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The occurrence of *Metatrichoniscoides leydigii* (Weber, 1880) (Isopoda: Oniscidea) on the Ribble Estuary, Lancashire

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Summary

Metatrichoniscoides leydigii (Weber, 1880) is recorded at its fourth site for the British Isles along the Ribble estuary, Preston, Lancashire. This is the second British record for this species within a semi-natural environment, and the first record for the western coastline of England.

Discovery

In December 2018 the author visited the northern bank of the Ribble estuary (SD 5003 2926), due west of Preston Dockland, Ashton in an attempt to locate coastal Trichoniscids; particularly *Miktoniscus patiencei* Vandel and *Trichoniscoides saeroeensis* Lohmander. On 19.xii.2019, 13 small (c. 3mm), off-white woodlice were located under firmly embedded rocks along the high tide mark above a dense layer of storm debris. Sampling showed pockets of suitable habitat, particularly below trees and vegetation where the substrate graded from sandy silt into a rich humus. Later examination of these woodlice revealed an absence of ommatidia and a coarsely tuberculated body suggesting a *Metatrichoniscoides* sp. Vandel. A few individuals of *Trichoniscus pygmaeus* Sars also turned up in this sample. Unfortunately, all the *Metatrichoniscoides* sp. were female; the absence of a male specimen for dissection meant that identifying to species was not possible.

A return to the original site on 22.xii.2019 turned up a further 8 females. On 5.i.2019 an attempt to locate this species on the southern bank slightly further downstream (SD 4877 2881) turned up a further 6 females as well as 5 *T. saeroeensis* (determined through dissection by Steve Gregory). Finally, during a revisit to the original site on 29.iv.2019, 2 male specimens were located alongside 2 females.

Dissection of one of these males (Fig. 1A) revealed sexual characteristics identical to *M. leydigii* (Weber, 1880) and matched figures described by Hopkin (1991). Pleopod 1 exopodite (Fig. 1B), clearly showed the twin tailed distal process, kinked at a 90 degree angle against the vertex. The pleopod 2 endopodite (Fig. 1C) also displayed the diagnostic spade shaped distal process.

Discussion

M. leydigii has been recorded three times previously within the British Isles. The initial discovery by Gregory in 1989 (Hopkin, 1990) was from a long-standing garden centre in Oxford (now demolished), implying that this species had likely arrived through horticultural means. This mode of introduction was also supported by the most recent record from Wentworth Castle Gardens in Stainborough by Richards (2016), where it was found within the nursery area of the walled garden. In contrast, Gregory (2012) discovered a single male specimen from the bank of the River Medway in Kent; unlike the other two (clearly introduced) records, this was a semi-natural location and had habitat characteristics similar to its known natural range in the Netherlands and Belgium (Berg *et al.*, 2008; De Smedt *et al.*, 2016). This observation raised speculation around the native status of this species within the British Isles. However, due to the extensive industrial history of the River Medway a synanthropic origin could not be completely ruled out. As a result *M. leydigii* still resides on the Non-native Species Register (<http://www.nonnativespecies.org/factsheet/factsheet.cfm?speciesId=2218>).

The Ribble Estuary also reflects a similar industrial past to the River Medway. The sampling location is in close proximity to Preston Dockland (previously, one of the largest single docks in Europe). The construction of the docks required a major remodelling and diversion of the river channel, with many of the riverbanks being artificially laid with stone. Following its completion in 1892, the docks had a 90-year industrial lifespan, being heavily involved in the importation of cotton, coal, timber, wood pulp, china clay, fruits, oil etc. from all over the world (Davies, 2019). The available literature failed to make any clear links with countries within the range of *M. leydigii*, but the likelihood of vessels moving between these countries and Preston Docks is still exceptionally high. This evidence greatly diminishes the probability of this being a native population of *M. leydigii*, but it does suggest a much broader distribution for them around the British coastline, especially along semi-natural and industrially-disturbed estuarine habitats.



Figure 1: Male *Metatriconiscoides leydigii* from the Ribble Estuary, Preston Docks, Ashton, Lancashire. A) Habitus, dorsal view; B) Pleopod 1; C) Distal process of the Endopodite 2

Despite this, the number of individuals sampled along the Ribble Estuary is noteworthy. The surveys of the location suggest a sizeable and stable population, with a total of 29 females and 2 males recorded (see overview of records). Therefore, the longevity of *M. leydigii* at this location is positive due to its close proximity to the Ribble Estuary SSSI which protects an extensive area of estuarine habitat (stretching from Blackpool to Southport, encompassing the mouth of the River Ribble). An additional attempt to sample a similar but less disturbed habitat due north along the River Lune estuary produced no examples of *M. leydigii*.

Overview of Records

- Metatrichoniscoides leydigii*: Ribble Estuary, Preston Dockland, Ashton, Lancashire, England. SD 5003 2926, 19.xii.2018, T. D. Hughes leg/det. 13♀
- Metatrichoniscoides leydigii*: Ribble Estuary, Preston Dockland, Ashton, Lancashire, England. SD 5003 2926, 22.xii.2018, T. D. Hughes leg/det. 8♀
- Metatrichoniscoides leydigii*: Ribble Estuary, Preston Dockland, Ashton, Lancashire, England. SD 4877 2881, 5.i.2019, T. D. Hughes leg/det. 6♀
- Metatrichoniscoides leydigii*: Ribble Estuary, Preston Dockland, Ashton, Lancashire, England. SD 5003 2926, 29.iv.2019, T. D. Hughes leg/det. 2♂, 2♀
- Trichoniscoides saeroeensis*: Ribble Estuary, Preston Dockland, Ashton, Lancashire, England. SD 4877 2881, 5.i.2019, T. D. Hughes leg. S. J. Gregory det. 1♂, 4♀

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