COMPARATIVE OBSERVATION ON THE HATCHING POPULATIONS OF CHLIDONIAS GENUS IN THE INFERIOR AREA OF THE PRUT RIVER

BY

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Abstract: This is the first systematic study in the area that will provide necessary information about breeding populations of Chlidonias genus. Biodiversity of the inferior basin of River Prut was occasionally studied, and for a large number of areas, avifaunistic data are not enough. The region has been affected by hydrotechnical arrangements in order to decrease the flood risk, and enlarge agricultural areas. Large chains of ponds and accumulation lakes used as water sources for localities, irrigation or fisheries were created. This study revealed the importance of the ponds existing in Cârja-Mața-Rădeanu area, in Vlădeni area and Brateş complex as a nesting place offered to Chlidonias genus. Also, we estimate the breeding population size of the Chlidonias hybridus species.

Introduction

The Prut river forms the natural border of Romania with Ukraine and the Republic of Moldavia. The basin area of the Prut river on the Romanian territory represents 10,990 km². In Romania, the Prut river collects water on the right side of 248 waterways, the total length is 4.551 km, the most important tributary streams flow into the superior and the middle section of the basin.

The hydrographical basin of the Prut river divides into three regions: the superior, the middle and the inferior basin. The biggest part of the superior basin of the Prut river is situated in Ukraine. The inferior basin of the Prut river begins with the Gorban locality and it ends where the Prut river flows into the Danube river. The most important afluents of the inferior Prut river are: the Elan and the Chineja rivers.

The climate is continental temperate with hot and droughty summers and cold and dry winters.

Many hydrotechnical and hydrological arrangement territory works took place in the Prut river basin, beginning with 1948. All these works were realized in order to reduce the flood risk during the high floods, to increase the arable surfaces for agriculture, to create some pond networks for the piscicultural destination and some drinking water sources in some localities or for irrigation. These arrangements led to the
severe modification of the landscape and qualitative and quantitative changes for the region’s fauna.

Among the aquatic basins that were formed in the inferior basin of the Prut river as a result of these arrangements, we can enumerate: the Cărja – Mața – Rădeanu ponds (appointed in 1995 by R.O.S. (Romanian Ornithological Society) as an Important Birds Area), The Vlădești pond and Brateș piscicultural complex.

**Material and method**

Observations on the hatching populations of the *Chlidonias* genus were made systematically by Gache Carmen beginning with 1996 and they have continued until 2004. The observations were made through the direct census of the nestling colonies or using the binoculars and the field glass in the fixed observation points higher than the colony in the case where it was impossible to come closer. By using a binocular it was possible to evaluate the number of pairs or nests. In case of the colonies which couldn’t be seen from the observation points situated at a certain height, the alternative methods were used such as the birds’ estimation which took-off when they were suddenly disturbed.

**Results and discussions**

The reproduction period of the species from the *Chlidonias* genus begins at the end of the vernal aspect and lasts during the aestival aspect. Except the period for finding food, the birds develop the activities around the nest and the hatching chicks at the end of June.

In the area of the Cărja – Mața – Rădeanu ponds during 1996 – 2002, 122 pairs of *Chlidonias hybridus* were found on two ponds with a vegetation rich in *Nymphoides peltata*.

In 2003, two colonies of *Chlidonias hybridus* were seen again, one made out of 72 pairs and other of 45 pairs. In 2004, the first attempt to form a colony was observed at the beginning of June, in the middle of the pond (Cărja I), on a strand of land which was later on covered with water. On the 27 June 2004, on the same pond a mixed colony was seen again which was formed by 3 pairs of *Chlidonias hybridus* and 12 pairs of *Podiceps cristatus*. The colony was situated on *Nymphoides peltata*.

In 2004, a colony of 106 pairs of *Chlidonias hybridus* was reviewed. The colony was made on the stems of the weed-killer reed. The birds were just laying their eggs, some nests had eggs, others were empty.

In the area of Mața – Rădeanu ponds in 2004, a colony of 22 pairs of *Chlidonias hybridus* was reviewed. The nest were placed on leaves of *Nymphaea alba*. Out of all the nests, only 3 had eggs, the others were empty.

The Whiskered Terns from the Cărja I colony and the one from Mața – Rădeanu, had specific behaviours for the nesting period, such as the mating parade, the exchange of partners at the nest etc. Their aggressiveness was intense and characteristic for the beginning of the reproduction season. These two colonies are a case of late nesting.
During the observation carried on in the area of the piscicultural farm in Vladesti there was reviewed only a colony of *Chlidonias hybridus* made out of 109 pairs in 2003 and 161 pairs in 2004. The colony is situated on the V pond on an association of *Potamogeton* sp., *Myriophyllum* sp., *Lemna* sp., *Polygonum* sp. and *Nymphoides peltata*. Unlike the Cârja colonies, in the Vlădeşti area, the *Chlidonias hybridus* colony was made up at the end of the vernal season, and in the aestival season the activity of the birds was developed around the nest. Some individuals of the colony already had chicks, others were still hatching the eggs. The transport of the construction material during hatching, and even when the chicks are hatched, is necessary in order to assure the durability of the nest during the reproduction period, which has to last through unfavourable weather, but also to maintain the best temperature for eggs which sometimes come in direct contact with water. The temperature difference of the water during day and night can disfavour the nestling success, but because of the direct contact of the plants with water, these become rotten phenomenon that emits heat and the nestling success is assured, especially in the case when the hatching pair stays far from the nest a long time. The thickness of the nest may measure even 29 cm.

I found an interesting thing in 13 pairs of *Chlidonias hybridus* that built their nests on *Nymphoides peltata* in the middle of the pond. These pairs of terns were just laying the eggs in comparison with other members of the colony situated at the end of the pond. In this case, the nestling success fails, the plants of *Nymphoides peltata* are mowed by the farmer during all the vegetation period because they consume a lot of oxygen necessary for the fish sapling. The farmers try to separate the Whiskered Tern nests from the plants of *Nymphoides peltata* and to push them to the reed, but the stress is too high and many birds leave their nests.

In 2003, many observations were made in the summer on one colony of *Chlidonias hybridus*, situated on *Nymphaea alba*, in the Prut Valley at 11+3 km in Folteşti border area. The colony was initially made of 22 pairs. On 26.06 only 5 members of *Chlidonias hybridus* and two nests with eggs were found in the colony. To defend their territory, all the members participated. Some of nests were flooded.

In 2004, the colony wasn’t found again. The edge of the marsh, the place where the colony was situated, was drayed. There have been observed members of *Chlidonias hybridus* that transported construction material, which means that the colony removed in the middle of the marsh.

In the area of the Brateş piscicultural complex, between 1997-2002 one colony of *Chlidonias hybridus* formed by the 108 pairs was reviewed. In the east side of this colony in 1997 one pair of *Sterna albifrons* nestled having two flying chicks. In 2003, there was catalogued one mixed colony made out of 125 pairs of *Chlidonias hybridus* and 15 pairs of *Podiceps cristatus*.

In 2004, in the Brateş complex area some observations were made on 4 colonies:
1. one colony made out of 118 pairs of *Chlidonias hybridus*;
2. one colony made out of 33 pairs of *Chlidonias hybridus*;
3. one mixed colony made out of 181 pairs of *Chlidonias hybridus*, 12 pairs of *Chlidonias niger* and 6 pairs of *Podiceps cristatus*;
4. One mixed colony made out of 304 pairs of *Chlidonias hybridus*, 22 pairs of *Chlidonias niger*, 23 pairs of *Podiceps cristatus* and 4 pairs of *Podiceps nigricollis*.

**Conclusions**

1. In the Prut river inferior basin during the observation (1996-2004) there were seen again 9 colonies of Whiskered Tern (*Chlidonias hybridus*) and 2 colonies of Black Tern (*Chlidonias niger*);

2. The big number of birds may be explained through the different weather conditions in 2004 year, for this area of the Prut river basin: abundant rain, not very high temperature, conditions that permitted a good development of a rich vegetation of *Nymphoides peltata*, *Nymphaea alba* and *Potamogeton* sp. Also, the big number of the aquatic and airy entomofauna, the amphibian and the fish sapling, species that make up the base food for the species of *Chlidonias* genus in the piscicultural complex area favoured the numerical and territorial expansion of the studied species.

3. *Chlidonias niger* nestles for the first time in this area of the Prut river basin. During the study period *Chlidonias niger* hasn’t been found before as a hatching species in the Prut inferior basin. This species can also nestle in the Ghireni river valley (a tributary of the middle Prut), on the Balta Lată, with a small number between 3 and 6 pairs.

**Bibliography**

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