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***Pirata tenuitarsis* Simon (Araneae, Lycosidae): a widespread but long-ignored species**

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It often happens that similar species are confused, and when such confusion arises most findings are attributed to the better known of the two species. Experience has shown the authors that this occurs most frequently when dealing with groups belonging to clearly defined species and hence considered to be "easily" identifiable. In such cases slight morphological differences, even if clearly recognisable, are frequently interpreted as an expression of variation within the species, or are simply overlooked. The European species of the genus *Pirata* exemplify the above misapprehension, for this is clearly what has happened in the case of *Pirata tenuitarsis* Simon 1876, a species that is widespread in southern central Europe but which is generally confused with *P. piraticus* (Clerck) 1757.

In studies carried out on a large number of wolf spiders collected in the Iberian peninsula by Mr A. Senglet (Geneva) we noticed that various of our specimens of *Pirata*, which had previously been identified as *P. piraticus*, showed significant differences in the structure of the male genitalia; differences in the female genitalia were less obvious, and it was only after extremely careful examination, and then with a certain margin of doubt, that we were able to dis-

tinguish these females from those that belonged undeniably to *P. piraticus*.

A rapid check of material preserved in the collection of one of the authors revealed that a number of Italian specimens of the genus *Pirata* which had already been identified as *P. piraticus* exhibited the same morphological characteristics as those of the Iberian peninsula. Subsequent comparison of our specimens with the paratypes of *P. tenuitarsis* kept in the Muséum d'Histoire Naturelle in Paris showed beyond doubt that they belonged to this species. Furthermore, comparison of *P. tenuitarsis* with specimens of *P. moravicus* Kratochvil, kindly sent by Dr J. Buchar, showed the two species to be identical. Dr Buchar was sent samples of *P. tenuitarsis* collected in Spain and he too declared them identical with *moravicus* (Buchar, *in litt*, 6 August 1974).

Pirata tenuitarsis was described by Simon (1876) who stated that it was very common in the marshlands of Corsica. Carpenter (1894) also records the presence of this species in Corsica. Rizzardi and Cecconi (1898) reported its presence in Vallombrosa in the Tuscan Apennines. In 1937 Simon relegated *tenuitarsis* to a subspecies of *P. piraticus*, reporting it in Guadarrama, Spain. Recently, Buchar (1966), in recognition of the morphological differences between the sub-species *moravicus* (Kratochvil 1930) and the typical form, conferred species status on *moravicus*, without however recognising the fact that this is identical with *P. tenuitarsis*. It should be noted here that, according to Article 50b of the International Code, "change in rank . . . does not affect the authorship of the nominal taxon". Therefore, Buchar's *moravicus* has to be quoted as *P. moravicus* Kratochvil and not, as Buchar did, as a new species.

The correct synonymy is therefore as follows:

Pirata tenuitarsis Simon, 1876: *Les Arachnides de France*, p. 302, male and female syntypes in the Mus.nat.Hist.Nat. Paris (MNHN, no. 1602) examined. One male lectotype here designated.

Lycosa piratica tenuitarsis Simon, 1937, p. 1118, 1140.

Pirata piraticus tenuitarsis, Roewer, 1954, p. 285; Bonnet, 1958, p. 3666.

Pirata piraticus moravicus Kratochvil, 1930, p. 2, 4, fig. 3.

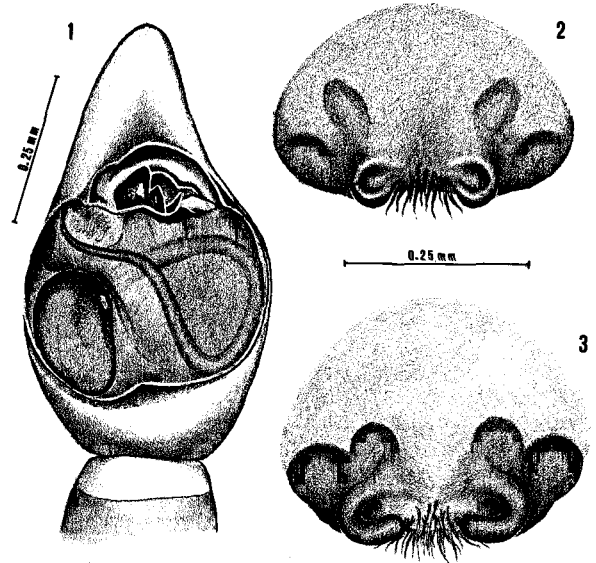
Pirata moravicus, Buchar, 1966, p. 213, fig. 3 A-C, E, F - NEW SYNONYMY.

As regards comparisons with the other species of the genus, we shall limit ourselves in this paper to *P. piraticus*, referring to Buchar (1966) for discussion of the related species *P. praedo* Kulczynski, *P. subpiraticus* Bösenberg and Strand, *P. piratellus* Strand, etc.. The Spanish species *P. subniger* Franganillo and *P. albimaculata* Franganillo are not recognisable from the brief description, yet there would seem to be little likelihood of their belonging to *P. tenuitarsis*. Thorell (1872, p. 342), with reference to *P. piraticus*, speaks of a melanic variety which could, however, be thought to belong to *P. tenuitarsis*: "yet individuals are sometimes met with, especially belonging to a darker variety, in which the thighs have two tolerably distinct dark rings." (see below).

The males of *P. piraticus* and those of *P. tenuitarsis* can be fairly easily distinguished from each other by means of the tegular apophysis (terminal apophysis, according to Buchar, 1966) (cf. Figs 1, 6 and 7). In *tenuitarsis*, the apophysis consists of two small cuneiform processes, joined at the base, the tip of the largest of which does not reach the border of the alveolus. In *piraticus*, the apophysis not only is formed differently (being larger, rounded off at the tip and having at its apex a pointed process turned outwards) but also extends as far as, and sometimes beyond, the border of the alveolus.

Identification of the females is more difficult, for it would appear that there are no well-defined characteristics enabling one species to be distinguished from the other. The taxonomist's task is further complicated by the fact that the two species frequently cohabit; of the material examined by us numerous samples include specimens of both species (viz. also Buchar, 1966, p. 217).

There are nevertheless certain features that help in distinguishing the two species:



Figs. 1-3: 1 *Pirata tenuitarsis*, left palp, ventral view (Spain, Badajoz, Valdecaballeros). 2 Epigyne (Portugal, Guarda). 3 *Pirata piraticus*, epigyne (Spain, C. Real, Dainiel).

1) in *P. tenuitarsis* there are slight ring markings on the femora, especially on the ventral face (clearly-ringed legs according to Simon, 1876, 1937). In *P. piraticus*, on the other hand, such markings are largely absent, as is noted by the majority of authors who have studied the species. However, specimens of *tenuitarsis* with uniformly-coloured legs or of *piraticus* with ringed legs are not infrequent;

2) the abdominal pattern may also be helpful (Buchar, 1966), even if, in our opinion, it cannot be considered decisive. In *tenuitarsis* the anterior, lanceolate band of light colour extends in a more or less continuous yellowish stripe as far as the spinnerets. In *piraticus* this stripe is replaced by a series of yellowish spots that are either roughly circular or in the form of circumflex accents. However, as with the ring-markings of the legs, the patterns may be reversed, specimens of *tenuitarsis* having an abdominal design similar to that of *piraticus* and specimens of the latter species having a light-coloured continuous stripe extending along the abdomen as in *tenuitarsis*;

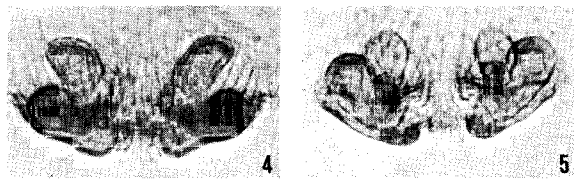
3) the differences in the female genitalia are more marked, although they can only be observed by examining the animal carefully from different angles. When the epigyne is viewed a little obliquely, i.e.

tilted back slightly (which is the position generally assumed when the animal is being studied in toto), two auricle-like lobes can be seen in the posterior region. In *tenuitarsis* these auricles point rearwards (Fig. 4), while in *piraticus* they point obliquely towards the observer (i.e. upwards and to one side) (Fig. 5).

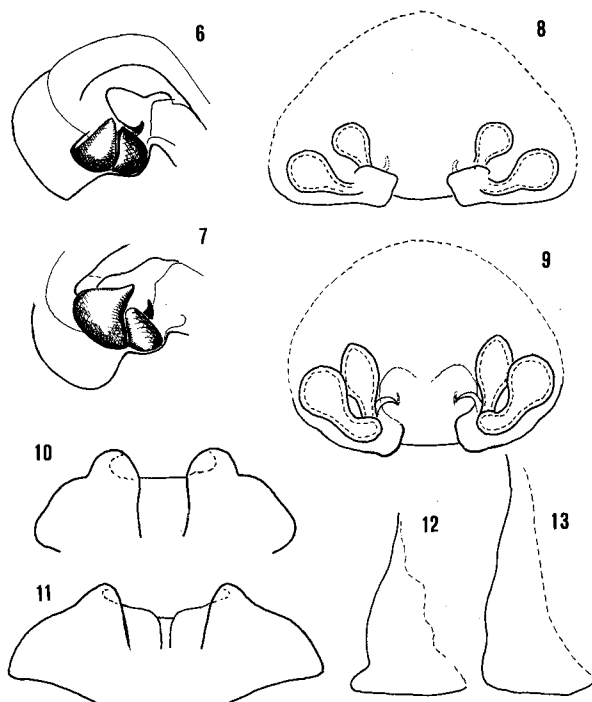
Furthermore, in *tenuitarsis* the lateral seminal receptacles are situated roughly parallel to the epigastric furrow and practically at right angles to the median seminal receptacles (Figs 2, 8). Also, when the epigyne is viewed externally, the median receptacles appear farther forward than the lateral receptacles. In *piraticus*, however, the lateral seminal receptacles slope steeply away from the epigastric furrow and form a very acute angle with the median receptacles (Figs 3, 9). Also, the median receptacles tend to slope backwards and thus occupy a plane which is farther back than that of the lateral receptacles.

What is more, the profile of the epigyne, seen from the side, is a little different in the two species. In *tenuitarsis* (Fig. 12) the auricular processes are flattened along their antero-posterior axis so as to resemble two laminae that protrude visibly from and at a distinct angle to the body of the epigyne itself. In *piraticus*, on the other hand, the auricular processes are not flattened in this manner and jut from the body of the epigyne in the form of an obtuse cone (Fig. 13). Other differences can also be noticed when observing the back face of the epigynes (cf. Figs 10 and 11).

We would once more point out that none of the features discussed is of itself sufficient to identify the species with certainty. The features need to be viewed as a whole and then with a certain degree of caution.



Figs. 4-5: 4 *Pirata tenuitarsis*, epigyne of a paratype from Corsica. 5 *P. piraticus*, epigyne (Italy, Siracusa, Brucoli). Both cleared in clove oil.



Figs. 6-13: 6 *Pirata tenuitarsis*, left palpus, apical view. 7 *P. piraticus*, left palpus, apical view. 8 *P. tenuitarsis*, vulva, ventral view. 10 Epigyne, posterior view. 12 Epigyne, lateral view (Portugal, Guarda). 9 *P. piraticus*, vulva, ventral view. 11 Epigyne posterior view. 13 Epigyne, lateral view (Spain, C. Real).

Only the presence of male specimens in the sample can ensure identification of the species with certainty.

Specimens examined

The species is new to Portugal.

Italy *Tuscany*: Pisa. S. Rossore (Sterpaia), 3.VI.1958, 4♀♀ 2 ♂♂ juv. S. Rossore (Lame), 20.V.1967, 3♀♀ (with *P. piraticus*). Montemagno, 5.VI.1958, 1♀. Campo, 16.VI.1958, numerous♀♀ and ♂♂. Massaciuccoli, 8.VI.1958, 6♀♀ 1♂. (All coll. P. Tongiorgi).

Spain *Salamanca*: El Cabaco, 12.VIII.1971, 1♀. *Toledo*: Urda/Consuegra, 12.VIII.1969, 1♂ (with *P. piraticus*). *Caceres*: Tejada del Tietar, 23.VIII.1969, 1♀. *Badajoz*: Valdecaballeros, 18.VIII.1969, numerous♀♀ and ♂♂; Garbayuela, 17.VIII.1969, 1♀. *Huelva*:

Huelva, 10.VII.1969, 2 ♀♀ 1 ♂; Zalamea la Real, 10.VII.1969, 6 ♀♀ 7 ♂♂. C. Real: Retana, 16.VIII.1969, 3 ♀♀. Leon: La Banezza, 26.VIII.1971, 1 ♀ (with *P. piraticus*). (All coll. A. Senglet).

Portugal *Beja*: Serpa, Guadiana, 1.VIII.1971, 2 ♀♀ 2 ♂♂. *Guarda*: Maceira/Fornos de Algodres, 9.VIII.1971, 8 ♀♀. *Vila Real*: Vilarandelo/Lourenço, 29.VII.1969, 1 ♀. (All coll. A. Senglet).

The ecology of *P. tenuitarsis* seems to be the same as that of *P. piraticus*, but *P. tenuitarsis* appears to be limited to the Mediterranean area and eastern Europe, whereas *P. piraticus* extends far into northern Europe. The species has generally been found on marshy ground or on damp meadows close to water.

Being partially sympatric with *P. piraticus* it is clear that *tenuitarsis* must be regarded as a separate species.

Acknowledgments

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