

Article

An annotated checklist of the ticks (Acari: Ixodida) of Germany

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Abstract

Ticks (Ixodida: Argasidae, Ixodidae) are the main arthropod vectors of disease in Central Europe, including Germany. One species, *Ixodes ricinus*, dominates the tick fauna throughout this area and, as such, is justifiably the most common species studied. However, this concentration on a single species has led to the neglect of a variety of other species, also often common on their wild hosts, and also involved in the natural, zoonotic cycles of disease. In this contribution we provide a checklist of the species currently known to occur in Germany. The information summarized under the endemic species includes general distribution, hosts, and basic ecology, as well as each species' medical and veterinary significance. Our aim is to bring the diversity of species present to the attention of the research community in the hope that the more neglected species will also be integrated into epidemiological models of the tick-borne diseases present.

Key words: Ticks, Argasidae, Ixodidae, Germany, checklist

Introduction

The growing recognition given to ticks as vectors of medically significant diseases in Germany has led to a massive increase in the amount of research being done on this group. Most of the publications dealing with ticks, including those involving field collections, only consider *Ixodes ricinus* (Linnaeus, 1758) in their collection data. *Ixodes ricinus* is undoubtedly the most commonly found tick in Germany; however, there is also a rich fauna of other tick species that appear to have been neglected. Some of these species, such as the hedgehog tick, *I. hexagonus* Leach, 1815, are known to be involved in the sylvatic cycles of tick-borne encephalitis (TBE) and Lyme borreliosis. The roles of other tick species in the sylvatic cycles of these diseases are either only poorly known or remain unknown in Germany.

An additional complication is our variable knowledge of the taxonomic status of a variety of European tick species, particularly in the genus *Ixodes*. The only comprehensive coverage including most European members of this genus is that of Filippova (1977), which is written in Russian and does not cover all of the species found in Central Europe. Older literature is often full of uncertainties, particularly that of the most important German tick taxonomist of the early 20th century, Paul Schulze. Between 1929 and 1937 Schulze and Schlottke (1929) and Schulze (1932, 1933a, 1937) described numerous species, subspecies or designations of *Ixodes*. *Ixodes barbarossae*, *I. melicola*, *I. sciuricola*, *I. vulpicola* and *I. vulpinus* have since all become junior synonyms of *Ixodes canisuga* Johnston, 1849; *I. arboricola arboricola*, *I. a. domesticus* and *I. passericola* are *I. arboricola* Schulze and Schlottke, 1929, as are *I. dryadis* and *I. strigicola*; while *I. plumbeus plumbeus*, *I. plumbeus obovatus* and *I. plumbeus bavaricus* are all junior synonyms of

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