

First confirmed record of *Thyreonotus coriscus* (Rambur, 1839) in the Provence-Alpes-Côte d'Azur region of France (Orthoptera, Tettigoniidae)

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Abstract

In September 2013, a population of *Thyreonotus coriscus* was discovered in the hills of the Alpilles (Bouches-du-Rhône), which is the first record of the species in this department and a confirmation of its presence in the Provence-Alpes-Côte d'Azur region of France.

Zusammenfassung

Im September 2013 wurde eine Population von *Thyreonotus coriscus* in den Alpilles (Bouches-du-Rhône) entdeckt. Dieser Fund ist der erste Nachweis der Art in diesem Departement und eine Bestätigung ihres Vorkommens in der Region Provence-Alpes-Côte d'Azur (Frankreich).

As a Western Mediterranean species, the distribution of *Thyreonotus coriscus* (Fig. 1) ranges from the Iberian Peninsula to France (CHOPARD 1922). Moreover, it occurs in Morocco (HARZ 1969, BELLMANN & LUQUET 1995). The first description of the species was by Rambur (SERVILLE 1839) on the basis of one female from Corsica with no precise information on the location. According to DEFAUT (1999), it was never found on the island again, but CHOPARD (1952) reported a sighting in Bastia without any details (BRAUD et al. 2002). The presence of this species in Corsica is therefore still in question (BRAUD et al. 2002, DEFAUT et al. 2009). In France, *Thyreonotus coriscus* is currently reported from the Pyrénées-Orientales (66), Aude (11), Hérault (34) and Gard (30) departments. In the latter, however, only sporadic and isolated sightings are mentioned. Its presence in the departments Aveyron (12) and Tarn (81) is considered doubtful, as well as in the Var (83), where the published sighting is interpreted as a possible geographical confusion between Bagnols-en-Forêt (83) and Banyuls (66), as the species has not been found there again despite intensive search (DEFAUT et al. 2009).

While the species is widespread throughout the Mediterranean but also the sub-Mediterranean region of the eastern part of the Iberian Peninsula (further inland and in the south-west it is replaced by *T. bidens*, LLUCIÀ-POMARES 2002) and common on the southern side of the Pyrenees (PONIATOWSKI et al. 2009), it is considered to be rare in France (CHOPARD 1922, 1952, VOISIN 2003), although uncomplete knowledge is possible due to its hidden and secret habits. In the Atlas of the Orthoptera of Catalonia, the species is listed as rare as it has only been observed in about 15% of the grid squares (OLMO-VIDAL 2006), while, according to LLUCIÀ-POMARES (2002), it occupies large parts of the Catalan region.

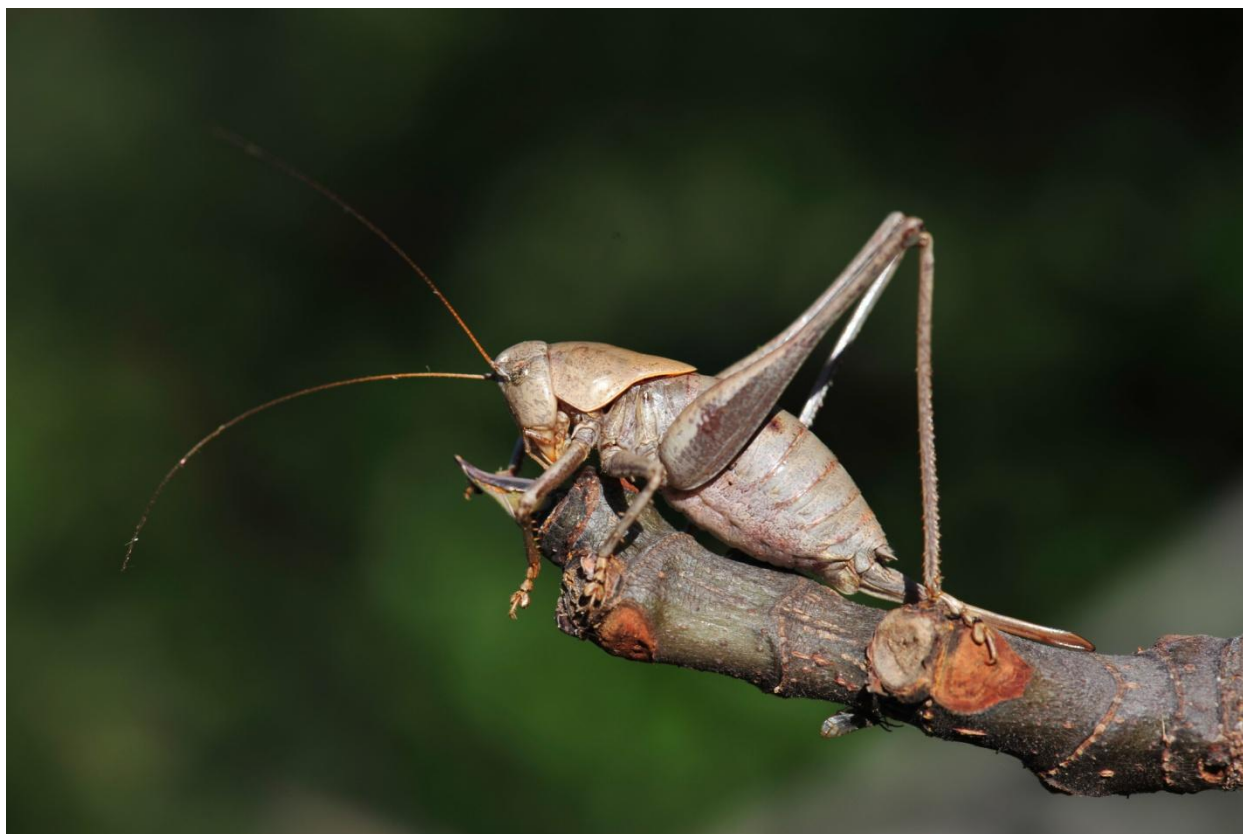


Fig. 1: Female of *Thyreonotus corsicus*, Cagalou, Alpilles, 8 December 2013 (L. Zechner).

Thyreonotus corsicus lives in dense low-growing shrubs (KRÄMER et al. 2010). In the Pyrenees it is found in shrub-rich Mediterranean dry grasslands, bramble shrubberies, maquis and light woodlands with a well-developed shrub layer (PONIATOWSKI et al. 2009). In Catalonia, according to OLMO-VIDAL (2006), the species is present in Mediterranean pine forests, holm oak-woods, maquis, calcicolous rosemary scrub, siliceous rockrose scrub and heath, kermes-oak shrubs, brambles and savannah-type meadows. LLUCIÀ-POMARES (2002) also mentions mesoxerophilous meadows, alfalfa fields and field vegetation in general as suitable habitats. According to BOLÍVAR (1900) and CHOPARD (1952), it is often observed in kermes-oak bushes. BRAUD et al. (2002) describe the species as xerothermophilous living in dry and shrub-rich habitats.

In France it occurs at altitudes between 0 and 830 m a.s.l. (VOISIN 2003), while in Catalonia it is observed mainly between 300 and 400 m a.s.l. and occurs from sea level up to 1500 m a.s.l. in the central Pyrenees (LLUCIÀ-POMARES 2002, OLMO-VIDAL 2006). Adults are observed from June to September/October (BELLMANN & LUQUET 1995, BRAUD et al. 2002, VOISIN 2003). LLUCIÀ-POMARES (2002) and CHOPARD (1952) observed the species until November, BOLÍVAR (1900) and OLMO-VIDAL (2006) even until December.

In the Alpilles (Bouches-du-Rhône, 13, Provence-Alpes-Côte d'Azur region), the species was found for the first time by chance on 25 September 2013, due to its song. The high-frequency song (15-25 kHz, HELLER 1988) is only audible at a few meters; the insects begin to sing at dusk. One male was captured and

photographed. The site of this first observation, "Le Cagalou" (43.7167°N, 4.8749°E, WGS84), is located in the municipality of Mouriès at 80 m a.s.l. During further excursions three individuals were collected there (1 ♂ leg. und det. L. Zechner, coll. E. Sardet, 27/9/2014, 1 ♂ und 1 ♀ leg., det. and coll. L. Zechner 7/12/2014).

These sightings are the first record of the species in the department Bouches-du-Rhône (13) and, therefore, the first confirmation of its presence in the Provence-Alpes-Côte d'Azur (PACA) region (cf. DEFAUT et al. 2009). The hills of the Alpilles and the department Gard are adjacent to one another (Fig. 2), but separated by the Rhône river. Hence, French orthopterologists have so far considered that the flightless species has not crossed the river, known as natural barrier for several species.

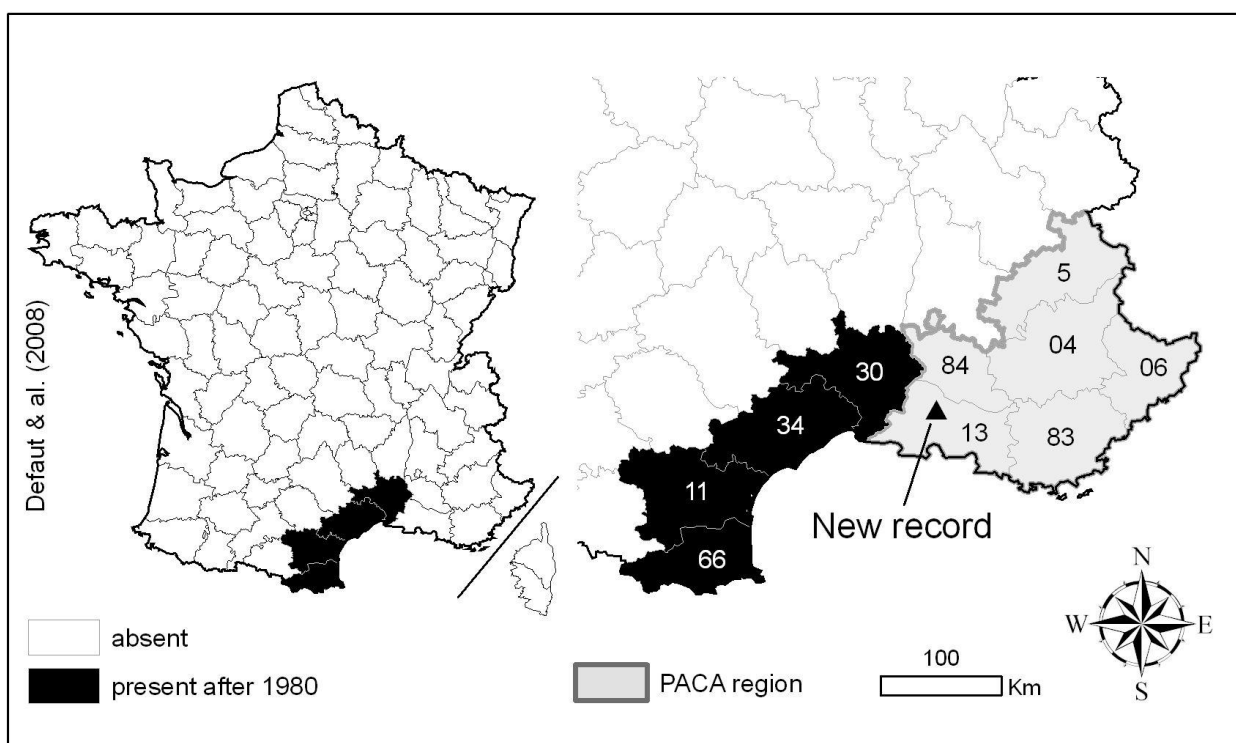


Fig. 2: The known range of *Thyreonotus corsicus* in France, former sightings and new records (E. Sardet).

Due to the characteristics of its song, further surveys of the species in the vicinity of the first sighting have been conducted by the first author using a bat detector (Ultra Sound Advice, Mini-3 Bat Detector). Up to now, the species has been observed at about 30 localities in the community areas of Mouriès, Maussane-les-Alpilles and Aureille (13), at altitudes of between 40 and 115 m a.s.l. In contrast, so far it has not been found in the more distant communities of Fontvieille, Le Paradou, Les Baux-de-Provence, Eyguières, Eygalières and Tarascon, although similar habitats have been checked (n = 27). The currently known range is quite small only covering 4.6 km² (maximum east-west distance between the observation sites = 6.7 km).

Thyronotus corsicus has so far been observed in the Alpillles mainly along irrigation canals and ditches that are often lined with dense shrubs as well as in nearby shrub-rich habitats (bramble shrubberies, Spanish Broom *Spartium junceum*, Small flowered gorse *Ulex parviflora*, Shrubby Hare's Ear *Bupleurum fruticosum*, etc.), often shaded by taller trees (Aleppo Pine *Pinus halepensis*, Downy Oak *Quercus pubescens* or Holm Oak *Quercus ilex*). Near the first observation site (so far with the highest population density), it also sings sporadically in olive groves and apricot orchards. However, in drier and higher habitats (shrubland with Kermes Oak, rosemary and rockrose, etc.) the species has not yet been found.

The last singing males were observed on 17 December 2013. In December they sang during the day, because evening temperatures (< 10 °C) were probably too low. The three individuals in captivity survived until 16 December (♂ coll. 7/12/2013), 25 December (♀ coll. 7/12/2013) and 9 January 2014 (♂ coll. 27/9/2013). Field excursions in 2014 and during subsequent years should provide additional information on the range, habitat requirements and phenology of this species in the Alpillles.

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