Notes on the spider genus *Plesiophantes* Heimer, 1981, with the first description of the female of *P. tanasevitchi* Wunderlich, 2011 (Aranei: Linyphiidae)

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ABSTRACT. The male holotype and a previosly unknown female of *Plesiophantes tanasevitchi* Wunderlich, 2011 are described for the first time. Two new combinations are proposed: *Plesiophantes globularis* (Tanasevitch, 2011), comb.n. ex *Megalepthyphantes* Wunderlich, 1994; and *Turinyphia simplex* (Tanasevitch, 1987), comb.n. ex *Plesiophantes* Heimer, 1981. The holotypes of both *P. globularis* (\$\(\phi\)) and *P. tanasevitchi* (\$\(\phi\)), as well as a \$\(\phi\) paratype of *P. joosti* Heimer, 1981 are illustrated. The particular structure of the epigyne in the genus is briefly discussed. Taking into account new data, the genus includes three species: *P. globularis*, *P. joosti*, and *P. tanasevitchi*, being characterised by the presence of a peculiar synapomorphy termed "inflatus", an outgrowth of the back wall of the epigyne that contains twisted copulatory ducts.

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KEY WORDS: Araneae, taxonomy, new combinations, *Turinyphia*, Caucasus.

Заметки о роде пауков *Plesiophantes* Heimer, 1981 с описанием неизвестной самки *P. tanasevitchi* Wunderlich, 2011 (Aranei: Linyphiidae)

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РЕЗЮМЕ. Описаны самец и ранее неизвестная самка Plesiophantes tanasevitchi Wunderlich, 2011. Предложены две новые комбинации: Plesiophantes globularis (Tanasevitch, 2011), comb.n., перенесён из Megalepthyphantes Wunderlich, 1994; Turinyphia simplex (Tanasevitch, 1987), comb.n., перенесён из Plesiophantes Heimer, 1981. Проиллюстрированы голотипы P. globularis (♀) и P. tanasevitchi (♂), а также ♂ паратип P. joosti Heimer, 1981. Кратко обсуждены особенности структуры эпигины самок рода. С учётом новых данных род Plesiophantes насчитывает три вида: P. globularis, P. joosti и P. tanasevitchi, и характеризуется наличием синапоморфии — выростом задней стенки эпигины, содержащей скрученные семенные каналы.

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КЛЮЧЕВЫЕ СЛОВА: таксономия, новые комбинации, *Turinyphia*, Кавказ.

Introduction

The genus Plesiophantes Heimer, 1981 was established for P. joosti Heimer, 1981 based on two males from the Caucasus (Heimer, 1981). Later, based on additional male material, *P. joosti* was redescribed, with a previously unknown corresponding female newly described from Turkey (Karabulut, Türkeş, 2012). The second representative, *P. simplex* Tanasevitch, 1987, is known from both sexes from Georgia, Caucasus (Tanasevitch, 1987). The third species, P. tanasevitchi Wunderlich, 2011, was established based on the illustrations of the male palp provided by Tanasevitch (1987), who had mistakenly identified the species as *P. joosti*, but Wunderlich (2011) found to be a misidentification actually belonging to a different, new species.

During my short trip in 2025 to the Adygea Republic, Caucasus, Russia, a female sample of *Plesiophantes* sp. has been collected. The epigyne of this female is similar to that of both *P. joosti* (in the sense of Karabulut, Türkeş, 2012) and *Megalepthyphantes globularis* Tanasevitch, 2011, known from Turkey (Tanasevitch, 2011). However, the epigyne of *Plesiophantes* sp. shows some important differences from those two species (see below), this indicating the specimen does not belong to either *P. joosti* or *M. globularis*. I am inclined to think the female from Adygea actually represents a previously unknown female of *P. tanasevitchi*, originally described from a nearby area.

The present paper provides the descriptions of both sexes of *P. tanasevitchi*, as well as brief remarks and taxonomic notes concerning all representatives of the genus *Plesiophantes*.

Material and methods

This paper is based on material deposited in the Zoological Museum of the Moscow State University, Moscow, Russia (ZMMU), and in the Muséum d'histoire naturelle, Geneva, Switzerland (MHNG). The corresponding sample number and locality data are given in square brackets. Specimens preserved in 75% ethanol were studied using an MBS-9 stereomicroscope. Drawings were executed with a drawing

tube. A Levenhuk C-800 PLUS digital camera was used for taking pictures. Leg chaetotaxy is presented in a formula, e.g. TiI: 2-1-1(2)-0, which means that tibia I has two dorsal spines, one prolateral, one or two retrolateral and no ventral spines, the apical spines are disregarded. The sequence of leg segment measurements is as follows: femur + patella + tibia + metatarsus + tarsus. All measurements are given in mm. The following abbreviations are used in the text and figures: alp — anterior lobe of paracymbium; apd — anterior process of dsa; a.s.l. — above sealevel; cd — copulatory duct; d — duct; dsa — distal suprategular apophysis sensu Hormiga (2000); e embolus; edm — edge membrane of embolus; Fe femur; hcd — helical copulatory duct; in — inflatus; lpd—lower process of dsa; mm—median membrane sensu van Helsdingen (1965), = embolic membrane sensu van Helsdingen (1986), Hormiga (2000); Mt metatarsus; p—paracymbium; pl—plate; r—radix; su — suprategulum sensu Saaristo (1971); Ti — tibia; TmI — relative position of trichobothrium on the metatarsus of leg I.

Results

Class Arachnida Cuvier, 1812 Order Araneae Clerck, 1758 Family Linyphiidae Blackwall, 1859

Genus Plesiophantes Heimer, 1981

Type species: *Plesiophantes joosti* Heimer, 1981, by monotypy.

Plesiophantes joosti Heimer, 1981 Figs 1E–G; 2F.

Plesiophantes joosti Heimer, 1981: 197, figs 1–4, \Diamond , examined.

TYPE MATERIAL RE-EXAMINED. *Plesiophantes joosti*: 1 ♂ paratype (MHNG), labeled: UdSSR, Georgien, am Ufer des Sotschi-Flusses oberhalb Plastunka, leg. Joost, 7.9.1978. The correct type locality, however, is as follows: RUSSIA, Krasnodar Krai, vicinity of Sochi, above Plastunka Village, bank of Sochi River, 07.IX.1978, Joost leg.

REMARKS. *Plesiophantes joosti* Heimer, 1981 was originally described based on two males from the Krasnodar Krai, Caucasus (Heimer, 1981), while its corresponding female was described from the Artvin Province, Turkey (Karabulut, Türkeş, 2012).

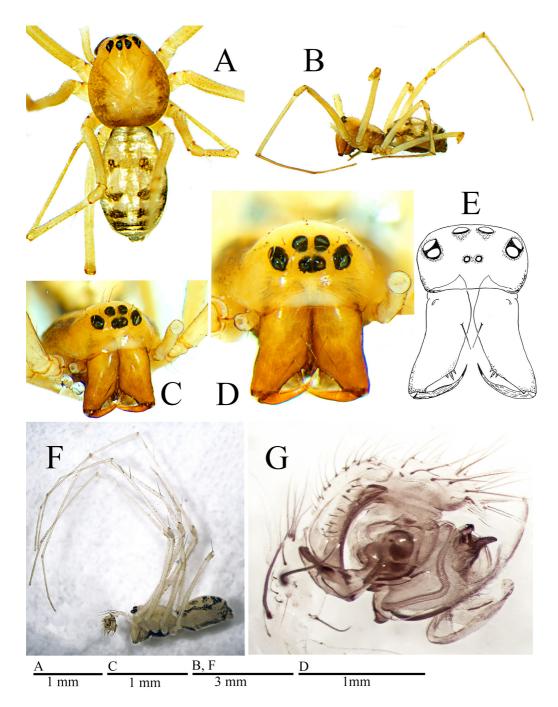


Fig. 1. *Plesiophantes tanasevitchi* Wunderlich, 2011, ♂ holotype (A–D), and *P. joosti* Heimer, 1981, ♂ paratype (E–G). A, B, F — habitus, dorsal and lateral views, respectively; C — prosoma, fronto-lateral view; D, E — prosoma, frontal view; G — right palp. Figs. E, G not to scale. Рис. 1. *Plesiophantes tanasevitchi* Wunderlich, 2011, ♂ голотип (A–D) и *P. joosti* Heimer, 1981, ♂ паратип

(E–G): A, B, F — внешний вид, соответственно вид сверху и виды сбоку; С — просома, вид сбоку и спереди; D, Е — просома, вид спереди; G — правая пальпа. Рис. E, G не в масштабе.

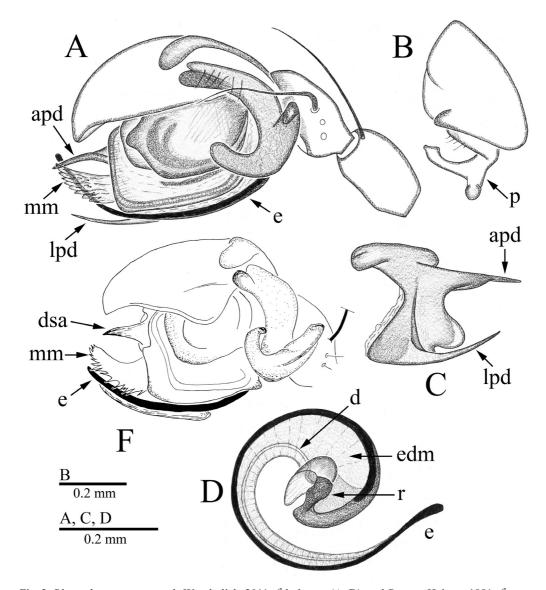


Fig. 2. *Plesiophantes tanasevitchi* Wunderlich, 2011, ♂ holotype (A–D), and *P. joosti* Heimer, 1981, ♂ paratype (F), after Heimer (1981). A, F — left palp, retrolateral view; B — cymbium and paracymbium, dorsal view; C — distal suprategular apophysis, lateral view; D — embolic division, lateral view. Fig. F not to scale. Рис. 2. *Plesiophantes tanasevitchi* Wunderlich, 2011, ♂ голотип (A–D) и *P. joosti* Heimer, 1981, ♂ паратип (F), по Heimer (1981). А, F — левая пальпа, ретролатерально; В — цимбиум и парацимбиум, вид сверху; С — дистальная супратегулярная апофиза, вид сбоку; D — эмболюсный отдел, вид сбоку. Рис. F не в масштабе.

TAXONOMIC REMARKS. The species seems to be especially similar to *P. tanasevitchi* Wunderlich, 2011, see below.

DISTRIBUTION. *Plesiophantes joosti* is presently known from the Krasnodar Krai, Russia, Caucasus (Heimer, 1981), and the Artvin Province, Turkey (Karabulut, Türkeş, 2012).

Plesiophantes tanasevitchi Wunderlich, 2011 Figs 1A–D; 2A–D; 3; 4E.

Plesiophantes joosti Heimer, 1981 sensu Tanasevitch, 1987: 323, figs 38–40, ♂, misidentification, examined.

P. tanasevitchi Wunderlich *sensu* Tanasevitch, 1990: 96, fig. 25: 25 (nomen nudum).

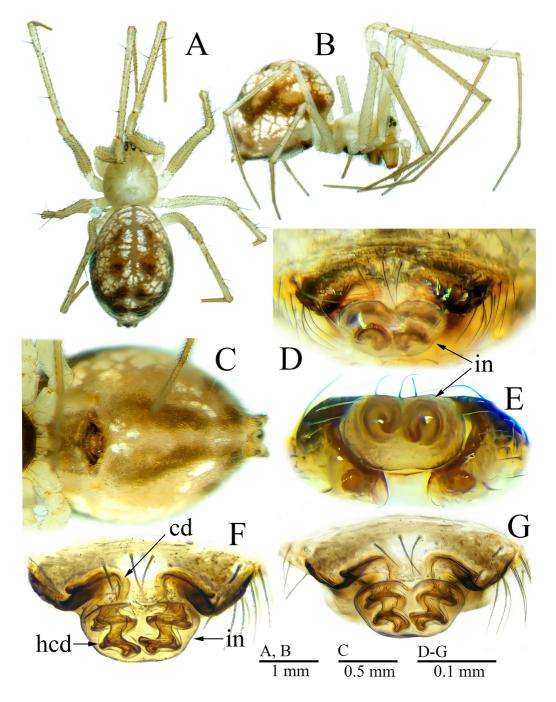


Fig. 3. Plesiophantes tanasevitchi Wunderlich, 2011, $\[\]$ from [AR1]. A, B — habitus, dorsal and lateral view, respectively; C — abdomen, ventral view; D, E — epigyne, ventral and dorsal view, respectively; F, G — cleared epigyne, ventral view.

P. tanasevitchi Wunderlich, 2011: 296, holotype designation, 3, examined.

REMARKS. A single male from the Caucasian Nature Reserve, Adygea Republic, Russia was mistakenly identified and illustrated by Tanasevitch (1987) as *Plesiophantes joosti* Heimer, 1981. Later, that male Tanasevitch (1990) incorrectly referred to it as *P. tanasevitchi* Wunderlich, 1989 (nomen nudum), and finely, based on the illustrations of the male palp (Tanasevitch, 1987), Wunderlich (2011) published the species as new: *Plesiophantes tanasevitchi* Wunderlich, 2011. Even though the male palp of *P. tanasevitchi* had been illustrated as *P. joosti* Heimer (Tanasevitch, 1987), the species had never been properly described since, while its corresponding female still remains unknown.

During my short trip in 2025 to Guzeripl, Adygea Republic, a female sample of *Plesiophantes* sp. has been collected. The structure of its epigyne is very similar to that of *P. joosti* in the sense of Karabulut, Türkeş (2012). However, the peculiar outgrowth on the epigyne (inflatus, see below) contains only two coils of the copulatory ducts, not three as in *P. joosti*. Therefore, *Plesiophantes* sp. represents a different species. I believe this female from Guzeripl is actually a corresponding and previously unknown female of *P. tanasevitchi*, which was originally described from a nearby area. A description of the male holotype of *P. tanasevitchi* and the first description of its female are provided below.

TYPE MATERIAL EXAMINED. *Plesiophantes joosti*: 1 & paratype (MHNG), RUSSIA, Krasnodar Krai, vicinity of Sochi, above Plastunka Village, bank of Sochi River, 07.IX.1978, Joost leg.; *P. tanasevitchi*: & holotype (ZMMU), designated by J. Wunderlich in April, 2011, RUSSIA, Caucasus Major, Adygea Republic, Caucasian Nature Reserve, Mt. Chugush, in grass, 1500 m a.s.l., 9.VI.1975, V. Ovtsharenko leg.

ADDITIONAL MATERIAL. 1 ♀ (ZMMU), Adygea Republic, road-km 17 from Guzeripl to Yarova Polyana, 44.009799° N, 40.001784° E, 1675–1710 m a.s.l., *Fagus* forest on steep slope, with *Abies*, sparse *Sorbus*, *Acer*, etc., fern, sifting leaf litter, 3.–7.VI.2025, A. Tanasevitch leg. [AR1].

DESCRIPTION. Male holotype. Total length 2.95. Habitus as in Fig. 1A, B. Carapace unmodified, 1.35 long, 1.15 wide, pale brown, with a broad brown margin, as in Fig. 1A. Chelicerae 0.65 long (Fig. 1C, D). Legs long and slender, pale brown to yellow, without bands. Leg I, 7.95 long (2.30 + 0.40 + 1.90 + 2.10 + 1.25), IV, 6.80 long (2.00 + 0.30 + 1.75 + 1.90 + 0.85) long. Chaetotaxy: FeI: 0-1-0-0, II-IV: 0-0-0-0; TiI-II, III: 2-1-0-0, IV—?; MtI-IV: 1-0-0-0. TmI—?, TmII—0.19, TmIII—0.17. Mt IV without trichobothrium. Palp (Fig. 2A—D). Cymbium proximally with a transverse bulge in its basal half. Proximal part of paracymbium slender and slightly curved. Distal part of paracymbium elongated in transverse direction: its

anterior lobe almost straight, posterior lobe curved apically. Distal suprategular apophysis massive, complex in shape. Median membrane well-developed, with a serrate edge. Radix very small, embolus long, making a loop, slightly broadened apically. Edge membrane of embolus very broad proximally, tapering distad. Abdomen 1.65 long, 1.00 wide, dorsal pattern as in Fig. 1A.

Female from Adygea [AR1]. Total length 2.90. Habitus as in Fig. 3A, B. Carapace unmodified, 1.00 long, 0.90, wide, yellow, with grey radial stripes. Chelicerae 0.55 long. Legs pale yellow, without bands. Leg I, $6.40 \log (1.75 + 0.40 + 1.70 + 1.65 + 0.90)$, IV, $5.10 \log (1.55 + 0.30 + 1.20 + 1.35 + 0.70) \log$. Chaetotaxy: FeI: 0-1-0-0, II-IV: 0-0-0-0; TiI: 2-1-1(2)-0, II: 2-1-1-0, III-IV: 2-1-0-0; MtI-IV: 1-0-0-0, TmI 0.23. MtIV without trichobothrium. Abdomen 2.00 long, 1.40 wide, dorsal pattern as in Fig. 3A. Epigyne (Figs 3D–G; 4E) with a broad cavity, showing in its posterior part a swollen outgrowth of epigynal back wall, termed "inflatus" thereafter. Copulatory ducts passing along the middle of the back wall of the cavity, to enter the inflatus, where copulatory ducts twist into a helix, making 2 complete coils each. Posterior median plate not clearly expressed. Receptacles oval.

TAXONOMIC REMARKS. *Plesiophantes tanasevitchi* is similar to *P. joosti*. The male differs by the shape of the prosoma in the frontal view (Fig. 1C, D cf. Fig. 1E), by much shorter legs (Fig. 1B cf. Fig. 1F), the straight or slightly curved anterior lobe of the distal part of the paracymbium, *vs.* hook-shaped in *P. joosti* (Fig. 2A cf. Figs 1G, 2F), as well as by the longer and thinner anterior process of the distal suprategular apophysis (Fig. 2A, C cf. Figs 1G, 2F). The female is distinguished by the presence of two complete coils of the copulatory ducts entering the inflatus, *vs.* three in *P. joosti* (Figs 3D, F, G; 4E cf. fig. 2J in Karabulut, Türkeş, 2012).

Copulatory ducts being exposed in external structures of the epigyne is common in the subfamily Micronetinae in the sense of Saaristo, Tanasevitch (1996). This external epigynal structure contains copulatory ducts termed in micronetines the scapus (= scape). The scapus is characterized by its particular structure, and the term cannot be applied to non-micronetines. The epigyne that has an inflatus with twisted copulatory ducts seems to be an apomorphy of the genus, so far likely to be unique in Linyphiinae.

NB. The structure of the male palp of *P. joosti* as illustrated in Karabulut & Türkeş (2012) is very similar to that of *P. tanasevitchi* (fig. 2L, M in Karabulut, Türkeş, 2012 cf. Fig. 2A, D), while the female of the Turkish *P. joosti* shows clear differences, namely, in possessing three complete coils of the copulatory ducts within the inflatus, *vs.* two in *P. tanasevitchi* (Fig. 3D, F, G cf. fig. 2J in Karabulut, Türkeş, 2012).

DISTRIBUTION. The species is known from the Caucasian Nature Reserve (Tanasevitch, 1987,

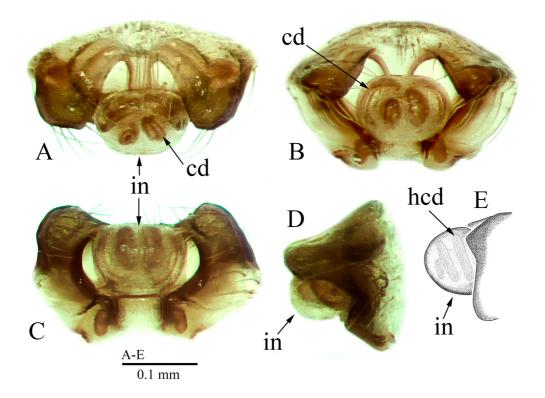


Fig. 4. Epigyne of *Plesiophantes globularis* (Tanasevitch, 2011), comb.n., ♀ holotype (A–D), and *P. tanasevitchi* Wunderlich, 2011, ♀ from [AR1] (E). A, B — ventral view, different aspects; C — dorsal view; D, E — lateral view.

Рис. 4. Эпигина *Plesiophantes globularis* (Tanasevitch, 2011), comb.n., ♀ голотип (A–D) и *P. tanasevitchi* Wunderlich, 2011, ♀ из [AR1] (E). А, В — вид снизу, разные аспекты; С — вид сверху; D, Е — вид сбоку.

as *P. joosti*), and the environs of Guzeripl, Adygea Republic, northern Caucasus, Russia.

Plesiophantes globularis (Tanasevitch, 2011), comb.n.
Fig. 4A–D.

Megalepthyphantes globularis Tanasevitch, 2011: 72, figs. 77-81, \mathcal{Q} , examined.

TYPE MATERIAL EXAMINED. *Megalepthy-phantes globularis*: 1 ♀ holotype (MHNG), Turkey, Artvin Province, Cankurtaran Geçidi, between Borçka and Hopa, 700 m a.s.l., under stones, 08.VI.1986, leg. C. Besuchet, I. Löbl & D. Burckhardt.

REMARKS. Plesiophantes globularis was originally described in Megalepthyphantes Wunderlich, 1994, based on a single female in from Cankurtaran Geçidi, Artvin Province, Turkey (Tanasevitch, 2011). The somatic characters and the particularly structure of the epigyne of Megalepthyphantes globularis are similar to those of both P. joosti (in the sense of Karabu-

lut, Türkeş, 2012) and *P. tanasevitchi* in possessing an inflatus that contains twisted copulatory ducts. The similarity of the somatic and genital characters of *M. globularis* to *P. joosti* (the type species), as well as the obvious differences in the epigynal structure as compared to representatives of *Megalepthyphantes* and the subfamily Micronetinae (*sensu* Saaristo, Tanasevitch, 1996) as a whole, indicates that the species belongs to the genus *Plesiophantes*: *Plesiophantes globularis* (Tanasevitch, 2011), comb.n.

TAXONOMIC REMARKS. The female of *Plesiophantes globularis* is similar to *P. joosti* and *P. tanasevitchi*. *Plesiophantes globularis* differs from both other congeners by the arrangement of the copulatory ducts into the inflatus, *vs.* helicoid. It also differs from *P. tanasevitchi* by the shape of the epigyne in lateral view (Fig. 4D cf. Fig. 4E). The male sex of *P. globularis* is still unknown.

DISTRIBUTION. *Plesiophantes globularis* is only known from its type locality, the Artvin Province, Turkey (Tanasevitch, 2011).

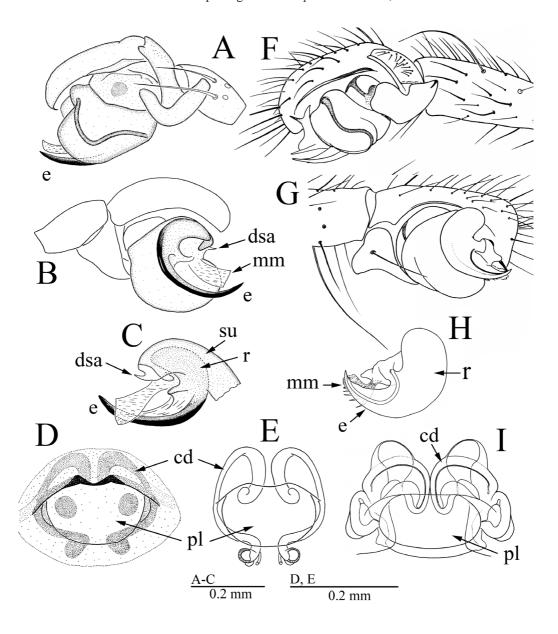


Fig. 5. *Turinyphia simplex* (Tanasevitch, 1987), comb.n., ♂ holotype (A–E), after Tanasevitch (1987) and *T. clairi* (Simon 1884) (F–I), after van Helsdingen (1982). A, B, F, G — left palp, A, F, retrolateral view, B, G, prolateral view; C — suprategulum and embolic division, lateral view; H — embolic division, lateral view; D — epigyne, ventral view; E, I — vulva, ventral view. Figs. F–I not to scale. Рис. 5. *Turinyphia simplex* (Tanasevitch, 1987), comb.n., ♂ голотип (А–Е), по Tanasevitch (1987) и *T. clairi* (Simon 1884) (F–I), по van Helsdingen (1982). A, B, F, G — левая пальпа, A, F, ретролатерально, B, G, пролатерально; С — супратегулюм и эмболюсный отдел, вид сбоку; Н — эмболюсный отдел, вид сбоку; D — эпигина, вид снизу; E, I — эндогина, вид снизу. Рис. F–I не в масштабе.

Turinyphia simplex (Tanasevitch, 1987), comb.n.
Fig. 5A–E.

Plesiophantes simplex Tanasevitch, 1987: 324, figs 41–45, \mathcal{J} , \mathcal{Q} , examined.

REMARKS. The species was described based on both sexes from Georgia, Caucasus.

TYPE MATERIAL EXAMINED. *Plesiophantes simplex*, paratypes (ZMMU): $1 \circlearrowleft$, GEORGIA, Adjara, Batumi, *Rhododendron* forest, 18.VIII.1981, D. Logunov leg.; $1 \circlearrowleft$, $1 \circlearrowleft$, Kintrish State Nature Reserve, Zeraboseli, 450–600 m a.s.l., 1.–3.VI.1981, S. Golovatch & J. Martens leg.; $4 \circlearrowleft$, Kintrish State Nature Reserve, Zeraboseli, 800 m a.s.l., *Rhododendron* thicket, litter, 13.X. 1981, S. Golovatch leg.

TAXONOMIC REMARKS. Plesiophantes simplex was originally assigned to the genus Plesiophantes only on the basis of the structural similarity of the male palp to P. joosti. The epigyne shows a completely different structure and is characterized by the absence of an inflatus containing twisted copulatory ducts. The epigynal cavity is covered by a plate of unclear origin.

Comparing the somatic characters and the structure of the genitalia of *P. simplex* with representatives of the genus *Turinyphia* van Helsdingen, 1982, shows their complete congruence with the type species, *T. clairi* (Simon 1884), known from Alps (Fig. 5A–E cf. Fig. 5F–I). Thus, *Plesiophantes simplex* is to be considered as belonging to the genus *Turinyphia: Turinyphia: 5F–H). The species is similar to <i>T. clairi*, but differs by a shorter palpal tibia, a narrow distal part of the paracymbium, and a thinner embolus in the male (Fig. 5A–C cf. Fig. 5F–H). The female is distinguished by the ordinary arrangement of the copulatory ducts, *vs.* complex in *T. clairi* (Fig. 5D, E cf. Fig. 5I).

DISTRIBUTION. Adjara, Georgia, Caucasus (Tanasevitch, 1987).

Conclusion

Taking the above new information into account, the genus *Plesiophantes* Heimer, 1981 presently includes three species: *Plesiophantes globularis* (Tanasevitch, 2011), *P. joosti* Heimer, 1981, and *P. tanasevitchi* Wunderlich, 2011. All congeners are similar in habitus and in the structure of the secondary genital organs. The genus seems to be related to *Turinyphia* van Helsdingen, 1982, but is characterised by the presence of a peculiar synapomorphy termed "inflatus", an outgrowth of the back wall of the epigyne that contains twisted copulatory ducts.

The genus shows the Caucasian – East Anatolian pattern of distribution.

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Compliance with ethical standards

CONFLICT OF INTERESTS: The author declares that he has no conflicts of interest.

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