

NEW RECORDS OF THE GENUS *CARPELIMUS* LEACH, 1819 (COLEOPTERA: STAPHYLINIDAE: OXYTELINAE) FROM TAIWAN

Mikhail Yu. Gildenkov

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New distributional data for thirteen species of the genus *Carpelimus* Leach, 1819 of Taiwan are presented, eight species from which are recorded for the first time: *C.* (s.str.) *biimpessus* (Cameron, 1933), *C.* (s.str.) *elegantus* Gildenkov, 2012, *C.* (s.str.) *indicus* (Kraatz, 1859), *C.* (s.str.) *praelongus* (Bernhauer, 1938), *C.* (s.str.) *pusillus* (Gravenhorst, 1802), *C.* (s.str.) *tener* (Bernhauer, 1902), *C. (Trogophloeus) padangensis* (Cameron, 1928), *C. (T.) paripalitans* Gildenkov, 2013. The record of *C. (Trogophloeus) globicollis globicollis* (Eppelsheim, 1885) for the fauna of Taiwan is erroneous; the record of *C. (s. str.) vagus* (Sharp, 1889) is need in confirmation.

Key words: Coleoptera, Oxytelinae, *Carpelimus*, Taiwan, new records.

Mikhail Yu. Gildenkov. Smolensk State University, department of Ecology and Chemistry, Przhhevsky str., 4, Smolensk 214000, Russia, e-mail: mgildenkov@mail.ru

INTRODUCTION

The genus *Carpelimus* Leach, 1819 is one of the largest genera within the subfamily Oxytelinae Fleming, 1821 with about 500 species in world and distributed in all zoogeographical areas. The majority species are inhabit damp ground on the supralittoral, where they can reach the big quantity and plays important role in the functioning of ecological systems.

According to the catalogue of Smetana (2004), for the Taiwan is known four species (the names of species and subgenera are listed in according to this catalogue): *C. (Troginus) formosanus* (Cameron, 1940); *C. (inc. sed.) formosae* (Cameron, 1940); *C. (inc. sed.) globicollis* (Eppelsheim, 1885); *C. (inc. sed.) vagus* (Sharp, 1889). One species were synonymized (Gildenkov, 2014): *C. (Troginus)*

atomus (Saulcy, 1864) = *C. (T.) formosanus* (Cameron, 1940), syn.

The present paper presents a list of 15 species of the genus *Carpelimus* of Taiwan, eight of them are new for this island, four species has been recorded (*C. (B.) formosae* (Cameron, 1940) and *C. (Troginus) atomus* (Saulcy, 1864)) and described (*C. (Bucephalinus) curvus* Gildenkov, 2014 and *C. (s.str.) pappi* Gildenkov, 2013) from Taiwan earlier, and *C. (Trogophloeus) pseudosimplex* Gildenkov, 2013 which was recently described from Asia (holotype from the Malaysia), including Taiwan.

MATERIAL AND METHODS

This paper is based on the study of specimens

which are deposited in the following collections: BMNH = British Museum of Natural History, London, UK (R. Booth); cMG = private collection of M. Gildenkov, Smolensk, Russia; cMSch = private collection of M. Schülke, Berlin, Germany; cVA = private collection of V. Assing, Hannover, Germany; FMNH = Field Museum of Natural History, Chicago, USA (M. Thayer); HNHM = Hungarian Natural History Museum, Budapest, Hungary (G. Makranczy); NHMW = Naturhistorisches Museum Wien, Vienna, Austria (H. Schillhammer); SDEI = Senckenberg Deutsches Entomologisches Institut, Müncheberg, Germany (L. Zerche); ZFMK = Zoologisches Forschungsmuseum Alexander Koenig, Bonn, Germany (D. Ahrens).

In the present study standard methods were used for the taxonomic research of the insects; the preparations were made with the use of the binocular microscope MBS-10. The genital preparations were processed using 10% KOH and fixed in euparal later.

RESULTS

Carpelimus (Bucephalinus) curvus Gildenkov, 2014

Gildenkov, 2014a: 233

Type material examined: Holotypus, male “Kankau (Koshun) Formosa, H. Sauter, VII 1942 09” “435” “Chicago NHMus M. Bernhauer Collection” (FMNH); Paratypus: 2 female “Kankau (Koshun) Formosa, H. Sauter, VII 1942 09” “435” “Chicago NHMus M. Bernhauer Collection” (FMNH); 1 male “Akau” “Formosa Sautter” “Chicago NHMus M. Bernhauer Collection” (cMG).

Additional material examined: 1 male “Kankau (Koshun) Formosa, H. Sauter, VII 1942 09” (SDEI); 1 male “Kankau (Koshun) Formosa, H. Sauter, VII 1942 09” “435” “*Trogophloeus silvestris* Cam.” “ex. coll. Scheerpeltz” (NHMW).

Remarks. It is known only from Taiwan.

Carpelimus (Bucephalinus) formosae (Cameron, 1940)

Bernhauer, 1922: 222 (as *Trogophloeus silvestris*); Cameron, 1940: 249

Type material examined: Lectotypus, female: “Kankau (Koshun) Formosa, H. Sauter VII 1909” “*T. formosae* TYPE Cam.” “Type” “Lectotypus *Trogophloeus formosae* Cameron, 1940 | des. Gildenkov, 2007” “M. Cameron Bequest. B.M. 1955-147” (BMNH); Paralectotypus, 2 females: “SYNTYPE” “Kankau (Koshun) Formosa, H. Sauter VII 1909” “*T. formosae* TYPE Cam.” “Syntype *Trogophloeus formosae* Cameron, det. R.G. Both 2007” “Paralectotypus *Trogophloeus formosae* Cameron, 1940 | des. Gildenkov, 2007” “M. Cameron Bequest. B.M. 1955-147” (BMNH).

Additional material examined: 1 specimen “TAIWAN – Chiayi Co. Alishan, Road 129, km 15,5, after Tanaigu Track, 600 m, leaf litter 13.IV.2009, leg. Vit [7]” (cVA); 3 specimens “TAIWAN: Chiayi Co., Alishan, S Lungmei 4.5km from Alishan 800m, mixed forest litter 12.IV.2009, leg. S. Vit” (cMSch); 1 specimen – cMG); 1 male “TAIWAN: Kao-Hsiung Co., Yushan NP, rd. 20, km 117, road sides slop litter, 1800m, 13.IV.2009, leg. S. Vit (9)” (cMSch); 2 males, 4 specimens “TAIWAN: Chiayi Co., Alishan, rd. 129, km 15,5, after Tanaigu, 600 m, dead leaves, 13.IV.2009, leg. S. Vit” (cMSch); 2 males, 1 specimen – cMG); 6 specimens “Kankau (Koshun) Formosa, H. Sauter, VII 1942 09” “435” “Chicago NHMus M. Bernhauer Collection” (FMNH); 1 male “Kankau (Koshun) Formosa, H. Sauter, VII 1942 09” (SDEI).

Remarks. The lectotype was designated from Taiwan (Gildenkov, 2013). The species is known (our data) from Japan (Okinawa). According to the catalogue of Smetana (2004) it is known from China (Hebei, Hongkong). The material from there is unknown for me.

Carpelimus (s.str.) *biimpressus* (Cameron, 1933)

Material examined: 2 specimens “TAIWAN: T’ai-tung Hsien (Dist.), Shih-nan, Peiyuan,

Tungho, elev.ca 200m, 2-IX-1972” “black light trap, F. J. Santana” (FMNH; 1 specimen – cMG); 1 specimen “TAIWAN: Hsinchu Hsien (Dist.), Kuanhsi, 8-X-1970” “white light trap, P.C. Lien” (FMNH); 1 specimen “TAIWAN: Nan-t’ou Hsien (Dist.) Puli, elev.ca 400m, 20-VIII-1973” “black light trap, F. J. Santana” (FMNH); 1 specimen “TAIWAN: P’ing-tung Hsien (Dist.), Ku-lou, 31-VIII-1974” “black light trap, F.J. Santana” (FMNH); 5 specimens “TAIWAN: T’ai-tung Hsien (Dist.), Taiguan, Tung-ho, elev. ca 100m, 1-IX-1972” “black light trap, F.J. Santana” (FMNH; 1 specimen – cMG); 3 specimens “TAIWAN: Shih-nan, Peiyuan, Tungho, Taitung Co., 2-IX-1972” “black light trap, F. J. Santana” (FMNH); 1 specimen “TAIWAN: Peiyuan, Tai’ tung Co., Tungho 200m. alt., 12-VI-1972 C.I. Cheng & T.S. Ho” (FMNH); 1 specimen “TAIWAN: T’ai-tung Hsien (Dist.), Peiyuan, Tung-ho, elev.ca 200 m, 12-VI-1972” “white light trap, C.I. Cheng & T.S. Lo” (FMNH); 1 specimen “TAIWAN: I-Ian Hsien (Dist.), Nan-ao, 12-X-1973” “black light trap, F.J. Santana” (FMNH); 1 specimen “TAIWAN: Hua-lien Hsien (Dist.), Fengpin, 14-IV-1975” “black light trap, F.J. Santana” (FMNH).

Remarks. The species is described from Japan (Cameron, 1933); the holotype was studied by me (Gildenkov, 2001). The species is known (our data) from Japan (Okinawa) and Vietnam. According to the catalogue of Smetana (2004), it is known from China. *C. biimpressus* is here reported for Taiwan for the first time.

Carpelimus (s.str.) *elegantus* Gildenkov, 2012

Material examined: 1 male, 1 female, 16 specimens “TAIWAN: T’ai-tung Hsien (Dist.), Peiyuan, Tung-ho, elev.ca 200 m, 12-VI-1972” “white light trap, C.I. Cheng & T.S. Lo” (FMNH; 1 specimen – cMG); 7 specimens “TAIWAN: Peiyuan, Tai’ tung Co., Tungho, 12-VI-1972” “white light trap, C.I. Cheng & T.S. Lo” (FMNH); 7 specimens “TAIWAN: Peiyuan, Tai’ tung Co., Tungho 200m. alt., 12-VI-1972 C.I. Cheng & T.S. Ho” (FMNH); 9 specimens “TAIWAN: T’ai-tung Hsien (Dist.), Taiguan, Tung-ho, elev. ca 100m,

1-IX-1972” “black light trap, F.J. Santana” (FMNH); 1 female, 6 specimens “TAIWAN: T’ai-tung Hsien (Dist.), Shih-nan, Peiyuan, Tungho, elev.ca 200m, 2-IX-1972” “black light trap, F. J. Santana” (FMNH); 7 specimens “TAIWAN: Shih-nan, Peiyuan, Tungho, Taitung Co., 2-IX-1972” “black light trap, F. J. Santana” (FMNH; 1 specimen – cMG); 1 specimen “TAIWAN: Hsinchu Hsien (Dist.), Kuanhsi, 8-X-1970” “white light trap, P.C. Lien” (FMNH); 1 specimen “TAIWAN: Nan-t’ou Hsien (Dist.), Wu she, elev. ca 1150m, 24-VIII-1973” “black light trap, F.J. Santana” (FMNH); 1 specimen “TAIWAN: I-Ian Hsien (Dist.), Nan-ao, 12-X-1973” “black light trap, F.J. Santana” (FMNH).

Remarks. The species is described from Pakistan (Gildenkov, 2012) and known from China (Guizhou, Homgkong) (Gildenkov, 2014b). Recently it was recorded (our data) from Cambodia, India, Indonesia (Java, Bali, Sulawesi), Japan (Okinawa), Malaysia (Malacca), Philippines (Luzon, Mindanao, Palawan, Eastern Visayas), Sri Lanka, Thailand, Vietnam. *C. elegantus* is here reported for Taiwan for the first time.

Carpelimus (s.str.) *indicus* (Kraatz, 1859) (*flavipes* Motschulsky, 1861; *ceylonicus* Bernhauer, 1902; *kreyenbergi* Bernhauer, 1928 – syn. in Gildenkov, 2014: 298)

Material examined: 1 male “Formosa Sautter” “Takao” “27 Dez. 1906” “Chicago NHMus. M.Bernhauer Collection” (FMNH); 1 specimen “Formosa Sautter” “Takao” “Taker 29. III. 87 (1887) Grabenrand” “*biimpressus* Cam., det. Bernhauer” “Chicago NHMus. M.Bernhauer Collection” (FMNH); 3 specimens “TAIWAN: T’ai-tung Hsien (Dist.), Peiyuan, Tung-ho, elev. ca 200 m, 12-VI-1972” “white light trap, C.I. Cheng & T.S. Lo” (FMNH; 1 specimen – cMG); 17 specimens “TAIWAN: P’ing-tung Hsien (Dist.), Ch’ao-chou, 29-VIII-1974” “black light trap, F.J. Santana” (FMNH; 1 specimen – cMG); 5 specimens “TAIWAN: T’ai-tung Hsien (Dist.), Taiguan, Tung-ho, elev. ca 100m, 1-IX-1972” “black light trap, F.J. Santana” (FMNH); 2

specimens “TAIWAN: I-Ian Hsien (Dist.), Nan-ao, 12-X-1973” “black light trap, F.J. Santana” (FMNH); 5 specimens “TAIWAN: P’ing-tung Hsien (Dist.), Ku-lou, 31-VIII-1974” “black light trap, F.J. Santana” (FMNH); 2 specimens “TAIWAN: Hsinchu Hsien (Dist.), Kuanhsi, 8-X-1970” “white light trap. P.C. Lien” (FMNH); 1 specimen “TAIWAN: Hua-lien Hsien (Dist.), Feng-pin, 15-IV-1974” “black light trap, F.J. Santana” (FMNH); 2 specimens “TAIWAN: Hua-lien Hsien (Dist.), Fengpin, 14-IV-1975” “black light trap, F.J. Santana” (FMNH).

Remarks. The lectotype was designated from India (Gildenkov, 2010). The species is widely distributed in the Oriental region (our data): Andaman islands, Cambodia, India, Indonesia (Borneo, Sumatra, Java), Japan (Okinawa), Laos, Malaysia (including Borneo), Myanma, Nepal, Philippines, Sri Lanka, Thailand, Vietnam. In the Palaearctic it is known from Japan, China (N-Sichuan), Pakistan, China (Fuzhou, Guangdong, Guangxi, Guizhou, Hongkong, Hunan, Yunnan, Zhejiang) (Gildenkov, 2001, 2009, 2012, 2014b). *C. indicus* is here reported for Taiwan for the first time.

Carpelimus (s.str.) *pappi* Gildenkov, 2013

Gildenkov, 2013c: 225

Type material examined: Holotypus, male “TAIWAN, Pingtung Hsien, Kenting Nat. P., Botanical Garden” “4-6.X.2000, L. Papp, L. Peregovits & L. Ronkay” (HNHM); Paratypus: 3 males, 1 female “TAIWAN, Pingtung Hsien, Kenting Nat. P., Botanical Garden” “4-6.X.2000, L. Papp, L. Peregovits & L. Ronkay” (HNHM); 1 male – cMG).

Material (serial): 1 female “TAIWAN, Taipei Hsien, Fu-Shan LTER site, lake shore, meadow” “swept, 25.III.2003, leg. L. Papp & M. Földvan” (HNHM); 1 male, 20 specimens “TAIWAN: T’ai-tung Hsien (Dist.), Peiyuan, Tung-ho, elev.ca 200 m, 12-VI-1972” “white light trap, C.I. Cheng & T.S. Lo” (FMNH); 5 specimens “TAIWAN: Peiyuan, Tai’ tung Co., Tungho 200m. alt., 12-VI-1972 C.I. Cheng & T.S. Lo”

(FMNH); 5 specimens “TAIWAN: Peiyuan, Tai’ tung Co., Tungho, 12-VI-1972” “white light trap, C.I. Cheng & T.S. Lo” (FMNH); 14 specimens “TAIWAN: T’ai-tung Hsien (Dist.), Taiguan, Tung-ho, elev. ca 100m, 1-IX-1972” “black light trap, F.J. Santana” (FMNH); 1 specimen “TAIWAN: I-Ian Hsien (Dist.), Chi-kung-Ii, elev. ca 250m, 18-X-1973” “black light trap, F.J. Santana” (FMNH); 26 specimens “TAIWAN: Hua-lien Hsien (Dist.), Feng-pin, 15-IV-1974” “black light trap, F.J. Santana” (FMNH); 2 specimens – cMG; 4 specimens “TAIWAN: T’aitung Hsien (Dist.), Shih-nan, Peiyuan, Tungho, elev.ca 200m, 2-IX-1972” “black light trap. F. J. Santana” (FMNH); 5 specimens “TAIWAN: Shih-nan, Peiyuan, Tungho, Taitung Co., 2-IX-1972” “black light trap. F. J. Santana” (FMNH); 3 specimens “TAIWAN: Hsinchu Hsien (Dist.), Kuanhsi, 8-X-1970” “white light trap. P.C. Lien” (FMNH); 2 specimens “TAIWAN: P’ing-tung Hsien (Dist.), Ku-lou, 31-VIII-1974” “black light trap, F.J. Santana” (FMNH); 15 specimens “TAIWAN: Nan-t’ou Hsien (Dist.), Wu she, elev. ca 1150m, 24-VIII-1973” “black light trap, F.J. Santana” (FMNH); 9 specimens “TAIWAN: Hua-lien Hsien (Dist.), Fengpin, 14-IV-1975” “black light trap, F.J. Santana” (FMNH); 1 specimen “TAIWAN: P’eng-hu Hsien (Dist.), Ma-kung, 15-V-1975” “black light trap, F.J. Santana” (FMNH); 1 specimen “TAIWAN: P’eng-hu Hsien (Dist.), Ma-kung, 17-V-1975” “black light trap, F.J. Santana” (FMNH); 14 specimens “TAIWAN: I-Ian Hsien (Dist.), Nan-ao, 12-X-1973” “black light trap, F.J. Santana” (FMNH); 2 specimens – cMG; 1 specimen – ZFMK; 14 ex. “TAIWAN: Nan-t’ou Hsien (Dist.) Puli, elev.ca 400m, 20-VIII-1973” “black light trap. F. J. Santana” (FMNH); 5 specimens “TAIWAN: P’ing-tung Hsien (Dist.), Ch’ao-chou, 29-VIII-1974” “black light trap, F.J. Santana” (FMNH).

Remarks. The species is known (our data) from Japan (Okinawa).

Carpelimus (s.str.) *praelongus* (Bernhauer, 1938)

Type material examined: 1 female “Alikang Formosa Sauter 07-09” “VIII” “*Trogophloeus* sp.

Rambousek det.” (SDEI); 1 female, 3 specimens “TAIWAN: Nan-t’ou Hsien (Dist.), Wu she, elev. ca 1150m, 24-VIII-1973” “black light trap, F.J. Santana” (FMNH); 1 female “TAIWAN: T’ai-tung Hsien (Dist.), Peiyuan, Tung-ho, elev. ca 200 m, 12-VI-1972” “white light trap, C.I. Cheng & T.S. Lo” (FMNH); 1 female “TAIWAN: Nan-t’ou Hsien (Dist.) Puli, elev.ca 400m, 20-VIII-1973” “black light trap. F. J. Santana” (FMNH); 2 females “TAIWAN: T’ai-tung Hsien (Dist.), Taiguan, Tung-ho, elev. ca 100m, 1-IX-1972” “black light trap, F.J. Santana” (FMNH); 1 specimen “TAIWAN: P’eng-hu Hsien (Dist.), Ma-kung, 17-V-1975” “black light trap, F.J. Santana” (cMG).

Remarks. The lectotype was designated from China (Gildenkov, 2013). The species is known from Fujian and Zhejiang (Gildenkov, 2014b). Recently it was recorded (our data) from Vietnam, Indonesia (Sumatra). *C. praelongus* is here reported for Taiwan for the first time.

Carpelimus (s.str.) *pusillus* (Gravenhorst, 1802) (*picipennis* Stephens, 1834; *affinis* Stephens, 1834; *rufipennis* Stephens, 1834; *evertsi* Bernhauer, 1915; *lindbergi* Scheerpeltz, – syn. in Gildenkov, 2010: 17; *lasti* Scheerpeltz, 1946; *thessalonicensis* Scheerpeltz, 1963 – syn. in Gildenkov, 2004: 542; *asmarensis* Coiffait, 1982 – syn. in Gildenkov, 2010: 17)

Material examined: 4 specimens “TAIWAN: Nan-t’ou Hsien (Dist.) Puli, elev.ca 400m, 20-VIII-1973” “black light trap. F. J. Santana” (FMNH); 1 specimen “TAIWAN: Hsinchu Hsien (Dist.), Kuanhsi, 8-X-1970” “white light trap. P.C. Lien” (FMNH); 1 specimen “TAIWAN: T’ai-tung Hsien (Dist.), Taiguan, Tung-ho, elev. ca 100m, 1-IX-1972” “black light trap, F.J. Santana” (FMNH).

Remarks. The lectotype was designated from Europe (Gildenkov, 2004, 2004a). It is widely distributed in the Palaearctic (Gildenkov, 2001, 2009); it was recorded for Nigeria (Gildenkov, 2007, 2007a). The species is known (our data) from Andaman islands, India (W. Bengal), Japan

(Okinawa), Thailand, Vietnam. Recently it was recorded (Gildenkov, 2014b) from China (Peking, Shaanxi, Shandong). *C. pusillus* is here reported for Taiwan for the first time.

Carpelimus (s.str.) *tener* (Bernhauer, 1902)

Type material examined: 4 males, 8 specimens “TAIWAN: T’ai-tung Hsien (Dist.), Taiguan, Tung-ho, elev. ca 100m, 1-IX-1972” “black light trap, F.J. Santana” (FMNH; 2 males – cMG); 1 female, 2 specimens “TAIWAN: Shih-nan, Peiyuan, Tungho, Taitung Co., 2-IX-1972” “black light trap. F. J. Santana” (FMNH); 2 specimens “TAIWAN: T’ai-tung Hsien (Dist.), Shih-nan, Peiyuan, Tungho, elev.ca 200m, 2-IX-1972” “black light trap. F. J. Santana” (FMNH; 1 specimen – cMG).

Remarks. The species is described (Bernhauer, 1902) from Kazakhstan (Aulie Ata). According to the catalogue of Smetana (2004), it is known from Egypt, Iran, Kazakhstan, Mongolia, Turkmenistan, Uzbekistan. The species is known from Morocco, Egypt, Iraq, Kazakhstan, Tadjikistan, Turkmenistan, Uzbekistan; Afghanistan, Pakistan, China (Shandong) (Gildenkov, 2001, 2009, 2012). *C. tener* is here reported for Taiwan and Oriental region for the first time.

[*Carpelimus* (s. str.) *vagus* (Sharp, 1889)]

Cameron, 1949: 461

Remarks. According to the catalogue of Smetana (2004), it is known from China (Heilongjiang, Jiangsu, Jilin, Liaoning), Korea and Japan (see also Gildenkov, 2001, 2003). Recently it was recorded (our data) from China (Liaoning). The presence of *C. vagus* in Taiwan is questionably. This species is very similar with *C. indicus* and *C. biimpressus*, with which it can be misidentified.

Carpelimus (*Troginus*) *atomus* (Saulcy, 1864) (*discolor* Baudi di Selve, 1870; *variegatus*

Cameron 1944 – syn. in Gildenkov, 2007b: 1318; *ruandanus* Cameron 1956 – syn. in Gildenkov, 2007b: 1318; *maroccanus* Gildenkov 2004 – syn. in Gildenkov, 2007b: 1318; *travei* Coiffait, 1982 – syn. in Gildenkov, 2014: 304; *formosanus* Cameron, 1940 – syn. in Gildenkov, 2014: 304; *atomarius* Coiffait, 1983 – syn. in Gildenkov, 2014: 304)
Cameron, 1940: 249 (as *Trogophloeus (Troginus) formosanus*)

Type material examined (as *formosanus*): Lectotypus, male “Lectotypus *Trogophloeus formosanus* Cameron, 1940 | des. M.Gildenkov, 2011” “Type” “Takosaki – Near Mt. Ari. Formosa. 12-12 1937/ Coll Yoshio Yano” <*T.formosanus* TYPE Cam.” “No. 120” “M.Cameron Bequest. B.M. 1955-147” “*Carpelimus atomus* (Saulcy, 1864), det. M.Gildenkov, 2011” (BMNH); Paralectotypus: 1 male “Paralectotypus *Trogophloeus formosanus* Cameron, 1940 | des. M.Gildenkov, 2011” “SYNTYPE” “CHINA Foochow/ 1936-37/ M/ S/ Yang” “Syntype/ paratype *Trogophloeus formosanus* Cam. | det. R.G. Booth, 2009” “M.Cameron Bequest. B.M. 1955-147” “*Carpelimus atomus* (Saulcy, 1864), det. M.Gildenkov, 2011” (BMNH).

Material examined (serial, as *atomus*): 2 specimens “TAIWAN, Nantou Prov., Huisun Forest Area, 15 km N of Puli” “500 m, at light, 12-13.IV.1997, G. Csorba & L. Ronkay” (HNHM); 3 specimens “TAIWAN, Pingtung Hsien, Kenting Nat. P., Botanical Garden” “4-6.X.2000, L. Papp, L. Peregovits & L. Ronkay” (HNHM); 1 male, 4 specimens “TAIWAN: Hsinchu Hsien (Dist.), Kuanhsi, 8-X-1970” “white light trap. P.C. Lien” (FMNH); 2 specimens “TAIWAN: T’ai-tung Hsien (Dist.), Peiyuan, Tung-ho, elev.ca 200 m, 12-VI-1972” “white light trap, C.I. Cheng & T.S. Lo” (FMNH); 1 specimen “TAIWAN: Peiyuan, Tai’ tung Co., Tung-ho, 12-VI-1972” “white light trap, C.I. Cheng & T.S. Lo” (FMNH); 1 specimen “TAIWAN: T’ai-tung Hsien (Dist.), Shih-nan, Peiyuan, Tung-ho, elev.ca 200m, 2-IX-1972” “black light trap. F. J. Santana” (FMNH); 2 specimens “TAIWAN: Nan-t’ou Hsien (Dist.) Puli, elev.ca 400m, 20-VIII-1973” “black light trap. F. J. Santana” (FMNH).

Remarks. The lectotype of *Trogophloeus (Troginus) formosanus* was designated from Taiwan (Gildenkov, 2013). The species is widely distributed in the Oriental region (our data): India, Indonesia (Borneo, Sumatra, Java), Japan (Okinawa), Cambodia, Malaysia (including Borneo), Nepal, Philippines, Sri Lanka, Thailand, Vietnam. Recently it was recorded (Gildenkov, 2014b) from China (Guangdong, Guizhou, Hongkong, Hubei, Hunan, Yunnan, Zhejiang). *C. atomus* is known from the tropical Africa: Angola, Benin, Botswana, Burundi, Cameroon, the Central-African Republic, Congo, Cote d’Ivoire, Ethiopia, Gambia, Ghana, Madagascar, Mauritius, Namibia, Nigeria, the Republic of South Africa, Ruanda, Senegal, Seychelles islands, Sudan, Tanzania, Uganda, Yemen, Zambia, Zimbabwe (Gildenkov, 2007b, 2007c). Besides that, the species is many times was recorded from the Palaearctic: Cyprus, Syria (Gusarov, 1997), Egypt, Libya, Saudi Arabia (Gusarov, 1997, 2001, 2003a, 2003b, 2009a), Iraq (Gildenkov, 2001, 2003a, 2003b), China (Hebei), Japan, South Korea (Gildenkov (as *formosanus*), 2001, 2003a, 2003b), Morocco (Gildenkov (as *maroccanus*), 2001, 2003a, 2003b), Turkey (Gildenkov, 2007b, 2007c), Afghanistan (Gildenkov, 2009a), Pakistan (Gildenkov, 2012) and China (Hebei, N-Sichuan, Peking, Shaanxi) (Gildenkov, 2014b). Recently it was recorded (our data) from Canary islands, Malta, Madiera, Spain, Tunis. Such distribution confirms the species more likely to belong to the fauna of tropical Africa and Oriental area, than to the fauna of Palaearctic.

[*Carpelimus (Trogophloeus) globicollis globicollis* (Eppelsheim, 1885)]

Bernhauer, 1922: 222

Remarks. The lectotype was designated from Ghana (Gildenkov, 2013a). It is well-known only from Tropical Africa (Gildenkov, 2013a): Gambia, Ghana, Senegal. The record of the species by Bernhauer (1922) for Taiwan is erroneous (see also Remarks for *C. pseudosimplex* below).

Carpelimus (Trogophloeus) padangensis
(Cameron, 1928)

Material examined: 3 specimen “TAIWAN: Shih-nan, Peiyuan, Tungho, Taitung Co., 2-IX-1972” “black light trap. F. J. Santana” (FMNH); 1 male “TAIWAN: Nan-t’ou Hsien (Dist.) Puli, elev.ca 400m, 20-VIII-1973” “black light trap. F. J. Santana” (FMNH); 1 specimen “TAIWAN: T’ai-tung Hsien (Dist.), Taiguan, Tung-ho, elev. ca 100m, 1-IX-1972” “black light trap, F.J. Santana” (FMNH).

Remarks. The lectotype was designated from Sumatra, Indonesia (Gildenkov, 2013a). The species is known from Burkina Faso, Congo-Kinshasa, Gabon, Guinea, Ivory Coast, Madagascar, Reunion island (Gildenkov, 2013a). Recently it is recorded (our data) from Cambodia, Indonesia (Bali, Irian Jaya, Molucca, Sumatra), Malaysia (Borneo), Philippines (Palawan), Singapore, Thailand. *C. padangensis* is here reported for Taiwan for the first time.

Carpelimus (Trogophloeus) paripalitans
Gildenkov, 2013

Material examined: 1 female, 6 specimens “TAIWAN: Hsinchu Hsien (Dist.), Kuanhsi, 8-X-1970” “white light trap. P.C. Lien” (FMNH); 1 specimen – ZFMK); 2 specimens “TAIWAN: T’ai-tung Hsien (Dist.), Peiyuan, Tung-ho, elev.ca 200 m, 12-VI-1972” “white light trap, C.I. Cheng & T.S. Lo” (FMNH); 3 specimens “TAIWAN: T’ai-tung Hsien (Dist.), Taiguan, Tung-ho, elev. ca 100m, 1-IX-1972” “black light trap, F.J. Santana” (FMNH); 1 specimen “TAIWAN: P’eng-hu Hsien (Dist.), Ma-kung, 15-V-1975” “black light trap, F.J. Santana” (FMNH); 1 specimen “TAIWAN: Nan-t’ou Hsien (Dist.), Wu she, elev.ca 1150m, 24-VIII-1973” “black light trap, F.J. Santana” (FMNH); 1 specimen “TAIWAN: I-Ian Hsien (Dist.), Nan-ao, 12-X-1973” “black light trap, F.J. Santana” (FMNH); 1 female “TAIWAN: T’ai-tung Hsien (Dist.), Shih-nan, Peiyuan, Tungho, elev.ca 200m, 2-IX-1972” “black light trap. F. J. Santana” (FMNH); 1 male “TAIWAN: Nan-t’ou Hsien (Dist.) Puli,

elev.ca 400m, 20-VIII-1973” “black light trap. F. J. Santana” (FMNH); 1 specimen “TAIWAN: Hua-lien Hsien (Dist.), Feng-pin, 15-IV-1974” “black light trap, F.J. Santana” (FMNH); 1 specimen “TAIWAN: P’ing-tung Hsien (Dist.), Ku-lou, 31-VIII-1974” “black light trap, F.J. Santana” (FMNH).

Remarks. The species was described from Cambodia, China (Guizhou, Hongkong), Indonesia (Borneo), Malaysia (Malacca), Thailand, Vietnam, Pakistan (Gildenkov, 2013b). The species is known (our data) from Japan (Okinawa). It is here reported for Taiwan for the first time.

Carpelimus (Trogophloeus) pseudosimplex
Gildenkov, 2013

Gildenkov, 2013c: 233

Type material examined: Paratypus, 1 male “Alicang Formosa 10 Sauter 07-09” “7 VIII” (SDEI).

Remarks. A type material is very extensive (Gildenkov, 2013c), the species is described (except for Taiwan) from: China (Hongkong), India, Indonesia (Sulawesi, Java), Malaysia (Malacca), New Caledonia, Philippines (Luzon), Sri Lanka, Thailand, Vietnam. The species belongs to “*simplex*” group, which includes *C. simplex* (Motschulsky, 1857), *C. globicollis globicollis* (Eppelsheim, 1885), *C. globicollis grandicollis* Gildenkov, 2013, *C. malgaceus* (Fauvel, 1904), *C. collarti* (Cameron, 1935), *C. lisfranci lisfranci* (Bernhauer, 1938), *C. lisfranci seydeli* (Cameron, 1952) and *C. saigonensis* (Cameron, 1940). Earlier, it was misidentified with *C. globicollis* and (more often) with *C. simplex* as evidenced by the studied material from old collections: 1 specimen “Manila Philipp” “*globicollis* Ep. det. Bernhauer” “Chicago NHMus M. Bernhauer Collection” (FMNH); 1 male “*simplex* Motsch. Ceylon det. Kraatz” “c. Eppelsh Steind. d.” (NHMW); 2 males, 1 female, 3 specimens “Manila Philipp” “leg Böttcher 1. Los; Staudinger” “*simplex* Motsch” “ex. coll.

Scheerpeltz” (NHMW); 4 specimens “Batavia Biró 1898” “*simplex* Motsch. det. A. Fauvel” (HNHM; 1 specimen – cMG); 1 male “Celebes Macassar 1.74: O.Beccari” “c. Epplsh. Steind. d.” “795” “*simplex* Mots. Celebes Dohrn” (NHMW); 2 specimens “Celebes Macassar 1.74: O.Beccari” “c. Epplsh. Steind. d.” “*simplex* det. Bernhauer” (NHMW); 1 specimen “Celebes» «*simplex* Motsch” “*Trogophloeus Simplex* Motsch. Celeb” “ex. coll. Klima” (NHMW); 1 male, 1 female “Nouvelle Calédonie leg. Cochereau” “Centre – Orston ... Mars 1966” “*Trogophloeus simplex* Motsch.” “Piege lumineux” “ex. coll. Scheerpeltz” (NHMW).

DISCUSSION

The Taiwan Island is located in the Oriental zoogeographical region and composition of the fauna of the genus *Carpelimus* completely correspond with it. Eight species of the reliable known thirteen species from Taiwan are typical elements of the Oriental fauna: *C. indicus*, *C. formosae*, *C. praelongus*, *C. padangensis*, *C. paripalitanis*, *C. pseudosimplex*, *C. pappi* and *C. curvus* (endemic for Taiwan). *C. elegantus* and *C. biimpressus* have been described from the Palearctic region, the first from North-Western Pakistan, the second - from Japan; the studied material proved that they should be considered as Oriental species, spreading in the Palearctic. *C. atomus* is the most widespread of all known species of the genus, it is widely distributed in the Tropical Africa and the Oriental region and has been recorded both Palearctic and Australian regions; its habitation in Taiwan is well correlated with this area. The presence in Taiwan of *C. pusillus* and *C. tener* may be considered as faunistic elements which came from the Palearctic. If the invasion of the widespread in the Palearctic *C. pusillus* into Tropical Africa and the Oriental region has been known before, the finding of *C. tener* in Taiwan come as a surprise. *C. tener* is widely distributed in Central Asia, it is known from North Africa, North-Western Pakistan and North-Eastern China. It is recorded for the Oriental region for the first time. It is possible that this poorly known species is more

widely distributed in China, including southern regions. However, not excluded that it penetrated to Taiwan a long time ago and connections with other populations have been lost.

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