

## DESCRIPTION OF THE SUPPOSED MALE *NEMESIA HISPANICA* L. KOCH IN AUSSERER, 1871 (ARANEAE: NEMESIIDAE)

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### Abstract

CARDOSO P.: Description of the supposed male *Nemesia hispanica* L. Koch in Ausserer, 1871 (Araneae: Nemesiidae). In GAJDOŠ P., PEKÁR S. (eds): Proceedings of the 18th European Colloquium of Arachnology, Stará Lesná, 1999. Ekológia (Bratislava), Vol. 19, Supplement 3/2000, p. 31-36.

The first description of *Nemesia hispanica* was by L. KOCH and appeared in AUSSERER, 1871. However, until now it has only been known from the female. During a study carried out in the Arrábida region of Portugal the author has collected what is thought to be the male of this species. It is described here for the first time. Some considerations of morphology, distribution and taxonomic relationships are briefly presented.

### Introduction

*Nemesia hispanica* was described by L. KOCH in a paper by AUSSERER in 1871 (BONNET, 1958). This description was based solely on the female characters. The species has been found many times in the southern Iberian Peninsula and is the most common mygalomorph in Portugal. Despite this the male had never been collected. A particular characteristic of the species, first noted by MACHADO (1944), is the existence of only two spinnerets, this in a genus where all other members have four. Although there is the possibility that they belong to a new, unknown species, this unique character together with some others, suggests that the two males collected belong to *N. hispanica*.

### Material and methods

Some of the characters often used, such as spination, have not been considered here due to their high variability and poor reliability. However, considerable importance has been attributed to the bulb structure and biometric characters which have been shown to be the most stable within species (BLASCO, 1986). All measurements are

made on the specimen of October 19 and are to an accuracy of 0.1 mm. The leg segment measurements refer to the retrolateral view with the legs detached from the body.

### ***Nemesia hispanica* L. Koch in AUSSERER, 1871 (Figs 1-3)**

*Nemesia hispanica* AUSSERER, 1871: 170; SIMON, 1892: 113; REIMOSER, 1919: 7; BACELAR, 1928: 172; FRADE, BACELAR, 1931: 233.

**Material:** 1 ♂, Terras do Risco, October 19, 1997, leg. P. Cardoso, PMC0018a Coll. Cardoso. 1 ♂, Terras do Risco, October 26, 1997, leg. P. Cardoso, PMC0018b Coll. Cardoso. Both specimens here described were taken in pitfall traps during October 1997, in a small area of grassland named Terras do Risco near to the Serra da Arrábida (Setubal, Portugal – UTM29SMC95).

**Description:** Male. Carapace. Length 7.0 mm, width 5.7 mm. Caput densely covered with silver white pubescence, with a middle line of long black setae, tegument brown, darker along the edges. Thorax slightly convex sloping down from the fovea towards the posterior edge, central parts brown, peripheral parts orange, brushes of black setae on both posterior corners and along the edges. Fovea deep, recurved, as usual for the genus. Eyes: Ocular area wider than high (width/length=2.2). Grouped on an ocular tubercle typical for the genus. Labium: Slightly wider than high, light brown, darker near the sternum, covered with black setae. Maxillae: A single row of denticles near the labium, slightly darker brown than sternum and similarly covered with black setae, anterior edges with scopulae of reddish hair. Chelicerae: Basal segment dark reddish brown, with the inferior margin slightly lighter. Seven teeth along the prolateral margin of the cheliceral furrow, a scopula of long reddish hair along its retrolateral margin. Keeled fang with serration formed by about 10 small black denticles. Sternum: Length 3.4 mm, width 3.0 mm. Widest between the coxae of the second and third legs. Yellowish brown and covered with black setae, denser at the edges. Palps: Femur, prolaterally glabrous with one single distal spine, row of three spines dorso-distally. Patella, prolaterally with one single distal spine. Tibia with prolateral and dorso-distal spines. Tarsus with retrolateral and dorsal spines, enlarging to the front. Bulb: Reddish, with an embolus as long as the basal part. The tip is curved and presents two small denticles on the outer curve preceded by a keel (Fig. 1). This unique embolus is one of the characters that distinguishes the male of this species from other *Nemesia*. The bulb itself is divided into two parts. A basal part, dark reddish brown with a prolateral triangular projection (Fig. 2). A distal part, typically pear-shaped, reddish brown, with an almost red, transverse stripe on the middle, with two thinner dark brown stripes surrounding it (Fig. 3). Legs: Leg I. Femur, prolaterally glabrous. Tibial spur with the usual shape, round and curved. Metatarsus with scopula on the distal part. Tarsus with scopula and no spines. Both tarsus and metatarsus curved downwards. Leg II. Femur, prolaterally glabrous. Metatarsus with scopula on the distal part of the segment. Tarsus with scopula and no spines. Leg III. Tarsus with 1 prolateral spine on the apical half. Leg IV. Femur retrolaterally glabrous, with field of short spines dorso-distally. Tarsus with no scopula or spines. All prosomal appendages, with the exception of the chelicerae are brown. Leg formula: 4231. Leg segments length: Table 1. Abdomen: Grey, with dark patches and evenly covered with black hair and setae.

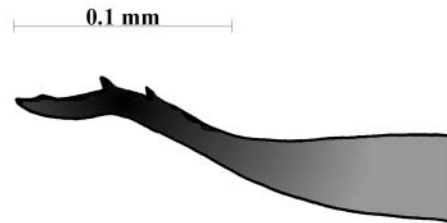


Fig. 1. Embolus tip with two denticles and a small keel in ventral view.

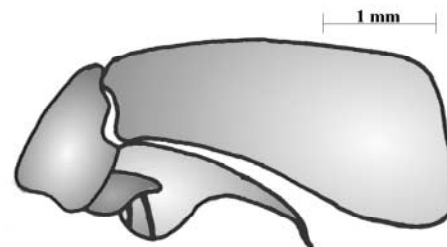


Fig. 2. Apical segment of right palp in prolateral view.

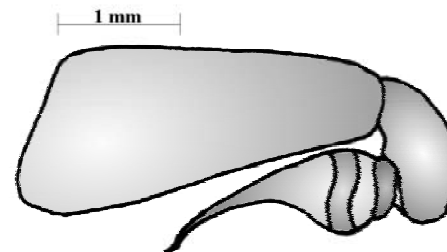


Fig. 3. Apical segment of right palp in retrolateral view.

Table 1. Leg segments (mm).

	<b>Femur</b>	<b>Patella</b>	<b>Tibia</b>	<b>Metatarsus</b>	<b>Tarsus</b>
Palp	3.4	2.1	2.7	–	1.6
Leg I	5.5	2.9	4.0	3.9	3.4
Leg II	5.8	2.9	4.5	4.4	3.4
Leg III	5.3	2.5	4.0	5.3	3.3
Leg IV	6.7	3.4	6.4	6.5	3.3

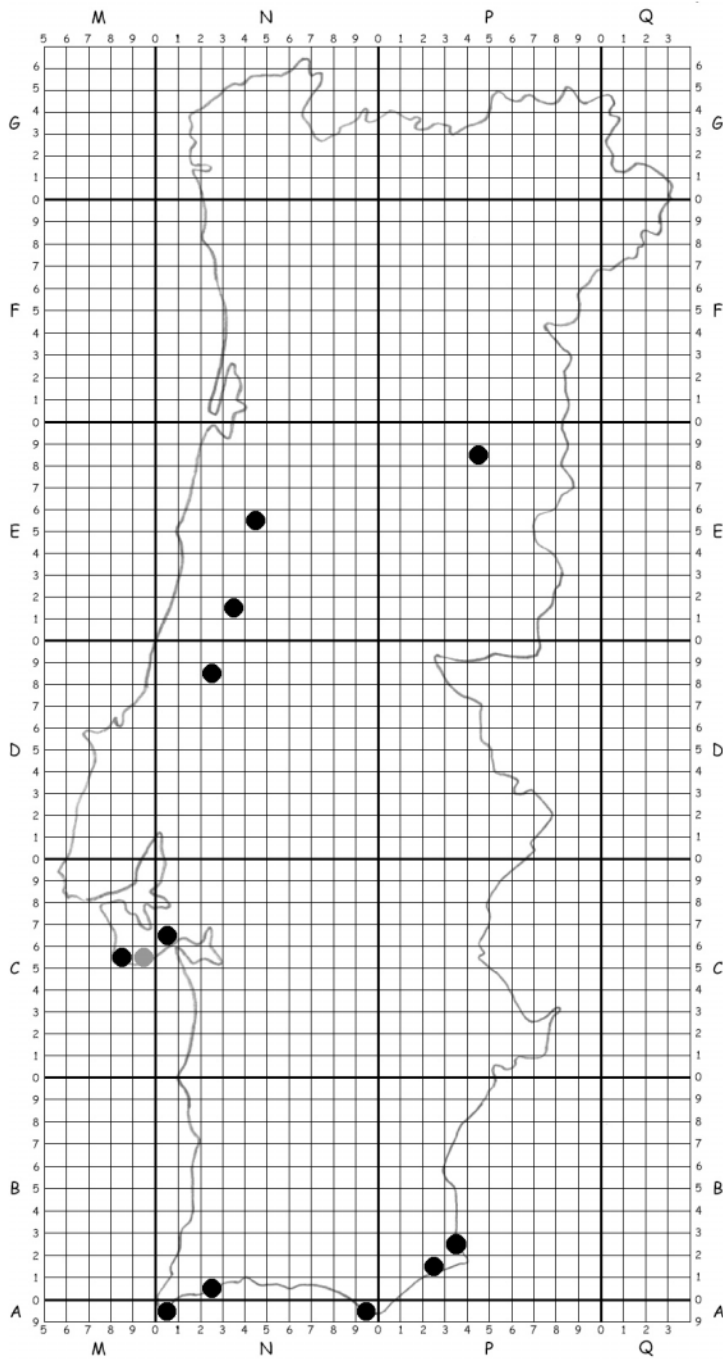


Fig. 4. Distribution map of *Nemesia hispanica* in Portugal, based on UTM (Universal Transverse Mercator) squares and with the capture site of males shown in light grey.

Spinnerets: Only the posterior spinnerets are present, as in *Nemesia hispanica* females and unlike all other *Nemesia* species, which have four (posterior and median, the latest reduced).

**Diagnosis:** As first noted by MACHADO (1944), the main character which separates this species from all other *Nemesia* species is the presence of only two spinnerets. This character, present in both the males taken, along with the known distribution of *Nemesia* species in Portugal and the large size of the individuals – the females are the largest of all *Nemesia* species found in Portugal (BACELAR, 1932) – strongly suggest that these specimens represent the hitherto unknown male of *N. hispanica*. Unfortunately, in November 1997 severe flooding occurred in the study area, possibly destroying the existing colony. Thus it has not been possible to confirm the species present by the capture of assignable females. Another character that easily permits the identification of males of this species is the unique denticulate and keeled embolus tip.

**Distribution:** This is the most common Mygalomorphae in Portugal but, even so, only a few records are known (Fig. 4). Previous records: Coimbra (BACELAR, 1928; BACELAR, 1932); Guarda, Setúbal, Cabo Espichel, Sagres, Lagos, Faro, Tavira, Castro Marim (FRADE, BACELAR, 1931; BACELAR, 1932); Ramalhais, Fátima (MACHADO, 1944).

**Remarks:** The taxonomy of the Genus *Nemesia* is at present confused, since, of the 47 described species, 13 are known only from the male and 19 only from the female (BLASCO, 1986; DECAE, 1995). Males and females have been collected on different occasions, using different methods and several species regularly occur syntopically, making assignment of males and females difficult. The males described here are considered to belong to *N. hispanica* but there is a possibility that they belong to an undescribed species or another known only from the female. In the original description of *N. hispanica*, L. KOCH (in AUSSERER, 1871) makes reference to a double row of denticles on the maxillae near the labium and the specimens here described have one single row. MACHADO (1944) also noted this and other smaller differences but, even so, considered his female specimens to belong to *N. hispanica*. The type specimens of *N. hispanica* are lost, which makes it very difficult to confirm the identity of the males. Another possible species is *Nemesia berlandi* FRADE, BACELAR, 1931 which presents several similarities with the described males, but MACHADO (1944) clearly stated that this species has four spinnerets. This would invalidate the possibility of it being *N. berlandi* but only if MACHADO checked the type specimens (now lost) or others labelled by the describers.

In the general area where they were captured three other *Nemesia* species have been taken. One is *N. meridionalis* (COSTA) and the others have not yet been identified. However, despite being close, the habitat of the other three species (Mediterranean woods) is different to the grassland site of *N. hispanica*. This species, a typical *Nemesia* as defined by RAVEN (1985), seems to be closely related to *N. uncinata* BACELAR, *N. raripila* SIMON and *N. gravieri* FRADE, BACELAR due to the presence of a denticle or denticulate keel on the tip of the embolus in all these species (SIMON, 1914; FRADE, BACELAR, 1931; BACELAR, 1933; BLASCO, 1986). In the original description of *N. uncinata* (BACELAR, 1933) it was suggested that it might be the male of *N. hispanica* but it was apparent that the author was unaware of the existence of only two spinnerets in the latter.

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