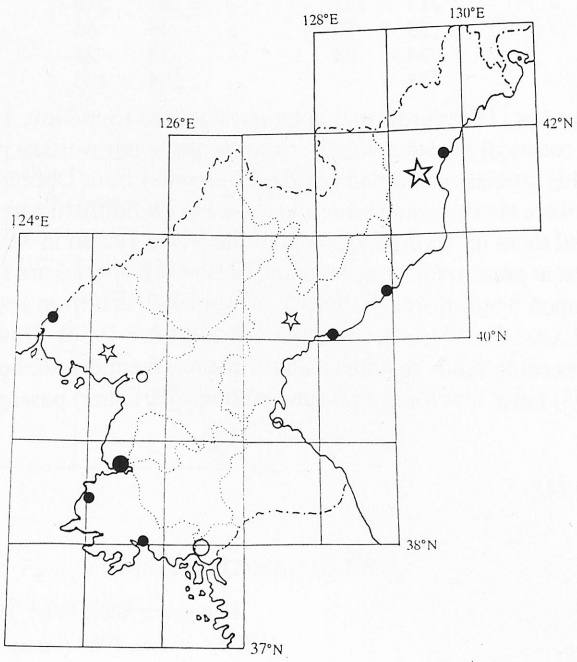
Data:

Hamgyong South (VII): Tanchon (VII-8): 16 Sep 1989 (FIEB).

So far the Grey-headed Lapwing has been reported only from the southern part of the peninsula as a rare passage migrant (WON Pyong-Oh 1993, 1996) and FIEBIG's (1993) observation is the first from the territory of North Korea. To be sure, PANOV (1973) claimed that "5 individuals taken in a period between 15 and 17 September are known from northern Korea", however the fact that no source of this information is given makes it less reliable. Gray-headed Lapwing is a species nesting in Manchuria and migrating southwards (VAURIE 1965, ETCHECOPAR & HÜE 1978, MEYER DE SCHAUENSEE 1984), among other regions also

over the southern part of the Korean Peninsula (WON Pyong-Oh 1993, 1996).

119. *Pluvialis fulva* (GMELIN, 1789)
[*Pluvialis dominica, Charadrius dominicus fulvus, Pluvialis dominica fulva*]



Data:

Pyongan South (II): Anju (II-16): 18 Sep, 2 Oct 1929 (WON), Nampho (II-26): 4 Oct 1988 (FIEB), Aug 1991 (BÁLDI);

Pyongan North (III): 14 Apr 1929 (AUST), Uiju (III-16): May 1979 (ZIP);

Hamgyong North (VI): 19 Aug, 27, 29 Sep 1917, 29 Sep 1929 (AUST), Chongjin (VI-19): 22, 29 Sep 1989 (FIEB);

Hamgyong South (VII): Sep, 11 Sep 1912 (AUST), Tanchon (VII-6): 18 Sep 1989 (FIEB), Sinpho (VII-16): 8, 14 Sep 1966 (ZIP);

Kangwon (VIII): Wonsan (VIII-3): 8 Oct 1897 (YANK);

Hwanghae South (X): Kwail (X-13): 22 Dec 1988 (FIEB), Haeju (X-22): May 1984 (ZIP);

Kaesong (XI): Kaepung (XI-5): 10 Oct 1924 (WON), 18, 20 Sep 1930, 5 May 1938 (WON 1964 or: 1928 WON 1956).

M e a s u r e m e n t s (3 specimens of the ZIP collection):

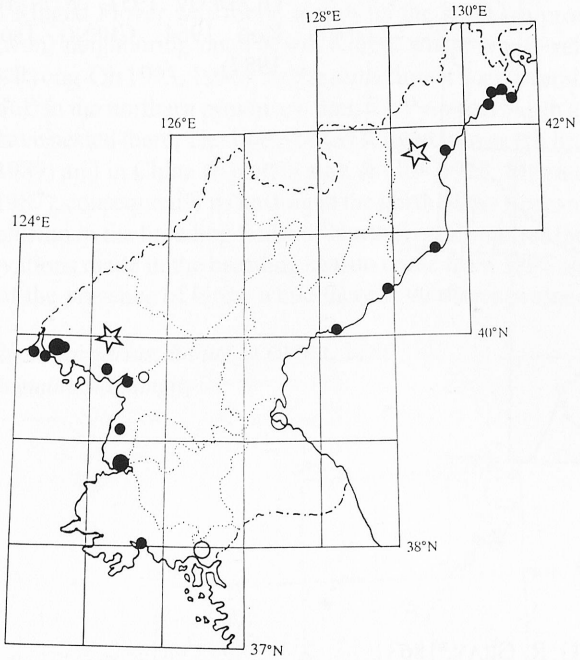
	♂	♀	?sex
wing	171	164	165
tarsus	43	41	44
bill	22	21	22
tail	67	63	67

Passage species observed during spring and autumn migrations (respectively 4 and 20 records) in flocks of several to several tens of individuals. During spring passage observed only along western coasts. It is possible that we are concerned with a phenomenon of different routes of spring and autumn migrations. The Pacific Golden Plover was also recorded once in the winter season (4 individuals on 22 Dec 1988 – FIEBIG 1993) and so it may exceptionally winter in the Korean Peninsula, although, except for this case, it has been reported only on passage as yet (AUSTIN 1948, WON Pyong-Oh 1993, 1996). It is known only from the migration season also in Manchuria, Japan and Primorsk (MEYER DE SCHAUENSEE 1984, CHENG Tso-hsin 1987, KURODA 1975, PANOV 1973).

120. *Pluvialis squatarola* (LINNAEUS, 1758)
[*Squatarola squatarola*]

Data:

Pyongan South (II): Anju (II-16): 28 Oct 1949, Muponri (*II-19): 25 Mar 1957 (WON), Nampho (II-26): 12-13 May 1980 (MAUERS), 15 May 1990 (FIEB), Aug 1991 (BÁLDI), Chongchon riv. (*II-29): 30 Jul 1989 (FIEB);



Pyongan North (III): 4 Sep 1912, 15, 29 Apr 1929 (AUST), Jongju (III-3): 30 Mar 1951 (WON), Yomju (III-10): 20 May, 27 Oct 1954, 20 May 1959, Haksori (*III-10): 27 Oct 1954 (ZIP), Tasado (III-12): 26 Jul 1989 (FIEB), Sindo (III-14): 15 Apr 1961 (ZIP);

Hamgyong North (VI): 26 Sep 1917, 17, 26 Sep 1929 (AUST), Manpo (VI-2): 2 Oct 1989 (FIEB), Sosura (VI-5): 25 Apr, 23 Sep 1963, Taeamri (*VI-7): 21 Sep 1963 (ZIP), Chongjin (VI-19): 22, 29 Sep 1989 (FIEB), Hapyongri (VI-31): 24-27 Sep 1950 (ZIP), Rajin (VI-39): 1 Oct 1989 (FIEB);

Hamgyong South (VII): Tanchon (VII-8): 18 Sep 1989 (FIEB), Sinpho (VII-16): 14 Sep 1969 (ZIP);

Kangwon (VIII): Wonsan (VIII-3): 15 Aug 1880 (G&S), 8 Sep 1897 (YANK);

Hwanghae South (X): Haeju (X-22): May 1984 (ZIP);

Kaesong (XI): Kaepung (XI-5): 15 Oct 1923, 10 Oct 1927 (WON), 15-10 Sep 1930 (WON 1964, but : 20 Sep, 30 Oct 1930 WON cited by AUST);

no data: 3 specimens (ZIP).

M e a s u r e m e n t s (13 specimens of the ZIP collection):

	♂	♂	5 ♀♀	$\bar{x}$	6 ?sex	$\bar{x}$
wing	195	203	191-208	200.4	191-209	199.8
tarsus	50	46	48-54	51.0	48-52	50.5
bill	31.5	–	28-35	31.8	28-32	30.0
tail	83	71	77-90	80.6	76-89	82.2

Species observed in parties of several individuals during spring (25 Mar-20 May – 11 records) and autumn migration (26 Jul-28 Oct – 22 records). In spring it is more frequently encountered along the western coast (10 records) than on the eastern (1 record), whereas during autumn migration it is somewhat more often observed on the eastern coasts (13 records) than on the western (9 records). It is therefore probable that the Grey Plover migrates along different routes in spring and in autumn.

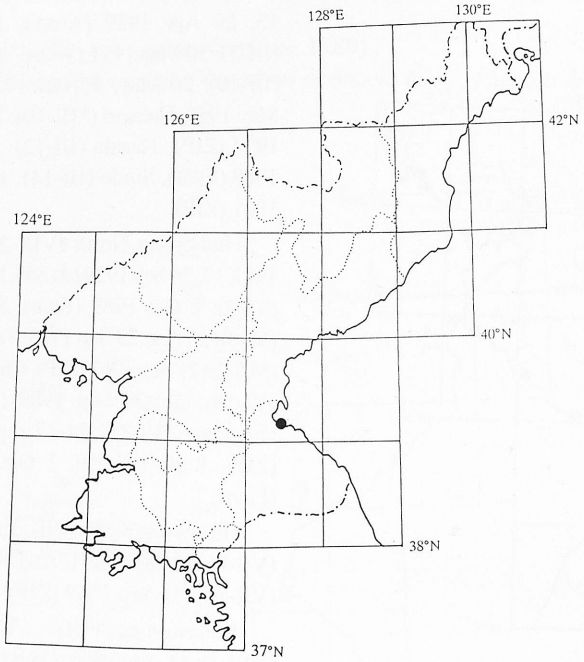
121. *Charadrius hiaticula* LINNAEUS, 1758

Data:

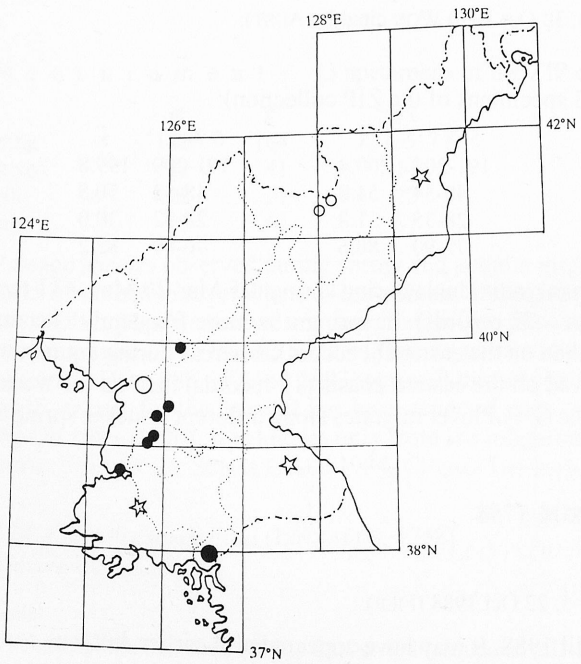
Kangwon (VIII): Wonsan (VIII-3): 3-5, 22 Oct 1988 (FIEB).

This species was not recorded until 1988. It may have appeared also earlier, but was confused with the species *Charadrius placidus*. The fact that in some publications both these species were re-

garded as subspecies of *Charadrius hiaticula* leads to this supposition (DEMENTEV & GLADKOV 1951, WON Hong-Koo 1964, CHENG Tso-hsin 1987).



122. *Charadrius placidus* J. E. et G. R. GRAY, 1863



Data:

Pyongyang (I): Pyongyang (I-1): 28 Sep 1954, Taesongsan (I-6): 20 Aug, 14, 15 Sep 1955 (WON);

Pyongan South (II): Unsan (II-10): 30 Jul 1954, Paeksongri (II-13): 17 Sep 1954, Anju (II-16): 22 Apr 1931, 4 Aug 1932, 24 Jan 1936 (WON), Nampho (II-26): 5 Oct 1988 (FIEB);

Pyongan North (III): Sinhungri (III-25): 3 Jun 1960 (ZIP);

Ryanggang (V): Samsu (V-4): 18 Jul 1897, Hyesan (V-5): 26 Jul 1897 (YANK);

Hamgyong North (VI): 7, 20 Sep 1917 (AUST);

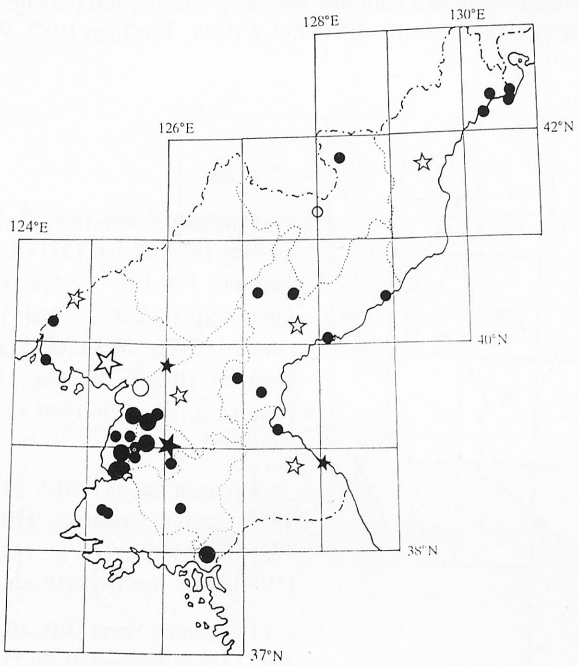
Kangwon (VIII): 30 Nov, 4 Dec 1927 (AUST);

Hwanghae (IX-X): 18 Mar 1914 (AUST);

Kaesong (XI): Kaesong (XI-1): 6 Sep 1927, 15 Sep 1955, 3 Apr 1956, 10 Jan 1957 (WON).

Species observed all the year round, more frequently during spring and autumn migration (15 records) than in the breeding season (3 records) and in winter (4 records). The boundaries of the breeding and wintering areas probably run across the territory of North Korea. In winter the Long-billed Ringed Plover was found mainly in the southern provinces of North Korea (Kaesong and Kangwon) neighboring upon South Korea, where it is a very scarce visitor and passage migrant (WON Pyong-Oh 1993, 1996). At the same time it was several times recorded in the breeding season (Jun-Jul) in the northern provinces, namely, Pyongan North and Ryanggang, which indicates that it may have nested there. The Long-billed Ringed Plover is a breeding bird in Primorsk (PANOV 1973, LER 1989) and in China (ETCHECOPAR & HÜE 1978, MEYER DE SCHAUENSEE 1984, CHENG Tso-hsin 1987), consequently its nesting in the north of the Korean Peninsula is very probable. However, its inclusion in the breeding fauna of North Korea requires the confirmation of nesting, because the observations made in the breeding season come from 1897 and 1960 and besides they are only records of the presence of birds, while there is no direct evidence of nesting.

123. *Charadrius dubius* SCOPOLI, 1786
[*Aegialitis harthingii*]



Data:

Pyongyang (I): Taedong riv (I-?): 16 Apr 1987 (GŁOW), Jun (FIEB), Pyongyang (I-1): 27 Apr 1949, 15 Apr, 14, 15, 26, 27 May, 29 Sep 1954; 16 Apr, 8, 15 May 1955, 6, 20 Apr, 20 Jun 1956 (ZIP), 22-23 Jun 1983 (TOM), 3-12 Apr 1988, Mankyongdae (I-11): Jun 1990 (FIEB), Nansanri (*I-12): 25 Apr 1957, Sangwon (I-14): 5 May 1969 (ZIP), Sogam (I-15): 26 Jun 1983 (TOM), 20 May 1989 (FIEB);

Pyongan South (II): 29 Apr, 18 May 1917 (AUST), Jasan (II-12): 15, 16 Apr 1954 (ZIP), Anju (II-16): 25 Apr 1931, 20 Apr 1933 (WON), Pyongwon (II-17): 21, 22 Apr 1951 (ZIP), 7 May 1951 (WON), 25, 26 Apr 1956 (ZIP), Hamjongri (*II-19): 29 Mar 1958, Taedong (II-21): 18 Apr 1950 (WON), Nampho (II-26): 10 Aug 1984 (KOLBE), 7 Sep 1989 (FIEB), Usanri (II-27): 6 Jun 1987 (TOM), Taesong-ho (II-28): 8 Jun 1980, 15 Jul 1983 (TOM), Chongchon riv (II-?): Jun (FIEB);

Pyongan North (III): Amnok riv.: before 1923 (SOWERBY), 12 Jun 1912, 6, 12 Apr 1929 (AUST), Tasari (III-11): 23 Mar 1958, Uiju (III-16): 10-20 May 1988 (ZIP);

Ryanggang (V): Samsu (V-4): 18 Jul 1897 (YANK), Samjiyon (V-10): 9 Jul 1958 (ZIP), no date (HO);

Hamgyong North (VI): 19, 25 Aug 1917 (AUST), Sobonpho (VI-3): 11 Apr 1959, Sosura (VI-5): 20 Apr 1959, Unggi (VI-7): 9 Apr 1959, Taechodo (VI-8): 27 Jun 1959 (ZIP);

Hamgyong South (VII): 25 Jul 1883 (AUST), Tanchon (VII-8): 24, 27 May 1987 (TOM), Ryongmu (VII-17): 24, 26 Apr 1970 (ZIP), Pujon (VII-22): 23 Jun 1958, Jangjin (VII-25): 17, 21, 24, 27 Jun 1955

(WON), Togkumari (*VII-38): 26 Apr 1960 (ZIP), Hungsan (VII-39): 21 May 1960 (ZIP, or 27 May – ZIP cited by WON);

Kangwon (VIII): 4 Apr 1915 (AUST), Wonsan (VIII-3): 20 Apr 1980 (MAUERS), Onjongri-Sijungho (VIII-5-6): 24 Apr 1987 (GLOW);

Hwanghae North (IX): Sohung (IX-9): 15, 17 May, 1980 (MAUERS);

Hwanghae South (X): Talchonri (X-9): 12, 13, 15, 26 Jun 1957, Kohyonri (*X-10): 30 May 1957 (ZIP);

Kaesong (XI): Kaesong (XI-1): 15 Sep 1955 (WON); 1, 29 Apr 1962, 20 Sep 1969 (ZIP);

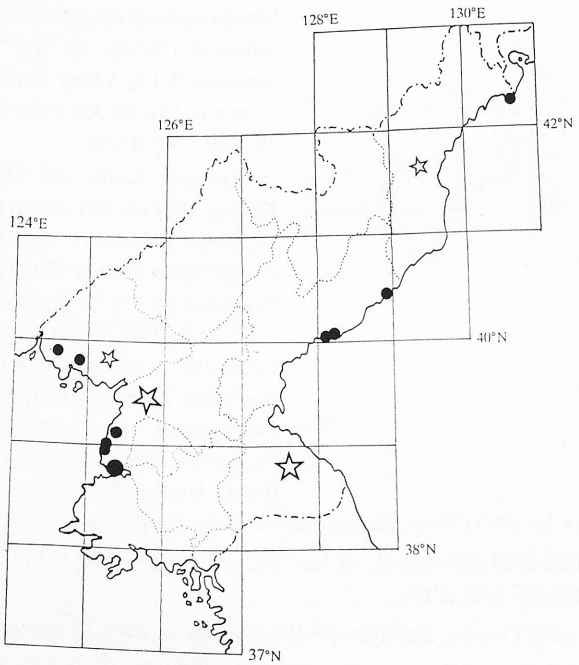
no locality: 29 Mar 1958 (ISEA).

Measurements (43 specimens of the ZIP collection):

	16 ♂♂	$\bar{x}$	17 ♀♀	$\bar{x}$	10 ?sex	$\bar{x}$
wing	108-118	114.8	107-118	112.3	92-119	110.8
tarsus	23-28	25.3	21-29	24.3	21-27	23.5
bill	12-14	13.1	11-16	13.5	12-13.5	12.9
tail	52-68	61.0	52-66	59.3	53-64	58.3

Species observed all over the country from the end of March throughout September, more often in coastal and lowland regions than in the inland mountains. It is considerably more frequent during spring migration (36 records) than in autumn (8 records). Just as in all areas bordering upon North Korea: China, Primorsk, Japan and South Korea, it is a common breeding species and passage migrant (KURODA 1975, DISTRIB 1981, MEYER DE SCHAUENSEE 1984, CHENG Tso-hsin 1987, WON Pyong-Oh 1993 1996).

124. *Charadrius alexandrinus* LINNAEUS, 1758



Data:

Pyongan South (II): 29 Apr, 18 May 1917, 21 Jun 1931 (AUST), Janganri (*II-19): 1 Apr 1958, Pungjongri (II-22): 27 Mar 1958, Ansokri (II-23): 18 Apr 1958 (ZIP), Nampho (II-26): 15 May 1980 (MAUERS), 26 Apr 1990 (FIEB), Aug 1991 (BÁLDI);

Pyongan North (III): 23 Jul 1927 (AUST), Samsongri (*III:6): 15 May 1955 (ZIP), Haksori (*III-10): 26 Apr 1958 (WON);

Hamgyong North (VI): 19 Aug 1917 (AUST), Sosura (VI-5): 27 Mar 1959 (ZIP);

Hamgyong South (VII): Tanchon (VII-8): 23-27 May 1987 (TOM), Sinpho (VII-16): 14 Apr 1969, Ryongmu (VII-17): 24 Apr 1970 (ZIP);

Kangwon (VIII): 27 Mar, 24 Sep 1914 (AUST);

no data: 1 specimen (ZIP).

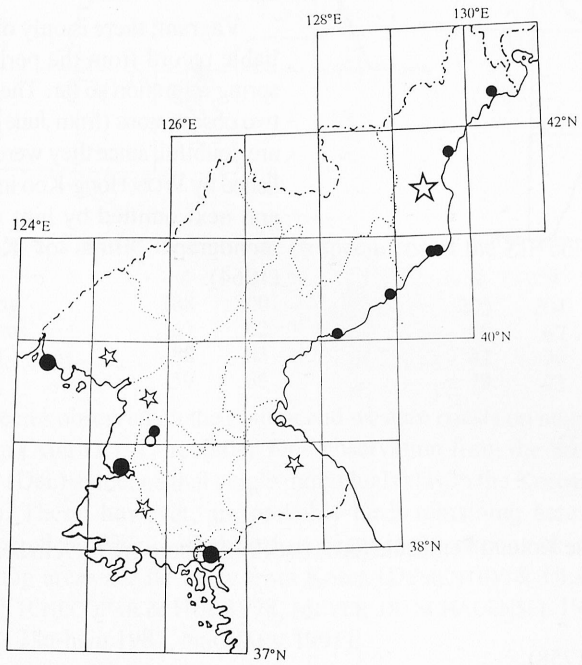
M e a s u r e m e n t s (7 specimens of the ZIP collection):

	5 ♂♂	$\bar{x}$	♀	?sex
wing	110-114	112.2	111	112
tarsus	26-29	27.6	31	27
bill	17-18	17.6	18	16
tail	49-51	49.7	45	–

Species observed along the eastern and western coasts from March to September, most frequently during spring migration (10 records). The observations from June and July indicate sporadic nesting. Although DEMENTEV & GLADKOV (1951), PANOV (1973) and (NECHAEV 1991) write, that the passage lasts to mid-May, the observation of a flock of a dozen or so birds from 23 to 29 May at Tanchon shows that the period of passage is more protracted in time.

The bill length of the individuals stored in the ZIP collection indicates that the taxon occurring in North Korea is the subspecies *Charadrius alexandrinus dealbatus* (SWINHOE, 1870)

125. *Charadrius mongolus* PALLAS, 1776



Data:

Pyongyang (I): Pyongyang (I-1): 24 Oct 1949, Ryongsong (I-7): May 1950 (WON);

Pyongan South (II): 17, 18, 20 May 1917 (AUST), Nampho (II-26): 13 May 1980 (MAUERS), 26 Apr 1990 (FIEB), Aug 1991 (BÁLDI);

Pyongan North (III): 18 May 1929 (AUST), Tasado (III-12): 14 Nov 1955, 1, 27 Aug 1957, 22 May 1959 (WON), 26-27 Jul 1989 (FIEB);

Hamgyong North (VI): 26 Sep 1917, 17, 19 Sep 1929 (AUST), Thowonri (*VI-7): 24 Sep 1959 (ZIP), Chongjin (VI-19): 22 Sep 1989 (FIEB), Hwadae (VI-30): 17, 24 Sep, 24 Oct 1959 (WON), Hapyongri (VI-31): 12 Sep, 24 Nov 1959 (ZIP);

Hamgyong South (VII): Tanchon (VII-8): 18 Sep 1989 (FIEB), Sinpho (VII-16): 9 Oct 1969 (ZIP);

Kangwon (VIII): 25 Sep, 5 Oct 1914 (AUST), Wonsan (VIII-3): 19 Sep 1897 (YANK);

Hwanghae (IX-X): 29 Oct 1949 (WON);

Kaesong (XI): Kaesong (XI-1): 11 Sep 1956, 14 May 1959 (WON), 23 Sep 1969 (ZIP), Kaepung (XI-5): 19 Oct 1927, 2 Oct 1929 (WON).

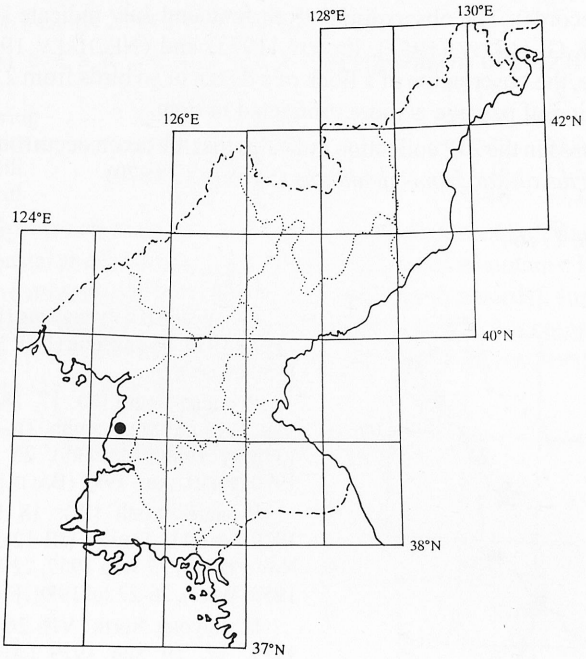
M e a s u r e m e n t s (8 specimens of the ZIP collection):

	7 ♀♀	$\bar{x}$	?sex
wing	123-134	129.8	127
tarsus	30-35	31.8	33
bill	14-16.5	15.5	16.5
tail	50-54	51.8	50

Species met with regularly during migration: in spring (end of April – May, 10 records) and in autumn (end of July -November, 25 records), in flocks of several to several tens of individuals (see

FIEBIG 1993). Most autumn observations (as many as 15) come from the eastern coast, whereas in spring the Mongolian Plover was observed only on the western coast. This would support PANOV's (1973) suggestion that the route of spring passage differs from that in autumn.

126. *Charadrius leschenaulti* LESSON, 1826



Data:

Pyongan South (II): Chungsan (II-19): 19 Apr 1958 (ZIP);

Pyongan North (III):? Myohyangsan (III-24): 15, 17 Jun 1950 (WON 1956).

Measurements (1 specimen of the ZIP collection):

wing 134, tarsus 32, bill 16, tail 53.

Vagrant; there is only one reliable record from the period of spring migration so far. The other two observations (from June 1950) are doubtful, since they were published by WON Hong-Koo in 1956 and next omitted by him in his monograph "Birds of Korea" (1964).

Charadrius asiaticus PALLAS, 1773
[*Eupoda asiatica vereda*]

Only one record, probably from the Korean Peninsula (AUSTIN 1948); there are no reliable data from North Korea.

127. *Limosa limosa* (LINNAEUS, 1758)
[*Limosa melanuroides*]

Data:

Pyongan South (II): Anju (II-16): 25 Sep 1930 (WON), Nampho (II-26): 25 May 1980 (TOM), 4 Oct 1988 (FIEB), Aug 1991 (BÁLDI);

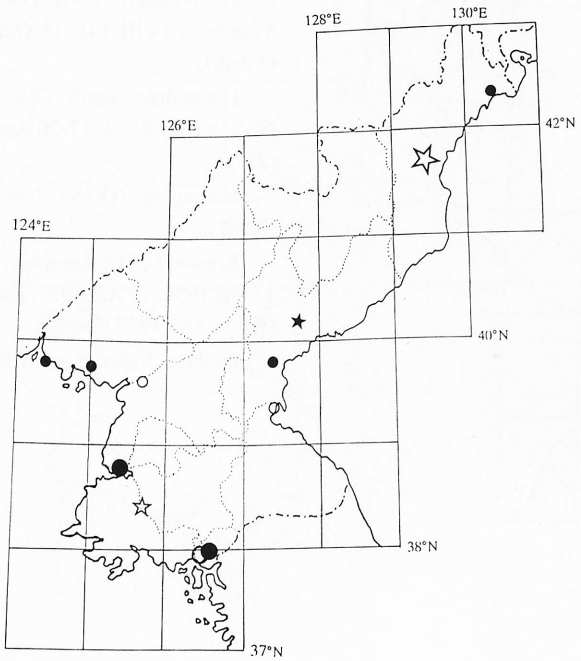
Pyongan North (III): Rohari (III-5): 16-17 Sep 1955 (ZIP), Tasado (III-12): 4 Jul, 17 Oct 1959 (WON);

Hamgyong North (VI): 29 Aug 1917, 13 Sep 1929 (AUST), Unggi (VI-7): 24 Sep 1963 (ZIP);

Hamgyong South (VII): Kwangpo (*VII-31): 13 Sep 1989, Anchon (?VII): 16 Sep 1989 (FIEB);

Kangwon (VIII): Yonghung (VIII-14): 15 Oct 1897 (YANK);

Hwanghae (IX-X): 1 May 1927 (AUST);



Kaesong (XI): Kaesong (XI-1): 15 Oct 1955, 6 May 1956 (WON), 3 May 1963 (ZIP), Kaepung (XI-5): Dec 1925, 3 Oct 1927, 25 Sept 1930, 25 Sep 1931 (WON).

Measurements (6 specimens of the ZIP collection):

	♂	♂	♀	♀	?sex	?sex
wing	188	200	205	204	193	170
tarsus	67	62	60	67	76	68
bill	88	83	82	90	95	64
tail	59	68	79	72	64	67

Species observed on the eastern and western coasts on migration in spring (May, 4 records) and autumn (Aug-Oct, 15 records). One observation from the breeding season (Jul) and one made in winter (Dec) evidence that single individuals stay in the Korean Peninsula also out of the migration season. These, however, are probably birds remaining here accidentally, because the breeding grounds of the Black-tailed Godwit occur in the regions situated farther to the north, while their wintering areas are far away from Korea (DEMENTEV & GLADKOV 1951, VAURIE 1965, PANOV 1973, ETCHECOPAR & HÜE 1978, MEYER DE SCHAUENSEE 1984, KNYSTATUAS & SHIBNEV 1986, CHENG Tso-hsin 1987, NECHAEV 1991).

128. *Limosa lapponica* (LINNAEUS, 1758)
[*Limosa uropygialis*]

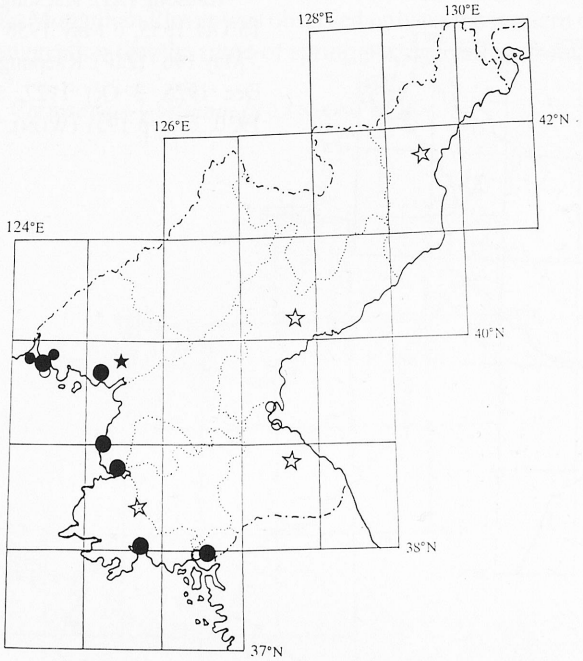
Data:

Pyongan South (II): Pungjongri (II-22): 19-20 Apr 1958 (ZIP), 28-30 Apr 1959 (WON), Nampho (II-26): 11, 13 May 1980 (MAUERS), 18 Apr 1987 (GŁOW), 9 Jun 1989, 26 Apr 1990 (FIEB), Aug 1991 (BÁLDI);

Pyongan North (III): 30 Jul 1989 (FIEB), Jongju (III-3): 20 Aug, 17 Sep 1951, 2, 14 Sep 1958, Yomju (III-10): 17 Sep 1954, Tasado (III-12): 14 Sep 1949, 14 Sep 1958, 14 May 1959 (WON), 30 Jul 1989 (FIEB), Sindo (III-14): 11-22 Apr 1961 (ZIP);

Hamgyong North (VI): Sep, 17 Sep 1929 (AUST);

Hamgyong South (VII): 3, 11 Sep 1912 (AUST);



Kangwon (VIII): 5 Apr 1914 (AUST), Wonsan (VIII-3): 9 Oct 1897, Yonghung (VIII-14): 15 Oct 1897 (YANK);

Hwanghae South (X): Haeju (X-22): May 1984, 17-20 Apr 1988 (ZIP);

Hwanghae (IX-X): Nov 1911 (AUST);

Kaesong (XI): Kaesong (XI-1): 17 Oct 1956, 12 Apr 1957, Kaepung (XI-5): Oct 1927 (WON);

no data: 3 specimens (ZIP).

M e a s u r e m e n t s (33 specimens of the ZIP collection):

	18 ♂♂	$\bar{x}$	10 ♀♀	$\bar{x}$	5 ?sex	$\bar{x}$
wing	202-234	223.2	222-235	229.1	215-228	221.2
tarsus	50-63	54.6	53-62	56.3	54-60	56.4
bill	78-88	84.0	72-88	80.2	81-96	86.2
tail	74-98	85.8	71-109	94.6	75-95	89.0

Species observed during spring (Apr-beg. Jun, 12 records) and autumn migrations (end Jul-Oct, 18 records), mainly on the western coast. On the eastern coast it was seen seven times, the last observation coming from 1929. It appears in large flocks, as suggested by the presence of 22 specimens taken at Sindo in 1961 and housed in the ZIP collection (3 of them collected on 11 Apr, 7 on 12 Apr and 5 on 17 Apr) and by FIEBIG's (1993) observations.

129. *Numenius minutus* (GOULD, 1841)
[*Numenius borealis minutus*]

Data:

Pyongyang North (III): 29, 30 May 1929 (AUST);

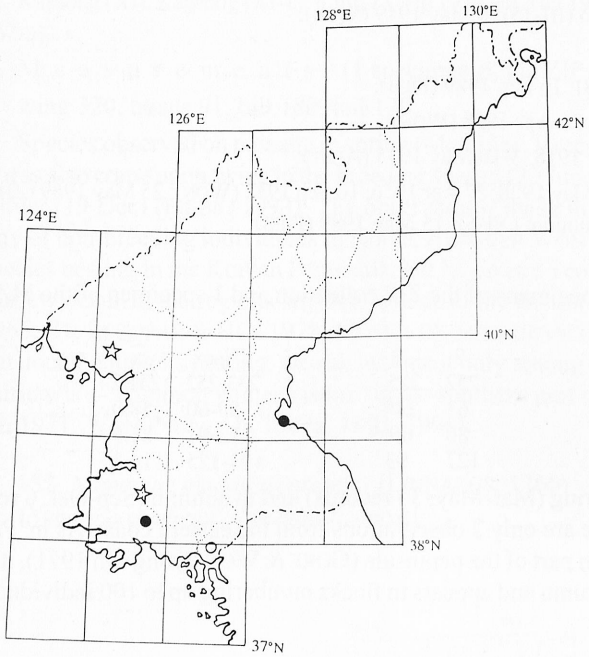
Kangwon (VIII): Wonsan (VIII-3): autumn 1988 (FIEB);

Hwanghae South (X): Changsu (X-25): 30 Apr 1987 (GLOW);

Hwanghae (IX-X): 26 Apr 1917 (AUST), 24 Apr 1928 (WON);

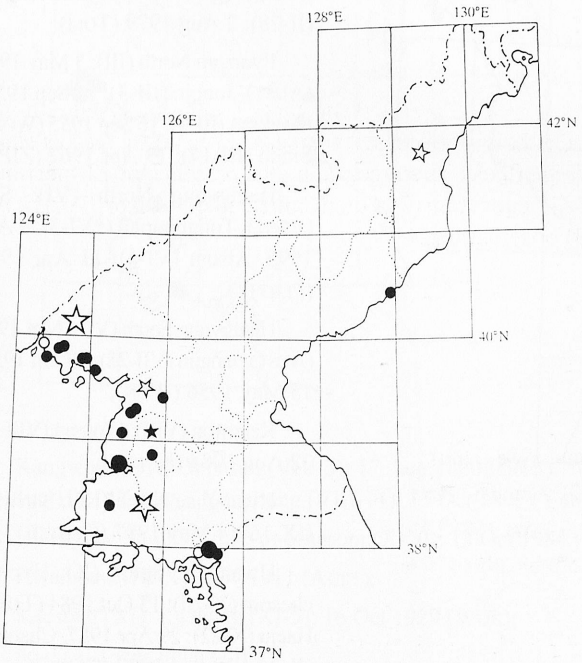
Kaesong (XI): Kaesong (XI-1): 28 Apr, 5 May 1928 (WON).

Species observed during migration. It was only once recorded in autumn on the eastern coast, the remaining observations were made on the western coast in the period of spring passage (end Apr – May, 7 records). The Little Whimbrel is the rarest species of the birds belonging to the genus *Nu-*



menius and, as in China, south-eastern Russia and South Korea, it is a rare passage migrant (PANOV 1973, ETCHECOPAR & HÜE 1978, CHENG Tso-hsin 1987, NECHAEV 1991, WON Pyong-Oh 1993, 1996).

130. *Numenius phaeopus* (LINNAEUS, 1758)



Data:

Pyongyang (I): 8-9 May 1979, Junghwa (I-13): 17 May 1980 (MAUERS);

Pyongan South (II): 13 May 1917 (AUST), Sunchon (II-11): 17 May 1953, Pyongwon (II-17): 3 May 1951, Chungsan (II-19): 29-30 Apr 1959, Janganri (*II-19): 25 Apr 1958 (WON), Nampho (II-26): 11-13 May 1980 (MAUERS), 18 Apr 1987 (GLOW), 26 Apr, 7 Sep 1989 (FIEB), Aug 1991 (BÁLDI);

Pyongan North (III): 14 Apr, 2 May 1929 (AUST), 20 May 1954 (MAUERS), Amnok riv. (III-?): 5 May 1917 (KUR), Kwaksan (III-4): 17-18 May 1955 (ZIP), Munsari (*III-6): 4 May 1958, Ryongyonri (*III-6): 6 May 1958 (WON), Yomju (III-10): 19 May 1954, Pankungri (*III-10): 3 May 1958 (ZIP),

Tasado (III-12): 15 May 1959, Ryongampho (III-15): 6 May 1949 (WON);

Hamgyong North (VI): Sep (AUST);

Hamgyong South (VII): Tanchon (VII-8): 16 Sep 1989 (FIEB);

Hwanghae South (X): Unchon (*X-10): 26 Apr 1958 (WON);

Hwanghae (IX-X): 29 Apr 1917, 1 May 1918, 5-10 May 1935 (AUST);

Kaesong (XI): Kaesong (XI-1): 4, 5, 10 May 1928, 27 Apr 1956, 10 Sep 1957 (WON), 25 May 1969 (ZIP), Kaepung (XI-5): 20 Oct 1930 (WON), Panmunjom (XI-6): 15 May 1989 (FIEB);

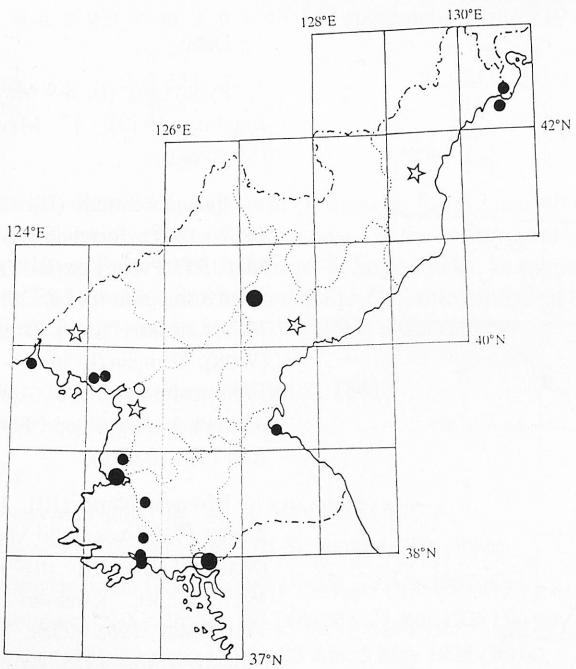
no data: 6 specimens (ZIP).

M e a s u r e m e n t s (12 specimens of the ZIP collection and 1 specimen of the MZB collection):

	3 ♂♂	$\bar{x}$	♀	♀	8 ?sex	$\bar{x}$
wing	216-247	233	252	225	233-252	241.2
tarsus	51-58	55	63	60	50-60	58.0
bill	80-85	83.3	86	69.5	72-91	81.5
tail	92-106	98.3	127	93	103-125	114.3

Species recorded on migration in spring (Mar-May, 34 records) and in autumn (Sep-Oct, 6 records), mainly on the western coast; there are only 2 observations from the eastern coast. As in Primorsk (PANOV 1973) and in the southern part of the peninsula (GORE & WON Pyong-Oh 1971), it is much more frequent in spring than in autumn and appears in flocks numbering up to 100 individuals (FIEBIG 1993).

131. *Numenius arquata* (LINNAEUS, 1758)



Data:

Pyongan South (II): 1 Oct 1915 (AUST), Anju (II-16): 24 Oct 1931 (WON), Nampho (II-26): 19 Dec 1989 (FIEB), Aug 1991 (BÁLDI), Taesong-ho (II-28): 2 Aug 1979 (TOM);

Pyongan North (III): 3 May 1917 (AUST), Jongju (III-3): 17 Sep 1951, Kwaksan (III-4): 16 Sep 1955 (WON), Sindo (III-14): 13 Apr 1962 (ZIP);

Hamgyong North (VI): Sep (AUST), Tongbonpho (*VI-3): 9 Apr 1996, Alsom (VI-6): 11 Apr 1996 (PERT);

Hamgyong South (VII): Mar 1910 (AUST), Jangjin (VII-25): 29 Jun 1955, 15 May 1956 (WON);

Kangwon (VIII): Wonsan (VIII-3): 22 Aug 1984 (KOLBE);

Hwanghae North (IX): Sariwon (IX-16): 4 May 1987 (GŁOW);

Hwanghae South (X): Hyongchesom (X-20): 13 Oct 1984 (TOM), Haeju (X-22): 29 Apr 1987, Changsu (X-25): 30 Apr 1987 (GŁOW);

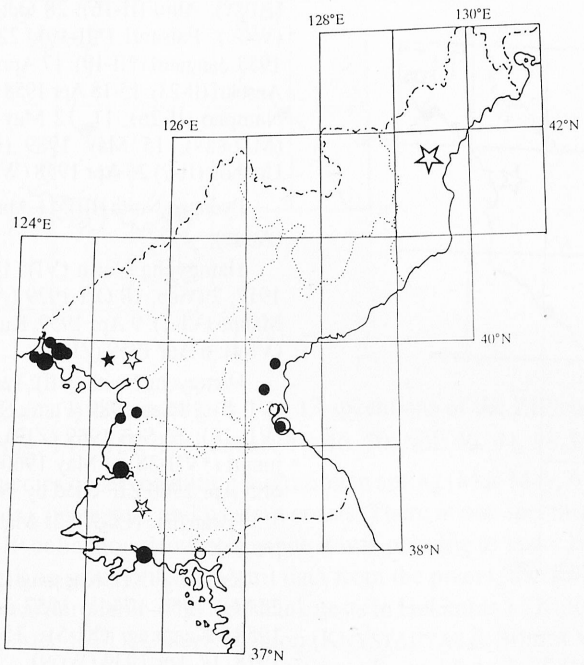
Kaesong (XI): Kaesong (XI-1): 6 Jul, 23 Sep 1957, 30 Aug 1958 Kaepung (XI-5): 15 Oct 1929, 8 Oct 1930 (WON).

M e a s u r e m e n t s (1 specimen of the ZIP collection, sex unknown):

wing 320, tarsus 91, bill 180, tail 120.

Species observed on passage in spring (Mar-May, 9 records) and autumn (Aug-Oct, 13 records). It was also come upon twice in the breeding season (29 Jun, 6 Jul) and a flock of 53 birds was seen in winter (19 Dec) (FIEBIG 1993). The observations made in June and July rather evidence a chance stay of non-breeding individuals in Korea. Although WON Hong-Koo (1964) claims that this was a species nesting in the Korean Peninsula, but he gives no concrete data. The breeding grounds of the Curlew occur in the regions situated further to the north (DEMENTEV & GLADKOV 1951, VAURIE 1965, ETCHECOPAR & HÜE 1978, MEYER DE SCHAUENSEE 1984, CHENG Tso-hsin 1987) and without documenting its nesting, we can include it only among the migrating and wintering species (the Curlew is a "common winter visitor" in the southern part of the peninsula – GORE & WON Pyong-Oh 1971, WON Pyong-Oh 1987a, 1993, 1996).

132. *Numenius madagascariensis* (LINNAEUS, 1766)
[*Numenius cyanopus, Numenius tahiticus*]



Data:

Pyongan South (II): Anju (II-16): 24 Oct 1931, Yongyuri (*II-17): 28 Mar 1956 (WON), Nampho (II-26): 24 May 1980 (TOM), 9-11 Aug 1984 (KOLBE), 22 Sep 1986 (TOM), 18 Apr 1987 (GLOW), 9, 24 Apr, 5 Nov 1989 (FIEB), Aug 1991 (BÁLDI), Hanchon (*II-35): 28 Mar 1956 (ZIP);

Pyongan North (III): 14, 19 May 1929 (AUST), beg. May 1989 (FIEB), Haksori (*III-10): 20 Oct 1955, 9, 12, 23 Apr 1959, Pankungri (*III-10): 18 Apr 1958 (ZIP), Tasado (III-12): 14 Sep 1956, 1 Aug 1957, 14 Nov 1958, 30 Apr, 20 May, 11 Oct 1959, Ryongchon (III-13): 27 Mar, 12, 22 Apr 1961 (WON), Sindo (III-14): 27 Mar 1961 (ZIP);

Hamgyong North (VI): Nov 1911, 26 Apr 1917 (AUST);

Hamgyong South (VII): Kwangpo (*VII-31): 12 Sep 1989 (FIEB), Haejungri (*VII-38): 9 Apr 1960 (ZIP);

Kangwon (VIII): Wonsan (VIII-3): 17 Aug 1880 (G&S), 30 Sep 1897 (YANK), 26 Apr 1917 (KUR), 17, 20 Aug 1984 (KOLBE), Yonghung (VIII-14): 15 Oct 1897 (YANK);

Hwanghae South (X): Hyongchesom (X-20): 13 Oct 1984 (TOM), 20 Apr 1987 (GLOW);

Hwanghae (IX-X): Nov 1911 (AUST);

Kaesong (XI): Kaepung (XI-5): 16 Oct 1929 (WON);

no data: 1 specimen (ZIP).

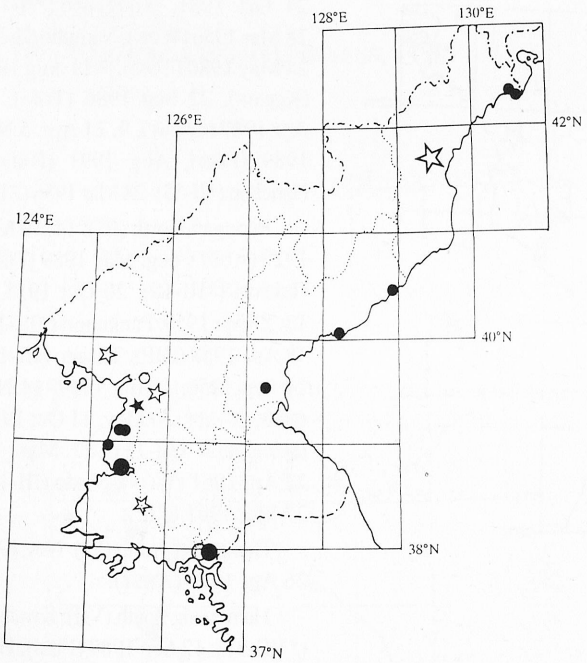
M e a s u r e m e n t s (9 specimens of the ZIP collection):

	♂	♂	♀	♀	♀	4 ?sex	$\bar{x}$
wing	310	300	330	305	311	303-333	316.2
tarsus	94	86	89.5	95.5	97	81-101	90.2
bill	146	140	96.5	118.5	126	109-124	116.7
tail	192	118	136.5	180	172	142-189	155.8

Observed during spring (end March-May, 23 records) and autumn migration (Aug-Nov, 23 records). More often recorded on the western coast, scarcely 8 times seen on the eastern coast (in 6 places; only 2 observations coming from these last 50 years at that). Therefore, the route of migration probably leads along the western coast, where their feeding grounds are large tracts uncovered during low tides.

It is most commonly encountered of the species of the genus *Numenius* occurring in North Korea, which is indicated not only by the number of records but also by the opinions of ornithologists visiting that country (AUSTIN 1948, FIEBIG 1993 and my own). It winters in the southern part of the peninsula (HAM Kyu-Hwang & LEE Doo-Pyo 1985, CHOI Young-Bok & JUNG Sook-Hee 1995).

133. *Tringa erythropus* PALLAS, 1764



Data:

Pyongan South (II): 30 Apr 1917 (AUST), Anju (II-16): 28 Oct 1949 (WON), Palsanri (*II-19): 22 Mar 1958, Janganri (*II-19): 17 Apr 1958, Ansokri (II-23): 15-18 Apr 1958 (ZIP), Nampho (II-26): 11, 12 May 1980 (MAUERS), 15 May 1989 (FIEB), Unchon (II-?) 26 Apr 1958 (WON);

Pyongan North (III): 11 Apr 1929 (AUST);

Hamgyong North (VI): 10 Sep 1917, 29 Sep, 18 Oct 1929 (AUST), Manpo (VI-2): 9 Apr 1959, Kulphori (VI-4): 6 Apr 1959 (ZIP);

Hamgyong South (VII): Tanchon (VII-8): 18 Sep 1989 (FIEB), Sinpho (VII-16): 13 Sep 1969 (ZIP), Haejungri (*VII-38): 4 May 1960 (ZIP, or 5 Apr 1960 ZIP cited by WON);

Hwanghae (IX-X): 21 Mar 1913 (AUST);

Kaesong (XI): Kaesong (XI-1): 22 May 1956, 17 May 1957, 30 Mar 1958, Kaepung (XI-5): 15 Mar 1928, 17 Apr 1930 (WON);

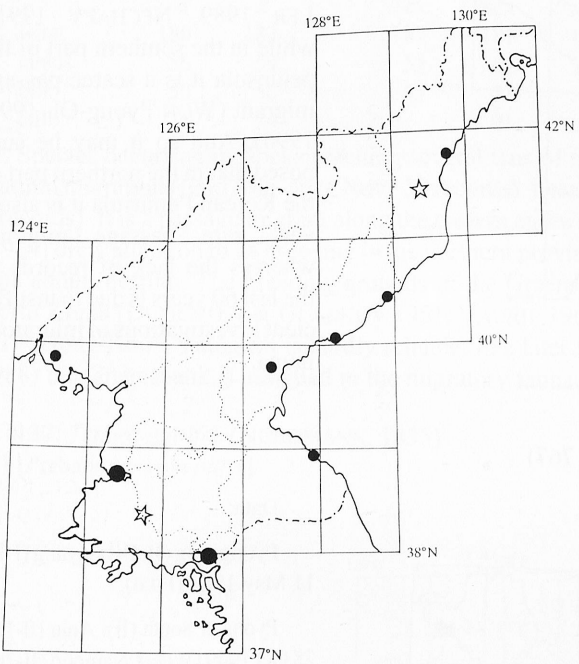
no data: 2 specimens (ZIP).

M e a s u r e m e n t s (13 specimens of the ZIP collection):

	6 ♂♂	$\bar{x}$	5 ♀♀	$\bar{x}$	?sex	?sex
wing	158-164	161.7	161-168	164.3	158	159
tarsus	53-62	55.8	53-63	55.8	55	57
bill	53-59	55.8	52-57	54.8	–	51
tail	67-73	68.8	62-68	65.2	–	–

Species observed during spring (Mar-May, 17 records) and autumn migration (Sep-Oct, 6 records) along eastern and western coasts. The Spotted Redshank is a common migrating species in Primorsk (PANOV 1973, POLIVANOVA & GLUSHCHENKO 1975), southern part of the peninsula (WON Pyong-Oh 1987a, 1993, 1996) and in the Japanese islands (KURODA 1975), Therefore, it may be supposed to be more frequent in North Korea than indicated by the number of records, which is particularly true of the last 15 years, in which scarcely 4 observations have been made.

134. *Tringa totanus* (LINNAEUS, 1758)



Data:

Pyongan South (II): Nampho (II-26): 15 May 1980 (MAUERS), 10 Aug 1984 (KOLBE), 24 Apr 1989 (FIEB), Aug 1991 (BÁLDI);

Pyongan North (III): Yomju (III-10): 23 Apr, 23 Jun 1954 (ZIP or 23 Apr 1944 – ZIP cited by WON);

Hamgyong North (VI): 17, 19 Sep 1929 (AUST), Chongjin (VI-19): 24 Mar 1957 (WON);

Hamgyong South (VII): Tanchon (VII-8): 16 Sep 1989 (FIEB), Sinpho (VII-16): 15 Sep 1969 (ZIP), Kwangpo (*VII-31): 12 Sep 1989 (FIEB);

Kangwon (VIII): Anbyon (VIII-17): 17 Oct 1989 (FIEB);

Hwanghae (IX-X): Apr 1933 (AUST);

Kaesong (XI): Kaesong (XI-1): 28 Mar 1957, 10 Oct 1958 (WON), Kaepung (XI-5): 25 Sep 1930 (WON or 24 Sep – WON cited by AUST).

M e a s u r e m e n t s (3 specimens of the ZIP collection, sex unknown):
wing: 142, 158, 156; tarsus: 41, 46, 50; bill: 40, 44, 46.5; tail: 59, 74, 65.

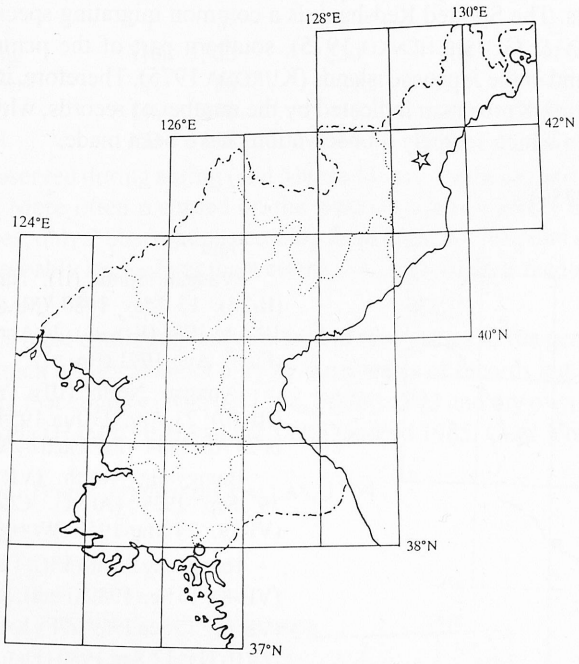
Species observed during migration in spring (Mar-May, 6 records) and in autumn (Aug-Oct, 10 records), on eastern and western coasts. There is one specimen from Yomju, dated 23 Jun 1954 in the ZIP collection. However, since it was possible to make an error when copying the label (WON Hong-Koo gives only the April data from the place), the statement of its presence in the breeding season is unreliable. The Redshank nests in Hokkaido I. (KURODA 1975, DISTRIB 1981), Sakhalin I. (NECHAEV 1991), Ussurisk region (KNYSTAUTAS & SHIBNEV 1986), but the southern boundary of its occurrence in the Far East is not exactly established (cf. DEMENTEV & GLADKOV 1951, VAURIE 1965, FLINT et al. 1968, ETCHECOPAR & HÜE 1978, SONOBE 1982, CHENG Tso-hsin 1987). In South Korea it is known only from the period of migration (WON Pyong-Oh 1993, 1996).

135. *Tringa stagnatilis* (BECHSTEIN, 1803)

Data:

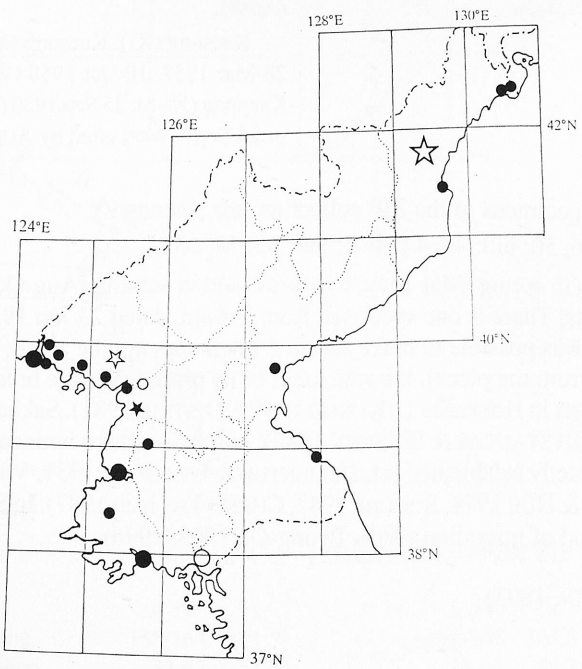
Hamgyong North (VI): 19 Aug 1917 (AUST);

Kaesong (XI): Kaepung (XI-5): 25 Sep 1930 (WON).



136. *Tringa nebularia* (GUNNERUS, 1767)

Within the boundaries of North Korea it was recorded only twice at the beginning of the century. The Marsh Sandpiper appears on passage in Japan (KURODA 1975), China (MEYER DE SCHAUENSEE 1984, CHENG Tso-hsin 1987) and south-eastern Russia (PANOV 1973, LER 1989, NECHAEV 1991), while in the southern part of the peninsula it is a scarce passage migrant (WON Pyong-Oh 1993, 1996). And so it may be supposed that in the northern part of the Korean Peninsula it is also a very rare passage migrant, whereas the lack of records in the last 60 years is due to insufficient investigations of migratory fauna.



Data:

Pyongyang (I): Pyongyang (I-1): 11 May 1988 (FIEB);

Pyongan South (II): Anju (II-16): 28 Oct 1949 (WON), Nampho (II-26): 11-13 May 1980 (MAUERS), Aug 1984 (KOLBE), 4, 5, 22 Oct 1988, 4 Aug 1989, 26 Apr, 7, 15 May 1990 (FIEB), Aug 1991 (BÁLDI), Chongchon riv. (*II-29): 30 Jul 1989 (FIEB), Hanchon (II-?): 28 Oct 1956 (WON);

Pyongan North (III): 2, 14 May 1929 (AUST), Jongju (III-3): 20 Aug 1951, Sonchon (III-6): 13 Oct 1958 (WON), Haksori (*III-10): 20 Oct 1955 (ZIP), Tasado (III-12): 26-27 Jul 1989 (FIEB), Ryongchon (III-13): 27 Oct 1954 (WON), Sindo (III-14): 27 Oct 1954, 26 Oct, 1 Nov 1961 (ZIP);

Hamgyong North (VI): 19 Aug-7 Sep 1917, 26-27 Sep 1917, 29 Aug 1920, 9 Oct 1929 (AUST),

Manpo (VI-2): 2 Oct 1989, Sobonpho (VI-3): 2 Oct 1989, Orang (VI-28): 23 Sep 1989 (FIEB);

Hamgyong South (VII): Kwangpo (*VII-31): 12 Sep 1989 (FIEB);

Kangwon (VIII): Anbyon (VIII-17): 17 Oct 1989 (FIEB);

Hwanghae South (X): Kohyonri (X-10): 17 May 1955 (ZIP), Hyongchesom (X-20): 13 Oct 1984 (TOM), 29 Apr 1987 (GLOW);

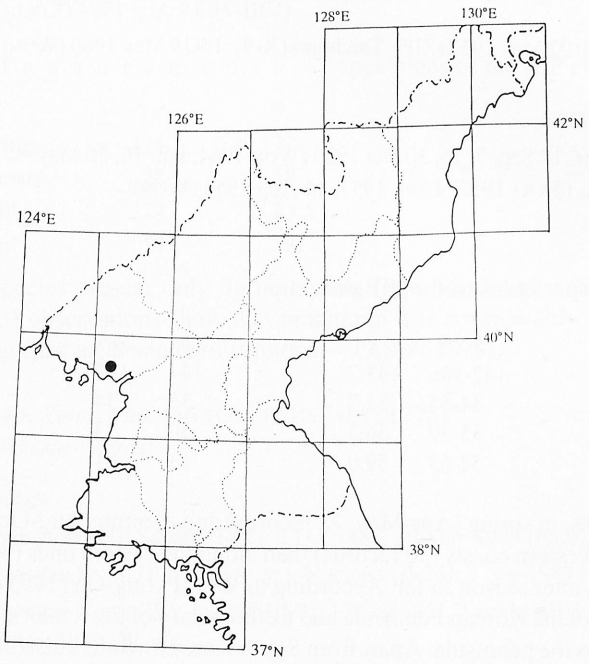
Kaesong (XI): Kaepung (XI-5): 23 Oct 1928, 25 Sep, 11 Oct 1930 (WON 1964 but 11 Oct, 25 Nov 1930 – WON cited by AUST).

M e a s u r e m e n t s (5 specimens of the ZIP collection):

	♂	♀	?sex	?sex	?sex
wing	180	182	187	181	191
tarsus	56	59	55	61	59
bill	50	56	54	51	59
tail	76	74	–	91	75

Species occurring in flocks reaching several tens of individuals (FIEBIG 1993), mainly during autumn migrations (end Aug – beg Nov, 30 records). Less frequently observed in spring (Apr-May, 9 records). It is a passage migrant along the eastern and western coasts. Although WON Hong-Koo (1964) drew attention to its breeding in the northern provinces of North Korea, he gives no concrete data about nesting. The breeding grounds of the Greenshank lie at a considerable distance from North Korea (DEMENTEV & GLADKOV 1951, VAURIE 1965, FLINT et al. 1968, SONOBE 1982) and WON Hong-Koo's statement is hardly reliable. In a later North Korean publication (O Hung-Dam 1988) the Greenshank is assigned to the migratory fauna.

137. *Tringa guttifer* (NORDMANN, 1835)
[*Pseudototanus gutttifer*]



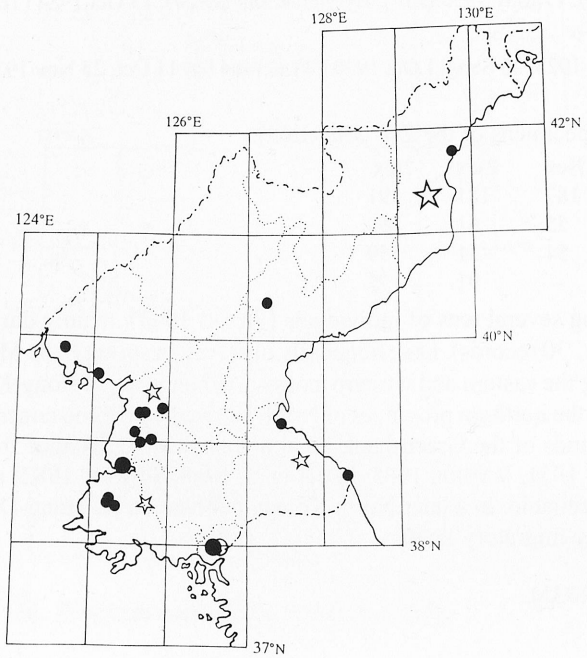
Data:

Pyongan North (III): Jongju (III-3): 17 Feb 1951 (WON);

Hamgyong South (VII): Sinpho (VII-16): 13 Sep 1912 (AUST).

The Spotted Greenshank is a species nesting in very small numbers in a small area on the eastern coasts of Russia (NEUFELDT & VIETINGHOFF-SCHEEL 1983, SOROKIN 1985, LER 1989, NECHAEV 1991). In the regions situated to the south of the breeding area, among them also in the Korean Peninsula, it appears in the seasons of migration (WON Pyong-Oh 1993, 1996). Since the total number of birds of this species does not exceed several hundred individuals (SOROKIN 1985, LER 1989), there is only a slim chance of meeting one of them in North Korea.

138. *Tringa ochropus* LINNAEUS, 1758



Data:

Pyongyang (I): Pyongyang (I-1): 9 May 1980 (MAUERS), Mankyongdae (I-11): 21 Apr 1956 (ZIP, but 21 Jun – ZIP cited by WON);

Pyongan South (II): Sep (AUST), Jasan (II-12): 6 May 1952 (WON), 7, 15 May 1953, Sori (*II-17): 25 Apr 1957 (ZIP), Pyongwon (II-17): 4-5 May 1951, Mundok (*II-21): 28 Oct 1949, 7, 9 May 1950 (WON), Nampho (II-26): 11, 13 May 1980 (MAUERS), 10 Aug 1984 (KOLBE);

Pyongan North (III): Kwaksan (III-4): 9 May 1958, Haksori (*III-10): 24 Oct 1955 (ZIP);

Hamgyong North (VI): 6 Sep 1917, 1 Oct 1929 (AUST), Chongjin (VI-19): Aug 1991 (BÁLDI);

Hamgyong South (VII): Jangjin (VII-26): 24 Apr 1956 (WON);

Kangwon (VIII): 8 Sep 1914 (AUST), Wonsan (VIII-3): 19 May 1980 (MAUERS), Samil-pho (VIII-7): 19 Aug 1984 (KOLBE);

Hwanghae South (X): Woljongri (X-8): 22 May 1957 (ZIP), Talchonri (X-9): 15-19 May 1960 (WON), Kohyonri (X-10): 14 Apr 1957 (ZIP);

Hwanghae (IX-X): 10 May 1917 (AUST);

Kaesong (XI): Kaesong (XI-1): 20 Apr, 17 Sep, 9, 16, 30 Oct 1929 (WON 1964, but: 16, 30 May, 17 Sep, 9 Oct 1929 – WON cited by AUST), 1 Sep, 15 Oct 1955, 4 Sep 1957, 14 Aug 1958 (WON);

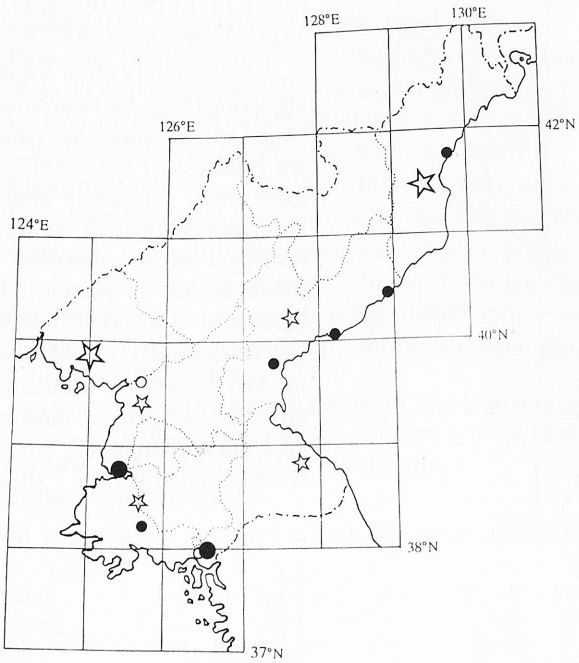
no data: 1 specimen (ZIP).

M e a s u r e m e n t s (9 specimens of the ZIP collection):

	4 ♂♂	$\bar{x}$	3 ♀♀	$\bar{x}$	?sex	?sex
wing	135-146	139.0	142-146	143.7	144	142
tarsus	33-38	34.7	34-35	34.7	35	34
bill	33-35	34.5	35-39	36,3	30	33
tail	52-63	56.7	54-63	59.0	63	61

Species observed during migrations, in spring (Apr-May, 22 records) and autumn (Aug-Oct, 16 records), much more often along the western coasts (30 records) than along the eastern ones (8 records). There are no records from the winter season so far. According to WON Pyong-Oh (1993), the Green Sandpiper winters in the south of the Korean Peninsula and the boundary of the wintering areas of this species probably runs across the peninsula. Apart from South Korea it winters also on the islands Honshu and Kyushu (KURODA 1975) – and in China, among other places, in the terrains lying west of the Korean Peninsula (MEYER DE SCHAUENSEE 1984, CHENG Tso-hsin 1987).

139. *Tringa glareola* LINNAEUS, 1758



Data:

Pyongan South (II): 13 May 1917 (AUST), Anju (II-16): 25 May 1935 (WON), Nampho (II-26): 12-13 May 1980 (MAUERS), 4 Oct 1988, Aug-Sep 1989, 15 May 1990 (FIEB), Aug 1991 (BÁLDI);

Pyongan North (III): 26 May 1917, 24 Apr, 10 May 1929 (AUST);

Hamgyong North (VI): 17 Aug-7 Sep, 28 Sep 1917, 9 Oct 1929 (AUST), Chongjin (VI-19): Aug 1991 (BÁLDI);

Hamgyong South (VII): 12 Sep 1920 (AUST), Tanchon (VII-8): 24 May 1987 (TOM), Sinpho (VII-16): 13 Sep 1969 (ZIP), Kwangpo (*VII-31): 12-13 Sep 1989 (FIEB);

Kangwon (VIII): 29 Sep 1914 (AUST);

Hwanghae South (X): Changsu (X-25): 30 Apr 1987 (GLOW);

Hwanghae (IX-X): 3 May (AUST);

Kaesong (XI): Kaesong (XI-1): 17 May 1957 (WON), 20 Sep 1969 (ZIP), Kaepung (XI-5): 4-22 May 1928 (WON).

M e a s u r e m e n t s (2 specimens of the ZIP collection):

	♂	♀
wing	124	122
tarsus	28	38
bill	24	27.5
tail	54	58

Species present only during spring (Apr-May) and autumn (Aug-Sep) migrations. FIEBIG's (1993) observations show that in autumn it is considerably more frequent and numerous than in spring (just as in southern Primorsk – PANOV 1973).

140. *Xenus cinereus* (GULDENSTADT, 1775)
[*Terekia cinerea*]

Data:

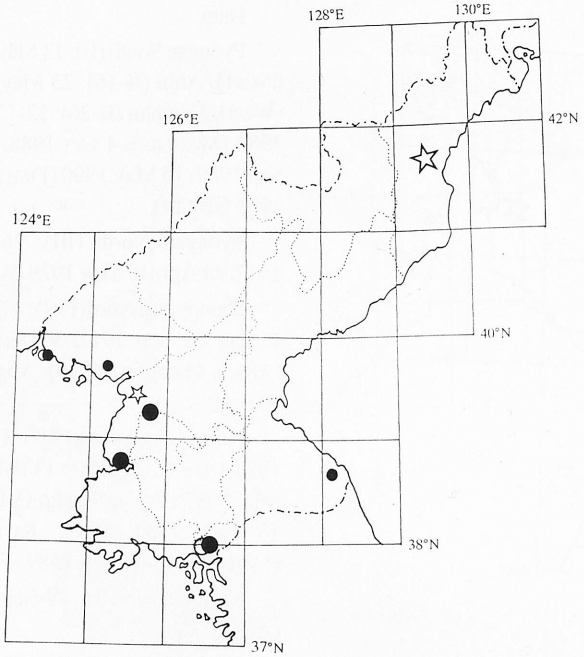
Pyongyang (I): Sogam (I-15): 4 Oct 1988, 20 May 1989 (FIEB);

Pyongan South (II): Sep (AUST), Nampho (II-26): 7 Sep 1989 (FIEB), Aug 1991 (BÁLDI);

Pyongan North (III): Jongju (III-3): 17 Sep 1951, Tasado (III-12): 14 May 1949, 25, 26 May, 25 Jun, 15, 19, 20 Oct 1959 (WON);

Hamgyong North (VI): 29 Aug 1912, 19 Aug 1917 (AUST);

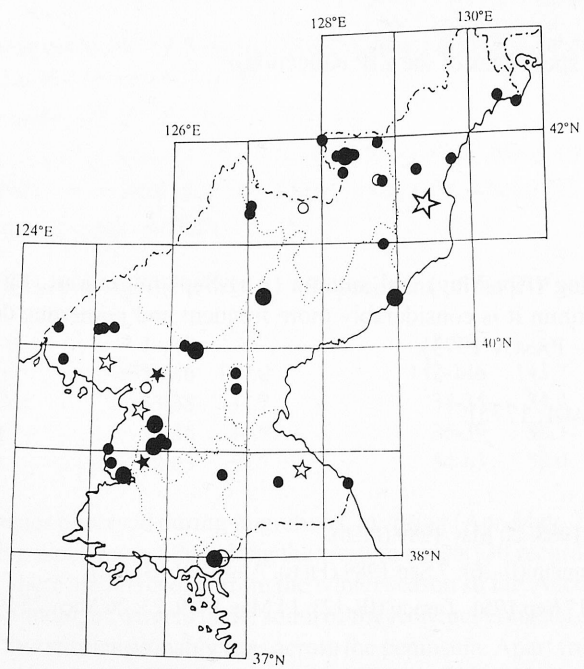
Kangwon (VIII): Kumgangsan (VIII-8): Aug 1991 (BÁLDI);



Kaesong (XI): Kaesong (XI-1): 20 Oct 1955, 20 Sep 1957, Kaepung (XI-5): 10 Oct 1927, 10 Sep, 12 Oct 1929, 25 Sep, 11 Oct 1930 (WON).

Species rarely observed during spring (May-Jun) and autumn (Aug-Oct) migrations; as in southern Primorsk (PANOV 1973), it more often appears in autumn (16 records) than in spring (5 records). In the territory of North Korea its presence has hitherto been found in 10 localities (including 3 records given by AUSTIN with an accuracy to province as 3 places), most records coming from the western coast (23 records from 7 sites).

141. *Actitis hypoleucos* (LINNAEUS, 1758)
[*Tringa hypoleucos*, *Totanus hypoleucos*]



Data:

Pyongyang (I): Pyongyang (I-1): 14 May 1954 (ZIP), 6-19 May 1980 (MAUERS), 4, 22 Jun 1983 (TOM), breeding season 1989-90 (FIEB), Samsok (I-5): 14 May 1954, Taesongsan (I-6): 24 Aug 1954 (WON), Sogam (I-15): 17 Apr 1987 (GLOW), 20 May 1989 (FIEB), Sunfakan (I-?): 16 Apr 1987 (GLOW);

Pyongan South (II): Sep (AUST), Anju (II-16): 22 Apr 1931, Pungjongri (II-22): 29 Apr 1959 (WON), no date, Sohari (*II-24): 31 Mar 1958 (ZIP), Nampho (II-26): 12-13 May 1980 (MAUERS), 9-11 Aug 1984 (KOLBE), Aug 1991 (BÁLDI);

Pyongan North (III): 12 Jun 1912 (AUST), Chongchon riv (III-?): Jun 1990 (FIEB), Yomju (III-10): 24 Apr 1951 (WON), no date (ZIP), Uiju (III-16): 12 Aug 1979, Chonmasan

(III-20): 1, 17 Jun 1961, Unrimri (*III-20): 1 Jun 1961, Unchangri (*III-21): 1, 14 Jun 1961 (ZIP), Hyangsan (III-23): 13 May 1990 (FIEB), Myohyangsan (III-24): 10-20 Jun 1983 (TOM), Aug 1991 (BÁLDI);

Chagang (IV): Okasan (IV-3): 17 May 1958 (WON);

Ryanggang (V): Ryongjori (V-2): 17 May 1958 (WON), Kimjongsukup (V-3): 19 Aug 1897 (YANK), Photae (V-8): 30 Jun 1967, Samjiyon (V-10): 1 Jul 1958, 25 May, 26 Oct 1962, 9 May 1965, Yangsakol (*V-10): 23 Apr 1966, Kanpaegsan (*V-10): 20 Jul 1962, Paekdusan (V-12): 28 Jul 1960 (ZIP), Yukok (*V-15): no date (HO), Paegam (V-16): 21 Jun 1897 (YANK), 18 Jul 1965 (ZIP);

Hamgyong North (VI): 17-29 Aug 1917, 19 Sep 1929 (AUST), Sosura (VI-5): 20 Sep 1959 (WON), Taeamri (*VI-7): 21 Sep 1963 (ZIP), Chongjin (VI-19): Aug 1991 (BÁLDI), Kwanmobong (VI-22): 8 Apr 1959 (WON);

Hamgyong South (VII): Pukdae-chon riv. (VII-1): 29 May 1987 (TOM), Tanchon (VII-8): 14 Jul 1960 (WON), 27 May 1987 (TOM), Jangjin (VII-25): 26-29 Jun 1955, 24 Apr 1956 (WON), Ripsokri (VII-41): 12 May 1960 (ZIP), Yodok (VII-42): 8 May 1960 (WON);

Kangwon (VIII): 11 Apr, 17 Sep 1914 (WON), Samil-pho (VIII-7): 19 Aug 1984 (KOLBE), Sambang (VIII-10): 3 Sep 1962 (ZIP);

Hwanghae North (IX): Koksan (IX-3): 19 May 1980 (MAUERS);

Kaesong (XI): Kaesong (XI-1): 14 May 1928, 5, 9 Oct 1929 (WON, but 2, 12 Oct – WON cited by AUST), 26 Apr 1946, 21 Nov 1955, 20 Aug 1956 (WON);

no data: 6 specimens (ZIP).

Measurements (32 specimens of the ZIP collection):

	10 ♂♂	$\bar{x}$	9 ♀♀	$\bar{x}$	13 ?sex	$\bar{x}$
wing	102-113	108.4	107-117	111.0	97-117	108.4
tarsus	21-25	23.4	23-28	25.9	23-27	23.9
bill	21-26	23.8	23-28	25.7	22-25	23,7
tail	50-57	53.5	45-59	55.3	52-67	57.1

Breeding species and passage migrant, observed all over the country from the end of March to September and, exceptionally, in October (2 records) and November (1 record). More frequently and in larger numbers it occurred in the mountainous northern part of the country, whereas in the south-eastern provinces (Hwanghae, Kaesong) was recorded much more rarely, mainly on passage. According to FIEBIG's (1993) and my observations, in the eighties and at the beginning of the nineties it was a common breeding bird in North Korea, nesting on rivers. However, at the beginning of the century it was a species rarely encountered in the Korean Peninsula and it did not breed (AUSTIN 1948).

Now the Common Sandpiper is a common breeding bird in Sakhalin (NECHAEV 1991) and Primorsk (PANOV 1973); it also nests in Japan (DISTRIB 1981) and rarely in the south of the Korean Peninsula (WON Pyong-Oh 1987a, 1993, 1996). According to earlier sources (VAURIE 1965, CHENG Tso-hsin 1976, 1987, ETCHECOPAR & HÜE 1978), it nested in the regions situated considerably further to the north, without reaching the Korean Peninsula or getting at the farthest to the chain of mountains separating the peninsula from the mainland (DEMENTEV & GLADKOV 1951). Here, we may be concerned with a shift of the boundary of the breeding grounds to the south, with colonization proceeding along the eastern coasts of the continent.

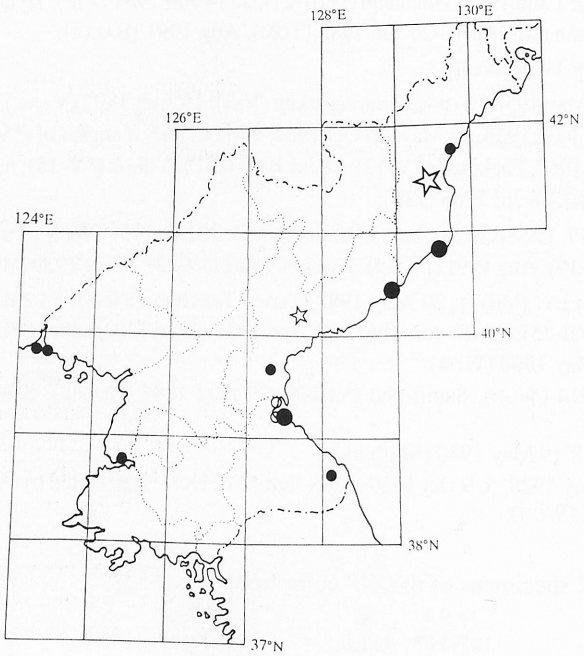
142. *Heteroscelus brevipes* (VIEILLOT, 1816)
[*Heteroscelus incana brevipes*, *Tringa brevipes*]

Data:

Pyongan South (II): Nampho (II-26): 15 May 1990 (FIEB);

Pyongan North (III): Tasado (III-12): 25 May 1959 (WON), Sindo (III-14): 18 Oct 1961 (ZIP);

Hamgyong North (VI): Sep, 31 Aug 1917, 4 Oct 1929 (AUST), Chongjin (VI-19): 19 Sep 1989 (FIEB), Hapyongri (VI-31): 19 Jun 1957, 9, 11 Sep 1959 (ZIP), 19, 21 Sep 1959 (WON);



Hamgyong South (VII): 15 Sep 1920 (AUST), Tanchon (VII-8): 24 May 1987 (TOM), 16 Sep 1989 (FIEB), Chowonri (VII-34): 24 Sep 1959 (ZIP);

Kangwon (VIII): Wonsan (VIII-3): 17 Aug 1880 (G&S), 19-24 May 1980 (MAUERS), 26 Sep, 2 Oct 1988 (FIEB), Kumgangsan (VIII-8): Aug 1991 (BÁLDI), Yonghung (VIII-14): 11 Aug 1880 (G&S).

M e a s u r e m e n t s (6 specimens of the ZIP collection):

	♂	5 ?sex	$\bar{x}$
wing	151	153-169	160.6
tarsus	31	32-35	33.6
Bill	36	37.5-40.6	38.8
tail	69	60-69	66.7

Observed mainly during autumn migrations (Aug-Oct, 16 records) and much more rarely on passage in spring (May, 6 records). The majority of observations of the Grey-tailed Tattler comes from the eastern provinces of North Korea, which indicates that the route of migration of this species leads along the eastern coast of the Korean Peninsula. It is also common on passage in Japan (KURODA 1975), and so in areas situated still further to the east. The ZIP collection has a specimen (skin) dated to 19 Jun 1957, which shows that, as in Primorsk (PANOV 1973), non-breeding birds may appear in North Korea, nomadizing south of the breeding grounds situated in the north-eastern Asia.

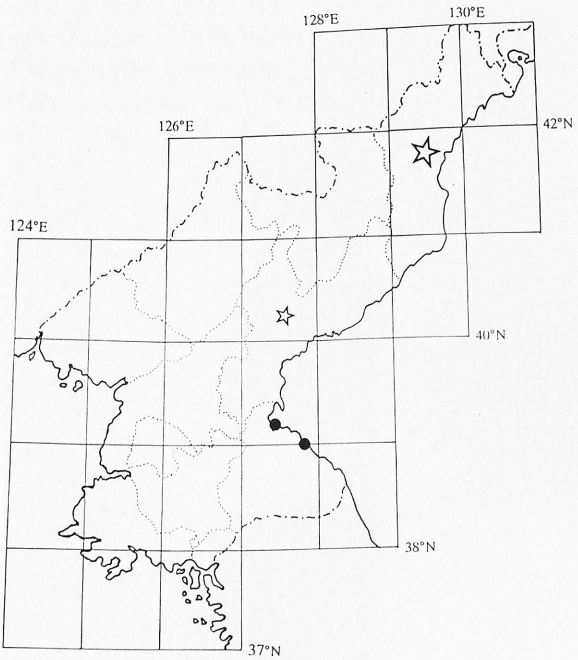
143. *Heteroscelus incanus* (GMELIN, 1789)
[*Tringa incana*]

Data: 1 specimen in ZIP collection without data.

M e a s u r e m e n t s: wing 162, tarsus 32, bill 34, tail 85.

There being only one record of the Wandering Tattler, this species is qualified here as vagrant. Perhaps in fact it appears more frequently as it would be confused with the Grey-tailed Tattler, similar to it (all the specimens of *Heteroscelus brevipes* in the ZIP collection were designated as *Heteroscelus incana brevipes*).

144. *Arenaria interpres* (LINNAEUS, 1758)



Data:

Hamgyong North (VII): 19 Aug 1917, 19, 22 Sep 1927 (AUST);

Hamgyong South (VII): Sep (AUST);

Kangwon (VIII): Wonsan (VIII-3): 26 Sep, 1-3 Oct 1988, Sijungho (VIII-5): 21 Jul 1990 (FIEB).

Species infrequently observed during autumn migrations. So far there are scarcely 7 records, all of them from the eastern coast. The small number of records supports AUSTIN's (1948) supposition that the migration route of the Turnstone keeps clear of the Korean Peninsula (or at least its northern part), for this is a species regularly observed on passage in the Japanese Is. (KURODA 1975, SONOBE 1982), rather common during migrations in China (CHENG Tso-hsin 1987) and only uncommon in the southern part of the peninsula (WON Pyong-Oh 1971, 1987a, 1993).

145. *Phalaropus lobatus* (LINNAEUS, 1758)
[*Lobipes lobatus*]

Data:

Hamgyong North (VI): 15-17 Sep 1929 (AUST), Taeamri (*VI-7): 20 Sep 1963, Jongmunri (*VI-30): 8 Sep 1959, Hapyongri (VI-31): 15 Sep 1959 (ZIP);

Kaesong (XI): no date (ZIP).

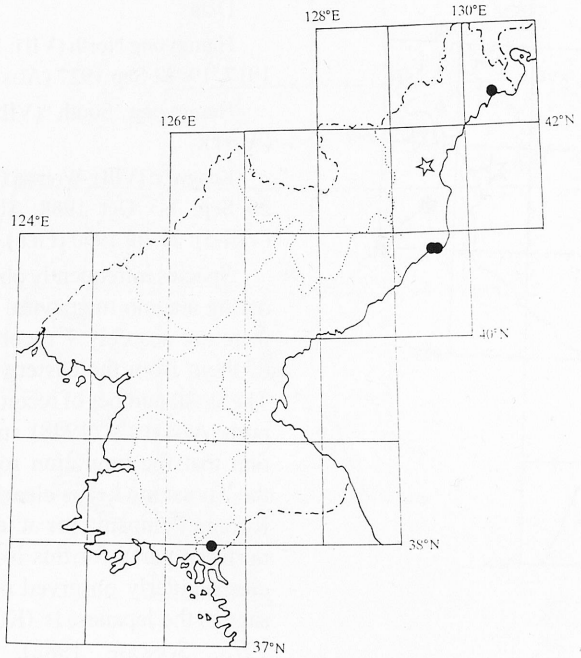
M e a s u r e m e n t s (6 specimens of the ZIP collection):

	♂	4 ♀♀	$\bar{x}$	?sex
wing	106	99-110	104.2	99.4
tarsus	22	20-21	20.5	20.0
bill	22	22-22	21.5	17.6
tail	49	45-55	50.7	43.4

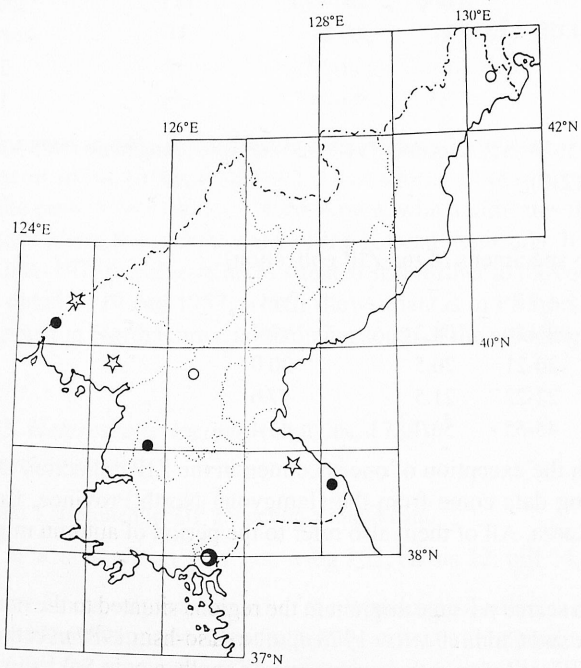
Recorded six times hitherto. With the exception of one specimen in the ZIP collection taken in the Kaesong region all the remaining data come from the Hamgyong North Province, from the north-eastern borderland of North Korea. All of them also refer to the period of autumn migration (Sep).

The Red-necked Phalarope is a scarce passage migrant in the regions situated to the north and west of North Korea, i.e. in Primorsk and China (PANOV 1973, CHENG Tso-hsin 1987). At the same time it is regarded as common in the areas lying in the north-east and south, e.g. in Sakhalin, Japan and on the south-eastern border of South Korea (NECHAEV 1991, KURODA 1975, WON Pyong-Oh

1993, 1996). And so it may be assumed that the way of migrations of this species leads via Sakhalin, Japanese Is. and the southern tip of the Korean Peninsula, avoiding the route along the peninsula itself.



146. *Scolopax rusticola* LINNAEUS, 1758



Data:

Pyongyang (I): Pyongyang (I-1): 7 May 1980 (MAUERS);

Pyongan South (II): Tokchon (II-33): 19 Oct 1945 (WON);

Pyongan North (III): 9 Apr 1926 (AUST), Amnok riv (III-?): before 1923 (SOWERBY), Uiju (III-16): 10-20 May 1988 (ZIP);

Hamgyong North (VI): Undok (VI-1): 25 May 1897 (YANK);

Kangwon (VIII): Apr (AUST), Onjongri (VIII-8): 14 Oct 1989 (FIEB);

Kaesong (XI): Kaesong (XI-1): Dec 1925, 12 Oct 1956 (WON), 9 Oct 1965 (ZIP);

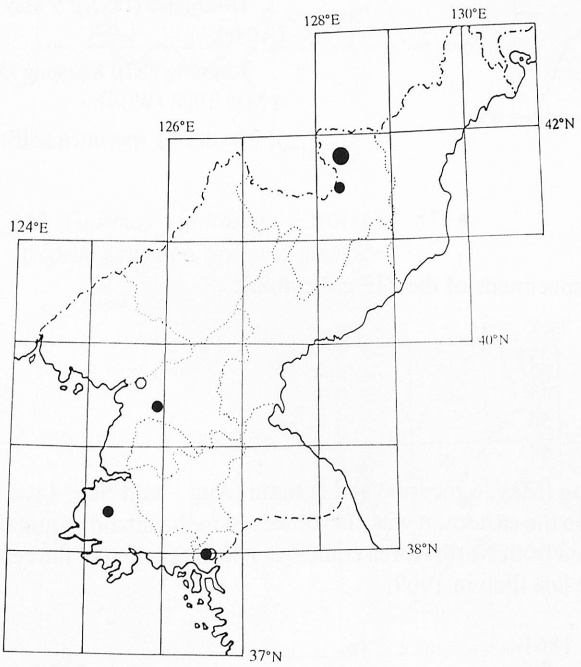
no data: 1 specimen (ZIP).

Measurements (2 specimens of the ZIP collection):

	♂	?sex
wing	198	193
tarsus	38	33
bill	79	77
tail	80	82

Species rarely encountered during migrations, in spring (Apr-May, 5 records) and in autumn (Oct, 4 records); it probably also very rarely winters (there is only one observation from December 1925). Woodcocks were considerably more frequent 80 to a hundred years ago than they are now, as is evidenced by descriptions given by YANKOVSKII (1897) and SOWERBY (1923), for whom the overflying flocks of these birds were an ordinary sight.

147. *Gallinago solitaria* HODGSON, 1831



Data:

Pyongan South (II): Jasan (II-12): 23 Apr 1952 (WON), Anju (II-16): 15 Feb 1929 (WON 1956);

Ryanggang (V): Chimbong (*V-6): 11 Oct 1958 (ZIP), Samjiyon (V-10): 21 Oct 1978 (TOM), no date (HO);

Hwanghae South (X): Samchon (X-10): 7 Feb 1969 (ZIP);

Kaesong (XI): Kaesong (XI-1): 10 Jan 1929 (WON), 26 Mar 1963 (ZIP).

Measurements (3 specimens of the ZIP collection):

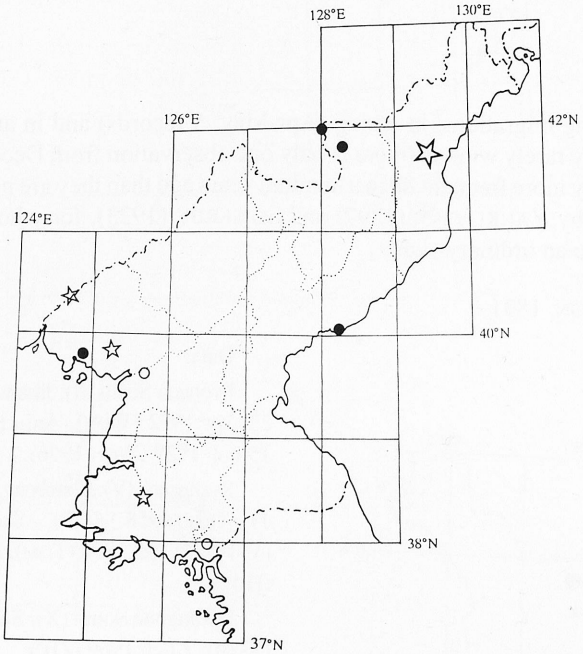
	♂	♀	?sex
wing	152	158	161
tarsus	33	36	36
bill	69	74	71
tail	74.5	69	63

So far recorded 8 times, from 11 Oct to 23 Apr. It is therefore a rare winter visitor and passage migrant, come upon by itself, more often inland than on the coast. According to TUCK (1972), it is a resident species in the greater part of its range, performing only vertical migrations (to the foot of the mountains for winter). Several records of the Solitary Snipe from the Ryanggang Province may indicate its nesting in the higher parts of the Paekdusan Massif. The nearest known nesting sites occur in the mountains of Eastern Siberia (LER 1989).

Gallinago hardwickii (GRAY, 1831)

no data from North Korea.

148. *Gallinago stenura* (BONAPARTE, 1830)



Data:

Pyongan South (II): Anju (II-16): 22 Aug 1933 (WON);

Pyongan North (III): Amnok riv (III-?): May before 1923 (SOWERBY), 10, 11 May 1929 (AUST), Sambongri (III-8): 3 May 1958 (ZIP);

Ryanggang (V): Samjiyon (V-10): no date, Nongsari (*V-12): no date (HO);

Hamgyong North (VI): 19 Aug 1917, 6 Aug 1929 (AUST);

Hamgyong South (VII): Sinpho (VII-16): 14 Sep 1969 (ZIP);

Hwanghae (IX-X): 5 May 1917 (AUST);

Kaesong (XI): Kaesong (XI-1): 4 May 1928 (WON);

no data: 1 specimen (ZIP).

M e a s u r e m e n t s (3 specimens of the ZIP collection):

	♀	?sex	?sex
wing	134	127	125
tarsus	–	34	34
bill	59	57	56
tail	46	–	47

Passage migrant, observed in spring (May, 6 records) and autumn (Aug – mid-Sep, 4 records), more often on the western coast than on the eastern; it was also observed in the inland mountainous regions (2 records). The majority of data from North Korea come from the beginning of the century; the Pintail Snipe was recorded for the last time in 1969.

149. *Gallinago megala* SWINHOE, 1861

Data:

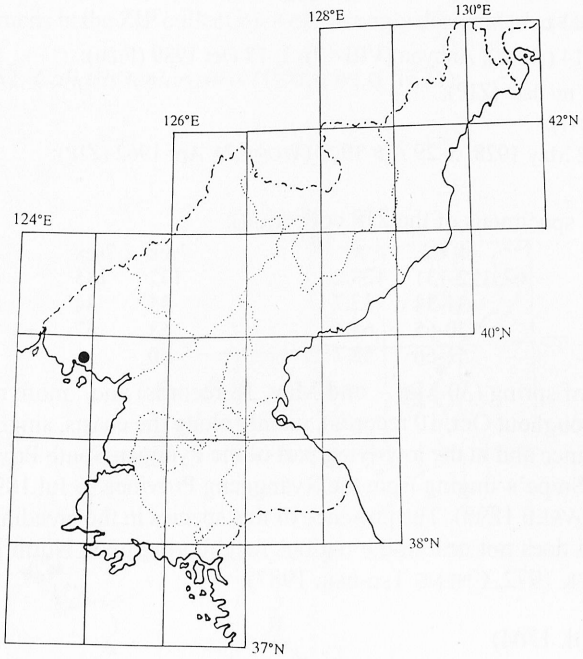
Pyongan North (III): Mugido (*III-6): 17 May 1967 (ZIP);

Kangwon (VIII): Wonsan (VIII-3): 15 Aug 1880 (G&S);

no data: 1 specimen (ZIP).

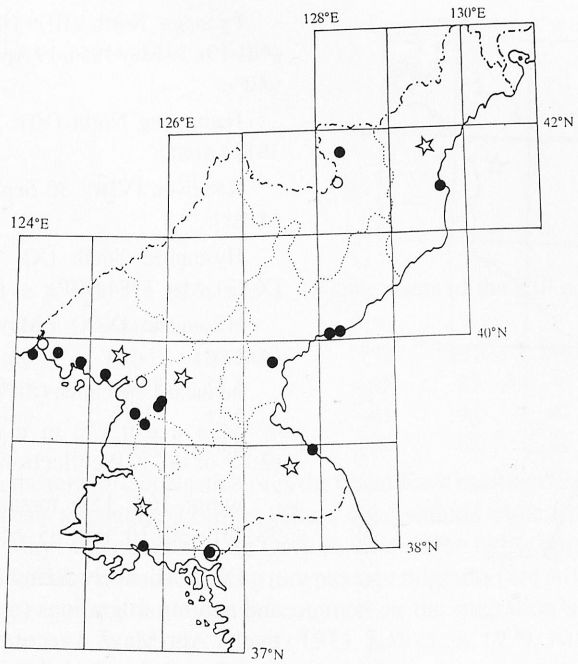
M e a s u r e m e n t s (2 specimens of the ZIP collection):

	♂	?sex
wing	145	134
tarsus	35	34
bill	65	66
tail	64	61



The rarest of the snipes, recorded scarcely 3 times until now. It probably appears more frequently than might be judged from the number of records, since it is a common passage migrant in adjacent Primorsk (PANOV 1973), was observed in the Paekdusan Massif in China (WON Pyong-Oh 1990b) but in the south of the Korean Peninsula it is considered to be a rare passage migrant (WON Pyong-Oh 1993, 1996).

150. *Gallinago gallinago* (LINNAEUS, 1758)
[*Capella gallinago*, *Scolopax galinago*]



Data:

Pyongyang (I): Sunan (I-8): 12 Aug 1979 (TOM);

Pyongan South (II): 13 May 1917 (AUST), Paesanjom (*II-11): 9 May 1950, Jasan (II-12): 8 Sep 1953 (ZIP), Anju (II-16): 17 Apr 1931, Pyongwon (II-17): 22 Apr 1951 (WON);

Pyongan North (III): 12, 18 Apr 1929 (AUST), Jongju (III-3): 6 Sep 1951, Sambongri (III-8): 3 Apr 1958, Haksori (*III-10): 5 May 1958 (WON), Mumyongpyong (*III-14): 21 Apr 1965 (ZIP), Ryongampho (III-15): 8 May 1949 (WON);

Ryanggang (V): Pochon (V-6): 6 Jul 1897 (YANK), Samjiyon (V-10): 1 Nov 1962 (ZIP);

Hamgyong North (VI): 10-28 Sep 1917 (AUST), Orang (VI-28): 23 Sep 1989 (FIEB);

Hamgyong South (VII): Sinpho (VII-16): 17 Apr 1969, Ryongmu (VII-17): 25-26 Apr 1970 (ZIP), Kwangpo (*VII-31): 12-13 Sep 1989 (FIEB);

Kangwon (VIII): 30 Mar, 24 Sep 1914 (AUST), Anbyon (VIII-17): 1, 17 Oct 1989 (FIEB);

Hwanghae South (X): Haeju (X-22): no date (ZIP);

Hwanghae (IX-X): 15 Sep 1932 (AUST);

Kaesong (XI): Kaesong (XI-1): 5, 12 May 1928, 5, 29 Apr 1929 (WON), 21 Apr 1962 (ZIP);

no data: 1 specimen (ZIP).

M e a s u r e m e n t s (8 specimens of the ZIP collection):

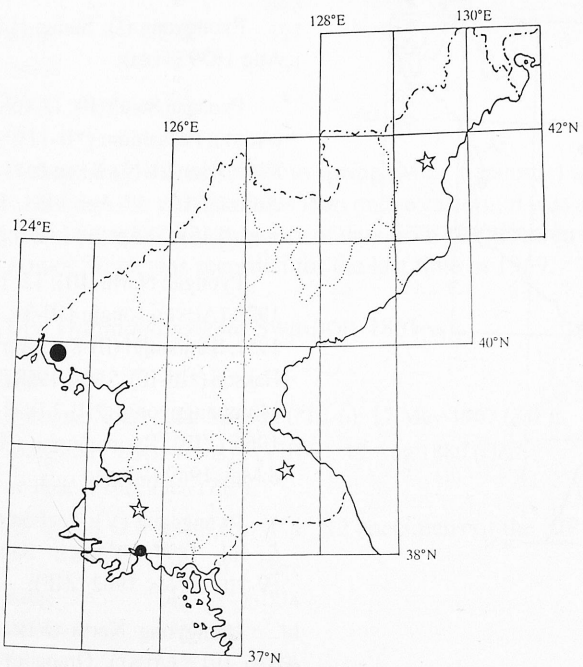
	♂	♂	4 ♀♀	$\bar{x}$	?sex	?sex
wing	120	129	122-131	128.2	132	135
tarsus	31	34	31-34	32.7	35	34
bill	50	65	50-65	63.1	63	67
tail	68	67	51-66	58.7	60	–

Species recorded in the seasons of spring (30 Mar – mid-May, 18 records) and, more rarely, autumn migrations (12 Aug, Sep throughout Oct, 10 records), mainly along the coasts, singly also in the mountainous Ryanggang Province and in the low-lying part of the Pyongan South Province. There is also a hint on the Common Snipe's singing from the Ryanggang Province (6 Jul 1897 /24 Jun by the Julian Calendar/ – YANKOVSKII 1898). The presence of this species in the breeding season is difficult to explain, because it does not nest in the regions neighboring upon North Korea (DEMENTEV & GLADKOV 1951, TUCK 1972, CHENG Tso-hsin 1987).

Lymnocryptes minima (BRUNNICH, 1764)

no data from North Korea.

151. *Calidris canutus* (LINNAEUS, 1758)



Data:

Pyongan North (III): Haksori (*III-10): 19 May 1954, 19 Apr 1955 (ZIP);

Hamgyong North (VI): 3 Sep 1912 (AUST);

Kangwon (VIII): 30 Sep 1914 (AUST);

Hwanghae South (X): Haeju (X-22): May 1984 (ZIP);

Hwanghae (IX-X): 1 May 1917 (AUST);

no data: 1 specimen (ZIP).

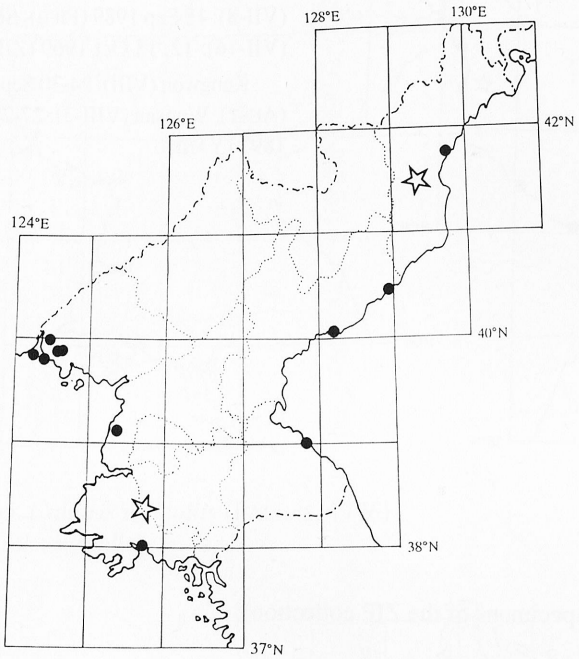
M e a s u r e m e n t s (2♂♂ of the ZIP collection):

wing: 164, 159; tarsus: 29, 28; bill: 30, 30; tail: 65, 65

Observed rarely during spring and autumn migrations (respectively, Apr-May, 4 records and Sep, 2 records). It probably appears more often than could be

judged from the number of records, because it happened to be confused with other species (two specimens in the ZIP collection were wrongly designated as *Calidris tenuirostris* – det. TOMEK).

152. *Calidris tenuirostris* (HORSFIELD, 1821)



Data:

Pyongan South (II): Chungsan (II-19): 1959 (WON);

Pyongan North (III): Yomju (III-10): 18, 19 May 1954, Haksori (*III-10): 6 May 1958 (ZIP), Tasado (III-12): 14 Sep 1958, Ryongchon (III-13): 18 Apr 1961 (WON), Sindo (III-14): 18 Apr 1961 (ZIP);

Hamgyong North (VI): 25 Aug 1917, 19, 23 Sep 1929 (AUST), Chongjin (VI-19): 19 Sep 1989 (FIEB);

Hamgyong South (VII): Tanchon (VII-8): 16 Sep 1989 (FIEB), Sinpho (VII-16): 14 Apr 1969 (ZIP);

Kangwon (VIII): Sijungho (VIII-5): 20 Aug 1984 (KOLBE);

Hwanghae South (X): Haeju (X-22): May 1984 (ZIP);

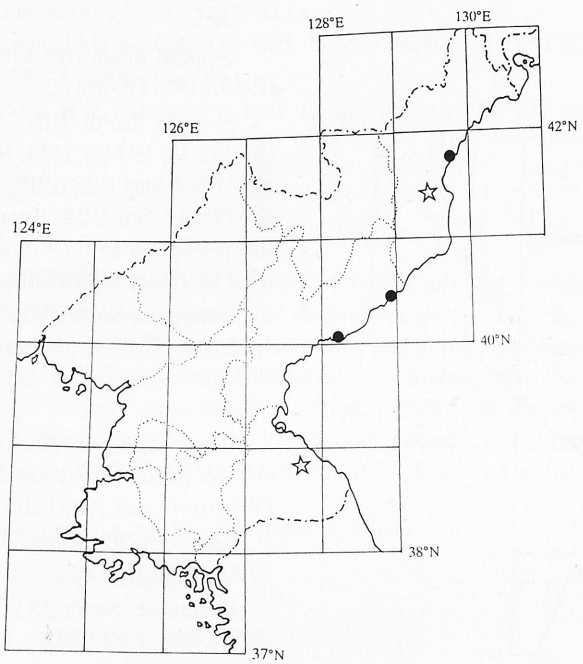
Hwanghae (IX-X): 3 May, 1912 (AUST), 14 Oct 1929, Oct 1930 (WON).

M e a s u r e m e n t s (8 specimens of the ZIP collection):

	4 ♂♂	$\bar{x}$	♀	♀	♀	?sex
wing	181-18	186.5	192	191	190	189
tarsus	33-37	35.5	35	33	36	43
bill	41-45	42.5	41	45	47	–
tail	74-85	78.5	82	82	74	77

In the territory of North Korea the Great Knot has been found present along the eastern and western coasts altogether 22 times. These observations come from the periods of migration: in spring (Apr-May) and autumn (Aug-Oct). In view of the rather small number of observations the species should still be included among rare passage migrants (see AUSTIN 1948, FIEBIG 1993). In the neighboring regions it is, however, common in the migration season (PANOV 1973, KURODA 1975, POLIVANOVA & GLUSHCHENKO 1975, LABZYUK 1979, NECHAEV 1991, WON Pyong-Oh 1993, 1996) and in North Korea it may be expected to appear more frequently than suggested by the number of observations made hitherto.

153. *Calidris alba* (PALLAS, 1764)
[*Crocethia alba*]



Data:

Hamgyong North (VI): 13 Sep 1929 (AUST), Chongjin (VI-19): 19, 22, 28, 29 Sep 1989 (FIEB);

Hamgyong South (VII): Tanchon (VII-8): 18 Sep 1989 (FIEB), Sinpho (VII-16): 12, 13 Oct 1969 (ZIP);

Kangwon (VIII): 24-30 Sep 1914 (AUST), Wonsan (VIII-3): 27-29 Sep 1897 (YANK).

M e a s u r e m e n t s (4 specimens of the ZIP collection):

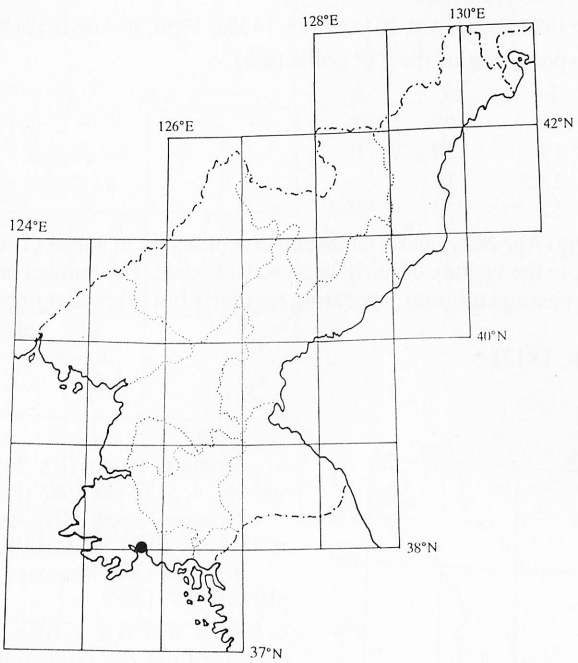
	♂	♀	♀	♀
wing	121	118	116	130
tarsus	26	24	25	29
bill	33	28	23	27
tail	–	52	46	50

There are scarcely 10 records of the Sanderling from 6 sites in North Korea so far, all of them coming from the eastern coast and the season of autumn migrations (Sep-Oct). In the migration period (notably the autumn one) the Sanderling is a common species in the adjacent terrains, i.e. in Russia (PANOV 1973, NECHAEV 1971), Japan (KURODA 1975) and the South Korea (GORE & WON Pyong-Oh 1971, WON Pyong-Oh 1987a, 1993, 1996). It is also a winter visitor to Japan and the southern part of the peninsula (KURODA 1975, WON Pyong-Oh 1993, 1996). Explanation is therefore needed as to whether the small number of data from North Korea is due to the unsatisfactory study of the migratory fauna in that country or whether the route of migration leads across the Japanese Is and the southern part of the Korean Peninsula (omitting the areas situated in the northern part). The number of records in hand does not entitle the statement that it was regular on passage ("regelmassiger Durchzugler" – FIEBIG 1993).

154. *Calidris mauri* (CABANIS,1857)

Data:

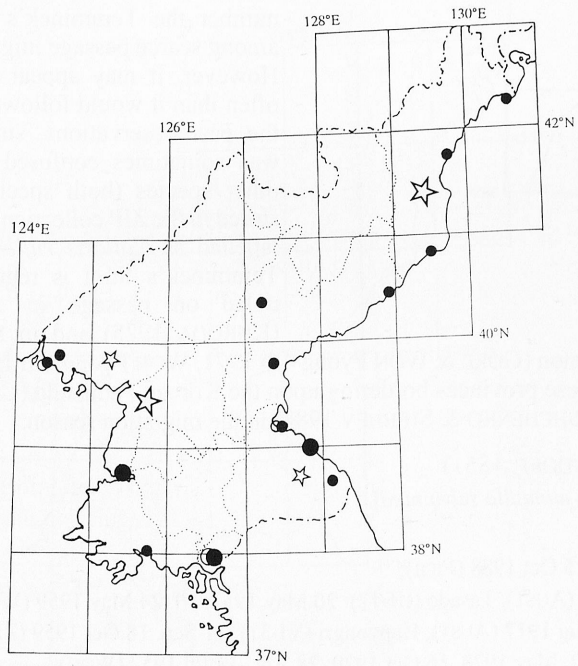
Hwanghae South (X): Haeju (X-22): May 1984 (ZIP).



Measurements wing 93, tarsus 23, bill 18.5, tail 41.

Straggler, reported only once. The likelihood of more frequent occurrence is slim, as it has not been recorded from the neighboring territories, i.e. China (ETCHECOPAR & HÜE 1978, MEYER DE SCHAUENSEE 1984, CHENG Tso-hsin 1987), Russia (PANOV 1973, KNYSTAUTAS & SHIBNEV 1986, NECHAEV 1991) and the southern part of the peninsula (GORE & WON Pyong-Oh 1971, WON Pyong-Oh, 1981a, 1987a, 1993, 1996). From Japan it is mentioned only as a straggler (SONOBE 1982).

155. *Calidris ruficollis* (PALLAS, 1776)
[*Erolia ruficollis*]



Data:

Pyongan South (II): 13 May 1917, 13 May 1919 (AUST), Nampho (II-26): 13 May 1980 (MAUERS), 22 Oct 1988 (FIEB), Aug 1991 (BÁLDI), 31 Jan 1995 (PERT);

Pyongan North (III): 25 Apr, 13 May 1929 (AUST), Yomju (III-10): 17 Apr, 18, 19 May 1955 (ZIP), Tasado (III-12): 14 May 1949, 5-25 May 1959 (WON);

Hamgyong North (VI): Sep, 20 Aug 1912, 19-25 Aug 1917 (AUST), Sosura (VI-5): 23 Sep 1963 (ZIP), Chongjin (VI-19): 19 Sep-22 Apr (sic !) 1989, 29 Sep 1989 (FIEB), Hapyongri (VI-31): 16 Sep 1959 (ZIP);

Hamgyong South (VII): Tanchon (VII-8): 16, 18 Sep 1989 (FIEB), Jangjinho (VII-25): 9 Aug 1956 (WON), Kwangpo (*VII-31): 13 Sep 1989 (FIEB);

Kangwon (VIII): 17-25 Sep 1914 (AUST), Wonsan (VIII-3): 3 Sep 1897 (YANK), 13 Sep 1987 (FIEB), Sijungho (VIII-5): 20 Aug 1984 (KOLBE),

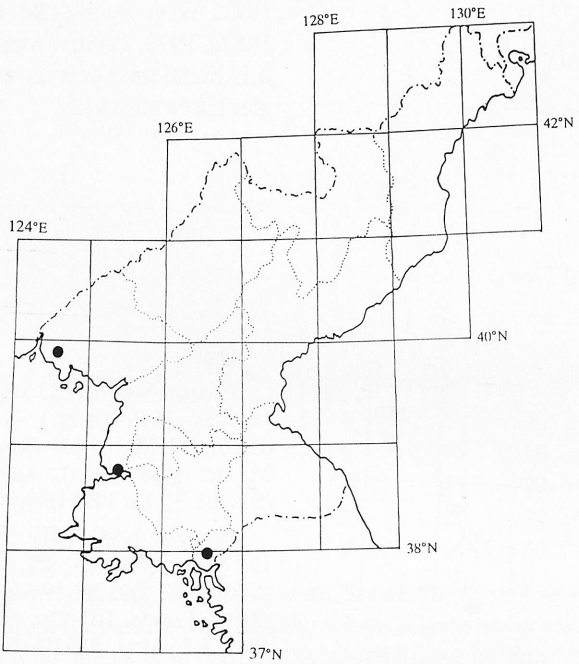
21 Jul 1990 (FIEB), Kumgangsan (VIII-8): Aug 1991 (BÁLDI);
Hwanghae South (X): Haeju (X-22): ?1988 (ZIP);
Kaesong (XI): Kaesong (XI-1): 18 Sep 1927, 9 Oct 1930, 15 Oct 1955, 14 May 1956, 30 Aug 1957 (WON).

M e a s u r e m e n t s (9 specimens of the ZIP collection):

	6 ♂♂	$\bar{x}$	♀	♀	♀
wing	99-108	103.0	102	109	106
tarsus	18-21	19.2	19	20	19
bill	16-18.5	16.9	15.5	18	–
tail	46-57	49.7	52	52	55

Species met with on passage in spring (Apr-May) and autumn and exceptionally in winter (1 record) along the coasts and, very rarely inland, in the vicinity of fairly large water bodies. The number and nature of observations indicate that it is a passage migrant, appearing regularly but in small numbers.

156. *Calidris temminckii* (LEISLER, 1812)
[*Erolia temminckii*]



Data:
Pyongan South (II): Nampho (II-26): 4, 5, 22 Oct 1988 (FIEB);
Pyongan North (III): Haksori (*III-10): 16 Oct 1955 (ZIP);
Kaesong (XI): Kaesong (XI-1): 10 Sep 1969 (ZIP).

M e a s u r e m e n t s (2 ♂♂ of the ZIP collection):

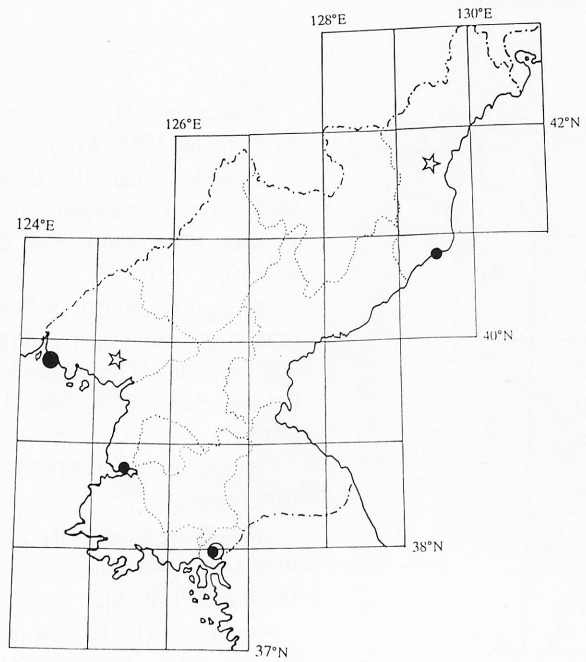
wing 101, 96; tarsus 17, 18; bill 19.5, 18; tail 50, 48.

The small number of observations (5 records) makes me number the Temminck's Stint among scarce passage migrants. However, it may appear more often than it would follow from the past observations, since it was sometimes confused with other species (both specimens stored in the ZIP collection were labelled as *Calidris ruficollis).* Temminck's Stint is regularly noted on passage in Japan (KURODA 1975) and in South Korea it was considered to be uncommon (GORE & WON Pyong-Oh 1971, WON Pyong-Oh 1987a, 1996), being also present in the Chinese provinces bordering upon the Korean Peninsula (CHENG Tso-hsin 1987) and in Primorsk (GLUSHCHENKO & SHIBNEV 1984) in the migration season.

157. *Calidris subminuta* (MIDDENDORF, 1851)
[*Erolia minutilla subminuta, Calidris minutilla subminuta*]

Data:
Pyongan South (II): Nampho (II-26): 5 Oct 1988 (FIEB);
Pyongan North (III): 9, 19 May 1929 (AUST), Tasado (III-12): 20 May 1957, 19, 24 May 1959 (WON);
Hamgyong North (VI): Sep, 19-31 Aug 1917 (AUST), Hapyongri (VI-31): 11 Sep, 18 Oct 1959 (ZIP);
Kaesong (XI): Kaesong (XI-1): 10, 12, May 1928, 16 Oct 1929, 28 Apr, 30 Jul 1957 (WON).

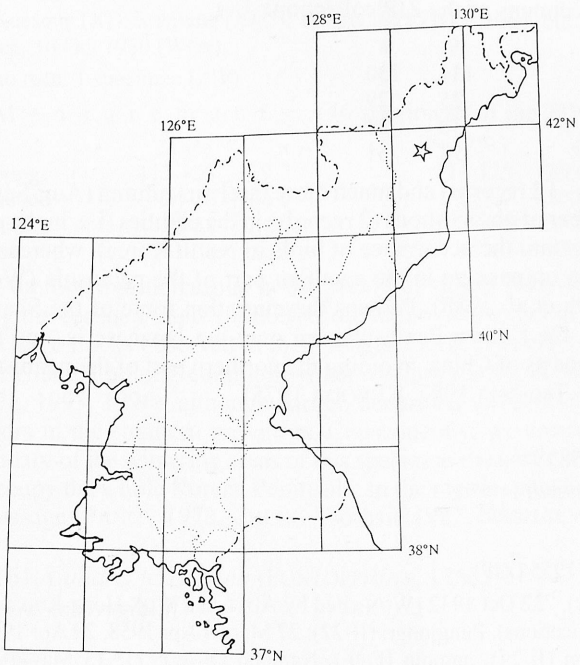
M e a s u r e m e n t s (2 specimens of the ZIP collection, sex unknown):



wing: 99, 99; tarsus 19.5, 20.5; bill 19, 18; tail 44.5, 44.

Observed during spring (8 records) and autumn (7 records) migration, mainly in the northern part of the country. The small number of records (scarcely six in the last 50 years) qualifies the Long-toed Stint as a rare passage migrant. In the southern part of the peninsula it belongs to scarce passage migrants (WON Pyong-Oh 1993, 1996) and at the same time is reckoned among uncommon birds in China (CHENG Tso-hsin 1987) and regarded as common in Primorsk (PANOV 1973, POLIVANOVA & GLUSHCHENKO 1975, LABZYUK 1979). The fact that the largest number of records comes from the borderland with China suggests that the main routes of migration of this species pass by the Korean Peninsula.

158. *Calidris melanotos* (VIEILLOT, 1819)
[*Erolia melanotos*]

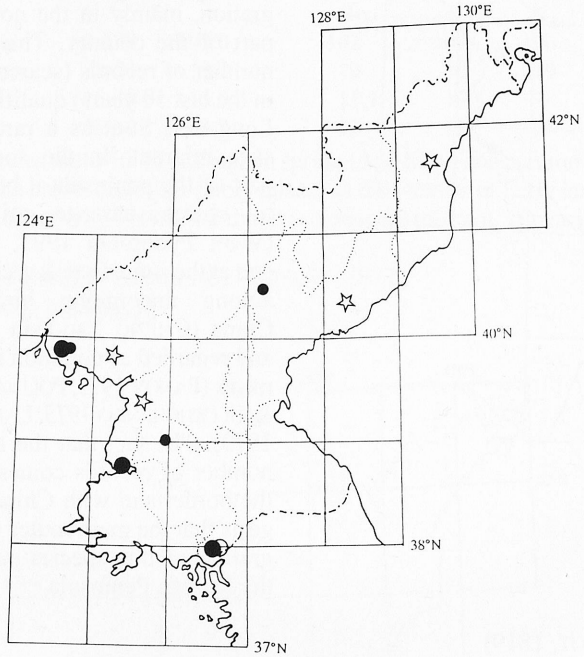


Data:

Hamgyong North (VI): 19-25 Sep 1929 (AUST).

Vagrant. The Pectoral Sandpiper has its exceptional appearance not only in the Korean Peninsula but also in Japan (KURODA 1975) and Russia (PANOV 1973, POLIVANOVA & GLUSHCHENKO 1975, NECHAEV 1991). It has not been recorded in China until now (MEYER DE SCHAUENSEE 1984, CHENG Tso-hsin 1976, 1987).

159. *Calidris acuminata* (HORSFIELD, 1821)
[*Erolia acuminata*]



Data:

Pyongyang (I): Songmunri (*I-2): 6 May 1955 (WON);

Pyongan South (II): 13 May 1917 (AUST), Nampho (II-26): 15 May 1990 (FIEB), Aug 1991 (BÁLDI);

Pyongan North (III): 19, 25 May 1929 (AUST), Yomju (III-10): 18-25 May 1954 (ZIP), 13 May 1955 (WON), Haksori (*III-10): 15 May 1958 (ZIP);

Hamgyong North (VI): 19 Aug 1917 (AUST);

Hamgyong South (VII): 12 Sep 1920 (AUST), Jangjinho (VII-25): 14 May 1956 (WON);

Kaesong (XI): 10 May 1928, 20 Sep 1930, Kaesong (XI-1): 18 May 1956, 16 May 1957 (WON).

M e a s u r e m e n t s (9 specimens of the ZIP collection):

	7 ♂♂	$\bar{x}$	♀	♀
wing	134-141	136.7	134	130
tarsus	30-34	32.1	25	29
bill	25-28	26.4	30	24
tail	50-63	56.8	58	51

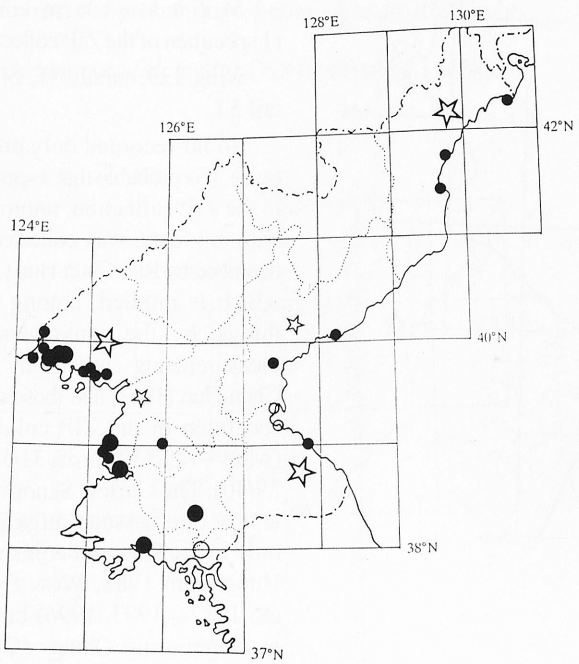
Observed on passage in spring (May – 12 records) and much more rarely in autumn (Aug-Sep – 4 records). Astonishing is the small number of observations (2 records) in the eighties (i.e. in the period of relatively intensive investigations into the occurrence of birds in North Korea), whereas at the same time this species was common on passage in the southern part of the peninsula (WON Pyong-Oh 1987a, 1993, WON Pyong-Oh et al. 1988). Perhaps the migration route of the Sharp-tailed Sandpiper does not extend along the Korean Peninsula, but over the Japanese Is. and the southern strip of Korea; next along the coasts of China, avoiding the northern part of the peninsula (MEYER DE SCHAUENSEE 1984, CHENG Tso-hsin 1987, KURODA 1975).

160. *Calidris alpina* (LINNAEUS, 1758)
[*Erolia alpina sakhalina*, *Tringa subarquata*]

Data:

Pyongyang (I): Songmunri (I-2): 6 May 1955 (ZIP);

Pyongan South (II): 13 May 1917 (AUST), ?22 Oct 1932 (WON cited by AUST, but WON Hong-Koo does not mention this observation in his later publications), Pungjongri (II-22): 27 Mar , 4 Apr 1958, 29 Apr 1959, Ansokri (II-23): 2 Apr 1958 (ZIP), Onchon (II-24): autumn (FIEB), Nampho (II-26): 11, 13 May 1980 (MAUERS), 9 Apr 1989 (FIEB);



Pyongan North (III): 3 May 1917, 25 Apr 1929 (AUST), Jongju (III-3): 16 Sep 1951 (WON), Kohyonri (*III-4): 22 May 1955, Rohari (III-5): 16 Sep 1955, Sambongri (III-8): 2 May 1958, Yomju (III-10): 10 May 1954 (ZIP), 16 Sep, 16, 20, 27 Oct 1955 (WON), Haksori (*III-10): 13 May, 27 Oct 1955, 25, 27 Mar, 15 Apr, 6 May 1958, Pankungri (*III-10): 6 May 1958 (ZIP), Tasari (III-11): 5 Aug 1957, 14, 15 Sep 1958, 14-22 May 1959, Tasado (III-12): 14 May 1949 (WON), Sindo (III-14): 17, 18 Apr, 13, 21 Oct 1961 (ZIP), Ryongampho (III-15): 18 Oct 1958 (WON), Sinuiju (III-28): 1, 19 Dec 1989 (FIEB);

Hamgyong North (VI): 19, 25 Aug 1927, 16, 19 Sep 1929 (AUST), Sosura (VI-5): 23 Sep 1963 (ZIP), Chongjin (VI-19): 19-22 Sep 1989, Orang (VI-28): 25 Sep 1989 (FIEB);

Hamgyong South (VII): Sep 1920 (AUST), Sinpho (VII-16): 15 Sep, 9-17 Oct 1969 (ZIP), Kwangpo (*VII-31): 12 Sep 1989 (FIEB);

Kangwon (VIII): 29 Oct 1911, 29 Mar, 28, 30 Sep 1914 (AUST), Wonsan (VIII-3): 19, 27-30 Sep 1897 (YANK), Sijungho (VIII-5): 9 Oct 1991 (TOM), Yonghung (VIII-14): 18 Oct 1897 (YANK);

Hwanghae North (IX): Pyongsan (IX-11): 20 Oct 1956, 20 Oct 1958 (ZIP);

Hwanghae South (X): Haeju (X-22): May 1984, 1987, 1988 (ZIP);

Kaesong (XI): Kaepung (XI-5): 10 Sep 1928 (WON 1964, but 10 Nov WON cited by AUST), 16 Oct 1929, 25 Sep, 10 Oct 1930 (WON);

no data: 1 specimen (ZIP).

M e a s u r e m e n t s (46 specimens of the ZIP collection):

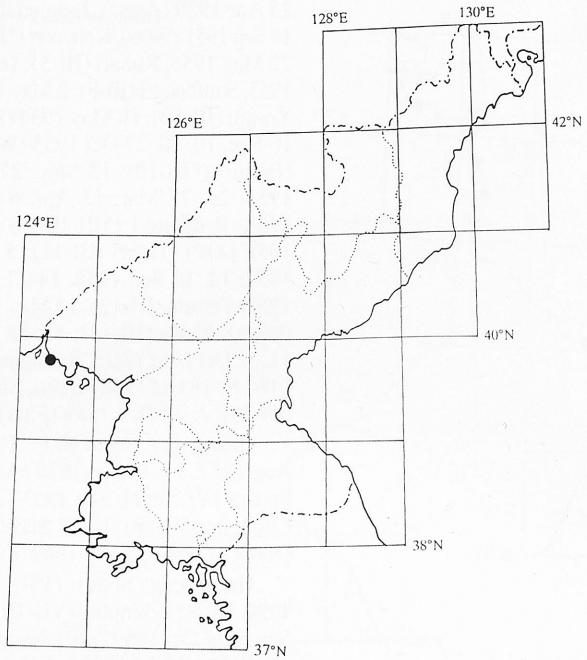
	23 ♂♂	$\bar{x}$	17 ♀♀	$\bar{x}$	6 sex?	$\bar{x}$
wing	112-128	119.7	114-125	120.4	111-124	117.8
tarsus	24-30	26.0	24-32	26.8	24-29	26.4
bill	30-38	34.0	30-38	35.0	33-36	34.3
tail	41-58	50.1	45-60	53.2	42-58	51.5

Common and numerous in the period of spring (Mar-May) and autumn (Aug-Oct) migration along the coasts. FIEBIG's (1993) observations show that in recent years it has also been wintering (two large flocks observed in the Pyongan North Province). In the last 30-40 years the Dunlin has been counted among common winter visitors (GORE & WON Pyong-Oh 1971, WON Pyong-Oh 1987a, 1993, 1996), although earlier, according to AUSTIN (1948), there were only a few winter visitors in the southern provinces. Consequently, we are concerned here with the shifting of the boundary of the wintering areas of this species to the north; nowadays the wintering grounds probably occupy the whole Korean Peninsula. In the regions situated in the north it is known only as a bird of passage (PANOV 1973, CHENG Tso-hsin 1987, NECHAEV 1991).

161. *Calidris ferruginea* (PONTOPPIDAN, 1763)
[*Erolia ferruginea*]

Data:

Pyongan North (III): Tasado (III-12): 19 May 1959 (RIM Chun-Hun 1962);



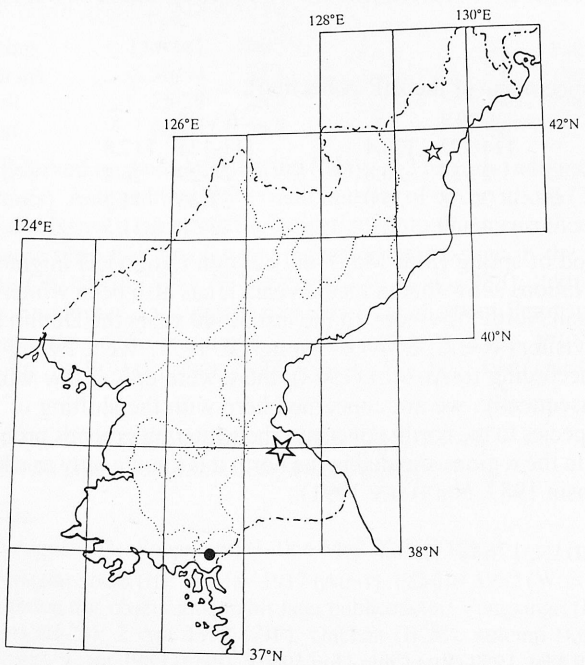
no data: 1 specimen (ZIP).

Measurements (1 specimen of the ZIP collection):

wing 129, tarsus 31, bill 39, tail 54.

So far recorded only once or twice. It is probable that a specimen in the ZIP collection, unprovided with any data, was collected and described by RIM Chun-Hun (1962), which is implied, among other things, by the convergence of measurements given by RIM Chun-Hun (1962) and those of the specimen in the ZIP collection (wing – 129/130, tarsus 31/32, bill 39/40). The Curlew Sandpiper is a very rare passage migrant not only in the Korean Peninsula (O Hung-Dam 1988, WON Pyong-Oh 1987a, 1993, 1996) but also in neighboring China (CHENG Tso-hsin 1987), Japan (KURODA 1975) and Russia (NECHAEV 1991).

162. *Eurynorhynchus pygmeus* (LINNAEUS, 1758)



Data:

Hamgyong North (VI): 10 Sep 1921 (AUST);

Kangwon (VIII): 24, 25 Sep 1914, 21 Mar 1916 (AUST);

Kaesong (XI): Kaesong (XI-1): 1958 (WON);

no data: 1 specimen (ZIP).

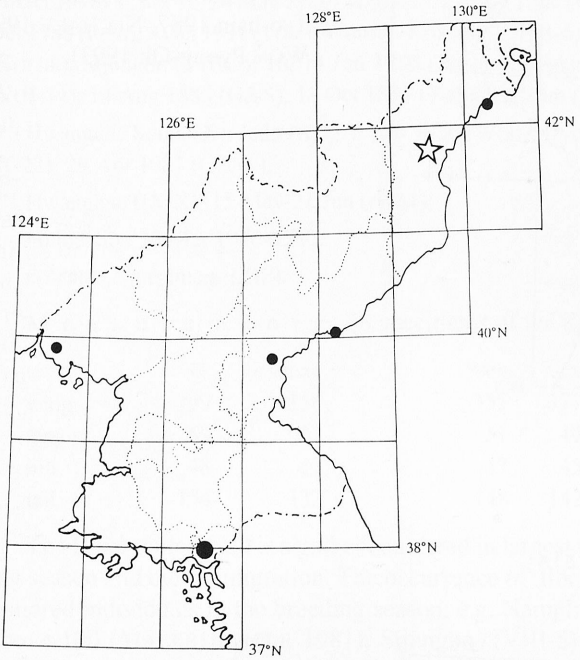
Measurements (1 specimen of the ZIP collection):

wing 99, tarsus 21, bill 19, tail 37.

Very rare during spring and autumn migrations: there are scarcely 6 records from North Korea so far, of which as many as 4 come from the beginning of the century. The Spoon-billed Sandpiper is a species occurring in very small numbers (its total

number in its breeding grounds is estimated at about 3000 individuals – LER 1989), and so at the present time the probability of coming upon it is slight.

163. *Limicola falcinellus* (PONTOPPIDAN, 1763)



Data:

Pyongan North (III): Haksori (*III-10): 15-27 Apr 1958 (WON);

Hamgyong North (VI): 19 Aug 1917, Sep, 6 Sep 1920, 16 Sep 1929 (AUST), Rajin (VI-39): 1 Oct 1989 (FIEB);

Hamgyong South (VII): Sinpho (VII-16): 14, 15 Sep 1969 (ZIP), Kwangpo (*VII-31): 12 Sep 1989 (FIEB);

Kaesong (XI): Kaesong (XI-1): 4 Apr 1956, 12 Apr 1957 (WON).

M e a s u r e m e n t s (2 specimens of the ZIP collection):

	♂	♀
wing	104	107
tarsus	40	42
bill	22	23
tail	28	28

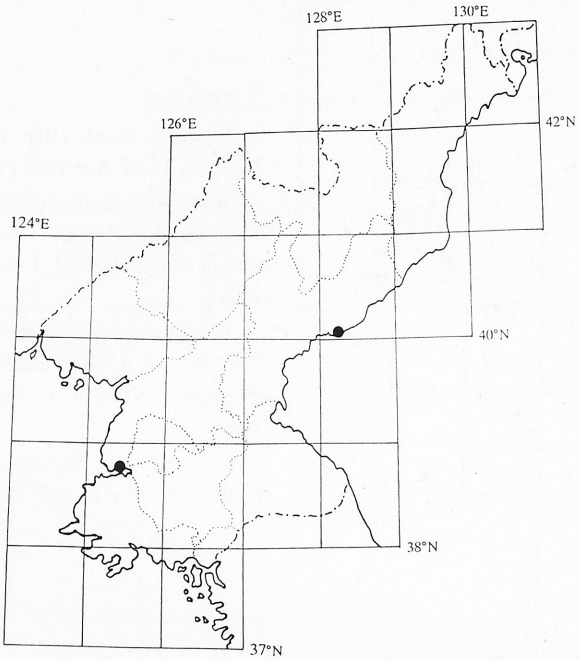
Three records during spring (Apr) and 9 during autumn migrations (Sep-Oct). It was probably considerably more frequent than would follow from the number of records, for it belonged to common migratory birds in Primorsk (PANOV 1973) and China (CHENG Tso-hsin 1987), while in Japan (KURODA 1975) it was a "regular transient and winter visitor". Its present status, however, calls for explanation, for, according to more recent Russian sources, it is not numerous either in breeding grounds or on passage (LER 1989, NECHAEV 1991).

164. *Philomachus pugnax* (LINNAEUS, 1758)

Data:

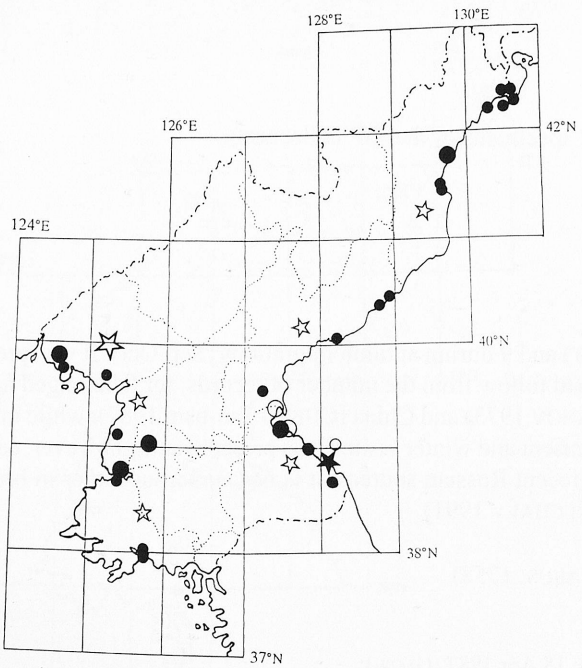
Pyongan South (II): Nampho (II-26): 18 Apr 1987 (GŁOW);

Hamgyong South (VII): Sinpho (VII-16): 9 Sep 1913 (AUST).



To be sure, there are only two records of the Ruff from North Korea till now, but it is probably a rare passage migrant, for this is its status in all the neighboring regions (PANOV 1973, KURODA 1975, CHENG Tso-hsin 1987, NECHAEV 1991, WON Pyong-Oh 1993).

165. *Larus crassirostris* VIEILLOT, 1818
[*Larus melanurus*]



Data:

Pyongyang (I): Pyongyang (I-1): 3 Oct 1984 (TOM), 18 Apr 1987 (GŁOW);

Pyongan South (II): 26 Jul 1932, Chungsan (II-19): 24 Apr 1958 (WON), Nampho (II-26): 28 Sep 1978, 24 May 1980 (TOM), 11-13 May 1980 (MAUERS), 9-11 Aug 1984 (KOLBE), 22 Sep 1986 (TOM), 18 Apr 1987 (GŁOW), Aug 1991 (BALDI);

Pyongan North (III): 9 Jun, 1 Jul 1917, 3 Jun 1918, 14 Apr 1929 (AUST), Jongju (III-3): 13, 20 Aug 1951 (WON), Tongchangri (*III-9): 5 Jun 1970, Haksori (*III-10): 18 Mar 1954, 20 Oct 1955, 20-22 Mar 1958 (ZIP), 20 Oct 1959 (WON);

Hamgyong North (VI): 29 Aug 1917, Nov (AUST), Manpo (VI-2): 9 Apr 1996, Tongbonpho (*VI-3): 9 Apr 1996 (PERT), Sosura (VI-5):

27 Mar, 3 Apr 1959 (WON), Pipa (*VI-6): 9, 10 Apr 1966 (PERT), Chongjin (VI-19): 26 Jun – 11 Jul 1983 (TOM), Aug 1991 (BÁLDI), Orang (VI-28): 9 Jul 1983, Ryonghyonri (VI-36): 5 Oct 1991 (TOM), Rajin (VI-39): 10 Apr 1996 (PERT);

Hamgyong South (VII): 26 Apr 1817 (AUST), Tanchon (VII-8): 23-31 May 1987, Kiam (VII-10): 31 May 1987 (TOM), Sinpho (VII-16): 14 Sep 1969 (ZIP), Haejungri (*VII-38): 12 Apr 1960 (WON);

Kangwon (VIII): 23 Apr, 23 Sep 1914 (AUST), Wonsan (VIII-3): 17 Aug 1880 (G&S), 5 Sep 1897 (YANK), 11 Oct 1978 (TOM), 19, 24 May 1980 (MAUERS), 22 Aug 1984 (KOLBE), 19, 24 Apr 1987 (GŁOW), 31 Oct 1987, Oct 1988 (FIEB), 9 Oct 1991 (TOM); Wonsan-Kosong (VIII-3-6): 20, 23 May 1980 (MAUERS), 17, 23 Aug 1984 (KOLBE), Sijungho (VIII-5): 10, 14 Jun 1980 (TOM), Kumgangsan (VIII-8): Aug 1991 (BÁLDI), Yonghung (VIII-14): 14 Aug 1880 (G&S), 18 Oct 1897 (YANK), Alsom (VIII-15): 16 Jun 1949 (WON);

Hwanghae South (X): Jedo (X-1): 5 Apr 1956 (WON), Hyongchesom (X-20): 13 Oct 1984 (TOM), Haeju (X-22): 29 Apr 1987 (GŁOW);

Hwanghae (IX-X): 15 May-21 Jun (AUST);

no locality: 13 Mar 1970 (ZIP);

no data: 2 specimens (ZIP).

M e a s u r e m e n t s (8 specimens of the ZIP collection):

	♂	♂subad	?sex	?sex	?sex	?sex	?sex	subad
wing	399	356	355	377	383	385	414	365
tarsus	59	51	51	49	50	50	58	52
bill	48	47	47	45	52	47	47	36
tail	154	132	148	142	165	160	141	131

The Black-tailed Gull is a gull encountered in largest numbers and most frequently in the breeding season and during migration. The occurrence of flocks numbering from several tens to several hundred individuals in the breeding season, e.g. Nampho (II-26) – ca 50 ind., Wonsan (VIII-3) – above 100 (MAUERSBERGER 1981), Sijungho (VIII-5) – above 1000 (TOMEK 1985), Chongjin (VI-19) – several tens, Orang (VI-28) – ca 100 (TOMEK 1985), Tanchon (VII-8) – several hundred (TOMEK unpubl.), gives evidence of the existence of breeding colonies consisting even of several hundred nests there. Flocks of as many as several thousand birds are observed in the migration season (FIEBIG 1993). Large numbers of Black-tailed Gulls winter on the waters of the southern part of the peninsula (SHIBAEV & LITVINENKO 1975, HAM Kyu-Hwang & LEE Doo-Pyo 1985, WON Pyong-Oh 1986b,1988a, WON Pyong-Oh et al. 1986b, ILYCHEV & ZUBAKIN 1988, HAHM Kyu-Hwang 1992). The wintering area, probably, does not embrace North Korea, because this species has not been recorded here in winter (the latest record is from November - AUSTIN 1948, and the earliest from 18 March – WON Hong-Koo 1964).

166. *Larus canus* LINNAEUS, 1758
[*Larus kamtschatkensis*]

Data:

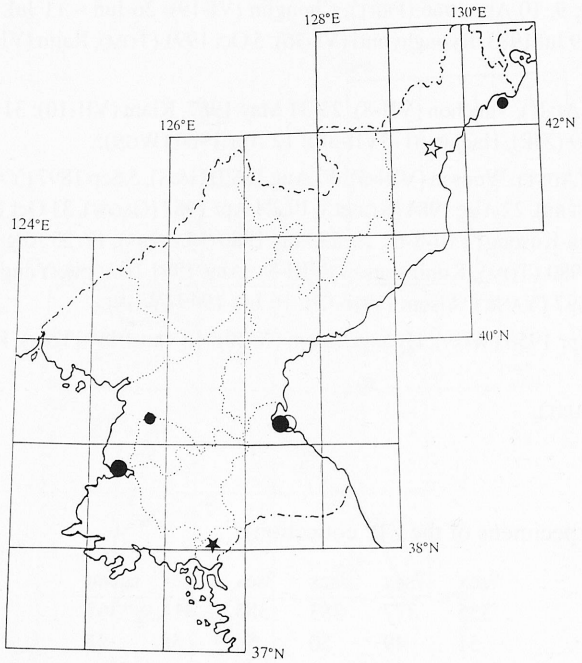
Pyongyang (I): Sogam (I-15): 17 Apr 1987 (GŁOW);

Pyongan South (II): Nampho (II-26): 12 May 1979 (MAUERS), 9-11 Aug 1984 (KOLBE), 7 Dec 1988, 24 Apr 1989, 6 Mar 1990 (FIEB), Aug 1991 (BÁLDI);

Hamgyong North (VI): Nov (AUST), Pipa (*VI-6): 10 Apr 1996 (PERT);

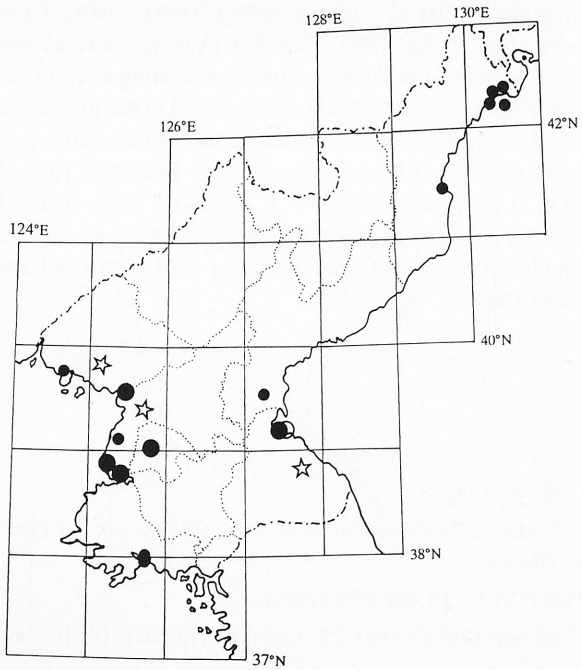
Kangwon (VIII): Wonsan (VIII-3): 27-29 Sep 1897 (YANK), 22 Aug 1984 (KOLBE), 14, 16 Dec 1988 (FIEB);

Kaesong (XI): Aug 1991 (BÁLDI).



Species observed from August till May. It must have escaped notice and as a matter of fact was remarkably more frequent than might be judged from the number of records, for as many as 11 records in 13 come from 1979-1996. Up to the eighties the Common Gull was known as a common migratory species and/or wintering in the neighboring regions (GORE & WON Pyong-Oh 1971, PANOV 1973, KURODA 1975), and the lack of earlier records in North Korea can hardly be accounted for by its absence. According to FIEBIG's data observation, the Common Gull is a migratory and wintering species, occurring in flocks of 20 to more than 300 individuals.

167. *Larus argentatus* PONTOPPIDAN, 1763



Data:

Pyongyang (I): Pyongyang (I-1): Apr 1987 (GŁOW), winters 1986-88 (CHON Gil-Pyo 1988), 14, 17 Nov 1987, 1 May 1988 (FIEB), Aug 1991 (BÁLDI), 30 Jan, 1 Feb 1995 (PERT);

Pyongan South (II): 25 Jul 1932 (AUST), Chungsan (II-19): 23 Mar, Apr 1958 (ZIP, or 1-24 Apr ZIP cited by WON), Onchon (II-24): autumns-winters 1987-90 (FIEB), Nampho (II-26): 28 Sep 1978 (TOM), 18 Apr 1987 (GŁOW), Aug 1991 (BÁLDI), 31 Jan 1995 (PERT), Chongchon riv. (*II-29): winters 1987-90 (FIEB);

Pyongan North (III): 30 May, 5, 10 Jun 1917 (AUST), Padukisom (*III-9): 18 May 1967 (ZIP);

Hamgyong North (VI): Manpo (VI-2): 9 Apr 1996, Pipa (*VI-6): 10 Apr 1996 (PERT), Unggi (VI-7): 25 Apr 1959 (ZIP), Orang (VI-28): 23 Sep 1989 (FIEB), Rajin (VI-39): 10 Apr 1996 (PERT);

Hamgyong South (VII): Haejungri (*VII-38): 9 Apr 1960 (WON), 12 Sep 1960 (ZIP);

Kangwon (VIII): 30 Mar 1912 (AUST), Wonsan (VIII-3): 16 Feb 1888 (TACZ), 27-29 Sep 1897 (YANK), 7 Aug 1979 (TOM), 19, 24 Apr 1987 (GŁOW), 3 Oct 1988 (FIEB);

Hwanghae South (X): Hyongchesom (X-20): 13 Oct 1984 (TOM), Haeju (X-22): 19 Apr 1987 (GŁOW).

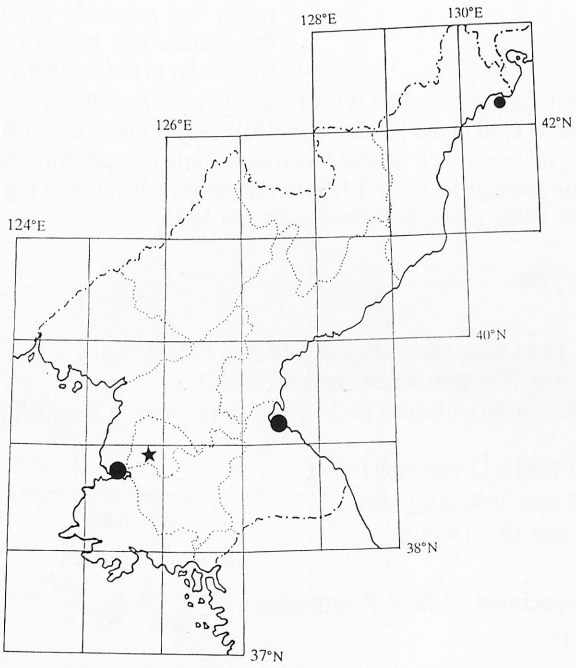
M e a s u r e m e n t s (6 specimens of the ZIP collection):

	♂	♀	?sex	?sex	juv	juv
wing	470	442	493	431	412	410
tarsus	71	78	75	66	63	65
bill	59	58	63	58	57	56
tail	190	177	187	172	158	160

Species observed all through the year. Most records come from spring (23 Mar – 1 May, 10 records) and autumn migration (Aug-Nov, 10 records). From the second half of May to July, i.e. in the breeding season, 5 records were gained, but there is no concrete information about nesting. In winter it was seen mainly in 1987-90 (FIEBIG 1993).

In the Far East the Herring Gull nests in the northern regions ((ILYCHEV & ZUBAKIN 1988). The isolated southernmost colony lies in the region of Lake Khanka (GLUSHCHENKO 1981). In China, that is, to the north of North Korea, this species is a passage migrant (CHENG Tso-hsin 1987), while to the east and south (Japan and South Korea) a common winter visitor (KURODA 1975, WON Pyong-Oh 1993, 1996). In North Korea the status of this species is not quite clear. According to AUSTIN (1948), the Herring Gulls wintered only in the southern part of the peninsula. FIEBIG's (1993) observations from the close of the eighties indicate that they were the second most frequently encountered gulls (after *Larus crassirostris*) in autumn and in early winter. On the other hand, according to North Korean ornithologists this species nests in the provinces: Pyongan North, Hamgyong North and Hamgyong South (WON Hong-Koo 1964, SONOBE 1987, O Hung-Dam 1988). And yet they give no reliable data concerning nesting. In view of the marked distance of the nearest known breeding colonies of the Herring Gulls, the inclusion of this species in the breeding fauna of North Korea needs to be first documented. At present it may be regarded as a passage migrant and winter visitor.

168. *Larus schistisagus* STEINEGER, 1884



Data:

Pyongyang (I): Sunfakan (I-?): 16 Apr 1987 (GŁOW);

Pyongan South (II): Nampho (II-26): 9-13 Aug 1984 (KOLBE), 22 Sep 1986 (TOM), Oct 1988 (FIEB), 31 Jan 1995 (PERT);

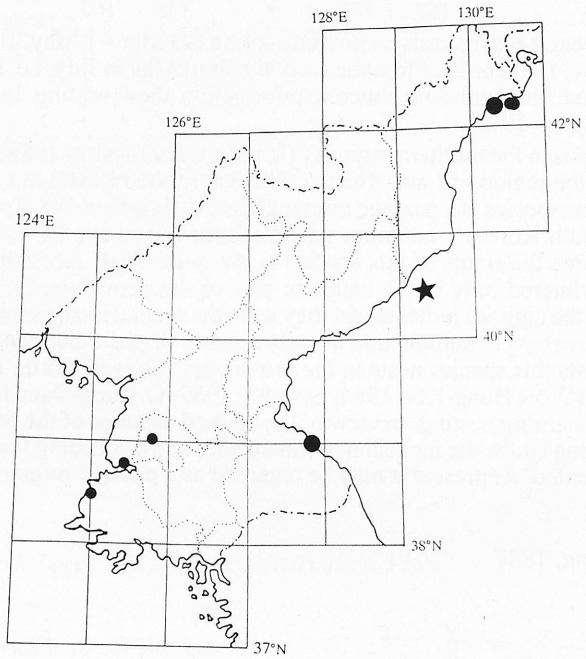
Hamgyong North (VI): Alsom (VI-6): 11 Apr 1996 (PERT);

Kangwon (VIII): Wonsan (VIII-3): 10-11 Oct 1978, 7 Aug 1979 (TOM), 3 Oct 1988 (FIEB).

Species observed during spring (2 records) and autumn (6 records) migrations and in winter (1 record). In the past it probably escaped attention or was confused with other species, because no observations from before 1978-1996 are on record. This is a common species wintering in China and Ja-

pan (CHENG Tso-hsin 1987, KURODA 1975), also occurring as a winter visitor in South Korea (GORE & WON Pyong-Oh 1971, WON Pyong-Oh 1993, 1996). Consequently, it may be supposed that it appears more frequently in North Korea than suggested by the number of records.

169. *Larus hyperboreus* GUNNERUS, 1767
[*Larus glaucus*]



Data:

Pyongyang (I): Pyongyang (I-1): 27 Dec 1989 (FIEB);

Pyongan South (II): Nampho (II-26): 9, 24 Apr, 30 Nov 1989 (FIEB);

Hamgyong North (VI): Alsom (VI-6): 11 Apr 1996, Pipa (*VI-6): 9, 10 Apr 1966 (PERT), Rajin (VI-39): 1 Oct 1989 (FIEB), 10 Apr 1996 (PERT);

Kangwon (VIII): Sijungho (VIII-5): 9 Dec 1989, 12 Feb 1990 (FIEB);

Hwanghae South (X): Kwail (X-13): no date (FIEB);

Eastern beach (VI-VII-VIII): a dozen or so undated observations (FIEB).

The species was not observed in North Korea before 1987-1996 whereas now, according to FIEBIG (1993), it rarely but regularly winters on the eastern and western coasts. Similarly, in the southern part of the peninsula it was not come upon until the last decades (WON Pyong-Oh 1987a, 1993, 1996). The more frequent appearance of the Glaucous Gull in the Korean Peninsula may point to the shift (widening) of the wintering grounds. It may however well be that this species only escaped attention before, as in Primorsk common species on passage (PANOV 1973) in the period when it was not noted at all in the Korean Peninsula (AUSTIN 1948, GORE & WON Pyong-Oh 1971).

170. *Larus ridibundus* LINNAEUS, 1766

Data:

Pyongan South (II): Nampho (II-26): 12-13 May 1980 (MAUERS), 10 Aug 1984 (KOLBE), 9 Apr, 7 Sep, 19 Oct 1989, 26 Jul-31 Aug 1990 (FIEB), Aug 1991 (BÁLDI), 31 Jan 1995 (PERT);

Hamgyong North (VI): 15-27 Sep 1929 (AUST), Manpo (VI-2): 9 Apr 1996 (PERT), Chongjin (VI-19): 20, 25 Sep 1989 (FIEB);

Hamgyong South (VII): Kwangpo (*VII-31): 12 Sep 1989 (FIEB);

Kangwon (VIII): Wonsan (VIII-3): 23 May 1980 (MAUERS);

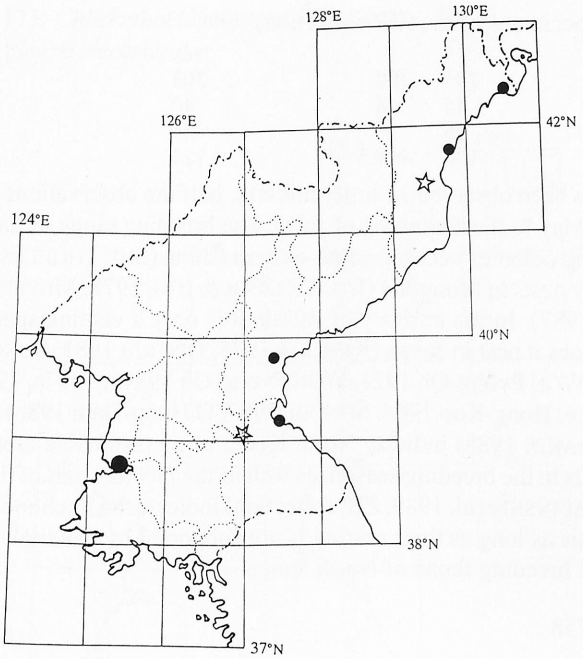
Unknown province: Ryosong riv.: 25 Mar 1927 (WON);

no data: 1 specimen (ZIP).

M e a s u r e m e n t s (1 specimen of the ZIP collection):

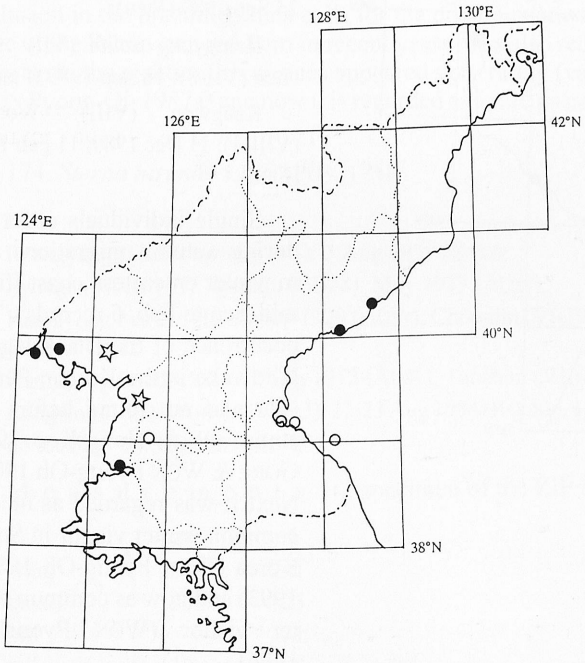
wing 325, tarsus 50, bill 35, tail 132.

This species was recorded scarcely twice before the eighties, whereas in 1987-90 it was often encountered in the migration season (FIEBIG 1993). Such a great difference in the number of records



is the effect, on the one hand, of too scanty data collected in the past (which has already been noted by AUSTIN, 1948) and, on the other hand, of the rapid rise in abundance of the whole population of the Black-headed Gull (CRAMP & SIMMONS 1983, ILYCHEV & ZUBAKIN 1988), including that living in the Far East (NECHAEV 1991). Taking into account the expansion of this species manifesting itself also in the widening of its breeding grounds, one may expect the formation of breeding colonies of the Black-headed Gull in the territory of North Korea. At present such colonies are known from the region of Khanka Lake (KNYSTAUTAS & SHIBNEV 1986) and from the vicinity of the Paekdusan Mts. in China (CHENG Tso-hsin 1987).

171. *Larus saundersi* (SWINHOE, 1871)
[*Chroicocephalus saundersi*]



Data:

Pyongyang (I): Pyongyang (I-1): 15 May 1933 (Won 1964, or May 1934 WON 1956);

Pyongan South (II): 13 May 1917 (AUST), Nampho (II-26): 18 Apr 1987 (GŁOW);

Pyongan North (III): 14 May 1917 (AUST), Haksori (*III-10): 20, 22 Mar 1958, Sindo (III-14): 16 Apr 1961 (ZIP);

Hamgyong South (VII): Riwon (VII-11): 20 Jun 1985, Sinpho (VII-16): 4 Jul 1960 (ZIP);

Kangwon (VIII): Wonsan (VIII-3): 16 Feb 1888 (TACZ), Alsom (VIII-15): 16 Jun 1949, Kukdo (VIII-16): 17 Jun 1949 (WON);

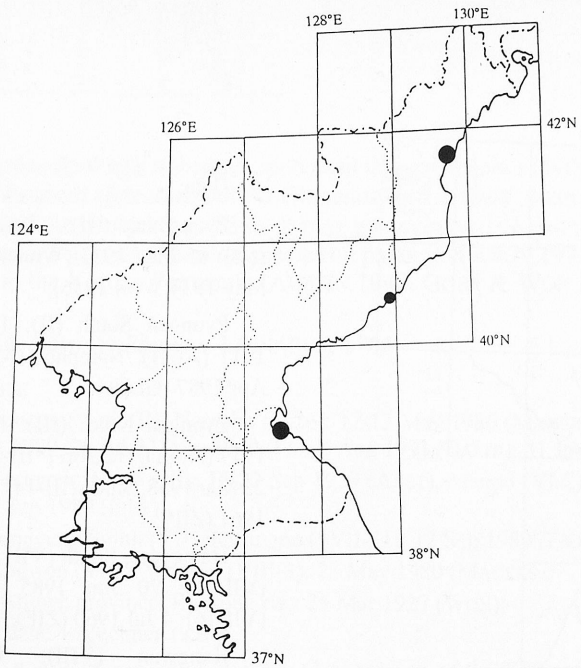
no data: 1 specimen (ZIP).

Measurements (8 specimens of the ZIP collection):

	5 ♂♂	$\bar{x}$	♀	♀	?sex
wing	282-298	292.4	293	300	303
tarsus	39-50	44.6	45	48	40
bill	25-30	26.8	26	26	25
tail	101-116	108.8	108	109.5	124

In the territory of North Korea it has been observed 13 times hitherto, half the observations falling in the breeding season (from mid-May to the beginning of July). The breeding range of Saunder's Gulls is still unclear. Two breeding colonies occur in south-eastern China (SHI, THOULESS & MELVILLE 1988). Moreover, it probably nests in Mongolia (ETCHECOPAR & HÜE 1978, MEYER DE SCHAUENSEE 1984, CHENG Tso-hsin 1987). In the territory of Russia it is only a visiting species (ILYCHEV & ZUBAKIN 1988), neither does it nest in Japan (KURODA 1975, DISTRIB 1981, SONOBE 1982) and in southern Korea (GORE & WON Pyong-Oh 1971, WON Pyong-Oh 1981a, 1987a, 1993, 1996). Only North Korean authors (WON Hong-Koo 1964, SONOBE 1987, O Hung-Dam 1988) and after them Russians (ILYCHEV & ZUBAKIN 1988) indicate North Korea as a presumable area of nesting. The presence of Saunder's Gulls in the breeding season, as well as the fact that part of them was already in nuptial plumage (GŁOWACIŃSKI et al. 1989, ZIP collection) indicate the likelihood of nesting. However, it is only a hypothesis as long as their nesting is not supported by material data and the species cannot be placed in the breeding fauna of North Korea.

172. *Rissa tridactyla* LINNAEUS, 1758



Data:

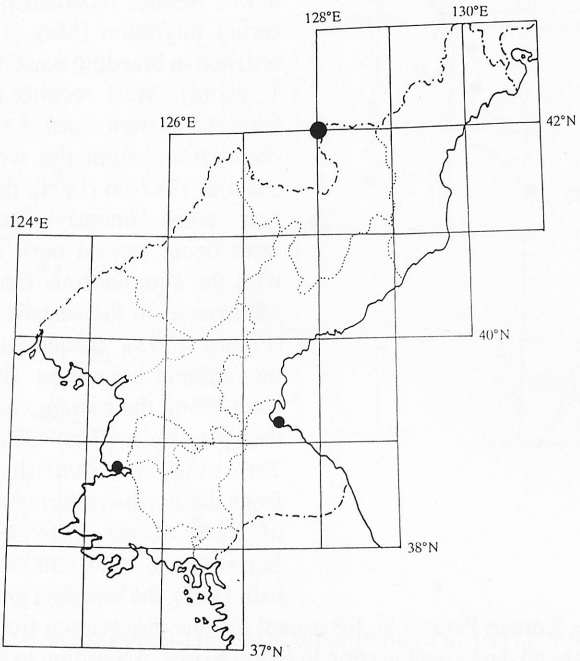
Hamgyong North (VI): Chongjin (VI-19): 5 Nov 1964 (WON), 25 Sep 1989 (FIEB);

Hamgyong South (VII): Tanchon (VII-8): 18 Sep 1989 (FIEB);

Kangwon (VIII): Wonsan (VIII-3): 11 Dec 1989, 11 Feb 1990 (FIEB).

Single individuals observed during autumn migrations and in winter on eastern coast (from mid-Sep to Feb, 5 records). The occurrence of the Black-legged Kittiwake in the Korean Peninsula was not found before the sixties (WON Hong-Koo 1965, GORE & WON Pyong-Oh 1971). Next it was regarded as an uncommon winter visitor in South Korea (WON Pyong-Oh 1987a, 1993) and now as common winter visitor (WON Pyong-Oh 1996).

173. *Chlidonias leucoptera* (TEMMINCK, 1815)
[*Sterna leucoptera*]



Data:

Pyongan South (II): Nampho (II-26): 31 Aug, 7 Sep 1989 (FIEB);

Ryanggang (V): Paekdusan (V-12): 6 Jul 1983, 23 Aug 1987 (JIN Dok-Jun, O Hung-Dam 1990);

Kangwon (VIII): Wonsan (VIII-3): 2, 3 Oct 1988 (FIEB).

Not recorded in North Korea until the eighties when two to more than 50 individuals were observed during autumn migration (FIEBIG 1993); they were also seen during the breeding season in the mountains in the north of the country.

The White-winged Tern nests in China near North Korea (MEYER DE SCHAUENSEE 1984, CHENG Tso-hsin 1987) and also in the Ussuriisk region (KNYSTAUTAS & SHIBNEV 1986, ILYCHEV & ZUBAKIN 1988) and an observation made at the beginning of July evidences the probability of its settling down in North Korea. In the latest decades the expansion of the breeding area of this species was observed (ILYCHEV & ZUBAKIN 1988), yet its inclusion in the breeding fauna calls for the documentation of nesting. The more frequent appearance of the White-winged Tern in recent years was also recorded in the southern part of the peninsula: up to the eighties this species appeared very rarely (vagrant – GORE & WON Pyong-Oh 1971, WON Pyong-Oh 1987a) and now it is regarded as a rare passage migrant (WON Pyong-Oh 1993).

174. *Sterna hirundo* LINNAEUS, 1758

Data:

Pyongyang (I): Pyongyang (I-1): 3 Aug 1979 (TOM);

Pyongan North (III): Synuiju (III-28): May 1927 (AUST);

Hamgyong North (VI): 25 Sep 1929 (AUST), Chongjin (VI-19): 22 Sep 1989 (FIEB), Jangyon-ho (VI-29): 9 Jul 1983 (TOM);

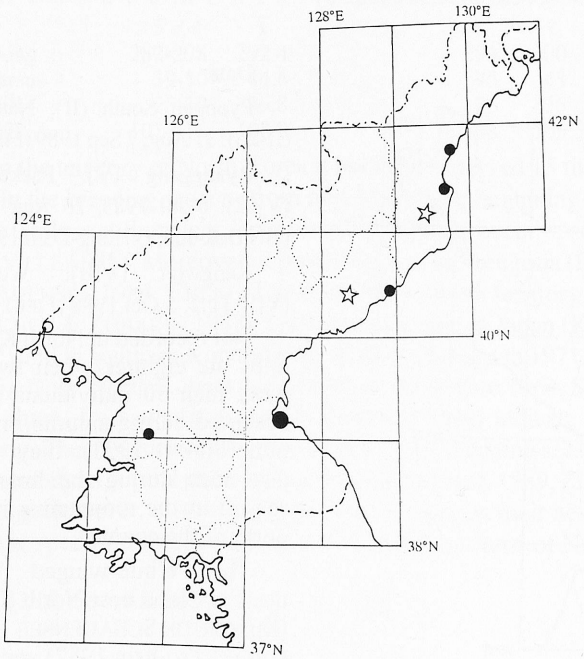
Hamgyong South (VII): 12 Sep 1912 (AUST), Tanchon (VII-8): 18 Sep 1989 (FIEB);

Kangwon (VIII): Wonsan (VIII-3): 22-23 Aug 1984 (KOLBE), 13 Sep 1987, 1 Oct 1988, 18 Sep 1989 (FIEB);

no locality: 13 Sep 1969 (ZIP).

M e a s u r e m e n t s (2 specimen of the ZIP collection):

	♂	♀
wing	250	241
tarsus	23	23
bill	–	31
tail	110	98



Species observed during autumn migrations (August-beginning of October, 10 records); it was besides recorded during spring migration (May, 1 record) and in breeding season (Jul, 1 record). Most records come from the eastern coast. Lack of observations from the western coast in 1987-90 (i.e. in the period when intensive studies were being carried out), along with the simultaneous frequent occurrence on the eastern coast (FIEBIG 1993), evidences that the autumn migration flyway leads along the eastern coast of the peninsula. The Common Tern nests at a short distance from the north-western frontier of North Korea (MEYER DE SCHAUENSEE 1984, CHENG Tso-hsin 1987), the breeding ground, however, does not extend as far as the Korean Peninsula, for except for one observation from the breeding season (TOMEK 1985) there are no data about nesting in North Korea. According to North Korean ornithologists it is a passage migrant (WON Hong-Koo 1964, O Hung-Dam 1988).

175. *Sterna albifrons* PALLAS, 1784
[*Sterna minuta*, *Sterna sinensis*]

Data:

Pyongan South (II): Taedong riv (II-?): 29 Apr 1917 (AUST), Anju (II-16): ? 21, 29 Apr 1931 (WON or 21, 29 Jun – WON 1956 and WON cited by AUST), Nampho (II-26): 24 Apr 1989, 26 Apr 1990 (FIEB);

Pyongan North (III): Amnok riv (III-?): 22 Jun (SOWERBY);

Hamgyong North (VI): Ryonghyonri (VI-36): 5 Oct 1991 (TOM);

Hamgyong South (VII): Tanchon (VII-8): 23-27 May 1987 (TOM), Sinpho (VII-16): 14, 15 Sep 1969 (ZIP), Kwangpo (*VII-31): 12 Sep 1989 (FIEB);

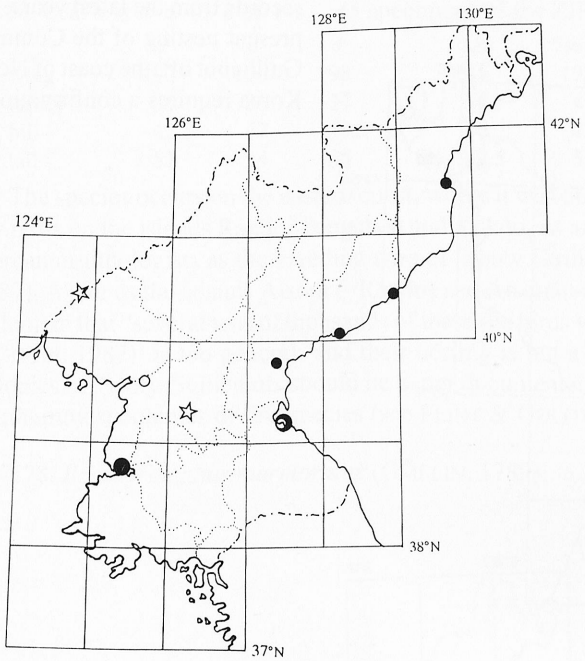
Kangwon (VIII): Wonsan (VIII-3): 22 Oct 1897 (YANK), 22 Aug 1984 (KOLBE), 13 Sep 1987 (FIEB);

no data: 2 specimens (ZIP).

M e a s u r e m e n t s (3 specimens of the ZIP collection):

	?sex	?sex	?sex
wing	261	260	265
tarsus	17	17	19
bill	30	30	32
tail	122	115	107

Breeding species observed from mid-April till October, the latest observation on 22 Oct (YANKOVSKII 1898). Acc. to FIEBIG (1993), it nests regularly ("regelmassiger Brutvogel"); however, he does not give any close data about nesting or the dates of observations falling in the breeding



season. In consequence, the only data referring to the breeding season are: SOWERBY's (1923) information from 25 July about an individual taken by Jouy on the frontier river Amnok (Yalu), an uncertain record by WON Hong-Koo in Anju (in one publication he gives its time as April, in another as June) and my so far unpublished observation made at Tanchon in 1987. A flock of about 20 individuals was staying there between 23 and 27 May. The behaviour of birds implied the existence of a breeding colony (because it was in the guarded frontier zone, it was impossible to get to the colony itself, which in consequence I observed from a distance of a few dozen meters). The Little Tern is a common breeding bird in the southern part of the peninsula (GORE & WON Pyong-Oh 1971, WON Pyong-Oh 1987a, 1993, 1996), but the colonization of its northern and eastern parts probably did not take place before the last decades, for still WON Hong-Koo (1964) claimed that this species nests only in the region of Seoul; from those very regions came AUSTIN's (1948) data. The Little Tern has been a breeding species in Primorsk, at least, since the sixties (POLIVANOVA 1971).

Thalasseus bergii (LICHTENSTEIN, 1823)
[*Sterna bergii*]

No data from North Korea.

176. *Uria aalge* (PONTOPPIDAN, 1763)

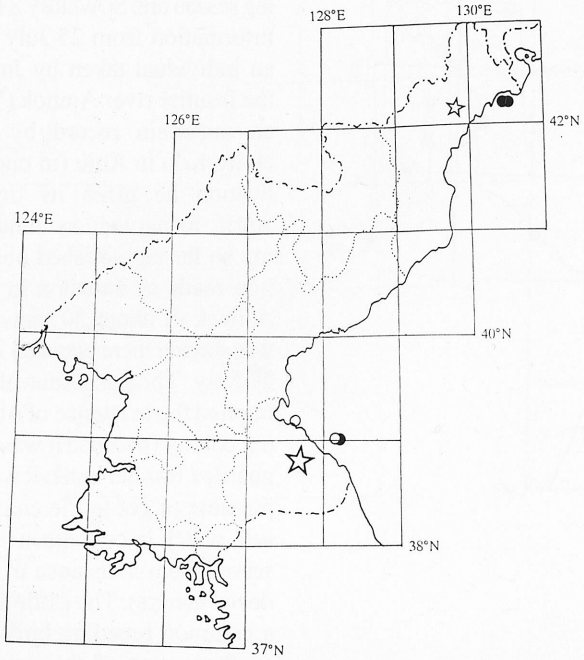
Data:

Hamgyong North (VI): 10 Mar 1916, no date (AUST), Alsom (Rando) (VI-6) : no date (SONOBE 1987), 11 Apr 1996, Pipa (*VI-6): 10 Apr 1996 (PERT);

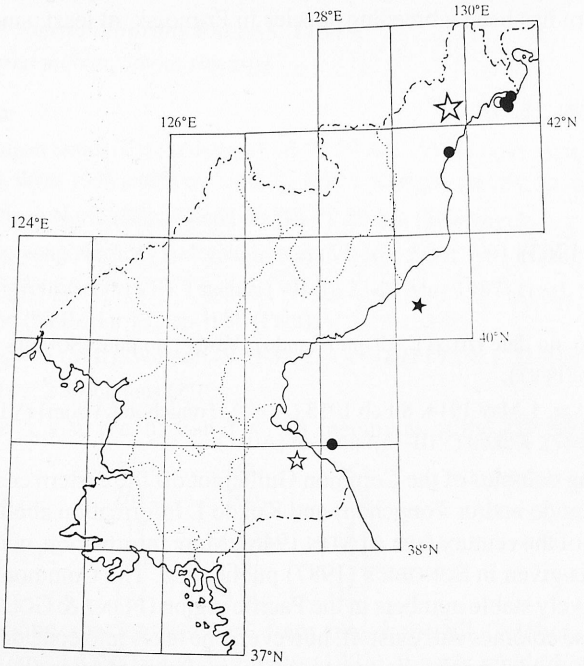
Kangwon (VIII): 28 Apr; 1, 28, 30 Apr, 1 May 1914, 8 Feb 1915 (AUST), Tongchon (Alsom) (VIII-15): 17 Jun 1949 (WON), no date (SONOBE 1987), Kukdo (VIII-16): no date (AUST).

There are probably 2 or 3 breeding colonies of the Common Guillemot off the eastern coasts of North Korea, i.e. on the Alsom Is (Rando and/or Tongchon) and Kukdo I. Information about their existence comes from the beginning of the century (see AUSTIN 1948). More information, comprising no concrete data about nesting, is given in SONOBE's (1987) publication. The Common Guillemot is a species occurring in relatively stable numbers in the Pacific region (FLINT & GOLOVKIN 1990) and it is very probable that those colonies still exist. If, however, one takes into consideration the fact that, according to the most recent works on the occurrence of this species (FLINT & GOLOVKIN 1990), the breeding area does not reach the Korean Peninsula and there are no concrete

records from the latest years, the present nesting of the Common Guillemot off the coast of North Korea requires a confirmation.



177. *Cepphus carbo* PALLAS, 1811



Data:

Hamgyong North (VI): 10 Mar 1916, 10 May 1935 (AUST), Sosura (VI-5): 29 Mar 1959 (ZIP), Alsom (Rando) (VI-6): no date (AUST), no date (SONOBE 1987), 11 Apr 1996, Pipa (*VI-6): 10 Apr 1996 (PERT), Chongjin (VI-19): Aug 1991 (BÁLDI);

Kangwon (VIII): 9 Apr-1 May 1914, 28 Apr 1914 (AUST), Tongchon (Alsom) (VIII-15): no date (SONOBE 1987), Kukdo (VIII-16): 17 Jun 1949 (WON);

East sea: May 1970 (ZIP);

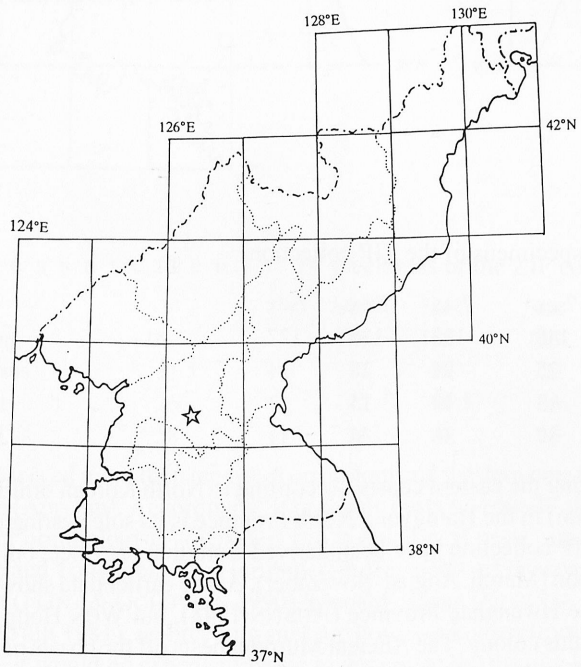
no data: 1 specimen (ZIP).

M e a s u r e m e n t s (5 specimens of the ZIP collection):

	♂	♂	♂	?sex	?sex
wing	192	196	198	185	192
tarsus	35	36	37	34.5	41
bill	42.5	47	39.5	40	45
tail	51	54	55	49.5	51

The species occurs on the eastern coast, where it was observed from March to August. It probably nests on the islands Rando, Tongchon and Kukdo. At any rate, these very islands are quoted by Korean ornithologists as the breeding sites of Sooty Guillemots (WON Hong-Koo 1964, SONOBE 1987). As far as the islands Alsom (=Rando) and Alsom (=Tongchon? Kukdo?) are concerned, the statement that "several tens of thousands of these sea birds visit the island to breed in May and June" (SONOBE 1987) is too general and their nesting is but a conjecture.The occurrence of breeding colonies of Sooty Guillemots should be better documented, since, if confirmed, they would be the southernmost colonies of this species (see FLINT & GOLOVKIN 1990).

178. *Brachyramphus marmoratus* (GMELIN, 1789)



Data:

Pyongan South (II): Taedong riv. (II-?): 13 Jun 1933 (WON);

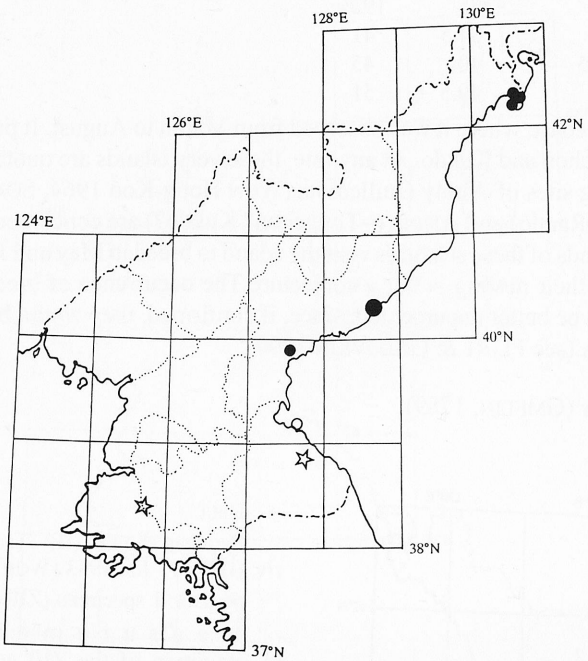
no data: 1 specimen (ZIP).

M e a s u r e m e n t s (1 specimen of the ZIP collection):

wing 137, tarsus 22, bill 19, tail 34.

Recorded twice only; in both cases single specimens in WON Hong-Koo's collections. One of the collections was set up before World War II and the other was being completed afresh since 1953. Although a specimen in summer plumage kept in the ZIP collection at present has no data concerning the place of collection, it probably comes from the territory of North Korea and was taken after 1953. The Marbled Murrelet is a scarcely occurring species with a small range of occurrence off the eastern coasts of Russia and of an unknown size of population (LER 1987, FLINT & GOLOVKIN 1990), the chance of its more frequent occurrence in the territory of North Korea being therefore small. Consequently, it should be reckoned under the category of stragglers. In South Korea it is a rare passage migrant, which however does not implies its occurrence in the northern part of the peninsula, for little is known of the migrations of this species. The measurements of the bird in the ZIP collection indicate its membership in the subspecies *Brachyramphus marmoratus perdix* PALLAS, 1811.

179. *Synthliboramphus antiquus* (GMELIN, 1789)



Data:

Hamgyong North (VI): Alsom (Rando) (VI-6): no date (AUST), no date (SONOBE 1987), 11 Apr 1996 (PERT), Kulphori (VI-4): 17 Nov 1959, Sosura (VI-5): 28, 29 Mar (ZIP), 17 Jun 1959 (WON);

Hamgyong South (VII): Riwon (VII-11): 20 Aug 1969 (ZIP) 11 Aug 1985 (ZIP cited by FIEB), Hungnam (*VII-30): 31 Jan 1990 (FIEB);

Kangwon (VIII): 24 Apr 1914, Kukdo (VIII-16): no date (AUST);

Hwanghae (IX-X): 5 Mar 1922 (AUST);

no data: 1 specimen (ZIP).

M e a s u r e m e n t s (5 specimens of the ZIP collection):

	♂	?sex	?sex	?sex	?sex
wing	135	140	133	135	127
tarsus	28	25	27	28	24
bill	15	13	14	15	13
tail	36	37	36	36	33

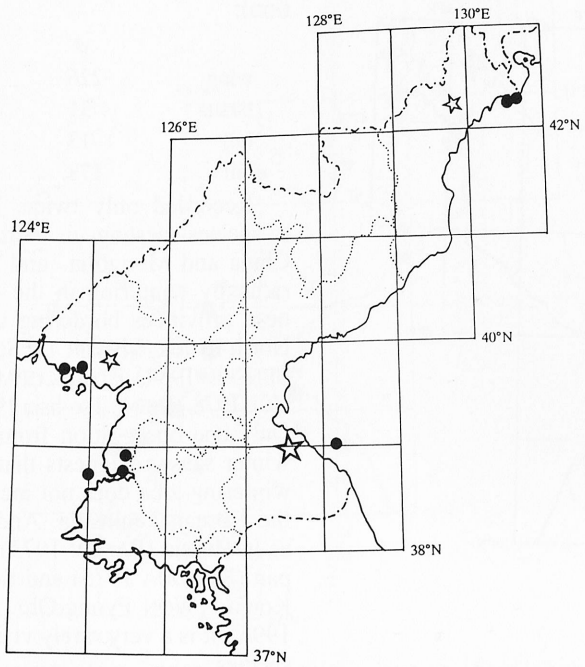
Its occurrence observed mainly along the eastern coasts. According to North Korean ornithologists (SONOBE 1987), Rando I. (=Alsom) in the Hamgyong North Province is its sole nesting place at present. All the specimens in the ZIP collection have been derived from that province, but they were collected out of the breeding season (March, August-November). As the earlier data show, this species nested also on an island in the Hwanghae Province (AUSTIN 1948), but WON Hong-Koo (1964) did not confirm the location of this colony. The Ancient Murrelet nests off the coasts of Russia, Japan, China and South Korea (KURODA 1975, CHENG Tso-hsin 1987, FLINT & GOLOVKIN 1990, WON Pyong-Oh 1993, 1996) and probably also in North Korea. There are, however, only some vague hints of its nesting in North Korea as yet (SONOBE 1987) and no reliable documentation.

Synthliboramphus wumizusume (TEMMINCK, 1835)

No data from North Korea.

The birds in the ZIP collection, taken at Kulphori (VI-4) on 17 Nov 1959 as *Synthliboramphus wumizusume* belonged to the species *Synthliboramphus antiquus* (det. TOMEK).

180. *Cerorhinca monocerata* (PALLAS, 1811)



Data:

Pyongan South (II): Nampho (II-26): 10 Jun 1958 (ZIP), Kangso (*II-28): Mar 1959 (WON), Tokto (II-25): no date (SONOBE 1987);

Pyongan North (III): 10 Jun 1917 (AUST), Rapdo (*III-6): no date (SONOBE 1987), Padukisom (*III-9): 18 May 1967 (ZIP);

Hamgyong North (VI): 20 Apr, 10 May 1935 (AUST), Sosura (VI-5): Apr 1959 (WON), no date (ZIP), Alsom (Rando) (VI-6): no date (SONOBE 1987);

Kangwon (VIII): 30 Apr, 1 May 1914, May 1916, Apr (AUST), Tongchon (VIII-15): no date (SONOBE 1987).

M e a s u r e m e n t s (4 specimens of the ZIP collection):

	♂	?sex	?sex	?sex
wing	182	186	183	185
tarsus	31.5	37	39	29
bill	26	25	26.5	33
tail	58	34	45	58

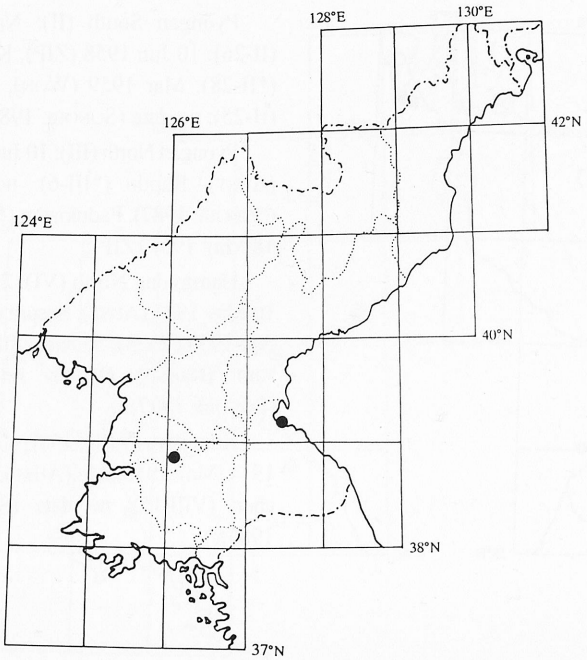
Observed more than ten times on eastern and western coasts. All observations made in breeding season (Apr-Jun). Accordingly, it probably nests on islands off the coasts of North Korea. In North Korean ornithologists' (SONOBE 1987) opinion, it nests, among other islands, on Rando, Tokto, Rapdo and Tongchon. The Hornbilled Puffin nests off the coasts of China (CHENG Tso-hsin 1987), Russia (FLINT & GOLOVKIN 1990), probably Japan (KURODA 1975, but sites unplotted on the maps of DISTRIB 1981); no breeding sites are however known from South Korea (WON Pyong-Oh 1993, 1996). It would be expedient better to document the nesting of this species in North Korea, for its southern boundary of distribution probably extends across the Korean Peninsula.

COLUMBIFORMES

181. *Syrrhaptes paradoxus* (PALLAS, 1773)

Data:

Pyongyang (I-1): Sangwon (I-14): 19 Feb 1965 (ZIP);
Kangwon (VIII): Wonsan (VIII-3): 22 Aug 1984 (KOLBE).



Measurements (2 specimens of the ZIP collection):

	♂	♀
wing	226	205
tarsus	31	28
bill	13	11
tail	178	146

Recorded only twice. It is a species nesting in northern China and Mongolia and sporadically wintering in the Chinese provinces bordering upon North Korea (MEYER DE SCHAUENSEE 1984, ETCHECOPAR & HÜE 1978, CHENG Tso-hsin 1987). Only one observation from the winter season suggests that the wintering area does not include the Korean Peninsula. And so, as in Russia (PANOV 1973), Japan (KURODA 1975) and South Korea (WON Pyong-Oh 1993, 1996), it is a very rarely visiting species.

Columba livia domestica GMELIN, 1789

Data:

Pyongyang (I): Pyongyang (I-1): 6 Aug 1984 (KOLBE), Apr-May 1987 (GŁOW);

Kaesong (XI): Kaesong (XI-1): 14-15 Aug 1984 (KOLBE).

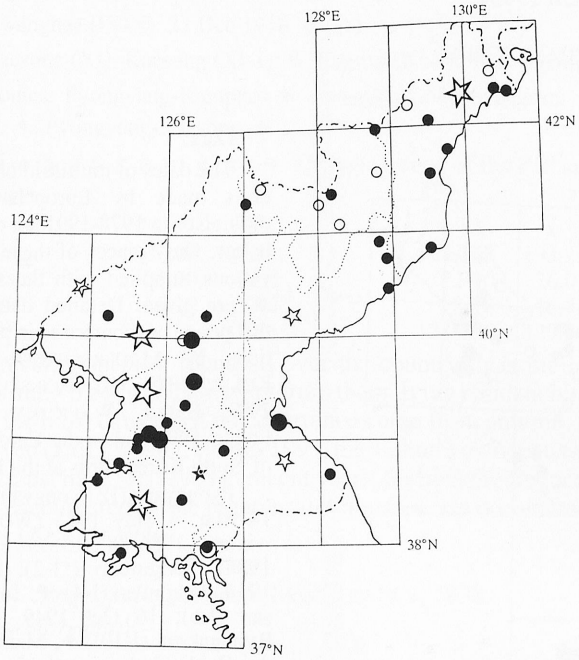
The presence of this species is mentioned only by KOLBE (1988) and GŁOWACIŃSKI et al. (1989), but has not been confirmed by FIEBIG's (1993) and my observations. Neither is this species given by Korean ornithologists (WON Hong-Koo 1964, KIM Ri-Thae & O Hung-Dam 1982, O Hung-Dam 1988). The occurrence of the feral form of pigeon is however possible, seeing that some isolated populations of the Rock Pigeon were reported from the Russian part of the Far East (DEMENTEV & GLADKOV 1951, FLINT et al. 1968, PANOV 1973), but more probable is the confusion of *Columba livia* with *Columba rupestris,* which are very similar to each other. Furthermore, according to VAURIE (1965), GOODWIN (1967) and HOWARD & MOORE (1991), only *Columba rupestris* occurs in eastern Asia (also as an urbanized bird) and without concrete proofs of its presence (e.g. in the form of a skin), we cannot include *Columba livia* in the fauna of North Korea.

182. *Columba rupestris* PALLAS, 1811
[*Columba livia rupestris*]

Data:

Pyongyang (I): Pyongyang (I-1): 7, 8, 13 May 1980 (MAUERS), 22 Sep 1991 (TOM), no date (FIEB), Ponghwari (I-4): 26 Oct 1984, Ryongaksan (I-10): 23 May 1980, 6 Oct 1984, Mankyongdae (I-11): 2 Oct 1984 (TOM), Kangnam (I-12): 17 Feb 1957 (ZIP);

Pyongan South (II): 30 Apr 1917, 28 Dec 1924, 21 Oct 1933 (AUST), Namsangri (II-7): 12 Nov 1961, 11 Nov 1967, Sinsongchon (II-8): 14 Nov 1961 (ZIP), Nampho (II-26): no date (FIEB);



Pyongan North (III): 5 May, 1, 6, 7, 12 Jun 1917, 15, 18 Apr 1929 (AUST), Amnok riv (III-?): before 1923 (SOWERBY), Unchangri (*III-21): 12 Jun 1961 (ZIP), Myohyangsan (III-24): 19 May 1949 (WON), 12 Aug 1979 (TOM), 25 Aug 1984 (KOLBE), Aug 1991 (BÁLDI), no date (FIEB), Kusong (III-27): 28 Dec 1924, Nyongbyon (III-30): 21 Oct 1933 (WON);

Chagang (IV): Okasan (IV-3): 8 Feb 1960 (HO), Wongungri (IV-8): 15 May 1987 (TOM);

Ryanggang (V): Huchang (V-1): 23-24 Aug 1897, Samsu (V-4): 18 Jul 1897 (YANK), Hyesan (V-5): 24 Sep 1991 (TOM), Taehungdan (V-15): 9 Nov 1983 (ZIP), Paegam (V-16): 22 Jun 1897, Kapsan (V-19): 14-15 Aug 1897 (YANK);

Hamgyong North (VI): 1-30 May 1912, 14-29 Aug 1917 (AUST), Undok (VI-1): 25 May 1897 (YANK), Kulphori (VI-4): 1 Apr 1959, Thori (*VI-7): 24 Apr 1959 (WON), Musan (VI-12): 11 Jun 1897 (YANK), Mayang (VI-15): 21 Sep 1989 (FIEB), Chongjin (VI-19): 4-6 Oct 1991 (TOM), Kwanmori (VI-26): 23 May 1959, Jungsanri (*VI-30): 22 Sep 1959 (ZIP);

Hamgyong South (VII): Dec 1912 (AUST), Kumdok (VII-2): 29 May 1987, Pogo (VII-4): 29 May 1987 (TOM), Tanchon (VII-8): no date (FIEB);

Kangwon (VIII): 26, 28 Sep 1914 (AUST), Wonsan (VIII-3): no date (FIEB), near Wonsan (*VIII-3): 19, 25 May 1980 (MAUERS), 17, 23 Aug 1984 (KOLBE), Kumgangsan (VIII-8): no date (FIEB);

Hwanghae North (IX): 17 Aug 1984 (KOLBE), Sinpyong (IX-1): 13 Oct 1978 (TOM), near Sohung (*IX-9): 11, 17 May 1980 (MAUERS);

Hwanghae South (X): Kumsanri (X-4): 13, 16, 17 Mar 1962, Kangryong (X-19): 28 Oct 1962 (ZIP);

Hwanghae (IX-X): 24 Mar 1914, 5 Mar 1927 (AUST), 24 Mar 1929, 28 Jan, 22 Mar 1936 (WON);

Kaesong (XI): Kaesong (XI-1): 5, 9 Mar 1929, 28 Feb, 22 Mar 1930, 28 Feb (WON), Aug 1991 (BÁLDI);

no locality: 23 Dec 1963 (ZIP).

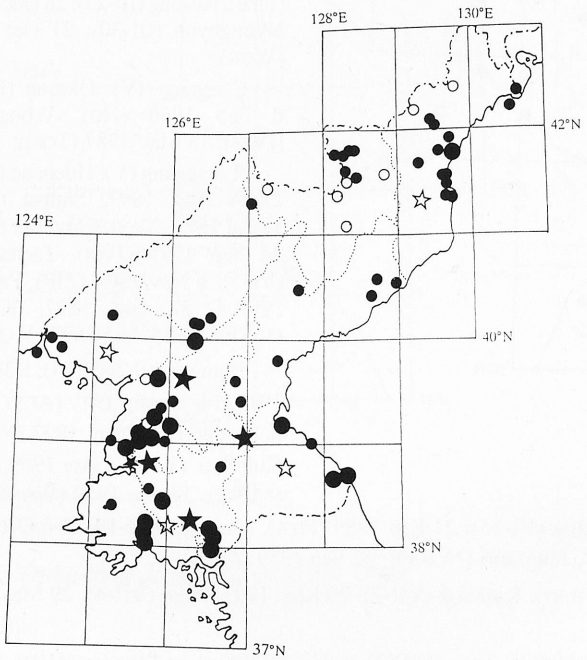
M e a s u r e m e n t s (12 specimens of the ZIP collection):

	3 ♂♂	$\bar{x}$	♀	♀	7 ?sex	$\bar{x}$
wing	220-227	223.3	181	217	200-229	217.9
tarsus	28-37	32.3	29	32	22-30	27.0
bill	16-17	16.3	14	15.5	15-16	15.4
tail	116-121	118.7	114	119	116-147	124.7

Encountered throughout the country all the year round. Observed in small numbers (single or in parties of several individuals) both far from human settlements, i.e. on rocky slopes of mountains, and in urban environments, on high buildings and bridge constructions (MAUERSBERGER 1981, KOLBE 1988, FIEBIG 1993, TOMEK & DONTCHEV 1986, unpubl. own materials). According to AUSTIN (1948), in the first half of the century it was "a common resident and a few may have wintered occasionally". At present, however, 11 records from the winter season (Nov-Feb) and FIEBIG's (1993) opinion evidence that it is a resident species.The Eastern Rock Pigeon is a resident

bird in Primorsk (PANOV 1973), China (MEYER DE SCHAUENSEE 1984) and South Korea (GORE & WON Pyong-Oh 1971, WON Pyong-Oh 1993).

183. *Streptopelia orientalis* (LATHAM, 1790)
[*Turtur rupicola*]



Data:

The dates of multifold observations made by European ornithologists, in 1978-1991 are omitted below. Only places of these observations, supplied with the symbol ✦, are given. Detailed data from that period are comprised in publications by MAUERSBERGER 1981, KOLBE 1988, GŁOWACIŃSKI et al. 1989, BÁLDI, WALICZKY 1992, FIEBIG 1993 and in the Card Index of North Korea Birds at the ISEA.

Pyongyang (I): Pyongyang (I-1): 14 Mar, 4 May 1955 (WON), ✦, winters 1986-88 (CHON Gil-Pyo 1988), Songmunri (*I-2): 8 May 1956, Ponghwari (I-4): ✦, Taesongsan (I-6): 16 Oct 1949 (WON), Ryongaksan (I-10): ✦, Mankyongdae (I-11): ✦, Sogam (I-15): ✦;

Pyongan South (II): Unsan (II-10): 30 Jul 1954 (MAUERS), 20 Jul, 1, 6 Aug 1954, Jasan (II-12): 3 Sep, 29 Oct 1953, Anju (II-16): 18 Jun, 12 Nov 1932 (WON); Pungjongri (II-22): 26 Mar 1958 (ZIP), Taesongho (II-28): ✦, Yonpung-ho (II-30): ✦;

Pyongan North (III): 7, 19 Jun 1917 (AUST), Pankungri (*III-10): 24 Apr 1958 (ZIP), Ryongchon (III-13): 20, 21, 24 May 1950 (WON), Sindo (III-14): 12 Oct 1961, Suwanri (*III-21): 19 Jun 1961 (ZIP), Myohyangsan (III-24): 17, 19, 24 May 1956 (ZIP), ✦;

Chagang (IV): Okasan (IV-3): 13 Apr, 15 May 1958 (HO), Wongungri (IV-8):15 May 1987, Huichon (IV-10): 16-18 May 1987, Chongsan (*IV-10): 14 May 1987 (TOM);

Ryanggang (V): Huchang (V-1): 23-24 Aug 1897, Hyesan (V-5): 11, 26 Jul 1897, Pochon (V-6): 4 Aug 1897 (YANK), Naegokri (V-7): 16 Oct 1986 (TOM), Photae (V-8): no date, Rimyongsu (V-9): 29 Sep 1991 (TOM), Samjiyon (V-10): no date, Kanpaegsan (*V-10): no date (HO), Paegam (V-16): 22 Jun, 1 Jul 1897, Kapsan (V-19): 14-15 Aug 1897 (YANK), Homultang (V-21): 27 Sep 1991 (TOM);

Hamgyong North (VI): 27 Sep 1917 (AUST), Tongbonpho (*VI-3): 9 Apr 1996, Pipa (*VI-6): 10 Apr 1996 (PERT), Hoeryong (VI-9): 27 May 1897, Musan (VI-12): 11 Jun 1897 (YANK), Chayuryong (VI-13): 7, 10 Jul 1983, Mayang (VI-15): 29 Jun 1983, Chongjin (VI-19): 5, 6 Jul 1983 (TOM), Kwanmobong (VI-22): 2, 10 Jun 1959 (ZIP), Kyongsong (VI-25): 1 Oct 1955 (WON), Osangri (*VI-25): 4 Oct 1991, Jangyon-ho (VI-29): 4 Jul 1983, Ryongchaeho (*VI-29): 28 Jun 1983, Oyuri (VI-33): 3 Oct 1991, Kumgangri (VI-34): 2 Oct 1991, Ryonghyonri (VI-36): 5 Oct 1991 (TOM);

Hamgyong South (VII): Tongdokri (*VII-6): 26, 28 May, 2 Jun 1987, Songryong (VII-12): 30 May 1987, Yomsongdok (VII-13): 24 May 1987 (TOM), Pujon (VII-22): 27 Jun 1958 (RIM Chu-Hun 1961), Jonphyong (VII-31): 27 May 1960 (ZIP), Yodok (VII-42): 12 May 1960, Jangdong (VII-43): 1 Jun 1960 (WON);

Kangwon (VIII): 26 Sep 1914 (AUST), Wonsan (VIII-3): ✦, Sijungho (VIII-5): 24 Apr 1987 (GŁOW), Samil-pho (VIII-7): ✦, Kumgangsan (VIII-8): ✦;

Hwanghae North (IX): Koksan (IX-3): 25 May 1980 (MAUERS), Sohung-ho ((IX-7): ✦, Sansongri (IX-14): 19, 20, 29 Jan 1962 (ZIP), Sariwon (IX-16): 14 Feb 1949 (WON);

Hwanghae South (X): Kohyonri (*X-10): 25 May 1957 (ZIP), Haeju (X-22): 27-30 Apr 1987 (GŁOW), Suyangsan (X-24): ✦, Changsu (X-25): 30 Apr 1987 (GŁOW);

Hwanghae (IX-X): 23 Dec 1916 (AUST);

Kaesong (XI): Kaesong (XI-1): ✦, Pagyon (XI-3): ✦, Kongminghang (XI-7): ✦;

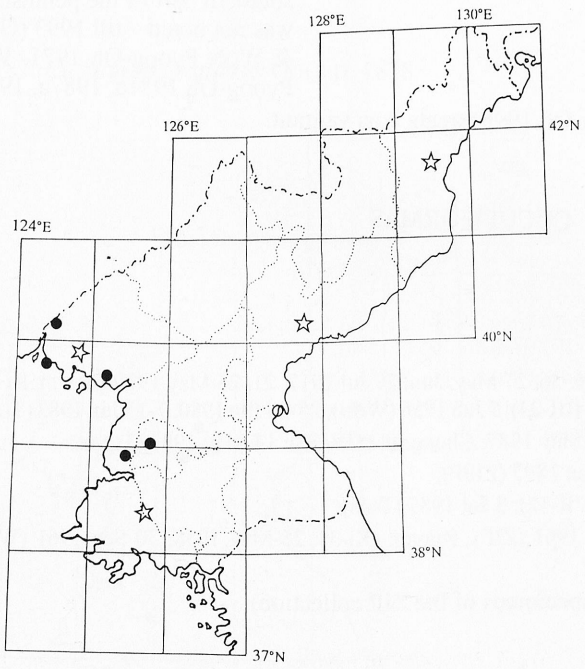
Routes: Pyongyang-Nampho: ✦, Pyongyang-Myohyangsan: ✦, Pyongyang-Wonsan: ✦, Pyongyang-Haeju: ✦, Pyongyang-Kaesong: ✦.

M e a s u r e m e n t s (11 specimens of the ZIP collection, 1 specimen of the MZB collection):

	7 ♂♂	$\bar{x}$	4 ♀♀	$\bar{x}$	juv
wing	180-203	188.7	184-198	193.2	198
tarsus	23-30	26.9	22-30	26.0	28
bill	16-19	17.2	18-18	16.5	19
tail	112-146	131.1	123-140	129.0	131

Breeding species, found all over the country. It is the commonest pigeon, occurring both in towns and villages and far away from them. It is a resident bird come upon all the year round. However, the most data about its occurrence come from autumn, since then this species is most readily observed (KOLBE 1987, FIEBIG 1993, the author's own materials) The numbers of the Rufous Turtle Dove must have increased in recent years, for both the frequency of observations and the number of birds encountered in the eighties and nineties are considerably greater than they were before the forties (AUSTIN 1948).

184. *Streptopelia decaocto* FRIVALDSZKY, 1838
[*Turtur risoria*]



Data:

Pyongyang (I): Pyongyang (I-1): 20 May 1980 (TOM);

Pyongan South (II): Taesong (II-28): 16 Oct 1978 (TOM);

Pyongan North (III): 24 May, 19 Jun 1917 (AUST), Posanri (*III-3): 27 Jul 1989, Tasado (III-12): 27 Jul 1989 (FIEB), Uiju (III-16): 17 Aug 1979 (ZIP);

Hamgyong North (VI): Aug 1929 (AUST);

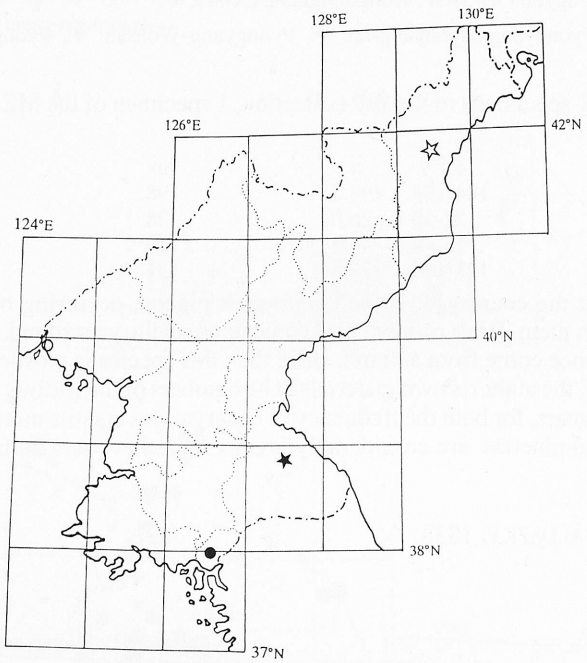
Hamgyong South (VII): Aug (AUST);

Kangwon (VIII): Yonghung (VIII-14): 12 Nov 1897 (YANK), Note: WON (1964) mentions from this province erroneously observations, which in fact come from Kyonggido province (see: AUSTIN 1948);

Hwanghae (IX-X): 20 Feb 1916 (AUST).

This species is rarely observed all through the year (11 records). The most observations come from the Pyongan North Province and they cover a period from May to August, which indicates that it nests, though rarely, in the north-western strip of North Korea. WON Hong-Koo's (1964) opinion that it nests in all the provinces situated along the eastern coast has not been confirmed: there have been no observations from these provinces for the last 50 years.

185. *Streptopelia tranquebarica* (HERMANN, 1804)
[*Oenopopelia tranquebarica*]



Data:

Pyongan North (III): Ryongampho (III-15): 1 May 1949 (WON);

Hamgyong North (VI): Myongchon (VI-?): Mar 1928 (AUST);

Kangwon (VIII): 23 Aug 1984 (KOLBE);

Kaesong (XI): Kaesong (XI-1): 16-17 Aug 1984 (KOLBE).

There are scarcely 4 records of this species. The Red Turtle Dove occurs in China, i.e. in areas situated west of the Korean Peninsula (ETCHECOPAR & HÜE 1978, MEYER DE SCHAUENSEE 1984, CHENG Tso-hsin 1987). Outside its breeding area it appears very rarely and in North Korea may be regarded as a straggler (AUSTIN 1948), just as in Russia (DEMENTEV & GLADKOV 1951) or Japan (KURODA 1975). In the southern part of the peninsula it was not noted – till 1993 (GORE & WON Pyong-Oh 1971, WON Pyong-Oh 1981a, 1987a, 1993). In 1996 WON Pyong-Oh (WON Pyong-Oh 1996) treats it as vagrant.

CUCULIFORMES

186. *Cuculus fugax* GOULD, 1856
[*Hierococcyx fugax*]

Data:

Pyongan North (III): no date, Sep 1915, 26, 27 May, Jun, 27 Jul 1917, 21, 25 May 1929 (AUST), Ryongchon (III-13): 20 May 1949, Myohyangsan (III-24): 5 Jun 1956 (WON), 25-28 Jun 1980, 7-17 Jun 1983 (TOM);

Chagang (IV): Myongmun (IV-6): 17 May 1987, Chongsan (*IV-10): 14 May 1987 (TOM);

Ryanggang (V): Paegam (V-16): 21 Jun 1897 (ZISP);

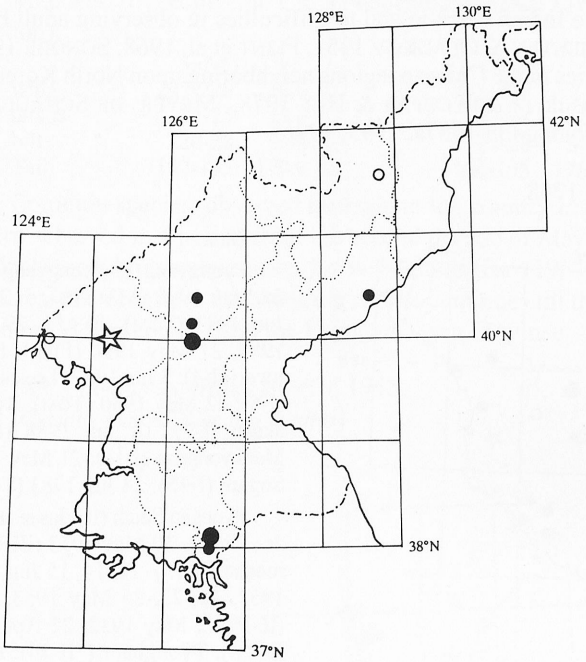
Hamgyong South (VII): Jongdongri (VII-12): 3 Jul 1987 (TOM);

Kaesong (XI): Kaesong (XI-1): Sep 1961 (ZIP), Pagyon (XI-3): 25 May 1958, 30 Sep 1961 (WON), 15 Aug 1984 (KOLBE).

M e a s u r e m e n t s (2 specimens of the ZIP collection):

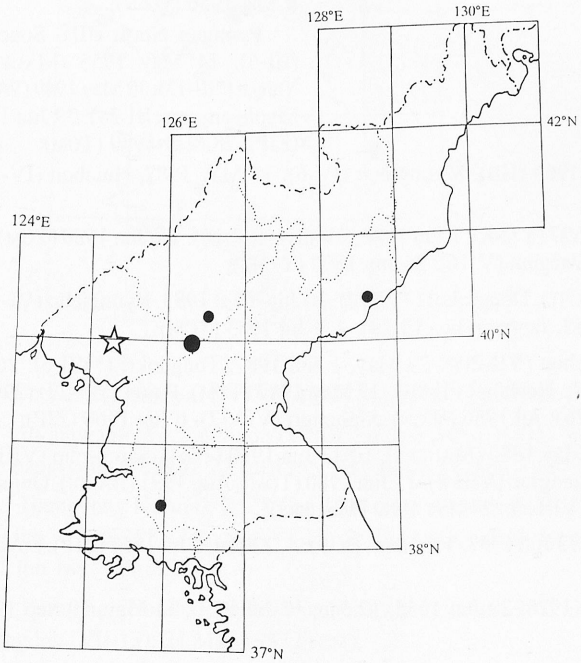
	♂	?sex
wing	204	206
tarsus	25	23
bill	23	20
tail	151	197

Horsefield's Hawk Cuckoos were found present from mid-May throughout September, mainly in the north-western provinces; only one record was obtained from the eastern coast. To be sure, neither



eggs nor chicks of this cuckoo have been observed till now, yet it is probably a breeding species (the presence at one locality for several days in the high breeding season). The Horsefield's Hawk Cuckoo is a breeding bird in China (ETCHECOPAR & HÜE 1978, MEYER DE SCHAUENSEE 1984, CHENG Tso-hsin 1987) Russia (PANOV 1973, KNYSTAUTAS & SHIBNEV 1986) and Japan (KURODA 1975, DISTRIB 1981, SONOBE 1982). In the southern part of the Korean Peninsula it was known as a scarce or uncommon passage migrant (WON Pyong-Oh 1993, 1996), but observations from May till September (WOO Han-Chung & HAM Kyu-Hwang 1982, HAHM Kyu-Hwang 1983, HA Kyoung-Sam & HAHM Kyu-Hwang 1994) indicate that there too it is a breeding species.

187. *Cuculus micropterus* GOULD, 1838



Data:

Pyongan North (III): 24, 31 May, 31 May 1917, 24 May 1929 (AUST), Myohyangsan (III-24): 26 May 1980, 6-18 Jun 1983 (TOM);

Chagang (IV): Wongungri (IV-8): 15 May 1987 (TOM);

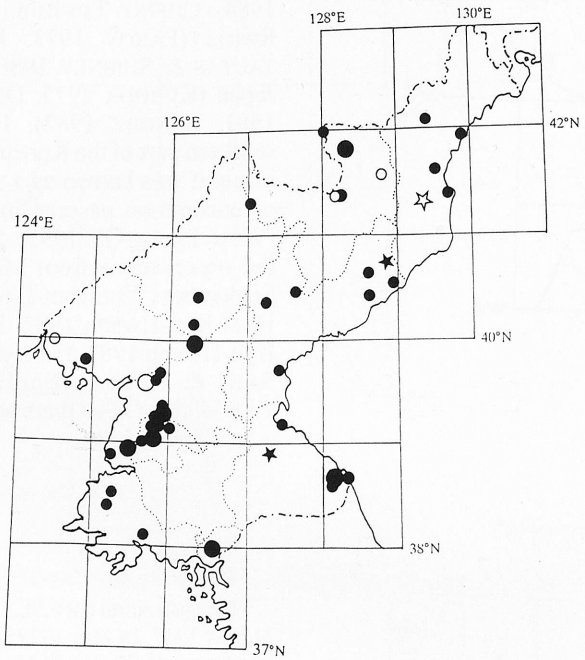
Hamgyong South (VII): Jongdongri (VII-12): 30 May, 3 Jun 1987 (TOM);

Hwanghae North (IX): Sohungho (IX-7): 22 May 1987 (TOM).

Probably breeding species, although neither eggs nor chicks have been found. The presence of birds calling in May and June, that is, when the majority of potential hosts are building nests and rearing chicks, makes us count the Indian Cuckoo in the breeding fauna of North Korea. Probably, it may even be locally frequent (TOMEK 1985). Surprisingly, this species was not mentioned by FIEBIG (1993), al-

though he carried out his investigation during three breeding seasons. This may have been due to his being unfamiliar with the voice of the Indian Cuckoo and to difficulties in observing adult birds, similar to the Common Cuckoo (DEMENTEV & GLADKOV 1951, FLINT et al. 1968, SONOBE 1982). The Indian Cuckoo is a breeding species in the Chinese regions neighboring upon North Korea and also in the southern part of the peninsula (ETCHECOPAR & HÜE 1978, MEYER DE SCHAUENSEE 1984, CHENG Tso-hsin 1987, WON Pyong-Oh 1987a, 1993, 1996).

188. *Cuculus canorus* LINNAEUS, 1758



Data:

Pyongyang (I): Pyongyang (I-1): 26 May 1980 (MAUERS), 5, 22, 25 Jun 1983 (TOM), 16, 24, 29 May 1988, 21 May 1990 (FIEB), Ponghwari (I-4): 5 Jun 1987, Taesongsan (I-6): 22 May 1980 (TOM), Ryongaksan (I-7): 18 Jun 1988 (FIEB), Mankyongdae (I-11): 21 May 1980, Sogam (I-15): 24 Jun 1983 (TOM);

Pyongan South (II): Jasan (II-12): 26, 27, 29, 30 May 1953 (ZIP), Jamosan (II-15): 12, 14, 15 Jun, 8 Jul 1952, 12, 23, 25 May 1953, Anju (II-16): 2 May 1932, 22 Apr 1936 (WON), Pyongnam (*II-24): 6 Jun 1987, Taesong-ho (II-28): 3 Aug 1979, 24 May, 8 Jun 1980, 13-15 Jul 1983 (TOM), 28 May 1988, 23, May 1990 (FIEB), Yonpung-ho (II-30): 7 Jun 1987 (TOM), Kaechon (II-31): 8 Aug 1956 (WON);

Pyongan North (III): Sonchon (III-6): 14 May 1955 (MAUERS), Yangsi (*III-13): 30 May 1949 (WON), Myohyangsan (III-24): 29 Jun 1954 (ZIP), 28 May 1980 (TOM);

Chagang (IV): Okasan (IV-3): 12 Jun 1960 (HO), Myongmun (IV-6): 17 May 1987, Huichon (IV-10): 16-18 May 1987 (TOM);

Ryanggang (V): Hyesan (V-5): 8 Aug 1897 (YANK), 1 Jun 1980, Samjiyon (V-10): 1-6 Jun 1980 (TOM), no date, Kansambong (*V-12): no date (HO), Paegam (V-16): 24 Jun 1897 (YANK);

Hamgyong North (VI): 28 Sep 1917 (AUST), Dongsakol (*VI-14): 30 Jun-1 Jul 1983, Ryongjeho (VI-17): 28 Jun 1983, Ryongsanri (VI-24): 5 Jul 1983, Jangyon-ho (VI-29): 4, 9 Jul 1983 (TOM);

Hamgyong South (VII): Kumdok-Tanchon (VII-2-8): 29 May, 1 Jun 1987, Tongdokri (*VII-6): 26-28 May 1987, Jongdongri (VII-12): 3 Jun 1987, Hochon (VII-14): 25 May 1987 (TOM), Pujon (VII-22): 29 Jun 1958 (RIM Chun-Hun 1961), Jangjin (VII-26): Jul 1956 (WON), Sinhungri (VII-32): 6 Jun 1960 (ZIP);

Kangwon (VIII): Wonsan (VIII-3): 24 May 1980 (MAUERS), 10-13 Jun 1980 (TOM), Samil-pho (VIII-7): 22 May 1980 (MAUERS), 13 Jun 1980, Kumgangsan (VIII-8): 11 Jun 1980 (TOM), Aug 1991 (BÁLDI), Onjongri (*VIII-8): 20-23 May 1980, Masingryong (VIII-?): 25 May 1980 (MAUERS);

Hwanghae South (X): Kuwolsan (X-6): 13 Jun 1957, Talchonri (X-9): 4, 22 Jun, 6 Jul 1957 (ZIP), Suyangsan (X-24): 31 May 1980 (TOM);

Kaesong (XI): Kaesong (XI-1): 15 Jun 1926, 20 Jun 1955, 12 Jun, 17 Jul 1956, 13 May, 10 Sep 1957, 1 Apr, 12 Jun 1958, 5 Sep 1959 (WON);

no locality: 20 May 1962 (ZIP);

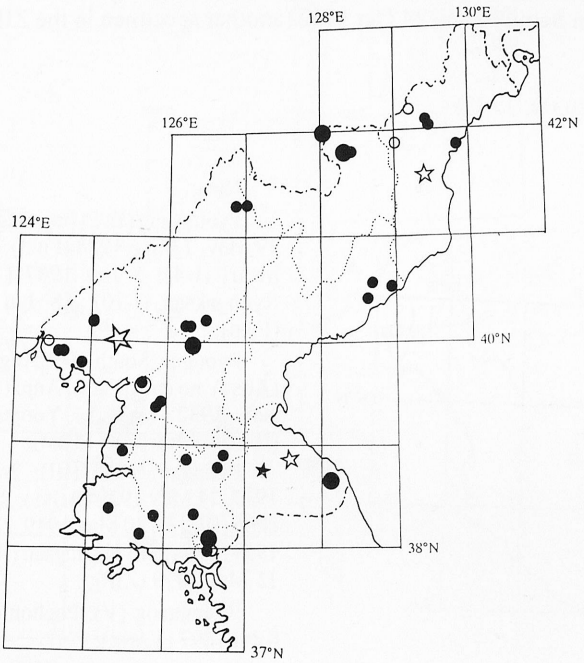
no data: 2 specimens (ZIP).

M e a s u r e m e n t s (11 specimens of the ZIP collection, 1 specimen of the MZB collection):

	5 ♂♂	$\bar{x}$	3 ♀♀	$\bar{x}$	4?sex	$\bar{x}$
wing	207-225	216.0	203-225	216	214-229	218.7
tarsus	22-25	23.6	22-24	21.0	18-25	22.7
bill	20-28	24.0	22-28	24.7	21-24	23.3
Tail	152-195	170.0	160-195	176.3	148-173	163.5

Common species, observed throughout the country in the breeding season. The most records were achieved in a period from the second decade of May to the first decade of July. Single individuals probably appear earlier, for WON Hong-Koo (1964) mentions records from 1 and 22 April, whereas the departure for wintering resorts continues till the end of September (the latest observation on 28 Sep comes from the Pyongan North Province – AUSTIN 1948).

189. *Cuculus saturatus* BLYTH, 1943
[*Cuculus indicus*, *Cuculus optatus*]



Data:

Pyongan South (II): Sunchon (II-11): 27 May, 1 Jun 1953 (WON), Jasan (II-12): 27 Jun 1953 (ZIP), Anju (II-16): 24 May 1931, 13 Jun 1933, 14 May 1950 (WON), Taesongho (II-28): 24 May 1980 (TOM);

Pyongan North (III): 26, 27, 31 May 1917, 8 May-1 Jun 1929 (AUST), Sonchon (III-6): 23 May 1955 (ZIP), Tongpalri (*III-10): 16 May 1958, Chongpalri (*III-10): 16 May 1958, Yangsi (*III-13): 13 May 1949 (WON), Unrimri (*III-20): 18 May 1961, Myohyangsan (III-24): 18 May 1956, 18 Jun 1957 (ZIP), 26 May 1980, 6-12 Jun 1983 (TOM), May 1988, 30 Apr, May 1989, May 1990 (FIEB);

Chagang (IV): Hwapyong (IV-2): no date (WON), Karimri (*IV-2): no date (ZIP), Okasan (IV-3): 8 May 1958 (HO), Wongungri (IV-8): 15 May 1987, Huichon (IV-10): 16-18 May 1987, Chongsan (*IV-10): 14 May 1987 (TOM);

Ryanggang (V): Samjiyon (V-10): no date (HO), 24 Oct 1962, 21 May 1963 (ZIP), 1-6 Jun 1980 (TOM), Hohangryong (*V-10): 22 Jul 1965, Paekdusan (V-12): 3 Jun 1964, 3 Jun 1965 (ZIP), no date (FIEB);

Hamgyong North (VI): 28 Sep 1917 (AUST), Musan (VI-12): 5 Jun 1897 (YANK), Dongsakol (*VI-14): 29 Jun, 1-7 Jul 1983, Mayang (VI-15): 29 Jun 1983, Koanjuryong (VI-18): 28 Jun 1983 (TOM), Yonsa (VI-20): 14 Jun 1897 (YANK);

Hamgyong South (VII): Kwangchon (VII-6): 1 Jun 1987, Jongdongri (VII-12): 30 May, 3 Jun 1987, Yomsongdok (VII-13): 24 May 1987 (TOM);

Kangwon (VIII): 8 Sep 1914 (AUST), Onjongri (*VIII-8): 20 May 1980 (MAUERS), 10-13 Jun 1980 (TOM) Masingryong (VIII-?): 25 May 1980 (MAUERS);

Hwanghae North (IX): Sinpyong (IX-1): 25 May 1980 (MAUERS), Koksan (IX-3): 9 Jun 1962 (ZIP), Sohung-ho (IX-7): no date, Pongtanri (*IX-11): no date, (FIEB), Yonsan (IX-17): 20 May 1987 (TOM);

Hwanghae South (X): Kohyonri (*X-10): 18 Apr, 18 May 1957 (ZIP), Suyangsan (X-24): 31 May 1980 (TOM);

Kaesong (XI): Kaesong (XI-1): 10 Jun 1926 (WON), 28 May 1970 (ZIP), Pagyon (XI-3): 13 May 1955, 25 Apr, 2 Aug 1956, 20 Sep, 13 May 1957 (WON);

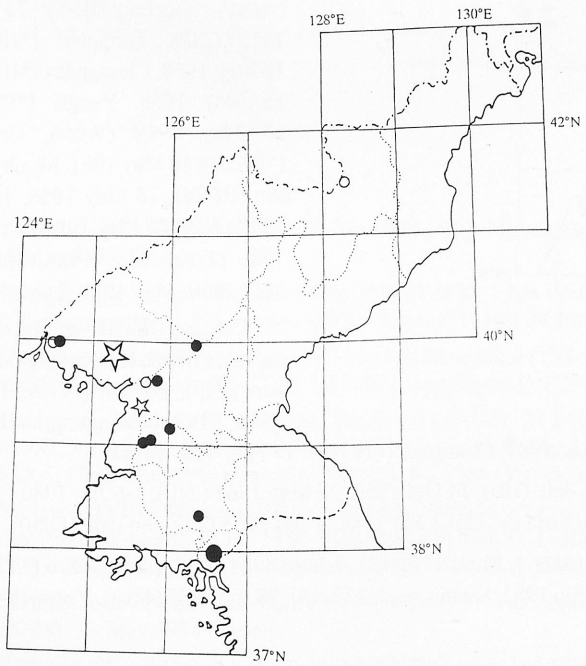
no data: 2 specimens (ZIP).

M e a s u r e m e n t s (17 specimens of the ZIP collection):

	10 ♂♂	$\bar{x}$	♀	♀	♀	4?sex	$\bar{x}$
wing	184-217	202.5	175	187	188	175-214	194.2
tarsus	18-23	20.3	18	20	21	18-22	20.0
bill	19-23	21.2	-	20	20	21-24	22.5
tail	146-184	160.1	159	150	143	140-164	154.2

The Oriental Cuckoo is a common species all over the country in the breeding season. The majority of records come from a period from the second decade of May to the first decade of July. The earliest record is represented by a specimen in the ZIP collection, bearing the date of 18 Apr 1957. The departure for the wintering grounds still continues in September (3 records: 8, 20 and 28 Sep), but the latest observation was made in Samjiyon on 24 Oct 1962 (another specimen in the ZIP collection).

190. *Cuculus poliocephalus* (LATHAM, 1790)
[*Cuculus himalayanus*]



Data:

Pyongyang (I): Pyongyang (I-1): 19 May, 13 Sep 1988 (FIEB), Ponghwari (I-4): 5 Jun 1987 (TOM), Ryongaksan (I-10): 18 Jun 1988 (FIEB);

Pyongan South (II): Aug 1916 (AUST), no date (FIEB), Anju (II-16): Jun 1932 (WON), Yonpung-ho (II-30): 7 Jun 1987 (TOM);

Pyongan North (III): 26 May 1917, 24 May 1929 (AUST), Ryongchon (III-13): 30 May 1949, 23 May 1959 (WON), Myohyangsan (III-24): 15 May 1979 (ZIP);

Ryanggang (V): Pochon (V-6): 6 Jul 1897 (YANK);

Hwanghae North (IX): Pongtanri (*IX-11): no date (FIEB);

Kaesong (XI): Kaesong (XI-1): 23, 30 May 1958 (WON), 9 Jun 1964 (ZIP).

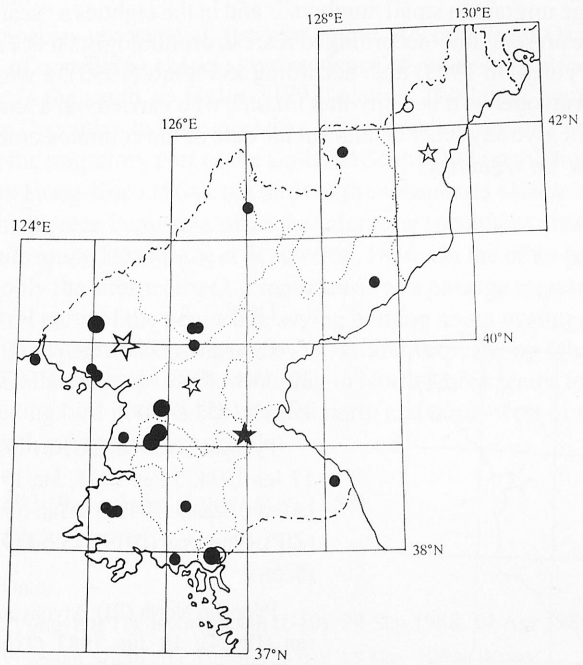
M e a s u r e m e n t s (2 specimens of the ZIP collection):

	♂	♀
wing	158	197
tarsus	18	26
bill	19	21
tail	121	175

The Little Cuckoo was observed present in the breeding season and during migrations (18 records from 19 May to 13 Sep), mainly in the western part of the country. It is a breeding species in areas bordering on North Korea, i.e. in China, Russia, Japan and South Korea (ETCHECOPAR & HÜE 1978, MEYER DE SCHAUENSEE 1984, CHENG Tso-hsin 1987, PANOV 1973, KNYSTAUTAS & SHIBNEV 1986, KURODA 1975, DISTRIB 1981, FUJIMAKI 1992, SONOBE 1982, WON Pyong-Oh 1993, 1996). It may be supposed that it is also a breeding species throughout North Korea. The lack of data from the eastern part of the country is rather indicative of the scarcity of occurrence. According to my observations, it is the most rarely encountered of the cuckoos living in North Korea.

STRIGIFORMES

191. *Otus scops* (LINNAEUS, 1758)
[*Otus sunia*]



Data:

Pyongyang (I): Pyongyang (I-1): 5 Oct 1955 (ZIP, or 1959 ZIP cited by WON), 12 May 1987 (TOM), Taesongsan (I-6): 11 May 1950 (WON), May 1975, 14 May 1984 (ZIP);

Pyongan South (II): 1 Nov 1936 (AUST), Jasan (II-12): 1 Apr 1953, 9 Apr 1954 (WON), Janganri (*II-19): 1 May 1958 (ZIP);

Pyongan North (III): Sep, 28 Apr-12 May 1929 (AUST), 11, 13 May 1949, Kwaksan (III-4): 20 May 1955 (WON), Rohari (III-5): 22 May 1955, Sindori (*III-14): 11 Oct 1961 (ZIP), Chonmasan (III-20): 7 Jul 1958 (WON), 26 Jun 1961 (ZIP), Myohyangsan (III-24): 6-21 Jun 1983 (TOM);

Chagang (IV): Karimri (*IV-2): 21 Sep 1958 (ZIP), Okasan (IV-3): 21 Sep 1958 (HO; note: These record deals probably with one observation, because the specimen collected by HO Hon on Mt Okasan is housed in the ZIP collection, with a label indicating Karimri as the nearest locality), Huichon (IV-10): 15 May 1987, Chongsan (*IV-10): 14 May 1987 (TOM);

Ryanggang (V): Samjiyon (V-10): no date (HO);

Hamgyong North (VI): 28 Aug, 5 Oct 1929 (AUST), Musan (VI-12): 7 Jun 1897 (YANK);

Hamgyong South (VII): Yomsongdok (VII-13): 24 May 1987 (TOM);

Kangwon (VIII): Kumgangsan (VIII-8): 20 Apr 1987 (GLOW);

Hwanghae North (IX): Sohung (IX-9): 9 Jan 1955 (WON);

Hwanghae South (X): Talchonri (X-9): 8 Jun 1960, Samchon (X-10): 5 Feb 1957 (WON), Kohyonri (*X-10): 24 May 1957 (ZIP), Yonan (X-30): 5 Feb 1958 (WON);

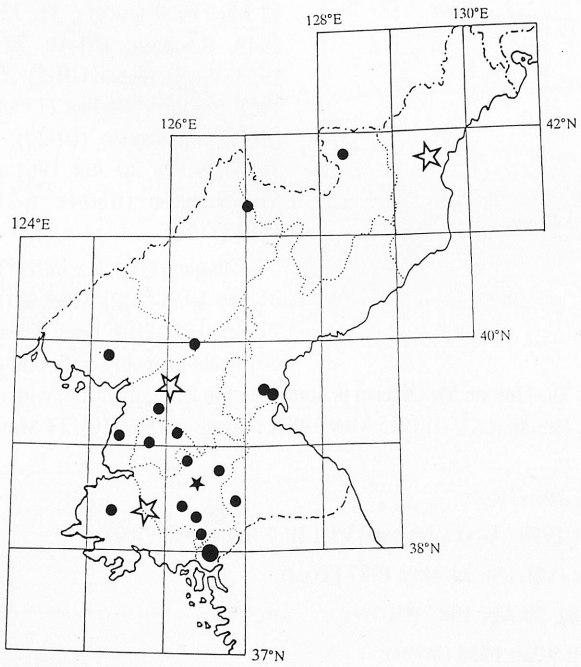
Kaesong (XI): Kaesong (XI-1): 7 May 1928, 26 Apr 1929, 22 Sep 1956, 5 Jun 1957 (WON); no locality ("vom Stadtpark bis zum Gebirgswald") and no date ("ab mitte April")(FIEB).

Measurements (9 specimens of the ZIP collection):

	♂	8?sex	$\bar{x}$
wing	150	148-155	151.6
tarsus	27	25-28	26.7
bill	17	16-19	17.2
tail	65	72-89	78.9

Species observed throughout the country (at least 38 records), oftener in its western part than in the eastern. The number of observations in the breeding season (20 records in May and June) indicates that it is a nesting bird, while 2 records in January and February, one in each, evidence that it also winters. Taking into account various authors' opinions on the occurrence of the Scops Owl in the Korean Peninsula, we may arrive at the conclusion that we are concerned here with a change in the status of this bird. According to AUSTIN (1948), until the forties it was "not uncommon transient and perhaps a summer resident". GORE & WON Pyong-Oh (1971) claim that up to the seventies it was a "scarce summer visitor, also passage migrant in small numbers", and in the eighties a "scarce resident" (WON Pyong-Oh 1987a). At the present time according to Korean ornithologists it is a resident bird (O Hung-Dam 1988, WON Pyong-Oh 1993) and, according to FIEBIG (1993), a widespread breeding species ("verbreiteter Brutvogel"). It is a pity that FIEBIG, who carried out a study of birds in North Korea for 3 years, did not give any other details but the date of the commencement of mating behaviour, particularly no data on wintering.

192. *Otus lempiji* (HORSFIELD, 1821)
[*Otus bakkamoena, Otus asio ussuriensis*]



Data:

Pyongyang (I): Pyongyang (I-1): 20 Oct 1958, Kangdong (I-3): 17 Feb 1957 (WON);

Pyongan South (II): 26 Nov 1932, 17 Jan 1934, 5 Feb 1935, Jan 1936 (AUST), Jasan (II-12): 9 Jun 1954 (ZIP), Chungsan (II-19): 15 Jul 1956 (WON);

Pyongan North (III): Myohyangsan (III-24): 10 Jun 1983 (TOM), Panghyondong (III-26): 7 Feb 1952 (WON);

Chagang (IV): Okasan (IV-3): 17 Jun 1960 (HO);

Ryanggang (V): Samjiyon (V-10): no date (HO);

Hamgyong North (VI): 6 Nov 1915, 15-27 Oct 1929 (AUST);

Hamgyong South (VII): Inhung (VII-37): 15 Apr 1960 (WON), Togkumari (*VII-38): 15, 18 Apr 1960 (ZIP);

Kangwon (VIII): Mukungri (*VIII-11): 22 Nov 1966 (ZIP);

Hwanghae North (IX): May 1962 (WON), Kupongsan (*IX-3): 24 May 1962, Sohung (IX-9): 9 Jan 1955 (ZIP), Pongtanri (*IX-11): May 1990 (FIEB), Ungyesan (*IX-13): 5 Feb 1969, Yonthan (IX-17): 5 Feb 1958 (ZIP);

Hwanghae South (X): Kohyonri (*X-10): 5 Nov 1957 (ZIP);

Hwanghae (IX-X): 19 Jan 1919, 20 Dec 1926 (AUST);

Kaesong (XI): Kaesong (XI-1): 19 Nov 1955, 30 Nov 1956, 30 Mar 1957, 1 Jan 1958 (WON), 4 Nov 1962, 10 Feb 1970 (ZIP);

no data: 5 specimens (ZIP).

M e a s u r e m e n t s (10 specimens of the ZIP collection):

	♂	♂	♀	♀	♀	5?sex	$\bar{x}$
wing	157	170	174	167	169	164-179	171.2
tarsus	37	34	34	31	32	33-35	34.2
bill	18	14	24	19	19	16-24	19.8
tail	87	84	95	82	84	85-95	87.5

Species observed all the year round. Records from Okasan, Jasan and Myohyangsan (the last two of non-flying chicks) give evidence of its nesting also in the northern part of the country, not only in the south, as FIEBIG (1993) claims. The larger number of winter observations (17 records from December to February) than in the breeding season (7 records from May to mid-July) suggests that the migratory part of the Collared Scops Owl population winters in North Korea. According to WON Hong-Koo (1964), the birds of the subspecies *Otus lempiji ussuriensis* (BUTURLIN, 1910) nest in the Korean Peninsula while the migrating specimens are members of the subspecies *Otus lempiji semitorques* TEMMINCK et SCHLEGEL, 1844. On the other hand, VAURIE (1965) mentions from Korea only the subspecies *O. l. ussuriensis* as a passage migrant and winter visitor in the southern and central parts of the peninsula, saying nothing about nesting; this subspecies is also named from the southern part of the peninsula by GORE and WON Pyong-Oh (1971). The subspecific membership of the Collared Scops Owls wintering in North Korea seems to need explaining (*O. l. semitorques* is a breeding bird in the areas situated north and north-west of the Korean Peninsula and the wintering of both subspecies is possible).

193. *Bubo bubo* (LINNAEUS, 1758)
[*Bubo ignavus*]

Data:

Pyongyang (I): Ryongaksan (I-10): 29 Sep 1988, 14 Apr 1989 (FIEB);

Pyongan South (II): Unsan (II-10): 16 Nov 1954 (WON);

Pyongan North (III): Nov 1915 (AUST), Amnok riv (III-?): before 1923 (SOWERBY), Yangsi (*III-13): 25 Oct 1961, Taegwan (III-21): 20 Jul 1961 (WON);

Chagang (IV): Hwapyong (IV-2): 6 Sep 1897 (YANK);

Ryanggang (V): Pochon (V-6): 6 Jul 1897 (YANK), Samjiyon (V-10): no data (HO);

Hamgyong North (VI): Yuson (VI-?): 4 Sep 1959 (WON);

Hamgyong South (VII): Hwangchoryong (VII-27): 11 Sep 1897 (YANK);

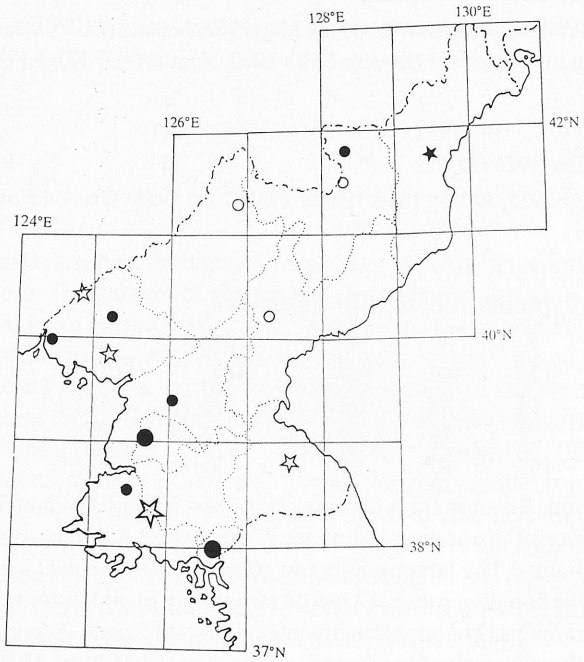
Kangwon (VIII): 3 Oct 1914 (AUST);

Hwanghae South (X): Anak (X-3): 27 Oct 1961 (ZIP);

Hwanghae (IX-X): 8 Dec 1916, May 1936 (AUST);

Kaesong (XI): Kaesong (XI-1): 20 Jul 1955, 21 Jun 1956, May 1957 (WON);

no data: 1 specimens (ZIP).



Measurements (2 specimens of the ZIP collection):

	♂	?sex
wing	433	450
tarsus	80	80
bill	49	48
without cere	39	39
tail	246	246

Observed throughout the country, mainly out of the breeding season. Since it is a resident species, it may be assumed that it nests in the same regions where it has been found present. It belongs to not numerous birds (a small number of observations – about 19), just as in the neighboring countries, i.e., South Korea (GORE & WON Pyong-Oh 1971, WON Pyong-Oh 1987a, 1993, 1996, LEE Woo-Shin 1994) and Russia (LER 1989).

Nyctea scandiaca (LINNAEUS, 1758)
[*Surnia nyctea*]

Data:

Kangwoṇ (VIII): Wonsan (VIII-3): Feb 1888 (TACZANOWSKI 1888, and TACZANOWSKI cited by AUST).

There is only one unreliable record from the end of the previous century. TACZANOWSKI (1888) presenting the results of the exploration of the Korean Peninsula by Jan KALINOWSKI writes about an observation of the Snowy Owl (*Surnia nyctea*) in the Wonsan region. Next, however, in his work on the avian fauna of eastern Siberia (1891) he does not mention this observation. WON Hong-Koo (1964) and GORE & WON Pyong-Oh (1971) also pass over this species and the Snowy Owl cannot be included in the fauna of North Korea.

194. *Strix aluco* LINNAEUS, 1758
[*Syrnium nivicolum*]

Data:

Pyongyang (I): Kangdong (I-3): 21 Apr 1960 (WON);

Pyongan South (II): Anju (II-16): 29 May 1931 (WON);

Ryanggang (V): Hyesan (V-5): 27 Nov 1960 (WON);

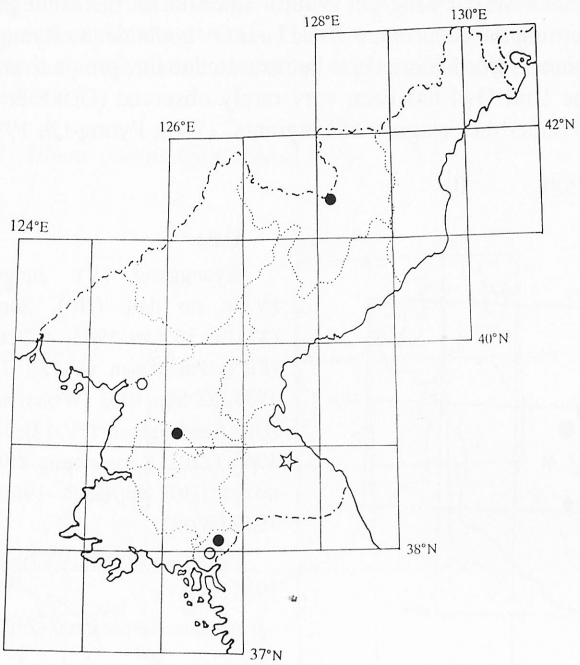
Kangwon (VIII): 12 Dec 1912 (AUST);

Kaesong (XI): Kaesong (XI-1): 25 Apr 1930 (WON or 25 Nov 1930 -WON cited by AUST), Jangphung (XI-2): 20 Apr 1960 (WON);

no data: 1 specimen (ZIP).

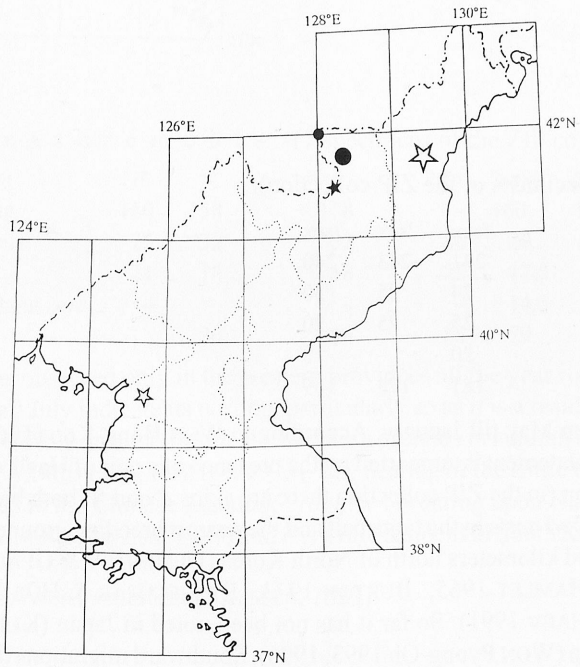
Measurements (1 specimen of the ZIP collection):

wing 305, tarsus 45, bill 31, without cere 19, tail 195.



Species rarely observed (7 records) all over the country. The Tawny Owl is a resident species and all the observations, notably those made in the breeding season (Apr, May), point to its nesting in North Korea. The Tawny Owl belongs to birds rarely nesting in South Korea (WON Pyong-Oh 1993, 1996) and it has not been noted from the regions lying north of the frontier Paekdusan Massif (DEMENTEV & GLADKOV 1951, PANOV 1971, CHENG Tso-hsin 1987). Hence it follows that North Korea (and more strictly -Paekdusan Mts) constitutes the northern range of this species in eastern Asia.

195. *Strix uralensis* PALLAS, 1771
[*Syrnium uralense*]



Data:

Pyongan South (II): no date (AUST);

Ryanggang (V): Amnok riv (V-?): 15 Aug 1989 (FIEB), Samjiyon (V-10): no date (HO), 18 Jun 1963 (ZIP), 22 Oct 1978 (TOM), Paekdusan (V-12): 25 Sep 1988 (JIN Dok-Jun & O Hung-Dam 1990);

Hamgyong North (VI): 29 May 1912, Jan 1920 (AUST).

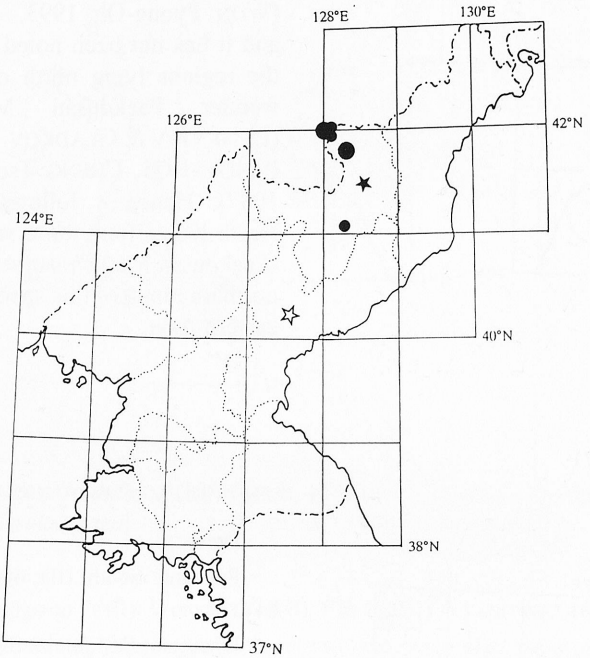
Measurements (1 female subad of the ZIP collection):

wing 278 tarsus 61, bill (with cere) 30, tail 180.

Species found scarcely 8 times up to now. In the last 70 years it has been observed exclusively in the Paekdusan region, where it probably nests (sites of the Ural Owl are also known from

the northern slopes of the Paekdusan Mts. – WON Pyong-Oh 1990b). Since the thirties of the present century there have been no data concerning the occurrence of the Ural Owl outside the Ryanggang Province and then its range of occurrence in North Korea is to be restricted to this province only. In the southern part of the peninsula the Ural Owl has been very rarely observed (GORE & WON Pyong-Oh 1971) and now it is placed under the category of "vagrants" (WON Pyong-Oh 1993).

196. *Surnia ullula* (LINNAEUS, 1758)



Data:

Ryanggang (V): Jungamsan (V-?): no date (HO), Samjiyon (V-10): 16 Oct 1963, 4 Oct 1967 (ZIP), Paekdusan (V-12): 13 Jan 1935, 23 Sep 1963 (WON), no date (HO), Sansangbong (*V-12): 12 May 1965 (ZIP), Kansanbong (*V-12): no date (HO), Kapsan (V-19): 14 Sep 1959 (WON);

Hamgyong South (VI): 13 Jan 1935 (AUST);

no data: 1 specimen (ZIP).

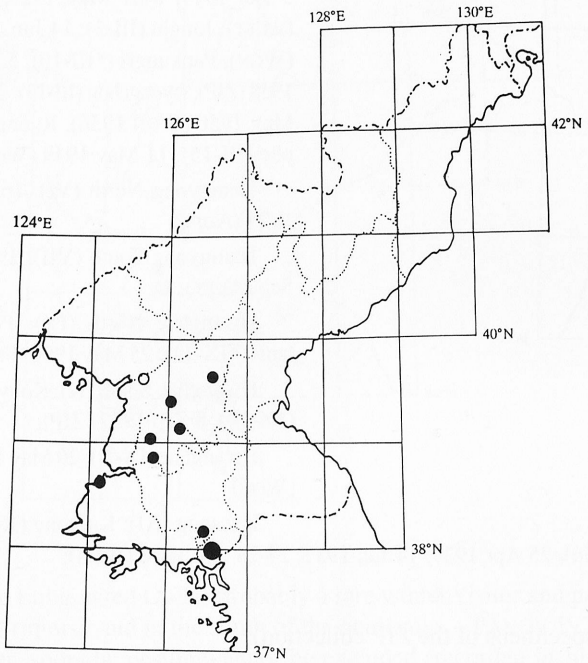
M e a s u r e m e n t s (5 specimens of the ZIP collection):

	♂	♀	?sex	?sex	?sex
wing	230	243	241	243	240
tarsus	25	26	24	25	30
bill	30	27	25	25	20
without cere:	25	25	20	–	18
tail	174	179	181	178	169

Species observed (10 records) from May till January. According to WON Hong-Koo (1964), it nests in the Paekdusan region, which statement is supported by the presence of a pair of Hawk Owls in Sansangbong in the breeding season (in the ZIP collection there are skins ♂ and ♀, both bearing the date of 12 May 1965). The Hawk Owl nests in the taiga belt and the nearest breeding grounds are known at a distance of several hundred kilometers north of North Korea (DEMENTEV & GLADKOV 1951, VAURIE 1964, GROSSMAN & HAMLET 1965, BURTON 1973, ETCHECOPAR & HÜE 1978, MEYER DE SCHAUENSEE 1984, NECHAEV 1991). So far it has not been noted in Japan (KURODA 1975, SONOBE 1982) or in South Korea (WON Pyong-Oh 1993, 1996). Southward migrations of this species are known in the irruption years and the presence of a pair of birds in North Korea in the

breeding season gives evidence of their stay in the high-mountain regions of the Paekdusan Massif where a severe climate prevails. However the assignment of the Hawk Owl among the breeding birds needs a confirmation of nesting, for it would be an insular and southernmost breeding site of this species.

197. *Athene noctua* (SCOPOLI, 1769)



Data:

Pyongyang (I): Pyongyang (I-1): 5 Jul 1959, Kangdong (I-3): 21 Feb 1957 (ZIP), Chunghwa (I-13): 19 Jun 1949 (WON);

Pyongan South (II): Unsan (II-10): 24 Aug 1954 (ZIP), Anju (II-16): 11-16 Nov 1931, Pukchang (*II-32): 2 Apr 1955 (WON);

Hwanghae North (IX): Kumchon (IX-13): 18 Jun 1960 (WON);

Hwanghae South (X): Kumsanri (X-4): 16, 17 Mar 1962 (ZIP);

Kaesong (XI): Kaesong (XI-1): 17 Nov 1955, 17 Mar 1956, 11 Feb 1957, 20 Oct 1958 (WON);

no locality: 22 Jun 1962 (ZIP);

no data: 2 specimens (ZIP).

M e a s u r e m e n t s (7 specimens of the ZIP collection):

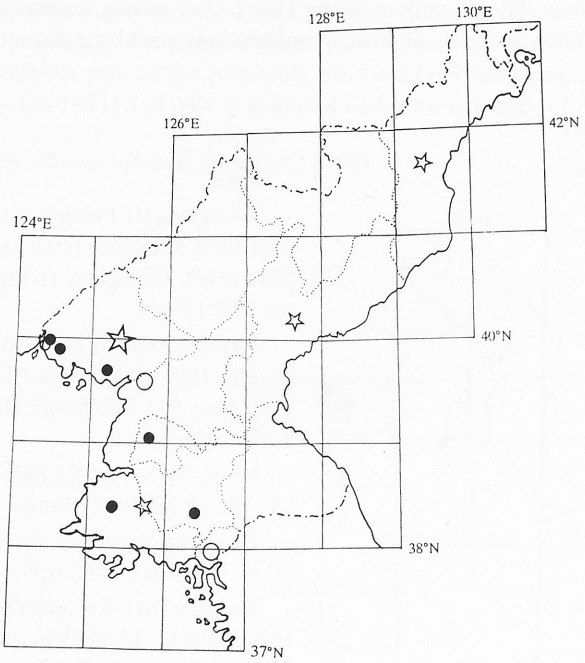
	♂	♂	♀	?sex	?sex	?sex	?sex
wing	160	158	158	–	160	158	158
tarsus	25	32	32	30	28	27	31
bill	21	18	18	22	17.5	18	18
without cere	–	–	–	–	14.5	16	15
tail		80	80	85	79	77	83

Was observed only in the western provinces all the year round (17 records). Four records from June and July indicate its nesting, particularly so as it is a resident species and only a small number of individuals wander outside the breeding grounds in autumn and winter (DEMENTEV & GLADKOV 1951, VAURIE 1965, BURTON 1973). The nesting of the Little Owl is also suggested by the fact that it breeds in the Chinese Liaoning Province bordering upon North Korea (MEYER DE SCHAUENSEE 1984, CHENG Tso-hsin 1987) and it is a rare resident in South Korea (WON Pyong-Oh 1993, 1996).

198. *Ninox scutulata* (RAFFLES, 1822)

Data:

Pyongyang (I): Pyongyang (I-1): 1 Apr 1987 (GLOW);



Pyongan South (II): ?6 Jan 1931 (WON cited by AUST, but WON Hong-Koo does not mention this observation in his later publications), ?Anju (II-16): 7 Jul 1933, Oct 1934 (WON 1956);

Pyongan North (III): 26 May, 3 Jun 1917, 8-21 May 1929, Sep (AUST), Jongju (III-3): 14 Jun 1951 (WON), Pankungri (*III-10): 5 May 1958 (ZIP), Ryongchon (III-13): 20-22 May 1950 (WON 1956), Ryongampho (III-15): 11 May 1949 (WON);

Hamgyong North (VI): 16 Oct 1929 (AUST);

Hamgyong South (VII): 19, 21 Sep (AUST);

Hwanghae North (IX): Pongtanri (*IX-11): 25 May 1990 (FIEB);

Hwanghae South (X): Kohyonri (*X-10): 8 Sep 1957 (ZIP);

Hwanghae (IX-X): 20 May 1949 (WON);

Kaesong (XI): Kaesong (XI-1): 1 Feb 1906 (Won 1964, or 1926 WON 1956), 25 Apr 1929, 14 Jun 1937, 24-28 Apr 1946 (WON);

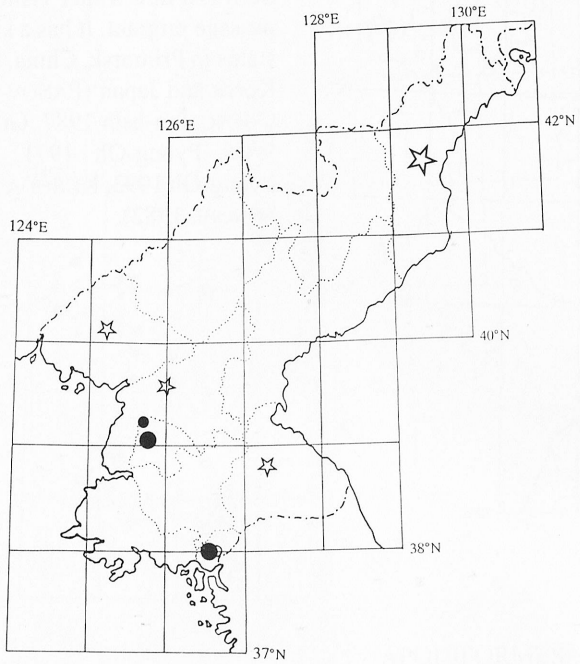
no data: 2 specimens (ZIP).

M e a s u r e m e n t s (4 specimens of the ZIP collection):

	♀	♀	?sex	?sex
wing	200	233	233	235
tarsus	24	30	33	32
bill	27	23	21	20
without cere	15	–	13	13
tail	107	122	–	130

Species observed all the year round., yet the most records derived from the breeding season (Apr-Jul, 14 records). Much more often encountered in the western part of the country than in the eastern: in the eastern provinces was found only three times out of the breeding season (Sep-Oct). The measurements of the individuals in the possession of the ZIP collection show that the birds occurring in North Korea belong to two subspecies: *Ninox scutulata scutulata* RAFFLES, 1822 and *Ninox scutulata ussuriensis* BUTURLIN, 1910. The individual taken in the breeding season (female with a date of 5 May 1958, from the Pyongan North Province) belonged to the subspecies *Ninox scutulata ussuriensis*. The breeding area of this subspecies occupies the neighboring regions, that is, southern Primorsk and north-eastern China (PANOV 1973, CHENG Tso-hsin 1987), and its nesting in the northern provinces of North Korea is therefore also probable. A member of the second subspecies *Ninox scutulata scutulata* (also female, date: 8 Sep 1957) was collected out of the breeding season in the Hwanghae South Province. This species nests in the Japanese Is. (VAURIE 1965) and, according to AUSTIN (1948) and GORE and WON Pyong-Oh (1971), it is just this subspecies that occurs (as a summer visitor) in the southern part of the peninsula. In consequence, the status of these two subspecies in the Korean Peninsula needs explaining.

199. *Asio otus* (LINNAEUS, 1758)



Data:

Pyongyang (I): Pyongyang (I-1): winters 1986-88 (CHON Gil-Pyo 1988), Sogam (I-15): 17 Apr 1987 (GLOW);

Pyongan South (II): 3 Jan 1927 (AUST);

Pyongan North (III): 4 Apr 1929 (AUST);

Hamgyong North (VI): 6 Nov 1915, 19-22 Oct 1929 (AUST);

Kangwon (VIII): 21 Sep 1926 (AUST);

Kaesong (XI): Kaesong (XI-1): 28 Jan 1930, 20 Jan 1956, 15 Jun 1957, 15 Jan 1958 (WON), no date (ZIP).

M e a s u r e m e n t s (1 specimen of the ZIP collection):

wing 304, tarsus 35, bill 23, (without cere 17.5), tail 142.

Found present scarcely 11 times, mainly out of the breeding season (only one record from the breeding season).

The Long-eared Owl is probably a rare winter visitor and passage migrant in North Korea (winters in Primorsk and in the south of the peninsula – PANOV 1973, WON Pyong-Oh 1993, 1996). However, sporadic nesting cannot be excluded (recorded in June), particularly because it occurs as a breeding species in the Chinese Liaoning Province adjoining North Korea (MEYER DE SCHAUENSEE 1984, ETCHECOPAR & HÜE 1978, CHENG Tso-hsin 1987). Nevertheless, nesting has not been observed till now and according to North Korean ornithologists (WON Hong-Koo 1964, O Hung-Dam 1988), the Long-eared Owl is present in this country only in winter and on migration.

200. *Asio flammeus* (PONTOPPIDAN, 1763)

Data:

Pyongan South (II): Dec 1912 (AUST);

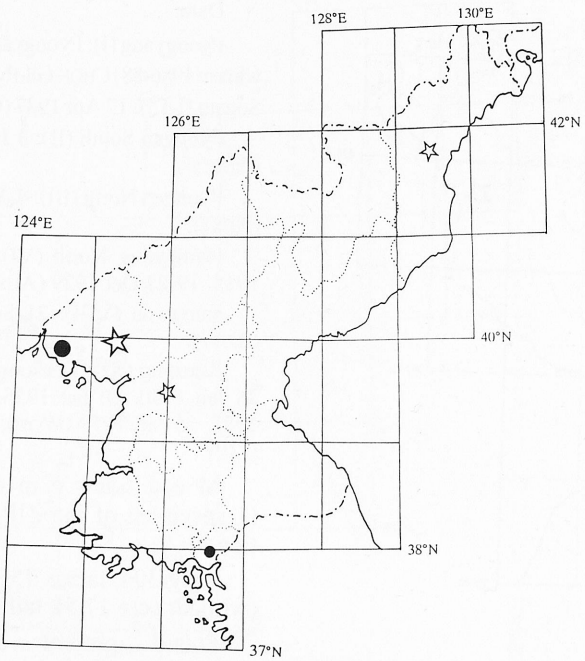
Pyongan North (III): 27 Sep 1915, 14 Apr 1929 (AUST), Pankungri (*III-10): 16 Apr 1958, 26 Apr 1965 (ZIP);

Hamgyong North (VI): Nov (AUST);

Kaesong (XI): Kaesong (XI-1): no date (ZIP).

M e a s u r e m e n t s (4 specimens of the ZIP collection):

	♀	?sex	?sex	?sex
wing	320	294	324	330
tarsus	40	55	45	45
bill	27	30	23	25
without cere	–	–	12	14
tail	–	–	141	160



So far recorded scarcely 7 times out of the breeding season. So it is a rare winter visitor and passage migrant. It has a similar status in Primorsk, China, South Korea and Japan (PANOV 1973, CHENG Tso-hsin 1987, GORE & WON Pyong-Oh 1971, WON Pyong-Oh 1993, KURODA 1975, SONOBE 1982).

CAPRIMULGIFORMES

201. *Caprimulgus indicus* LATHAM, 1790
[*Caprimulgus jotaka*]

Data:

Pyongyang (I): 16 Sep 1957 (WON), Taesongsan (I-6): beginning of Jun 1990 (FIEB);

Pyongan South (II): Jasan (II-12): 15 May 1956 (ZIP or 15 May 1958 – ZIP cited by WON), Chungsan (II-19): 29 Apr 1959 (WON);

Pyongan North (III): 26, 26 May, 10 Jun 1917, 12-21 May 1929 (AUST), Kwaksan (III-3): 19 May 1965 (ZIP), Tasado (III-12): 18 May 1959 (WON), Sujinri (III-17): 6 Jun 1982 (ZIP), Myohyangsan (III-24): 17-19 Jun 1983 (TOM), beginning of Jun 1990 (FIEB);

Hamgyong North (VI): Musan (VI-12): 13 Jun 1897 (YANK), Dongsakol (*VI-14): 30 Jun-1 Jul 1983 (TOM);

Hamgyong South (VII): Jongdongri (VII-12): 16 Jul 1960 (ZIP);

Kangwon (VIII): Onjongri (*VIII-8): 12-13 May 1980 (TOM), 21 May 1980 (MAUERS);

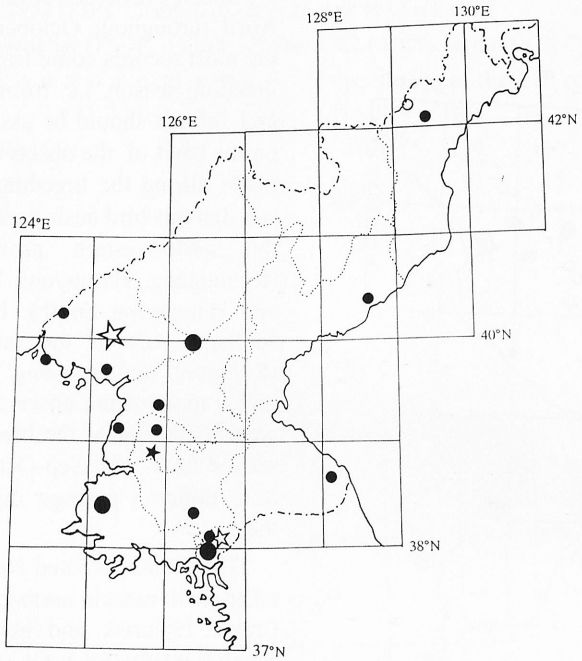
Hwanghae North (IX): Pongtanri (*IX-11): May 1990 (FIEB);

Hwanghae South (X): Talchonri (X-9): 27 Jun 1957 (ZIP), 19, 25 May, 19 Jun 1960 (WON);

Kaesong (XI): 28 May 1929, Kaesong (XI-1): 15 Jul 1955, 12 Oct 1956, 1 May 1957, 2 Jun 1958 (WON), 30 May 1970 (ZIP), Pagyon (XI-3): 16 May 1957 (WON).

Measurements (9 specimens of the ZIP collection):

	5 ♂♂	$\bar{x}$	♀	♀	♀	?sex
wing	206-223	216	192	201	211	217
tarsus	15-18	16.4	15	19	15	16
bill	11.5-12	11.8	–	11	–	10
tail	125-154	140.8	123	115	124	140



Observed in the breeding season, mainly in May and June. The first individuals, however, appear as early as April (29 Apr at Chungsan) and single nightjars stay as long as mid-October (12 Oct at Kaesong). The number of dates and observation sites indicates that it is not a rare species, occurring everywhere except in the mountains in the central and northern parts of the country. The Jungle Nightjar is a breeding species in the regions neighboring upon North Korea: Russia, China, Japan and South Korea (CHENG Tso-hsin 1987, DISTRIB 1981, KNYSTAUTAS & SHIBNEV 1986, WON Pyong-Oh 1993, 1996).

APODIFORMES

202. *Hirundapus caudacuta* (LATHAM, 1801)
[*Chaetura caudacuta*, *Hirundoapus caudacuta*]

Data:

Pyongyang (I): Ponghwari (I-4): 28 Sep 1978 (TOM);

Pyongan South (II): Anju (II-16): 1 Oct 1932 (WON), Nampho (II-26): 13 May 1980 (MAUERS);

Pyongan North (III): Ryongampho (III-15): 16 May 1929 (AUST);

Ryanggang (V): 29 Jul, 30 Aug 1929 (AUST), Hyesan (V-5): 29 Jul 1897, Pochon (V-6): 8 Jul 1897 (YANK), Samjiyon (V-10): 24 Jun 1958 (ZIP, or 26 Jun ZIP cited by WON), 1-6 Jun 1980, 25 Sep 1991 (TOM), no date, Nongsari (*V-12): no date (HO), Paegam (V-16): 20 Jun 1897 (YANK), 25 Jul 1965 (ZIP);

Hamgyong North (VI): 9 Sep 1917 (AUST), Jun 1935 (MAUERS), Musan (VI-12): 12 Jun 1897, Yonsa (VI-20): 14 Jun 1897 (YANK), Nongsari (*VI-20): 15 Jul 1959 (ZIP);

Hamgyong South (VII): Machonri (VII-5): 27 May 1987 (TOM), Jangjin (VII-26): 10 Sep 1956 (WON), Taesukri (VII-40): 18 Jun 1960 (ZIP);

Kangwon (VIII): 15, 26 Sep 1914, Sep 1917 (AUST), Wonsan (VIII-3): 6, 29 Oct 1897 (YANK), 19 May 1980 (MAUERS), 22 Aug 1984 (KOLBE), Kumgangsan (VIII-8): Sep 1914 (WON);

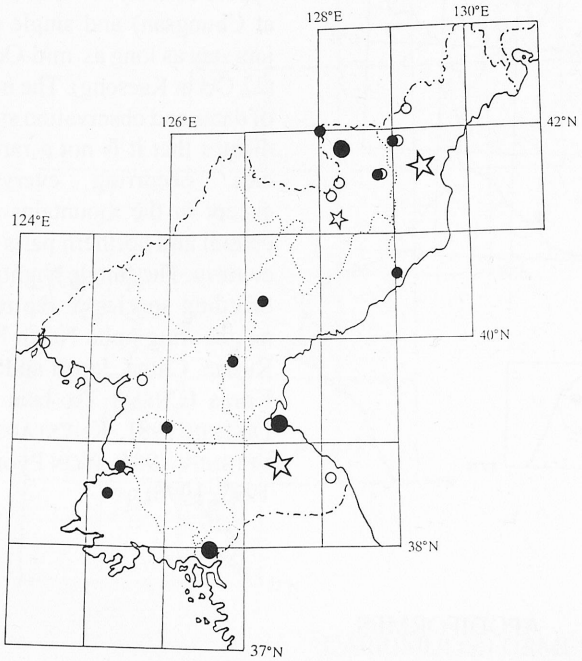
Hwanghae South (X): Kuwolsan (X-6): 2 Jul 1957 (WON);

Kaesong (XI): Kaesong (XI-1): 22 Sep 1955, 26 Sep 1956, 12 Apr 1957, 15 Sep 1958 (WON);

no data: 1 specimens (ZIP).

Measurements (7 specimens of the ZIP collection and 1 specimen of the collection ISEA):

	♂	♂	♀	♀	?sex	?sex	?sex	?sex
wing	203	202	206	208	202	202	205	195
tarsus	21	18	–	20	18	20	17	18
bill	9	–	9	10	9	9	8.5	9
tail	52	49	50	59	49	50	48	56



Species observed from mid-April throughout October, but the most records come from the breeding season, i.e. from June and July. It should be assumed on the basis of the observations made during the breeding season that this bird nests mainly in the north-western provinces (Ryanggang, Hamgyong North and Hamgyong South). In the southern part of the country (Kangwon and Kaesong Provinces) most of the observations were made out of the breeding season (Apr and Sep-Oct) and it is rather a passage migrant there.

The White-throated Needle-tailed Swift nests in north-eastern China, Ussurisk and northern Japan (DEMENTEV & GLADKOV 1951, MEYER DE SCHAUENSEE 1984, ETCHECOPAR & HÜE 1978, DISTRIB 1981, KNYSTAUTAS & SHIBNEV 1986, CHENG Tso-hsin 1987, NECHAEV 1991, LYULEEVA 1991). On the other hand, in the southern part of the peninsula it was observed only on migration (GORE & WON Pyong-Oh 1971, WON Pyong-Oh 1993, 1996). Then, the boundary of the southern range of the breeding grounds of this species extends across North Korea.

203. *Apus pacificus* (LATHAM, 1801)
[*Cypselus pacificus*]

Data:

Pyongan South (II): no date 1931 (AUST), Anju (II-16): 4 Jul 1933 (WON but 1932 WON cited by AUST);

Pyongan North (III): 3, 4, 9 Jun 1917, 29 May 1929 (AUST), Rapdo (*III-6): Jun 1917 (WON), Wondo (*III-9): Jun 1917, Rakdo (*III-9): 17 May 1967 (ZIP), Tasari (III-11): 16 May 1959, Suundo (III-?): Jun 1917 (WON);

Ryanggang (V): Hyesan (V-5): 29 Jul 1897, Pochon (V-6): 8 Jul 1897 (YANK), Paekdusan (V-12): 18 Jul 1958 (ZIP), 5 Jun 1980 (TOM), Aug 1981, 20 May 1984, 19 Jun, 29 Jul 6 Aug 1987, 8 Jun 1988 (JIN Dok-Jun & O Hung-Dam 1990);

Hamgyong North (VI): 28 Aug 1917 (AUST), Alsom (VI-6): 1935 (MAUERS), Unggi (VI-7): Aug 1917 (WON), no date (ZIP), Musan (VI-12): 12 Jun 1897 (YANK), Hapyongri (VI-31): 20 Sep 1959 (ZIP);

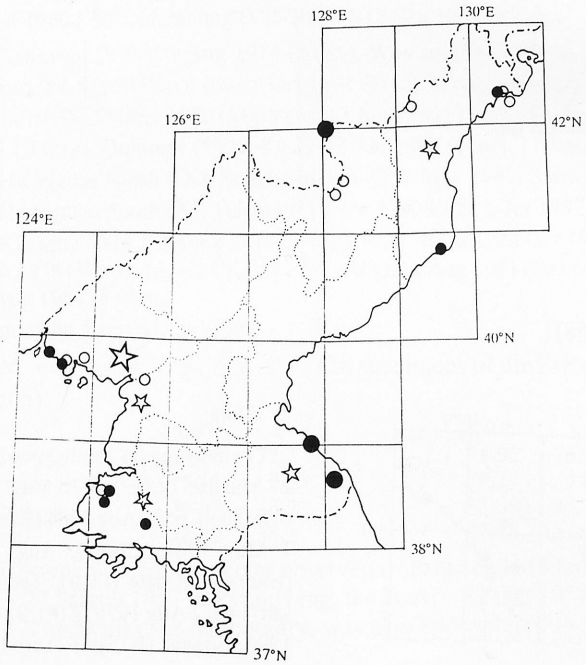
Kangwon (VIII): 3 Jul 1929 (AUST), Sijungho (VIII-5): 23 May 1980 (MAUERS), 14 Jun 1980 (TOM), 19, 24 Apr 1987 (GLOW), Kumgangsan (VIII-8): 19 Aug 1984 (KOLBE), Aug 1991 (BÁLDI);

Hwanghae South (X): Unryul (X-5): May 1917, Kuwolsan (X-6): 5 May 1960 (WON), Talchonri (X-9): 28 Jul 1957 (ZIP), Changsu (X-25): 27 Apr 1987 (GŁOW);

Hwanghae (IX-X): 15 May-21 Jun 1922 (AUST), Sodo (IX-X-?): May-Jun 1922 (WON).

M e a s u r e m e n t s (5 specimens of the ZIP collection):

	♂	?sex	?sex	?sex	?sex
wing	181	192	179	169	178
tarsus	11	14	12	15	13
bill	8	8	7	7	7.5
tail	81	87	–	71	89



Breeding species observed from April to September. The most records were gained in the breeding season (Jun-Jul). It mainly nests along the coasts both on islands and on the mainland. Inland it was found only in the Paekdusan region, where it probably also nests (YANKOVSKII 1898, TOMEK 1984).

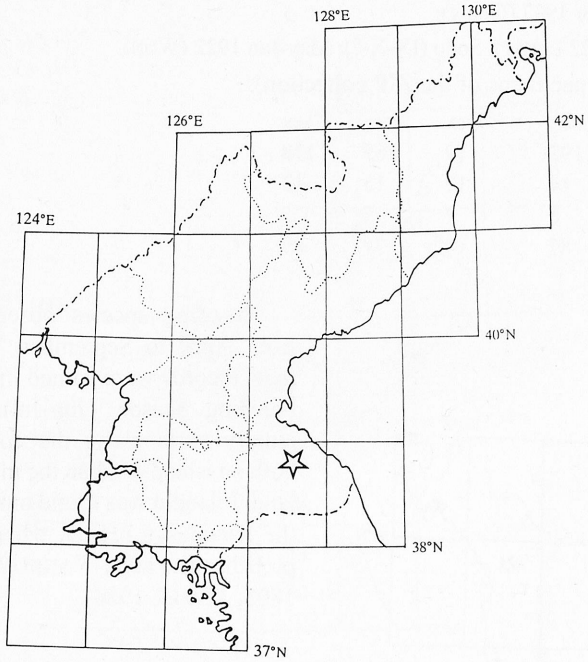
CORACIIFORMES

204. *Megaceryle lugubris* (TEMMINCK, 1834)
[*Ceryle lugubris*]

Data:

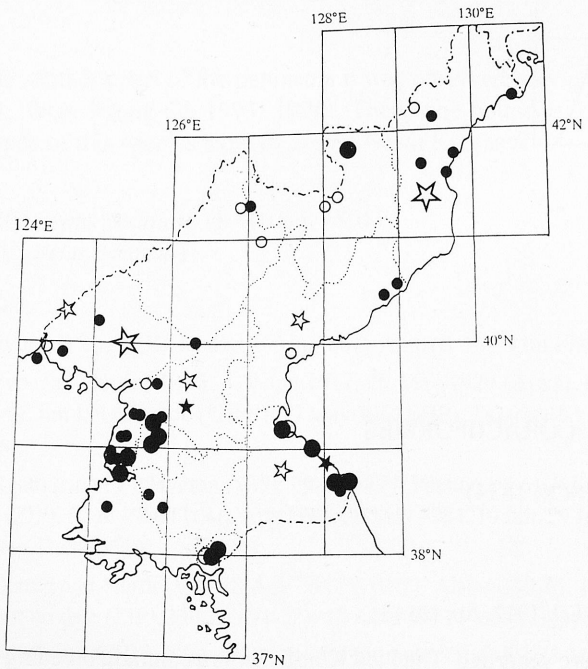
Kangwon (VIII): 1 Dec 1886 (TACZ), Feb 1917, Apr (AUST).

Recorded only twice eighty and more years ago. The Pied Kingfisher is a common breeding species in Japan (KURODA 1975, DISTRIB 1981), it also nests in eastern China (CHENG Tso-hsin 1987)



and its lack in the Korean Peninsula is surprising. According to WON Pyong-Oh (1993), this species is probably extinct in South Korea and has not as yet been noted from southern Primorsk LER (1989).

205. *Alcedo atthis* (LINNAEUS, 1758)
[*Alcedo ispida*]



Data:

Pyongyang (I): Pyongyang (I-1): 27 Mar 1957 (ZIP), 6-26 May 1980 (MAUERS), 6, 25 Aug 1984 (KOLBE), 1 May 1987 (GŁOW), Aug 1991 (BÁLDI), no date (FIEB), Taesongsan (I-6): 2 Aug 1979 (ZIP), 22 May 1980, Sogam (I-15): 3 Aug 1979, 24 Jun 1983 (TOM), 17 Apr 1987 (GŁOW);

Pyongan South (II): 4 Sep 1912 (AUST), 11 Aug 1979 (TOM), Paeksongri (II-13): 18 Sep 1954 (MAUERS), Anju (II-16): 17 Apr 1932, Pyongwon (II-17): 5 May 1951 (WON), Sori (*II-17): 25, 26 Apr 1957, Joksongri (*II-19): 3 Sep 1957, Ochongdong (*II-19): 4 Sep 1957, Ansokri (II-23): no date (ZIP), Okdori (*II-24): 24 Sep 1954 (WON), Pyongnam (*II-24): 6 Jun 1987, Nampho (II-26): 28 Sep 1978 (TOM), 12-13

May 1980 (MAUERS), 9-11 Aug 1984 (KOLBE), Aug 1991 (BÁLDI), Taesong-ho (II-28): 3 Aug 1979, 24 May – 9 Jun 1980, 15 Jul 1983, Yonphung-ho (II-30): 7 Jun 1987 (TOM);

Pyongan North (III): 19 Jun 1918, 22 Apr–22 May 1929 (AUST), Amnok riv. (III-?): before 1923 (SOWERBY), Pankungri (*III-10): 2 May 1958, Sindo (III-14): 20 Apr 1961 (ZIP), Ryongampho (III-15): 10, 28 , 1 Jun 1949 (WON), Unrimri (*III-20): 20 May, 3 Jun, 18 Jul 1961 (ZIP), Myohyangsan (III-24): Aug 1991 (BÁLDI);

Chagang (IV): Hwapyong (IV-2): 3-4 Sep 1897 (YANK), Okasan (IV-3): 28 Sep 1958 (HO), Rangnim (IV-5): 8 Sep 1897 (YANK);

Ryanggang (V): Samsu (V-4): 17-18 Aug 1897, Hyesan (V-5): 20 Jul 1897 (YANK), Samjiyon (V-10): 2 Sep 1961, 12 May 1965, 17 Oct 1958 (ZIP), 23 Oct 1978, 25, 28 Sep 1991 (TOM);

Hamgyong North (VI): 15, 24 Aug, 1 Sep, 1 Oct 1917 (AUST), 1935 (MAUERS), Kulphori (VI-4): 22 Sep 1959 (ZIP), Musan (VI-12): 9 Jun 1897 (YANK), Chayuri (VI-14): 1 Jul 1983 (TOM), Chongjin (VI-19): Aug 1991 (BÁLDI), Kwanmobong (VI-22): 12 May, 7 Jun 1959, Chonpol (*VI-25): 27 May 1959 (ZIP);

Hamgyong South (VII): 27 Jul 1886 (AUST), Tongdokri (*VII-6): 26 May 1987 (TOM), Kawonri (VII-9): 16 Jul 1960 (ZIP), Hamhung (VII-30): 14-15 Sep 1897 (YANK);

Kangwon (VIII): 3 Aug 1914 (AUST), Wonsan (VIII-3): 16 Aug 1880 (G&S), 27-29 Sep, 29 Oct 1897 (YANK), 24 Apr 1987 (GŁOW), 9 Oct 1991 (TOM), Wonsan-Onjongri (VIII-3-8): 24 Apr 1987 (GŁOW), Samilpho (VIII-7): 22 May 1980 (MAUERS), 13 Jun 1980 (TOM), 23 Apr 1987 (GŁOW), Kumgangsan (VIII-8): Aug 1991 (BÁLDI), Onjongri (*VIII-8): 12-13 Jun 1980 (TOM), 17 Jun 1984 (KOLBE), 19 Apr 1987 (GŁOW);

Hwanghae North (IX): Sohung-ho (IX-7): 3 May 1987, Sariwon (IX-16): 2 May 1987 (GŁOW);

Hwanghae South (X): Talchonri (X-9): 17, 28 Jun, 6 Jul 1957 (ZIP);

Kaesong (XI): Kaesong (XI-I): 9 Sep 1929, 10 Sep, 20 Oct 1930, 1 Jul 1955, 18 Jun 1956, 3 May 1957, 8 Jun 1958 (WON), 14, 16, 19 Aug 1984 (KOLBE), Aug 1991 (BÁLDI), Pagyon (XI-3): 16 May 1980 (MAUERS), 15 Aug 1984 (KOLBE);

no data: 5 specimens (ZIP).

M e a s u r e m e n t s (26 specimens of the ZIP collection, 1 specimen of the MZB collection):

	15 ♂♂	$\bar{x}$	4 ♀♀	$\bar{x}$	8 ?sex	$\bar{x}$
wing	69-79	72.2	71-92	76.5	65-76	70.9
tarsus	7-11	9.2	8-11	9.9	9-12	9.9
bill	29-42	36.7	32-39	36.7	26-41	34.0
tail	31-42	35.2	32-35	33.0	28-40	33.9

Common breeding species observed from the end of March throughout October (the earliest record – 27 March 1957 in Pyongyang, the latest – 23 Oct 1978 at Samjiyon and 29 Oct 1897 at Wonsan). It nests all over the country, was also encountered in parks of big cities (FIEBIG 1993).

206. *Halcyon coromanda* (LATHAM, 1790)

Data:

Pyongan North (III): 20 Jul 1917 (AUST);

Kangwon (VIII): 9 Jul 1929 (AUST), Onjongri (*VIII-8): 13 Jun 1980 (TOM);

Hwanghae North (IX): Sansongri (IX-14): 28 May 1957 (ZIP);

Hwanghae South (X): Suyangsan (X-24): 14-19 Jun 1985 (TOM);

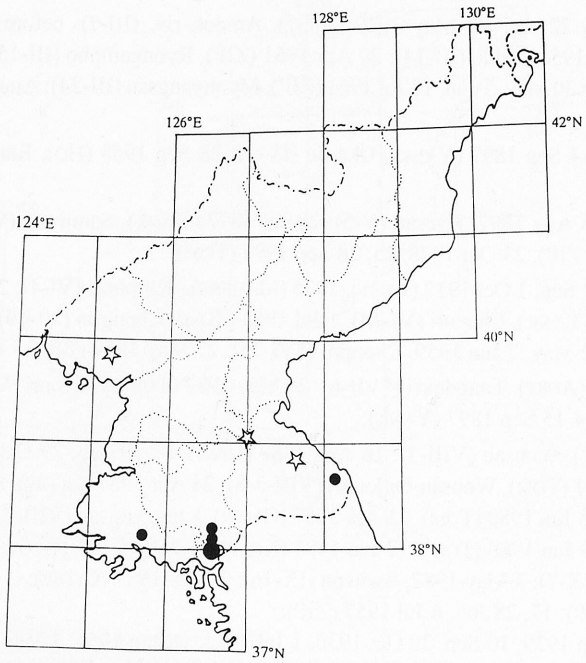
Kaesong (XI): Kaesong (XI-1): 6 May 1926, 5 Jun 1956, 1 Jul 1957, 30 Jun 1958, Pagyon (XI-3): 27, 28 May 1957 (WON);

unknown province: Yangju: 6 Jun 1928 (WON).

M e a s u r e m e n t s (♂ of the ZIP collection):

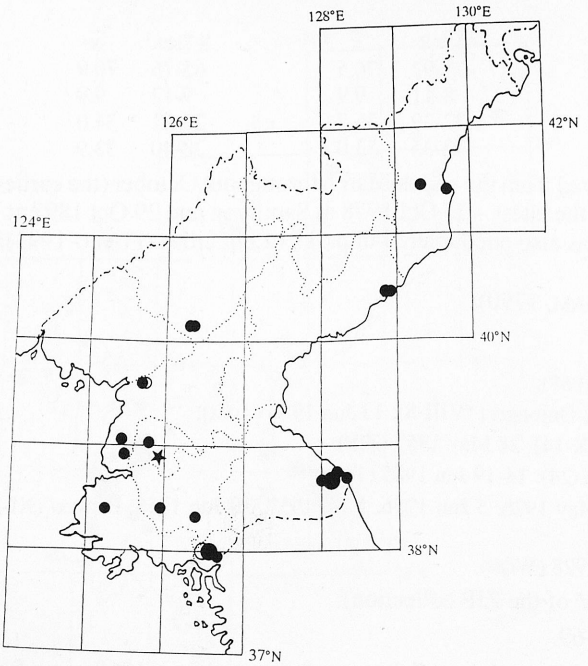
wing 127, tarsus 17, bill 59, tail 69.

Breeding species, observed from May to July. All the records but one from 1917 come from the southern provinces. Nesting was found at Suyangsan (oral information of the members of the ISEA



expedition to North Korea in 1985). Its occurrence all over North Korea is probable for a site of the Ruddy Kingfisher was reported from the Paekdu-san Massif in the territory of China (CHENG Tso-hsin 1987, WON Pyong-Oh 1990b). The Ruddy Kingfisher nests in South Korea, China and Japan (GORE & WON Pyong-Oh 1971, DISTRIB 1981, CHENG Tso-hsin 1987, WON Pyong-Oh 1993, LEE Woo-Shin 1994). At the same time, however, the north-eastern boundary of the distribution of this species, not noted in the Russian portion of the Far East (DEMENTEV & GLADKOV 1951, FLINT et al. 1968, PANOV 1973, KNYSTAUTAS & SHIBNEV 1986) may travers North Korea.

207. *Halcyon pileata* (BODDEART, 1783)



Data:

Pyongyang (I): 11 Sep 1989, Pyongyang (I-1): 22 Oct 1988 (FIEB);

Pyongan South (II): Anju (II-16): 7, 13 Jun 1933 (WON, but 5 Jun 1932 and 13 Jun 1933 – WON cited by AUST), 19 May 1987 (TOM), Chungsan (II-19): 1959 (WON), Taesongho (II-28): 13 Jul 1983 (TOM);

Chagang (IV): Huichon (IV-10): 18 May 1987, Chongsan (*IV-10): 14 May 1987 (TOM);

Hamgyong North (VI): Mehyangri (VI-27): 27 Jun 1983, Jangyon-ho (VI-29): 4 Jul 1983 (TOM);

Hamgyong South (VII): Tanchon (VII-8): 6 Sep 1989 (FIEB), Sophyongri (*VII-8): 6 Jun 1960 (ZIP);

Kangwon (VIII): Kosong (VIII-6): 20 May 1980 (MAUERS), Samil-pho (VIII-7): 19 Aug 1984 (KOLBE),

Kumgangsan (VIII-8): 8 Aug 1979, 11 Jun 1980 (TOM), Aug 1991 (BÁLDI), Onjongri (*VIII-8): May 1980 (MAUERS);

Hwanghae North (IX): Sohung-ho (IX-7): 22 May 1987 (TOM), Pongtanri (*IX-11): no date (FIEB);

Hwanghae South (X): Talchonri (X-9): 24, 28 Jun 1957 (WON);

Kaesong (XI): Kaesong (XI-1): 1 Jun 1925, 9 Oct 1930, 5 Aug 1955, Jun, 12 Oct, 1956, 1 Jun 1957, 9 Jun 1958, 24 Jun 1961 (WON), Panmunjom (XI-6): 14 Aug 1984 (KOLBE);

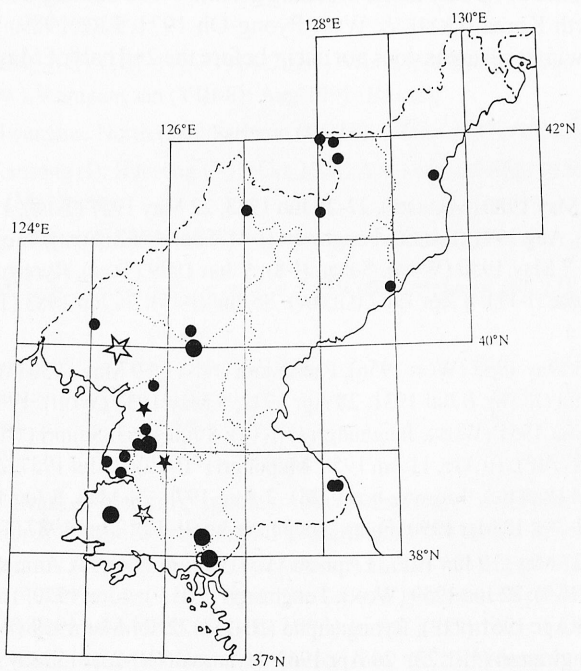
no data: 1 specimen of the ZIP collection.

M e a s u r e m e n t s (2 specimens of the ZIP collection):

	♂	?sex
wing	132	127
tarsus	22	17
bill	50	58
tail	96	85

Breeding species observed in the whole territory of the country from mid-May to October (the latest record on 22 Oct 1988 in Pyongyang). Most frequently met with in the lowlands in the southern provinces, somewhat scarcer in the river valleys in the coastal tract of the north-eastern provinces and the scarcest in the north-western and central parts of the country. North Korea is probably the north-eastern borderland of the distribution of this species, for the Black-capped Kingfisher breeds all over the Korean Peninsula (WON Hong-Koo 1964, WON Pyong-Oh 1993, 1996) and in south-eastern China (CHENG Tso-hsin 1987), but nothing is known of its nesting in Japan (KURODA 1975, DISTRIB 1981) and in the Russian part of the Far East (DEMENTEV & GLADKOV 1951, PANOV 1973, KNYSTAUTAS & SHIBNEV 1986).

208. *Eurystomus orientalis* (LINNAEUS, 1766)



Data:

Pyongyang (I): Aug 1991 (BÁLDI), Pyongyang (I-1): 17 Sep 1964 (ZIP), 20 May 1980 (TOM), no date (FIEB), Sunan (I-8): 12 Aug 1979, Ryongaksan (I-10): 19 Sep 1978 (TOM);

Pyongyang South (II): Pyongnam (*II-24): 6 Jun 1987 (TOM), Nampho (II-26): 13 May 1980 (MAUERS), Taesong-ho (II-28): 15 Jul 1983, Yonphung-ho (II-30): 2 Jun 1987 (TOM), Unchon (II-?): 6 Jul 1976 (ZIP);

Pyongan North (III): 26 May 1917, 12-20 May 1929 (AUST), Chonmasan (III-20): 5, 8 Jul 1961 (ZIP), Myohyangsan (III-24): 12 Jun 1950 (WON), 7-15 Jun 1983 (TOM), 9-13 Apr 1987 (GŁOW), Aug 1991 (BÁLDI), no date (FIEB);

Chagang (IV): Okasan (IV-3): no date (HO), Huichon (IV-10): 17-18 May 1987 (TOM);

Ryanggang (V): Samsu (V-4): no date, Samjiyon (V-10): no date, Nongsari (*V-12): no date, Mutubong (V-13): no date (HO);

Hamgyong North (VI): Ryongsanri (VI-24): 5 Jul 1983 (TOM);

Hamgyong South (VII): Tongdokri (*VII-6): 1 Jun 1987 (TOM);

Kangwon (VIII): Kumgangsan (VIII-8): Aug 1991 (BÁLDI), Onjongri (*VIII-8): 19 Aug 1984 (KOLBE);

Hwanghae North (IX): Kumchon (IX-13): 20 May 1957 (ZIP), 29 Jul 1958 (WON);

Hwanghae South (X): Kohyonri (*X-10): 28, 29 May 1957 (WON), 28 May 1975 (ZIP);

Hwanghae (IX-X): 1919 (AUST);

Kaesong (XI): Kaesong (XI-1): 30 Apr 1930, 5 Jul 1955, 15 Jun 1956, 5 May 1957, 13 Jun, 1 Sep 1958 (WON).

Measurements (5 specimens of the ZIP collection):

	♂	♂	♀	?sex	?sex
wing	–	186	191	190	180
tarsus	24	20	–	19	17
bill	27	26	25	24	29
tail	91	89	96	106	90

Breeding species observed throughout the country from the 2nd decade of April to the 2nd decade of September. Since the end of the seventies the presence of the Broad-billed Roller has been reported from many of the places in which studies were carried out (MAUERSBERGER 1981, BOCHEŃSKI et al. 1981, TOMEK 1984, 1985, unpublished materials, TOMEK & DONTCHEV 1987, GŁOWACIŃSKI et al. 1989, FIEBIG 1993). It may be assumed after FIEBIG (1993), that it is a common breeding species ("verbreiteter Brutvogel") in North Korea; in South Korea the Broad-billed Roller was regarded as an uncommon summer visitor (WON Pyong-Oh 1993, 1996). An observation in the 2nd decade of April (GŁOWACIŃSKI et al. 1989) and again in the 2nd decade of September (BOCHEŃSKI et al. 1981) stretches the time of its stay in the breeding grounds. The authors discussing the regions neighboring upon North Korea (GORE & WON Pyong-Oh 1971, LER 1989) have claimed so far that the return from the wintering areas does not occur before the 2nd half of May.

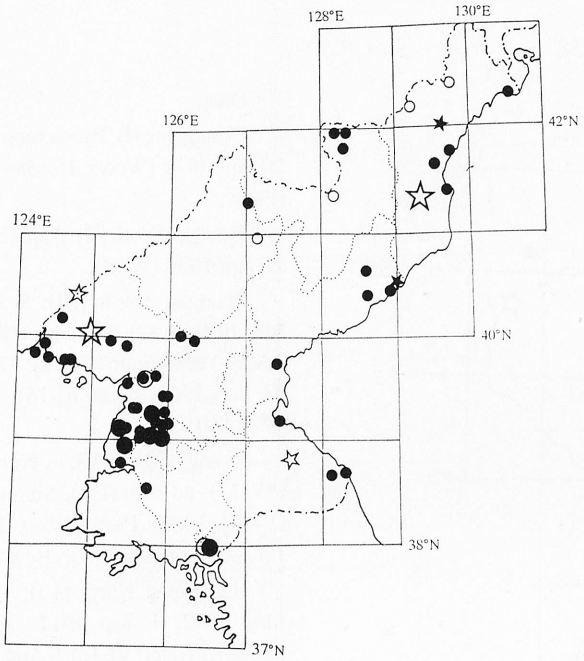
209. *Upupa epops* LINNAEUS, 1758

Data:

Pyongyang (I): Pyongyang (I-1): 5-26 May 1980 (MAUERS), 22-25 Jun 1983, 22 May 1987 (TOM), 1 May 1987 (GŁOW), breeding period 1989 (FIEB), Aug 1991 (BÁLDI), Ponghwari (I-4): 5 Jun 1987 (TOM), Taesongsan (I-6): 10 May 1950, Ryongsong (I-7): 7 May 1950 (WON), Sunan (I-8): 9 Jun 1989 (TOM), Ryongaksan (I-10): 7 May 1980 (MAUERS), Mankyongdae (I-11): 8 Apr 1987 (GŁOW), Sogam (I-15): 24 Jun 1983 (TOM), 17 Apr 1987 (GŁOW);

Pyongan South (II): Sunchon (II-11): 5 May 1953 (WON 1956), Paesanjom (*II-11): 9 May 1950 (WON), Pyongsong (II-14): 12 Jul 1983 (TOM), Anju (II-16): 6 Jun 1931, 28 Apr 1932, 5 May 1933 (WON), 19 May, 7 Jun 1987 (TOM), Pyongwon (II-17): 29 Mar 1951 (WON), Janghungri (*II-17): 8 Jun 1963, Sujinri (*II-17): 6 Jun 1982, Hamjongri (*II-19): 2 Apr 1958 (ZIP), 10 Apr, 11 Jun 1958, Mupongri (*II-19): 23 Jul 1957, 27 Jul 1959 (WON), Nampho (II-26): 9 Aug 1984 (KOLBE), Taesong-ho (II-28): 3 Aug 1979, 24 May, 8 Jun 1980, 13-15 Jun 1983 (TOM), Chongchon riv (*III-29): 12 Mar 1990 (FIEB), Yonphung-ho (II-30): 7 Jun 1987 (TOM);

Pyongan North (III): 12 Jun 1912, 26, 27 May, 19 Jun 1917, 3 Apr-30 May 1929, Apr (AUST), Amnok riv. (III-?): spring 1914 (SOWERBY), Cholsan (III-9): 22 Jun 1959 (WON), Tonghangri (*III-9): 4 Jun 1970, Tasado (III-12): 6 Apr 1965, Sindori (*III-14): 14 Apr 1961 (ZIP), Ryongampho (III-15): 22, 24 Mar 1959 (WON), Kumwangri (III-18): 7 Jun 1982 (ZIP), Singwangri (*III-22): 20 Apr 1963, Hyangsan (III-23): 13 May 1987 (TOM), Myohyangsan (III-24): 13 Apr 1987 (GŁOW), Kusong (III-27): 21 May 1950 (WON);



Chagang (IV): Karimri (IV-2): 1 Apr 1958 (ZIP), Okasan (IV-3): 1 Apr 1958 (HO; note: these records deals probably with one observations, because the specimen collected by HO Hon on Mt Okasan is housed in the ZIP collection, with a label indicating Karimri as the nearest locality), Rangnim (IV-5): 2 Sep 1897 (YANK);

Ryanggang (V): Samsu (V-4): 13 Jul 1897 (YANK), Samjiyon (V-10): 9 Apr 1965 (ZIP), no date (HO), Mutubong (V-13): 27 Jul 1958 (ZIP), no date (HO), Sinmusong (V-14): 3 Oct 1962 (ZIP), no date (HO);

Hamgyong North (VI): 25 Apr 1918, 12 Jul 1940 (AUST), Kulphori (VI-4): 10 Jun 1961 (WON), Hoeryong (VI-9): 28 May 1897, Musan (VI-12): 12 Jun 1897 (YANK), Chayuri-Chongjin (VI-14-19): 7 Jul 1983 (TOM), Chongjin (VI-19): Aug 1991 (BÁLDI), Onphori (VI-23): 27 Jun 1983, Jangyon-ho (VI-29): 7-9 Jul 1983 (TOM);

Hamgyong South (VII): Machonryong-Tanchon (VII-5-8): 26-27 May 1987, Tanchon (VII-8): 29 May 1987, Jongdongri (VII-12): 30-31 May 1987, Hochon (VII-14): 25 May 1987 (TOM), Sinhungri (VII-32): 2, 7 Jun 1960 (ZIP);

Kangwon (VIII): 5 Apr 1914 (AUST), Wonsan (VIII-3): 24 Apr 1987, Samil-pho (VIII-7): 21-23 Apr 1987 (GLOW), Kumgangsan (VIII-8): Aug 1991 (BÁLDI);

Hwanghae North (IX): Sariwon (IX-16): 2 May 1987 (GLOW);

Kaesong (I): Kaesong (I-1): Oct 1921, Apr 1931, 25 May 1956, 7 Apr 1957, 7 Apr 1958 (WON), 15 May 1980 (MAUERS);

no data: 1 specimen (ZIP).

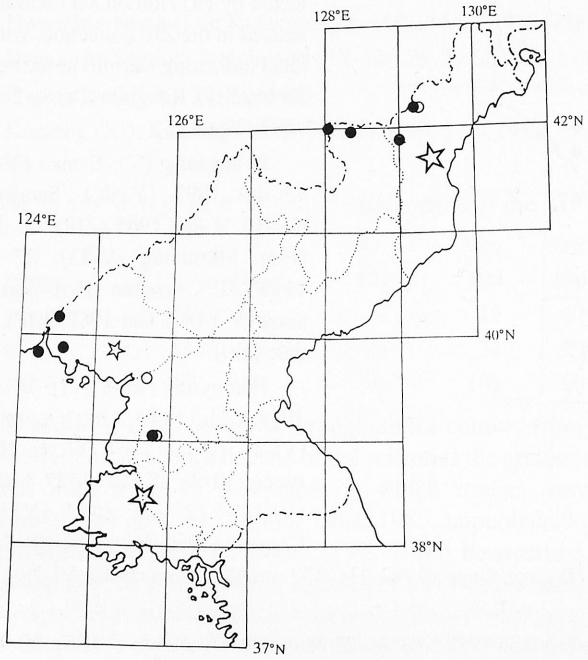
M e a s u r e m e n t s (19 specimens of the ZIP collection):

	12 ♂♂	$\bar{x}$	♀	♀	5 ?sex	$\bar{x}$
wing	132-150	144.9	140	143	139-152	143.6
tarsus	21-29	24.5	23	24	20-24	21.0
bill	44-63	56.2	50	51	43-54	49.3
tail	98-120	105.5	97	100	97-109	102.0

Common breeding species, more frequently observed in the northern provinces than in the southern. Hoopoes were found present not only in the low-lying agricultural areas but also in the mountains (Myohyangsan, Paekdusan) and inside big towns (Pyongyang, Wonsan, Kaesong). The most observations come from the breeding season (Apr-Jul, about 80 records). Hoopoes are met with from mid-March (FIEBIG 1993) to the beginning of October (WON Hong-Koo 1964), but in March and in the post-breeding period they are considerably scarcer (Mar and Aug-Oct, 4 records in each).

PICIFORMES

210. *Jynx torquilla* LINNAEUS, 1758



Data:

Pyongyang (I): Pyongyang (I-1): 20 Apr 1949 (WON), 15 May 1989 (FIEB);

Pyongan South (II): Anju (II-16): 22 Apr 1936 (WON);

Pyongan North (III): 9 Apr-2 May 1929 (AUST), Pankungri (*III-10): 3 May 1958, Sindo (III-14): 17 Apr, 18 Sep 1961, Uiju (III-16): 8 Jul 1979 (ZIP);

Ryanggang (V): Nongsari (*V-12): no date (HO), Sinmusong (V-14): 3 May 1958 (WON), 26, 29 Jul 1958 (ZIP), no data (HO);

Hamgyong North (VI): 19, 20 May 1912, 1 Sep 1917 (AUST), Samjangmyon (*VI-12): 9 Aug 1929, 16 Sep 1952, Nongsadong (*VI-20): 13 Sep 1952 (WON);

Hwanghae (IX-X): 20 May 1917, 1 May 1918 (AUST);

no data: 1 specimen (ZIP).

Measurements (8 specimens of the ZIP collection):

	♂	♂	♂	♂	♀	?sex	?sex	?sex
wing	83	83	73	72	83	83	85	84
tarsus	22	21	22	20	21	–	19	22
bill	15	14	12	12.5	15.5	16	13	14
tail	68	65	65	58	66	64	70	72

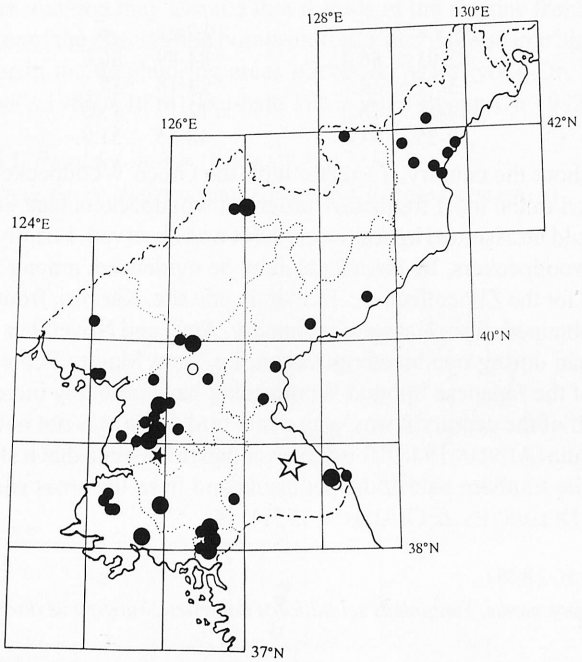
Species observed mainly on passage in spring (Apr-May, 11 records) and in autumn (Aug-Sep, 5 records). Recorded also in the breeding season (Jul, 3 records), exclusively in the vicinity of the northern frontier of the country. According to WON Hong-Koo (1964), it nested only in the Paekdu-san region. Its breeding area is probably larger and includes also the Pyongan North Province where another observation was made in the breeding season. The Wryneck nests in small numbers north of the Korean Peninsula in China (ETCHECOPAR & HÜE 1978, MEYER DE SCHAUENSEE 1984, CHENG Tso-hsin 1987), Russia (PANOV 1973, NECHAEV 1991) and in Japanese Hokkaido I. (KURODA 1974, DISTRIB 1981), whereas in the middle and southern parts of the Korean Peninsula it is known only as a passage migrant (WON Hong-Koo 1964, GORE & WON Pyong-Oh 1971, WON Pyong-Oh 1987a, 1993). The northern provinces of North Korea therefore constitute the southern border of its distribution.

211. *Picoides kizuki* (TEMMINCK, 1836)

[*Dendrocopos kizuki*, *Yungipicus Seebohmi*, *Yungipicus kizuki*, *Dryobates kizuki*]

Data:

The following data do not include the dates of repeated observations made by European ornithologists in 1978-1991. Details from that period are comprised in publications by MAUERSBERGER 1981, KOLBE 1988,



GŁOWACIŃSKI et al. 1989, BÁLDI, WALICZKY 1992, FIEBIG 1993 and in the Card Index of Birds of North Korea in the ISEA. Below are named only the places of such observations furnished with the symbol ✦.

Pyongyang (I): Aug 1991 (BÁLDI), Pyongyang (I-1): 25 Aug 1984 (KOLBE), winters 1986-88 (CHON Gil-Pyo 1988), Kangdong (I-3): 12 Apr 1950 (WON), Taesongsan (I-6): ✦, Masanri (*I-8): 25 Oct 1956 (ZIP), Ryongaksan (I-10): 21 Sep 1991, Sogam (I-15): 24 Oct 1984 (TOM);

Pyongan South (II): Unsan (II-10): 20, 22 Aug 1954 (ZIP), Jasan (II-12): 3 May 1953 (WON), 6 Mar, 12 Apr, 24 May, 19 Sep 1954, Ochongdong (*II-19): 3 Sep 1956 (ZIP) Yonphung-ho (II-30): 1 Oct 1978 (TOM), Maengsan (II-32): 10, 13 Apr 1955, Tokchon (II-33): 11 Nov 1949 (WON);

Pyongan North (III): Kwaksan (III-4): 19 May 1955, Kohyonri (*III-4): 10 May 1958, Unrimri (*III-20):12 Jul 1961, Thaepyongri (*III-23): 16 Jul 1956, Myohyangsan (III-24): 16 Apr, 1 May, 16 Jun, 20 Jul, 20 Aug, 12 Sep 1956 (ZIP), ✦, 2 Feb 1995 (PERT);

Chagang (IV): Karimri (*IV-2): 7 Jul, 4 Aug, 22 Sep, 22 Oct, 4, 5, 12 Nov 1958 (ZIP), Okasan (IV-3): 7 Jul, 24 Dec 1958, 18 Feb 1960 (HO);

Ryanggang (V): Sinmusong (V-14): no date (HO);

Hamgyong North (VI): Chayuri (VI-14): 29 Jun 1983 (TOM), Koanjuryong (VI-18): 6 Jul 1983 (TOM), Chongjin (VI-19): Aug 1991 (BÁLDI), Samphori (VI-21): 27 Jul 1959 (WON), Kwanmobong (VI-22): 29 May, 18 Jun 1959 (ZIP), Onphori (VI-23): 27 Jun 1983 (TOM), Sanmori (*VI-25): 28 Jul 1959 (ZIP);

Hamgyong South (VII): Jongdongri (VII-12): 30 May 1987 (TOM), Kuryongri (VII-19): 1 Jul 1960, Sinhungri (VII-32): 8 Jun 1960 (ZIP), Kowon (VII-44): 11 May 1958 (WON);

Kangwon (VIII): 14 Sep 1914, 13 Jun-4 Jul 1929 (AUST), 8 Aug 1930 (WON), Samil-pho (VIII-7): 19 Aug 1984 (KOLBE), Kumgangsan (VIII-8): 1929 (WON), 31 Aug, 8 Sep 1962 (ZIP), ✦, Sanjiri (*VIII-11): 20 Nov 1966 (ZIP);

Hwanghae North (IX): Sohung-ho (IX-7): ✦, Kumchon (IX-13): 3 Feb 1972, Sansongri (IX-14): 23, 24, 30 Jan 1962, 2 Apr 1967 (ZIP);

Hwanghae South (X): Kuwolsan (X-6): 10 Mar 1963, Woljongri (X-8): 21, 27 May 1957, Kohyonri (*X-10): 20 Apr, 4 Jun, 13, 20, 21 Sep 1957, Ungyesan (*X-10): 2, 28 Apr, 3 Oct, 26 Nov 1963 (ZIP), Suyangsan (IX-24): ✦;

Kaesong (I): Kaesong (I-1): 23, 24, 27, 30 Jan, 1 Apr, 16 Nov 1962, 20 Jan 1966 (ZIP), 1962, Pagyon (XI-3): 17 Jan 1955, 1 Apr 1956, 2 Apr, 12 May 1957, 30 Jun 1958, 15 Jan 1959 (WON), ✦, Kongminghang (XI-7): 7 Oct 1988 (TOM);

no data: 5 specimens (ZIP).

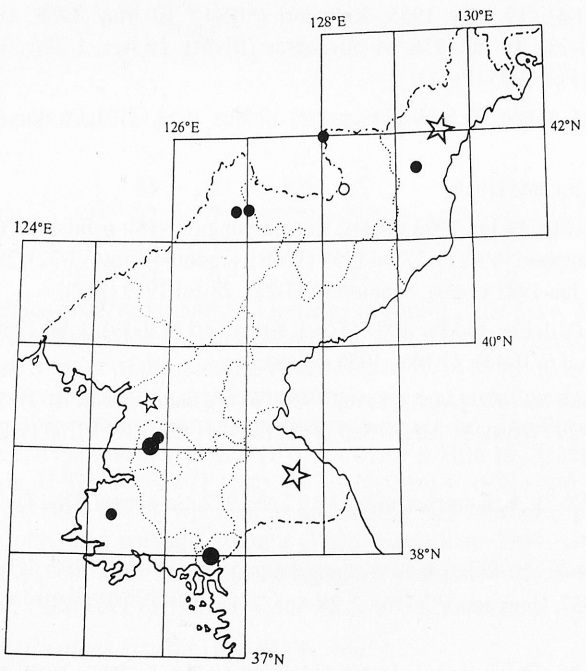
M e a s u r e m e n t s (65 specimens of the ZIP collection, 1 specimen of the collection ISEA):

	31♂♂	$\bar{x}$	25 ♀♀	$\bar{x}$	10 ?sex	$\bar{x}$
wing	79-96	86.1	82-91	86.4	84-89	86.6
tarsus	13-19	14.9	13-17	14.7	14-18	15.5
bill	12-18	15.2	14-17	16.0	12-17	15.0
tail	39-59	51.4	39-55	51.8	48-55	51.9

Common breeding species throughout the country. Together with the Green Woodpecker and Great Spotted Woodpecker it belonged to the most frequently observed woodpeckers (see FIEBIG 1993). Being a resident species, it should be assumed to nest wherever it was observed. Locally, it is probably also the most abundant of woodpeckers. Its abundance may be evidenced, among other things, by the numbers of birds gained for the ZIP collection: from only one site, Karimri, from July to November 1958 eight males were obtained, from Kaesong in January, April and November 1962 – 9 individuals and from Myohyangsan during one breeding season, i.e. from May to September 1956, another 6 birds. The numbers of the Japanese Spotted Woodpecker have probably increased in the last tens of years. In the first half of the century it was such a rare bird that it was not noted in the northern part of the Korean Peninsula (AUSTIN 1948). It is however hard to assume that it should not nest there, if it was known from the southern part of the peninsula and from the areas situated north of the frontier of North Korea (DEMENTEV & GLADKOV 1951).

212. *Picoides canicapillus* (BLYTH, 1845)

[*Dendrocopos canicapillus*, *Dendrocopos nanus*, *Yungipicus scintilliceps doerriiesi*, *Yungipicus doerriesi* *Yungipicus nanus*, *Dryobates nanus*]



Data:

Pyongyang (I): Pyongyang (I-1): winters 1986-88 (CHON Gil-Pyo 1988), Taesongsan (I-6): 14 Apr 1957 (WON);

Pyongan South (II): 17 Oct 1935 (AUST);

Chagang (IV): Karimri (*IV-2): 7 Nov 1958 (WON), Okasan (IV-3): 20 Mar, 24 Dec 1958 (HO);

Ryanggang (V): Samsu (V-4): 8 Jul 1897 (YANK), Paekdusan (V-12): 1 Aug 1960 (WON), no date (HO);

Hamgyong North (VI): 25 Sep 1917, 26 Jul, 16, 28 Oct 1929 (AUST), Kwganmobon (VI-22): 29 May-28 Jun 1958 (WON);

Kangwon (VIII): 19 Sep 1914, 9 Jul 1929 (AUST);

Hwanghae South (X): Samchon (X-10): 20 Nov 1969 (ZIP);

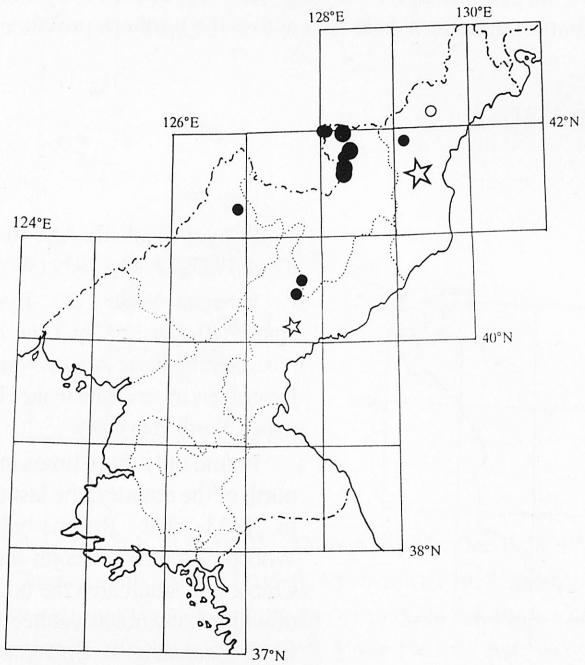
Kaesong (XI): Kaesong (XI-1): 30 Oct 1956, 10 Jan 1958, 20 Jan 1959 (WON), 7 Feb 1970 (ZIP).

M e a s u r e m e n t s (3 specimens of the ZIP collection, sex unknown):

wing: 106, 107, 105; tarsus: 18, 17, 18; bill: 20, 17, 19; tail: 67, 68, 65.

Species rarely observed throughout the country. The Grey-capped Woodpecker is a resident species and one may assume that it nests in the regions from which it has been reported. A small number of the observation points indicates that it is a scarce bird. Its status (rare or scarce resident) is similar in the neighboring areas (GORE & WON Pyong-Oh 1971, PANOV 1973, KNYSTAUTAS & SHIBNEV 1986, CHENG Tso-hsin 1987, WON Pyong-Oh 1993, 1996).

213. *Picoides minor* (LINNAEUS, 1758)
[*Picus minor*, *Dendrocopos minor*, *Dendrocopos kemaensis*]



Data:

Chagang (IV): Karimri (*IV-2): 7 Jul 1958 (WON);

Ryanggang (V): Photae (V-8): 16 Oct 1958 (WON), 27 Oct 1958, 19 Feb 1962, 13, 21, 22 Mar, 13 Sep 1963, Namphothae (*V-8): 5 Aug 1960, 26 Mar 1965, Konjang (*V-9): 4 Mar 1963, Samjiyon (V-10): 20, 31 Mar, 2, 24 Oct 1963, 27 Mar, 2, 28 Apr 1965 (ZIP), no date (HO), Paekdusan (V-12): 1 Aug 1960, Nongsari (*V-12): no date (HO), Sinmusong (V-14): 26 Jul 1958, 13 Oct 1967 (ZIP);

Hamgyong North (VI): 12, 24, 29, 31 May 1912, 30 Jul-1 Sep 1929, 31 Jul, 1, 7 Aug 1929, 11 Jan 1935 (AUST), Chayuryong (VI-13): 3 Jun 1897 (YANK), Samphori (VI-21): 27 Jul 1959 (ZIP);

Hamgyong South (VII): 11 Jan 1935 (AUST), Pujon (VII-22): 5 Jul 1958, Chailbong (VII-23): 5 Jul 1958 (ZIP);

no data: 12 Nov 1963, 14 May 1970 (ZIP).

M e a s u r e m e n t s (28 specimens of the ZIP collection):

	13 ♂♂	x̄	10 ♀♀	x̄	5 ?sex	x̄
wing	87-96	91.9	88-101	92.5	91-97	92.6
tarsus	15-18	15.7	13-17	15.1	12-20	15.0
bill	14-17	15.6	13-17	15.7	14-17	15.8
tail	55-72	63.4	51-65	59.6	60-70	66.5

In the ZIP collection there are three individuals described by WON Hong-Koo (1962) as a separate subspecies *Dendrocopos minor kemaensis* WON Hong-KOO, 1962 and later mentioned as a separate species *Dendrocopos kemaensis* (O Hung-Dam 1988). Two of them have distinctly longer bills (see photograph in FIEBIG 1995). The measurements of these birds are as follows:

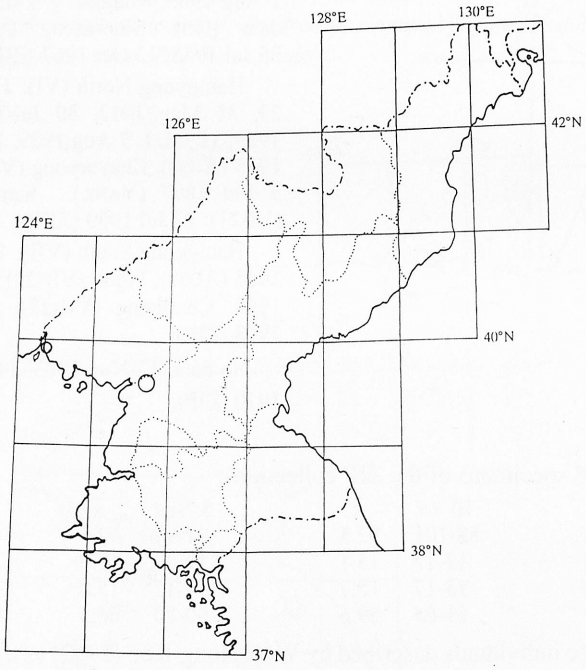
	♂	?sex	?sex
wing	92	89	92
tarsus	14	–	14.5
bill	19	17.5	19
tail	60	58	57

VAURIE (1965) and later FIEBIG (1995) acknowledged them as synonymous with the subspecies *Dendrocopos minor amurensis* (BUTURLIN, 1909).

Before the sixties the occurrence of the Lesser Spotted Woodpecker was restricted to the mountainous regions of the northern provinces (WON Hong-Koo 1964). It was not a rare species there, since 36 skins were gathered for the ZIP collection in 1958-1970 (10 skins in each, 1958 and 1963). Now it is probably rare, for it was not observed in 1978-1991 and the latest record comes from 1970 (the specimen in the ZIP collection).

The Lesser Spotted Woodpecker is a resident species nesting in the regions lying north of North Korea: in China, Russia and the Japanese island Hokkaido (PANOV 1973, KURODA 1975, ETCHECOPAR 1978, MEYER DE SCHAUENSEE 1984, CHENG Tso-hsin 1987, NECHAEV 1991), but it has not been noted in the southern part of the peninsula (WON Pyong-Oh 1981, 1993, 1996). Consequently, the southern range of its distribution in eastern Asia runs across the northern provinces of North Korea.

214. *Picoides hyperythrus* (VIGORS, 1831)
[*Dendrocopos hyperythrus*]



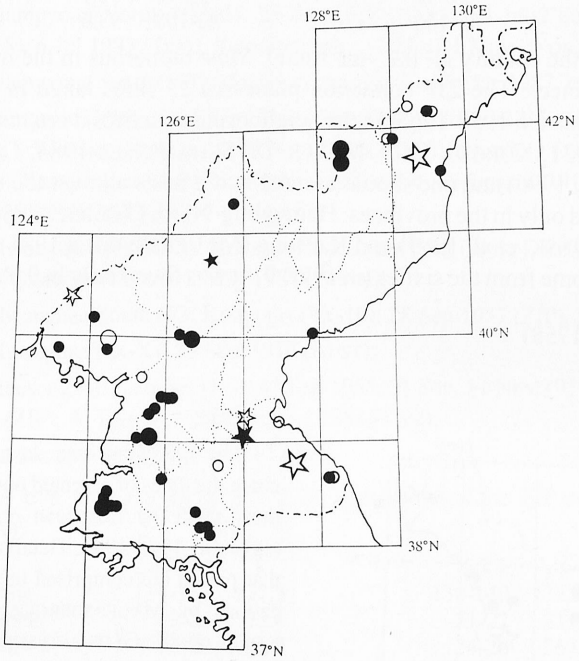
Data:

Pyongan South (II): Anju (II-16): 6 Sep 1933, 22 May 1939 (WON);

Pyongan North (III): Ryongampho (III-15): 12 May-3 Jun 1929 (ORII cited by WON; AUSTIN wrongly locates this observation in the Hamgyong North Province).

Found only three times in the north of the country; the last time in 1933. The Rufous-bellied Woodpecker breeds in north-eastern China, in a small area the bounds of which have not as yet been defined. According to ETCHECOPAR and HÜE (1978) and CHENG Tso-hsin (1987), its nesting area extended as far as the River Amur bordering upon Russia, whereas the Russian authors dealing with the regions neighboring upon China either did not mention this species at all (DEMENTEV & GLADKOV 1951, VOROBEV 1954, FLINT et al. 1968) or quoted only single records (PANOV 1973, KNYSTAUTAS & SHIBNEV 1986). Three birds belonging to this species were collected in the breeding season and they are said to have nested in the region in which they were collected (see AUSTIN 1948). Anyway, the small number of records, coming in addition from before several tens of years does not permit the inclusion of the Rufous-bellied Woodpecker in the breeding fauna and the present status of this species needs explaining. Neither are there any bases to claim that it migrates over the Korean Peninsula (see AUSTIN 1948, VAURIE 1965, ETCHECOPAR & HÜE 1978).

215. *Picoides leucotos* (BECHSTEIN, 1803)
[*Dendrocopos leucotos*, *Picus leuconatus*]



Data:

Pyongyang (I): Pyongyang (I-1): winters 1986-88 (CHON Gil-Pyo 1988), Aug 1991 (BÁLDI), Ryongaksan (I-10): 6 Oct 1984, Sogam (I-15): 24 Oct 1984 (TOM);

Pyongan South (II): Unsan (II-10): 13 Mar 1957 (ZISP), Jehyonri (*II-11): 19 Mar 1954 (WON), Ponghakri (*II-11): 23 Nov 1954, Jamosan (II-15): 28 Dec 1963 (ZIP), Anju (II-16): 11, 17 Oct 1931 (WON);

Pyongan North (III): Amnok riv. (III-?): no date (SOWERBY), Namsi (*III-10): 28 Oct 1954 (WON), Chonmasan (III-20): 28 Jan 1961 (ZIP), Thaepyongri (*III-23): 17 Apr, 15 Jun, 14 Jul 1957 (WON), Myohyangsan (III-24): 20 May, 14 Jul, 29 Aug 1956, 17 Apr, 15 Jun 1957 (ZIP), 12 Aug 1979, 19-20 Jun 1983, 8 Oct 1986 (TOM), 11 Apr 1987 (GŁOW), May-Jun 1988-1990 (FIEB), Aug 1991 (BÁLDI), Pang-hyondong (III-26): 22 Nov 1951, Kusong (III-27): Dec 1928, 17 Oct 1935 (WON);

Chagang (IV): Karimri (*IV-2): 4 Feb-16 Oct 1958, Sambang (IV-?): no date (ZIP);

Ryanggang (V): Photae (V-8): 23 Oct 1958, 24 Feb 1962, 1 Jan, 21, 31 Mar, 5, 19 Dec 1963, 13 Mar 1964, Samjiyon (V-10): 9 Jun, 24 Jul 1958, 8 Aug 1961, 11 Jun 1965 (ZIP);

Hamgyong North (VI): 14 Apr-21 May 1912, 25-27 Sep 1917, 1 Aug 1926, 24 Jul-22 Aug, 15 Aug, 3, 17 Oct 1929 (AUST), Musan (VI-12): 6 Jun 1897, Chayuri (VI-13): 4 Jun 1897 (YANK), 1 Jul 1983 (TOM), Yonsa (VI-20): 20 Jun 1897 (YANK), Nongsadong (*VI-20): 1, 5 Aug, Kyongsong (VI-25): 15 Dec 1955 (WON);

Hamgyong South (VII): Jungsori (*VII-20): 17 Mar 1972 (ZIP);

Kangwon (VIII): 19 Oct 1912, 15 Sep 1914, 6-16 Jul 1929 (AUST), Wonsan (VIII-3): 29 Oct 1897 (YANK), Kumgangsan (VIII-8): Nov 1914 (WON), Aug 1991 (BÁLDI), 12 Oct 1991 (TOM);

Hwanghae North (IX): Koksan (IX-3): Mar 1914 (AUST), Yonthan (IX-6): 5 Feb 1956 (ZIP), Pyongsan (IX-11): 20 Feb 1957 (ZISP), Pongtanri (*IX-11): no date (FIEB), Kumchon (IX-13): 23 Mar 1955 (ZISP), Kangpukri (*IX-13): 23 Mar 1954 (WON);

Hwanghae South (X): Kuwolsan (X-6): 20 Jun 1962, Woljongri (X-8): 15 Sep 1957, Talchonri (X-9): 21 Dec 1957, 19 Feb 1958, Kohyonri (*X-10): 13 May-4 Nov 1957 (ZIP), Samchon (X-10): 10 Sep 1957 (WON);

Kaesong (I): Pagyon (XI-3): 16 May 1980 (MAUERS);

unknown province: Yonan: May 1915 (WON), Chonpansok: 25 Mar 1965, Ryomchang: 19 Dec 1963 (ZIP);

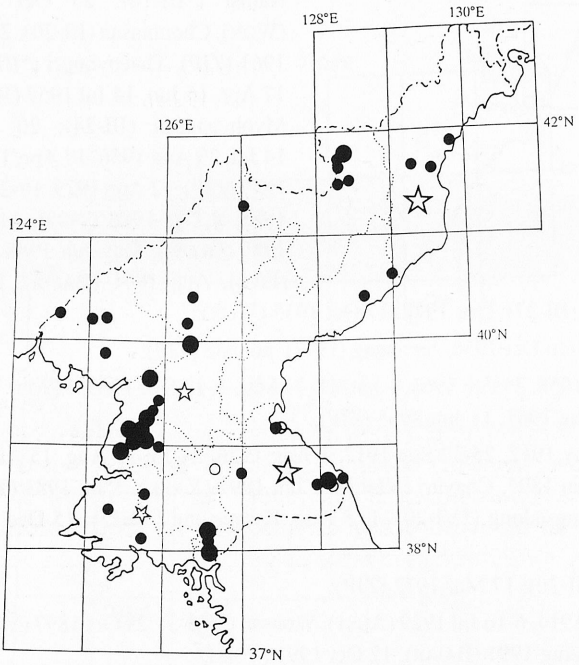
no data: 3 specimens (ZIP).

M e a s u r e m e n t s (48 specimens of the collection (ZIP):

	23 ♂♂	x̄	11♀♀	x̄	14 ?sex	x̄
wing	136-158	145.6	140-154	145.4	142-152	146.7
tarsus	20-31	25.3	20-31	25.2	22-30	26.1
bill	35-41	38.0	28-48	37.6	27-40	36.7
tail	75-102	89.9	86-100	93.6	82-108	93.6

The species observed throughout the country all the year round. Most numerous in the mountainous regions of the northern provinces: The ZIP collection possesses 22 skins taken in three places only: Samjiyon, Potae and Karimri in 1958-1965. In the neighboring countries it is a resident species (GORE & WON Pyong-Oh 1971, KURODA 1975, MEYER DE SCHAUENSEE 1984, CHENG Tso-hsin 1987, WON Pyong-Oh 1993, 1996) and one should assume that it nests all over the country, although its nesting has been found only in the provinces: Hamgyong North (TOMEK 1985), Pyongan North (TOMEK 1985, GŁOWACIŃSKI et al. 1989) and Kaesong (MAUERSBERGER 1981). The most data concerning its occurrence come from the sixties (in 1978-91 it was found only in 9 places)

216. *Picoides major* (LINNAEUS, 1758)
[*Dendrocopos major*, *Picus major*]



Data:

The following data do not include the dates of repeated observations made by European ornithologists in 1978-1991. Details from that period are comprised in publications by MAUERSBERGER 1981, KOLBE 1988, GŁOWACIŃSKI et al. 1989, BÁLDI, WALICZKY 1992, FIEBIG 1993 and in the Card Index of Birds of North Korea in the ISEA. Below are named only the places of such observations furnished with the symbol ✦.

Pyongyang (I): Pyongyang (I-1): winters 1986-88 (CHON Gil-Pyo 1988), ✦, Taesongsan (I-6): 6 Apr 1979 (ZIP), ✦, Ryongaksan (I-10): ✦, Sogam (I-15): ✦, Tongmyongwang (I-16): 21 Sep 1986 (TOM);

Pyongan South (II): 16 Sep, 1 Nov 1932 (WON, but 16 Jun – WON cited by AUST), Ponghakri (*II-11): 23 Apr 1954 (WON), Sainjang (*II-14): 4 Dec 1953 (ZIP), Kumchonri (*II-21): 12 Nov 1951 (WON), 12 Nov 1954 (ZISP), Taesong-ho (II-28): ✦, Yonphungho (II-30): ✦;

Pyongan North (III): Sujinri (III-17): 6 Jun 1982, Chonmasan (III-20): 5 Jul 1961, Unchangri (*III-21): 2 Jul 1961 (ZIP), Myohyangsan (III-24): 20 May 1956 (WON), 15 Jun 1956 (ZIP), ✦, 2 Feb 1995 (PERT), Panghyondong (III-26): 7 Jan 1952 (WON);

Chagang (IV): Karimri (*IV-2): 25 May 1960 (ZIP), Okasan (IV-3): 25 May 1960 (HO; note: These records deals probably with one observation, because the specimen collected by HO Hon on Mt Okasan is housed

in the ZIP collection, with a label indicating Karimri as the nearest locality), Myongmun (IV-6): 17 May 1987, Huichon (IV-10): 18 May 1987 (TOM);

Ryanggang (V): Pochon (V-6): 15 Oct 1958 (WON), Naegokri (V-7): 17 Oct 1986 (TOM), Photae (V-8): 21 Jan, 21 Mar 1963 (ZIP), Rimyongsu (V-9): 30 Sep 1991 (TOM), Samjiyon (V-10): no date (HO), ✦;

Hamgyong North (VI): 21, 25 Sep 1917 (AUST), 24 Jul-2 Sep, 17-24 Nov 1929 (WON), Koanjuryong (VI-18): 6 Jul 1983 (TOM), Kwanmobong (VI-22): 31 May (WON), Onphori (VI-23): 27 Jun 1983 (TOM);

Hamgyong South (VII): Machonryong (VII-5): 26 May 1987, Jongdongri (VII-12): 30 May 1987 (TOM);

Kangwon (VIII): 8, 11 Sep 1914, 15 Sep 1920, Nov 1927, 6, 9 Jul, 25, 28 Nov, 21 Dec 1929, 21 Feb 1935 (AUST), Wonsan (VIII-3): 27-29 Sep, 23 Oct 1897 (YANK), 9 Oct 1991 , Samil-pho (VIII-7): 13 Oct 1991 (TOM), Kumgangsan (VIII-8): Sep 1914 (AUST), ✦, Onjongri (*VIII-8): ✦, Naekangri (*VIII-9): 26 Feb 1961, Kujangri (*VIII-12): 28 Nov 1966 (ZIP);

Hwanghae North (IX): Koksan (IX-3): Mar 1914 (AUST), Sansongri (IX-14): 24 Jan 1962, 18 May 1963 (ZIP), Sariwon (IX-16): 2 May 1987 (GŁOW);

Hwanghae South (X): Kohyonri (*X-10): 28 Sep 1957 (ZIP), Suyangsan (X-24): 27 Apr 1987 (GŁOW);

Hwanghae (IX-X): 20 Mar 1914 (AUST);

Kaesong (I): Kaesong (I-1): 15 Sep 1955, 21 Sep, 11 Nov 1957, 5 Jan 1958 (WON), 30 Oct 1960, 26 Jan 1986 (ZIP), ✦, Pagyon (XI-3): 22 Oct 1984 (TOM);

no locality: 2 Jul, 23 Jun 1975 (ZIP).

M e a s u r e m e n t s (20 specimens of the ZIP collection, 1 specimen of the collection ISEA):

	14 ♂♂	$\bar{x}$	4 ♀♀	$\bar{x}$	3 ?sex	$\bar{x}$
wing	114-138	127.5	130-140	134.5	127-133	129.5
tarsus	19-25	22.8	21-22	21.8	21-25	22.3
bill	23-29	26.5	24-28	26.0	22-29	25.0
tail	74-96	84.4	86-95	90.5	89-127	101.7

Breeding species encountered throughout the country. Until the seventies it was one of the most frequently observed woodpeckers, found present in many places in addition to AUSTIN's data (17 records); specimens from 13 sites are stored, among other collections, in that of the ZIP and WON Hong-Koo (1964) mentions another 7 localities of its occurrence. In 1978-91 the Great-spotted Woodpecker was observed in 24 sites and according to FIEBIG (1993), it was present at each site visited by him. As it is a resident species within the range of its breeding area (DEMENTEV & GLADKOV 1951, VAURIE 1965), the higher frequency of observations in 1978-1991 than in the preceding period may evidence an increase in the numbers of this woodpecker. The increase in numbers is probable, for in North Korea all the woodpeckers are placed under special protection (because of their economic significance, i.e. participation in the fighting against noxious insects in agricultural and forest economy).

217. *Picoides tridactylus* (LINNAEUS, 1758)

Data:

Ryanggang (V): Amnok riv (V-?): 14, 15 Aug 1989 (FIEB), Hyesan (V-5): 1 Mar 1931 (WON), Pochon (V-6): 14 Jul 1956 (ZISP), Photae (V-8): 25 Nov 1962, Namphothae (*V-8): 11 Dec 1965 (ZIP), no date (HO), Samjiyon (V-10): 11 Jan 1935, 14 Jul 1958 (WON), 11 Oct 1958, 16 Dec 1962, 29 May, 12 Aug, 24 Oct 1963, 7 Apr, 27 Mar 1965, 12 Apr 1966 (ZIP), no date (HO), Paekdusan (V-12): 1 Aug 1927 (WON), 27 Jul 1963, Mutubong (V-13): 17 Oct 1964, Sinmusong (V-14): 6, 13 Oct 1967 (ZIP), no date (HO), Yukok (V-15): 12 Oct 1964, Paegam (V-16): 20 Sep 1958, Pakchonri (V-17): 19, 26 Sep 1958 (ZIP);

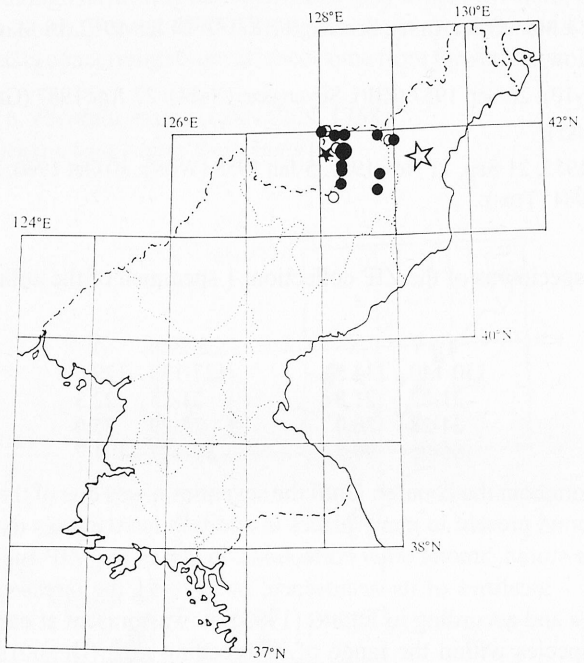
Hamgyong North (VI): 10 May 1912, 1 Aug 1926 (AUST), Nongsadong (*VI-20): 19 Aug-2 Sep 1929 (WON), no date (HO);

?Hamgyong South (VII): ?1 Feb 1931, ?11 Jan 1935 (WON cited by AUST) but WON Hong-Koo (1964) writes about these observations as done in the Ryanggang province (see above);

no data: 2 specimens (ZIP).

M e a s u r e m e n t s (20 specimens of the collection (ZIP)):

	12 ♂♂	x̄	5 ♀♀	x̄	?sex	?sex	?sex
wing	116-129	123.8	116-130	123.6	120	120	126
tarsus	18-28	23.0	20-26	23.1	24	20	20
bill	25-34	31.2	27-30	28.4	31	30	31
tail	73-85	79.1	79-94	86.4	67	58	76



Breeding species, observed in a small area in the Paekdusan region all through the year. Probably, it is not a very scarce species there, because 8 of these woodpeckers were gained at one locality, Samjiyon, for the ZIP collection in 1962-1966. The Three-toed Woodpecker nests in the terrains situated north of North Korea (PANOV 1973, KURODA 1975, ETCHECOPAR & HÜE 1978, MEYER DE SCHAUENSEE 1984, KNYSTAUTAS & SHIBNEV 1986, CHENG Tso-hsin 1987, NECHAEV 1991) but it has not been noted from the southern part of the peninsula (GORE & WON Pyong-Oh 1971, WON Pyong-Oh 1981a, 1993, 1996). The mountains in the northern part of North Korea make the southern boundary of its distribution in the Far East.

218. *Dryocopus javensis* (HORSFIELD, 1821)

Data:

Hwanghae North (IX): Chuamri (*IX-8): 25 May 1986 (CHUNG Jong Ryol 1987), Pongtanri (*IX-11): 26 May 1990 (FIEB), Sangamri (*IX-11): breeding season 1978, probably: Paekchonri (*IX-8)[1], Techonri (*IX-8)[1], Ryongpungri (*IX-8)[1] (SONOBE 1987);

Hwanghae South (X): probably: Unchonri (*X-31)[1], Paeksongri (*X-31)[1] (SONOBE 1987);

Kaesong (XI):probably Jangphung (XI-2)[1] (SONOBE 1987), Pagyon (XI-3): 10 Dec 1956 (WON).

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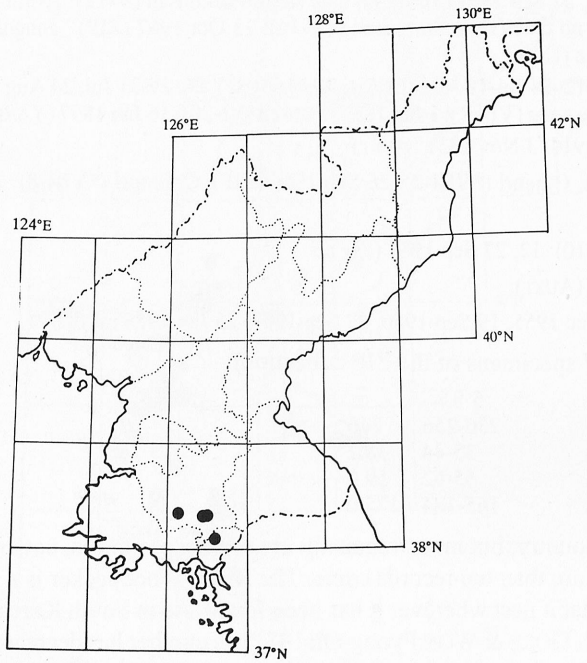
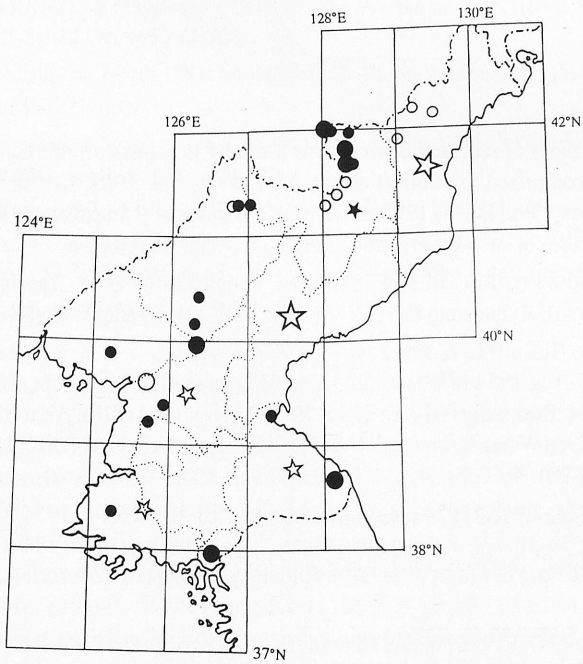
[1]Names of the localies are listed as the areas established for the protection of the White-bellied Woodpecker although SONOBE (1987) writes nothing about the nesting ot even occurrance of the species.



An endemic form of the White-bellied Woodpecker lives in the Korean Peninsula and forms a separate subspecies *Dryocopus javensis richardsi* TRISTRAM, 1879. This woodpecker occurs in a small area in the borderland of North Korea and South Korea. Its number is estimated at a dozen pairs or so (PAK U Il oral comm. – cited by GŁOWACIŃSKI et al. 1989). The greater part of the population live in North Korea and only 3-5 pairs in South Korea. This species has been put under strict protection (CHUNG Jong-Ryol 1987, HAM Kyu-Hwang & WON Pyong-Oh 1982, LEE Woo-Shin 1994) and we may cherish hopes that it will be saved.

219. *Dryocopus martius* (LINNAEUS, 1758)
[*Dryopicus martius*]



Data:

Pyongyang (I): Tongpukri (*I-8): 23 Mar 1957 (ZIP);

Pyongan South (II): Jasan (II-12): 6 Mar 1954 (ZIP), Anju (II-16): 26 Mar 1929 (WON, but 1934 – WON cited by AUST), 15 Nov 1932, Yangdok (II-?): 3 Feb 1949 (WON);

Pyongan North (III): Myohyangsan (III-24): 12 Jul 1956 (ZIP), 26 May 1980, 9 Jun 1983, 4 Oct 1986 (TOM), 12 Apr 1987 (GŁOW), Aug 1991 (BÁLDI), Panghyondong (III-26): 21 Dec 1951 (WON);

Chagang (IV): Hwapyong (IV-2): 4 Sep 1897 (YANK), Karimri (*IV-2): 11 Apr 1958, Okasan (IV-3): 2 Apr, 3 Nov 1958 (ZIP), Myongmun (IV-6): 17 May 1987, Huichon (IV-10): 16 May 1987 (TOM);

Ryanggang (V): Samsu (V-4): 12 Jul 1897, Hyesan (V-5): 19 Aug 1897, Pochon (V-6): 20 Jun 1897 (YANK), Photae (V-8): 31 Mar,

12 Nov 1963, 14 Mar 1966 (ZIP), Hongkyesu (*V-8) no date (HO), Samjiyon (V-10): 25 Jun, 16 Oct 1958, 29 Mar, 20 Oct 1963, 20 May 1964 (ZIP), 27 Sep 1991 (TOM), no date (HO), Paekdusan (V-12): 26 Jul 1960 (ZIP), no date (FIEB), Nongsari (*V-12): no date (HO), Sinmusong (V-14): 13 Oct 1967 (ZIP), Jungamsan (V-?) no date (HO), Mupong (V-?) no date (HO);

Hamgyong North (VI): 17, 20 May 1912, 24 Jul-19 Aug, 13 Aug 1929 (AUST), 26, 29-31 Jul, 24 Aug 1952 (WON), Musan (VI-12): 6 Jun 1897, Chayuryong (VI-13): 3 Jun 1897, Yonsan (VI-20): 16 Jun 1897 (YANK);

Hamgyong South (VII): 17, 25 Mar 1914, 3 Nov 1931 (AUST);

Kangwon (VIII): 30 Jan 1935 (AUST), Othanri (*VIII-2): 26 Sep 1954 (ZIP), Onjongri (*VIII-8): 7 Oct 1978 (TOM), 23 May 1980 (MAUERS);

Hwanghae South (X): Kohyonri (*X-10): 12, 27 Sep 1957 (ZIP);

Hwanghae (IX-X): 10 Nov 1913, Jan (AUST);

Kaesong (I): Kaesong (I-1): Dec, 2 Dec 1955, 19 Sep 1956, 22 Sep 1957, 25 Jan 1958 (WON).

M e a s u r e m e n t s (17 specimens of the ZIP collection):

	12 ♂♂	$\bar{x}$	5 ♀♀	$\bar{x}$
wing	237-259	246.4	230-256	246
tarsus	32-41	37.4	35-44	38.2
bill	55-69	61.7	55-62	59.0
tail	154-196	172.7	165-184	175.0

Species observed throughout the country, but most frequently in northern provinces, notably in the Paekdusan region, from which more than ten records come. The Black Woodpecker is a resident species and it may be assumed that it nest wherever it has been found. As in South Korea and Russia (DEMENTEV & GLADKOV 1951, GORE & WON Pyong-Oh 1971) its number has decreased in the present century, e.g. it was relatively often encountered in the Hamgyong North and Ryanggang Provinces towards the end of the previous century (YANKOVSKII 1898) In 1978-1991, during a period of 37 days of observations carried out by European ornithologists in the same region, it was recorded only twice (FIEBIG 1993, TOMEK unpubl. materials).

220. *Picus canus* GMELIN, 1788
[*Gecinus canus*]

Data:

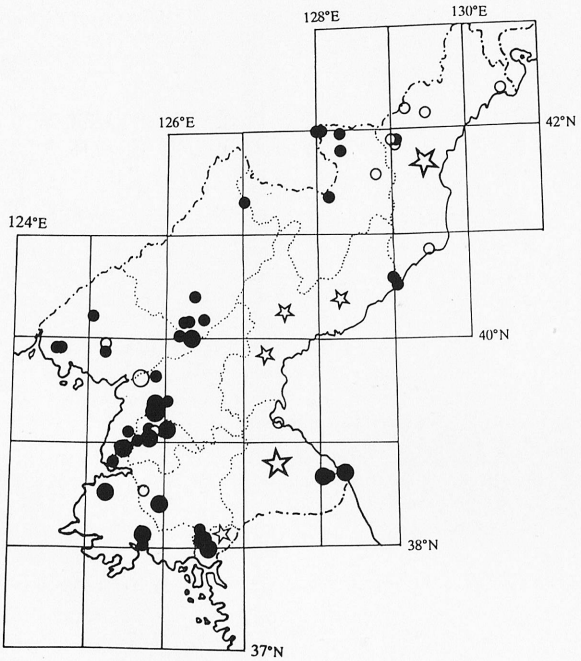
The following data do not include the dates of repeated observations made by European ornithologists in 1978-1991. Details from that period are comprised in publications by MAUERSBERGER 1981, KOLBE 1988, GŁOWACIŃSKI et al. 1989, BÁLDI, WALICZKY 1992, FIEBIG 1993 and in the Card Index of Birds of North Korea in the ISEA. Below are named only the places of such observations furnished with the symbol ✦.

Pyongyang (I): Pyongyang (I-1): 1986-88 (CHON Gil-Pyo 1988), ✦), Ponghwari (I-4): ✦, Taesongsan (I-6): 6 Dec 1948 (WON), 28 Sep 1986 (TOM), Ryongsong (I-7): 20 Apr 1950 (WON), Ryongaksan (I-10): ✦, Sogam (I-15): ✦;

Pyongan South (II): Unsan (II-10): 25 Aug 1954 (ZIP), 25, 29 Dec 1954, Jasan (II-12): 22 Apr, 18 Dec 1953 (WON), 19 Nov 1953, 21, 23 Nov 1954, Paeksongri (II-13): 22 Jul 1953, 22 Nov 1954 (ZIP), Anju (II-16): 15 Sep 1931, 4 Apr, 7 Sep 1932, 17 Oct 1935 (WON), Kumjongri (*II-21): 12 Sep, 11 Nov 1954 (ZIP), Usanri (II-27): 6 Jun 1987 (TOM), Taesong-ho (II-28): ✦, Yonpung-ho (II-30): 30 Sep, 1 Oct 1978 (TOM);

Pyongan North (III): Yomju (III-10): 28, 29 Oct 1954 (MAUERS), Namsi (*III-10): 28 Oct 1954, Chonmasan (III-20): 31 May 1961 (ZIP), Hyangsan (III-23): 3, 5 Oct 1986 (TOM), Myohyangsan (III-24): 17-18 Jun 1950 (WON), 15 Jun 1955, 16 Apr 1957, 11 Apr, 17 May 1979 (ZIP), ✦, Panghyondong (III-26): 20 Jan 1952, Kusong (III-27): 15 Dec 1929 (WON);

Chagang (IV): Karimri (*IV-2): 2 Feb, 29 Oct 1958 (WON), Okasan (IV-3): 6 Feb, 29 Oct 1958 (HO; note: the record from 29 Oct 1958 is probably identical with that given above, i.e. the specimen collected by HO Hon on Mt Okasan housed in the ZIP collection, with a label indicating Karimri as the nearest locality), Myongmun



(IV-6): 17 May 1987, Wongungri (IV-8): 15 May 1987, Huichon (IV-10): 18 May 1987, Chongsan (*IV-10): 14 May 1987 (TOM);

Ryanggang (V): Hyesan (V-5): 1 Jun 1980, Samjiyon (V-10): 22 Oct 1978 (TOM), Paekdusan (V-12): 12 Oct 1957, Nongsari (*V-12): no date (HO), Sinmusong (V-14): no date (ZIP), Paegam (V-16): 21 Jun 1897 (YANK);

Hamgyong North (VI): 7 Sep 1917, 1-10 Aug, 31 Sep 1929 (AUST), Manpo (VI-2): Nov 1929 (WON), Musan (VI-12): 6 Jun 1897, Chayuryong (VI-13): 3 Jun 1897, Yonsa (VI-20): 20 Jun 1897 (YANK), Nongsari (*VI-20): Jul 1929, 18 Sep 1952, Jungsanri (*VI-30): Sep 1917 (WON);

Hamgyong South (VII): 10, 26 Apr 1884 (AUST), Machonryong (VII-5): 27 May 1987, Sangryong (VII-7): 30 May, 3 Jun 1987 (TOM) Kapsan (VII-?) 19 Nov 1929, Chaho (VII-?): 5 Jan 1954 (WON);

Kangwon (VIII): 19 Sep 1914, 9, 10 Jul 1929 (AUST), Wonsan (VIII-3): 27 Sep-23 Oct 1897 (YANK), Samilpho (VIII-7): ✦, Onjongri (*VIII-8): ✦, Manmulsan (*VIII-8): 8 Sep 1962 (ZIP), 11 Jun 1980, Kuryong (*VIII-8): 12 Oct 1991 (TOM);

Hwanghae North (IX): Sohungho (IX-7): ✦, Ungyesan (*IX-13): 28 Nov 1963 (ZIP), Sariwon (IX-16): 10 Jan 1949 (WON);

Hwanghae South (X): Kuwolsan (X-6): 15 Jun 1955 (WON), 16 May, 2 Jul, 2 Aug 1957, Haeju (X-22): no date (ZIP), Suyangsan (X-24): ✦;

Kaesong (I): 5 Mar, 4, 9, 19 Nov 1929 (WON, but: 9, 19 Nov 1928 and 5 Mar 1929 WON cited by AUST), Kaesong (I-1): 19 Nov 1955, 1 Apr 1956, 1 Jan 1958, 27 Feb 1959, 25 Sep 1959 (WON), 30 Apr 1961 (ZIP), Pagyon (XI-3): 27 May 1957 (WON), 25, 27 Oct 1986 (TOM), Haesonri (XI-4): ✦;

no data: (FIEB).

M e a s u r e m e n t s (26 specimens of the ZIP collection, 2 specimens of the MZB collection, 1 specimen of the ISEA collection):

	11 ♂♂	$\bar{x}$	14 ♀♀	$\bar{x}$	4 ?sex	$\bar{x}$
wing	141-154	145.0	137-146	142-8	146-151	149.1
tarsus	25-28	26.9	23-33	27.2	26-29	27.7
bill	34-39	36.9	31-38	33.4	28-40	36.1
tail	95-109	103.4	90-106	98.5	101-110	103.6

Common breeding species met with in the territory of the whole country. Since the fifties it has been reported by WON Hong-Koo (1964) from 20 localities, specimens from another 20 places are kept in the ZIP collection. It was besides observed repeatedly in most places visited by members of ornithological expeditions to North Korea in 1978-1991. According to FIEBIG's (1993) and my observations, it was the most frequently seen woodpecker. It was present far from the built-up areas,

close to settlements and even inside big towns; not only in the lowlands but also in mountainous areas. The Grey Woodpecker is a common breeding species in the neighboring regions: Japan, China, Russia and South Korea (GORE & WON Pyong-Oh 1971, PANOV 1973, KURODA 1975, ETCHECOPAR 1978, DISTRIB 1981, MEYER DE SCHAUENSEE 1984, CHENG Tso-hsin 1987, NECHAEV 1991, WON Pyong-Oh 1993, 1996).

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