

Travaux du Muséum National d'Histoire Naturelle «Grigore Antipa»	Vol. L	pp. 289–315	© Octobre 2007
---	--------	-------------	-------------------

GENUS *LIMOSA* BRISSON, 1760 (AVES: SCOLOPACIDAE) IN ROMANIA

ANGELA PETRESCU

Abstract. *Limosa limosa* occurs in Romania in a large number during the migration period, in spring in March-April, and at the end of June, with a numerical maximum in July and August; stations are short in spring and much longer in the after breeding period. It is a species in a territorial expansion, and since 1960, six sure nestling places were reported from Romania. In the collections of the Romanian museums, there are 57 specimens of *Limosa limosa*, out of which 27 skins, 30 naturalized birds and 55 eggs. *Limosa lapponica* is rare in Romania, accidental and in a very low number. Therefore there are a few remarks on this species, about 12. In the Romanian museums there are two specimens (Sibiu and Târgu Mureş).

Résumé. *Limosa limosa* apparaît en Roumanie en grand nombre au cours de la période de migration pendant le printemps en mars-avril et à la fin du mois de juin, avec un maximum numérique en juillet et août; les stationnements sont de courte durée au printemps et bien plus longs au cours de la période post-nuptiale. C'est une espèce en cours d'expansion, et depuis 1960 jusqu'à présent on a signalé 6 lieux sûrs de nidification en Roumanie. Dans les collections des musées de Roumanie il y a 57 exemplaires de *Limosa limosa*, dont 27 peaux, 30 oiseaux naturalisés et 55 œufs. *Limosa lapponica* n'apparaît que très rarement en Roumanie, accidentellement et en fort petit nombre, c'est pourquoi il n'y a que peu d'observations concernant cette espèce, environ 12. Dans les musées de Roumanie on n'en trouve que deux exemplaires (Sibiu et Târgu Mureş).

Key words: *Limosa*, Romania, remarks, nest, collections.

INTRODUCTION

Genus *Limosa* is represented in the Palaearctic by two species: *Limosa limosa* and *Limosa lapponica*. *Limosa limosa* (Linnaeus, 1758) has 3 subspecies: *Limosa limosa limosa* (Linnaeus, 1758), *Limosa limosa islandica* Brehm C. L., 1831, *Limosa limosa melanuroides* Gould, 1846. The two European subspecies, *Limosa limosa limosa* (Linnaeus, 1758) and *Limosa limosa islandica* Brehm C. L., 1831, slightly distinguish from the nominated species, by some small morphological features as: smaller body size, especially of the beak, a more intense colour and by the nestling and wintering place (Beintema & Melter, 1997). Nominated subspecies is distributed in Western Europe, in the Netherlands, Belgium, Germany and Denmark, where it nestles in agro-systems. Population from Eastern Europe, from Hungary, Ukraine, Poland, Belarus and Estonia still nestles in natural habitats in the steppe or in the grassy floodplains of the rivers and winters in southern Sahara.

The subspecies *Limosa limosa islandica* nestles mainly in Island and winters on the Atlantic coasts from South of the Great Britain to Marocco (Beintema & Melter, op. cit).

Limosa limosa melanuroides is distributed in Mongolia, Central Asia to Enisei in Siberia. It winters in Formosa and Philippine, East India, Sunda Islands, New Guinea and Australia. It distinguishes from the nominated species by its

nestling and wintering range, but also by the very long beak, which exceeds 120 mm long. It was not reported from Romania.

Limosa lapponica Linnaeus, 1758 nestles in Europe in a discontinuous range, in the sub-Arctic area, in Norway, Sweden, Finland till the eastern Russia. It winters in Africa (Smit & Saari, 1997).

In Romania, the two species are known as passage species. They were observed in spring and in autumn, during migration period, they being reported in the second half of the 19th century, as special occurrences in the autochthonous avifauna. In time, these remarks became more detailed, with dates, observation places and number of specimens, so that along the last 40 years, all these observations can create a general view of the appearance of these two species in Romania, station periods, favourite feeding places, migration way.

Limosa limosa is a species in expansion from northern Europe to South (Tălpeanu & Paspaleva, 1979), therefore lately several places where the Black-tailed Godwit nestles sporadically in Romania were reported (Fig. 2). Our paper is a synthesis which gathers all observations made along 100 years of ornithology in Romania. In the volume „*The EBCC Atlas of European Breeding Bird. Their distribution and abundance*” (1997), data on this species in Romania are not mentioned. It is only underlined the population from Eastern Europe uses the Danube Delta in its migration way to Africa.

Limosa lapponica occurs accidentally and rarely in Romania.

As regards the conservation statute at the European level, *Limosa limosa* is included in the category SPEC 2 (favourable statute, concentrated populations in Europe), i. e. it is vulnerable.

In Romania, *Limosa limosa* is mentioned in the Law no 13/1993, which included it among the species of protected fauna; Annex II of the Law no 103/1996 mentions it among the species of hunting interest, whose hunting is allowed; Annex I of the Urgent Order no 236/2000 mentions it among the species whose conservation need special conservation areas and special avifauna protection.

MATERIAL AND METHOD

I gathered data on *Limosa*, printed along 100 years in Romanian ornithological papers, most of them on faunology, others unknown or difficult to be read because of the language, others unobserved. I selected around 104 out of 250 read papers, only those which offered significant information, with an exact geographical localization and precise observation data: month, year, number of specimens, etc. So I could gather more than 200 remarks of these species in Romania. From all Romanian ornithological literature, only three papers are dedicated to the Black-tailed Godwit (Hamvas, 1969; Kiss & Marinov, 2005; Muller, 2005 a, b). I considered better to note and comment all information using historical regions of Romania, respectively: Dobrogea, Muntenia, Oltenia, Banat, Transylvania and Moldavia.

I used the catalogues of the ornithological collections of many museums which offered me important information. I observed that in the Romanian museums there are a few specimens of Black-tailed Godwit. In the collections of “Grigore Antipa” National Museum of Natural History (Bucharest) there are 17 specimens, and all over Romania there are only 57 specimens, a clutch of 5 eggs, collected from Hungary, in the Museum of Timișoara and 13 clutches in the collection of the Museum of Oradea, collected from Hungary (Tab. 3).

I measured the 17 specimens from “Grigore Antipa” Museum.

In table 3, with the pieces of the Black-tailed Godwit from the collections of the museums from Romania, there are several abbreviations of the collectors' names, as follows: A. A.= Adrian Andrei; Gh. B = Gh. Boroş; A. B.= Adam Buda; A. C. = Andrei Carastate; C = Csilensky; C. F. J. = C.F. Jickeli; H. C. G. = Herbert C. Guşchievici; C. C. G. = Carol C. Guşchievici; M. H. – M. Hamar; G. H. = Gheorghe Hulub; T. J = Tiberiu Jurcsak; W. K. = Werner Klemm; A. K. = Anton Klinke; K. A. = Kiss Andrei; K= Köber; Ş. K. = Ştefan Kohl; P. L.=P. Liebhardt; D. L. = Dimitrie Linţia; N. E. = Emil Nadra; A. P. = Aurel Papadopol; C. R. = Cătălin Rang; D. R. = Dimitrie Radu; M. T. = Matei Tâlpeanu; M. T. & M. P. = Matei Tâlpeanu & Maria Paspaleva; N. S. – Nicolae Semen; S. D = Dan Stănescu; F.W. S. = F. W. Stetter.

RESULTS AND DISCUSSIONS

Limosa limosa (Linnaeus, 1758)

From literature and from all data structured according to the localities and years, it can be easily observed that most of the information is from Dobrogea.

But the observations on the Black-tailed Godwit of Dobrogea became ordered, completed and interesting since 1960. Most of them are from northern Dobrogea, from the Danube Delta and the Razelm-Sinoe Complex, now the Danube Delta Reservation of the Biosphere.

During their field trips made in 1965-1966 in Dobrogea, Cătuneanu et al. (1967) observed the Black-tailed Godwit in the Lupilor and Popina islands (10-16.10.1965); on the Călăraşi Lake and in the Danube Delta on the route Sulina Canal – Crişan - Mila 23 - Buhaiova (26.06. - 07.07.1966); on the same route, in the Danube Delta (25-30.07.1966). In these observations there are not mentioned remarks on the number of the specimens.

Veilliard & Tâlpeanu (1971) observed this species in Murighiol (17.08.1966) (over 50 specimens); Plopu (7.08.1966) (11 specimens); Dunavăţ, between 1000-7200 specimens (18. 08. 1966); several thousands of birds on the Lupilor Island (12-14 and 31.08.1966), Cocor (20.08.1966), Histria (14-16, 24 and 31.08.1966), Chituc, on the strips of flooded land between Sinoe and Black Sea (1.09.1966).

In 25.05.1968, Radu (1968) observed numerous flocks of *Limosa* in the Danube Delta. The specimens captured on this occasion were all females. Radu considers that the females leave the nestling places after the chickens hatched, the males continuing to take care of them.

In the first half of October 1968, Stănescu & Rang (1969) studied Ostrovul Maliuc from the Danube Delta and observed the Black-tailed Godwit, a single specimen, on Ghiolul Fortuna. The two authors consider the Black-tailed Godwit a passage species in this area.

In his study on the avifauna of the Agigea Lake, today drained, Ciochia (1969) noted that in the passage period the rather wide beach of the lake and the shallow water create a favourable biotope for forage. That is why tens of bird species stop here in spring and in autumn, among them being also the Black-tailed Godwit. The author did not make other specifications on the appearance or number of the observed birds.

Papadopol (1981) synthesized the observations made between 1966-1978 in the section Murighiol–Tulcea–Babadag–Lunca (Jurilovca) and pointed that the Black-tailed Godwit occur in a high number during the after-breeding period, it is a species in transit, which did not nestle. He noted the observations made in Murighiol-Sarinasuf from 1966, Sfântu-Gheorghe 1973 and Plopu Bei-Bugeac from August 1978.

Munteanu (1970) observed a single specimen on the littoral, on the southern shore of Techirghiol Lake, on 4.09.1966.

From June to August, on the North-western side of the Sahalin Island (the Danube Delta), Kiss (1971) observed *Limosa limosa* in flocks of 20-30 specimens.

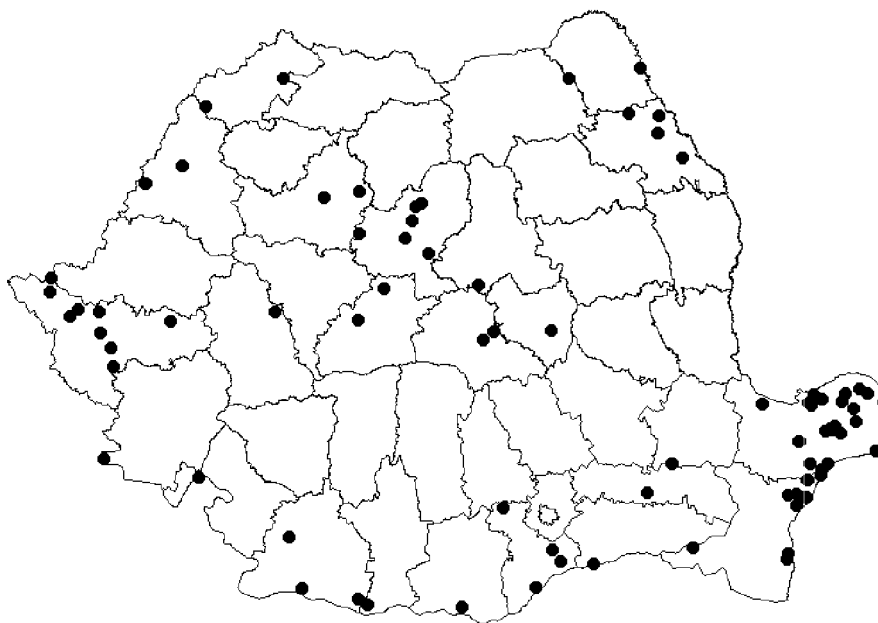


Fig. 1 – Romanian localities where *Limosa limosa* was observed during migration periods.

At the end of July, on Nuntași Lake of Dobrogea, Ciochia & Ciochia (1973) observed 10 specimens together with other charadriiforms. In August they observed isolated specimens associated with *Tringa totanus*, *Recurvirostra avosetta*, *Philomachus pugnax*, *Calidris* sp., *Limicola falcinellus* and *Larus minutus*. During the flight they keep their individuality in their flocks, not preferring the company of other species.

At Murighiol, Sfântul Gheorghe and Sahalin Island, Stănescu (1973) observed the Black-tailed Godwit from 1967 to 1972. On Sahalin Island, the low level of water of the western shore of the island made it the preferred place of the Limicolae, where *Limosa limosa* mingles with *Calidris minuta*, *C. alpina*, *C. ferruginea*, *Limicola falcinellus*.

In his field trip from 1974, in the Danube Delta, Vaucher (1975) observed 2 pairs near Razel Lake at Sarinasuf (20.05.); 6 individuals on the shore of Histria Lake (27.05.); a pair at Letea on 23.05; around 50 specimens at Merheiu Mare on 29.05 and in the same day 20-25 individuals at Mila 23 and another 3 flocks with over 350 individuals, in the same place towards evening.

Stănescu (1980) considers that the Black-tailed Godwit has a sporadic occurrence in summer and autumn, in large groups of over 200 specimens, especially at the confluence of Histria Lake with Nuntași Lake.

In a trip in the Danube Delta during 3rd of June – 24th July 1990, Robert et al. (1990) observed *Limosa limosa* on the route: Periteașca Lake – Meșterul Lake, in

groups different in number, from some individuals to over 400; on Şontea canal (the Danube Delta) over 100 specimens; over 100 specimens on Fortuna Lake, in a resting place; on Merhei Lake, one of the 5 large lake of the Delta, they observed only 4-5 specimens; on Isacov Lake and Uzlina, several hundreds of specimens which were looking for food or were resting; in South of the Delta, in Razelm lagoon-complex, they observed several hundreds of specimens.

In a report on the observations made in the Delta between 1980-1991, Brehme et al. (1992) synthesized these observations and consider that the Danube Delta and Razelm and Sinoe lakes have an extraordinary value as resting places for the populations of *Limosa limosa* from Eastern Europe. I structured these observations according the localities: Histria: 12.06.1982, over 800 specs; 25.06.1984, 167 specs; 27.06.1984, 160 specs, Histria and Nuntaşi; 18.08.1985, 300 specs; 19.08.1985, 200 specs; 14.07.1986, 1,100 specs at Vadu-Histria; 15.07.1986, 100 specs; 27-28.04.1987, over 500 specs; 29.08.1987, 1,000 specs; 10.07.1988, 1,000 specs; 10.08.1988, 600 specs; 3.06.1989, 500 specs; 4.06.1989, 400 specs; 23.08.1991, 122 specs; Dunavăţ: 26.08.1981, 113 specs; 12.06.1982, over 300 specs; Gorgova-Maliuc: 14.06.1982, 500 specs; Crişan: 30.08.1980, 180 specs; 19.06.1986, 100 specs; 9.07.1987, 300 specs; Letea: 21.06.1985, 350 specs; 23-24.06.1985, 395 specs; 28.08.1987, 200 specs; Grindul Stîpoc: 22.06.1984, 155 specs; Grindul Coşna: 15.08.1988, 100 specs; Grindul Lupilor: 22.08.1991, 270-193 specs; Caraorman: 26.07.1988, 500 specs; 4.08.1988, 951 specs; Isaccea: 30.07.1980, 350-250 specs; Vadu: 17.07.1986, 1,700 specs; Tătaru Lake: 1.08.1980, 1,200 specs; Lunga Lake: 5-6.08.1985, 200 specs; Băclăneşti Lake: 8.08.1985, 200 specs; Sahalin Island: 8.09.1981, 393 specs; 9.09.1981, 489 specs; 26.08.1985, 500 specs; 10.08.1988, 642 specs; 12-13.08.1988, 525-889 specs; 20.08.1988, 800 specs; 18-20.08.1989, 650 specs; Portiţa: 13.08.1988, 600 specs; 14.08.1988, 800 specs.

Brehme et al. (op. cit.) consider that in the periods March – April and June – September they are present daily in this region, around 5,000 – 15,000 *Limosa limosa*. A number of 10,000 - 12,000 specs were seen on the lakes Razelm and Sinoe during the period 26-30.03.1991; maximum number was observed on 29.03.1991 on Grindul Saele – Nuntaşi Lake, 8,000 specs.

In his Ph. D. thesis, which deals just the avifauna of Histria Lake, Weber (1998) mentions *Limosa limosa* as a passage species, and the maximum number of observed birds during the passage period was of 14,000 specimens.

During the period 1991-1998, Bănică (1999) made numerous remarks from Histria Lake where he saw the Black-tailed Godwit in March-April, in June-July-August-September and sometimes even in November and underlined that he remarked a maximum number of 10,450 specimens, on 29.03.1991. Also Bănică (2002) mentioned *Limosa limosa* only as a passage species in his observations from Sărături Lake (the Danube Delta), during his 5 field trips (18.09.1993; 11.07.1994; 25.06.1995; 28.05.1999 and 25.06.2000), without making other comments or specifications on the exact date of his observation or on number of the specimens.

In his observations made during the period 1989-1995 on the littoral of the Black Sea, Bănică (2004) mentioned the Black-tailed Godwit only in the prevernal period, i.e. during the period of the spring passage, between the 1st of March – 30th of April.

On the Bei-Bugeac Lake from the Danube Delta, sometimes during the passage period, there are hundreds, thousands of limicolous specimens, Sandpipers and Black-tailed Godwit, in monospecific or plurispecific groups (Munteanu, 2004).

Very few observations are from southern Dobrogea, from Oltina Lake. Veilliard & Tâlpeanu (op. cit.) observed the Black-tailed Godwit in a very large number on 1.09.1966; Cătuneanu et al. (op. cit.), on 26-28.08.1966 in the same place.

Observations on the Black-tailed Godwit from Dobrogea are numerous and sporadic, from papers on the avifauna which do not deal especially with this species. Therefore they are not continuous. In spite of this, it can be easily observed that *Limosa limosa* occurs in a large number during the spring migration period, in March and at the end of June, with a maximum number in July and the beginning of August; in spring stations are short and much longer during the after breeding period. In Dobrogea, the birds prefer Histria Lake, Bei-Bugeac, Sahalin Island, Razelm-Sinoe Complex and other places from the Danube Delta where flocks of hundreds, tens of thousands of specimens occur, around 14,000 – 15,000 (Fig. 1). Dobrogea remains an important place along the migration way for a part of the European population of this species. Only northern Dobrogea, that means the Danube Delta and a part of the littoral of the Black Sea, as Portița or Techirghiol Lake, is important for the migration of the Black-tailed Godwit. Southern Dobrogea, without large surfaces of water, excepting Oltina Lake and some other lakes and smaller water surfaces is much less important.

In Moldavia the observations on the Black-tailed Godwit have been published after 1960 and there are reported from over 15 localities in about 10 papers on avifauna (Fig. 1).

Ionescu et al. (1968) reported *Limosa limosa* from the mountain basin of Bistrița, from the Bâta Doamnei dam lake, on 18.VII.1966, one specimen.

In his studies on the lower flow of Bistrița, on the Gârteni, Bacău I and Bacău II dam lakes, Rang (1971) observed the Black-tailed Godwit in July and August only on Bacău II Lake, as a passage species in this area.

Papadopol (1975) observed the Black-tailed Godwit on the valley of the Bârlad River, at Vaslui, in August (4-18.08.1969) without specifying the place and the number of specimens.

In a study on the avifauna of northern Moldavia, Dănilă (1990) made observations on the Black-tailed Godwit in May-June between 1990-1994 at Drăcșani (Bucecea, Botoșani).

In his study on the avifauna of the middle basin of Jijia, between 1989-1992, Ion (1997) specified that *Limosa limosa* reached this sector during the spring passage in a very large number.

In the avifaunal studies from Stâncă-Ștefănești dam lake, Ion & Gache (1997) mentioned that *Limosa limosa* occurred there only during the spring and autumn passage, but the authors did not specify the number of the observed specimens.

Gache & Muller (2002) found the Black-tailed Godwit in large populations, in groups of tens or hundreds of specimens, in spring (11.04.2002): over 230 specimens in the Prut valley, in Mața-Cârja-Rădeanu ponds, where it appeared also at the end of July and the beginning of August. Also Gache & Muller (2005) analyzed the state of the avifauna in the Prut basin. The observations on the Black-tailed Godwit are from 2003-2004. At the beginning of April 2003, in the floodplain

of Jijia, they discovered large groups of limicolous birds, among them being 400 specimens of Black-tailed Godwit. At the end of March (27.03.2004), on the pond of the complex Larga-Jijia, they also observed over 480 *Limosa limosa*. On 17.04.2003, in the same area, in the pools between Bogdănești and Fălciu, they observed 285 Black-tailed Godwits; in June 2005, at Gura Văii, they discovered 4-5 pairs of Black-tailed Godwit. In the paper, the ponds from Cârja-Mața-Rădeanu are mentioned as resting places for the limicolous birds which are in passage and pass through these places in flocks of tens or hundreds of specimens in spring and which come back at the end of July and the beginning of August.

The basin of Prut, the floodplain of Jijia are important wet areas, where large groups of limicolous birds occur, where there are hundreds of specimens of *Limosa limosa*, which stop here in their Carpathian way of migration which passes through Moldavia. As in the Pontic way, which passes through Dobrogea, the Carpathian migration way remains an important transit way for the eastern side of the European population of Black-tailed Godwit.

For Muntenia structured observations on the Black-tailed Godwit were published in the faunistic papers of the beginning of the 60's. There are over 30 observations from 22 localities in over 15 papers on avifauna.

In the studies made in 1962-1963, in the Călărăși Lake, in South-East Romania, Papadopol (1965) remarked the presence of the Black-tailed Godwit in a very large number since 28-29 of June. He counted 1,500-2,000 specimens, especially young birds. They were grouped in flocks of tens up to hundreds of specimens. During its trips for finding food *Limosa limosa* occurs in this area at the end of June, in July the trips are very frequent, and in August and September it reaches maximum values with a large number of specimens, a few thousands. In his studies on the avifauna of the salt lakes from the Romanian Plain during the following years, Papadopol (1971) observed the Black-tailed Godwit in Balta Albă and Jirlău Lake, but in a small number, at the beginning of September 1969.

In 1970, at the end of June (30.06 - 2.07), at Balta Albă, along the Buzău River, Papadopol (1972) observed massive concentrations of limicolous birds, among them being also *Limosa limosa*, with over 5,000 specimens. Also, in the Valley of Călmățui River, at Balta Bătrână and Via Mare, he observed several tens of Black-tailed Godwit specimens at the beginning of July (3.07.1970), which he considered in premature migration, associated with *Philomachus pugnax*, *Recurvirostra avocetta*, *Vanellus vanellus*, *Larus ridibundus*, anseriformes, etc. Lakes are rich in filamentous algae and have marshy and sandy beaches, which draw the birds in passage.

In the studies made in 1971 (31.03 - 2.04) on the Fundata Lake, in its South, where there are muddy beaches, Papadopol (1973) observed around 350 specimens of Black-tailed Godwit; also in this period, he observed groups of 500-600 specimens in the lower flow of the Ialomița River, on Strachina Lake and on the temporary pools from Bărăgan. On 28-29.06.1971 he observed an interesting association on Strachina Lake: *Larus ridibundus* (adults and flying chickens), *L. cachinnans* (adults and flying chickens), *Limosa limosa* (5-8 specimens), *Numenius arquata* (1 specimen) and *Hydroprogene tschegrava* (2 specimens).

Papadopol (1974 a) observed *Limosa limosa* on Tătaru Lake (5-6.06.1972) in association with *Anas querquedula* and *Larus minutus*.

For the lakes from the Romanian Plain, Papadopol (1974 b) asserts that *Limosa limosa* is present in the spring passage from the half of March till the end of April, but in small populations, and in the autumn passage, beginning from June till the beginning of October, with a maximum number of 500-7,000 specimens from the end of June, all July and the beginning of August, after that the populations becoming smaller, of about tens and hundreds of specimens.

A synthesis of the observations from Balta Albă shows us that this lake is an important station of the Black-tailed Godwit in his migration way: 100 specs 26-30.09.1969; 5,000 specs 30.06 - 2.07.1970; 7,000 specs 16-17.07.1973; 2,000 specs 27-29.09.1974; Amara: 300 specs 16-17.07.1973; Strachina: 14 specs 28-29.06.1971; Via Mare: 60 specs 3.08.1970.

From the interior of the Romanian Plain there are a few observations, only Papadopol (1979) observed the Black-tailed Godwit at Nucet, on Dâmbovița River, as a passage species, between 1-19.04.1962, without specifying the number of the specimens. In 1980, also Papadopol reported twice *Limosa*, one from Bălteni, Periș (6.08.1954), uncertain, and one from Snagov Lake, on 3.08.1961, considering it a rare species in transit in the Snagov Department and its surroundings (Papadopol, 1980).

Munteanu & Mătieș (1983) observed the Black-tailed Godwit on the arranged lakes in Argeș River.

Limosa limosa was occurred along the flow of the Mostiștea River, in Siliștea-Argovei Valley-Frâsinet sector, in July 1984, as a transit species, rare in this area (Papadopol, 1985).

Numerous specimens of *Limosa* were observed at Giurgiu, Prundu-Chirnoși – Căscioarele in 1961-1962, in the flooding area of the Danube Floodplain, and in 1968, in March – April, in the same sector, where this species is considered exclusively a transit species (Papadopol, 1989).

Papadopol & Petrescu (1995) observed the Black-tailed Godwit at Comana, in August-September (8.08.1989) and in April (12.04.1992), around 100 specimens; also they consider that it is a common species during the migration period, when the birds stop for a longer period of time to feed themselves.

Ciochia et al. (1996) mentioned the Black-tailed Godwit as a summer guest, brooding and as a passage species on the Lower Danube (that means between Baziaș, where the Danube enters in Romania, and the river mouth till its flowing in the Black Sea).

Petrescu & Chișamera (2003) noted the presence of this species on Suhaia Lake, where they observed 12 specimens at the beginning of August.

In their studies on the avifauna of three lakes of the Romanian Plain, Petrescu & Iancu (2005) found groups of some tens of specimens, of over 30 specimens on Fundata Lake (28-30.08.1998), 130 specimens on Tătaru Lake (1-3.09.1998).

Onea (2006) observed 64 specimens of Black-tailed Godwit on the Traian pool, from Călmățui basin, placed between Zăvoaia and Însurăței from Brăila.

For *Limosa limosa*, the wet areas represented by the lakes from the eastern Romanian Plain: Balta Albă, Balta Sărată, Tătaru, Strachina, Fundata, the pond from the surroundings of Călărăși town, represent an elongation of the Carpathian migration way; that is why numerous flock with hundreds-thousands of specimens can be occurred in this areas, both in spring, in March-April and in autumn, from the end of June to September. In the other regions of Muntenia they are occurred

sporadically. According to the water level or food resources some tens of specimens can be observed at Comana, in the Danube Floodplain at Giurgiu, Prundu or on the Suhaia Lake, in migration.

In Oltenia all observations are from the southern area, around 10 observations sites, from the Danube Floodplain and from the areas of the Bistreț, Nedeia, Potelu lakes, with large surfaces and also with muddy beaches which draw limicolous birds (Fig. 1).

Tălpeanu (1964) remarked that in early summer, in southern Oltenia, flocks of Black-tailed Godwit come from West, flying high, and then resting on the sandbanks of all pools of the region. Some of the chickens from the respective year have growing feathers on wings, this being a sign that they come from the nearby areas, either from Dăbuleni (June 1963) or Hungary, or from other areas from the Danube Floodplain, where there aren't so large pools as in southern Oltenia.

Tălpeanu (1965) observed *Limosa limosa* in the flooding area of the Danube Floodplain, in Oltenia (1960-1963), from the beginning of April to September, and then scattered specimens, till the beginning of November; he considered it a transit species which he observed in all warm month of the year: on 25.05.1961 at Strâmba, one specimen, 9.06.1962 at Nedeia (15-20 specimens), 22.06.1963 at Dăbuleni (70-80 specimens), out of which 2 specimens were captured (Tab. 2). He considered that its nestling in these places is possible.

Veilliard & Tălpeanu (op. cit.) visited Potelu Lake (3.08.1966) and observed over 1,000 Black-tailed Godwit specimens, and on the Bistreț Lake, only 200 specimens (3-4.08.1966). Munteanu & Szabo (2001) reported the species from the mouth of the Olt River. Orzață (2002, 2003) reported the species from the Danube Floodplain, within the sector between Jiu River and Olt River, as a passage species, annually present in a very high number, without giving detailed observations or the exact number of the specimens. In their studies on the avifauna of the area Dunăreni-Bistreț, along 8 years (between 1996 – 2004), Ridiche & Orzață (2004) observed that *Limosa limosa* is in passage in this area, in a high number, but is summer guest and in transit during the migration period.

Limosa was also observed at Strejești, on Olt River, upstream Drăgănești-Olt (Munteanu, 2004).

In Oltenia, Black-tailed Godwit occurs frequently during spring and autumn migration in the Danube Floodplain, within the sector between Jiu and Olt rivers, and especially in the area of the lakes Dunăreni-Bistreț, Strâmba, Nedeia. Lately it was observed on the water accumulations from the Olt River or at the flowing mouth of Olt in the Danube.

In Banat, reports on the Black-tailed Godwit have been given since 1918; a specimen collected by Dionisie Linția, on 17 of May, capture mentioned by Kiss (2005 c).

At Balta Mare (Satchinez), Neumann (1982) observed flocks of 150-200 specimens of Black-tailed Godwit in March 1981. He presumes that in the 70s, before the canalization of the Ierului Valley, large populations of limicolous birds stopped here, and *Limosa limosa* and *Gallinago gallinago* were observed here during the nestling period. It is possible that they nested here but they were not watched.

In the observations made between 1982-1985 at Sacoșu-Turcesc, in Banat, by Neumann (1996), the Black-tailed Godwit was seen in the fish ponds, in March-

April and September-October, in flocks of 3-200 specimens (1982: 2-3 specimens; 1983: 46-200 specimens; 1984: 13-50 specimens; 1985: 39-70 specimens).

Kiss (1999) groped all observations on this species in Banat, and his synthesis presents that the Black-tailed Godwit occur in spring, in March-April, in the wet areas, and in summer, in August-September, sometimes even in October. There are 46 observations from 1924 to 1996, from 12 localities of Banat. The number of the birds in a single observation varied from 1-2 specimens to some tens, and the highest number was of 200 specimens counted on Balta Mare, at Satchinez 1982. Here it is the synthesis of these observations according to Kiss (1999), ordered by us after localities: Biled: 28.08.1936; Satchinez: 29.06.1924 (N.E.); 07.1926 (N.E.); 01.08.1946; 20.08.1947 (A.K.); 11.07.1948; 18.07.1948; 25.07.1948; 3.07.1963; 4.07.1963; 18.07.1963; 2.08.1963 (C.G.); 5.08.1963 (N.E.); 6.08.1963 (C.G.); 23.08.1963 (C.G.); 2.09.1964; 18.09.1964; 4.08.1969, 6 specs; 8.09.1969, 8 specs; 14.04.1980, 15 specs (K.A.); 3.03.1982, 20 specs (K.A.); 12.03.1982, 14 specs (K.A.); 12-13.03.1982, 500 specs (K.A.); 3.05.1982, 32 specs (K.A.); 25.03.1985, 200 specs (K.A.); 16.04.1988, 70 specs (K.A.); 3.04.1990, 11 specs (K.A.); 18.04.1990, 14 specs (S.D.), 2.04.1996, 7 specs (K.A.); Tormac: 10.04.1977, 2 specs (K.A.); 30.04.1978, 5 specs (K.A.); Murani: 9.03.1983, 15 specs (K.A.); 21.04.1983, 70 spec (K.A.); 17.03.1984, 14 specs (K.A.); (A.A.); Orșova: 16.03.1996, 1 spec. (K.A.); 20.09.1996, 22 specs (A.A).

In Mehedinți, Kiss (1996, 2005 b) reported 11 specimens remarked on the Iron Gates dam lake, during the period 12-16.03.1996; in 22.09.2002, at Baziaș, Chișamera (2003) observed 1 specimen, also as a passage species, in the studied area; on the fish ponds from Gruia, in the Danube Floodplain, also in Mehedinți, Munteanu (2004) remarked some tens of Black-tailed Godwit specimens.

From Transylvania we have the oldest observations, as the Black-tailed Godwit specimens from the collections from Sibiu show us. Seven from the ten specimens present there are collected between 1847-1892 (Tab. 2).

Klemm & Kohl (1988) in "*Die Ornithologie Siebenbürgens*" made a synthesis of the reports on the Black-tailed Godwit from Transylvania, between 1912-1985 from: Boziaș: 16.08.1912, 1 spec.; Covasna: 3.03.1928, 1 spec.; Gornești: 22.03.1968, 2 specs; 20.04.1969, 2 specs; 24.04.1969, 2 specs; Ideciu de Jos: 24.03.1973, 18-20 specs; Iernut: 26.07.1933, 1 spec.; 07.1933, 8 specs; 2.05.1970, 1 spec.; 25.06.1972, 1 spec.; 3.09.1981, 4 specs; 13.04.1985, 1 spec.; Mândra: 24-31.10.1982, 1 spec.; 8.04.1984, 14 specs; Reghin: 19.04.1979, 1 spec.; Sânpaul: 3-30.04.1983; 3-31.03.1985, 1 spec.; 14.04.1985, 1 spec.; Sucutard: 18.04.1936; 10.04.1972, 4 specs; Sângeorgiu de Pădure: 3-14.06.1966; Târgu Mureș: 25.07.1966, 1 spec.; 28.04.1968 1 spec.

On Someșul Mic, it occurs in spring, on 20th of March, then in summer, from 16th of July, 2-20 birds (Beldi & Mannsberg, 1973). Weber (1973) found it at Mediaș. Munteanu (1976) reminds an exhibit from the collections of the Gheorghieni Museum, collected in 1965.

In their observations made at Someșeni, near Cluj, in 1967-1969, Antal & Libuș (1975) observed 2 specimens, on 22.03.1968 and every 2 specimens in 22 and 24.04.1969.

Limosa limosa was observed by Poliș (1976) at Pîlu, 1.06.1972; at Mirtău, 2 specs; at Chișineu-Criș, on 1.06.1972, 12 specimens, from which he collected 6 for

the collection of the Museum of Oradea. In the observations from Cefa, from November 1972 – October 1973, Poliș (1974) remarked the Black-tailed Godwit in the area, in March-April, in a low number, in the shallow water lakes. In May, the males have their breeding feathers. Poliș (1974) thinks that may nestle in the Cefa area. Hamvas (1969) found the species on 19–30.05.1969, in Ierul Valley, near the Andrid and Didești, where it nested.

Kovats (1973) observed *Limosa* on Crișul Repede, between 22.07. and 15.08. together with the species *Vanellus vanellus* and *Tringa* sp.

Between 1993-1995, Hodor (1996) observed the Black-tailed Godwit at Rotbav and in the spring passage, in April, and in September.

At the beginning of June, Ionescu (1996) observed 2 specimens of *Limosa* on the ponds from Dumbrăvița (Brașov); the same author continued the observations (Ionescu, 2002) between 1993-1996 at the pools Rotbav and Dumbrăvița and remarked that in summer, in June-July, mature and immature specimens of *Limosa limosa* can be occurred, without making quantitative specifications.

In Fizeș Valley, placed in the North-West of the Transylvanian Plain and in the migration way of the aquatic birds, *Limosa limosa* stips in a low number, for a short period of time during the transit period because it has not optimum foraging habitats (Munteanu, 2004).

In the fish ponds from Câmpenești, in Feiurdeni Valley, Cluj, Munteanu & Munteanu (2005) observed it as a passage species with small populations. Between 1990-1995 they made 21 observations. From the number of observed bird point of view they considered that the spring passage is more intense than the autumn one. Observations: 18.07.1990, 15 specs; 27.07.1994, 15 specs; 10.07.1995, 5 specs; 16.07.1995, 35 specs. In august they made 9 observations, and the flocks were of 5-30 specimens, a medium of 13 specimens. Their flights are rare through Transylvania during migration, number of the specimens from the observed flocks is of some tens or hundreds, if we compare with Dobrogea.

Nestling of the Black-tailed Godwit in Romania

Since 1940, Linția presumed that it may nestle in western Romania (Linția, 1955).

In 1968, in the study on Romanian Charadriiformae, Papadopol mentioned that he found specimens of *Limosa limosa* in the breeding season in the Danube Delta, within the area of the Razelm Complex, Grindul Lupilor-Bisericuța, but they were present in a very low number. Also, he observed adult birds within the period 20–30.05.1966 at Mahmudia and in the wet areas of Transylvania, at Sanislău – Carei, in 1967. Also in this study, Papadopol (op. cit.) considered that *Limosa limosa* nested rarely in Romania, in simple monospecific colonies; it lays normally 3-5 eggs; the period for laying eggs is April-May in the conditions from Romania; incubation lasts 24-27 days, and both male and female nestle; the breeding period lasts from April to May; nest is built from roots and finer vegetal materials; it lays a single clutch (Fig. 2).

Kiss (1997 b) published the catalogue of the egg collection from Timișoara. Here, there is a clutch of *Limosa limosa*, reported by Linția (1955), collected of the North-western border of Romania, near Tisa, in Hungary at Tisza Püsöki, by G. A. Ertl, before 1910. The clutch has 4 eggs, with the following dimensions: 54.5 X 37;



Fig. 2 – Romanian localities where *Limosa limosa* nestles (●-precise nestling; ○-presumed nestling).

57.5 X 36.5; 56.5 X 38; 53 X 37 mm; also Linția (op. cit.) presumed that this species might nestle in Romania, because that time he had several specimens in collection, with a breeding plumage: an adult female shut at Săcălaz, in the middle of July 1926; an adult male, in a breeding plumage, collected on 29.06.1930, at Satchinez, in Banat; then an adult, in a breeding plumage, collected on 5.05.1930, in the Danube Delta, at Jurilovca, from a group of 5 specimens. The idea that the Black-tailed Godwit was a nestling species was underlined that is nested frequently in the Hungarian Plain.

The first report of the nestling of the Black-tailed Godwit in Romania belongs to Vasiliu (1968), who mentioned an incubation case in the Danube Delta, at Corciovata, on 12. 06.1963.

Hamvas (op.cit.) found a nest of *Limosa* with 4 eggs in Ierul Valley, near Andrid and Didești (Satu Mare), on 19-30.05.1969. According the observations he made, he presumed that the male may nestle, the smaller birds and more intensely coloured. On 4.05.1966 he found another nest of *Limosa limosa*, with 2 eggs, also near Andrid. Because of the bad weather, a very rainy spring, the nest had no clutch after three weeks.

Between 20th – 27th of May 1974, in Dobrogea, near a pool between Tulcea and Babadag, maybe Zebil, Vaucher (op.cit.) observed a pair, and he presumed that it nested without finding a clutch of a nest.

Poliș (1974) thought that it is about the nestling from Cefa, even she considers it a passage species.

Tălpeanu & Paspaleva (1979) reported a nestling case at Bisericuța (Razelm Lake), observed with a binocular, not to disturb the birds, 14.07.1977.

Table 1

Black-tailed Godwit egg size, from literature.

Length (L)			Diameter (D)			n	Geographical area	Bibliographical reference
Min.	Max.	x	Min.	Max.	x			
47.7	59.9	54.5	32.5	40.7	37.5	100	Belgium	Verheyen ¹
51.5	58.1	55.0	34.5	39.9	37.8	58	Belgium	Batijns & Grootaers ¹
45.3	63.9	55.3	32.4	41.3	37.4	100	The Netherlands	Hellebrekers ¹
50.4	61.1	54.88	35.3	41.0	38.14	79	Germany	Niethammer ¹
48.5	59.8	54.7	34.0	40.7	37.3	100	Europe	Jourdain ¹
–	–	52	–	–	35	–	Russia	Shnitnikov, 1913 ²
48.5	59.8	54.71	34	40.7	37.37	50		Hartert, 1915 ²
50.3	61.8	55.25	33.4	40.7	38.2	118	Siberia	Groen & Yurlov, 1999
48.6	61.3	55.31	35.2	40.1	38.12	102	The Netherlands	

¹ data after Verheyen (1967)² data after Dementiev & col. (1951)

Munteanu (1977-1979) considered it a rare nestling bird and mentioned the papers in which it was reported as a nestling bird; he added a report on a nest on the Sahalin Island, which belonged to Filipaşcu (in verbis). Also, *Limosa limosa* is mentioned as a frequent passage species and summer guest. In the “*Atlas of the Romanian nestling birds*” (Munteanu et al., 2002) specified Comana as an unsure nestling place, i. e. which was not verified.

In his avifauna studies from the Prut basin, Muller (2005 a) thinks that in 2001 and 2002 there were unsuccessful attempts of a pair of Black-tailed Godwit to nestle, in the lawn near Leţcani. In 2003, at the end of April, on a grassy and marshy land, near Vlădeni railway station, she discovered 6 nests of *Limosa limosa*, in which the first chickens hatched on 10th of May. Also in May, near Borşa pool, she discovered other 3 nests, and on the Hălăceni pool, other 2 nests. In 2004, three pairs



Fig. 3 – Egg of *Limosa limosa* from the collection of the Museum of Oltenia, Craiova (Photo Mirela Rădiche).

of Black-tailed Godwit nested on the grassy land near Miletinului pool. According to these information the Black-tailed Godwit is a summer guest species which nestle in the Prut basin. Muller (2005 b) measured 37 eggs from the 11 studied nests and noted the following data: max. 60.0 X 38.2 mm and 60.1 X 42.3 mm; min. 50.9 X 40.8 and 51.6 X 41.8 mm, with an average of 56.1 X 42.6 mm.

On 18.05.2004, between Bistreț and Măceșu de Jos, in Desnățui River, Kiss & Marinov (op. cit.) observed 6-8 pairs of Black-tailed Godwit, whose behaviour was typical for the breeding season. Unfortunately they found the nest destroyed and the rests of an egg; dimensions of the reconstructed egg were of 50.54 mm X 38 mm, dimensions which correspond to the literature studied by the authors.

Considering table 1, where I synthesized data from literature on the Black-tailed Godwit eggs size from Europe, I can assert that the values of the measurements made by Kiss (1999) on the clutch from the collection of Timișoara, as well as the measurements made on the eggs of the collection from Craiova can be included in the category of the medium values. Measurements made on the clutches from Moldavia by Muller (2005 b) or those one made by Kiss & Marinov (op.cit.) seem to be closer to the maximum values found by other authors in Europe. These large dimensions of the eggs can be the result of the conditions offered by the new nestling place, richer in food and more quite from the point of view of the anthropic disturbances.

From 1960 till now several certain nestling places were reported from Romania: Corciovata (the Danube Delta) in 1963 (Vasilii, op.cit.); Andrid (Satu Mare) in 1966 and 1969 (Hamvas, op.cit.); Valea Erului, Banat (Neumann, 1982); Bisericuța, Razelm Lake in 1977 (Tălpeanu & Paspaleva, 1979); Vlădeni, Iași in 2003 (Muller, 2005 a, b), Bistreț, Dolj in 2004 (Kiss & Marinov, 2005) (Fig. 2).

Material from collections

In the Romanian museums there are a few Black-tailed Godwit specimens. Ornithological collections of the entire Romania have 57 specimens of *Limosa limosa*, out of which 27 skins and 30 naturalized birds. Over 54 specimens are collected from the Romanian fauna and only three pieces are from the world fauna: a specimen of *Limosa limosa* from Russia and another one without data from Europe, preserved in the collection of „Grigore Antipa” National Museum of Natural History, a specimen collected at Vâlcov, locality in Ukraine now. To all these a clutch formed of 5 eggs, collected from Hungary, preserved in the collection of the Museum of Timișoara, 13 clutches of Black-tailed Godwit, in the collection of the Museum of Oradea, with 47 eggs, collected from Hungary are added (Tab. 3).

“Grigore Antipa” National Museum of Natural History has 17 specimens; Museum of Sibiu, 10 specimens; Museum of Timișoara, 9 specimens; the other museums have 1-3 specimens (Tab. 4).

“Grigore Antipa” National Museum of Natural History has 17 specimens out of which only 12 were included in the catalogue of the collection, i. e. only those collected from Romania (Papadopol & Tălpeanu, 1987). In this table I added a specimen collected by Radu Dimitrie, 2 specimens collected by Matei Tălpeanu and Maria Paspaleva, donated to the Museum, as well as the two specimens from Europe (Tab. 2; figs 4, 5).

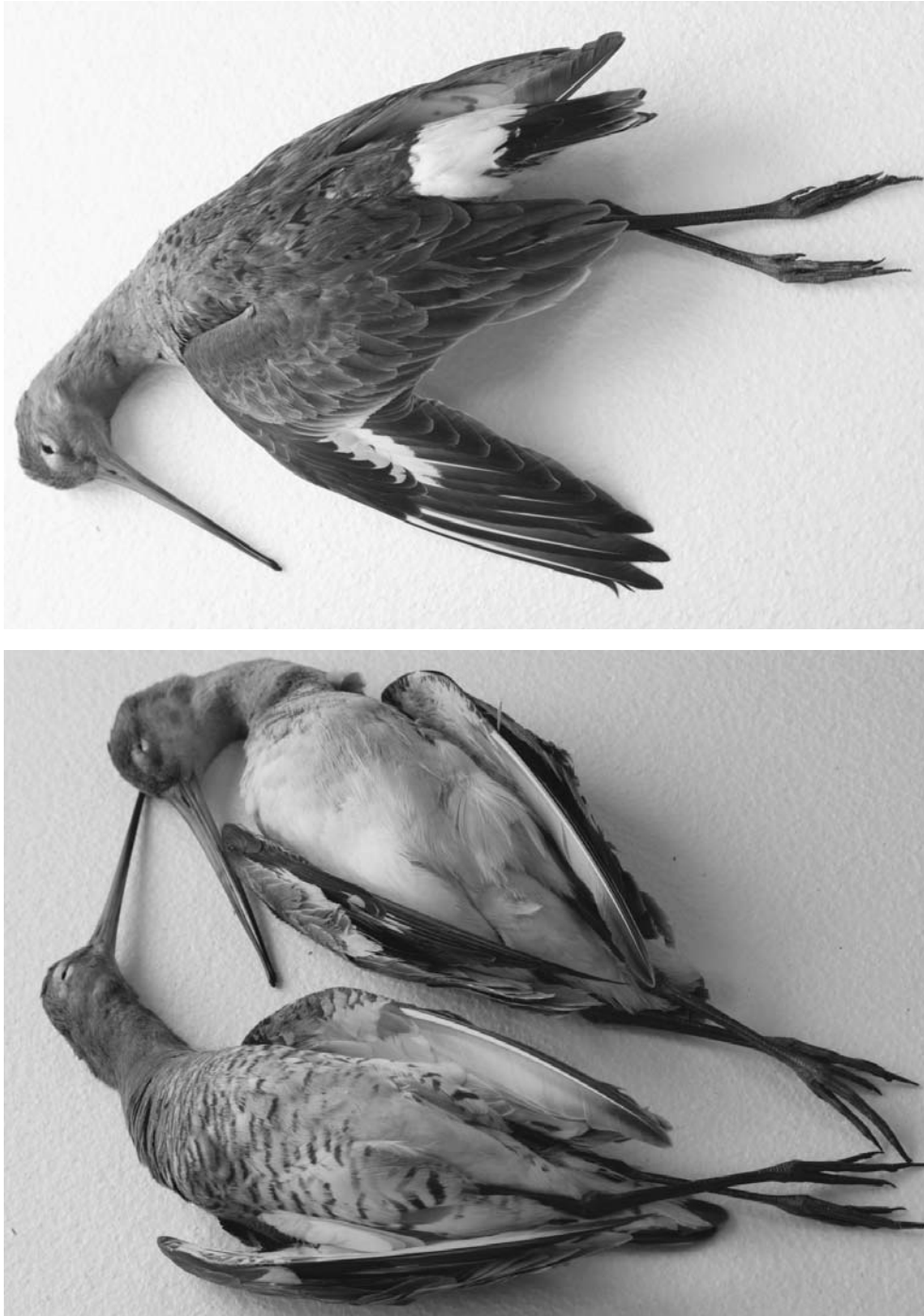


Fig. 4 – Two specimens of *Limosa limosa* collected in March 2004, one in breeding plumage (dorsal side, up) and the other in winter plumage (ventral side, down) (Photo Adrian Stoicoviciu).

Table 2

Limosa limosa in the collections of the Romanian museums.

No crt.	Inventory no	Sex	B/M	Date	Localities	Collected by	Museum	Reference
1.	5234	♂ ad.	B	14. 08. 1958	Leahova Lake, Razelm	A. P.	București	Papadopol & Talpeanu, 1987
2.	15045	♀	B	26. 09. 1981	Bistreț, Dolj	M.T.	București	
3.	15012	♂	B	6. 03. 1979	Răchitoasa, Bacău	C.R.	București	
4.	14574	♀	B	22. 06. 1967	Independența, Murighiol	M.T.	București	
5.	14140/1	juv.	B	22. 06. 1963	Dăbuleni, Dolj	N.S.	București	
6.	14140/2	♀ juv.	B	22. 06. 1963	Dăbuleni, Dolj	N.S.	București	
7.	14903/1	♂	B	3. 04. 1971	Crîșan, the Danube Delta	A.C.	București	
8.	14903/2	♂	B	3. 04. 1971	Crîșan, the Danube Delta	A.C.	București	
9.	14903/3	♀	B	3. 04. 1971	Crîșan, the Danube Delta	A.C.	București	
10.	5272/1	♂	B	18. 08. 1958	Boian Lake	M.T.	București	
11.	5272/2	♀	B	17. 07. 1958	Boian Lake	M.T.	București	
12.	15421	-	B	25. 05. 1968	The Danube Delta	D.R.	București	
13.	5032	ad.	M	-	Romania	-	București	
14.	3808	ad.	M	-	Europe	-	București	
15.	A	ad.	0	13. 03. 2004	Vadu-Chituc	MT&MP	București	
16.	B	ad.	0	13. 03. 2004	Vadu-Chituc	MT&MP	București	
17.	14974	-	B	1953	Urals, Rusia	Coll M.H.	București	
18.	202	-	-	18. 04. 1957	Larga, Jijia	-	Iași	
19.	232	-	-	13. 09. 1959	Roșcani, Iași	-	Iași	
20.	213	-	-	13. 09. 1969	Larga, Jijia	-	Iași	
21.	624	-	-	20. 04. 1977	Larga, Jijia	-	Iași	
22.	A-395	ad.	N	1953	Jirău, Brăila	S.K.	Reghin	
23.	A-396	ad.	N	1953	Jirău, Brăila	S.K.	Reghin	
24.	A-397	-	N	7. 04. 1954	Mila 23, Gr. Stipoc, the Danube Delta	S.K.	Reghin	
25.	A-398	-	N	12. 04. 1954	Mila 23, Gr. Stipoc, the Danube Delta	S.K.	Reghin	
26.	A-399	-	B	30. 06. 1964	Mila 23, Gr. Stipoc, the Danube Delta	S.K.	Reghin	
27.	1388/580	♂ ad.	N	25. 05. 1847	Deva	C		
28.	1361/583	♀ ad.	N	1853	Transylvania	F.W.S.	Sibiu	
29.	1357/579	♂ ad.	N	1860-1870	Turnișor, Sibiu	P.L.	Sibiu	
30.	1359/581	juv.	N	1860-1875	Turnișor, Sibiu	K	Sibiu	
31.	1362/4507	♂	N	25. 03. 1865	Hățeg, Hunedoara	A.B.	Sibiu	
32.	1360/582	♂ ad.	N	1877	Sibiu	C.F.J.	Sibiu	
33.	1363/4508	♂	N	9. 04. 1892	Rea, Hunedoara	A.B.	Sibiu	

Stein-von Spiess,
2005

Kohl, 1990

Mândru, 1985

Table 2 (continued)

No crt.	Inventory no	Sex	B/M	Date	Localities	Collected by	Museum	Reference
34.	1364/4603	-	B	08. 1958	The Danube Delta	W.K.	Sibiu	Stein-von Spiess, 2005
35.	1365/4604	-	B	08. 1958	The Danube Delta	W.K.	Sibiu	
36.	5109/-	-	B	-	-	-	Sibiu	
37.	1102	♂ ad.	M	26. 05. 1930	Jurilovca, Tulcea	L.D.	Timișoara	
38.	654	♂ ad.	M	28. 08. 1936	Biled, Timiș	N.E.	Timișoara	
39.	1166	♂ ad.	B	23.06. 1942	Vălcov, Ismail	-	Timișoara	Nadra, 1972
40.	879	♂ ad.	M	29. 06. 1934	Satchinez, Timiș	N.E.	Timișoara	
41.	655	♀ ad.	M	28. 08. 1936	Biled, Timiș	N.E.	Timișoara	
42.	656	♀ ad.	M	07. 1926	Saclauz, Timiș	L.D.	Timișoara	
43.	1459	♂ ad.	B	20. 08. 1947	Satchinez, Timiș	K.A.	Timișoara	
44.	2888	♂ ad.	B	4. 07. 1963	Satchinez, Timiș	N.E.	Timișoara	
45.	2889	♂ ad.	B	18. 07. 1963	Satchinez, Timiș	N.E.	Timișoara	
46.	2872	♀ ad.	B	5. 08. 1963	Satchinez, Timiș	N.E.	Timișoara	
47.	1/s/154	-	B	2. 08. 1963	Satchinez, Timiș	C.C.G	ICAS*	Kiss, 2005 a
48.	1/s/156	♀	B	6. 08. 1963	Satchinez, Timiș	C.C.G.	ICAS*	
49.	1/B/166	♀ juv.	N	30. 07. 1963	Satchinez, Timiș	C.C.G.	ICAS*	
50.	1/B/251	♂	N	23. 07. 1964	Satchinez, Timiș	C.C.G.	ICAS*	
51.	683	-	B	3. 09. 1967	Satchinez, Timiș	C.H.G	ICAS*	
52.	919	♀	B	14. 08. 1969	Satchinez, Timiș	C.H.G	ICAS*	
53.	157115/1	♀ ad.	B	15. 08. 1974	Balta Plopu	G.H.	Bacău	Rang, 1980
54.	1	1 ♂ ad.	N	without data	Tulcea	Coll. H	Brașov	
55.	2	♀ ad.	N	1894	without data	Coll. H	Brașov	
56.	3	♀ ad.	N	1894	without data	Coll. H	Brașov	
57.	4	-	N	without data	without data	Coll. H	Brașov	Ciochia & Barbu, 1983
58.	5	-	N	without data	without data	Coll. H	Brașov	
59.	6	-	N	without data	without data	Coll. H	Brașov	
60.	29	-	N	21. 10. 1957	-	Coll. H	Galați	Glavan, 2003
61.	4750	-	N	28. 07. 1973	Balta Brăilei	A.G.V.P.S	Galați	
62.	1445	♂ ad.	N	-	-	N.M.	Galați	
63.	9343/1018	-	N	without data	without data	P.N.	Cratova	Bazilescu et al. 1980
64.	5275	♂ juv.	N	29. 09. 1964	Cefa	Gh. B.	Oradea	Kovats, Poliș,
65.	5756	♀ juv.	B	3. 07. 1967	Galospetreu	T. J	Oradea	Beczy, 1970
66.	5757	♀ juv.	B	3. 07. 1967	Galospetreu	T. J.	Oradea	

B = skin; N = naturalized bird; coll. H- Hausmann collection; * - disappeared collection.

In the collection of the Museum of Iași there are only 4 specimens, collected from Moldavia (Mândru, 1985).

The Museum of Craiova (Bazilescu et al., 1980) has a single specimen, without data, with the collection number 9343/1018 and 3 eggs of Black-tailed Godwit, without data, of the collection Ion P. Licherdopol (Ridiche, 2003) with the following dimensions: No. 13485/3468: L-57 mm, D-37 mm; No. 13526/3509: L-58 mm, D-37 mm; No. 3536/ 3519: L-56 mm, D-38 mm (Fig. 3).

„Ștefan Kohl” Ornithological Collection deposited at High School No 2 from Reghin, consists of 5 specimens (Kohl, 1990) collected from Brăila and the Danube Delta, four of them are naturalized birds and one skin (Tab. 2).

In the systematical catalogue of the ornithological collection of the Museum of Banat Timișoara, Nadra (1972) mentioned 9 specimens, 3 females and 6 males whose data can be seen in tab. 2.

Kiss (2005 a) published the catalogue of a collection, vanished today, with birds collected from Banat, which belong to the Agro-Forest Research Institute of Timișoara. In this collection were 6 specimens.

In the collection catalogue of the Museum of Bacău, published by Rang (1980), there is a single Black-tailed Godwit specimen, a female, without data.

Museum of Galați has 3 specimens of *Limosa limosa*, naturalized, without data (Glavan, 2003).

In Hausmann ornithological collection, preserved at the Faculty of Forestry of Brașov, Ciochia & Barbu (1983) mentions 6 specimens of *Limosa limosa*, without inventory numbers and with incomplete data: 1 ♂ ad., Tulcea, without collecting data; 1 ♀ ad., 1894, without collecting locality, ♀ ad., 1894, without collecting locality and more 3 specimens without data, out of which a specimen is with the summer plumage.

In the systematical catalogue of the birds collection of the Museum of Oradea (1951-1969) (Kovats et al., 1970) there are over 1,315 birds of 207 species and 3 specimens of *Limosa limosa*. In one of his papers, Kovats (1973) presents the dimensions of two specimens (Tab. 6).

In Ladislau Dobay Collection of the Museum of Oradea there are 13 clutches with 47 eggs of *Limosa limosa* collected from two localities from Hungary (Beczy, 1971) (Tab. 3).

Table 3

Clutches of *Limosa limosa* of the Ladislau Dobay Collection, Țara Crișurilor Museum, Oradea (after Beczy, 1971).

No. crt.	No. coll	Locality	Date	No. of clutch	No. eggs
1.	NRI. 1987	Pest, Sari, Hungary	4. 05. 1909	1	3
2.	NRI. 1981	Urbö, Hungary	6. 05. 1903	1	4
3.	NRI. 1983	Urbö, Hungary	12. 05. 1903	1	3
4.	NRI. 1982	Urbö, Hungary	26. 04. 1904	1	4
5.	NRI. 1992	Urbö, Hungary	29. 04. 1904	1	4
6.	NRI. 1984	Urbö, Hungary	4. 05. 1904	1	4
7.	NRI. 1991	Urbö, Hungary	10. 05. 1904	1	4
8.	NRI. 664	Urbö, Hungary	7. 05. 1906	1	3
9.	NRI. 1990	Urbö, Hungary	10. 05. 1907	1	3
10.	NRI. 1986	Urbö, Hungary	10. 05. 1907	1	4
11.	NRI. 1985	Urbö, Hungary	12. 05. 1907	1	4
12.	NRI. 1988	Urbö, Hungary	18. 05. 1907	1	4
13.	NRI. 1989	Urbö, Hungary	7. 05. 1909	1	3

In tab. 4 the body dimensions of the specimens of “Grigore Antipa” Museum are presented. Six specimens have the beak dimensions between 92.4-99 mm, and the wing of 202-210 mm; six specimens have the beak of 100-109.6 mm and the wing of 210-223 mm; five of them have the beak between 119-121 mm and the wing between 215-227.5 mm, but the small number of specimens does not help us to reach a conclusion. In Romania, there is the subspecies nominata *Limosa limosa limosa*, but, as it can be seen also in the table, there are variations of the dimensions (Tab. 5). In fig. 5 there is a specimen with a very short beak, of 92.4 and which hasn't a white eyebrow above the eye as long as the specimen next to it, with a beak of 120 mm. Their features resemble those of the subspecies *islandica*, but they are not convincing enough.



Fig. 5 – *Limosa limosa*, specimens prepared as skins, in the collection of „Grigore Antipa” Museum.

Table 4

Dimensions of the Black-tailed Godwit after the material of ornithological collection of “Grigore Antipa” National Museum of Natural History.

No crt.	Inventory no	Wing (mm)	Beak (mm)	Tail (mm)	Tars (mm)	Length (mm)	Span (mm)
1.	5234 ♂ ad.	212	109.6	86.1	82.4	-	-
2.	15012 ♂	227.5	119	85	88	475	770
3.	14140/1	215	120.4	83	86.3	483	739
4.	14903/1 ♂	208	95.3	101	74.5	460	766
5.	14903/2 ♂	210	101	94	73.5	425	688
6.	5272/1 ♂	210	99	84	73	420	670
7.	15045 ♀	221	106	80	77.5	455	680
8.	14574 ♀	202	92.4	86	65.5	-	-
9.	14140/2 ♀	208	96.6	81.4	72	414	696
10.	14903/3 ♀	215	107.2	97	79	456	720
11.	5272/2 ♀	197	98	92	69	415	700
12.	15421	218	121	85	84	-	-
13.	A	223	112	88	80	460	697
14.	B	210	94	97	75	415	650
15.	14974	226	121.2	98.3	90.8	-	-
16.	5032	225	121	89	84	-	-
17.	3808	214	100	84	80	-	-

Table 5

Dimensions of the Black-tailed Godwit after Dombrowski (1912).

Material	Size differences	Length (mm)	Wing length (mm)	Tail length (mm)	Tars length (mm)	Beak length (mm)
10 ♂♂ ad.	Max	484	227	95	78	112
	Min	430	210	82	72	88
10 ♂♂ ad.	Max	486	230	92	80	120
	Min	441	210	86	75	89

Table 6

Dimensions of the Black-tailed Godwit after Kovats (1973).

Date	Sex	Wing (mm)	Beak (mm)	Tail (mm)	Tars (mm)	Weigth (g)
24.07.1970	♀ juv.	220	96	81	80	315
22.07.1971	♂ juv.	193	92	75	72	305

Biological and ecological data

In a study on the food and trophic relations in Charadriiformae, Papadopol (1970) shows that the food eaten by *Limosa limosa* normally consists of worms, molluscs, crustaceans, different insects in different states (adults, pupae, larvae), aquatic and terrestrial plant fragments, seeds of aquatic plants; it rarely eats fish (eggs, larvae), amphibians (eggs, larvae), mineral particles, detritus, etc., both in fresh and salt waters. Lăcătușu et al. (1971) made an analysis of the stomachs of several bird species, collected from the Danube Delta, among them being also 4 specimens of *Limosa limosa*, 3 females and a male, collected from the Sahalin Island, on 3.04.1968. Analysed stomach content revealed gastropods, unidentified chironomid larvae and ants: *Myrmecocistis cursor*.

Chiriac (1960) studied the cestodes in several bird species, collected between 1957-1959 from Dobrogea, and in the list she mentioned a specimen of *Limosa lapponica*, collected from Medgidia, which had parasites.

In a ample study on Romanian Charadriiformae, Papadopol (1966) considered that *Limosa limosa* chose the Pontic way and the Carpathian one, through Romania in his migration way to southern Europe, together with other species of Charadriiformae: *Calidris minuta*, *C. temmincki*, *C. alpina*, *Philomachus pugnax*, *Actitis hypoleuca*, *Tringa erythropus*, *Glareola praticola*, *Charadrius morinellus*, *Numenius arquata*, etc. Also in this study, the author presented his doubt on the Black-tailed Godwit as a nestling species in Romania, although he included it as a present passage species in our fauna from the middle of March till the middle of October. It prefers shallow marshes, wet lands with rare vegetation and muddy beaches. The nests found near Carei were in a vegetation dominated by *Alopecurus* and *Carex* (Munteanu, 1977-1979). The nests from the Prut basin were built in amphibian habitats where plants as *Juncus* sp. and *Carex* sp. were prevalent.

Limosa lapponica (Linnaeus, 1758)

Limosa lapponica comes accidentally in Romania, that is why there are a few observations on this species, around 12 observations (Fig. 6). Impe (1969) observed 2 specimens on 11.09.1966, and a specimen on 20.09.1966 together with

Philomachus pugnax, in the South of the Techirghiol Lake. Stănescu (1980) observed 4 specimens each time at Histria, in March and September 1973, April 1974. Brehme et al. (op. cit.) mentioned three observations of this species, as follows: Murighiol, the Danube Delta, 25.08.1981, 1 specimen; Sahalin Island, 26.08.1985, 2 specimens; Gura Portița, 19.08.1991, 4 specimens.

Munteanu (2004) reported it as a very rare species, with accidental appearances in Razelm-Sinoe Complex. Munteanu & Munteanu (op.cit.) observed a juvenile specimen of *Limosa lapponica* on 22nd, 24th, 29th of September 1996, on the ponds from Câmpenești.

Gache & Muller (2005) observed 2 specimens of *Limosa lapponica* in the flooded plain of the Jijia River, on 23.03.2004.

In the museums of Romania, there is a single specimen at the Museum of Sibiu, in the Adam Buda collection. Dombrowski (1912) did not mention this species in his monograph paper "*Ornis Romaniae*".

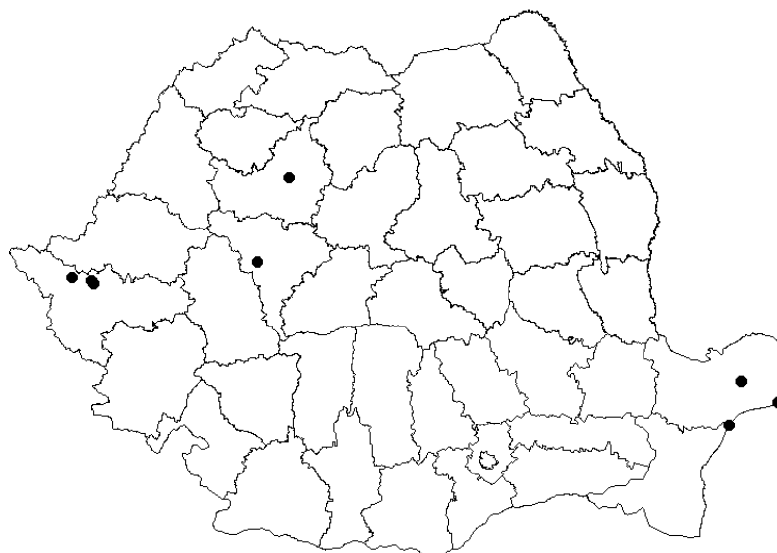


Fig. 6 – Localities from Romania where *Limosa lapponica* was observed.

Linția (op.cit.) presents that a specimen of *Limosa lapponica*, a female, was shot near Deva, in 1840-1844, by Alexie Buda, in whose collection it was preserved. The second specimen, a male, was shot by Alexie Buda, Adam Buda's son, from Rea, at Bălțațar (Hațeg), in whose collection it was preserved for a very long time. Later on, one of these specimens reached the Museum of Sibiu. In the catalogue of Adam Buda collection, preserved at the Museum of Sibiu, Popescu (2002) mentioned the presence of a male of *Limosa lapponica*, collected in 1864, on the 30th April, Bălțațar, a naturalized specimen, with the collection number 1366/4509. The same specimen is also mentioned by Silvia Stein-von Spiess (2005) in the catalogue of the bird collection of the Museum of Sibiu; a specimen of *Limosa lapponica*, collected at Sân Martin, on 17.04.1977, preserved in formol, is in the collection of the Museum of Târgu Mureș (Klemm & Kohl, op.cit.).

For the northern Black-tailed Godwit there are mentioned only sporadic observations in the papers. In the entire Romanian ornithological literature there is no study dedicated exclusively to this species and also there aren't material in the Romanian museum collections, excepting the 2 specimens from the museums of Sibiu and Târgu Mureş. *Limosa lapponica* is rarely occurred in Romania, accidentally and in a small number, 1-4 specimens, so that it cannot draw attention to people but to the specialists.

ACKNOWLEDGEMENTS

I thank to my colleagues, Mrs Mirela Sabina Ridiche, from the Museum of Oltenia, for the data on the ornithological collection of the Museum of Oltenia of Craiova; to my colleague Alexandru Iftime for his help in drawing up the maps; to Dr. Ileana Negoescu and Mrs Mihaela Achim for their support and especially to Mr. Matei Tâlpeanu for his critical review and for the improvements of the manuscript.

GENUL *LIMOSA* BRISSON, 1760 (AVES: SCOLOPACIDAE) ÎN ROMÂNIA

REZUMAT

Limosa limosa apare în România în număr mare în perioada de migrație primăvara în martie-aprilie și la sfârșitul lunii iunie, cu un maxim numeric în iulie și începutul lui august; stațiile sunt de scurtă durată primăvara și mult mai lungi în perioada post nupțială. Este o specie în expansiune, iar din 1960 până acum au fost semnalate mai multe locuri sigure de cuibărire în România: Corciovata (Delta Dunării) în 1963; Andrid (Satu Mare) în 1966 și 1969; Valea Erului (Banat); Bisericuța, Lacul Razelm în 1977; Vlădeni (Iași) în 2003; Bistreț (Dolj) în 2004.

În colecțiile muzeelor din România sunt 57 de exemplare de *Limosa limosa*, din care 27 balguri și 30 de păsări naturalizate și 55 de ouă.

Limosa lapponica apare foarte rar în România, accidental și în număr foarte mic, de aceea sunt puține observații asupra acestei specii, circa 12 observații între anii 1840-2005. În muzeele din România sunt 2 exemplare, un exemplar la muzeul din Sibiu, din colecția Adam Buda și unul la muzeul din Târgu Mureş.

LITERATURE CITED

- ANTAL, V., A. LIBUȘ, 1975 – Observații avifaunistice și cenologice la Someșeni, Cluj-Napoca, între anii 1967-1969. *Nymphaea*. Muzeul Țării Crișurilor. Oradea, 3: 201-214. (in Romanian)
- BAZILESCU, E., C. SORESCU, M. CRUCE, M. POPESCU, 1980 - Catalogul sistematic al colecțiilor de vertebrate. Oltenia. Studii și Comunicări, Muzeul Olteniei Craiova, 3: 347-384. (in Romanian)
- BĂNICĂ, G., 1999 - The birds of Histria (ornithological comment from the Southern Danube Delta, Romania 1983 to 1999. *Sea Swallow*, 48: 35-48.
- BĂNICĂ, G., 2002 - Lacul Sărături-an important nesting area in the Danube Delta, Romania. *Sea Swallow*, 51: 55-58.
- BĂNICĂ, G., 2004 - Specii de păsări observate pe litoralul Mării Negre la Constanța (1989-2003). *Scripta Ornologica Romaniae*, Cluj-Napoca, 1: 99-102. (in Romanian)
- BECZY, T., 1971 – Catalogue of the oological collection of the Museum in Oradea. Criș-River Region Museum. Oradea 1971: 81 (226 pp). (in Romanian)
- BEINTEMA, A., J. MELTER, 1997 - *Limosa limosa*. Pp. 294-295. In: W. J. M. Hagemeijer, M. Y. Blaire, eds. The EBCC Atlas of European Breeding Bird. Their distribution and Abundance. Published for the European Bird Census Council by T & A. D. POYSER.
- BELDI, M., A. MANNBERG, 1973 - A Kiss-Szamos vizgyujto területenek madarvilga (Die Vogelwelt in Wasserinzugsgebietdes Klainen Samoch). *Aquila*, 76-77: 165-179. (in Hungarian)
- BREHME, S., T. MULLER, J. REDLICH, 1992 - Bird observations in the Danube Delta and in the Dobrogea (Romania). *WIWO raport NR. 43, July 1992: 2-50.*

- CĂTUNEANU, I. I., AL. JOHNSON, M. TĂLPEANU, 1967 – Recherches ornithologiques dans la Dobroudja (1965 – 1966). Travaux du Muséum d'Histoire Naturelle "Grigore Antipa", 7: 419-435.
- CHIRIAC, E., 1960 - Considerații zoogeografice asupra cestodelor păsărilor din Dobrogea de Sud. Studii și Cercetări de Biologie. Seria Biologie Animală, 12: 395-402. (in Romanian)
- CHIȘAMERA, G., 2003 - Contribuții la cunoașterea avifaunei Parcului natural Porțile de Fier. Drobeta. Muzeul Regiunii „Porțile de Fier” Drobeta - Turnu Severin, 13: 254-267. (in Romanian)
- CIOCHIA, V., 1969 - Rezervația naturală „Lacul Agiea”. Ocrotirea naturii, 13 (2): 183-189. (in Romanian)
- CIOCHIA, V., A. BARBU, 1983 – Avifauna Țării Bârsei, ieri și azi, privită prin intermediul colecției ornitologice Hausmann. Analele Banatului. Științele Naturii. Muzeul Banatului, Timișoara, 3: 181-194. (in Romanian)
- CIOCHIA, V., D. CIOCHIA, 1973 - Aspecte ale dinamicii Charadriiformelor în timpul toamnei anului 1972 în zona Nuntași. Studii și Comunicări. Muzeul de Științele Naturii Bacău: 377-403. (in Romanian)
- CIOCHIA, V., M. TĂLPEANU, M. PASPALEVA, 1996 - Structura și fenologia avifaunei Dunării de Jos și problema ocrotirii acesteia. Lucrările celei de a III-a „Conferințe Naționale pentru Protecția mediului prin metode și mijloace biologice și biotehnice”, Universitatea Transilvania, Brașov: 390-400. (in Romanian)
- DĂNILĂ, I., 1996 - Contribuții la cunoașterea structurii și dinamicii avifaunei din partea de nord a Moldovei. Lucrările celei de a III-a „Conferințe Naționale pentru Protecția mediului prin metode și mijloace biologice și biotehnice”, Universitatea Transilvania, Brașov: 404-408. (in Romanian)
- DEMENTIEV, G. P., N. A. GLADKOV, E. P. SPANGENBERG, 1951 - Ptîț Sovetskogo Soiuză. Moskva, 3: 228-293. (in Russian)
- DOMBROWSKI, R. R., 1912 - Ornis Romaniae. București: 748-750.
- GACHE, C., J. W. MULLER, 2002 - Starea actuală a avifaunei eleșteelor Cârja-Mața-Rădeanu. Analele Banatului. Seria Nouă. Științele Naturii. Muzeul Banatului, Timișoara: 45-54. (in Romanian)
- GACHE, C., J. W. MULLER, 2005 - Monitorizarea avifaunei unor zone umede din bazinul Prutului. Oltenia. Studii și Comunicări. Științele Naturii, Muzeul Olteniei, Craiova, 21: 173-177. (in Romanian)
- GLAVAN, T., 2003 – Catalogul Sistematic al Colecției Ornitologice a Complexului Muzeal de Științele Naturii Galați (1954-2002). (in Romanian)
- GROEN, N. M., A. K. YURLOV, 1999 - Body dimensions and mass of breeding and hatched Black-tailed Godwits (*Limosa l. limosa*): a comparison between a West Siberian and Dutch population. Journal for Ornithology, 140: 73-79.
- HAMVAS, F., 1969 - Sitarul-de-mal (*Limosa limosa*) clocește pe Valea Erului. Vânătorul și Pescarul Sportiv, 8: 26. (in Romanian)
- HODOR, V. C., 1996 - Contribuții la studiul ornitofaunei din complexul de lacuri Rotbav (jud. Brașov). Lucrările celei de a III-a „Conferințe Naționale pentru Protecția Mediului prin Metode și Mijloace Biologice și Biotehnice”, Universitatea Transilvania, Brașov: 409-415. (in Romanian)
- IMPE van J., 1969 - Neue Angaben Uber die Rumanische ornithofauna. Gierv., 58 (1-2): 139-147.
- ION, I., 1997 - Observații asupra ornitofaunei din Bazinul mijlociu al Jijiei. Analele Banatului. Științele Naturii. Muzeul Banatului, Timișoara, 3: 23-29. (in Romanian)
- ION, I., C. GACHE, 1997 - Contribuții la studiul vertebratelor din zona lacului de acumulare Stâncă-Ștefănești. Analele Banatului. Științele Naturii. Muzeul Banatului, Timișoara, 3: 133-137. (in Romanian)
- IONESCU, D. T., 1996 - Eleșteele de la Dumbrăvița, județul Brașov - o posibilă A.I.A. Buletin A.I.A., 4 (iulie): 2. (in Romanian)
- IONESCU, D. T., 2002 - Aspecte ale migrării păsărilor de apă în Depresiunea Bârsei, Transilvania, România. Analele Banatului. Seria Nouă. Științele Naturii. Muzeul Banatului, Timișoara: 109-119. (in Romanian)
- IONESCU, V., I. MIRON, D. MUNTEANU, V. SIMIONESCU, 1968 - Vertebrate din bazinul montan al Bistriței. Lucrările Stațiunii de Cercetări Biologice, Geologice și Geografice „Stejarul”, 1: 375-437. (in Romanian)
- KISS, A., 1996 - Lacul de acumulare Porțile de Fier I. Buletin A.I.A., 4 (iulie): 4. (in Romanian)

- KISS, A., 1997 a - Observații ornitologice pe Dunărea de Jos. Lucr. Simpozionului „Arii de Importanță Avifaunistică” din România. Publicațiile S.O.R. 3: 16-18, Cluj-Napoca. (in Romanian)
- KISS, A., 1997 b - Repertoarul colecției oologice de la Muzeul Banatului din Timișoara. Analele Banatului. Științele Naturii, 3: 277-312. (in Romanian)
- KISS, A., 1999 - Avifauna din zonele umede ale Banatului. Muzeum Banaticum. Bibliotheca Historica et Archaeologica Banatica, Edit. Mirton, Timișoara, 21: 5-259 (127-128). (in Romanian)
- KISS, A., 2005 a - Colecția de ornitologie a I.C.A.S. Timișoara. Edit. Solness, Timișoara: 237-352. (in Romanian)
- KISS, A., 2005 b - Iernarea populațiilor de păsări pe Dunăre. Între localitățile Baziaș-Orșova-Turnu Severin, 1996-2005. Oltenia. Studii și Comunicări. Științele naturii, Muzeul Olteniei, 21: 146-148. (in Romanian)
- KISS, A., 2005 c – Dionisie Linția (1880-1952). Colecția ornitologică. Edit. Cosmopolitan Art: 73 (239 pp). (in Romanian)
- KISS, J. B., 1971 - Date preliminare asupra ornitofaunei Insulei Sahalin și rolul ei în migrație. Peuce. Studii și Comunicări, Tulcea, 1: 479-494. (in Romanian)
- KISS J. B., M. MARINOV, 2005 – The first recording of Black-tailed Godwit (*Limosa limosa* L.) nesting in Romania to the South of Carpathians. Scientific Annals of the Danube Delta Institute for Research and Development, Tulcea - Romania: 39-41.
- KLEMM, W., S. KOHL, 1988 - Die Ornis Siebenbürgens. In: S. Eck, H. Heltmann, E. Schüz (Eds.). Studia Transylvanica, 8 (3): 1-388, Böhlau Verlag Köln.
- KOHL, ȘT. 1990 - Systematischer katalog der ornithologischen sammlung des Lyzeum Nr.2 aus Reghin (I. Teil). Studia Univ. Babeș-Bolyai, Biologia, 35 (1): 45-81.
- KOVATS, L., 1973 - Cercetări ornitologice în Valea Crișului Repede, între Oradea și granița de vest a României. I. Aspectul serotinal și autumnal. Nymphaea: 87-136. (in Romanian)
- KOVATS, L., R. POLIȘ, T. BECZY, 1970 - Catalogul sistematic al Colecției de păsări a Muzeului din Oradea (1951-1969). Oradea. (in Romanian)
- LĂCĂTUȘU, M., I. TEODORESCU, C. TUDOR, D. RADU, 1971 - Contribuții la cunoașterea hranei la unele păsări din Delta Dunării. Analele Universității București. Biologie animală, 20: 57-75. (in Romanian)
- LINȚIA, D., 1955 - Păsările din R.P.R, 3: 312-317. (in Romanian)
- MÂNDRU, V., 1985 - Colecțiile științifice ale Muzeului de Istorie Naturală Iași, Vertebrate. Universitatea „Alexandru Ioan Cuza”, Iași: 1-96. (in Romanian)
- MULLER, J. W., 2005 a - Specii de păsări limicole clocitoare în bazinul Prutului. Oltenia. Studii și Comunicări. Științele Naturii, Muzeul Olteniei, Craiova, 21: 178-180. (in Romanian)
- MULLER, J. W., 2005 b - *Limosa limosa* the first breeding in the Prut river basin (Romania). Scientific Annals of the Danube Delta Institute for Research and Development, Tulcea - Romania: 59-62.
- MUNTEANU, D., 1970 - Date asupra avifaunei litoralului românesc al Mării Negre (Agigea-Techirghiol-Eforie). Lucrările Stațiunii de Cercetări Biologice, Geologice și Geografice „Stejarul”, 3: 351-369. (in Romanian)
- MUNTEANU, D., 1976 - Recherches ornithologiques dans la dépression de Giurgeu. Studii și Comunicări. Muzeul de științele Naturii, Bacău: 163-178.
- MUNTEANU, D., 1977-1979 - Conspectul avifaunei clocitoare a României. III. Charadriiformes-Cuculiformes. Studii și Comunicări. Muzeul de Științele Naturii, Bacău: 167-182. (in Romanian)
- MUNTEANU, D., 2004 - Ariile de Importanță Avifaunistică din România. Societatea Ornitologică Română. Edit. Alma Mater, Cluj-Napoca: 118, 171, 214, 223 (307 pp). (in Romanian)
- MUNTEANU, D., M. MĂTIEȘ, 1983 - Modificări induse de lacurile de acumulare în structura și dinamica avifaunei. Analele Banatului. Științele Naturii. Muzeul Banatului, Timișoara, 3: 217-225. (in Romanian)
- MUNTEANU, D., C. MUNTEANU, 2005 - Cercetări asupra avifaunei bazinelor piscicole de la Câmpenești (jud. Cluj). Scripta Ornitologica Romaniae, Cluj-Napoca, 2: 46-62. (in Romanian)
- MUNTEANU, D., A. PAPADOPOL, P. WEBER, 2002 - Atlasul Păsărilor clocitoare din România. Publicațiile Societății Ornitologice Române, Ediția II, Cluj-Napoca: 1-152. (in Romanian)
- MUNTEANU, D., J. SZABO Jr., 2001- Cursul inferior al Oltului la confluența cu Dunărea. Buletin A.I.A., 11. (in Romanian)

- NADRA, E., 1972 - Catalogul sistematic al colecției ornitologice a Muzeului Banatului, Timișoara, 1878-1970. (in Romanian)
- NEUMANN, H., 1982 - Aspecte noi privind situația păsărilor de apă în județul Timiș. Studii și Comunicări. Societatea de Științe Biologice din R.S.R. Filiala Reghin: 456-472. (in Romanian)
- NEUMANN, H., 1996 - Ornitofauna fermei piscicole Sacoșu Turcesc, județul Timiș. Analele Banatului, 3: 91-107. (in Romanian)
- ONEA, N., 2006 - Observații ornitologice în zona bălții Traian-Județul Brăila. Oltenia. Studii și Comunicări. Științele Naturii. Muzeul Olteniei, Craiova, 22: 268-272. (in Romanian)
- ORZAȚĂ, N., 2002 - Contribuții la cunoașterea avifaunei din zona Corabia-Siliștioara. Analele Banatului. Seria Nouă. Științele Naturii. Muzeul Banatului, Timișoara: 139-146. (in Romanian)
- ORZAȚĂ, N., 2003 - Păsările acvatice din lunca Dunării dintre Jiu și Olt. Oltenia. Studii și Comunicări. Științele Naturii, Muzeul Olteniei, 19: 202-206. (in Romanian)
- PAPADOPOL, A., 1965 - Essai sur l'ornithofaune du lac Călărași et du sud - ouest du marais Borcea (Marais Ialomița). Travaux du Muséum d'Histoire Naturelle "Grigore Antipa", 5: 347-380.
- PAPADOPOL, A., 1966 - Les Charadriiformes de Roumanie (I). Travaux du Muséum d'Histoire Naturelle "Grigore Antipa", 6: 227-247.
- PAPADOPOL, A., 1968 - Les Charadriiformes de Roumanie (II). Contributions concernant l'écologie des espèces couveuses. Travaux du Muséum d'Histoire Naturelle "Grigore Antipa", 9: 511-527.
- PAPADOPOL, A., 1970 - Les Charadriiformes de Roumanie (III). Etudes concernant la nourriture, les relations trophiques et les vol. Travaux du Muséum d'Histoire Naturelle "Grigore Antipa", 10: 273-294.
- PAPADOPOL, A., 1971 - Recherches ornithologiques dans la zone du lacs salés du Nord - Est de la Plaine Roumaine (I). Travaux du Muséum d'Histoire Naturelle "Grigore Antipa", 11: 363-392.
- PAPADOPOL, A., 1972 - Recherches ornithologiques dans la zone du lacs salés du Nord - Est de la Plaine Roumaine (II). Les bassins inférieurs des rivières Buzău, Călmățui et Ialomița. Travaux du Muséum d'Histoire Naturelle "Grigore Antipa", 12: 319-341.
- PAPADOPOL, A., 1973 - Recherches ornithologiques dans le Nord-Est de la Plaine Roumaine (III). Considérations aviphénologiques, sur l'importance biologique et économique des oiseaux dans le secteur situé entre les rivières Buzău et Ialomița. Travaux du Muséum d'Histoire Naturelle "Grigore Antipa", 13: 345-368.
- PAPADOPOL, A., 1974 a - Recherches ornithologiques dans le nord-est de la plaine roumaine (IV). La zone des étangs situés dans la partie centrale de la Plaine du Bărăgan, entre les cours inférieurs des rivières Călmățui et Ialomița. Travaux du Muséum d'Histoire Naturelle "Grigore Antipa", 14: 359-383.
- PAPADOPOL, A., 1974 b - Quelques considérations sur l'importance des eaux stagnantes et courantes du Nord-Est de la Plaine Roumaine, pour la dynamiques des oiseaux (V). Travaux du Muséum d'Histoire Naturelle "Grigore Antipa", 15: 331-344.
- PAPADOPOL, A., 1975 - Contributions à la connaissance de l'avifaune du district Vaslui. Travaux du Muséum d'Histoire Naturelle "Grigore Antipa", 16: 249-264.
- PAPADOPOL, A., 1979 - Contributions à la connaissance de l'avifaune du département d'Argeș et de Dâmbovița (Roumanie). Travaux du Muséum d'Histoire Naturelle "Grigore Antipa", 20 (1): 401-422.
- PAPADOPOL, A., 1980 - L'avifaune de la zone du complexe forestier et lacustre de Snagov (Roumanie). Travaux du Muséum d'Histoire Naturelle "Grigore Antipa", 22: 495-522.
- PAPADOPOL, A., 1981 - Considérations sur l'écologie des oiseaux du secteur Murighiol - Tulcea - Babadag - Lunca (Jurilovca) dans le contexte de la dynamique de l'avifaune du complexe lagunaire de Razelm - Sinoe (Dobrogea, Roumanie). Travaux du Muséum d'Histoire Naturelle "Grigore Antipa", 23: 259-282.
- PAPADOPOL, A., 1985 - Nouvelles contributions à la connaissance de l'avifaune de la zone de Mostiștea (entre les localités Brănești - Fundulea - Mănăstirea - Dorobanțu) (II). Travaux du Muséum d'Histoire Naturelle "Grigore Antipa", 27: 305-316.
- PAPADOPOL, A., 1989 - L'avifaune de la zone des cours inférieurs des rivières Argeș, Dâmbovița, Neajlov, et de leurs affluents (Roumanie); dynamique saisonnière et aspects écologiques. Travaux du Muséum d'Histoire Naturelle "Grigore Antipa", 30: 317-334.

- PAPADOPOL, A., A. PETRESCU, 1995 - Lacustrine and forest complex Comana, a very important area in the avifauna dynamics. *Travaux du Muséum d'Histoire Naturelle „Grigore Antipa“*, 35: 609-626.
- PAPADOPOL, A., M. TĂLPEANU, 1987 - Catalogue des collections ornithologiques provenant de Roumanie conservées au Muséum d'Histoire Naturelle "Grigore Antipa". II. Charadriiformes - Passeriformes. *Travaux du Muséum d'Histoire Naturelle "Grigore Antipa"*, 29: 213-316.
- PETRESCU, A., G. CHIȘAMERA, 2003 - Contributions to the knowledge of the avifauna of Suhaia Lake (Southern Romania). *Travaux du Muséum National d'Histoire Naturelle "Grigore Antipa"*, 45: 321-329.
- PETRESCU, A., I. IANCU, 2005 - Observații avifaunistice în trei lacuri din Câmpia Română (Fundata, Tâtaru și Mostiștea). *Armonii Naturale. Museum Arad*, 5: 133-144. (in Romanian)
- POLIȘ, R., 1974 - Observații asupra avifaunei de la Cefa (județul Bihor). *Nymphaea. Muzeul Țării Crișurilor. Oradea*, 4: 195-225. (in Romanian)
- POLIȘ, R., 1976 - Date privind avifauna Zarandului. *Nymphaea. Muzeul Țării Crișurilor. Oradea*, 2 : 109-127. (in Romanian)
- POPESCU, C., 2002 - Colecția de ornitologie Adam Buda la Muzeul de Istorie Naturală din Sibiu. *Analele Banatului. Seria Nouă. Științele Naturii. Muzeul Banatului, Timișoara*: 123-137. (in Romanian)
- RADU, D., 1968 - Erori privind răspândirea unor specii de păsări în România (II). *Studii și Cercetări de Biologie. Seria Biologie Animală, București*, 38 (2): 156-162. (in Romanian)
- RANG, C., 1971 - Beitrage zur kenntnis der vogelfauna der stanseen Gârleni, Bacău I, Bacău II, auf den Bistriza fluss. *Studii și Comunicări. Muzeul de Științele Naturii Bacău*: 285-300.
- RANG, V., 1980 - Catalogul colecției ornitologice. *Muzeul Județean de Științele Naturii, Bacău*: 28 (104 pp). (in Romanian).
- RIDICHE, M. S., 2003 - Catalogul colecției de oologie a Muzeului Olteniei. *Oltenia. Studii și Comunicări. Științele Naturii, Muzeul Olteniei*, 19: 207-217. (in Romanian)
- RIDICHE, M. S., N. ORZAȚĂ, 2004 - Analiză de ansamblu asupra ornitofaunei din zona umedă Dunăreni-Bistreț (județul Dolj). *Drobeta, Seria Științele Naturii, Muzeul Regiunii Porților de Fier, Drobeta-Turnu Severin*, 14: 213-222. (in Romanian)
- ROBERT, D., PH. GAUTIER, E. JONNARD, 1990 - Delta du Danube. Juillet 1990. *Compte rendu du voyage. Rapport d'observations ornithologiques. Association „Danube Vert“*. Paris: 2-41.
- SMIT, C., L. SAARI, 1997 - *Limosa lapponica*. Pp. 296-297. *In: W. J. M. Hagemeyer, M. J. Blaire, eds. The EBCC Atlas of European Breeding Bird. Their distribution and Abundance. Published for the European Bird Census Council by T & A. D. POYSER.*
- STĂNESCU, D., 1973 - Avifauna vârsării Brațului Sfântu Gheorghe (Delta Dunării). *Studii și Comunicări. Științele Naturii. Muzeul Brukental, Sibiu*, 18: 199-228. (in Romanian)
- STĂNESCU, D., 1980 - Histria schiță ornitologică. *Studii și Comunicări. Științele Naturii. Muzeul Brukental, Sibiu*, 24: 471-489. (in Romanian)
- STĂNESCU, D., C. RANG, 1969 - Ornitofauna ostrovului Maliuc în perioada autumnală. *Studii și Comunicări. Științele Naturii. Muzeul de Științele Naturii Bacău*: 277-282. (in Romanian)
- STEIN - VON SPIESS, S., 2005 - *Catalogus Ornithologicus. Studii și Comunicări. Științele Naturii (Supliment). Muzeul Național Brukenthal. Muzeul de Istorie Naturală, Sibiu*: 40-41 (301 pp.). Reviewed and completed edition by H. STEIN and I. WURDINGER. (in Romanian)
- TĂLPEANU, M., 1964 - Păsările din Lunca Dunării în Oltenia. II. *Vânătorul și Pescarul Sportiv*, 16 (6): 3, 10. (in Romanian)
- TĂLPEANU, M., 1965 - Avifaune de la region inondable du Danube, en Oltenie. *Travaux du Muséum d'Histoire Naturelle „Grigore Antipa“*, 5: 293-317.
- TĂLPEANU, M., M. PASPALEVA, 1979 - Expansion recente de quelques especes d'oiseaux en Roumanie. *Travaux du Muséum d'Histoire Naturelle „Grigore Antipa“*, 20: 441-449.
- VASILIU, G. D., 1968 - *Systema Avium Romaniae*. Edit. Alauda: 1-120 pp. Paris.
- VAUCHER, Ch. V. 1975 - Notes sur les vertébrés et les milieux naturels du Delta du Danube et de la Dobroudja. *Geneve*: 3-54.
- VERHEYEN, R., 1967 - *Oologia Belgica: Institut Royal des Sciences Naturelles de Belgique*: 126-129 (330 pp).

- VIELLIARD, J., M. TĂLPEANU, 1971 – Recherches ornithologiques, surtout sur les zones humides, en Roumanie (Août–Septembre 1966). Travaux du Muséum d’Histoire Naturelle “Grigore Antipa”, 11: 401-415.
- WEBER, P., 1973 - Contribuții la cunoașterea avifaunei din împrejurimile Mediașului. Studii și Comunicări. Științele Naturii. Muzeul Brukental, Sibiu, 18: 191-197. (in Romanian)
- WEBER, P., 1998 - Avifaunistisch-Ökologische untersuchung des vogelschutzgebietes Histria. Zusammenfassung der doktoratsarbeit. Cluj: 1-35.

Received: April 4, 2007
Accepted: May 23, 2007

Muzeul Național de Istorie Naturală “Grigore Antipa”
Șos. Kiseleff nr. 1, 011341 București 2, România
e-mail: angelap@antipa.ro