

## Some food sources of the Zitting Cisticola (*Cisticola juncidis*) in Malta

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The Zitting Cisticola, *Cisticola juncidis* (Rafinesque, 1810) is a small insectivorous bird which started breeding in Malta some 40 years ago and is now one of the most diffused species of warblers in the Maltese Islands (FENECH, 2010). The species was listed in the check-list compiled by Nicola Ardoino in February 1893, who said it was scarce and appeared in early September (DESPOTT, 1928). The first nest was found at is-Simar in 1973 (SULTANA & GAUCI, 1974) but De Lucca had published records of four birds at Salina in June 1967 (DE LUCCA, 1967).

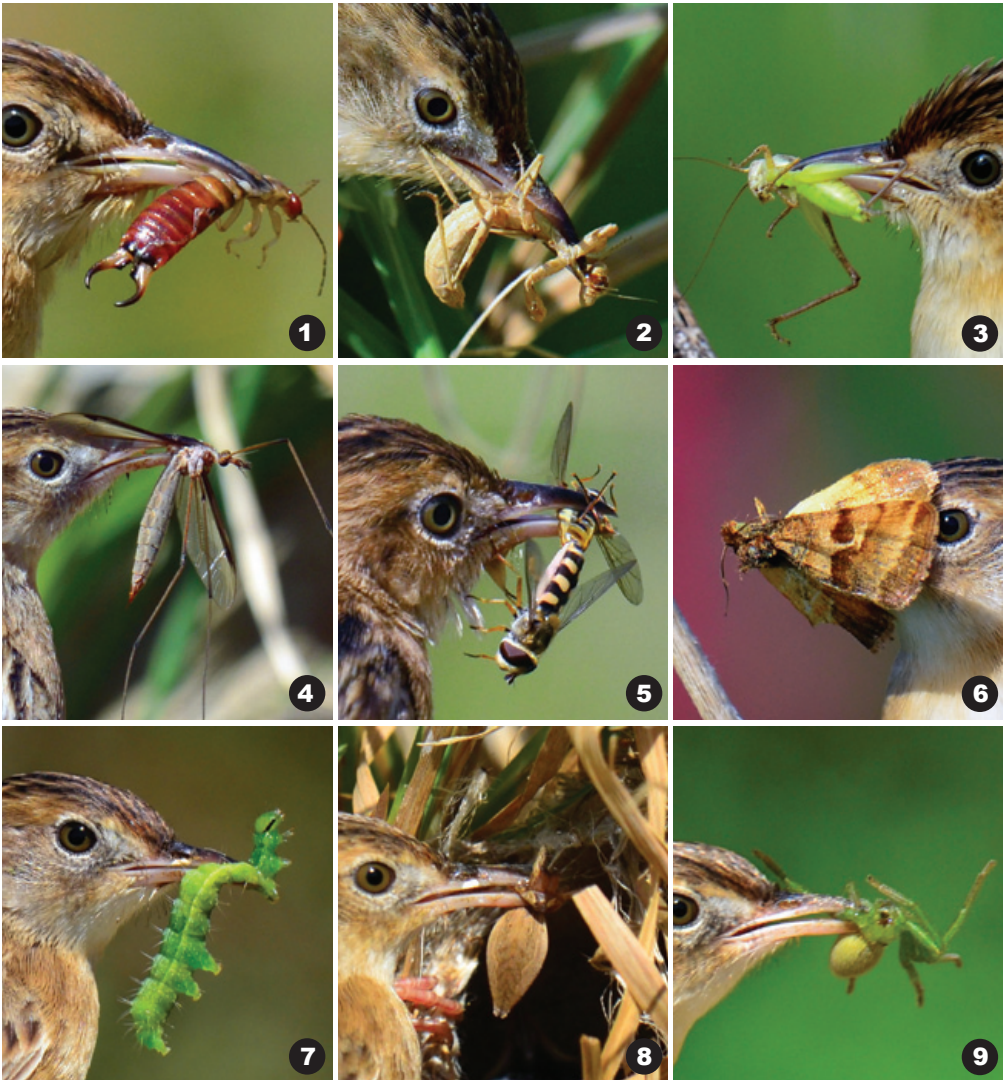
As part of a wider study planned in the future to see whether there is any food competition with other warblers, especially the Sardinian Warbler (*Sylvia melanocephala* Gmelin, 1789) and Spectacled Warbler (*Sylvia conspicillata* Temminck, 1820), which often breed in the same habitat, several nests of Zitting Cisticola were located in April and May 2012. Nests of Zitting Cisticola are built mostly in vegetation such as rushes, grasses and low shrubs, found on the verges of agricultural land and disturbed habitats. Three to six eggs are laid, which hatch after about ten days. The male builds the outer skeleton, incorporating strands or blades of grass in it. Vegetable down and wool are also used, and the female continues to line the nest by adding fine blades of dry grass. Nests can initially be rather conspicuous as they usually appear white from the type of material used in the construction, but as nest building starts in mid or late February, the vegetation continues to grow, concealing the nest very well. The breeding season lasts until August but it was also recorded in November (FENECH, 2010).

In 1912 Lynes noted that Spectacled Warblers were breeding plentifully in Malta but makes no mention of Sardinian Warblers (LYNES, 1912). Up to the mid-1940s, the Spectacled Warbler was more widely distributed than the Sardinian Warbler (GOODWIN, 1948; GIBB, 1951). The latter, now a very common breeding bird, has been breeding for less than 140 years. Both Charles Wright and Henry Eeles Dresser said the Sardinian Warbler may have started to breed in 1874 (WRIGHT, 1874; DRESSER, 1885). Since then, the bird established itself very well and is now much more common than the Spectacled Warbler. A study of food sources of these warblers can shed light on whether competition for food is correlated with their distribution. The comparison of food items would be an interesting exercise because the Sardinian Warbler and the Zitting Cisticola have now colonised many areas while the formerly more common Spectacled Warbler has decreased over much of its range. In many areas, the three species can be found together, with the Zitting Cisticola being the most common, followed by the Sardinian Warbler while the Spectacled Warbler has now become rather scarce.

Like other warblers, the young are fed on a variety of insects and arachnids. Two of the nests were selected so that the adult bird could be photographed with food in its bill while on the way to the nest so that the insect prey could be identified. Both nests were found in typical breeding habitat: the one in Selmun in overgrown agricultural land which was no longer tilled while the one in Bidnija was in a patch of untilled land between Carob trees with clumps of tall grass.

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**Figure 1:** *Forficula decipiens*; **Figure 2:** *Ameles* sp.; **Figure 3:** ? *Platycleis* sp.; **Figure 4:** *Tipula* sp.; **Figure 5:** *Eupeodes corollae*; **Figure 6:** *Synthymia fixa*; **Figure 7:** *Autographa gamma*; **Figure 8:** *Pisaura mirabilis*; **Figure 9:** *Micrommata ligurina*.

Adults were photographed near the nests in April in Selmun and Bidnija respectively. Photographs were taken with a Nikon D7000 and a Nikkor 500mm lens between sunrise and 13.00 hours, when feeding activity was at its highest.

From the photographs, the following arthropods were identified (in some cases precise identification was not possible due to the condition of the prey): *Forficula decipiens* Gén , 1832 (Fig. 1) (Dermaptera, Forficulidae), *Ameles* sp. (Fig. 2) (Mantodea, Mantidae), ? *Platycleis* sp. (Fig. 3) (Orthoptera, Tettigoniidae), *Tipula* sp. (Fig. 4) (Diptera, Tipulidae), *Eupeodes corollae* (Fabricius,

1794) (Fig. 5) (Diptera, Syrphidae), *Synthymia fixa* (Fabricius, 1787) (Fig. 7) (Lepidoptera, Noctuidae), *Autographa gamma* (Linnaeus, 1758) (Fig. 6) (Lepidoptera, Noctuidae), *Pisaura mirabilis* (Clerck, 1757) (Fig. 8) (Araneae, Pisauridae) and *Micrommata ligurina* (C.L. Koch, 1845) (Fig. 9) (Araneae, Sparassidae). All species are common arthropods in Malta.

The status of these three warblers has changed considerably over a relatively short period of time and a study on the food sources in the breeding season, when the demand for food is at its peak, can shed light whether competition for food has anything to do with their status and distribution.

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