

# CHECKLIST AND KEY TO SPECIES OF *CARABODES* (ACARI, ORIBATIDA, CARABODIDAE) OF THE CAUCASIAN REGION, WITH DESCRIPTION OF A NEW SPECIES

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**ABSTRACT:** A revised checklist is presented for the 28 species in the oribatid mite genus *Carabodes* (Carabodidae) that are known from the Caucasian region, including distributional data and new records from Georgia. An identification key for Caucasian *Carabodes* species and a table of characters are included. A new species from the West Georgian subtropical region, *Carabodes kintrishiana* sp.n., is proposed.

**KEY WORDS:** Oribatid mites, *Carabodes*, Caucasus, Kintrishi Reserve

## INTRODUCTION

The oribatid mite genus *Carabodes* C.L. Koch, 1835 has a nearly world-wide distribution and includes about 115 named species (Subias 2004). These inhabit soil and litter, mosses and lichens, fungi, the bark of twigs, branches and tree trunks, rock surfaces and rotten wood (Reeves 1987; Reeves and Behan-Pelletier 1998). They are considered to be panphytophages (unspecialized feeders), which explains their ability to inhabit a great diversity of habitats (Reeves 1987).

The need for a taxonomic revision of the *Carabodes* of Georgia was recently noted (Murvanidze and Weigmann 2007) but this is also true of the whole Caucasus region, which represents a “hotspot” of biodiversity (Meyers et al. 2000) and therefore is of high biogeographical interest. In a recent checklist of the Caucasian oribatid fauna (Shtanchaeva 2001) *Carabodes* was represented by 19 named species and three undetermined species. The most recent key that includes *Carabodes* species from this region was that of Bulanova-Zakhvatkina (1975). After 1975 several new species were described (Djaparidze 1990 a, b; Kulijev 1979; Shtanchaeva 2004; Weigmann and Murvanidze 2003; Murvanidze and Weigmann 2007) and relevant new distributional records were published (Arabuli and Murvanidze 2003; Murvanidze and Weigmann 2007).

In this paper I present a revised checklist of the Caucasian *Carabodes* species, which includes previously known data on their distribution and new records from Georgia. An identification key for the Caucasian *Carabodes* species and a table of characters (Table 1) are also given. During this work a new species of *Carabodes* was discovered in the West Georgian subtropical region, which is described immediately below as *C. kintrishiana* sp. n.

## MATERIAL AND METHODS FOR *C. KINTRISHIANA*

Material of the new species was collected on 31.07.2005 in Kintrishi Reserve, located in the West Georgian subtropical region of Ajaria. The site was a *Castanea* forest with a few *Carpinus* and *Alnus* trees and an understory of *Vaccinium myrtillus*. Specimens were extracted by modified Berlese-funnels, stored in alcohol and studied in lactic acid in an open hollow-ground slide. The terminology of morphological structures follows Weigmann (2006).

## SYSTEMATICS

### Family Carabodidae

#### Genus *Carabodes* C.L. Koch, 1835

#### *Carabodes kintrishiana* Murvanidze, sp. n.

Fig. 1.

**Diagnosis.** Large, dark reddish brown, almost black mite. Interlamellar setae — short, *ss* — short, clavate, distally barbed. Anterior part of prodorsum punctuate, posterior part with sclerotized ridges. Sculpture of the notogaster composed of heavily sclerotized wrinkles and punctuated. 10 pairs of smooth, baciliform notogastral setae are present. Dorsosejugal groove is absent. Legs are typical to the genus. With the general characters of *Carabodes*, as given by Weigmann (2006).

**Description.** Length 670  $\mu$ m. Color — dark reddish-brown.

**Prodorsum.** Rostrum rounded. *ro* and *le* setae are smooth, directed medially. Lamellae typical to the family: large and wide, joined to the bothridia. *in* setae inserted on the prodorsum, near to the lamellar edges, smooth, bacilliform, apically pointed; length approximately 15  $\mu$ m. Anterior part of the prodorsum is punctuated, posterior part is made up by sclerotized, irregular ridges. Sensilli with short peduncle and clavate head, distally

Table 1  
 Characters of *Carabodes* species known from the Caucasus area

Characters species	body length (µm)	prodorsal sculpture	size of <i>in</i> setae (µm)	shape of <i>in</i> setae	ss shape	dorsosejugal groove	notogastral sculpture	size of <i>ng</i> setae (µm)	shape of <i>ng</i> setae	c2 setae	genital setae
<i>areolatus</i>	480–615	areolae	60	long, curved inside	“finger”-shaped	absent	areolae	40	widened, barbed	normal	short
<i>auriculatus</i>	574–689	fine	?	short, smooth	peduncle long, head spinose	absent	three longitudinal ridges	?	baciliform	normal	minute
<i>bidens</i>	540	longitudinal ridges	130	long, strong, erect	“finger”-shaped	wide	rosette-like	50–60	baciliform	long, strong, 110 µm	short
<i>comas</i>	500	longitudinal ridges	15	fine, thin	“finger”-shaped	absent	irregular wrinkles	20	thin, fine	normal	?
<i>coriaceus</i>	565–725	two chitimized elevations	?	lanceolate	fusiform	wide	irregular ridges	?	lanceolate	normal	long
<i>djaparidzae</i>	510	areolae and irregular ridges	90	long, strong, erect	“finger”-shaped	moderately wide	rosette-like	38–50	phylliform barbed	long, strong, 85 µm	short
<i>dubius</i>	420–517	longitudinal ridges	80	long, strong, erect	“finger”-shaped	wide	rosette-like	25–30	fusiform, barbed	long, strong, 85 µm	short
<i>egregious</i>	400	areolae	50	smooth, erect	club-shaped	absent	areolae	40–50	baciliform	normal	?
<i>femorialis</i>	600–715	fine ridges	8	short	“finger”-shaped	absent	longitudinal ridges and granulation	8–10	short, smooth	normal	medium size
<i>granulatus</i>	415	areolae, irregular ridges	30	phylliform, barbed	“finger”-shaped	narrow	with areolae, punctate	20–30	phylliform barbed	normal	short
<i>horreo</i>	490	irregular ridges	100	long, erect	club-shaped	narrow	rosette-like	28–35	thick baciliform	long, strong, 75 µm	short
<i>intermedius</i>	480–540	tubercles, irregular ridges	80	long, erect	club-shaped	narrow	rosette-like	35	lanceolate	long, strong, 70 µm	short
<i>kintrishiana</i> sp. n.	670	with longitudinal ridges, punctate	15	baciliform, smooth	clavate	absent	with thick wrinkles, punctate	25	straight, smooth	normal	minute
<i>labirinthicus</i>	430–580	irregular ridges	30	straight, serrate	clavate	absent	joint tubercles	30	straight, fine	normal	short
<i>marginatus</i>	470–560	areolae and tubercles	40	lanceolate	fusiform	narrow	tubercles	40	lanceolate	normal	long

Table 1  
Continued

<i>minusculus</i>	340–385	tubercles	45	smooth, baciliform	club-shaped	absent	tubercles	15–25	phylliform	normal	short
<i>ornatus</i>	540–690	tubercles	50	smooth, baciliform	fusiform	wide	tubercles	40	lanceolate	normal	very long
<i>paraspinosus</i>	374	areolae	60	long, setiform	“finger”-shaped	narrow	areolae	30	phylliform	normal	short
<i>procerus</i>	450–550	nodules, irregular ridges	10	short, smooth	rounded to “finger”-shaped	absent	nodules, irregular ridges	15	short, fine	normal	short, fine
<i>pulcher</i>	450	areolae	45	long, curved	club-shaped	absent	tubercles	10–25	long, thin, erect	normal	short, fine
<i>rugosior</i>	520–650	two tubercles in posterior part	10	short, smooth	flat to “finger”-shaped	absent	one long and several irregular ridges	15	short, fine	normal	short, fine
<i>subarcticus</i>	400–490	areolae	110	long, curved	“finger”-shaped	absent	with areolae, punctate	30	lanceolate	normal	short
<i>tenuis</i> sbsp. <i>longisetosus</i>	480	tubercles, longitudinal ridges	85	long, setiform	club-shaped	narrow	tubercles	40	long, setiform	normal	short
<i>scopulae</i>	467–637	tubercles, irregular ridges	95–116	long, erect	“finger”-shaped	narrow	separated rosettes	48–53	distally widened	95–110 µm	short
<i>tarbae</i>	475–635	areolae, irregular ridges	100–120	long, erect	“finger”-shaped	narrow	rosette-like	55–57	slightly widened or baciliform	100–120 µm	minute
<i>willmannii</i>	310–450	areolae	30	baciliform, smooth	club-shaped	absent	tubercles	15–20	lanceolate	normal	short
<i>schatzi</i>	310–385	tubercles	30	baciliform, smooth	club-shaped	absent	tubercles	17–25	thin, short	normal	short

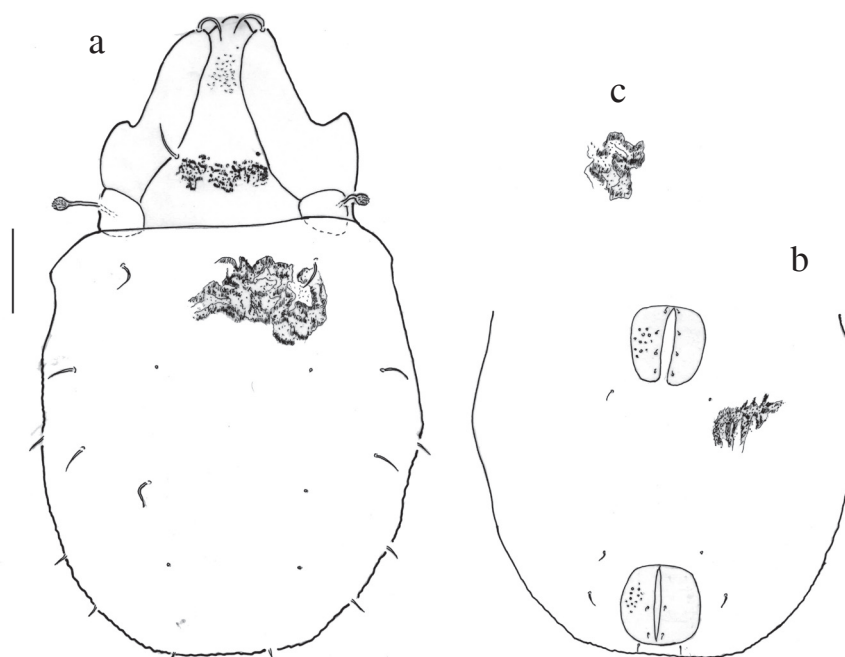


Fig. 1. *Carabodes kintrishiana* sp. n.: a — dorsal view; b — ano-genital region; c — notogastral sculpture. Scale bar 100  $\mu$ m (for a, b). The figure shows holotype. Some setae on the notogaster are broken and indicated only by their alveoli.

slightly barbed. Dorsosejugal groove is absent (Fig. 1a).

**Notogaster.** Sculpture of the notogaster is made up by strongly sclerotized, thick, interconnected, punctuated transverse wrinkles (Fig. 1c). 10 pairs of notogastral setae smooth and bacilliform, apically pointed, with their length about 25  $\mu$ m (Fig. 1a).

**Ventral region.** Surface is covered by strongly chitinized, finely punctuated wrinkles around the ano-genital region. Epimeral seta formula is: 3:1:2:3. Genital seta formula — 4g: 1ag: 2a: 3ad. The genital and anal plates are finely punctuated. Genital, aggenital and anal setae are minute; *ad* setae smooth, fine, bacilliform, apically pointed (Fig. 1b).

Legs with 1 claw.

**Type material.** A single specimen, the holotype female, was collected at the location indicated above, by L. Jgenti and Er. Kvavadze. It is mounted on a permanent slide and deposited in the collections of LEPL Institute of Zoology.

**Etymology.** The name *C. kintrishiana* refers to the Kintrishi Reserve where this species was found.

#### DISCUSSION

The new species resembles *C. labyrinthicus* by (1) type of notogastral sculpturing; (2) absence of dorsosejugal groove; (3) shape of *in* setae; (4) shape of sensillus; (5) shape of *ng* setae; (6) shape

of *ad* setae. It differs from *C. labyrinthicus* in the following characters: (7) Length of *C. labyrinthicus* varies from 430–580  $\mu$ m (Pérez-Iñigo 1997; Weigmann 2006). *C. kintrishiana* is much larger at 670  $\mu$ m. (8) The notogastral sculpture of *C. labyrinthicus* is made of rounded, joint tubercles that form short, irregular transverse ridges. Sculpturing of *C. kintrishiana* is made up by strongly sclerotized, thick, transverse, interconnected, punctuated wrinkles, (9) *in* setae of *C. kintrishiana* are shorter (15  $\mu$ m), than those of *C. labyrinthicus* (30  $\mu$ m).

*Carabodes comas* Kulijev, 1979 is similar to *C. kintrishiana* in regard of the type of notogastral sculpture (sclerotized wrinkles), but the wrinkles of *C. comas* are thin and prolonged; the body size is smaller (500  $\mu$ m); interlamellar and notogastral setae are setiform; sensillus head is split into “fingers”; the sculpture of prodorsum is different.

The comparative table of characters (Table 1) shows the difference between *C. kintrishiana* and all other *Carabodes* species known from the Caucasus area.

#### TAXONOMICAL REMARKS

1. *Carabodes forsslundi* Sellnick, 1953, given in the checklist of Shtanchaeva (2001), has been considered a junior synonym of *C. ornatus* (cf. Pérez-Iñigo 1997; Subias 2004).

2. The genus *Flexa* Kuliev, 1977 has been considered a synonym of *Carabodes* (Murvanidze

and Weigmann 2007), and in Subias (2004) is regarded as a subgenus.

3. In the original descriptions of *C. comas* (Kulijev, 1979) and *C. egregius* (Djaparidze, 1990) the shape and size of genital setae is not mentioned. I could not examine the type specimens, so these character states remain unknown.

4. Distributional records in Georgia are grouped into two larger units: Western Georgia (marked as WG) and Eastern Georgia (marked as EG), because of fundamental differences in climate between the two regions: subtropical humid in the west and dry continental climate in the east.

5. The biogeographic distribution of species is given according to Subias (2004).

6. Fig. 1 is original; Figs 2, 3, 7–9, 11, 14, 16–18, 20, 24, 26 are reproduced from Weigmann (2006); Figs 4, 22, 25 from Djaparidze (1990 a,b); Figs 5, 10, 19, 21 from Kulijev (1979); Fig. 6. from Mahunka (1986); Figs 12, 13, 15 from Bernini (1976), Fig. 27 from Shtanchaeva (2004).

7. The identification key is based on modified keys of Weigmann (2006) and Shtanchaeva (2004).

#### REVISED CHECKLIST OF CAUCASIAN SPECIES OF *CARABODES*

1. *C. areolatus* Berlese, 1916

**Georgia.** WG: Ritsa Reserve, Myusera; EG: Borjomi, Bakuriani, Khodzhal, Manglisi.  
Distribution. Holarctic.

2. *C. auriculatus* Mahunka, 1987

**Russia.** The Krasnodar Territory: Sochi.  
Distribution. Europe.

3. *C. bidens* (Djaparidze, 1990)

**Georgia.** EG: Tsagveri, Bakuriani, Pasaauri.  
Distribution. Caucasus.

4. *C. comas* Kulijev, 1979

**Azerbaijan.** Zakataly, Sheki.  
Distribution. Caucasus.

5. *C. coriaceus* C. L. Koch, 1835

**Russia.** The Stavropol Territory: Teberda. **Georgia.** EG: Dmanisi, Tbilisi.  
Distribution. Palaearctic.

6. *C. djaparidzae* Murvanidze, Weigmann, 2007

**Georgia.** WG: Kintrishi Reserve; EG: Shuamta, Omalo.  
Distribution. Caucasus.

7. *C. dubia* (Kulijev, 1968)

**Georgia.** WG: Surami Range. **Azerbaijan.** Zakataly, Sheki.  
Distribution. Caucasus.

8. *C. egregius* Djaparidze, 1990

**Georgia.** EG: Tsemi, Skra, Tskneti, Pasaauri  
Distribution. Caucasus.

9. *C. femoralis* (Nicolet, 1855)

**Russia.** North Ossetia: Arkhonskaya, Tagardon, Gusyra, Dzuarikau, Kartsa mnt; Daghestan: Makhachkala. **Georgia.** WG: Batumi, Kintrishi Reserve, riv. Chorokhi gorge, Imnati, Racha Range; EG: Gombori Range, Babaneuri Reserve. **Azerbaijan:** Lenkoran.

10. *C. granulatus* Banks, 1895

**Georgia.** WG: Surami Range.  
Distribution. Nearctic, Caucasus.

11. *C. horreo* (Djaparidze, 1990)

**Russia.** The Stavropol Territory: Teberda. **Georgia.** WG: Becho; EG: Tsagveri.  
Distribution. Caucasus.

12. *C. intermedius* Willmann, 1951

**Russia.** The Stavropol Territory: Teberda.  
Distribution. Europe.

13. *C. kintrishiana* sp. nov.

**Georgia.** WG: Kintrishi Reserve.  
Distribution. Caucasus.

14. *C. labyrinthicus* (Michael, 1879)

**Russia.** Daghestan: Kurush. **Georgia.** WG: Ritsa Reserve, Myusera, Kintrishi Reserve; EG: Shenako.  
Distribution. Holarctic.

15. *C. marginatus* (Michae, 1884)

**Russia.** The Stavropol Territory: Teberda; North Ossetia: Arkhonskaya, Tagardon, Gusyra; Daghestan: Kurush. **Georgia.** WG: Ritsa Reserve, Myusera, Batumi; EG: Tsagveri, Tsemi, Bakuriani, Dmanisi. **Azerbaijan:** Chiragadzor, Lenkoran.  
Distribution. Palaearctic.

16. *C. minusculus* Berlese, 1923

**Russia.** Daghestan: Tarumovka, Buinaksk. **Georgia.** WG: Myusera; EG: Tsagveri, Dmanisi. **Azerbaijan:** Chiragadzor, Apsheron, Lake Gel-Gel, Gadzhikend. Lenkoran.  
Distribution. Palaearctic.

17. *C. ornatus* Storkan, 1925

**Russia.** The Stavropol Territory: Teberda; North Ossetia: Arkhonskaya, Tagardon, Gusyra, Dzuarikau, Kartsa mnt.  
Distribution. Palaearctic.

18. *C. paraspinosus* Kulijev, 1968.

**Azerbaijan:** Zakataly, Sheki, Chiragadzor, Lake Gel-Gel, Gadzhikend, Kel'badzar, Karabakh.  
Distribution. Caucasus.

19. *C. procerus* Weigmann, Murvanidze, 2003



Figs 2–13. 2 — *C. subarcticus* Trägårdh, 1902; 3 — *C. areolatus* Berlese, 1916; 4 — *C. egregius* Djaparidze, 1990; 5 — *C. paraspinosus* Kulijev, 1968; 6 — *C. auriculatus* Mahunka, 1987; 7 — *C. rugosior* Berlese, 1916; 8 — *C. femoralis* (Nicolet, 1855); 9 — *C. procerus* Weigman et Murvanidze, 2003; 10 — *C. comas* Kulijev, 1979; 11 — *C. labyrinthicus* (Michael, 1879) 12 — *C. minusculus* Berlese, 1923; 13 — *C. schatzi* Bernini, 1976.

**Georgia.** WG: Kintrishi Reserve, riv. Chorokhi gorge; EG: Shuamta.  
Distribution. Caucasus.

20. *C. pulcher* Bernini, 1976

**Russia.** The Krasnodar Territory: Novorossiysk; the Stavropol Territory: Teberda.  
Distribution. Mediterranean.

21. *C. reticulatus* Berlese, 1913

**Georgia.** EG: Tsikhisdjvari.

Distribution. Palaearctic.

22. *C. rugosior* Berlese, 1916

**Russia.** Daghestan: Makhachkala. **Georgia.** WG: Ritsa Reserve, Myusera, Kintrishi Reserve, Anaklia, Imnati, Racha Range, Surami Range; EG: Dmanisi, Tetrtskaro, Algethy Reserve, Gombori Range, Lagodekhi Reserve. **Azerbaijan:** Lenkoran.

Distribution. Holarctic.

23. *C. schatzi* Bernini, 1976

**Georgia.** WG: Kintrishi Reserve; EG: Gombori Range, Babaneuri Reserve.

Distribution. Europe.

24. *C. scopulae* (Kulijev, 1968)

**Russia.** The Krasnodar Territory: Sochi; Daghestan: Buinaksk, Tlyarata, Tsimilukh. **Georgia.** WG: Ritsa Reserve. **Azerbaijan.** Talysh.

Distribution. Caucasus.

25. *C. subarcticus* Trägårdh, 1902

**Georgia.** WG: Surami Range; EG: Tsikhisdjvari, Bakuriani, Lagodekhi Reserve.

Distribution. Palaearctic.

26. *C. tarbae* Shtanchaeva, 2004

**Russia.** Daghestan: Tsumilukh.

Distribution. Caucasus.

27. *C. tenuis* var. *longisetosus* Kulijev, 1968

**Russia.** Daghestan. **Azerbaijan.** Zakataly, Sheki, Talysh, Great Caucasus.

Distribution. Caucasus.

28. *C. willmanni* Bernini, 1975

**Russia.** The Krasnodar Territory: Sochi; the Stavropol Territory: Teberda. **Georgia.** WG: Kvereti; EG: Shuamta.

Distribution. Holarctic.

#### IDENTIFICATION KEY FOR CAUCASIAN SPECIES OF *CARABODES*

1. Notogastral sculpture with tubercles or chitinized ridges ..... 5  
 — Notogastral sculpture with areolae ..... 2  
 2. All notogastral setae of similar shape ..... 3  
 — Notogastral setae differ in shape ..... 4  
 3. p1, p2 and p3 setae are shorter than other notogastral setae. Interlamellar setae very long, curved inside. Interbothridial region with two chitinized elevations. Sensillus distally split into “fingers”. Notogastral setae lanceolate, distally slightly barbed. Body length 400–490 µm (Fig. 2).  
 ..... *C. subarcticus* Trägårdh, 1902  
 — p1, p2 and p3 setae not shorter than other notogastral setae. Interlamellar setae shorter, curved inside. Interbothridial region without chitinized

elevations. Sensillus distally split into “fingers”. Notogastral setae distally widened, barbed. Body length 480–615 µm (Fig. 3).  
 ..... *C. areolatus* Berlese, 1916

4. Seven pairs of notogastral setae short, thick, baciliform, distally slightly barbed. p1, p2 and p3 setae are short, thin, smooth. Interlamellar setae are situated on the prodorsum, near to the lamellae, smooth, long, erect. Sensillus club-shaped. c1 setae are twice longer than other notogastral setae. Body length 400 µm (Fig. 4).  
 ..... *C. egregius* Djaparidze, 1990

— Seven pairs of notogastral setae are phylliform and barbed, p1, p2, p3 setae are short, thin and smooth. Interlamellar setae are situated on the prodorsum, near to the lamellae, long, strong, erect. Sensillus distally split into “fingers”. Body length 374 µm (Fig. 5).  
 ..... *C. paraspinosus* Kulijev, 1968

5. Dorsosejugal groove present ..... 16  
 — Dorsosejugal groove absent ..... 6

6. Notogastral sculpture with longitudinal chitinized ridges ..... 7  
 — Notogastral sculpture without longitudinal chitinized ridges; comprised of chitinized wrinkles or tubercles ..... 10

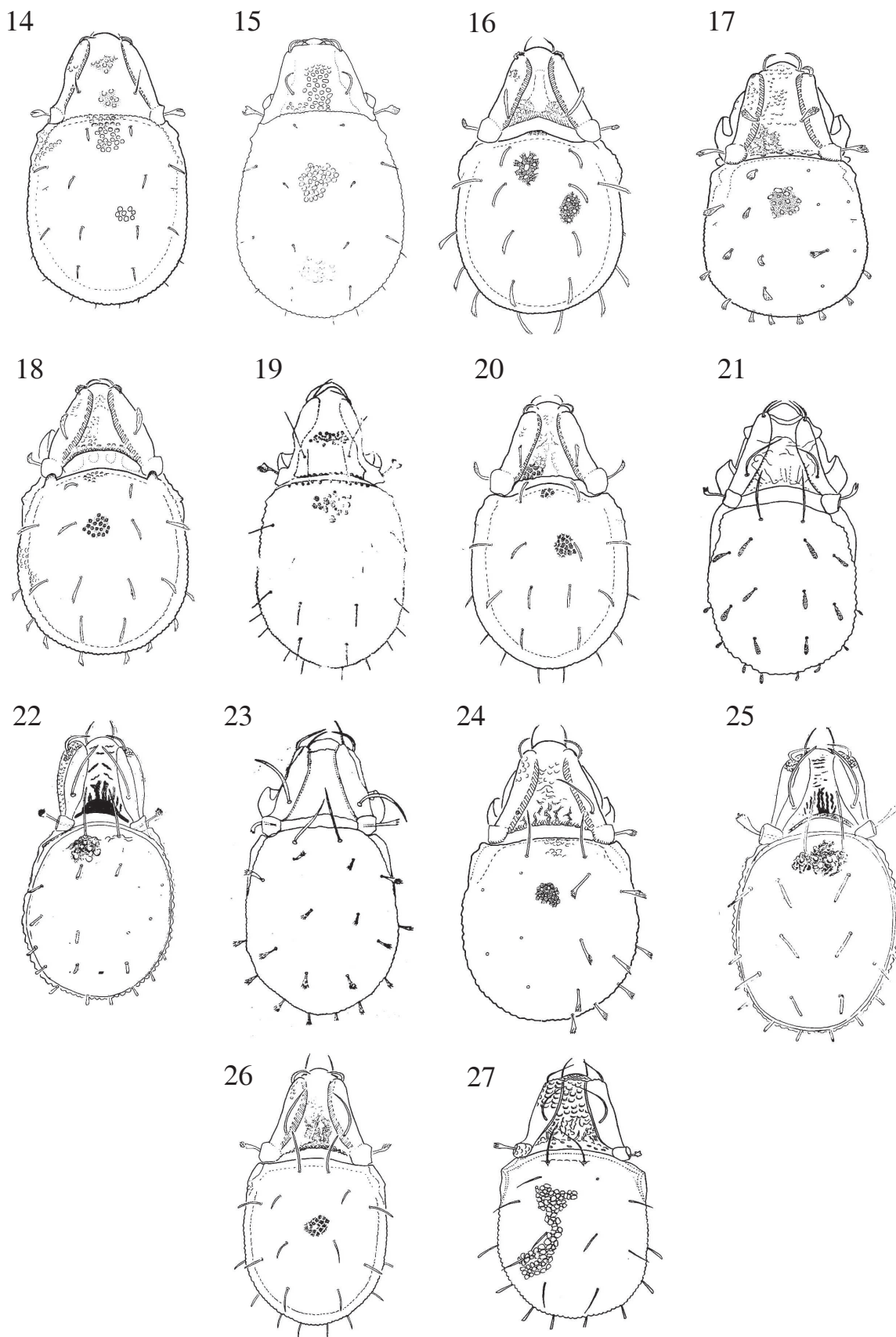
7. Prodorsum with a pair of very large chitinized elevations covering the lamellae. Interlamellar setae are short and smooth. Peduncle of the sensillus is very long, curved forward; the head is very small and spinose. On the notogaster three longitudinal chitinized ridges are present. Notogastral setae baciliform. c setae is located at the shoulder. Body length 574–689 µm (Fig. 6).  
 ..... *C. auriculatus* Mahunka, 1987

— Prodorsum without elevations ..... 8

8. Notogastral sculpture with one strong longitudinal ridge and small irregular ridges. Interlamellar setae are very short and straight. Sensillus is slim, distally split into “fingers” (this character varies from “finger”-shaped to almost setiform). Notogastral setae are short and straight. c setae is situated at the shoulder. Body length 520–650 µm (Fig. 7).  
 ..... *C. rugosior* Berlese, 1916

— Notogaster without one strong longitudinal ridge ..... 9

9. A large species. Interlamellar setae are minute and rough. Notogaster with several longitudinal ridges covered by rough tubercles. Sensillus split into “fingers”. 10–11 pair of notogastral setae present. c3 is located near to c2. Body length 600–715 µm (Fig. 8).  
 ..... *C. femoralis* (Nicolet, 1855)



Figs 14–17. 14 — *C. willmanni* Bernini, 1975; 15 — *C. pulcher* Bernini, 1976; 16 — *C. coriaceus* C.L. Koch, 1835; 17 — *C. granulatus* Banks, 1895; 18 — *C. ornatus* Storkan, 1925; 19 — *C. tenuis longisetosus* Kulijev, 1968; 20 — *C. marginatus* (Michael, 1884); 21 — *C. dubius* Kulijev, 1968; 22 — *C. horreo* (Djaparidze, 1990); 23 — *C. scopulae* Kulijev, 1968; 24 — *C. djaparidzae* Murvanidze et Weigmann, 2007; 25 — *C. bidens* (Djaparidze, 1990); 26 — *C. intermedius* Willmann, 1951; 27 — *C. tarbae* (Shtanchaeva, 2004).



- A smaller species. Interlamellar setae are minute. Posterior part of the prodorsum with transversal chitinized ridge. Sensillus distally varies from rounded to split into “fingers”. Sculpture of notogaster with roundish nodules and irregular ridges. 10 pairs of notogastral setae present. c setae is located at the shoulder. The body is slim. Body length 450–550 µm (Fig. 9). ..... *C. procerus* Weigman et Murvanidze, 2003
10. Notogastral sculpture is made up by chitinized wrinkles ..... 11
- Notogastral sculpture is made up by separated or interconnected tubercles ..... 12
11. Notogastral sculpture is made up by thin, longitudinal wrinkles. Interlamellar setae are situated on the lamellae, setiform. Sensillus distally split into “fingers”. Notogastral setae are of medium size, setiform. Body length 500 µm (Fig. 10). ..... *C. comas* Kulijev, 1979
- Wrinkles on the notogaster are thick, fine punctation. Interlamellar setae are situated on the prodorsum, near to the lamellae, baciliform, apically pointed. Sensillus is clavate, distally barbed. Notogastral setae are short, baciliform, apically pointed. Body length 670 µm (Fig. 1). ..... *C. kintrishiana* Murvanidze, sp. n.
12. Notogastral sculpture is made up by joint tubercles. Interlamellar setae are short, sensillus is clavate. Notogastral setae are of medium size, baciliform, apically pointed. Body length 430–580 µm (Fig. 11). .... *C. labyrinthicus* (Michael, 1879)
- Tubercles on the notogaster are separated .. 13
13. Prodorsal sculpture with tubercles ..... 14
- Prodorsal sculpture with areolae ..... 15
14. Notogastral setae are curved, phylliform. Interlamellar setae are of medium size. Sensillus distally club-shaped. Body length 340–385 µm (Fig. 12). ..... *C. minusculus* Berlese, 1923
- Notogastral setae are thin, straight. Interlamellar setae of medium size, curved inside. Sensillus with short peduncle and club-shaped head. Body length 310–390 µm (Fig. 13). ..... *C. schatzi* Bernini, 1976
15. Seven pairs of notogastral setae lanceolate. p1, p2, p3 setae short and thin. Interlamellar setae of medium size. Sensillus with short peduncle, distally club-shaped. Body length 340–450 µm (Fig. 14). ..... *C. willmanni* Bernini, 1975
- Long, thin, erect notogastral setae. All setae of equal shape. Interlamellar setae of medium size. Sensillus distally club-shaped. Body length 450 µm (Fig. 15). ..... *C. pulcher* Bernini, 1976
16. c2 setae very long, strong, erect, directed forward. Notogastral sculpture rosette-like ..... 21.
- c2 setae normal. Notogastral sculpture different ..... 17
17. Notogastral sculpture is made up by irregular chitinized ridges. In the interbothridial region the chitinized sculpture is present resembling the “spectacles”. Interlamellar setae long, widened, barbed. Notogastral setae long, lanceolate, barbed. p1, p2, p3 setae short, thin. Sensillus distally fusiform, barbed. Body length 565–725 µm (Fig. 16). ..... *C. coriaceus* C. L. Koch, 1835
- Notogastral sculpture without irregular chitinized ridges. No “spectacle”-shaped sculpture on the prodorsum ..... 18
18. Interlamellar setae phylliform, barbed. Sensillus distally split into “fingers”. Notogastral sculpture is made up by bright foveolae with fine punctation. The dorsosejugal groove is narrow. Notogastral setae are phylliform, barbed. Body length 415 µm (Fig. 17). ..... *C. granulatus* Banks, 1895
- Interlamellar setae of different shape ..... 19
19. Dorsosejugal groove wide. At the shoulders the chitinized projections are presented. Interlamellar setae moderately long, lanceolate, barbed. Sensillus fusiform, barbed. Notogastral sculpture with dense tubercles. Notogastral setae lanceolate, distally barbed. Body length 540–690 µm (Fig. 18). ..... *C. ornatus* Storkan, 1925
- Dorsosejugal groove narrow. No chitinized projections at the shoulders ..... 20
20. All prodorsal and notogastral setae thin, long, setiform. Interlamellar setae very long, straight. Notogastral and prodorsal sculpture is made up by dense tubercles. Sensillus distally club-shaped. c2 setae are longer than other notogastral setae. Body length 480 µm (Fig. 19). ..... *C. tenuis longisetosus* Kulijev, 1968
- Prodorsal and notogastral setae are different. Interlamellar setae lanceolate and barbed. Sensillus fusiform, barbed. Notogastral sculpture is made up by dense tubercles. Notogastral setae weakly lanceolate, barbed. Body length 470–560 µm (Fig. 20). ..... *C. marginatus* (Michael, 1884)
21. Nine pair of notogastral setae are fusiform and totally barbed. Sensillus distally split into “fingers”. Dorsosejugal groove wide. Body length 420–517 µm (Fig. 21). ... *C. dubius* Kulijev, 1968
- Notogastral setae of different shape ..... 22
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26. Notogastral setae thick, baciliform, distally slightly barbed Dorsosejugal groove wide. Body length 540  $\mu\text{m}$  (Fig. 25). ..... .. *C. bidens* (Djaparidze, 1990) — Notogastral setae thinner, hardly widened, barbed. Posterior part of the prodorsum with longitudinal chitinized ridges, anterior part with areolae. Dorsosejugal groove moderately wide (Fig. 26). ..... *C. intermedius* Willmann, 1951

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