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A Review of the Species of *Aphelinus* Dalman, 1820 (Hymenoptera: Aphelinidae) from Georgia

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ABSTRACT

The aphelinid genus *Aphelinus* Dalman is defined by means of a brief diagnosis. Two species (*A. babaneuri* Japoshvili and *A. yasnoshae* Japoshvili) are described as new. Distribution, synonyms and host information, where available, are given for each species treated. A key to the females of all 14 known Georgian species is provided.

Key words: Aphelinus, Fauna, Key, Aphelinidae, New species, Georgia.

INTRODUCTION

Among the Hymenoptera Parasitica, the Aphelinidae (Chalcidoidea) represents an interesting group including 32 genera and a little over a thousand species (Hayat, 1998). Members of the Aphelinidae are parasitoids of Hemiptera, Orthoptera, Hymenoptera, Diptera, and Lepidoptera. A majority of the species are parasitic upon Hemiptera in the families of Coccoidea, Aleyrodoidea and Aphidoidea (Yasnosh, 1995). Several species have been successfully used, even recently, in classical biocontrol projects (Nikolskaya & Yasnosh, 1966; Chervonenko, 1997; Viggiani, 2004).

Genus *Aphelinus* are parasitoids of a group of sap-sucking insects belonging to the superfamily Aphidoidea (Hemiptera). The economic importance of Aphids is quite considerable on all kind of plants. They damage many horticultural, forest and fruit plants. Aphids are the cause of leaf distortion and flagging terminals. Infested plants have reduced growth and vigour. With severe infestations, leaf yellowing and twig dieback may occur. Species of *Aphelinus* have been used against many aphid pests, most successfully *Aphelinus mali* for biological control of *Eriosoma lanigerum*, the apple woolly aphid (Nikolskaya & Yasnosh, 1966; Yasnosh, 2002).

The genus *Aphelinus* Dalman 1820 with more than 80 described species, is distributed worldwide with 33 species known from Europe (Noyes, 2009). Prior to our studies 12 species of this genus were known from Georgia.

The material examined was collected different years between 1994-2006 by the first author. Also samples from V. Yasnosh's collection, Georgian Institute of Zoology collection, L. Kanchaveli Plant Protection Institute of Georgia collection and The Natural History Museum collection, London, UK (BNHM) were examined. Terminology follows that of Nikolskaya & Yasnosh (1966), Graham (1976) and Yasnosh (1963-2002). Here should be noted that during the first author's visit to the Museum of Institute of Zoology, St. Petersburg in April 2003 he could not find types of *Aphelinus* spp. described by Yasnosh, although she was sending all types to there. The present studies had to be limited by the existing material in Georgia and by Prof. Dr. Yasnosh's consultations.

Abbreviations used in the text include: AOL, distance between posterior and anterior ocelli; DAO Diameter of Anterior ocellus, DPO Diameter of posterior ocelli, EL, maximum eye length; F1, F2, etc., first funicle segment, second funicle segment, etc.; FV, minimum frontovertex width; HW, maximum head width; MSL, length of mesoscutum; OOL, ocular-ocellar line (=the shortest distance between posterior ocellus and adjacent eye margin); OCL, occipital-ocellar line (= the shortest distance between each posterior ocellus and occiputal margin); POL, posterior ocelar line (= the shortest distance between the posterior ocelli).

Aphelinus **Dalman, 1820**

Aphelinus Dalman, 1820: 181. Type species *Entedon abdominalis* Dalman, by original designation.

Diagnosis: Body colour varies from dark brown to yellow. Head width equal to or slightly wider than thorax. Mandibles with one tooth and truncation. Palpi maxilare two segmented and palpi labialis one segmented. Antennae six segmented, with three funicular segments. First two flagellar segments shorter than third segment. Thorax slightly longer then wide. Mesoscutum covered by setae and with pair of long setae at apex. Scutellum shorter than mesoscutum. Forewings 2-2.5x as long as wide. Marginal vein as long as or slightly shorter than submarginal. Stigmal vein very short almost sessile and postmarginal vein not developed. Legs with five tarsal segments. Midtibial spur as long as or slightly shorter than tarsus first tarsal segment. Ovipositor very slightly exerted. Hypopygium reaching apex of gaster.

Key to females of Georgian species of *Aphelinus*

1. Brachypterous: tip of forewing, when the latter is laid back, not reaching apex of gaster……..…..…*asychis* Walker

- Macropterous: tip of forewing, when the latter is laid back, reaching beyond apex of gaster……..……..……2

2. Body wholly yellow ……*subflavescens* (Weswood)

- Body with dark parts ……..……3

3. Costal cell of forewing with only one complete row of hairs or without ……....4

- Costal cell of forewing with two or three complete rows of hairs……5

4. Hind ocelli larger, separated by less than their own major diameter from the orbits of eyes, antenna with third funicular segment almost quadrate, F2 slightly longer than F3…….. ……..*abdominalis* Dalman

- Hind ocelli very small, separated by more than their own major diameter from the orbits of eyes, antenna with third funicular segment slightly longer than broad, F2 almost as long as F3 ……..….. *asychis* Walker

5. Legs, including fore and mid coxae and usually the distal part of the hind coxae, also the antennae, yellow……....……*flaviventris* Kurdjumov

- Legs mostly dark brown (almost black) ……..….6

6. All the femora broadly, or mainly dark brown……*brunneus* Yasnosh

- At least hind femora entirely yellow or very slightly infuscated in the middle……...7

7. Fore wing, just basad of the speculum, with only one complete line of hairs, second line extends at most half way down……..*mali* (Haldeman)

- Fore wing, just basad of the speculum, with more numerous hairs in two or more lines, second line extends at least three quarters of the way down ……8

8. At least the mid femora slightly infuscate medially ……..….9

- All the femora entirely yellow ……..…….. 10

9. Fore wings basad of speculum (from basal part of wing until to linea calva) with one complete and 2-3 incomplete lines of hairs……..……*chaonia* Walker

- Fore wings basad of speculum with 5-6 complete lines of hairs..... .....*fusciscapus* (Förster)

10. Hind tibia yellow ……11

- Hind tibia more or less infuscate ……12

11. Pedicel at most 2x as long as third funicular segment and slightly wider than long …… *atriplicis* Kurdjumov

- Pedicel slightly less then 3x as long as third funicular segment and slightly longer than wide ……..……..……*kurdjumovi* Mercet

12. F1 and F2 together slightly less then ½ as long as pedicel ……..*hordei* Kurjumov

- F1 and F2 together almost ⅔ as long as pedicel ……..……..……13

13. Clava at least 3x as long as wide ……..……*yasnoshae* Japoshvili sp. n.

- Clava at most 2.5x as long as wide ……..14

14. Marginal vein of fore wings shorter then submarginal ....*babaneuri* Japoshvili sp.n.

- Marginal vein of fore wings at least as long as submarginal ……..…*varipes* Förster

***Aphelinus abdominalis* (Dalman, 1820)** (= *Aphelinus alius* Yasnosh, *A. bicolour* Yasnosh) (Yasnosh, 2002)

Diagnosis: Body black with at least lower face, sometimes the whole head yellowish; base of gaster reddish-yellow, sometimes also the ventral surface, legs varying from entirely yellow to moderately infuscated. Scape almost five times as long as wide.

Hind ocelli larger, separated by less than their own major diameter from the orbits of eyes, antenna with third funicular segment subquadrate, F2 slightly longer than F3. Fore wings with 6-12 hairs on the basal vein, with 2-3 setae bellow basal vein and with 4-6 lines of long hairs composing the delta area basad of the speculum. Costal cell of fore wings with only one complete row of hairs, the cell slightly shorter than the marginal vein.

Distribution: Argentina, Australia, Austria, Azerbaijan, Belgium, Brazil, Channel Islands (UK), Chile, Croatia, Czech Republic, Germany, Denmark, France, Georgia, Hungary, India, Ireland, Iraq, Italy, Japan, Kazakhstan, Pakistan, Poland, Russia, Slovakia, Spain (incl. Canary Islands), Switzerland, Sweden, South Africa, UK, Zimbabwe and Yugoslavia (Federal Republic) (Japoshvili & Abrantes, 2006).

Material examined: Achara, Matskvalta, Western Georgia, 9.VIII.1953, 2 females, 6 males; Oladauri, Western Georgia, 17.VIII.1953, 2 females, 4 males, V. Trjapitzin.

Host insects: *Acyrthosiphon caraganae, A. papaverinum, A. pisum, A.* sp*., Aphis craccivora, A. fabae, A. gossypii, A. spiraecola, A. viburni, Aphis* sp., *Corylobium avellanae, Dysaphis reaumuri, Ericaphis* sp., *Hyalopterus arundinis, H. pruni, Lipaphis erysimi, Macrosiphoniella pulvera, Macrosiphum euphorbiae, M. funestum, M. rosae, M.* sp., *Metopolophium dirhodum, Myzus ascalonicus, M. persicae, M.* sp., *Neomyzus* sp., *Rhopalosiphum maidis, R. padi, Schizaphis graminum, Sitobion avenae, Thelaxes dryophila, Toxoptera aurantii, T. graminum* and *Wahlgreniella ossiannilssoni* (Hemiptera: Aphididae) (Japoshvili & Abrantes, 2006).

Remarks: Costal cell of *A. alius* with two complete rows of hairs according to Yasnosh's description (Yasnosh, 1963).

***Aphelinus asychis* Walker, 1839**

Diagnosis: Body black or with the gaster more or less brown, reddish or reddish-yellow, legs reddish more or less extensively infuscated. Scape almost 6 times as long as wide. Hind ocelli very small, separated by more than their own major diameter from the orbits of eyes, antenna with third funicular segment longer than width, F2 slightly longer than F1. Fore wings with 1-6 hairs on the basal vein and with 3-4 lines of long hairs composing the delta area basad of the speculum. Costal cell of fore wings with only one complete row of hairs, the cell slightly shorter than the marginal vein.

Material examined: Achara, Gonio, Western Georgia, 14.VI.1958, 4 females, V. Trjaptzin.

Distribution: Angola, Argentina, Australia, Azerbaijan, Brazil, Chile, China, Colombia, Croatia, Czech Republic, Finland, France, Greece, Georgia, Germany, Hungary, India, Iran, Iraq, Ireland, Israel, Italy, Japan, Kazakhstan, Morocco, Mexico, Nepal, Pakistan, Russia, Slovakia, South Africa, Spain (incl. Canary Islands), Sweden, Turkey, Ukraine, UK and USA (Japoshvili & Abrantes, 2006).

Host insects: In Georgia Ex M*yzus persicae* (=*Myzodes persicae, Macrosiphum convolvuli*) (Noyes, 2007; Remaudiere & Remaudiere, 1997). Agromyzidae (unspecified), *Phytomyza atricornis* (Diptera: Agromyzidae); *Acyrthosiphon* sp., *A. kondoi, A. pisum, Aphis chloris, A. citricola, A. craccivora, A. gossypii, A. helianthi, A. nerii, A.* sp., *Aulacorthum solani* (=*Myzus convolvuli, Macrosiphum convolvuli*) (Hille

Ris Lambers, 1949), *Brachycaudus persicae, Brachycolus korotnevi* (Shaposhnikov, 1964), *Brevicoryne brassicae, B.* sp., *Chaetosiphon fragaefolii, Diuraphis noxia* (=*Brachycolus noxius*) (Blackman & Eastop, 2000), *Diuraphis* sp., *Elatobium abietinum, Holcaphis tritici* (= *Diuraphis tritici*) (Jensen et al., 2009), *Hyperomyzus lactucae, Lipaphis erysimi, Lipaphis* sp., *Macrosiphoniella* sp., *Macrosiphum* sp., *M. euphorbiae, Megoura viciae, Metopolophium dirhodum, M. festucae, Myzaphis* sp., *M. rosarum, Myzus ornatus*, (Blackman & Eastop, 1994), *M*. sp., *Nasonovia ribisnigri, Neomyzus* sp., *Rhopalosiphum maidis, R. padi, Sipha* (= *Rungsia*) *maydis* (Blackman & Eastop, 2000), *S. flava, S. glyceriae, Schizaphis graminum, S.* sp., *Sitobion avenae* (= *Macrosiphum avenae*) (Blackman & Eastop 2000), *Therioaphis maculata, T. trifolii, Toxoptera citricidus, Uroleucon* (= *Dactynotus*) *helianthicola* (Remaudiere & Remaudiere, 1997; Japoshvili & Abrantes, 2006).

***Aphelinus atriplicis* Kurdjumov, 1913**

(*A. transversus* Thomson, 1876)(misidentification)(Yasnosh, 2002)

Diagnosis: Body black with at most base of gaster and apex reddish, legs entirely yellow with coxae brown. Scape almost 4 times as long as wide. Antenna with third funicular segment slightly wider than lengh. Fore wings with 6-12 hairs on the basal vein and with 3-5 lines of long hairs composing the delta area basad of the speculum. Costal cell of fore wings with two or three complete rows of hairs, the cell fully as long as or even slightly longer than the marginal vein (Nikolskaya & Yasnosh, 1966).

Material examined: Not available in the collections of Georgian Institutions.

Distribution: Georgia, Hungary, Russia and Ukraine (Noyes, 2009).

Host insect: *Hayhurstia atriplicis*.

***Aphelinus brunneus* Yasnosh, 1963**

Diagnosis: Body dark brown. Legs brown with yellow apical part of fore and middle femora, fore tibia and first tarsal segments. Antenna brown. Scape less than four times as long as wide. Antenna with third funicular segment slightly wider than long, F2 slightly longer than F1. Fore wings with 1-6 hairs on the basal vein and with 1-3 lines of long hairs composing the delta area basad of the speculum. Costal cell of fore wings with two or three complete rows of hairs, the cell as long as or even slightly longer than the marginal vein.

Material examined: Tbilisi, Eastern Georgia, 9.VI.1954, 1 female, (V.Yasnosh), Borjomi, Southern Georgia, 17.VII.1958, 1 female, (V. Trjapitzin).

Distribution: Georgia.

Host insects: *Brachycaudus cardui, Hyadaphis passerinii, Uroleucon sp.* (= *Dactynotus*) (Akhvlediani, 1974).

Remarks: *A. brunneus* was described only from females from Georgia. Then Akhvlediani (1974) reared this species from some different aphids and described the male *A. brunneus* as closely related to *A. daucicola* Kurd. As Yasnosh clearly differentiated two close species by some morphological structures and coloration both species must remain valid (Yasnosh, 2002).

***Aphelinus babaneuri* Japoshvili sp. n.** (Fig. 1. a, b, c, d)

Diagnosis: Length of body 0.94 mm, excluding ovipositor 0.92 mm (CPD).

Head completely dark brown; antenna yellow with very slight almost unnoticeable infuscation. Thorax dark brown with metallic reflection. Tegula dark but not as dark as thorax. Gaster basal 1/3 yellow and rest light brown. Mesoscutum with short dark setae and a pair of long setae at the apex, scutellum with two pair of long setae. Fore wings hyaline. Legs yellow, only mid and hind coxae dark; hind tibia with very slight infuscation.

Head slightly shiny. Ocelli forming an angle of about 100º. Antenna with apex of clava more or less rounded. Eye reaching occipital margin; upper temple rounded in facial view. Eye margins on the face curved. Scrobes moderately deep, U-shaped. Antennal torulus separated from mouth margin by about 2x its own length.

Relative measurements on slides: HW 36, FV 15, POL 10, AOL 6, DPO 1.5, DAO 1.5, OOL 2, OCL 1, EL 18, MSL 12.

The new species is most closely related to *A. abdominalis*, but differs by the following morphological characters: costal cell with two lines of setae; in *A. abdominalis* the costal cell with one line of setae; in front of linea calva (basad of the speculum) there are hardly more then 35 setae, less than 45; in *A. abdominalis* in front of linea calva there are more then 45 setae; clava 3x as long as F3, while those of *A. abdominalis* clava 3.5x as long as F3; only 2/3 part of scutellum is covered by setae and pair of long setae are slightly further from the apex, while the entire scutellum of *A. abdominalis* is covered by setae and the pair of long setae are on the top of the scutellum.

Material examined: Holotype: Georgia: Babaneuri, on the grass near Zelkova (*Zelkova carpinifolia*) woodland, 16.VI.1997, 1 female, G.Japoshvili (Slides).

Holotype designed to the Institute of Zoology, Georgian Academy of sciences (IZGAS).

Host: unknown.

***Aphelinus chaonia* Walker, 1839**

Diagnosis: Body black or with the gaster more or less brown, antennae yellow, with infuscated scape and partially pedicel. Legs brown, with fore and mid femora apically part yellow, hind femora yellow, apical part of fore tibia and midtibia yellow. Scape almost 5 times as long as wide. Antenna with third funicular segment subquadrate. Clava 3x as long as F3. Fore wings with 1-6 hairs upon the basal vein and with 2-4 lines of long hairs composing the delta area basad of the speculum, one line is complete among them. Costal cell of fore wings with two or more row of hairs, the cell almost as long as marginal vein.

Material examined: Achara, Batumi, 25.VIII.1953, 24.VI.1958, 1 female, 2 males; 27.V-13.VI. 1958, 1 female; Lagodekhi, 20.VI. 1956, 1 female; Tbilisi, 2.VII.1958, 1 female; Mtskheta, 21.VII.1959, 26.VII.1960, V. Yasnosh, 3 females, 1 male; Telavi, 21.V.1961, 5 females; Sagarejo, 31.VII.1961, 1 female; Lagodekhi 2-13.VI.1971 ex *Aphis fabae* on *Leucanthemum matsima*, 2 females; Kazbegi 26.VI.-8.VII.1971 4 females ex *Aphis idaei* on *Rubus idaeus*; Lagodekhi 1 female ex *Aphis craccivora* on *Acacia*; Lagodekhi, 1 female, ex *Aphis punicae* on *Punica granatum* 4-15.VII.1971; Lagodekhi, 1 female ex *Aphis ruborum* on *Rubus*, 11-12.VII.1971; Lagodekhi, 10 females, ex *Dysaphis affinis* on *Malus* 11-16.VII.1971; Lagodekhi, 3 females, ex *Aphis gossypii* on Rosa 5.VII-20.X.1971 M. Akhvlediani; Bakuriani, 12.VII.1958, 2 females, V. Trjapitzin.

Distribution: Austria, Azerbaijan, Brazil, Chile, China (incl. Hong Kong), Croatia, Czech Republic, Germany, France, Georgia, Hungary, Ireland, Lithuania, Pakistan, Poland, Russia, Slovakia, Spain, Sweden, Turkey, Ukraine, UK, USA and Yugoslavia (Federal Republic) (Japoshvili & Abrantes, 2006).

Host insects: In Georgia Ex *Aphis craccivora, A. fabae, A. gossypii, A. idaei, A. punicae, A. ruborum, Dysaphis affinis.* Also ex *A. euonymi, A. sambuci, A. spiraecola, A. taraxacicola, Aphis* (= *Doralis*) *sp.* (Shaposhnikov, 1964), *Brachycaudus helichrysi, Dysaphis sp., Hayhurstia atriplicis* (= *Semiaphis atriplicis*) (Miller & Stoetzel, 2005), *Phorodon sp., Ovatus crategarius* (= *Phorodon crataegaria*) (Blackman & Eastop, 1994), *Rhopalosiphum padi, Toxoptera aurantii, T.* sp. (Japoshvili & Abrantes, 2006).

***Aphelinus flaviventris* Kurdjumov, 1913**

Diagnosis: Body black, gaster bright yellow, with brown terminal tergites and middle sternites. Antennae yellow. Legs yellow. Scape almost 4 times as long as wide. Antenna with third funicular segment subquadrate. Clava 3x as long as F3. Fore wings with 1-6 hairs on the basal vein and with 2-4 lines of long hairs composing the delta area basad of the speculum, one is complete among them. Costal cell of fore wings with two or more rows of hairs, the cell slightly shorter then marginal vein.

Material examined: Dedoplis tskaro, Pantishara, Eastern Georgia, on *Phragmites communis,* 25-29.V.1971, 1 female, M. Akhvlediani.

Distribution: Azerbaijan, Croatia, Czech Republic, France, Georgia, Hungary, Kazakhstan, Moldova, Romania, Spain, Sweden, UK (excl. Northern Ireland), USA, Yugoslavia (Federal Republic) (Noyes, 2007).

Host insects: *Hyalopterus pruni* (Akhvlediani, 1981), *Hyalopterus* sp., *Macrosiphoniella pulvera, Macrosiphum euphorbiae* (Noyes, 2007).

***Aphelinus fusciscapus* (Förster, 1841)**

Diagnosis: Body black, lower face except genae yellow; base of gaster reddish-yellow, sometimes also the ventral surface, legs yellow, with infuscated mid and hind coxae, mid and hind femora partially and tibia and last segment of tarsus. Scape almost 5 times as long as wide. Antenna with third funicular segment quadrate or slightly longer than wide. Clava almost 4x as long as F3. Fore wings with 2-3 setae below basal vein and with 4-6 lines of long hairs composing the delta area basad of the speculum. Costal cell of fore wings with only one complete row of hairs, the cell slightly longer than the marginal vein.

Material examined: Achara, Mtsvane kontski, Western Georgia, 25-29.V.1953, 8.V-21.VI. 1958, 18 females, 1 male; Keda, Western Georgia, 29.V.1958, 1 male, V. Trjapitzin.

Distribution: Azerbaijan, Georgia, Germany, Hungary (Noyes, 2007).

Host: Unknown.

***Aphelinus hordei* Kurdjumov, 1913**

Diagnosis: Body black; antenna yellow; legs yellow, with infuscated coxae, hind, sometimes mid tibia and last tarsal segment. Scape almost 3 times as long as wide. Antenna with third funicular segment subquadrate. Clava almost 3x as long as F3.

Fore wings with 2-3 setae below basal vein and with 2-5 lines of long hairs composing the delta area basad of the speculum. Costal cell of fore wings with two complete rows of hairs, the cell almost as long as marginal vein.

Material examined: Achara, Kakhaberi, Western Georgia, 19.V.1958, 1 female, 2 males, (V. Trjapitzin).

Distribution: Australia, Georgia, South Africa, Ukraine, USA (Noyes, 2007).

Host insects: *Acyrthosiphon pisum, Brachycolus* korotnewi, *B. noxius, Diuraphis noxia* (Noyes, 2007).

***Aphelinus kurdjumovi* Mercet, 1930**

Diagnosis: Body black; gaster with reddish-yellow base; legs yellow, with black coxae and last segment of tarsus. Fore coxae some times pale. Scape almost 5 times as long as wide. Antenna with third funicular segment slightly longer than wide. Clava almost 3x as long as F3. Fore wings with 3-5 lines of long hairs composing the delta area basad of the speculum. Costal cell of fore wings with only one complete row of hairs, the cell almost 1.5x as long as marginal vein.

Material examined: Dedoplis Tskaro, Pantishara, Eastern Georgia, ex *Aphis ruborum* on *Rubus,* 25.V.-5.VI.1971, 1 female; Dedoplis Tskaro, Pantishara, ex *Aphis punicae* on *Punica granatum*, 27.V.-2. VI.1971, 1 female; Lagodekhi, Eastern Georgia, ex *Aphis evonymi* on Zea Mays 4-15.VII.1971, 2 females, M. Akhvlediani.

Distribution: Georgia and Ukraine (Noyes, 2007).

Host insects: *Aphis ruborum, A. punicae, A. evonymi, Rhopalosiphum maidis, Schizaphis graminum* (Yasnosh, 2002).

Remarks: This species was described by Kurdjumov as *A. flavipes* based on many specimens from Ukraine, but this name was preoccupied by *A. flavipes* (Förster). Mercet (1930) supported Novicky's suggestion to rename this species as *A. kurdjumovi.*

***Aphelinus mali* (Haldeman, 1851)**

Diagnosis: Body black; gaster with yellow base; legs infuscated with yellow fore tibia, apical part of mid tibia and hind femora. Sometimes apical part of fore femora also yellow. Scape almost 4 times as long as wide. Antenna with third funicular segment slightly longer than wide. Clava almost 3x as long as F3. Fore wings with 2-4 lines of long hairs composing the delta area basad of the speculum. Costal cell of fore wings with two or more complete row of hairs, the cell almost as long as marginal vein.

Material examined: Doesi, Kaspi, Eastern Georgia, ex *Eriosoma lanigerum* on apple, 4-13.V.2001, 4 females, Sh. Barjadze.

Distribution: Argentina, Australia, Austria, Azerbaijan, Bolivia, Brazil, Bulgaria, Canada, Chile, China, Colombia, Costa Rica, Croatia, Cyprus, Czech Republic, Germany, Ecuador, Egypt, France, Georgia, Indonesia, India, Iraq, Israel, Italy, Japan, Korea, Lebanon, Malta, Mexico, Moldova, Netherlands, New Zealand, Pakistan, Paraguay, Peru, Philippines, Poland, Puerto Rico, Romania, Russia, Saudi Arabia, Senegal, Slovakia, South Africa, Spain (incl. Canary Islands), Sweden, Switzerland, Tadzhikistan, Trinidad & Tobago, Turkey, Ukraine, UK, Uruguay, USA, Uzbekistan, Venezuela, Yugoslavia (former), Zambia and Zimbabwe (Japoshvili & Abrantes, 2006).

Host insects: In Georgia was reared from *Eriosoma lanigerum*. Also ex *Anuraphis schwartzi, Aphis gossypii, A. monardae, A. pomi, A. spiraecola, A. tavaresi, A.* sp., *Brevicoryne brassicae, Ceratovacuna lanigera, Colopha eragrostidis, C. graminis, Dactynotus floridae, Eriosoma americanum, E. crataegi, E. lanigerum, E. pyricola, E.* sp., *Macrosiphum floridae, M. rosae, Macrosiphum* sp., *Mordwilkoia vagabunda, Myzus lythri, M. persicae, Prociphilus fraxinifolii, Schizaphis graminum, Schizoneura americanum, Tetraneura graminis, Toxoptera aurantii* (Hemiptera: Aphididae) (Japoshvili & Abrantes, 2006).

***Aphelinus subflavescens* (Westwood, 1837)** (= *Agonioneurus, Mesidiopsis subflavescens* Novicky)

Diagnosis: Body totally yellow except eyes; midtibia also totally yellow. Scape almost 5 times as long as wide. All funicular segments longer than wide. F1 and F2 equal in length and slightly shorter then F3. Clava almost 4x or slightly more as long as F3. Fore wings with 3-4 lines of long hairs composing the delta area basad of the speculum. Costal cell with one complete row of hairs, the cell shorter than marginal vein.

Material examined: Not available in the collections of Georgian Institutions.

Distibution: Argentina, Azerbaijan, Bosnia Hercegovina, Chile, Croatia, Czech Republic, FrancArgentina, Azerbaijan, Bosnia Hercegovina, Chile, Croatia, Czech Republic, France, Georgia, Kazakhstan, Netherlands, New Zealand, Russia, Slovakia, South Africa, Turkmenistan, UK(excl. Northern Ireland) and USA(Noyes 2007).

Host insects: *Betulaphis* sp., *Calaphis* sp*., Drepanosiphum oregoensis* (= *D. zimmermanni*), *Eucallipterus tiliae, Hoplocalis pictus* (= *H. picta*), *Myzocallis carpini, M. coryli, Pterocallis* sp*., Symydobius* sp*., Therioaphis riehmi, Tinocallis platani, T. saltans, Tuberculatus annulatus* (= *Tuberculoides annulatus*), *T. querceus* (Hemiptera: Aphididae) (Remaudiere & Remaudiere, 1997; Noyes, 2007).

***Aphelinus varipes* (Förster, 1841)**

Diagnosis: Body black; gaster almost brown; legs yellow, with infuscate coxae, slightly infuscatBody black; gaster almost brown; legs yellow, with infuscate coxae, slightly infuscated hind tibia and last tarsal segment. Scape 4 times as long as wide. Antenna with third funicular segment subquadrate. Clava less than 3x as long as F3. Fore wings with 3-6 lines of long hairs composing the delta area basad of the speculum. Costal cell of fore wings with two or more complete row of hairs, the cell almost as long as marginal vein.

Material examined: Dedoplis Tskaro, Pantishara, Eastern Georgia, on Tamarix, 25.V.1971, 1 female, M. Akhvledian.

Distibution: Australia, Azores, canary Islands, Chile, Croatia, Czech Republic, Egypt, France, Germany, Georgia, Hungary, Ireland, Israel, Italy, Japan, Kazakhstan, Madeira, Morocco, Mexico, Nepal, Pakistan, Paraguay, Russia (Primor'ye Kray), Slovakia, South Africa, Spain, Sweden, Turkey, Ukraine, UK, USA and Yugoslavia (Federal Republic) (Japoshvili & Abrantes, 2006).

Host insects: *Acyrthosiphon pisum, Aphis fabae, A. gossypii, A. helianthi, A.* sp., *Diuraphis noxia* (=*Brachycolus noxius*) (Blackman & Eastop, 2000), *Diuraphis*

(=*Brachycolus*) *muehlei* (Miller & Stoetzel, 2005), *Hysteroneura setariae, Melanaphis donacis, Metopolophium dirhodum, Rhopalosiphum insertum, R. maidis, R. padi, Schizaphis graminum* (= *Toxoptera graminum*) (Miller & Stoetzel, 2005), *Sipha* sp., *Sitobion avenae* (Hemiptera: Aphididae) (Japoshvili & Abrantes, 2006).

***Aphelinus yasnoshae* Japoshvili sp.n.** (Fig. 2. a, b, c, d)

Diagnosis: Length including ovipositor 1.02mm, excluding exserted part of ovipositor 0.96Length including ovipositor 1.02mm, excluding exserted part of ovipositor 0.96mm.

Head completely dark brown, antenna yellow with very slightly dark infuscation. Thorax dark brown with metallic reflection. Basal 2/5 of gaster yellow, rest light brown with metallic reflection. Tegulae dark brown. Mesoscutum with dark, short setae on the anterior 3/4 and with a pair of long setae at the apex. Scutellum with two pairs of long setae. Legs yellow, only tibiaes from one side with very slight infuscation and mid and hind coxa with slight infuscation. Fore wings with very slight infuscation.

Head slightly shiny, ocelli forming 95º. Antenna with apex of clava more or less pointed, with a slightly apical truncation. Eyes reaching occipital margin upper temple rounded in facial view. Eye margins on the face curved. Scrobes moderately deep, V-shaped. FV almost parallel sided.

Relative measurements: HW 37, FV 14, POL 10, AOL 6, DPO 2, DAO 2, OOL 2, OCL 1.5, MSL 13, EL 18.

The new species is most closely related to *A. abdominalis* and *A. varipes* but differs by the following morphological characters: costal cell with two lines of setae; in *A. abdominalis* the costal cell with one line of setae; in front of linea calva (basad of the speculum) there are less then 40 setae; in *A. abdominalis* in front of linea calva there are more then 45 setae; clava 3x as long as wide, while of the clava of *A. varipes* is at most 2.5x as long as wide; marginal vein slightly longer than or as long as stigmal vein, while marginal vein of *A. varipes* is shorter than stigmal.

Material examined: Holotype: Georgia, Near Sagamo lake, 15.VIII.1997, 1 female, G.Japoshvili (Slides).

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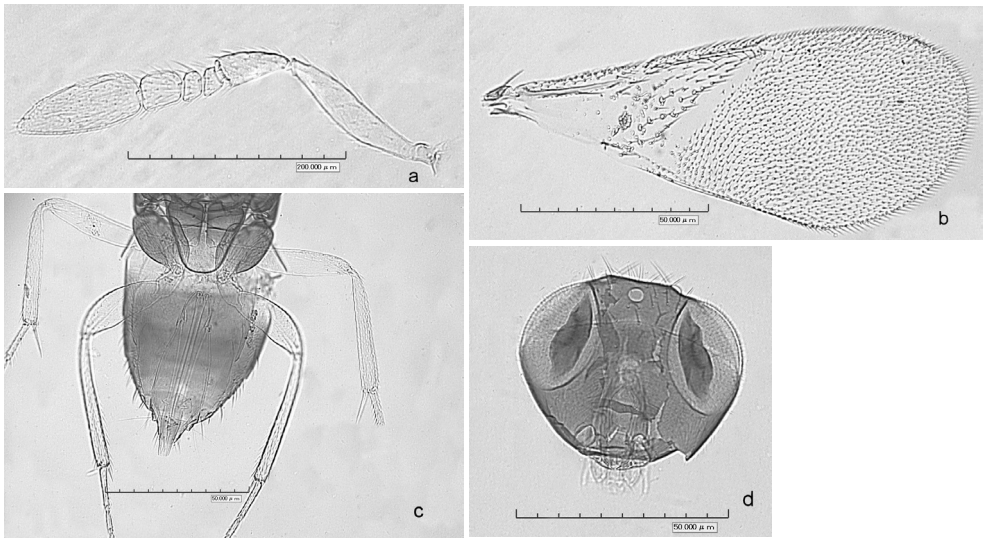

Fig. 1. *Aphelinus babaneuri* n. sp., female. a) antenna, b) fore wing, c) body, d) occiput.

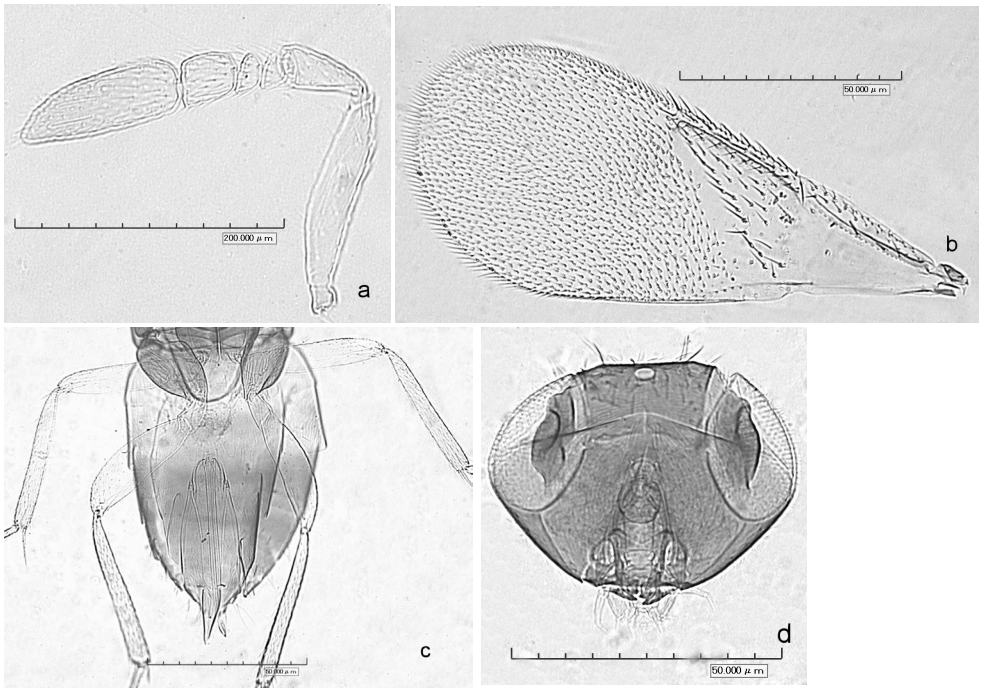

Fig. 2. *Aphelinus yasnoshae* n. sp, female. e) antenna, f) fore wing, g) body, h) occiput.

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