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The spider genus *Pulchellodromus* Wunderlich, 2012 in the Crimea (Aranei: Philodromidae)

Пауки рода *Pulchellodromus* Wunderlich, 2012 Крыма (Aranei: Philodromidae)

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KEY WORDS: spiders, *Pulchellodromus*, the Crimea, new combination, new records.
КЛЮЧЕВЫЕ СЛОВА: пауки, *Pulchellodromus*, Крым, новая комбинация, новые находки.

ABSTRACT. The validity of the genus *Pulchellodromus* Wunderlich, 2012 is discussed. A new combination is established: *Pulchellodromus mainlingensis* (Hu et Li, 1987) **comb.n.**, ex *Philodromus*. Two species of *Pulchellodromus* are recorded from the Crimea for the first time: *P. medius* (O. Pickard-Cambridge, 1872) and *P. ruficapillus* (Simon, 1885). The record of *P. medius* from the Crimea lies at the north-easternmost limit of the known species range. Both species are provided with diagnostic drawings, notes on their distribution, habitat preferences and phenology in the Crimea.

РЕЗЮМЕ. Обсуждается валидность рода *Pulchellodromus* Wunderlich, 2012. Установлена новая комбинация: *Pulchellodromus mainlingensis* (Hu et Li, 1987) **comb.n.**, ex *Philodromus*. Впервые в Крыму зарегистрированы 2 вида рода *Pulchellodromus*: *P. medius* (O. Pickard-Cambridge, 1872) и *P. ruficapillus* (Simon, 1885). Находка *P. medius* в Крыму — самая северо-восточная точка его известного ареала. Для обоих видов приводятся диагностические рисунки, географическое распространение, биотопическая приуроченность в Крыму и фенология.

Introduction

Philodromidae Thorell, 1870 is a large family with 542 species belonging to 29 genera [Platnick, 2014]. *Philodromus* Walckenaer, 1826 is the largest genus in the family. At present, it includes 158 species, predominantly known from the Holarctic Region [Platnick, 2014].

However, *Philodromus* consists of a large number of unrelated species and indeed is a polyphyletic assemblage of the spiders characterized by similar general appearance only. Recently *Philodromus* was subdivided by Wunderlich [2012] in several distinct genera listed in the Table 1.

The genus *Pulchellodromus* Wunderlich, 2012 has not been accepted by Platnick [2014] in his World Spider Catalog and regarded as *nomen nudum* because "no type species was specified". In fact, the type species of *Pulchellodromus* was designated by Wunderlich [2012: 33], and it is *Philodromus pulchellus* Lucas, 1846. In our opinion, *Pulchellodromus* is a valid genus corresponding to the *pulchellus* species-group *sensu* Muster *et al.* [2007]. The genus was completely revised as a species-group in the scope of the Mediterranean species [Muster *et al*., 2007].

While sorting out the newly collected spider material, we have identified two *Pulchellodromus* species being new to the Crimean fauna [Kastrygina, 2014]. The main purposes of the present paper are to provide new faunistic records and diagnostic drawings for both species; and to discuss the distribution, habitat preferences and phenology of these species in the Crimea.

Material and methods

Drawings were made by means of both stereo and compound light microscopes using a grid method. Illustrations of epigynes were made after their maceration in 20% KOH water solution. All scale bars are 0.1 mm, except for general apperanced where the scale bars is 1 mm.

The morphological terminology follows Muster *et al.* [2007] with two additions (viz., *FD* and *K*). Pedipalp: *bE* — basal embolus; *Co* — conductor; *CyP* — cymbial process; *dE* — distal embolus; *PEP* — paraembolar projection of the embolus; *RTA* — retrolateral tibial apophysis; *VTA* — ventral tibial apophysis. Epigyne-vulva: *CD* — copulatory duct; *EF* — epigynal fold; *EG* — epigynal groove; *FD* — fertilization duct;

Table 1. The distinct genera included by Platnick [2014] in the paraphyletic genus *Philodromus* and their type species in original combination.
Таблица 1. Отдельные рода, помещаемые Платником [Platnick, 2014] в состав парафилетического рода *Philodromus* Walckenaer, 1826, и их типовые виды в исходной комбинации.

Genus	Type species
Artanes Thorell, 1869	*Araneus margaritatus* Clerck, 1757
Emargidromus Wunderlich, 2012	*Aranea emarginata* Schrank, 1803
Philodromimus Wunderlich, 2012	*Philodromus dispar* Walckenaer, 1826
Philodromoides Scheffer, 1904	*Philodromoides pratariae* Scheffer, 1904
Philodromus Walckenaer, 1826	*Araneus aureolus* Clerck, 1757
Pulchellodromus Wunderlich, 2012	*Philodromus pulchellus* Lucas, 1846
Rhysodromus Schick, 1965	*Thomisus histrio* Latreille, 1819
Tibellomimus Gertsch, 1933	*Tibellomimus lineatus* Gertsch, 1933

GH — glandular head; *GM* — glandular mound; *K* — keel; *MS* — median septum; *R* — receptaculum.

All specimens treated in this study have been deposited in the collection of Zoology Department, V.I. Vernadsky Taurida National University, Simferopol, the Crimea, curator M.M. Kovblyuk (TNU). In the material reported below the name of collector M.M. Kovblyuk is abbreviated as M.K.

In the following text we provide references only to the most important taxonomic publications, including books and revisions. For a complete set of taxonomic references see Platnick [2014].

Taxonomic survey

Pulchellodromus Wunderlich, 2012

Type species: *Philodromus pulchellus* (Lucas, 1846) from the Mediterranean.

DIAGNOSIS. Small spiders that can be distinguished from other philodromid genera in the following combination of characters: in males "...there is a flat, transparent *VTA* that is longer or of equal length as *RTA*, in combination with prolateral-anterior origin of the embolus and a membraneous conductor with sclerotised claw. Females are characterized by globular receptacula with relatively long copulatory ducts and distinct glandular heads" [Muster *et al.,* 2007: 47–49]. In additions, "leg II [is] not distinctly longer than I", and *CyP* (= 'retrobasal cymbial hook' *sensu* Wunderlich) is well developed [Wunderlich, 2012: 38].

DESCRIPTION. A detailed description of the genus (as a species group) was provided by Muster *et al.* [2007: 49].

COMMENTS. According to Wunderlich [2012] and Muster *et al.* [2007], the genus contains 11 species, mostly from the Mediterranean region. Only two species are distributed outside the Mediterranean: *P. medius* known from the Caucasus (Armenia and Azerbaijan), and *P. ruficapillus* recorded from Kazakhstan. Both these species have been found in the Crimea [Kastrygina, 2014; present paper]. One more species from Tibet, *Philodromus mainlingensis* Hu et Li, 1987, should undoubtedly be placed in *Pulchellodromus*, on the basis of the configuration of copulatory organs in both sexes, as illustrated by Song & Zhu [1997: f. 134A–D], Song *et al*. [1999: f. 271J, 272F], and Hu [2001: f. 195.1–4]. Therefore, *Pulchellodromus mainlingensis* (Hu et Li, 1987) **comb.n.** ex *Philodromus*, is the 12th valid species of the genus (see Table 2).

Pulchellodromus medius (O. Pickard-Cambridge, 1872)

Figs 1, 3, 5, 7, 9, 11–12.

Philodromus pulchellus: Levy, 1977: 198, f. 12–13 (♀) (misidentification).

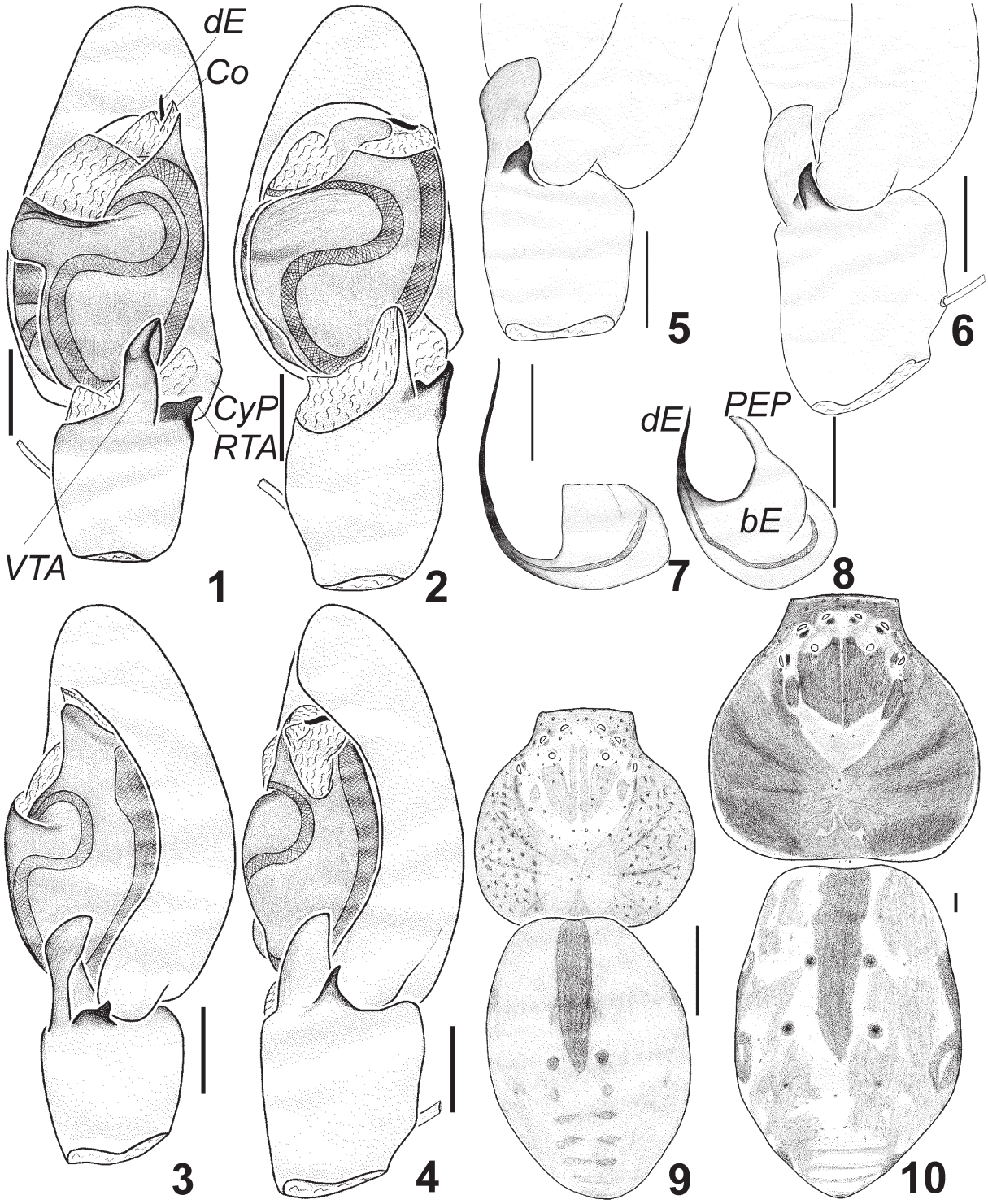
Philodromus m.: Muster *et al*., 2007: 57, f. 9, 23, 34, 45, 56, 67–68 (♂♀).

MATERIAL. UKRAINE. ***Kherson Area*:** Genichesk Distr.: 1 ♀ (TNU-3105/3), Arabatskaya strelka, 4 km S of Genichesk, 4.06.2012, N.A. Stasyuk. ***The Crimea*:** Alushta Distr.: 1 ♀ (TNU), Kanaka, 29.05.2000, M.V. Onchurov; Feodosiya Distr.: 12 ♂♂, 22 ♀♀ (TNU-1726/4, 1761/12, 1768/5, 2039/31, 2281/2, 2288/5, 2307/5, 2382/17, 2389/17, 2563/22, 2592/6, 2595/17, 3190/9, 3259/38/3, 3326/18), Karadag Nature Reserve, nr. biological station, sweeping, sifter, pitfalls, 19.07.2002–05.2013, M.K., O.V. Kukushkin, A.A. Nadolny, N.N. Yunakov; Lenino Distr.: 2 ♂♂ (TNU), environs Vulkanovka Vil. and Vulkan (Djau-Tepe) Mt., sweeping in grass, 10.05.1999, M.K.; Sudak Distr.: 2 ♂♂, 1 ♀ (TNU-2693/7), 10 km W of Sudak, nr. Mezhdurech'e Vil., in a garden, 7.06.2010, M.K. Yusufova; Yalta Distr.: 1 ♀ (TNU-3106/9), 1 km N of Nikita Vil., abandoned field, 10 pitfalls, 27.05.–3.06.2000, M.K.; 1 ♂ (TNU-2478/1), Yalta Mountain Forest Reserve, 1–1.5 km N of Nikita Vil., on grass, 13.06.2002, M.K.

DIAGNOSIS. The male palp is very similar to that of *P. ruficapillus*, but the conductor is long and triangular (compact and truncate in *P. ruficapillus*). The shape of tibial apophyses is also different. The epigyne is similar to those in *P. ruficapillus* and *P. pulchellus,* but the keel of median septum is narrow, the copulatory ducts are as long as the diameter of receptacula (the keel wide, the copulatory ducts shorter than the diameter of receptacula in *P. ruficapillus* and *P. pulchellus*) [Muster *et al*., 2007].

DESCRIPTION. The species was described by Muster *et al.* [2007].

DISTRIBUTION. The Mediterranean to the Caucasus: Portugal, Spain, France, Algeria, Italy, Tunisia, Greece, Turkey, Cyprus, Lebanon, Israel, Palestine, Armenian upland, Azerbaijan [Levy, 1997: sub *P. pul-*

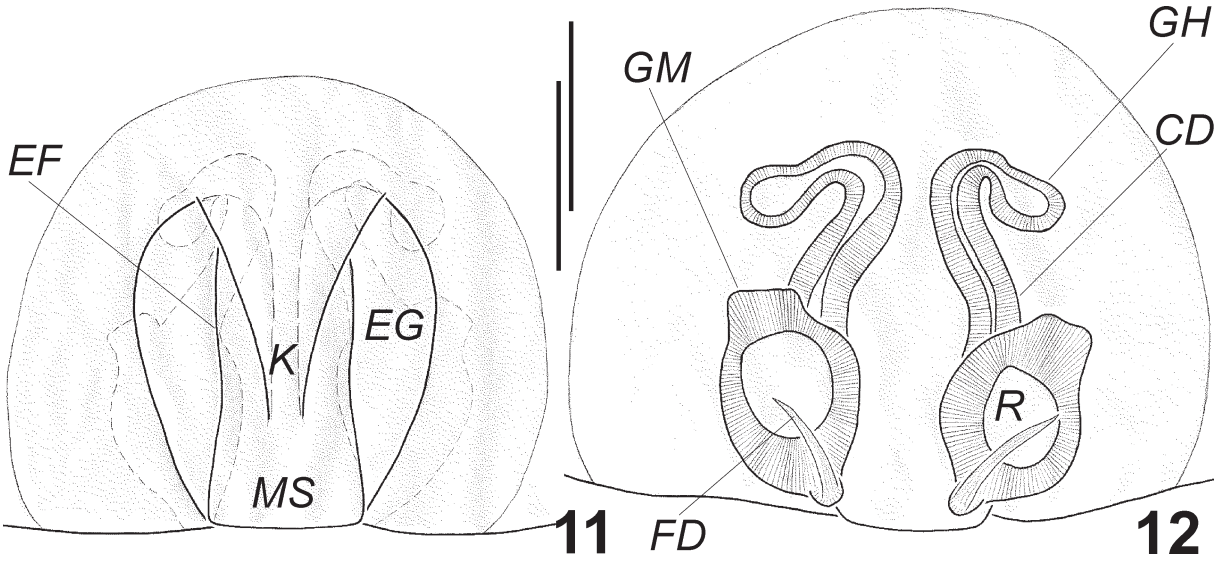


Figs 1–10. Male somatic and genitalic characters of *Pulchellodromus medius* (1, 3, 5, 7, 9) and *P. ruficapillus* (2, 4, 6, 8, 10): 1–2 — palp, ventral; 3–4 — palp, retrolateral; 5–6 — tibia, retrolateral; 7–8 — embolus, dorsal; 9–10 — habitus, dorsal. All scale bars equal 0.1 mm, except 9, where the scale bar is 1 mm.

Рис. 1–10. Соматические признаки и признаки гениталий самцов *Pulchellodromus medius* (1, 3, 5, 7, 9) и *P. ruficapillus* (2, 4, 6, 8, 10): 1–2 — пальпа вентрально; 3–4 — пальпа ретролатерально; 5–6 — голень ретролатерально; 7-8 — эмболюс дорзально; 9–10 — габитус дорзально. Масштаб 0,1 мм, кроме 9, где масштаб 1 мм.

Table 2. Valid species of *Pulchellodromus* Wunderlich, 2012 and their distribution.
Таблица 2. Валидные виды рода *Pulchellodromus* Wunderlich, 2012 и их распространение.

Species	Distribution
P. afroglaucinus (Muster et Bosmans, 2007)	Algeria
P. bistigma (Simon, 1870)	The Mediterranean
P. glaucinus (Simon, 1870)	The Mediterranean
P. lamellipalpis (Muster, 2007)	Algeria
P. mainlingensis (Hu et Li, 1987) **comb.n.**	Tibet
P. medius (O. Pickard-Cambridge, 1872)	The Mediterranean to the Caucasus
P. pardalis (Muster et Bosmans, 2007)	The Mediterranean
P. pulchellus (Lucas, 1846)	The Mediterranean
P. punctiger (O. Pickard-Cambridge, 1908)	Canary Islands
P. ruficapillus (Simon, 1885)	The Mediterranean to Kazakhstan
P. simoni (Mello-Leitão, 1929)	Spain, Algeria
P. wunderlichi (Muster et Thaler, 2007)	Canary Islands



Figs 10–11. Epigyne of *Pulchellodromus ruficapillus*: 11 — ventral; 12 — dorsal. The scale bar is 0.1 mm.
Рис. 10–11. Эпигина *Pulchellodromus ruficapillus*: 11 — вентрально; 12 — дорзально. Масштаб 0,1 мм.

chellus; Muster *et al*., 2007; Helsdingen, 2013; Mikhailov, 2013; Nentwig *et al*., 2014].

COMMENTS. This species is recorded from the Crimea for the first time. The record from the Crimea lies in the north-easternmost limit of the known species range.

HABITATS. The sub-Mediterranean forests with *Pistacia mutica, Quercus pubescens*, meadow steppes, steppes, abandoned fields, semi-deserts with *Artemisia*, mountain stony steppes.

PHENOLOGY. In the Crimea, ♂♂: V–VI, ♀♀: V–VIII, the peak activity of adults occurs in May. In Israel, ♂♂: III–IV, ♀♀: IV–V [Levy, 1997: sub *P. pulchellus*], the period of activity of adults start two months earlier than it does in the Crimea.

Pulchellodromus ruficapillus (Simon, 1885)
Figs 2, 4, 6, 8, 10.

Philodromus r.: Simon, 1932: 856, 885, f. 1306–1307 (♂).
Philodromus pulchellus: Jäger, 1995: 20, f. 3–7 (♂♀).
Philodromus r.: Muster *et al*., 2007: 64, f. 8, 22, 33, 44, 55, 65–66 (♂♀).

MATERIAL. ***The Crimea*:** Lenino Distr.: 1 ♂ (TNU), nr. Vulkanovka Vil. and Vulkan Mt., sweeping in grass, 10.05.1999, M.K.

DIAGNOSIS. The male conductor is compact and truncate, with a small retrolateral tip. The shape of the tibial apophyses is also diagnostic [cf. Muster *et al*., 2007].

DESCRIPTION. The species was described by Muster *et al.* [2007].

DISTRIBUTION. This species occurs from Portugal in the west to Kazakhstan in the east, northward as far as Austria and Hungary, and southward as Greece [Helsdingen, 2013; Mikhailov, 2013; Nentwig *et al*., 2014].

COMMENTS. This species is recorded from the Crimea for the first time.

HABITATS. The semi-desert steppe.

PHENOLOGY. In the Crimea, ♂: V.

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