



## NOTAS / NOTES

### Presence of *Therioaphis bonjeaniae* Hille Ris Lambers & van den Bosch, 1964 (Hemiptera, Aphidoidea, Drepanosiphidae) in Continental Portugal

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#### ABSTRACT

*Therioaphis bonjeaniae* Hille Ris Lambers & van den Bosch, 1964, recorded for the first time from Continental Portugal allows us to enlarge the distributional data of the species in the Iberian Peninsula. Information on morphometric characters of the studied samples is also provided.

**Key words:** *Therioaphis bonjeaniae*; *Dorycnium rectum*; Continental Portugal.

#### RESUMEN

#### Presencia de *Therioaphis bonjeaniae* Hille Ris Lambers & van den Bosch, 1964 (Hemiptera, Aphidoidea, Drepanosiphidae) en Portugal continental

Se actualiza la distribución en la Península Ibérica del pulgón *Therioaphis bonjeaniae* Hille Ris Lambers & van den Bosch, 1964, citado por primera vez en Portugal Continental. Se aporta también información sobre caracteres morfológicos de las muestras estudiadas.

**Palabras clave:** *Therioaphis bonjeaniae*; *Dorycnium rectum*; Portugal Continental.

**Recibido/Received:** 3/06/2015; **Aceptado/Accepted:** 20/01/2016; **Publicado en línea/Published online:** 01/03/2016

**Cómo citar este artículo/Citation:** Sousa-Silva, C. R. & Ilharco, F. A. 2016. Presence of *Therioaphis bonjeaniae* Hille Ris Lambers & van den Bosch, 1964 (Hemiptera, Aphidoidea, Drepanosiphidae) in Continental Portugal. *Graellsia*, 72(1): e040. <http://dx.doi.org/10.3989/graellsia.2016.v72.140>

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In this note *Therioaphis* is included in family Drepanosiphidae based on general classification by Heie (1980) that is also followed by Ilharco (1992).

The apterous and alate females of *Therioaphis bonjeaniae* are whitish to yellowish. The body is coated with mammiform tubercles, almost always darkened, varying in number in accordance with the segment on which they are, each bearing a single capitate setae. Nieto Nafría & Mier Durante (1998) and Quednau (2003) mention this species in France and Spain. Its life cycle is unknown, but possibly

anholocyclic (Nieto Nafría & Mier Durante, 1998) living on *Dorycnium rectum* and *D. hirsutum* (Fabaceae).

The Portuguese samples of *T. bonjeaniae* were identified from the original description and by comparison with paratypes loaned by The Natural History Museum, London, and specimens of the Museum National d'Histoire Naturelle, Paris. The Portuguese material is now deposited in the Aphid Collection of the National Agronomic Station (Coleção de Afídeos da Estação Agronómica Nacional - CAEAN), Oeiras, Portugal.

Apterous viviparous females collected on *Dorycnium rectum* and alate collected on the same host or like vagrant, at the following localities and dates have been studied: Aljezur, 1977 and 1978; Oeiras, 1978, 1979, 1983 and 2005.

#### Apterous viviparous females

Morphological characters based upon 30 specimens. Body length varies from 1.387 to 1.850 mm. Antennae 0.699-0.944 times as long as the body. Secondary rhinaria 8-13, distributed above the III antennal segment forming a straight line. VI antennal segment with process terminalis 0.55-0.77 times as long as the base

of the segment. Rostrum extends to the mid coxae; ultimate rostral segment with 4-6 accessory setae, 0.55-0.76 times as long as the length of second segment of hind tarsi. First tarsal segment with 2 dorsal setae, and 4 to 6 ventral setae. Body carrying mammiforms tubercles, almost always darkened, each one bearing a single capitate setae. In the abdomen, first tergite with 5 to 9 setae varying between 0.030-0.071 mm. Second tergite with 7 to 9 setae varying between 0.026-0.071 mm. Third tergite with 6 to 10 setae varying between 0.027-0.076 mm. Fourth tergite with 7 to 9 setae varying between 0.029-0.061 mm. Fifth tergite with 8 to 9 setae varying between

Table 1.— Morphometric data (mm) for the aphid *Therioaphis bonjeaniae*, apterous viviparous females of Continental Portugal. Ant. = Antennae; b = base; pt = processus terminalis; Rhin. on III = secondary rhinaria on the III antennal segment; 2nd s. h. t. = second segment of hind tarsi; Siph. = Siphunculi; Tub. on 8<sup>th</sup>. = tubercles on eighth abdominal segment; - = unmeasured.

Tabla 1.— Datos morfométricos (mm) del pulgón *Therioaphis bonjeaniae*, hembras vivíparas ápteras de Portugal continental. Ant. = Antenas; b = base; pt = proceso terminal; Rhin. on III = sensores secundarios del III antenómero; 2nd s. h. t. = segundo segmento de los tarsos posteriores; Siph. = cornículo; Tub. on 8<sup>th</sup>. = tubérculos del octavo segmento abdominal; - = no medidos.

Nº	Body length	Antennal segments						Rhin. on III	Apical rostral segment	2nd s.h.t.	Siph.	Cauda	Tub. on 8 <sup>th</sup>
		Ant.	III	IV	V	VI							
						b	pt						
1	1.808	1.484	0.485	0.280	0.300	0.190	0.105	13	0.080	0.129	0.029	0.197	2
2	1.387	1.149	0.400	0.206	0.221	0.136	0.078	8	0.082	0.118	0.034	0.182	2
3	1.731	1.210	0.425	0.223	0.209	0.140	0.090	11	0.079	0.120	0.022	0.175	2
4	1.661	1.405	0.465	0.259	0.279	0.173	0.106	12	0.079	0.131	0.019	0.250	2
5	1.562	1.283	0.427	0.250	0.223	0.150	0.100	11	0.081	0.107	0.020	0.209	2
6	1.487	1.350	0.485	0.250	0.244	0.166	0.104	13	0.076	0.122	0.026	0.203	3
7	1.579	1.384	0.471	0.250	0.250	0.164	0.111	13	0.081	0.127	0.032	0.185	2
8	1.625	1.484	0.485	0.289	0.284	0.172	0.119	12	0.086	0.121	0.023	0.203	2
9	1.575	1.487	0.500	0.266	0.283	0.172	0.118	12	0.086	0.130	0.032	0.200	3
10	1.475	1.262	0.422	0.231	0.220	0.150	0.100	13	0.086	0.125	0.025	0.172	3
11	1.762	1.457	0.513	0.274	0.279	0.168	0.115	11	0.086	0.129	0.038	0.200	3
12	1.725	1.500	0.520	0.319	0.306	0.175	0.117	12	0.072	0.131	0.020	0.200	2
13	1.737	1.400	0.516	0.268	0.279	0.167	0.108	11	0.075	0.105	0.025	0.192	2
14	1.725	1.537	0.491	0.306	0.273	0.174	0.117	13	0.079	0.106	0.025	0.214	2
15	1.850	1.550	0.527	0.294	0.279	0.180	0.120	11	0.092	0.126	0.025	0.200	3
16	1.537	1.268	0.450	0.222	0.228	0.155	0.096	12	0.073	0.130	0.027	0.209	2
17	1.712	1.500	0.487	0.275	0.287	0.175	0.125	12	0.084	0.128	0.020	0.223	3
18	1.800	1.274	0.421	0.238	0.233	0.150	0.100	13	0.076	0.132	0.023	0.191	2
19	1.625	1.300	0.427	0.232	0.241	0.163	0.108	11	0.073	0.130	0.028	0.200	2
20	1.712	1.272	0.421	0.230	0.239	0.150	0.100	11	0.076	0.100	0.020	0.200	2
21	1.612	1.312	0.450	0.236	0.238	0.159	0.115	12	0.081	0.120	0.015	0.177	4
22	1.787	1.310	0.407	0.237	0.240	0.172	0.108	12	0.090	0.126	-	0.209	4
23	1.775	1.315	0.450	0.233	0.239	0.159	0.100	11	0.082	0.132	0.019	0.195	4
24	1.725	1.292	0.404	0.265	0.204	0.169	0.110	12	0.080	0.132	-	0.207	3
25	1.687	1.387	0.474	0.250	0.250	0.156	0.121	11	0.085	0.127	-	0.200	3
26	1.612	1.312	0.450	0.236	0.238	0.159	0.115	12	0.081	0.120	0.015	0.177	3
27	1.787	1.310	0.407	0.237	0.240	0.172	0.108	12	0.090	0.126	0.016	0.209	4
28	1.775	1.315	0.450	0.233	0.239	0.159	0.100	11	0.082	0.132	0.019	0.195	2
29	1.725	1.292	0.404	0.265	0.204	0.169	0.110	12	0.080	0.132	-	0.207	2
30	1.687	1.387	0.474	0.250	0.250	0.156	0.121	11	0.085	0.127	-	0.200	2

Table 2.— Morphometric data (mm) for *Therioaphis bonjeaniae*, alate viviparous females, of Continental Portugal. Abbreviations as in Table 1.

Tabla 2.— Datos morfométricos (mm) de *Therioaphis bonjeaniae*, hembras vivíparas aladas de Portugal continental. Abreviaturas como en la Tabla 1.

Nº	Body length	Ant.	Antennal segments					Rhin. on III	Apical rostral segment	2nd s,h,t	Siph.	Cauda	Tub. on 8 <sup>th</sup>
			III	IV	V	VI							
						b	pt						
1	2.070	1.560	0.495	0.311	0.318	0.188	0.108	12	0.050	0.111	-	0.210	2
2	1.897	1.563	0.567	0.300	0.262	0.175	0.126	13	0.079	0.130	0.030	0.171	3
3	1.787	1.510	0.491	0.300	0.300	0.176	0.127	13	0.076	0.126	0.016	0.188	3
4	1.476	1.407	0.480	0.268	0.260	0.166	0.111	12	0.075	0.123	0.017	0.199	2
5	2.037	1.675	0.540	0.326	0.343	0.200	0.142	13	0.080	0.122	0.015	0.209	2
6	1.625	1.487	0.500	0.275	0.290	0.187	0.122	11	0.076	0.121	0.012	0.197	3
7	1.650	1.510	0.485	0.290	0.300	0.190	0.125	12	0.075	0.121	0.012	0.215	2
8	1.682	1.626	0.550	0.325	0.300	0.192	0.122	13	0.087	0.122	0.018	0.227	3
9	1.550	1.520	0.550	0.250	0.300	0.160	0.125	12	0.075	0.128	0.012	0.220	2
10	1.650	1.634	0.530	0.330	0.330	0.187	0.130	14	0.085	0.133	0.022	0.215	3
11	1.737	1.655	0.550	0.322	0.335	0.200	0.133	13	0.081	0.112	0.020	0.222	2
12	1.625	1.465	0.475	0.290	0.300	0.170	0.120	13	0.070	0.107	0.018	0.200	2
13	1.662	1.545	0.510	0.295	0.300	0.185	0.135	16	0.075	0.128	-	0.200	3
14	1.762	1.732	0.590	0.340	0.350	0.210	0.137	16	0.071	0.130	0.022	0.230	2
15	1.725	1.537	0.500	0.285	0.327	0.190	0.124	14	0.075	0.125	0.020	0.225	2
16	1.712	1.692	0.560	0.335	0.327	0.210	0.125	13	0.085	0.128	0.018	0.225	2
17	1.825	1.662	0.570	0.300	0.335	0.192	0.145	14	0.085	0.132	0.017	0.225	2
18	1.562	1.433	0.450	0.267	0.290	0.182	0.122	14	0.071	0.125	0.020	0.200	2
19	-	1.569	0.505	0.322	0.300	0.177	0.140	13	0.082	0.137	0.025	0.207	4

0.026-0.070 mm. Sixth tergite with 5 to 7 setae varying between 0.014-0.074 mm. Seventh tergite with 4 setae varying between 0.016-0.090 mm. Eighth tergite showing 2 to 4 setae varying between 0.017-0.070 mm, (Table 1).

#### Alate viviparous females

Morphological characters based upon 19 specimens. Body length varies from 1.476 to 2.070 mm. Antennae 0.817 to 0.953 times as long as the body. Secondary rhinaria, 11-16, distributed in a straight line above the III antennal segment. VI antennal segment with processus terminalis 0.675-0.690 times the length of the basal part. Rostrum does not extend to the mid coxae. Ultimate rostral segment with 4-6 secondary setae and is 0.450-0.635 times the length of the second segment of the hind tarsi. First tarsal segment with 2 dorsal setae, ventral with 4-6. First abdominal tergite with 6 to 9 setae varying between 0.015-0.062 mm. Second tergite with 7 to 11 setae varying between 0.023-0.062 mm. Third tergite with 7 to 10 setae varying between 0.025-0.065 mm. Fourth tergite with 7 to 10 setae varying between 0.017-0.069 mm. Fifth tergite with 6 to 10 setae varying between 0.019-0.061 mm. Sixth tergite with 5 to 8 setae varying between 0.08-0.062 mm. Seventh tergite with 4 setae varying between 0.027-0.075 mm.

Eighth tergite showing 2 to 4 setae varying between 0.012-0.064 mm (Table 2).

#### Acknowledgements

The authors thank Drs. Paul Brown (Department of Entomology The Natural History Museum, London) and Prof. Georges Remaudière *in memoriam* (Museum national d'Histoire naturelle, Paris) for the loan of the slides with specimens of *Therioaphis bonjeaniae*, used for comparison with the Portuguese material, and Dr. Chris J Hodgson for suggestions and correction of the English language. The first author thanks the Foundation for Science and Technology (FCT), Lisbon, for the scholarship granted.

#### References

- Heie, O. E., 1980. The Aphidoidea (Hemiptera) of Fennoscandia and Denmark. I. General part. The families Mindaridae, Hormaphididae, Thelaxidae, Anoeciidae, and Pemphigidae. *Fauna Entomologica Scandinavica* 9: 1-236.
- Hille Ris Lambers, D. & Van Den Bosch, R., 1964. On the genus *Therioaphis* Walker, 1870, with descriptions of new species (Homoptera, Aphididae). *Zoologische Verhandelingen* 68: 3-47.
- Ilharco, F. A., 1992. *Equilíbrio biológico de afídeos*. Fundação Calouste Gulbenkian, Lisboa.
- Nieto Nafria, J. M. & Mier Durante, M. P., 1998. *Hemiptera, Aphididae* I. In: *Fauna Ibérica* vol. 11. Ramos, M. A.

- et al.* (Eds.). Museo Nacional de Ciencias Naturales, CSIC. Madrid. 424 pp.
- Quednau, F. W., 2003. Atlas of the Drepanosiphine aphids of the world. Part II Panaphidini Oestlund, 1923–Panaphidina Oestlund, 1923 (Hemiptera: Aphididae: Calaphidinae). *Memoirs of the American Entomological Institute* 72: 1-301.
- Remaudière, G., 1989. Le genre *Therioaphis* Walker au Moyen-Orient (Homoptera, Aphididae). *Annales de la Société entomologique de France (N.S.)*, 25(2): 171-198.
- Remaudière, G. & Remaudière, M., 1997. *Catalogue des Aphididae du Monde/Catalogue of the world's Aphididae*. INRA. Paris. 473 pp.