

Short notes

Occurrence of *Argas reflexus* (Fabricius, 1794) (Ixodida, Argasidae) in urban habitat of south-eastern Poland

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ABSTRACT. The pigeon tick, *Argas reflexus*, has been found in old buildings in the centre of Lublin (51°24'N latitude). This is the easternmost locality of this tick species in Poland.

Key words: *Argas reflexus*, pigeon tick, ticks in urban environment

The pigeon tick, *Argas reflexus*, is the most common synanthropic mite in the central Europe; its geographical range covers a large area from the British Isles and Spain in the west of the continent, across the Mediterranean countries to Israel, Egypt, the Crimea, and Caucasus in the east [1]. The climatic conditions prevailing in the distribution area of the pigeon tick ensure completion of its embryonic development before the onset of the cold season of the year [2–4]. Temperature of 25°C and humidity of 10–75% are the most favourable conditions for the course of embryogenesis and *A. reflexus* larval hatching [5]. This soft tick may also develop in high humidity (90%), although the development of eggs and larval hatching is disturbed in such conditions [6–8]. Disturbance and inhibition of the embryonic stage of development are produced by low and variable temperatures in the environment [7,9–11]. *A. reflexus* parasitizes the rock pigeon *Columbia livia* and its various domesticated forms. According to Filippova [1], it may also feed on blood of other bird species, e.g. *Ptyonoprogne* (*Riparia*) *rupestris* Scop., *Athene noctua glaux* Sav., *Corvus rhipidurus* Hart., and *Coleus monedula* (L.). Hungry ticks can get to human flats and attack man. To fulfil their requirements for humidity and temperature and their host preferences, the ticks tend to inhabit attics, lofts, and building facades, i.e. pigeons' dwelling places.

In Poland, the pigeon tick was first described by Rafalski [12] in Poznań and its vicinity. Since that time, the species has been found in many other cities, e.g. in Gdańsk [13,14], Toruń [15], Kalisz (Wójcik, personal communication), Warsaw [16,17], Łódź [18], Częstochowa (Buczek, unpublished data), Wrocław [19,20], Upper Silesia [5,21–25], and Rzeszów [26]. These localities were described after reports of tick attacks on humans. The inhabitants of urban agglomerations informed medical doctors, sanitary services, and biologists about skin lesions or systemic reactions caused by tick bites. The most severe adverse effect of the pigeon ticks' saliva components in Poland was anaphylactic shock diagnosed in a 42-year old man, which led to the patient's death [24].

Case study

Information about the occurrence of the arthropods in office premises was obtained from employees of two institutions located in the centre of Lublin (south-eastern Poland, 51°24'N latitude). The buildings housing the headquarters of these institutions were built in 1955. The architecture of these buildings with numerous facades, large window sills, attic and loft with small open windows encourages many city birds to nest there. Pigeons have been seeking shelter in those attics for many years. 10 *A. reflexus* females, 5 males and 4

nymphs were collected from the walls and cracks at the height of the third floor of a building that was adjacent to the loft. We did not have access to the premises of the other institution, but two *A. reflexus* females collected there were delivered to us. Marking the specimens was based on morphological characteristics of pigeon ticks described by Filippova [1], Siuda [23] and Buczek [27]. This was the first documented presence of *A. reflexus* in Lublin. This is the easternmost locality hitherto reported in Poland.

The interviews with the employees of the offices did not reveal any cases of *A. reflexus* tick attack. This can be explained by the fact that the employees were present in their workplace only during the day, i.e. the period of pigeon tick inactivity. During our long-term laboratory tests and observations of pigeon tick's habitats, we reported low host-seeking activity of nymphs and adults (i.e. stages that attack humans most frequently) and lack of foraging activity in the light phase. The employees of the offices paid more attention to ticks after watching a TV programme on the occurrence, biology, and medical importance of this tick. This shows the prophylactic importance of educational programmes focused on threats posed by ticks and of presentation of the arthropods photographs in the media, which may help city residents to identify the ticks. This, in particular, applies to arthropod species of great medical importance, such as the pigeon tick, which is still a poorly recognized species of the fauna in the Polish cities.

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Received 4 November 2011
Accepted 5 December 2011