

# SHRIKEOLOGY IN POLAND – A REVIEW AND BIBLIOGRAPHY

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## ABSTRACT

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The study of shrikes in Poland is mainly focused on the Red-backed Shrike (*Lanius collurio*) and the Great-Grey Shrike (*L. excubitor*). As the Woodchat Shrike (*L. senator*) and the Lesser Grey Shrike (*L. minor*) are rare, only their breeding sites are noted. The subjects of most papers published to date are Red-backed Shrikes (51%) and Great Grey Shrikes (23%). This paper also includes a bibliography of shrikes in Poland.

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## INTRODUCTION

In this paper, shrikeology is considered as a science dealing with shrikes (*Laniidae*). We review the papers on shrikes of Poland already published, the studies under way, and mention some projects for the coming years. For the latter two, we cite the papers at least partly published, whereas in the other cases we give only the names of workers dealing with shrike problems. We also consider the papers published by Polish authors on shrikes that do not occur in Poland. The bibliography includes also the papers published before World War II by German authors, mainly on shrikes in western Poland.

## SPECIES REVIEW

### Red-backed Shrike

The Red-backed Shrike is the most abundant and most thoroughly examined shrike species in Poland. Essentially, this is the only species for which we can speak

of more advanced population studies. Long-term studies in the Kampinos National Park (central Poland), conducted from 1964, provide information on population dynamics, effects of vegetation structure on population size, changes in breeding success (Diehl 1995), timing of laying, and clutch size in the seasonal and long-term aspects (Diehl 1998). This population was also the subject of detailed bioenergetics studies, including energy requirements in nestlings and fledglings (Diehl 1971a), changes in body weight, body temperature and metabolism (Diehl and Myrcha 1973), and even changes in the gross chemical composition (Diehl *et al.* 1972). Moreover, the impact of density-dependent factors on population productivity was analysed (Diehl 1971b) and, in particular, the effect of ambient temperature on density-dependent processes (Diehl 1977). Also the effect of changes in behaviour on population size was analysed, and the reproductive success of aggressive and nonaggressive females was compared (Diehl unpubl.).

Also in central Poland, spatial relationships were examined between the Red-backed Shrike and the Barred Warbler – *Sylvia nisoria*, (Gotzman 1965), and experiments on nest defence and nest desertion were conducted (Gotzman 1967).

Another area of rather intensive studies on the Red-backed Shrike is in the area of Leszno (western Poland). A classical description of reproductive ecology was made in this area (Kuźniak 1991) and long-term changes (since 1971) in the ecology of this population have been analysed. So far, only preliminary results of the analysis of changes in egg size are published (Tryjanowski *et al.* 1998). The data analysed from this site include the relationship between nest size and clutch size (Tryjanowski 1999), and the effect of research activity on breeding success (Tryjanowski and Kuźniak 1999). Now, intense studies are conducted on habitat selection (Kuźniak and Tryjanowski 2000) and on nest material and its effect on nest arthropods (insects and mites) (Tryjanowski *et al.* – in press). Data are also collected to answer the question why the return rates of both adults and juveniles are low in the population. The studies near Leszno are becoming more and more intense. They involve an increasing number of researchers, therefore new interesting projects may be developed soon.

In western Poland (Wielkopolska region and Silesia), diet of this species was analysed (Skarżyńska 1956, Strojny 1961, Mielewczyk 1967), but at sites where no other studies of this species were conducted. Beginning in 1999, a comprehensive project was initiated near the village of Turew, involving food resources, the composition of nestling food, and various aspects of reproduction (K. Karg, P. Tryjanowski). Population density and distribution are also examined in Lower Silesia (M. Sęk).

In eastern Poland, in Podlasie region, where farming is still relatively extensive, a study on reproductive ecology of Red-backed Shrikes was initiated in 1998 by A. Goławski. The study mostly concerns the effects of farming on numbers, distribution of breeding pairs, breeding success, and food supply and diet composition. The same researcher is also examining the appearance and composition of nest material.

The distribution, numbers, and even some elements of habitat selection were also studied in southeastern Poland (e.g. Hordowski 1996, Kunysz 1996). Instances of killing small passerine birds captured in mist-nets are known from that region (Gwiazda 1996).

Based on the Polish Nest Record Data, information from all of Poland on the breeding ecology of the Red-backed Shrike, especially on breeding parameters in different habitats and the effect of temperature on clutch size and the number of young fledged, was analysed by Matyjasiak (1995).

Variation in egg colour and size was examined, based on the old collection of 677 eggs from the Upper-Silesian Museum in Bytom (L. Kuczyński, P. Tryjanowski).

The occurrence of Red-backed Shrikes with a visible white patch at the base of primaries was the subject of two notes by Chylarecki (1988, 1991). He found that such birds are not occasional among birds breeding in Poland, and hypothesized that a large white patch may result from the introgression of *phoenicuroides* genes via the hybridisation zone between *collurio* and *phoenicuroides*.

Migration of this species during 1961-1990 and changes in numbers of migrants on the Polish Baltic coast were analysed by Busse (1995). Field studies conducted as a part of Operation Baltic are continuing. Each year scores of Red-backed Shrikes captured and an analysis of the biometric traits of these migrants may be expected. This will be useful as the only Polish paper considering biometric traits of Red-backed Shrikes (Feliński 1976) is not convincing, and was even cited as an example of a pseudobiometric paper (Busse 1978).

In Poland, 9665 individuals were ringed by the end of 1997, including 5771 individuals in 1971-1997 (3905 nestlings and 1866 adult birds), but only 24 (0.25%) long-term ringing recoveries exist (data from the Ringing Office of the Ornithological Station, PAS).

### Great Grey Shrike

The most advanced study of this species was conducted in the region of Wrocław during 1989-1992. The number of breeding pairs was estimated in floodplains of several rivers (Lorek 1995a). There were conducted also behavioural studies on copulation and mate guarding (Lorek 1995b), the use of carrion as a source of food (Lorek 1992a), and catching insects in the light of street lamps (Tryjanowski and Lorek 1998). This study also provided information on the use of birds as food by Great Grey Shrikes (Lorek *et al.* 2000). For example, it was observed that a Great Grey killed a Red-backed Shrike (Lorek 1996), and also a case of intraspecific necrophagy was noted (Lorek 1994a). Unfortunately, only part of these materials is published since a large part of them was lost in an accident.

Currently another intensive study on the Great Grey Shrike is conducted in the Wielkopolska region, where preliminary results on numbers and distribution were obtained in 1998 under a cooperative project „The Great Grey Shrike - Bird of Year 1998”. Thanks to the help of many amateurs, several nests of this species were found, and the descriptions of habitat in their surroundings were analysed using lo-

gistic regression to describe habitat selection for nesting and height of nest placement (Tryjanowski *et al.* 1999). In addition, much information was obtained on time budgets, foraging technique, and diet. This study will continue (M. Hromada, M. Antczak, P. Tryjanowski). We also analyse the effect of Great Grey Shrikes in a region on the occurrence of other bird species (P. Tryjanowski, M. Hromada).

### Lesser Grey Shrike

By the end of the 19<sup>th</sup> century, the Lesser Grey Shrike was an uncommon but widely distributed breeding bird over the whole country. Early in the 20<sup>th</sup> century, it almost completely disappeared from western Poland (Tomiałojć 1990). Recently only single nest sites exist in eastern Poland, although one breeding pair was recorded from Silesia in 1996 (Krzanowski 1998). This species has not been analysed in detail.

### Woodchat Shrike

At present, this is an extremely rare species, breeding only in eastern Poland, although in the 1970s, it nested in western Poland (Jabłoński 1972, Lewartowski 1982, Tomiałojć 1990), where now only single migrating individuals are observed (S. Kuźniak – pers. comm.).

Original information on habitat selection, phenology and reproductive biology of the Woodchat Shrike is given only by Lewartowski (1982).

### Other Shrikes

In Poland, occasional individuals of Southern Grey Shrike (*L. meridionalis*) (1 record by 1997) and the Isabelline Shrike (*L. isabellinus*) (3 records by 1997) were noted. Taxonomic problems and identification of the latter were discussed by Lontkowski and Stawarczyk (1983).

Moreover, Polish ornithologists contributed to the knowledge of two shrike species that do not occur in Poland. Dunajewski (1939) analysed the taxonomy of the Long-tailed Shrike (*L. schach*), and several years ago, Kopij (2000) studied the reproductive biology of the Fiscal Shrike (*Lanius collaris*) in the Orange Free State, South Africa.

### CONCLUSIONS

As for now, 71 papers were published on shrikes living in Poland or studied by Polish ornithologists abroad. Of this number, 27 (38%) were published in international journals. The number of all papers on shrikes, including those with a broader than local importance is steadily increasing (Spearman correlation, in both cases  $p < 0.001$ ) (Fig. 1), which provides clear evidence that the study of these birds is growing. Most papers already published are concerned with the Red-backed Shrike

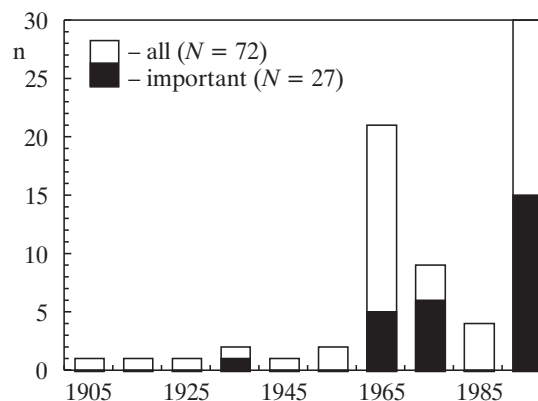


Fig. 1. Number of papers on shrikes in ten-year periods

(51%) and the Great Grey Shrike (23%), whereas the remaining papers are mostly short faunistic reports on other shrike species.

Current studies are focused also on these two most abundant species because they are readily available. We believe that these studies will prove to be an important contribution on a broader scale, as both these species have relatively abundant and stable populations in Poland (Tucker *et al.* 1994), and this may be important for the protection of these species in Europe. Unfortunately, although many good studies have been published, many aspects of the biology and ecology of these two species are still unknown, especially for research that require expensive equipment (telemetry, molecular studies, and genetics). A possible solution is wider international co-operation. You are welcome!

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