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Ornis Hungarica 2021. 29(2): 183–187.
DOI: 10.2478/orhu-2021-0029

New cases of facultative interspecific brood parasitism in Black-winged Stilt *(Himantopus himantopus)* and Eurasian Coot *(Fulica atra)*

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Received: July 11, 2021 – Revised: August 26, 2021 – Accepted: August 31, 2021

Stermin, A. N. 2021. New cases of facultative interspecific brood parasitism in Black-winged Stilt *(Himantopus himantopus)* and Eurasian Coot *(Fulica atra)*. – Ornis Hungarica 29(2): 183–187. DOI: 10.2478/orhu-2021-0029

Abstract Many hypotheses try to explain the evolution and possible relations between obligate and facultative brood parasitism in birds. To explore this, a large number of observations and data are needed. Our understanding based on the observations of facultative parasitic species published in the literature is less clear compared to the obligate parasitic species. This communication is about three cases of facultative interspecific brood parasitism. Two nests of Black-headed Gull *(Chroicocephalus ridibundus)* parasite by Eurasian Coot *(Fulica atra)* and one nest of Pied Avocet *(Recurvirostra avosetta)* parasite by Black-winged Stilt *(Himantopus himantopus)*. These observations are significant as long as interspecific brood parasitism was frequently described in Gruiformes (Rallidae) but has rarely observed within Charadriiformes.

Keywords: Rallidae, Charadriiformes, eggs, nests

Összefoglalás Az obligát és fakultatív fészekparazitizmus kialakulását és kapcsolatát számos feltevéssel próbálják magyarázni. Ennek további vizsgálatához még sok megfigyelésre és adatra van szükség. A fakultatív fészekparazitizmusról közölt adatok alapján ismereteink még kevésbé letisztultak, mint az obligát fészekparazita fajok esetében. Ebben a rövid közleményben három megfigyelést közlünk a fajok közötti fakultatív fészekparazitizmus esetére. Két dankasirály *(Chroicocephalus ridibundus)* fészekben egy-egy szárcsa *(Fulica atra)*, valamint egy gulipán *(Recurvirostra avosetta)* fészekben egy gólyatöcs *(Himantopus himantopus)* tojást azonosítottunk. Ezek a megfigyelések azért is fontosak, mert amíg a darualakúaknál, azon belül is a guvatfélék körében jól ismert a fészekparazitizmus, addig a lileféléknél ritka jelenség.

Kulcsszavak: guvatfélék, lilealakúak, tojások, fészkek

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Around 109 bird species (1% of all birds) are obligate brood parasites, never incubate their own eggs or raise their own young (Mann 2017). There are also known facultative brood parasite species, which usually take care for their own eggs and young but in some cases lay their eggs in other nests from the same species (conspecific parasites) and/or of another species (interspecific parasites) (Mann 2007, Lyon & Eadie 2008).

The evolution of brood parasitism in birds and the relations between obligate and facultative brood parasites, or conspecific and interspecific parasites, attracted the interest of evolutionary biologist, create a context for many hypotheses (Hamilton 1964, Hamilton & Orians 1965, Johnsgard 1997, Magali & Sorci 2001) and still remain poorly understood (Krakauer & Kimball 2009).

Figure 1. Black-headed Gull *(Chroicocephalus ridibundus)* nests with two eggs and one egg of Eurasian Coot *(Fulica atra)* (*) (Photo: A. N. Stermin)

1. ábra Két-két tojásos dankasirály *(Chroicocephalus ridibundus)* fészkek egy-egy idegen szárcsa *(Fulica atra)* tojással (*) (Fotó: A. N. Stermin)

It is assumed that brood parasitism evolved first as a facultative strategy in conspecific brood parasitism and developed into facultative or obligate interspecific parasitism (Hamilton & Orians 1965, Payne 1977, Yamauchi 1995). 234 species, about 2.4% of all birds are interspecific brood parasites (Yom-Tov 2001). Analysis in altricial birds revealed that obligate brood parasitism possibly arose directly from non-parasitic behaviour rather than from facultative parasitism (Sorenson & Payne 2001, 2002, Yom-Tov & Geffen 2006).

To understand the relations between parasitism types and to test the hypotheses, a large number of observations and data are needed. If the obligate parasitic species are better known than the facultative parasitic species, the observations published in the literature can be less evident, as long as the cases of facultative parasitism are more difficult to observe and to identify (Haraszthy 2019a). In this context, the publication of any observations related to cases of facultative parasitism are essential for understanding the extent of the phenomenon and its evolution.

Three cases of facultative interspecific brood parasitism were revealed during our field work in May 2021 in two ponds, Gruia (44.285426°; 22.689336°) and Gârla Mare (44.199930°; 22.775321°) from South Romania.

In a small colony (9 nests) of Black-headed Gull *(Chroicocephalus ridibundus),* on Gruia pond, two nests with two gull eggs were parasite by one egg of Eurasian Coot *(Fulica atra) (Figure 1)*. In the middle of the Black-headed Gull colony, about 2 m away from the gulls'

Figure 2. Pied Avocet *(Recurvirostra avosetta)* nest with 4 eggs and one egg of Black-winged Stilt *(Himantopus himantopus)* (*) (Photo: A. N. Stermin)

2. ábra Négytojásos gulipán *(Recurvirostra avosetta)* fészek egy idegen gólyatöcs *(Himantopus himantopus)* (*) tojással (Fotó: A. N. Stermin)

nests, a European Coot nest with seven eggs was located. It is a high probability that the European Coot eggs from the Black-headed Gull nests belong to this female, as long as usually a coot lay between 6 – 10 eggs (Taylor & van Perlo 1998). The measurements of the eggs in the nests: (1) for Black-headed Gull: 52.83 × 36.84 mm, 52.47 × 36.71 mm and for Eurasian Coot: 54.31 × 37.45 mm, (2) for Black-headed Gull: 49.30 × 35.89 mm, 48.07 × 36.33 mm and for Eurasian Coot: 52.20 × 36.49 mm.

On Gârla Mare pond, a Pied Avocet *(Recurvirostra avosetta)* nest with 4 eggs was parasite by one egg of Black-winged Stilt *(Himantopus himantopus) (Figure 2)*. The measurements of the eggs in the nests for Pied Avocet: 52.81 × 35.64 mm, 51.18 × 36.04 mm, 52.05 × 34.32 mm, 52.95 × 35.45 mm and for Black-winged Stilt: 40.36 × 31.24 mm.

Other cases of Black-headed Gull nests with one European Coot egg ware also observed in other studies. It was found that Black-winged Stilt can lay eggs in nests of Common Tern *(Sterna hirundo)* and also Black-headed Gull (Haraszthy 2019b).

We mention that in the observed cases, they were involved nidifugous (European Coot, Pied Avocet and Black-winged Stilt) and also nidicolous (Black-headed Gull) species.

As long as interspecific brood parasitism was frequently described in Gruiformes (Rallidae) (Forman 2003, Haraszthy 2019b), the phenomenon has rarely been observed within Charadriiformes (Amat 1998, Yom-Tov 2001, Niemczynowicz *et al.* 2015). In this context, these observations are important and can be important points in the understanding of the occurrence and evolution of brood parasitism in birds.

Acknowledgements

I am grateful to Paul Ionuț Breban, for invaluable help on the field. This work was supported by Babeș -Bolyai University, GTC 34732/30.10.2020.

References

Amat, J. A. 1998. Mixed clutches in shorebirds nests: why are they so uncommon? – Wader Study Group Bulletin 85: 55–59.

Forman, D. 2003. Moorhen interspecific brood parasitism. – British Birds 96: 43–44.

Hamilton, W. D. 1964. The genetical evolution of social behaviour. – Journal of Theoretical Biology 7: 17–52.

Hamilton, W. J. & Orians, G. H. 1965. Evolution of brood parasitism in altricial birds. – Condor 67(5): 361–382. DOI: 10.2307/1365631

Haraszthy, L. 2019a New species on the list of species with intraspecific nest parasitism. – Ornis Hungarica 27(1): 166–206. DOI: 10.2478/orhu-2019-0010

Haraszthy, L. 2019b Cases of occasional interspecific brood parasitism and egg dumping in Hungary. – Ornis Hungarica 27(2): 115–141. DOI: 10.2478/orhu-2019-0020

Johnsgard, P. A. 1997. The Avian Brood Parasites. – Oxford University Press, Oxford

Krakauer, A. H. & Kimball, R. T. 2009. Interspecific brood parasitism in galliform birds. – Ibis 151(2): 373–381. DOI: 10.1111/j.1474-919X.2009.00916.x

Lyon, B. E. & Eadie, J. M. 2008. Conspecific brood parasitism in birds: a life-history perspective. – Annual Review of Ecology, Evolution, and Systematics 39: 343–363. DOI: 10.1146/annurev.ecolsys.39.110707.173354

Magali, R. & Sorci, G. 2001. The evolution of obligate interspecific brood parasitism in birds. – Behavioral Ecology 12(2): 128–133. DOI: 10.1093/beheco/12.2.128

Mann, C. F. 2017. A taxonomic review of obligate and facultative interspecific avian brood parasitism. – In: Soler, M. (ed.) Avian Brood Parasitism: Behaviour, Ecology, Evolution and Coevolution. – Springer, Berlin, Germany, pp. 61–92.

Niemczynowicz, A., Świętochowski, P., Zalewsk, A. & Chętnicki, W. 2015. Facultative interspecific brood parasitism in colonial breeding waterbirds in Biebrza National Park, Poland. – Waterbirds 38(3): 282–289. DOI: 10.1675/063.038.0308

Payne, R. B. 1977. The ecology of brood parasitism in birds. – Annual Review of Ecology and Systematics 8: 1–28. DOI: 10.1146/annurev.es.08.110177.000245

Sorenson, M. D. & Payne, R. B. 2001. A single ancient origin of brood parasitism in African finches: implications for hostparasite coevolution. – Evolution 55(12): 2550–2567. DOI: 10.1111/j.0014-3820.2001.tb00768.x

Sorenson, M. D. & Payne, R. B. 2002. Molecular genetic perspectives on avian brood parasitism. – Integrative & Comparative Biology 42(2): 388–400. DOI: 10.1093/icb/42.2.388

Taylor, B. & van Perlo, B. 1998. Rails: A Guide to the Rails, Crakes, Gallinules, and Coots of the World. – Yale University Press, New Haven

Yamauchi, A. 1995. Theory of evolution of nest parasitism in birds. – The American Naturalist 145(3): 434–456.

Yom-Tov, Y. & Geffen, E. 2006. On the origins of brood parasitism in altricial birds. – Behavioral Ecology 17(2): 196–205. DOI: 10.1093/beheco/arj013

Yom-Tov, Y. 2001. An updated list and some comments on the occurrence of intraspecific nest parasitism in birds. – Ibis 143: 133–143. DOI: 10.1111/j.1474-919X.2001.tb04177.x