ACTA ZOOL. CRACOV. | 30 | 4 | 37—52 | KRAKÓW, 30. IV. 1987

Teresa TOMEK and Stefan DONTCHEV

Materials concerning the avifauna of the Democratic People's Republic of Korea in the postbreeding season

[with Pls V—VII and 1 text-fig.]

Materiały do fauny ptaków Koreańskiej Republiki Ludowo-Demokratycznej w sezonie polęgowym

Abstract. During their stay in the Democratic People's Republic of Korea from 30 July to 13 August 1979 and from 2 to 26 October 1984 the authors observed 82 bird species. The most instructive observations concern the occurrence of such species as *Podiceps cristatus*, *Numenius arquata*, *Larus argentatus* and *Larus schistisagus*.

CONTENTS

I. INTRODUCTION

The peninsula of Korea is a bridge that connects the Japanese Is. with the Asiatic continent, on the one hand, and the North of Asia with the South, on the other. It is therefore zoogeographically important region. Nevertheless, its avifauna, notably that of the northern part, has not as yet been studied well enough. In the studies of the fauna of birds covering rather large areas of eastern Asia (VAURIE 1959, 1965; ETCHECOPAR and HÜE 1978, 1983) Korean Peninsula is a blank space as regards many of the species. The numbers of birds of some species also change and information from before a few tens of years (AUSTIN 1948; WON Hong Koo 1963—1965) is in great part out of date at present. The recently issued publications by Korean ornithologists give lists of bird species from small areas or say nothing at all about their numbers (LE Heui

Tae 1967; Ho Hon and Rim Chu Yon 1975; Kim Ri Thae and O Hyng Dam 1982) or, lastly, are concerned with only one species (Li Hi Tae 1970, 1969; Pak U Il, Rim Chu Yon and Choe Mun Gap 1983; Rim Chu Yon 1983; O Myong Sok 1984 and others). This is why each item of information about the occurrence, distribution and numbers of birds in the Korea may actually be conducive to better knowledge of the fauna of that country. For this reason we have decided to publish our observations in spite of their fragmentary nature. We made them during our visits to the Democratic People's Republic of Korea under the scheme of scientific interchange between the Korean Academy of Sciences and the Polish and Bulgarian Academies of Sciences. We present them jointly, since although divided by a long time space they deal with the post-breeding fauna of birds of overlapping areas. Together with other fragmentary studies (Bocheński et al. 1981; Mauersberger 1981; Tomek 1984, 1985; Kolbe in prep.), these materials can be used as the starting point to prepare a monograph of the present distribution of birds in the DPR of Korea.

II. STUDY AREA AND METHOD

In this paper we present our observations of the fauna of birds carried out in the second half of summer and in autumn: in the postbreeding season, i. e. from 30 July to 13 August 1979 (S. Dontchev) and in the season of autumn migrations, i. e. from 2 to 26 October 1984 (T. Tomek). Observations were made in various places, mostly in the southern part of the Democratic People's Republic of Korea, during a full day's or several hours' excursions into the country. The time and places of observation (plotted on the map in Fig. 1) are as follows:

Summer 1979:

31 July. Pyongyang, the region of the River Taedong.

3 August. Lake Taesong-ho, the region of the lower course of the River Taedong, below Pyongyang.

5 August. Wooded rocky hill Yongak-san.

6 August. Sokam dam-like (Phot. 1).

7 August. Wonsan, sea coast.

8—10 August. Kumgang-san Mts. the neighbourhood of the hotel at Kosong, mountain valleys in a radius of several kilometres from Kosong, the sea coast and rice fields situated not far from the coast (the region of Lake Samil-po). (Phot. 2).

11 August. Rice fields at a distance of about 60 km north-east of Pyongyang.

12 August. Myohyang-san Mts.: the region of the River Hyangsan-chon over a length of several kilometres and the route along the highway from the Myohyang-san Mts. to Pyongyang.

Autumn 1984:

2 October. The Moranbong Park at Pyongyang, Mankyongdae (park).

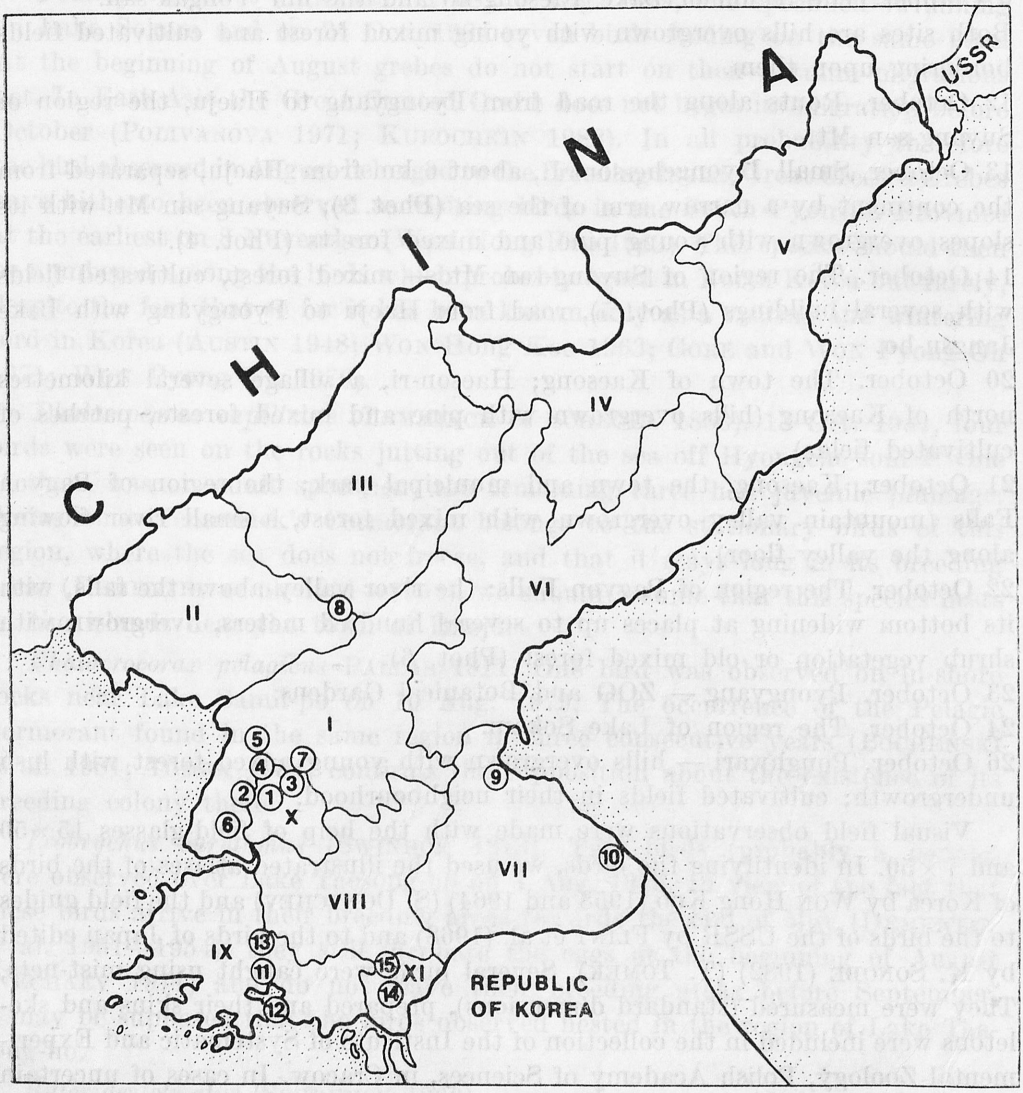


Fig. 1. People's Democratic Republic of Korea. The map shows the localities (arabic numerals) and the division of the country into provinces (roman numerals). 1 — Pyongyang (town), 2 — Mankyongdae, 3 — Yongak-san, 4 — Sunan, 5 — Sokam Lake, 6 — Taesong-ho Lake, 7 — Ponghwari, 8 — Myohyang-san, 9 — Wonsan, 10 — Kumgang-san, 11 — Haeju, Suyang-san, 12 — Hyongche-som, 13 — Jangsu-ho Lake, 14 — Kaesong, 15 — Pagyon. I. South Pyongan, II — North Pyongan, III — Chaggang, IV — Ryang gang, V — North Hamgyong, VI — South Hamgyong, VII — Kangwon, VIII — North Hwanghae, IX — South Hwanghae, X — Pyongyang-si, XI — Kaesong-si

3—4 October. Wooded hill Taesong-san and the River Taedong — both within the limits of the town of Pyongyang.
6 October. The region of Lake Taesong-ho and the hill Yongak-san.
Both sites are hills overgrown with young mixed forest and cultivated fields bordering upon them.
12 October. Routs along the road from Pyongyang to Haeju, the region of Suyang-san Mt.
13 October. Small Hyongche-som I., about 6 km from Haeju, separated from the continent by a narrow arm of the sea (Phot. 3); Suyang-san Mt. with its slopes overgrown with young pine and mixed forests (Phot. 4).
14 October. The region of Suyang-san Mt. — mixed forest, cultivated fields with several buildings (Phot. 5), road from Haeju to Pyongyang with Lake Jangsu-ho.
20 October. The town of Kaesong; Haeson-ri, a village several kilometres north of Kaesong (hills overgrown with pine and mixed forests, patches of cultivated fields).
21 October. Kaesong, the town and municipal park; the region of Pagyon Falls (mountain valley overgrown with mixed forest, a small river flowing along the valley floor).
22 October. The region of Pagyon Falls: the river valley above the falls, with its bottom widening at places up to several hundred meters, overgrown with shrub vegetation or old mixed forest (Phot. 6).
23 October. Pyongyang — ZOO and Botanical Gardens.
24 October. The region of Lake Sokam.
26 October. Ponghwari — hills overgrown with young mixed forest with lush undergrowth; cultivated fields in their neighbourhood.

Visual field observations were made with the help of field-glasses 15×50 and 7×50. In identifying the birds, we used the illustrated atlases of the birds of Korea by WON Hong Koo (1958 and 1964) (S. DONTCHEV) and the field guides to the birds of the USSR by FLINT et al. (1968) and to the birds of Japan edited by K. SONOBE (1982) (T. TOMEK). Several birds were caught using mist-nets. They were measured (standard dimensions), prepared and their skins and skeletons were included in the collection of the Institute of Systematic and Experimental Zoology, Polish Academy of Sciences, in Cracow. In cases of uncertain specific determinations made in the field, they were verified on the basis of the skin collection of the Institute of Zoology, Korean Academy of Sciences, in Pyongyang.

III. SURVEY OF SPECIES

Altogether 82 species were observed. The list of birds presented below is not complete, some of the birds seen in the field could not be identified and are left out. Uncertain determinations of species are indicated with question

marks (?). The systematic arrangement and nomenclature are based on works by VAURIE (1959, 1965).

Podiceps cristatus (LINNAEUS 1758). 6 Aug. 1979, one specimen swimming on Lake Sokam and on 24 Oct. 1984 seven birds feeding on the same lake. At the beginning of August grebes do not start on their autumn migrations yet. In East Asia the Great Crested Grebe does not begin its migration before October (POLIVANOVA 1971; KUROCHKIN 1982). In all probability therefore the bird observed in August belonged to the breeding fauna. Great Crested Grebes have hitherto been observed as visiting birds in the South Pyongan Province at the earliest on 8 November (WON Hong Koo 1963). This species should then be numbered among the birds which probably breed in North Korea but rarely, despite the fact that so far it has been known only as a visiting and wintering bird in Korea (AUSTIN 1948; WON Hong Koo 1963; GORE and WON Pyong Oh 1971; WON Pyong Oh 1976).

Phalacrocorax capillatus (TEMMINCK et SCHEGEL 1850). 13 Oct. 1984, four birds were seen on the rocks jutting out of the sea off Hyongche-som I. One of them was an adult specimen, the remaining three had juvenile plumage. Seeing that Temminck's Cormorant belongs to the stationary birds of this region, where the sea does not freeze, and that it stays long in its breeding areas (DEMENTEV et al. 1951—1954), we should assume that this species nests on the islands near the town of Haeju.

Phalacrocorax pelagicus PALLAS 1811. One bird was observed on in-shore rocks near Lake Samil-po on 10 Aug. 1979. The occurrence of the Pelagic Cormorant found in the same region in three consecutive years (BOCHEŃSKI et al. 1981; TOMEK 1984) confirms the supposition about the existence of its breeding colony there.

Ixobrychus eurythmus (SWINHOE 1873). Two birds (probably a couple) were observed over Lake Taesong-ho on 3 Aug. 1979. In view of the fact that these birds arrive in their breeding areas towards the end of May (DEMENTEV et al. 1951—1954), they still incubate the eggs at the beginning of August (NECHAEV 1971) and do not leave their breeding areas before September, it may be supposed that the birds observed nested in the region of Lake Taesong-ho.

Butorides striatus (SCHRENCK 1860). Seen only once, on 12 Aug. 1979, over the widely spread river Hyangsan-chon in the region of the Myohyang-san Mts., about 3 km below the place where this species was seen on 18 June 1983 (TOMEK 1985).

Bubulcus ibis (LINNAEUS 1758). On 13 Oct. 1984 three birds fed on the shallows, exposed during the low tide, by Hyongche-som I. near Haeju.

Egretta alba (LINNAEUS 1758). Great White Herons foraging in rice fields about 60 km north-east of Pyongyang were seen on 11 Aug. 1979 and by the road between Pyongyang and Haeju on 12 Oct. 1984. These last birds were feeding in the field dried up after rice harvest.

Egretta intermedia (WAGLER 1828). Nine specimens were observed in rice fields in the vicinity of Lake Samil-po only once, on 10 Aug. 1979.

Ardea cinerea LINNAEUS 1758. One bird was seen on Lake Taesong-ho on 3 Aug. 1979 and also one, feeding in shallows, overgrown with reed, in Lake Jangsu-ho near Haeju on 14 Oct. 1984.

Anas platyrhynchos LINNAEUS 1758. On 3 Aug. 1979 five Mallards occurred on the River Taedong, in its lower course, several kilometres below Pyongyang.

Anas poecilorhyncha (SWINHOE 1866). Spot-billed Ducks were relatively frequently encountered in October 1984. And so on 3 Oct. three flocks of these birds of about 50, 20 and 20 specimens were observed on the River Taedong in Pyongyang, on 13 Oct. more than ten birds on the sea near Haeju, on 14 Oct. a flock of about 40 birds on Lake Jangsu-ho near Haeju, on 23 Oct. 28 specimens on Lake Sokam and on 26 Oct. 24 birds on the dam-like near Ponghwari.

Buteo buteo (LINNAEUS 1758). Observed in the autumn 1984: 3 Oct., one bird circling over Taesong-san Hill near Pyongyang; 26 Oct., another single bird perching in a tree at Ponghwari.

Butastur indicus (GMELIN 1788). A bird circling over Lake Sokam on 24 Oct. 1984.

Falco peregrinus TUNSTALL 1771 (?). Seen only once, near Lake Taesong-ho on 6 Oct. 1984.

Falco columbarius LINNAEUS 1758. Observed in the autumn 1984: a bird in the region of Suyang-san Mt. on 12 Oct. and another one over Lake Sokam on 24 Oct.

Falco vespertinus LINNAEUS 1766. A Red-footed Falcon was seen in the region of Yongak-san Hill on 5 Aug. 1979. Migrations of this bird do not begin in southern Primorsk before September (DEMENTEV et al. 1951—1954; PANOV 1973) and so the bird observed probably belonged to the breeding fauna.

Falco tinnunculus LINNAEUS 1758. On 3 Aug. one bird was seen hunting insects over Lake Taesong-ho, on 7 Aug. 1979 another one was observed over the shore of the sea near the hotel at Wonsan. Only one specimen was come across several kilometers south of Kaesong in the autumn 1984.

Phasianus colchicus LINNAUES 1758. In Oct. 1984 it was observed in the following sites: Mankyongdae, Yongak-san, the neighbourhood of Lake Taesong--ho, Suyang-san Mt., and the region of Lake Sokam. As in the summer of 1983, the most pheasants were found by Lake Sokam: about 10 birds, five of them — males, the remaining five — females or juveniles.

Tringa nebularia (GUNNERUS 1767). On 13 Oct. 1984 three birds were foraging in an inshore area exposed at the low tide in Hyongche-som I.

Numenius arquata (LINNAEUS 1758). One Curlew was seen on Lake Taesong-ho on 2 Aug. 1979 and one feeding on the shore of Hyongche som I. The presence of the Curlew at the beginning of August may suggest that it belonged to the breeding fauna of the DPRK, the more so, because birds of this species had already been reported from the Korean Peninsula and neighbouring region

from May till August before (Won Hong Koo 1964; Nazarov and Labzyuk 1975), although the breeding areas of the Curlew lie much farther to the north (Dementev et al. 1951—1954; Hartert 1903—1922; Vaurie 1965; Cheng Tso Hsin 1976; Etchecopar and Hüe 1978). On the other hand, however, the bird observed may have been a nomadic specimen that had not entered upon breeding.

Numenius madagascariensis (Linnaeus 1766). Five Australian Curlews were feeding on the shore of Hyongche-som I. on 13 Oct. 1984.

Gallinago gallinago (Linnaeus 1758) (?). Four birds feeding in rice fields near Sunan were observed on 12 Aug. 1979.

Larus argentatus Pontoppidan 1783. The Herring Gull was found present at Wonsan on the eastern sea-coast on 7 Aug. 1979 (7—8 specimens) and near Heaju on the western coast on 13 Oct. 1984 (3 or more birds in a flock of Black-tailed Gulls). The birds observed in August probably nested in that part of the coast. This is not the first statement in this sense: according to Won Hong Koo (1964), this species nests on the eastern and western coasts of the northern part of the peninsula. As many authors claim that Herring Gulls are only migratory or wintering birds in the region of Primorsk, Korea and the eastern coast of China (Dementev et al. 1951—1954; Cheng Tso Hsin; 1976 Etchecopar and Hüe 1978; Vaurie 1965; Hartert 1903—1922), the status of the Herring Gull on the eastern coast of Asia needs explaining.

Larus schistisagus Stejneger 1884. One bird was seen at Wonsan on the sea-coast on 7 Aug. 1979. The Slaty-backed Gull was first recorded from the Korean Peninsula on 15 March 1969; further observations come from the winter (Gore and Won Pyong Oh 1971) or autumn seasons (Bocheński et al. 1981). The present observation is therefore the first record of this bird from the summer season.

Larus crassirostris Vieillot 1818. It was observed in the autumn of 1984: six birds on the River Taedong in Pyongyang on 3 Oct. and a flock of about 100 specimens on Hyongche-som I. on 13 Oct. They were in juvenile plumage or adult birds.

Sterna hirundo Linnaeus 1758. Only one bird was noted on the River Taedong below Pyongyang on 3 Aug. 1979.

Columba rupestris Pallas 1811. Rock Doves were met with in the Myohyang-san Mts. (one bird on the roof of the Museum building) on 12 Aug. 1979, and in 1984: one specimen in Mankyongdae on 2 Oct., two in the region of Yongak-san Hill on 6 Oct. and a flock of 18 birds in the proximity of the dam-lake at Ponghwari on 26 Oct. These birds occur also in Pyongyang, where they nest on the girders of the bridge over the River Taedong (O Hyng Dam, oral communication).

Streptopelia orientalis (Latham 1790). This dove was frequently observed. It occurred singly or in flocks consisting of up to more than ten specimens one. In October 1984 it appeared mainly outside the built-up areas, i. e. in fields or woods.

Cuculus canorus LINNAEUS 1758. The Common Cuckoo was present by lake Taesong-ho on 3 Aug. 1979.

Eurystomus orientalis (LINNAEUS 1766). A bird was watched feeding and alighting on electric power-wires, near Sunan on 12 Aug. 1979.

Halcyon pileata (BODDEART 1783). On 8 Aug. 1979 one bird was seen in the Kumgang-san Mts., in the same region where a pair of this species was observed in 1980 (TOMEK 1984). And so Black-capped Kingfishers nested in the Kumgang--san Mts. at least in two consecutive breeding seasons.

Alcedo atthis (LINNAEUS 1758). In August 1979 these birds were found three times on the lakes: Taesong-ho (2 observations) and Sokam (1 observation), and about 60 km north-east of Pyongyang, where a specimen was seen by a canal supplying water to rice fields — about 1 m wide and with its banks about 0.8 m high.

Upupa epops LINNAEUS 1758. It was observed only on Lake Taesong-ho in August 1979.

Picus canus GMELIN 1788. It was recorded three times in the autumn of 1984: on Suyang-san Mt. on 12 Oct., in a forest by Lake Sokam (2 birds) on 24 Oct. and near Ponghwari (also 2 birds) on 26 Oct.

Dendrocopos major (LINNAEUS 1758). Like the previous species, the Great Spotted Woodpecker was observed in the autumn of 1984: on Yongak-san Hill (1 specimen) 6 Oct., one bird in the neighbourhood of Pagyon Fall on 22 Oct. and four times on Lake Sokam on 24 Oct.

Dendrocopos leucotos (BECHSTEIN 1803). The presence of the White-backed Woodpecker was noted in the valley of the River Hyangsan-chon in the Myohyang-san Mts. on 12 Aug. 1979, on Yongak-san Hill on 6 Oct. 1984 and in the forest surrounding Lake Sokam on 24 Oct, 1981.

Dendrocopos kizuki (TEMMINCK 1835). Similarly to the above-mentioned woodpeckers the Japanese Pygmy Woodpecker was seen in three places: in the Myohyang-san Mts. on 12 August 1979, near Pagyon Fall on 22 Oct. 1984 and on Lake Sokam on 24 Oct. 1984 (1 bird in each).

Hirundo rustica LINNAEUS 1758. Flocks of Swallows, numbering from some dozen to about 30 birds were observed on Lake Taesong-ho on 3 Aug. 1979 and in the villages situated by the road from Pyongyang to Haeju on 12 Oct. 1984.

Hirundo daurica LINNAEUS 1771. Three Red-rumped Swallows were seen flying near the rocky vertical walls of a valley near Kuriong Fall in the Kumgang-san Mts. on 9 August 1979.

Delichon urbica (LINNAEUS 1758). The occurrence of this species was found in Pyongyang and its environs in 1984: in the Moranbong Park (about 15 birds) on 2 Oct., by the River Taedong (about 15 birds) en 3 Oct. and over Yongak-san Hill (5—6 birds) on 6 Oct.

Galerida cristata (LINNAEUS 1758). One bird was seen on Lake Taesong-ho on 3 Aug. 1979. Both this observation and the previous two (BOCHEŃSKI et al. 1981; TOMEK 1984) come from more or less the same place.

Anthus hodgsoni RICHMOND 1907. Members of this species were observed in 1984: in a young mixed forest near Lake Taesong-ho on 6 Oct. (5 birds) and in a similar forest on Yongak-san Hill on 6 and 7 Oct. (3 birds). One of these last birds was caught, its measurements being: wing — 85 mm, tarsometatarsus — 40 mm, beak — 11 mm, tail — 60 mm and body weight — 22,2 g.

Anthus spinoletta (LINNAEUS 1758). About 10 Water Pipits stayed in the region of the wet, flat beach of Lake Jangsu-ho on 14 Oct. 1984.

Motacilla cinerea TUNSTALL 1771. One specimen was encountered in the valley of the River Hyangsan-chon in the Myohyang-san Mts. on 12 Aug. 1979.

Motacilla alba LINNAEUS 1758. These birds were noted three times: 2 specimens on Lake Taesong-ho on 3 Aug. 1979, one on Lake Sokam on 6 Aug. 1979 and one on Hyongche-som I. on 13 Oct. 1984.

Lanius sphenocercus CABANIS 1873 (?). Only one specimen was seen near Suyang-san Mt. on 12 Oct. 1984.

Oriolus chinensis LINNAEUS 1766. This is one of the species departing fairly early and for this reason our information about its occurrence is limited to August 1979. In addition to the places from which the Black-naped Oriole had already been reported, i. e. Pyongyang and Lakes Taesong-ho and Sokam (TOMEK 1984, 1985), it was observed in the Kumgang-san Mts.: in the valley leading to Kuriong Fall on 6 Aug. and near the hotel at Kosong on 10 Aug.

Garrulus glandarius (LINNAEUS 1758). These birds were met with frequently and in large numbers in the autumn of 1984: in Moranbong Park on 2 Oct. (1 specimen), on Taesong-san Mt. on 3 Oct. (9 specimens), in the region od Yongak-san on 6 Oct. (2), 10 birds flying over Hyongche-som I. on 13 Oct., on Suyang-san Mt. on 14 Oct. (3) and in the region of the town of Kaesong: about 15 birds in the village of Haeson-ri on 20 Oct., 4—5 specimens in the municipal park at Kesong on 21 Oct. and 2 birds near Pagyon Fall on 22 Oct.; besides, one bird in the Zoological Gardens in Pyongyang on 23 Oct. and two on Lake Sokam on 24 Oct. The fact that Jays were more frequently seen in autumn than in spring and summer (TACZANOWSKI 1888, BOCHEŃSKI et al. 1981, TOMEK 1984, 1985, present material) confirms the earlier supposition that this species belongs to the common birds only that it is hard to detect in the breeding season (WON Hong Koo 1965; TOMEK 1984).

Pica pica (LINNAEUS 1758). This is a common bird, encountered single or in flocks of up to 20 specimens in all environments investigated.

Corvus macrorhynchos WAGLER 1827. Jungle Crows were observed in 1979: on the rocky slopes of Yongak-san Hill on 5 Aug. (3), at Wonsan on 7 Aug. (2), in the valley leading to Kuriong Fall in the Kumgang-san Mts. on 8 Aug. (1) and in 1984: on Taesong-san Mt. on 3 Oct (5), on rocks near Pagyon Fall (about 14) and on Lake Sokam (7).

Corvus carone orientalis EVERSMANN 1841. These birds were often seen, mostly in flocks of several to about 20 specimens. In addition to the localities which have already been published (BOCHEŃSKI et al. 1981, TOMEK 1984, 1985),

they also occurred in the neighbourhood of Lake Jangsu-ho on Oct. 1984 (3) and in the region of the village of Panmunjom on 20 Oct. 1984 (about 20).

Microscelis amaurotis (TEMMINCK 1830). This species was observed several times in the autumn of 1984: a flock of 7—8 specimens on Yongak-san Hill on 6 Oct., 5 birds on Suyang-san Mt. on 14 Oct., a flock of 5—10 birds in the region of Pagyon Fall on 22 Oct. 2 birds in the grounds of the ZOO in Pyongyang on 23 Oct. and another two at Ponghwari on 26 Oct. It is noteworthy that the birds were observed in the places in which they had not been found present in the breeding season in our previous observations (TOMEK 1984, 1985). The occurrence of these birds in flocks suggests besides that they were migrants or nomads. To be sure, the Brown-eared Bulbul is a common resident in the southern part of the peninsula (GORE and WON Pyong Oh 1971; WON Pyong Oh 1976), but in the DPRK it was recorded scarcely several times in the breeding season (WON Hong Koo 1965).

Cinclus pallasi TEMMINCK 1820. On 8 Aug. 1979 this species was observed in the vicinity of Kuriong Fall in the Kumgang-san Mts., approximately in the same place as in 1980 (TOMEK 1984).

Troglodytes troglodytes (LINNAEUS 1759). On 22 Oct. 1984 five pairs of Wrens displaying autumnal sexual behaviour and 6 single specimens were seen along a several-kilometre-long mountain valley above Pagyon Fall and so there were at least 16 specimens there. Wrens were rarely observed in the breeding season (WON Hong Koo 1965; TOMEK 1984, 1985) and nowhere did they occur in such a number as at present. Taking into consideration the relatively large number of Wrens over a small area and an earlier finding of a dead bird on volcanic tuffs void of plants at the summit of Paektusan Mt. (TOMEK 1984), we may assume that at least some members of this species encountered in North Korea are migratory birds. And so AUSTIN'S (1948) and PANOV'S (1 973) suppositions that in that part of their range the Wrens are migrating birds, although many authors are inclined to number them among the residents (DEMENTEV et al. 1951—1954; VAURIE 1959), would be right.

Phylloscopus inornatus (BLYTH 1842). The Yellow-browed Warbler is relatively often come across in the migration season. In the autumn of 1984 it was seen on Suyang-san Mt. on 14 Oct., 4 birds in the region of Pagyon Fall on 22 Oct., one specimen at Kaesong on 21 Oct., two on Lake Sokam on 24 Oct. and one at Ponghwari on 26 Oct.

Phylloscopus borealis (BLASIUS 1858) (?). One specimen was seen in the neighbourhood of Lake Taesong-ho on 6 Oct. 1984.

Phylloscopus trochiloides (SUNDEWALL 1837) (?) One bird belonging probably to this species was observed at Kosong on 9 Aug. 1979.

Phylloscopus tennelipes SWINHOE 1860. Observed in the Myohyang-san Mts. on 12 Aug. 1979.

Phylloscopus coronatus (TEMMINCK et SCHLEGEL 1847). One bird was met with on Lake Sokam on 6 Aug. 1979.

Regulus regulus (LINNAEUS 1758). The birds of this species were observed

only in the autumn of 1984: 5 specimens in the pine forest growing on the slopes of Suyang-san Mt. on 14 Oct., one on Lake Sokam on 24 Oct. and 6 at Ponghwari on 26 Oct.

Ficedula mugimaki (TEMMINCK 1835). Two birds were encountered in the forest on Taesong-san Hill on 3 Oct. 1984.

Phoenicurus auroreus (PALLAS 1776). A female was seen in thickets overgrowing the knolls in the vicinity of Yongak-san Hill on 6 Oct. 1984.

Luscinia (*Pseudaëdon*) *sibilans* (SWINHOE 1863). Two males were caught on Suyang-san Mt. on 13 Oct. 1984. Their measurements are, respectively: wing — 70 and 68 mm, tarsometatarsus — 26 and 27 mm, beak — 10 and 10.5 mm and tail — 53 and 47 mm.

Tarsiger cyanurus (PALLAS 1773). As in 1978 (BOCHEŃSKI et al. 1981), it was observed only in the second half of October: twice two birds, 6 kilometres apart, were observed in the region of Pagyon Fall on 22 Oct. 1984 and 2 specimens at Poghwari on 26 Oct. 1984.

Turdus naumanni TEMMINCK 1820. This was a migratory species, which did not appear before the second half of October in 1984. At the time of migration the presence of this species was noted in all the places where observations were made: 2 specimens near Pagyon Fall and another 7 at a distance of 6 km on 22 Oct., several flocks, altogether about 100 birds in the botanical gardens in Pyongyang on 23 Oct., a flock of more than 20 specimens near Lake Sokam on 24 Oct. and another of about 15 birds at Ponghwari on 26 Oct. They were for the most part birds belonging to the form *Turdus naumanni eunomus* TEMMINCK 1831; there occurred specimens with intermediate plumage (between the subspecies *T. n. eunomus* and *T. n. naumanni*) among them.

Aegithalos caudatus (LINNAEUS 1758). Seen three times: a family flock in the valley of the River Hyangsan-chon in the Myohyang-san Mts. on 12 Aug. 1979, 3 specimens, probably juveniles, for with dark plumage on the head, near Pagyon Fall on 21 Oct. 1984 and 2 adult birds in the forest on Lake Sokam on 24 Oct. 1984.

Parus palustris LINNAEUS 1758. The largest number of birds of this species were found on Lake Sokam, namely, 2 specimens on 6 Aug. 1979 and about 10 birds along a 3-kilometre section of our route on 24 Oct. 1984. Single birds were besides seen at Mankyongdae on 2 Oct. 1984, on Suyang-san Mt. on 14 Oct. 1984 (a juvenile) and near Pagyon Fall (two localities about 6 km apart) on 22 Oct. 1984.

Parus montanus (CONRAD von BALDENSTEIN 1827). Only once three specimens were met with near the hotel at Kaesong on 21 Oct. 1984.

Parus ater LINNAEUS 1758. These birds were observed in the same places in 1979 and in 1984, i. e. on Lake Sokam and on Yongak-san Hill (more than ten Coal Tits on Lake Sokam on 24 Oct. 1984). Further observations of the Coal Tit come from 1984: single birds on Suyang-san Mt., a family flock at Kaesong and another near Pagyon Fall and several specimens at Ponghwari.

Parus varius TEMMINCK et SCHLEGEL 1848. In addition to the Myohyang-san

Mts. (12 Aug. 1979), from where the Varied Tit had already been reported repeatedly before (TOMEK 1984, 1985), there is information about the occurrence of this species near Kuryong Fall in the Kumgang-san Mts. on 8 Aug. 1979 and in the proximity of Pagyon Fall, where altogether 7 birds were seen in 4 places over a distance of 6 km on 21 and 22 Oct. 1984.

Parus major LINNAEUS 1758. This tit was encountered most frequently and in the largest numbers. Single specimens and family flocks were observed in 1979: on Yongak-san Mt. on 5 Aug., on Lake Sokam on 6 Aug. and in the Myohyang-san Mts. on 12 Aug. They were much more numerous and frequent in the autumn 1984; several to several tens of Great Tits were noted in each place where observations were carried out.

Sitta europaea LINNAEUS 1758. The Nuthatch was seen near Kuryong Fall in the Kumgang-san Mts. on 9 Aug. 1979 (2 specimens) and in the Myohyang-san Mts. on 12 Aug. 1979 (1 specimen), and so in the places where later observations confirmed its nesting (TOMEK 1984, 1985). Nuthatches were in addition found present at Kaesong on 21 Oct. 1984, at least 8 birds along the 6-kilometre-long mountain valley near Pagyon Fall on 21 Oct. 1984, 3 specimens on Lake Sokam on 24 Oct. 1984 and five at Ponghwari at 26 Oct. 1984. The Nuthatch is a resident species and the fact that it is also frequently recorded in autumn (BOCHEŃSKI et al. 1981) indicates that it is a common bird all over that country.

Passer montanus LINNAEUS 1758. These birds were frequent and numerous, notably in places situated not very far from buildings. We came across their flocks numbering from several to several dozen specimens; the most numerous flock, consisting of several hundred birds foraged in the fields by Lake Sokam on 24 Oct. 1984.

Fringilla montifringilla LINNAEUS 1758. A flock of 17 specimens were feeding in the botanical gardens in Pyongyang on 23 Oct. 1984.

Carduelis sinica (LINNAEUS 1766). Its presence was found near some buildings by Lake Sokam on 6 Aug. 1979, in the Maranbong Park in Pyongyang and in the part at Mankyongdae on 2 Oct. 1984 and in the botanical gardens in Pyongyang on 23 Oct. 1984.

Carduelis spinus (LINNAEUS 1758). Seen only once, a flock of 14 specimens, on Lake Sokam on 24 Oct. 1984.

Uragus sibiricus (PALLAS 1773). A flock of 8—10 birds stayed in the region of Pagyon Fall on 22 Oct. 1984.

Eophona personata (TEMMINCK et SCHLEGEL 1848). Only once 5 specimens were observed in the park at Kaesong on 20 Oct. 1984.

Emberiza cioides BRANDT 1843. This species was observed twice: a singing male in the thickets on the slope of Yongak-san Hill on 7 Oct. 1984 and one specimen at Ponghwari on 26 Oct. 1984.

Emberiza elegans TEMMINCK 1835. In Oct. 1984 it was the most frequent and numerous bunting. Single or 2—3 specimens were seen in the first days of October: on Yongak-san Hill and near Lake Taesong-ho on 6 Oct. and on Hyongche-som I. on 13 Oct. On the other hand, starting from mid-October

they occurred in flocks of 20—30 specimens: several flocks in the region of Suyang-san Mt. and a flock on Lake Jangsu-ho on 14 Oct., at Haeson-ri on 20 Oct., 3 flocks in the municipal part at Kaesong on 21 Oct., altogether 5 flocks in the region of Pagyon Fall on 21 and 22 Oct. and several flocks on Lake Sokam on 24 Oct.

Emberiza aureola PALLAS 1773. A dead bird was found in the area of the Zoological Gardens in Pyongyang in mid-October 1984. Its measurements: wing — 70 mm, tarsometatarsus — 19 mm, beak — 12 mm.

Emberiza rutila PALLAS 1776. Males of this species were seen twice: in the thicket on the slopes of Yongak-san Hill on 6 Oct. 1984 and in the thikets near the hotel at Kaesong on 21 Oct. 1984.

IV. ACKNOWLEDGMENTS

The accomplishment of these field observations was possible thanks to the help of the workers of the Zoological Institute of the Academy of Sciences, DPRK in particular Scientific Director CHU Dong Riul, to whom the authors wish to express their heartfelt thanks. Special words of acknowledgment are due to the workers of the Academy of Sciences, who accompanied the authors on their trips into the country for their being immensely helpful; and so the first of the authors thanks LI Chin Kuk and HAN Hyon Ju and the second SOK Ha Ryong.

Translated into English
by Jerzy ZAWADZKI

Teresa TOMEK
Institute of Systematic and Exp.
Zoology,
Polish Academy of Sciences
31-016 Kraków, Sławkowska 17,
Poland
Stefan DONTCHEV
Institute of Zoology
Bulgarian Academy of Sciences
Sofia 1000, Russki 1,
Bulgaria

REFERENCES

AUSTIN O. L., 1948. The birds of Korea. Bull Mus. Comp. Zool. Harv. Univ., Cambridge, **101** (1): 1—301.

BOCHEŃSKI Z., OLEŚ T., TOMEK T. 1981. Materials for the Avifauna of People's Democratic Republic of Korea. Acta zool. cracov., Kraków, **25** (2): 13—32.

CHENG Tso Hsin, 1976. Distributional list of Chinese birds (Revised Edition) Peking. (Chinese with English summary).

Dementev G. P. et al. 1951—1954. Дементьев Г. П. и др., 1951—1954. Птицы Советского Союза. Под общ. ред. Г. П. Дементьева и Н. А. Гладкова. Москва, **1—6**.

Etchecopar R. D., Hüe F., 1978. Les Oiseaux de Chine, de Mongolie et de Coree. Non passeraux. Papeete.

Etchecopar R. D., Hüe F., 1983. Les Oiseaux de Chine, de Mongolie et de Coree. Passereaux. Paris.

Flint V. E. et al., 1968. Флинт В. Е., Беме Р. Л., Костин Ю. В., Кузнецов А. А. 1968. Птицы СССР. Москва.

Gore M. E. J., Won Pyong Oh, 1971. The birds of Korea. Seoul.

Hartert E., 1903—1922. Die Vögel der palërktischen Fauna. Berlin **1—3**.

Ho Hon, Rim Chu Yon, 1975. Studies on species of Birds and Mammals in the Region of Pektu-san. Publ. Acad. Sci., Pyongyang, 187—199. (in Korean).

Kim Ri Thae, O Hyng Dam, 1982. Animals in colour. Kwahak, Paek Kwasajon Chulpansa, Pyongyang, 1—480 (in Korean).

Kurochkin E. N., 1982. Курочкин Е. Н. Поганкообразные. В: Птицы СССР под ред. Ильичев В. Д., Флинт В. Е. Москва. Изд. Наука 1: 289—351.

Le Heui Tae, 1967 (Li Hi Tae). Birds in the district of Kaesong. Sengmul (Biology), 6 (3): 39—48. (in Korean).

Li Hi Tae. 1969. Skylark in Korea. Kor. Nat., **1969** (1): 6.

Li Hi Tae, 1970. Birds of the *Dicruridae* migrating to our Country. Kor. Nat. Pyongyang. **1970** (1): 7.

Mauersberger G., 1981. Anmerkungen zur Avifauna Nordkoreas. Mitt. Zool. Mus., Berlin, **57** (Suppl.: Ann. Orn. **5**): 15—62.

Nazarov Yu. N., Labzyuk V. I. 1975. Назаров Ю. Н., Лабзюк В. И. 1975. К авифауне Южного Приморья. Орн. исслед. на Дальнем Востоке. Тр. биол. почв. инст. Новая серия. Владивосток, 29 (132):268—276.

Nechaev V. A., 1971. Нечаев В. А., 1971. К распространению и биологии некоторых птиц Южного Приморья. Орнит. исследования на юге Дальнего Востока. Тр. биол. почв. инст., Новая серия. Владивосток, 6: 193—200.

O Myong Sok, 1984. Wiederentdeckung der Schopfkasarka, *Tadorna cristata*, in der Koreanischen Demokratischen Volksrepublik. J. Orn., Berlin. **105** (1): 102—103.

Pak U Il, Rim Chu Yon, Choe Mun Gap. 1983. Distribution of Red Crowed Cranes (*Grus japonensis* Müll.) wintering in our country. Kwahakwon Tongbo (Bull. of the Academy of Sciences of the DPR Korea). Pyongyang. **1983** (5): 54—56.

Panov E. V. 1973. Панов Е. Н. 1973. Птицы Южного Приморья. Новосибирск.

Polivanova N. N. 1971. The Birds of the Khanka Lake. Proc. of the Reserve "Kedrovaya Pad'" vol. **3**. Vladivostok.

Rim Chu Yon, 1983. Рим Чху Ен, 1983. Птица Кхыллак. Корея 323 (8): 28—29.

Sonobe K. (ed.). 1982. A Field Guide to the Birds of Japan. Wild Bird Society of Japan. Tokyo.

Taczanowski W. 1888. Liste supplementaire des oiseaux recueillis en Coree par M. Jean Kalinowski. Proc. Zool. Soc. London: 450—469.

Tomek T. 1984. Materials to the breeding avifauna of the People's Democratic Republic of Korea. Acta zool. cracov., Kraków, **27** (1): 19—46.

Tomek T. 1985. Materials for the breeding avifauna of the Democratic People's Republic of Korea. Results of Expedition '83. Acta zool. cracov., Kraków, **29** (1): 187—217.

Vaurie C., 1959. The birds of the Palaearctic fauna. Passeriformes. London.

Vaurie C., 1965. The birds of the Palearctic fauna. Non Passeriformes. London.

Won Hong Koo, 1958. The descriptions of Korean birds with colour pictures. Passerines (in Korean). Pyongyang.

Won Hong Koo, 1964. The descriptions of Korean birds with colour pictures. Non Passerines (in Korean). Pyongyang.

Won Hong Koo, 1963—1965. The Birds of Korea (in Korean). Pyongyang 1—3.

Won Pyong Oh, 1976. Checklist of the Birds of the Republic of Korea. Seoul.

STRESZCZENIE

Praca przedstawia wyniki obserwacji fauny ptaków w Koreańskiej Republice Ludowo-Demokratycznej w sezonach polęgowych. Prowadzone one były od 30. VII do 13. VIII. 1979 przez S. Donczewa oraz od 2. X. do 26. X. 1984 przez T. Tomek w kilkunastu miejscowościach południowej części kraju (ryc. 1). Łącznie podczas 23 dni przebywania w terenie autorzy stwierdzili występowanie 82 gatunków ptaków. W części poświęconej przeglądowi gatunków podane zostały daty i miejsca obserwowania ptaków, a także ich liczebność. Przy omawianiu niektórych gatunków zamieszczono krótką dyskusję dotyczącą ich występowania na Półwyspie Koreańskim. Ma to miejsce w przypadkach, gdy status tych gatunków w Korei nie jest do tej pory całkowicie wyjaśniony (m. in. *Podiceps cristatus*, *Numenius arquata*, *Larus schistisagus*, *Larus argentatus*) lub gdy sprzeczne są opinie co do liczebności danego gatunku (m. in. *Garrulus glandarius* i *Troglodytes troglodytes*).

Redaktor pracy: prof. dr Z. Bocheński

Plate V

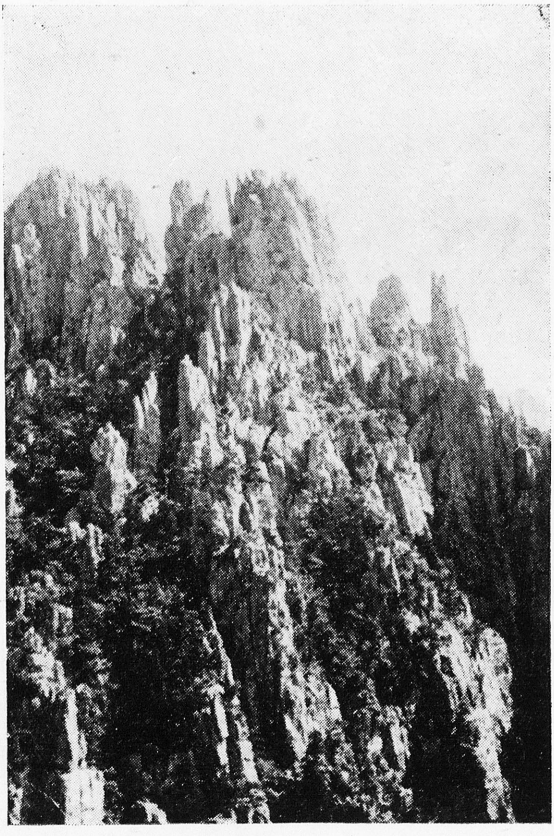
Phot. 1. Sokam Lake. Breeding biotope of *Podiceps cristatus*

Phot. T. Tomek

Phot. 2. Kumgang-san Mts. The place of occurring *Parus varius, Hirundo daurica, Sitta europea*

Phot. S. Dontchev

Phot. 1



Phot. 2

Plate VI

Phot. 3. Hyongche-som I. The place of foraging Cormorants, Gulls and Curlews

Phot. 4. Suyang-san Mts.

Phot. T. Tomek

Phot. 3

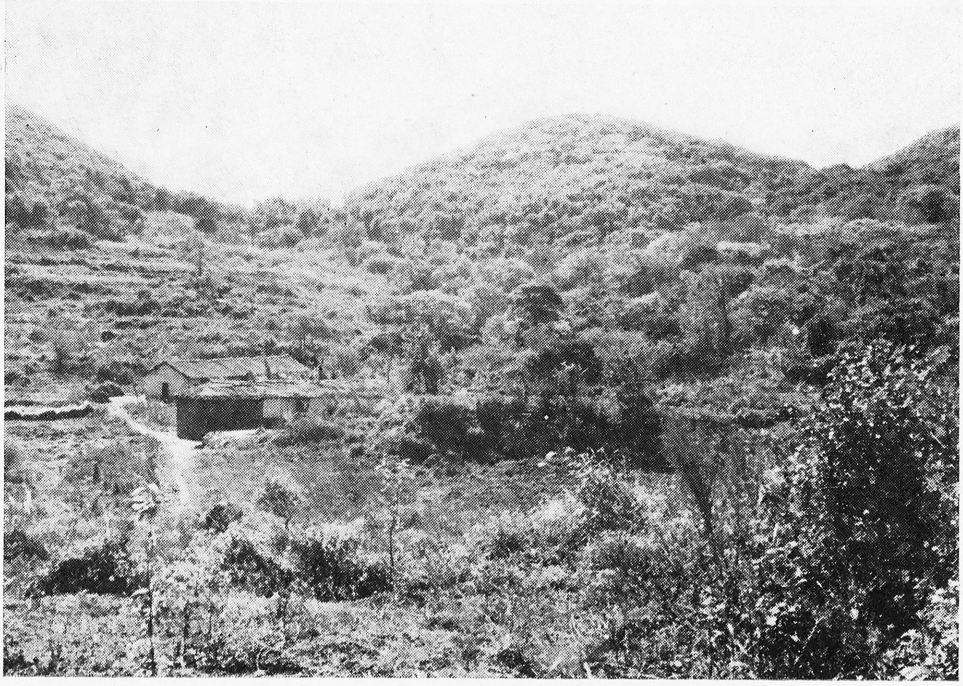
Phot. 4

Plate VII

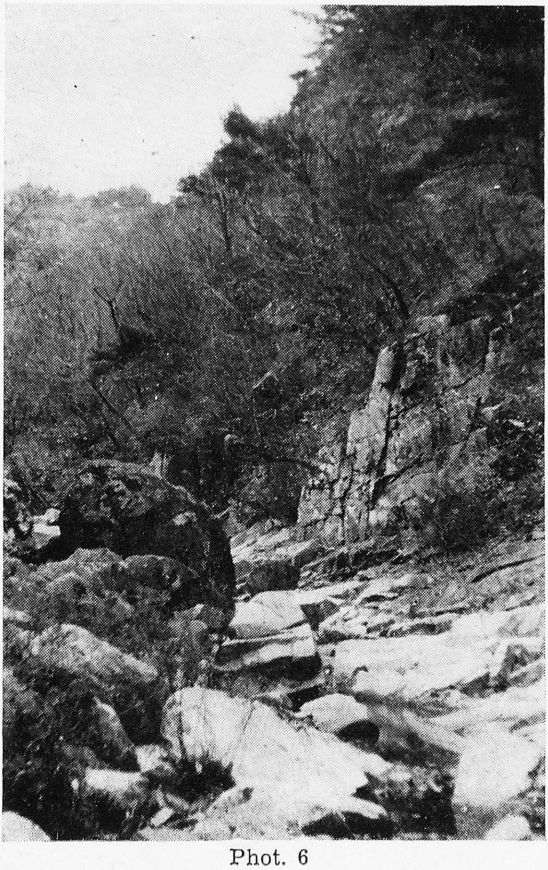
Phot. 5. Suyang-san Mts. The place of occurrence of *Emberiza elegans*

Phot. 6. River Valley above Pagyon Falls. The place of occurrence of *Troglodytes troglodytes*

Phot. T. Tomek



Phot. 5



Phot. 6