Historia naturalis bulgarica, 19: 99-110, 2008

Contribution to the taxonomy of *Dicyphus constrictus* (Boheman, 1852) (Heteroptera: Miridae)

Michail JOSIFOV, Nikolay SIMOV

JOSIFOV M., SIMOV N. 2008. Contribution to the taxonomy of *Dicyphus constrictus* (Boheman, 1852) (Heteroptera: Miridae). – Historia naturalis bulgarica, **19**: 99-110

Abstract. *Dicyphus constrictus eduardi* ssp.n. is described from the high mountains in Bulgaria. The taxon is obligatory stuck to karst regions and is associated with *Geranium sylvaticum* var. *glanduligerum* and *Geranium macrorrhyzum*.

Key words: *Dicyphus constrictus eduardi* ssp.n., Heteroptera, Miridae, Bulgaria

In his work on the taxonomy of the genus *Dicyphus* the prominent European heteropterist Eduard Wagner supposed that the populations of *Dicyphus constrictus* (Boheman, 1852) from the mountains in Middle and Southern Europe most probably represent a separate subspecies (WAGNER, 1951). However, in the same work, or later in his monograph on Mediterranean mirids (WAGNER, 1974) he refrained from designating it as a subspecies, most probably because of lack of sufficient material.

During the investigation of true bug fauna in karst regions in Bulgaria, differences were found between the diagnostic characters mentioned in the description and the diagnosis of *Dicyphus constrictus* (WAGNER, 1952, 1961, 1974; WAGNER & WEBER, 1964) and the characters of Bulgarian specimens. To clarify whether these differences are reliable, we compared material from Northern Europe with material from the high Bulgarian mountains.

Abundant material of *Dicyphus constrictus* collected by the authors in Northern Europe (33 males and 48 females – Bornholm Island, Gudhjem, 20.08.1966, M. Josifov leg.) and in the high Bulgarian mountains, stored at the collections of the Institute of Zoology and National Museum of Natural History – BAS, was investigated. The indices published in Wagner's works (WAGNER, 1951, 1974), and Univariate Statistics – ANOVA test were used. The results give us reason to determine the populations of *Dicyphus constrictus* inhabiting the coniferous belt of high mountains in Bulgaria as a separate subspecies.

***Dicyphus constrictus eduardi* ssp. n.**

Holotype: 1 male, Bulgaria, Rila Mts., 1400 m a.s.l, village of Borovets, Varnika Site, 20.08.1971, leg. M. Josifov

Paratypes: 32 males and 24 females, same locality as holotype; 1 male Bulgaria, Rila Mts., 1400 m a.s.l, village of Borovets, Varnika Site, 31.07. – 03.08.1958, leg. M. Josifov; 5 males and 3 females Bulgaria, Rila Mts., 1400 m a.s.l, village of Borovets, Varnika Site, 06.09.1980, leg. M. Josifov; 7 males and 1 female Bulgaria, Rila Mts., 1400 m a.s.l, village of Borovets, Varnika Site,

16.08.1975, leg. M. Josifov; 13 males and 1 female Bulgaria, Slavyanka/ Alibotush Mts., 1600 m, 12.08.1979, leg. M. Josifov; 1 male and 8 females Bulgaria, Pirin Mts., 1800 m a.s.l, Bayuvi Dupki Reserve, 13.08.1980, leg. M. Josifov; 6 males and 13 females Bulgaria, Pirin Mts., 1800 m a.s.l, Bayuvi Dupki Reserve, 14.08.1979, leg. M. Josifov; 2 males Bulgaria, Pirin Mts., 1800 m a.s.l, near hut P. Yavorov, 30.08.2001, leg. N. Simov; 15 males and 6 females Bulgaria, Pirin Mts., 1800 – 1900 m a.s.l, Bayuvi Dupki Reserve, 31.08.2001, leg. N. Simov

The type material is deposited in the National Museum of Natural History, Sofia (NMNHS).

Diagnosis

Differs from *Dicyphus constrictus constrictus* (Boheman, 1852) by larger body size (Fig. 1 and 2), longer antennae and hind tibia, wider vertex, bigger value of the synthlipsis / eye width ratio, lower value of head width / length first antennal article ratio, bigger value of second antennal article length / head width ratio, bigger value of pronotum width / head width ratio, bigger value of hind tibia length / head width ratio and by differences in the curve of left paramere. For the levels of significance of the differences between the morphometric characters and the ratios used in the comparison of *Dicyphus constrictus eduardi* ssp.n. and *Dicyphus constrictus constrictus* (Boheman, 1852) see Table 4.

Description

Males

Predominantly macropterous. Greenish-yellow, dry specimens yellowish. Parallel. Body about 1.6 (macropterous) as long as hind tibia. Head brown to black. Longitudinal stripes on the frons and vertex, medial longitudinal stripe on the clypeus, spots on maxillary and mandibular

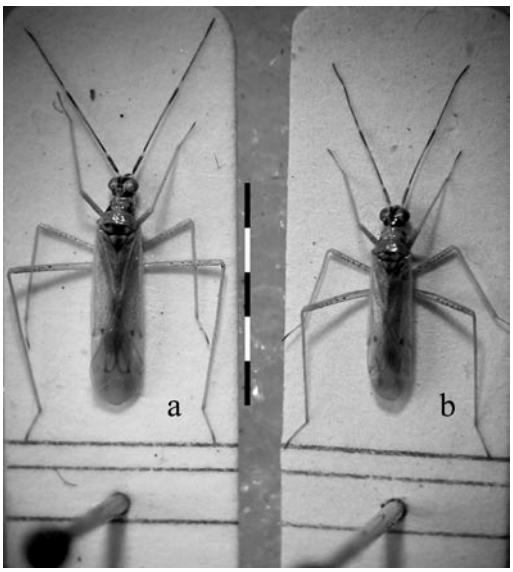

Fig. 1. Males – a: *Dicyphus constrictus eduardi* ssp.n.; b: *Dicyphus constrictus constrictus* (Boheman, 1852). (scale bar, 1mm)

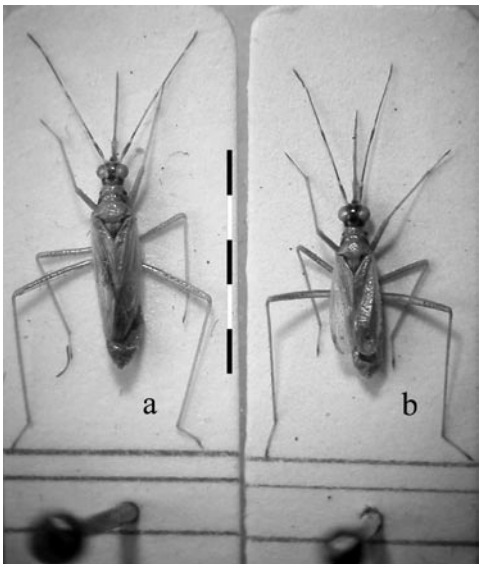

Fig. 2 Females – a: *Dicyphus constrictus eduardi* ssp. n.; b: *Dicyphus constrictus constrictus* (Boheman, 1852). (scale bar, 1mm)

plates (in pale specimens entire maxillary and mandibular plates), gula and bucculae yellowish. Synthlipsis about 1.13 (macropterous), 1.03 (brachypterous) as wide as eye. Head width is about 1.36 (macropterous), 1.77 (brachypterous) bigger than length of 1st antennal article. 1st antennal article reddish, in some dark specimens brown. 2nd antennal article yellowish with brownish apical and basal parts, about 3.14 (macropterous), 2.53 (brachypterous) as long as 1st antennal article and about 1.43 (macropterous), 1.58 (brachypterous) as long as 3rd antennal article. Length of 2nd antennal article about 2.3 (macropterous), 1.43 (brachypterous) bigger than head width and about 1.7 (macropterous), 1.29 (brachypterous) bigger than pronotum width. 3rd and 4th antennal article brownish, except for yellowish basal part of 3rd.

Collar white-grayish with brownish spots on lateral sides.

Pronotum white grayish on dorsal side, about 1.33 (macropterous), 1.11 (brachypterous) as wide as head. Calli yellowish-brown. Propleuron with big brown spots. Scutellum yellowish – brown with brown medial stripe and spots near basal corners.

Hemelytra slightly transparent, grayish-yellow with brownish spots on the apices of exocorium, corium, cuneus and posterior of claval commissure . Membrane transparent, light smoky. Veins yellowish to brown.

Legs yellowish. Femurs with reddish-brown spots on the dorsal side. Apical part of 3rd tarsal article brownish. Hind tibia length about 4.53 (macropterous), 3.36 (brachypterous) times bigger than head width.

Abdomen greenish, in dry specimens yellowish to brownish.

Male genitalia like in nominotypical subspecies with differences in curve of left paramere: see Figs. 3 and 4, see also fig. 12 A, B in WAGNER (1951).

Measurements. – see Table 1 and Table 3.

Females

Predominantly brachyprerous. Greenish-yellow, dry specimens yellowish. Parallel. Body about 1.4 (brachypterous), 1.7 (macropterous) as long as hind tibia. Head brown to black. Longitudinal stripes on the frons and vertex, medial longitudinal stripe on the clypeus, spots on maxillary and mandibular plates (in pale specimens entire maxillary and mandibular plates), gula and bucculae yellowish. Synthlipsis about 1.2 (brachypterous), 1.16 (macropterous) as wide

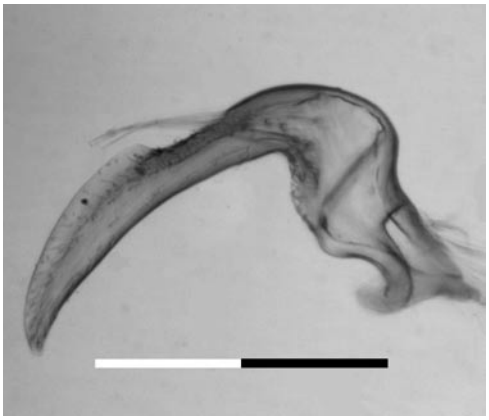

Fig. 3. Left paramere of *Dicyphus constrictus eduardi* ssp.n. (scale bar, 0,1mm)

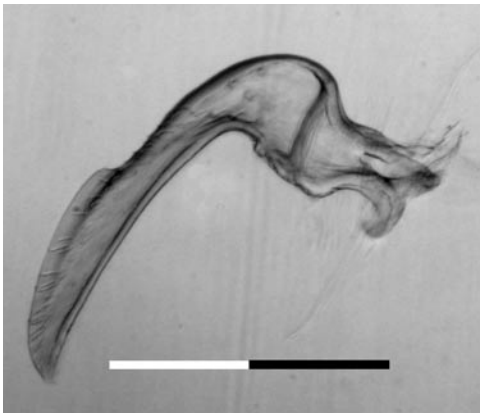

Fig. 4. Left paramere of *Dicyphus constrictus constrictus* (Boheman, 1852). (scale bar, 0,1mm)

Table 1

Measurements (in mm, dried specimens) of macropterous males of *Dicyphus constrictus eduardi* ssp.n. and *Dicyphus constrictus constrictus* (Boheman, 1852).

Males	*Dicyphus constrictus eduardi* ssp. n.					*Dicyphus constrictus constrictus*				
	Valid N	Mean	Min.	Max.	Std. Dev.	Valid N	Mean	Min.	Max.	Std. Dev.
Head width	32	0.691	0.65	0.737	0.025798	21	0.711	0.675	0.762	0.020918
Synthlipsis	32	0.250	0.225	0.275	0.012453	21	0.238	0.225	0.275	0.016527
Length 1st antennal article	32	0.512	0.45	0.575	0.033592	21	0.457	0.425	0.475	0.016091
Length 2nd antennal article	32	1.603	1.375	1.9	0.117217	21	1.482	1.3	1.675	0.093255
Length 3rd antennal article	30	1.123	1	1.3	0.072024	20	1.038	0.975	1.15	0.047642
Length 4th antennal article	32	0.505	0.4	0.6	0.042587	21	0.537	0.45	0.6	0.040788
Eye width	32	0.221	0.206	0.244	0.009971	21	0.237	0.225	0.244	0.006018
Pronotum width	32	0.920	0.85	1.05	0.062681	21	0.912	0.85	1.025	0.043746
Hind tibia length	32	3.139	2.82	3.47	0.141526	20	3.029	2.825	3.25	0.135305
Length 1st tarsal article	19	0.15	0.15	0.15	0	10	0.178	0.15	0.2	0.02189
Length 2nd tarsal article	19	0.480	0.45	0.525	0.022942	12	0.494	0.45	0.525	0.024133
Length 3rd tarsal article	19	0.243	0.225	0.275	0.014006	12	0.244	0.225	0.275	0.021651
Body length	32	5.04	4.5	5.6	0.240777	21	4.619	3.9	5	0.24004
Synthlipsis / eye width	32	1.134	0.974	1.273	0.065163	21	1.005	0.923	1.189	0.072716
Length 2nd antennal article / length 1st antennal article	32	3.136	2.773	3.389	0.13325	21	3.228	2.737	3.555	0.222891
Length 2nd antennal article / length 3rd antennal article	30	1.425	1.311	1.561	0.066049	20	1.436	1.268	1.561	0.069256
Head width / length 1st antennal article	32	1.357	1.227	1.472	0.062192	21	1.547	1.447	1.639	0.051209
Length 2nd antennal article / head width	32	2.301	2.115	2.571	0.10325	21	2.086	1.704	2.285	0.138485
Length 2nd antennal article / pronotum width	32	1.748	1.524	1.861	0.075742	21	1.625	1.268	1.765	0.102995
Pronotum width / head width	32	1.327	1.207	1.5	0.062918	21	1.283	1.214	1.357	0.046059
Body length / hind tibia length	32	1.606	1.446	1.742	0.057364	20	1.533	1.219	1.769	0.095795
Hind tibia length / head width	32	4.526	4.13	4.815	0.166209	20	4.260	3.705	4.536	0.191891

as eye. Head width is about 1.5 (brachypterous), 1.43 (macropterous) bigger than length of 1st antennal article. 1st antennal article reddish, in some dark specimens brown. 2nd antennal article yellowish with brownish apical and basal parts, about 2.68 (brachypterous), 2.81 (macropterous) as long as 1st antennal article and about 1.23 (brachypterous), 1.37 (macropterous) as long as 3rd antennal article. Length of 2nd antennal article about 1.78 (brachypterous), 1.96 (macropterous) bigger than head width and about 1.53 (brachypterous), 1.34 (macropterous) bigger than pronotum width. 3rd and 4th antennal article brownish, except for yellowish basal part of 3rd.

Collar white-grayish with brownish spots on lateral sides.

Pronotum yellowish, about 1.17 (brachyterous), 1.47 (macropterous) as wide as head. Calli yellowish – brown. Propleuron with big brown spots. Scutellum yellowish – brown with brown medial stripe and spots near basal corners.

Hemelytra slightly transparent, greyish – yellow with brownish spots on the apices of exocorium, corium, cuneus (macroperous) and posterior of claval commissure (macroperous). Membrane (macropterous) transparent, light smoky. Veins yellowish to brown.

Legs yellowish. Femurs with reddish-brown spots on the dorsal side. Apical part of 3rd tarsal article brownish. Hind tibia length about 4.03 (brachypterous), 4.2 (macropterous) times bigger than head width.

Abdomen greenish, in dry specimens yellowish to brownish. Dorsal side darker than ventral.

Measurements. – see Table 2 and Table 3.

Etymology

The new subspecies is dedicated to Eduard Wagner who first reported the differences between the populations of *Dicyphus constrictus* from Northern and Southern Europe.

Distribution

Up to now the new subspecies was known only from the Balkan Peninsula – Bulgaria: Rila, Pirin and Slavyanka/ Alibotush Mts. The records of *Dicyphus constrictus* for Bulgarian fauna (JOSIFOV, 1969, 1970, 1976, 1983, 1986, 1990; HEISS & JOSIFOV, 1990; GUEORGUIEV et al., 1998; KERZHNER & JOSIFOV, 1999) refer to new subspecies. Other records from the Balkan countries (Slovenia and Croatia) (GOGALA & MODER, 1960; GOGALA & GOGALA, 1986, 1989; HORVÁTH, 1900) are from territories outside of the Balkan Peninsula. The records from Slovenia (GOGALA & MODER, 1960; GOGALA & GOGALA, 1986, 1989) are erroneous, misidentifications with *Dicyphus stachidis wagneri* Tamanini, 1956 (GOGALA, 2006). The record from Croatia: Breze (Brezje) (HORVÁTH, 1900) is doubtful in the light of the above cited new results of the investigation of mirid fauna of Slovenia (GOGALA, 2006). The locality Brezje is close to Slovenian localities and is at a very low altitude (200 m a.s.l.) compared to the altitude preference of *Dicyphus constrictus* in Southern and Central Europe – above 1000 m (WAGNER, 1958 , 1961; WACHMANN et al., 2004; own data).

Biology

Dicyphus constrictus eduardi ssp. n. is obligatory stuck to karst regions and is associated with *Geranium sylvaticum* var. *glanduligerum* (Fig. 5) and *Geranium macrorrhyzum* (Fig. 6). Records of *Salvia* and *Digitalis* like food plants of *Dicyphus constrictus* in Bulgarian (JOSIFOV, 1969, 1983) are erroneous. In contrast to *Dicyphus constrictus eduardi* ssp. n., a nominotypical subspecies was recorded on *Stachys sylvatica*, *Stachys* sp., *Melandryum* sp., *Lychnis* sp., *Galeopsis*

Table 2

Measurements (in mm, dried specimens) of brachypterous females of *Dicyphus constrictus eduardi* ssp.n. and *Dicyphus constrictus constrictus* (Boheman, 1852).

Females	*Dicyphus constrictus eduardi* ssp. n.					*Dicyphus constrictus constrictus*				
	Valid N	Mean	Min.	Max.	Std. Dev.	Valid N	Mean	Min.	Max.	Std. Dev.
Head width	22	0.764	0.7	0.8	0.027359	19	0.758	0.725	0.775	0.018743
Synthlipsis	24	0.285	0.275	0.3	0.012032	19	0.274	0.25	0.3	0.015829
Length 1st antennal article	23	0.512	0.45	0.575	0.028072	19	0.453	0.425	0.475	0.016446
Length 2nd antennal article	24	1.366	1.25	1.475	0.063764	19	1.291	1.225	1.375	0.038379
Length 3rd antennal article	23	1.111	1.025	1.25	0.063437	19	1	0.95	1.05	0.026352
Length 4th antennal article	21	0.531	0.425	0.625	0.052384	17	0.543	0.475	0.6	0.035984
Eye width	22	0.239	0.212	0.25	0.011751	19	0.241	0.225	0.262	0.008928
Pronotum width	24	0.893	0.825	0.975	0.040027	19	0.825	0.775	0.875	0.028868
Hind tibia length	23	3.114	2.82	3.35	0.132964	19	2.909	2.65	3.075	0.107436
Length 1st tarsal article	11	0.166	0.125	0.2	0.02311	10	0.215	0.175	0.25	0.021082
Length 2nd tarsal article	13	0.481	0.45	0.525	0.020801	10	0.48	0.45	0.5	0.015811
Length 3rd tarsal article	13	0.254	0.225	0.3	0.022468	10	0.25	0.225	0.275	0.016667
Body length	19	4.389	3.7	5.1	0.417525	19	4.021	3.6	4.5	0.320727
Synthlipsis / eye width	22	1.196	1.1	1.333	0.072566	19	1.137	0.952	1.297	0.089193
Length 2nd antennal article / length 1st antennal article	23	2.667	2.523	2.83	0.07254	19	2.783	2.289	3.059	0.211188
Length 2nd antennal article / length 3rd antennal article	23	1.234	1.133	1.39	0.061544	19	1.291	1.219	1.368	0.038474
Head width / length 1st antennal article	22	1.498	1.391	1.67	0.074284	19	1.672	1.526	1.824	0.070613
Length 2nd antennal article / head width	22	1.783	1.645	1.896	0.073244	19	1.704	1.612	1.833	0.05947
Length 2nd antennal article / pronotum width	24	1.533	1.333	1.676	0.075934	19	1.571	1.485	1.67	0.059777
Pronotum width / head width	22	1.168	1.097	1.3	0.047453	19	1.089	1	1.206	0.051235
Body length / hind tibia length	18	1.415	1.209	1.738	0.148342	19	1.382	1.22	1.525	0.095825
Hind tibia length / head width	21	4.057	3.68	4.321	0.176267	19	3.84	3.548	4.103	0.13957

Table 3

Measurements (in mm, dried specimens) of brachypterous males and macropterous females of *Dicyphus constrictus eduardi* ssp.n.

	***Dicyphus constrictus eduardi* ssp. n. brachypterous males**			***Dicyphus constrictus eduardi* ssp. n. macropterous females**		
	Valid N	**Minimum**	**Maximum**	**Valid N**	**Minimum**	**Maximum**
Head width	1	0.663	0.663	1	0.75	0.75
Synthlipsis	1	0.225	0.225	1	0.275	0.275
Length 1st antennal article	1	0.375	0.375	1	0.525	0.525
Length 2nd antennal article	1	0.95	0.95	1	1.475	1.475
Length 3rd antennal article	1	0.55	0.55	1	1.075	1.075
Length 4th antennal article	1	0.35	0.35	1	0.475	0.475
Eye width	1	0.219	0.219	1	0.237	0.237
Pronotum width	1	0.737	0.737	1	1.1	1.1
Hind tibia length	1	2.23	2.23	1	3.15	3.15
Length 1st tarsal article	1	0.15	0.15	1		
Length 2nd tarsal article	1	0.425	0.425	1	0.5	0.5
Length 3rd tarsal article	1	0.225	0.225	1	0.25	0.25
Body length	1	3.7	3.7	1	5.4	5.4
Synthlipsis / eye width	1	1.029	1.029	1	1.158	1.158
Length 2nd antennal article / length 1st antennal article	1	2.533	2.533	1	2.81	2.81
Length 2nd antennal article / length 3rd antennal article	1	1.583	1.583	1	1.372	1.372
Head width / length 1st antennal article	1	1.767	1.767	1	1.428	1.428
Length 2nd antennal article / head width	1	1.434	1.434	1	1.967	1.967
Length 2nd antennal article / pronotum width	1	1.288	1.288	1	1.340	1.340
Pronotum width / head width	1	1.113	1.113	1	1.467	1.467
Body length / hind tibia length	1			1	1.714	1.714
Hind tibia length / head width	1	3.358	3.358	1	4.2	4.2

Table 4

Levels of significance of differences between morphometric characters and ratios used in comparison between *Dicyphus constrictus eduardi* ssp.n. and *Dicyphus constrictus constrictus* (Boheman, 1852).

***Dicyphus constrictus eduardi* ssp.n. / *Dicyphus constrictus constrictus* (Boheman, 1852)**		
	Males	Females
Head width	$p<0.01$	
Synthlipsis	$p<0.01$	$p<0.05$
Length 1st antennal article	$p<0.001$	$p<0.001$
Length 2nd antennal article	$p<0.001$	$p<0.001$
Length 3rd antennal article	$p<0.001$	$p<0.001$
Length 4th antennal article	$p<0.01$	
Eye width	$p<0.001$	
Pronotum width		$p<0.001$
Hind tibia length	$p<0.01$	$p<0.001$
Length 1st tarsal article	$p<0.001$	$p<0.001$
Length 2nd tarsal article		
Length 3rd tarsal article		
Body length	$p<0.001$	$p<0.01$
Synthlipsis / eye width	$p<0.001$	$p<0.05$
Length 2nd antennal article / length 1st antennal article		$p<0.05$
Length 2nd antennal article / length 3rd antennal article		$p<0.01$
Head width / length 1st antennal article	$p<0.001$	$p<0.001$
Length 2nd antennal article / head width	$p<0.001$	$p<0.001$
Length 2nd antennal article / pronotum width	$p<0.001$	
Pronotum width / head width	$p<0.05$	$p<0.001$
Body length / hind tibia length	$p<0.01$	
Hind tibia length / head width	$p<0.001$	$p<0.001$

sp., *Aconitum* sp., *Salvia* sp. and *Urtica* sp. (WAGNER, 1958, 1961, 1974; WACHMANN et al., 2004).

The new subspecies inhabits karsts regions in the coniferous belt (Fig. 7) of the above-cited mountains, between 1400 to 1900 m above sea level.

Fig. 5. *Geranium sylvaticum* var. *glanduligerum* – host plant of *Dicyphus constrictus eduardi* ssp.n.

Fig. 6. *Geranium macrorrhyzum* – host plant of *Dicyphus constrictus eduardi* ssp.n.

Fig. 7. Typical habitat of *Dicyphus constrictus eduardi* ssp.n.

Acknowledgements

The study was partly supported by the grants B-1304 and B-1526 of the Bulgarian Ministry of Education and Science. We thank our friend Dr N. Tzankov for his help and useful comments on statistics.

References:

GOGALA A. 2006. Heteroptera of Slovenia, III: Miridae. – Annales, Annals for Istrian and Mediterranean Studies, Series historia naturalis, **16** (1): 77-112.

GOGALA A., GOGALA M. 1986. Seznam vrst stenic, ugotovljenih v Sloveniji (Check list of bug species recorded in Slovenia) (Insecta: Heteroptera). – Biološki vestnik, **34**: 21-52.

GOGALA A., GOGALA M. 1989. True bugs of Slovenia (Insecta: Heteroptera). – Biološki vestnik, **37**: 11-44.

GOGALA M., MODER A. 1960. Prispevek k poznavanju favne stenic Slovenije (Hemiptera – Heteroptera). – Biološki vestnik, **7**: 85-99.

GEORGIEV V., BESHOVSKI V., RUSSEV B., KUMANSKI K., JOSIFOV M., V SAKALIAN V. 1998. Insects of Bulgaria, Part 1: Odonata, Ephemeroptera, Plecoptera, Homoptera (Auchenorrhyncha), Heteroptera, Coleoptera. – In: Meine C. (ed.). Bulgarian's Biological Diversity: Conservation Status and Needs Assessment, Vol. 1. Washington D. C: Biodiversity Support Program, 163-209.

HEISS E., JOSIFOV M.1990. Vergleichende Untersuchung über Artenspectrum, Zoogeographie und Ökologie der Heteropteren-Fauna in Hochgebirgen Österreichs und Bulgariens. – Berichte des Naturwissenschaftlich-Medizinischen Vereines in Innsbruck, **77**: 123-161.

HORVÁTH G. 1900. Ordo Hemiptera. – In: Paszlavszky, J. (ed.). A Magyar Birodalom Állatvilága (Fauna Regni Hungariae), III. (Arthropoda). A K. M. Természetudományi Társulat, Budapest, 1-72. [1897].

JOSIFOV M. 1969. Artenzusammensetzung und Verbreitung der Insekten von der Ordnung Heteroptera in Bulgarien, Teil III. – Bulletin de l'Institut de Zoologie et Musée, **29**: 29-82. (In Bulgarian with German Summary).

JOSIFOV M. 1970. Ergebnisse der Albanien-Expedition 1961 des Deutschen Entomologischen Institutes. 82. Beitrag. Heteroptera. – Beiträge zur Entomologie, **20** (7/8): 825-956.

JOSIFOV M. 1976. Artbildung bei den Heteropteren im Mittelmeerraum als Folge der postglazialen Disjunktion ihrer Areale. – Acta zoologica bulgarica, **4**: 11-19. (In Bulgarian with German Summary).

JOSIFOV M. 1983. Über die Verbreitung mancher Heteropterenarten auf der Balkanhalbinsel. II. – Acta zoologica bulgarica, **22**: 3-8.

JOSIFOV M. 1986. Verzeichnis der von der Balkanhalbinsel bekannten Heteropterenarten (Insecta, Heteroptera). – Faunistische Abhandlungen Staatliches Museum für Tierkunde in Dresden, **14** (6): 61-93.

JOSIFOV M. 1990. Heteroptera (Insecta, Heteroptera) in the belts of the beech, spruce and the subalpine belt of Vitoša. – Fauna of Southwestern Bulgaria, **3**: 88-101. (In Bulgarian with German Summary).

KERZHNER I. M., JOSIFOV M. 1999. Family Miridae Hahn, 1833 – In: Aukema, B., C. Rieger (eds.). Catalogue of the Heteroptera of the Palaearctic Region, The Netherlands Entomological Society, Amsterdam, Vol. **3**: 1-576.

WACHMANN E., MELBER A., DECKERT J. 2004. Wanzen 2 – Die Tierwelt Deutschlands, **75**: 1-294.

WAGNER E. 1951. Zur Systematik der Gattung *Dicyphus* (Hem. Het. Miridae) – Commentationes Biologicae, **12** (6): 1-36.

WAGNER E. 1952. Blindwanzen oder Miriden. – Die Tierwelt Deutschlands, **41**: 1-218.

WAGNER E. 1958. Deuxiéme contribution à la faune des Hémiptères Héteroptères de France. – Vie et Milieu, **9**: 236-247.

WAGNER E. 1961. Unterordnung: Ungleichflügler, Wanzen, Heteroptera (Hemiptera). – Die Tierwelt Mitteleuropas, **4**: 1-173.

WAGNER E. 1974. Die Miridae Hahn, 1831, des Mittelmeerraumes und der Makaronesischen Inseln (Hemiptera, Heteroptera). Teil 1. – Entomologische Abhandlungen Staatliches Museum für Tierkunde in Dresden, **37**, Suppl. (1970-1971): i-ii , 1-484.

WAGNER E., WEBER H. H. 1964. Héteroptères Miridae. – Faune de France, **67**: 1-592.

Received: 10.09.2007

Author's adrsess:
Nikolay Simov, National Museum of Natural History – BAS, Tsar Osvoboditel Blvd. 1, 1000 Sofia, Bulgaria, e-mail: simov@nmnh.bas.bg

Принос към таксономията на *Dicyphus constrictus* (Boheman, 1852) (Heteroptera: Miridae)

Михаил ЙОСИФОВ, Николай СИМОВ

(Р е з ю м е)

Описва се новия подвид *Dicyphus constrictus eduardi* ssp.n. от Рила, Пирин и Славянка планина. Новия подвид е калцифил, трофично свързан с *Geranium sylvaticum* var. *glanduligerum* и *Geranium macrorrhyzum*. Обитава карстови райони в иглолистния пояс на споменатите планини между 1400 и 1900 m надморска височина.