

Advances in spring but variable autumnal trends in timing of inland wader migration

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Adamík P, Pietruszková J. 2008. Advances in spring but variable autumnal trends in timing of inland wader migration. *Acta Ornithol.* 43: 119–128. DOI 10.3161/000164508X395225

Abstract. Advancement of spring migration in response to recent global climate change is well documented for a variety of bird species, but the pattern for autumn migration is rather equivocal. During a 42-year period (1964–2005) the changes in timing of spring and autumn migration of eight wader species were studied at multiple inland sites in Central Europe (Czech Republic and Slovakia) using ringing data. While a clear pattern was found for the advancement of the spring passage, there were variable trends in the timing of the autumn passage. Three species significantly advanced (Wood Sandpiper, Common Sandpiper and Dunlin), three species delayed (Ruff, Snipe and Little Ringed Plover), and two species did not change the timing of the autumn passage (Little Stint and Green Sandpiper). Earlier studies had predicted that long-distance migrants wintering south of the Sahara would advance the timing of autumn migration, while short-distance migrants would postpone it. However, our findings do not fully conform to these predictions. Across species, the timing of both the spring and autumn passages was negatively associated with the winter North Atlantic Oscillation (NAO) index, suggesting that even in long-distance migrants the timing of migration might be under direct environmental control. In conclusion, phenological responses of birds to recent changes in climate are quite coherent for the early phenological phases; however, the responses to later phases are not so straightforward, and the present study contributes to this diverse pattern.

Key words: *Tringa*, *Calidris*, *Actitis hypoleucos*, *Gallinago gallinago*, *Philomachus pugnax*, autumn migration, bird ringing, climate change, limnic habitat, passage

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Effects of brood size manipulation on physiological condition of nestling Blue Tits *Cyanistes caeruleus*

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Bañbura J., Skwarska J., Kaliński A., Wawrzyniak J., Słomczyński R., Bañbura M., Zieliński P. 2008. Effects of brood size manipulation on physiological condition of nestling Blue Tits *Cyanistes caeruleus*. *Acta Ornithol.* 43: 129–138. DOI 10.3161/000164508X395234

Abstract. Producing high quality offspring of good physiological performance, able to survive to independence and, then, to reproductive maturity is a major component of life history strategies. The ability of nestling altricial birds to develop a good physiological condition depends to a large extent on the amount and quality of food provided by parents, as well as other aspects of parental care. We hypothesized that experimental changes to the original brood size should affect both parental Blue Tits and their offspring, resulting in corresponding changes in the body condition of the nestlings. Over two breeding seasons, using two habitat sites, we conducted an experiment with two manipulative treatments applied to broods of three-day-old nestlings — the reduction or enlargement of broods by three nestlings, and one non-manipulative control treatment. Our aim was to test whether the experiment would affect a number of different measures of nestling condition: blood concentrations of hemoglobin and glucose, heterophil-to-lymphocyte ratio and morphometric condition index, all being analyzed when the nestlings were 13 days old. We found no effect in the case of hemoglobin, despite the fact that it had previously been shown to be sensitive to large-scale differences in trophic conditions between habitats and years and to the experimental removal of nest parasites. All the remaining variables, i.e. heterophil-to-lymphocyte ratio, glucose concentration and morphometric condition index, responded to the experimental treatments, showing different but reasonable patterns of variation. We suggest that an experimental increase in brood size definitely hinders the development of nestling physiological condition, but even an experimental reduction of broods can affect some physiological indicators (glucose), probably because of readjustments in the feeding rate.

Key words: physiological condition, haemoglobin, glucose, heterophils:lymphocytes, nestlings, brood-size experiment, Blue Tit, *Cyanistes caeruleus*

Seasonal variation in the body size-body mass relationship in the Southern Grey Shrike *Lanius meridionalis*

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Campos F, Gutiérrez-Corchero F, Hernández M. A., López-Fidalgo J. 2008. Seasonal variation in the body size-body mass relationship in the Southern Grey Shrike *Lanius meridionalis*. Acta Ornithol. 43: 139–143.

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Abstract. The variation of male (n = 105) and female (n = 107) Southern Grey Shrike body mass has been analyzed in northern Spain during 2000–2002. The annual cycle was divided into autumn (October and November), winter (December to February) and breeding season (March to July), the latter subdivided into egg incubation, small nestlings and large nestlings periods. In order to analyze body mass, the residual index (RI) was used because it corrects body mass related to body size. The mean RI value for males was negative during the whole breeding season and positive during autumn and winter and it did not vary greatly between the periods. In females, the mean RI was definitely greater during egg incubation compared to other periods. The RI value of females was higher than that of males during the egg incubation and large nestlings periods, showing no significant differences in other periods. Female Southern Grey Shrikes (but not males) fitted to the programmed anorexia hypothesis during the breeding season whereas in winter they did not increase their body mass, in clear contrast to what has been put forward in some theoretical models.

Key words: Southern Grey Shrike, *Lanius meridionalis*, body mass, mass change

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Food supply and external cues limit the clutch size and hatchability in the White Stork *Ciconia ciconia*

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Djerdali S., Tortosa F. S., Hillstrom L., Doumandji S. 2008. Food supply and external cues limit the clutch size and hatchability in the White Stork *Ciconia ciconia*. *Acta Ornithol.* 43: 145–150. DOI 10.3161/000164508X395252

Abstract. Clutch size is an important life history trait, and factors such as nest predation and food availability can both be of crucial importance for its variation in nature. The aim of the present study was to evaluate the effects of extra food on clutch size, laying date and hatching success in the White Stork. Three different colonies of White Storks were studied in northern Algeria over a three-year period (2002–2004) that was characterised by considerable variation in both food availability and precipitation. This study demonstrated that an extra food supply during the pre-laying period had a positive effect on clutch size — nests with extra food had larger clutches. There was also an advance in laying date and a greater hatching success in nests with access to extra food. In addition to food supply, clutch size was independently affected by the year, which could have been due to differences in rainfall. Furthermore, the results of this study suggest that extra food during the incubation period could help the parent birds resolve the conflict between incubation behaviour and minimizing the time off the nest, i.e. increasing nest attentiveness in nests with extra food and enhancing hatching success.

Key words: life history, clutch size, laying date, White Stork, *Ciconia ciconia*, extra feeding, hatching success, food supplementation

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Body size relationships between avian predators and their rodent prey in a North-American sagebrush community

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Gliwicz J. 2008. Body size relationships between avian predators and their rodent prey in a North-American sagebrush community. Acta Ornithol. 43: 151–158. DOI 10.3161/000164508X395261

Abstract. Larger predators consume prey of greater mean size and include a wider diversity of prey in their diets than their smaller counterparts occurring in the same communities. There is some controversy as to whether these patterns result from opportunistic feeding behavior or from prey size selectivity leading to food-niche segregation among predators. This study examined the effects of body size on the diet of avian predators in the sagebrush habitat of north-eastern Utah. The assessment was based on data collected from the analysis of pellet contents and was deliberately confined to mammalian components, almost exclusively from rodents. A significant positive relationship was found between predator size and both average and maximum prey size, but no such correlation was found for the minimum body size of prey. In general, there was considerable overlap in the rodent prey taken by different raptors, suggesting opportunistic feeding behavior in these predators. However, the size (and species) of rodent prey that contributed most to the consumed biomass was different for each bird species and correlated well with its body size. The revealed pattern of larger raptors acquiring most biomass (energy) from larger prey, implies food selectivity based on its energetic profitability, and niche segregation that could facilitate the coexistence of a high diversity of avian predators in the sagebrush habitat. The possible role of food limitation and competition in the evolution of body size in raptors and the consequences of size-dependent predation are discussed.

Key words: *Accipiter*, *Buteo*, *Falco*, body size, prey-predator relationships, raptors, rodent prey, sagebrush, food, pellets, Utah

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Breeding parameters and recruitment in Feral Pigeons *Columba livia f. domestica*

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Hetmański T, Barkowska M. 2008. Breeding parameters and recruitment in Feral Pigeons *Columba livia f. domestica*. Acta Ornithol. 43: 159–166. DOI 10.3161/000164508X395270

Abstract. This research was conducted on the Feral Pigeon population in Słupsk (NW Poland). Breeding parameters and the number of parental pairs' young recruited into the breeding population were determined for 52–112 marked pairs over three breeding seasons. Pairs had an average of 4.4 broods and produced 3.6 fledglings per breeding season. From 39 to 49% of pairs in various seasons did not have any young recruited. Every fourth pair (25–30%) had a single young bird recruited, from 12 to 20% of pairs — two young, from 4 to 11% — 3 young, and 6% of pairs had from four to six young recruited. The number of recruits depended on the breeding parameters of the parents: it was lowest among young pairs (low quality birds), those that began breeding late in the season, had a short breeding season, or low breeding success. In contrast, high quality birds with a long breeding season, the highest reproductive parameters and breeding success, had the most young recruited. Survival rate of young after leaving the nest was not found to be influenced by the starting date or the length of the breeding season of pairs. However, nesting conditions, such as pair density in colonies, may influence the fate of young birds after they leave the nest and are recruited.

Key words: Feral Pigeon, *Columba livia*, recruitment, pre-breeding survival, density dependence, reproductive rates

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Does Red Fox *Vulpes vulpes* affect bird species richness and abundance in an agricultural landscape?

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Kujawa K., Łęcki R. 2008. Does Red Fox *Vulpes vulpes* affect bird species richness and abundance in an agricultural landscape? *Acta Ornithol.* 43: 167–178. DOI 10.3161/000164508X395289

Abstract. The aim of the study (carried out 25 km south of Poznań, western Poland) was to determine the impact of Red Fox on bird abundance on farmland. Bird abundance was studied in the years 1999–2000 and 2005–2007 in three categories of sampling plots: 1) in small woods — with or without active fox dens, 2) along transects — starting from dens and running across arable land, and 3) around points — located at dens and far from them. Thus, variability in bird density was analyzed in relation to the presence/absence of Red Fox (in woods) and to the intensity of Red Fox penetration of crops (approximated by distance from a den). Two groups of bird species were distinguished with respect to their vulnerability to Red Fox predation pressure: 1) potential fox prey, i.e. species nesting on the ground and in low vegetation; and 2) birds not threatened by foxes, i.e. species nesting in tree holes and in tall vegetation. To investigate the relationships between bird distribution and Red Fox dens in woods, a step-wise multiple regression of bird density and species number on woodland structure was first performed. The residuals derived from the model were used to evaluate the impact of foxes by analyzing the differences between woods with and without active dens. Neither the species number nor the bird density differed significantly between woods with and without active dens. The differences in bird density observed between years in woods with or without active dens were not significant, either. No relationship between bird density in crop fields and distance from fox dens was found. The results are contrary to those of earlier studies and show that Red Fox does not affect farmland bird distribution, diversity and abundance, at least in the short term.

Key words: Red Fox, *Vulpes vulpes*, Skylark, *Alauda arvensis*, bird community, farmland, predation, Poland

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Habitat use by endangered Sichuan Partridges *Arborophila rufipectus* during the breeding season

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Liao W. B., Fuller R. A., Hu J. C., Li C. 2008. Habitat use by endangered Sichuan Partridges *Arborophila rufipectus* during the breeding season. *Acta Ornithol.* 43: 179–184. DOI 10.3161/000164508X395298

Abstract. A detailed understanding of habitat associations of threatened species is essential for the development of sound conservation and habitat management plans. The globally endangered Sichuan Partridge is endemic to montane southwestern China, where it inhabits subtropical broadleaf forest. Its use of various habitats within the forest is poorly known. Habitat use by Sichuan Partridges in Laojunshan Nature Reserve, Sichuan, was studied during the breeding season (April–October). Habitat characteristics at feeding places were compared with randomly selected sites. Auditory detection was used during transect surveys of calling males to locate birds and their feeding scrape sites. Partridges were recorded in primary and secondary broadleaf forest, but not in coniferous plantations or farmland and settlements. Birds occurred between 1400 and 1800 m a. s. l., typically on the ground with a gentle slope of between five and 15 degrees, close to paths and water sources. The habitats used by Sichuan Partridges differed from the random sites in that they had a denser shrub layer, greater tree cover, thicker deciduous leaf depth and lower abundance of bamboo. Principal Components Analysis identified factors interpretable as concealment, topography and leaf litter depth as key axes of variation in Sichuan Partridge habitats. We suggest that habitat management plans incorporating this new information can now focus more effectively on identifying, protecting and restoring those sites within protected areas that are most suitable for the Sichuan Partridge.

Key words: Sichuan Partridge, *Arborophila rufipectus*, conservation, habitat selection, Laojunshan Nature Reserve

Nest construction during autumn display and winter roosting in the Tree Sparrows *Passer montanus*

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Pinowski J., Pinowska B., Chernetsov N., Romanowski J., Sierakowski K. 2008. Nest construction during autumn display and winter roosting in the Tree Sparrows *Passer montanus*. *Acta Ornithol.* 43: 185–195.
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Abstract. A study of Tree Sparrows was conducted near Warsaw, central Poland. During the breeding season, nest boxes were checked to record the presence of Tree Sparrow nests and broods. Nestlings, juveniles, and adults captured in mist nets were ringed with different combinations of colour rings to identify their age during visual observations in the autumn sexual display period. Before the autumn display, breeding nests were dyed in order to identify nest material added during the autumn display period. In winter, nest boxes were inspected to catch the birds roosting in them at night. The study was conducted in optimal and marginal habitat types. In the optimal habitat during the autumn sexual display, adult birds were much more abundant than in the marginal habitat. During the breeding season, 41% of the nest boxes were occupied in the optimal habitat, compared with 8% in the marginal habitat. The respective figures during the autumn display were 95% and 45%. Autumn nests were built in 83% and 12% of the nest boxes, respectively, and in winter, 35% and 7% of nest boxes, respectively, were used by birds for night-time roosting at night. The autumn display continued from early September to the end of October. For roosting at night in winter (November–March), Tree Sparrows selected nests according to their insulating quality. Most often they roosted in nest boxes containing nests from the breeding season with autumn nests built over them, then, in descending order of frequency, in nest boxes with autumn nests built in empty boxes, in boxes with breeding nests, and in completely empty boxes. Among birds roosting at night and captured on the first survey in winter, 86% were represented by pairs that had built those nests during the autumn display. Young birds that did not build autumn nests typically roosted at night in tree crowns. This implies that the construction of autumn nests is primarily a consequence of the autumn sexual display, and secondarily may be an adaptation for winter survival. The winter survival rate was significantly higher in juvenile Tree Sparrows that were found in nest boxes on winter nights than in those that were not.

Key words: Tree Sparrow, *Passer montanus*, autumn sexual display, autumn nests, winter roost, nest boxes, survival rate

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The effect of scale-dependent habitat gradients on the structure of bird assemblages in the Czech Republic

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Reif J., Storch D., Šímová I. 2008. The effect of scale-dependent habitat gradients on the structure of bird assemblages in the Czech Republic. *Acta Ornithol.* 43: 197–206. DOI 10.3161/000164508X395315

Abstract. Spatial patterns in bird community structure are closely related to changes in habitat composition at small spatial scales, but the explanatory power of habitat declines towards larger scales, where dispersal limitations and historical factors becoming more important. To disentangle these effects, we performed a large-scale bird census using a small-scale field approach in the Czech Republic. Using canonical correspondence analysis, we found that the strongest scale-independent gradient in bird community composition goes from higher-altitude forest assemblages to lower-altitude farmland and human settlement assemblages. The other gradients were also scale-dependent, probably due to the different distributional patterns of particular habitats at the respective scales. Closer examination of bird occurrence in particular habitats revealed that water bodies host the most distinct bird assemblage compared to the assemblages of other habitats. Interestingly, although the census tracked the most important east-west biogeographical gradient within the Czech bird fauna, we did not find longitude to be a significant predictor of changes in bird community structure along the transect at any resolution. We suggest that the biogeographical gradient is actually related to the habitat-based distinction between the coniferous-forested higher-altitude West and the deciduous-forested lower-altitude agricultural East. Fine-scale bird-habitat associations are thus responsible for the patterns of community structure at all spatial scales.

Key words: bird community, spatial structure, habitat gradients, biogeographical gradients, scaling, habitat requirements, multivariate statistics

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Breeding biology of the endangered Blue Chaffinch *Fringilla teydea polatzeki* in Gran Canaria (Canary Islands)

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Rodríguez E, Moreno A. C. 2008. Breeding biology of the endangered Blue Chaffinch *Fringilla teydea polatzeki* in Gran Canaria (Canary Islands). *Acta Ornithol.* 43: 207–215. DOI 10.3161/000164508X395324

Abstract. The Blue Chaffinch is a passerine endemic to the Canary Islands and comprises two subspecies, one found on Tenerife (*Fringilla teydea teydea*) and the other on Gran Canaria (*F. t. polatzeki*). Even though the status of the Gran Canaria subspecies is endangered due to habitat loss and fragmentation, knowledge of its life history is anecdotal. We studied its breeding ecology during the years 1991–2004. New data are presented on breeding phenology, number of broods per year, egg biometrics, nest-site characteristics, breeding site fidelity and breeding success. In general, the breeding biology of the two subspecies were similar, with discrepancies in some previously reported traits, such as egg laying interval and frequency of second clutches. The Blue Chaffinch breeds earlier on Gran Canaria than on Tenerife: nests were begun mainly in the second fortnight of May. We did not find any relationship between the onset of egg laying and rainfall in March. However, the onset of the breeding period was negatively correlated with mean April temperature. The Blue Chaffinch showed preferences for a south-easterly nest orientation and for nest placement at the end of branches, where the nest is hidden by pine needles. Nests were located at various heights, from 5.5 to 23.8 m above the ground. 33% of females produced two broods a year. We found no differences in nest site characteristics between successful and unsuccessful nests, which suggests that other factors may be affecting the vulnerability of nests. The main cause of nesting failure (73.9%) was predation, due mostly to the Great Spotted Woodpecker.

Key words: Blue Chaffinch, *Fringilla teydea polatzeki*, reproduction, laying date, nest site characteristics, nest success, Canary Islands

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Syntopic taxa in the *Sylvia cantillans* species complex

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Brambilla M., Quaglierini A., Reginato F., Vitulano S., Guidali F. 2008. Syntopic taxa in the *Sylvia cantillans* species complex. *Acta Ornithol.* 43: 217–220. DOI 10.3161/000164508X395333

Abstract. Distributional relationships among closely related taxa can provide key information about the levels of their reproductive isolation or compatibility, and thus the stage of speciation process. Here, we present new information on the sites where two taxa traditionally considered as subspecies of the Subalpine Warbler *Sylvia cantillans*, *S. c. cantillans* and *S. (c.) moltonii*, breed sympatrically in mainland Italy. We analyse geographic distribution and behaviour as well as other characteristics shown by these warblers in the areas of contact. The distributional pattern shown by these taxa, which is partly sympatric with syntopic breeding, and the apparent lack of interbreeding, strongly suggest that they behave as different species, confirming previous findings about genetic divergence and differential song perception.

Key words: distribution, reproductive isolation, speciation, *Sylvia cantillans*, Mediterranean region

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Densities and habitats of the Tawny Pipit *Anthus campestris* in the Wielkopolska region (W Poland)

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Grzybek J., Michalak I., Osiejuk T. S., Tryjanowski P. 2008. Densities and habitats of the Tawny Pipit *Anthus campestris* in the Wielkopolska region (W Poland). *Acta Ornithol.* 43: 221–225. DOI 10.3161/000164508X395342

Abstract. The material was collected in a large plot (100 km²) in west-central Poland in 2004–2005. The average density was 85.5 breeding pairs/100 km² and was similar during both years of the study. The vegetation structure (visibility of the territory surroundings, and height and density of the under-storey vegetation) was described for 82 pipit territories in 2004, and for 33 additional territories in 2005. The same information on habitat variables was collected in randomly selected localities. Tawny Pipits use nesting sites with very short vegetation and with a high number of areas free of vegetation or only covered with dry mosses. The available data on the Tawny Pipit's habitat in different European localities show that the species is able to occupy a much wider range of habitats. Destruction of habitats, for example, for the construction of a new motorway, influenced pipit numbers and distribution in the study area; even so, the studied population remains the densest and most stable in the geographical range of the species. Although the study area contains Tawny Pipits and other interesting species from a conservation point of view, protection of the land may be very difficult owing to changes in habitats that are being destroyed both by infrastructure investments, and also by the financial support farmers receive from the European Union, which allows them to cultivate more land and thus destroy bird habitats.

Key words: Tawny Pipit, *Anthus campestris*, breeding ecology, Common Agricultural Policy, conservation troubles, density, farmland, habitat use

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The Madagascan “Cuckoo-roller” (Aves: Leptosomidae) is not a roller — notes on the phylogenetic affinities and evolutionary history of a “living fossil”

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Mayr G. 2008. The Madagascan “Cuckoo-roller” (Aves: Leptosomidae) is not a roller — notes on the phylogenetic affinities and evolutionary history of a “living fossil”. *Acta Ornithol.* 43: 226–230. DOI 10.3161/000164508X395360

Abstract. The phylogenetic affinities and evolutionary history of the Madagascan Leptosomidae (Courol or “Cuckoo-roller”) are reviewed to rectify erroneous accounts in the recent literature. These birds are not closely related to rollers, and multiple molecular and morphological data sets congruently support their position outside the clade including Coraciiformes sensu stricto (rollers and ground rollers), Piciformes (woodpeckers and allies), and Alcediniformes (kingfishers and allies). The recent discovery that *Plesiocathartes*, from the Eocene of Europe and North America, is a stem lineage representative of the Leptosomidae further shows that Pan-Leptosomidae were widely distributed across the Northern Hemisphere in the early Paleogene. The Courol is among the few avian taxa which qualify as “living fossils”, and its persistence on Madagascar may have been facilitated by the absence of ecological factors that led to extinction of Pan-Leptosomidae elsewhere.

Key words: Leptosomidae, phylogeny, fossil record, *Plesiocathartes*

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First report of fishing in the European Blackbird *Turdus merula*

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Raes A., Lefebvre L., Jordaens K. 2008. First report of fishing in the European Blackbird *Turdus merula*. Acta Ornithol. 43: 231–234. DOI 10.3161/000164508X395351

Abstract. During two hours of observation, a female Blackbird made approximately 30 attempts to catch fish, 20 of which were successful. The bird watched and followed a minnow shoal in shallow parts of the river, hopping from stone to stone in a way that resembled its normal behaviour when catching earthworms. The bird only caught small individuals (5–7 cm). Larger individuals were present in the river but were not seen within the shoal and were not attacked.

Key words: European Blackbird, *Turdus merula*, fishing, innovative feeding

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Male-biased sex of extra pair young in the socially monogamous Red-backed Shrike *Lanius collurio*

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Abstract. Females of many socially monogamous bird species engage in — or even actively seek — copulations outside their social pair bond. However, in socially monogamous birds with low breeding abundance, such as the Red-backed Shrike, extra-pair paternity (EPP) was thought to be an exceptional and random incident. Drawing on samples collected in an unusually dense Red-backed Shrike population in the Czech Republic, we show through DNA microsatellite typing that among 65 chicks from 15 nests, 10 individuals (26.5%) had been sired by males other than the nest-attending social mate. All 10 extra pair young were of male sex. In all cases, genetic fathers of extra pair young stemmed from neighbouring territories. Extra pair fathers had significantly longer tarsi than social mates, indicating that female choice was a function of age-class dependent male body size. Our findings support sex allocation theory, which suggests that promiscuous females mating with higher quality males should produce mostly sons.

Key words: Red-backed Shrike, *Lanius collurio*, extra pair paternity, sex ratio, secondary sexual character, DNA microsatellite

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