

Paolo Neri, Luca Toledano & Karel Rébl

***Bembidion (Asioperyphus) pseudoinfuscatum n. sp.*  
from Mongolia and Siberia**

(Insecta: Coleoptera: Carabidae: Bembidiini)

**Abstract**

*Bembidion (Asioperyphus) pseudoinfuscatum n. sp.* from Mongolia and Siberia is described and compared with the species of the subgenus showing similar characters.

Key words: *Bembidion*, *Asioperyphus*, Mongolia, Russia, new species, taxonomy.

**Riassunto**

[*Bembidion (Asioperyphus) pseudoinfuscatum n. sp. di Mongolia e Siberia (Insecta: Coleoptera: Carabidae: Bembidiini)*].

Viene descritto *Bembidion (Asioperyphus) pseudoinfuscatum n. sp.* di Mongolia e Siberia; è comparato con le specie del sottogenere che presentano caratteri simili.

**Introduction**

The species described here was discovered more than 20 years ago by the late Prof. Gerd Müller-Motzfeld and provisionally named *pseudoinfuscatum* (pers. comm. to K.R.); unfortunately its description was never published. The occurrence of this taxon in Mongolia was first reported by SCHNITTER (2016), under the name "*B. pseudoinfuscatum* Rébl, in litt.", due to some specimens from the Coll. Schnitter that were identified by L.T. and provisionally named in this way. We provide here the description of the new taxon using the same name as selected by its real discoverer, Gerd Müller-Motzfeld.

**Materials and methods**

We examined several specimens of all the species of subg. *Asioperyphus* Vysoký, 1986 sharing characters with the new species and the numerous papers dealing

with them (KRYZHANOVSKIJ, 1979; LUTSHNIK, 1928; MÜLLER-MOTZFELD, 1998; NETOLITZKY, 1934; VYSOKY, 1986).

The systematic treatment follows MARGGI *et al.* (2017). The total body length was measured from apex of labrum to the apex of the elytra. The genitalia of holotype and paratypes are mounted on the same pin as the specimen.

The photo of the habitus, made by LT is a composite image with progressive focusing obtained with a Nikon DSFi1 digital camera controlled by Nikon DS-L2 stand alone remote controller mounted on a Leica Z6 microscope equipped with a 1.0x Leica lens and a customized motorized stand made by LT, then processed with Helicon Focus® 6.4.3 and optimized with Photoshop® Elements 14. The photos of the genitalia are made with the same setup and processing method described above, although using a 5x Infinity Corrected Nikon Fluor lens on the Z6 microscope. The photos of the microsculpture are made with Nikon DSFi1 / Nikon DS-L2 on Leica M205C microscope equipped with Leica lens 1.0x and Leica phototube 2.5x.

The examined material is preserved in the following collections:

CTVR	coll. Luca Toledano, Verona, Italy
DW	coll. David W. Wrase, Gusow-Platkow, Germany (part of Zoologische Staatssammlung München, Germany)
MT	coll. Marcos Toribio, Tres Cantos (Madrid), Spain
PN	coll. Paolo Neri, Forlì, Italy
PS	coll. Peer Schnitter, Halle, Germany
KR	coll. Karel Rébl, Novè Strašeci, Czech Republic
ZIMG	Zoologische Institut und Museum, Greifswald, Germany (coll. Müller-Motzfeld)

***Bembidion (Asioperlyphus) pseudoinfuscatum* n. sp.** (figs 1, 2, 5, 8, 10)

**Diagnosis.** A *Bembidion* belonging to subg. *Asioperlyphus*, characterized by parallel sided elytra and U-shaped yellowish apical spot, pronotum microsculptured only at sides, elytral microsculpture with sculpticells of mixed shape, aedeagus with main tubular sclerite with a coil in the central portion and spermathecal reservoir with distal cavity half as long as the proximal one.

**Type locality.** Mongolei, Dornod-Aimak, Dashbalbar NE, salzsee steppe, 670 m., N 49°38'53.3" E 114°41'27.1".

**Type series.** Holotype, ♂, "N 49°38'50.3" E 114°41'27.1 / Mongolei Dornod-Aimak / Dashbalbar NE, / Salzsee Steppe / 27.07.2012 670m / leg. Schnitter"

[printed]” (CTVR).

We added to the specimen the following label [red, printed]: *Bembidion (Asioperypus) pseudoinfuscatum* Neri, Toledano & Rébl, 2023 – HOLOTYPUS.

Topotypical Paratypes. 4 ♂♂, 6 ♀♀, “N 49°38’50.3” E 114°41’27.1 / Mongolei Dornod-Aimak / Dashbalbar NE, / *Salzsee Steppe* / 27.07.2012 670m / leg. Schnitter”; (CTVR, PN, KR, PS).

Non-topotypical Paratypes.

Mongolia. 5 ♂♂, 6 ♀♀, “N 45°48’43.2” E 109°33’46.1” / Mongolei Donorgov Aimak / Ayrag 10km E / *Steppensee-Ufeizone* / 12.08.2013 970m / leg. Schnitter” (CTVR, PN, PS); 2 ♂♂, 4 ♀♀, “N 47°40’57.4” E 111°02’59.8” / Mongolei Chentej-Aimak / Öndörkhaan N, *Steppensee* / (Salz) 24.07.2012 1075m / leg. Schnitter” (CTVR, PS); 1 ♀, “N 45°17’478” E 113°50’16.9” / Mongolei Suchbaatar Aimak / Ganga Nuur Natural Reserve / *Salzstelle* / 10.08.2013 1240m / leg. Schnitter” (PS); 4 ♂♂, 4 ♀♀, “N 48°52’07.0 E 112°12’37.3” / Mongolei Dornod Aimak / Bayan Uul SSW, Ulz Gol, / Lager 3 *Steppe* / 25.07.2012 978m / leg. Schnitter” (CTVR, PN, PS); 4 ♂♂, 3 ♀♀, “N 48°27’43.4 E 114°53’05.6” / Mongolei Dornod Aimak / Khulstay Nuur, Tschojbalsan N, / Lager 4, *Steppensee* / 26.07.2013 685m / leg. Schnitter” (CTVR, PS); 3 ♂♂, 3 ♀♀, “N 48°39’02.6” E 114°21’21.8” / Mongolei Dornod Aimak / Yakh Nuur, Tschojbalsan N, / *Sand Salzschlick* / 25.07.2013 660m / leg. Schnitter” (CTVR, PS); 1 ♀, “N 47°07’31.5” E 119°09’56.8” / Mongolei Darnod Aimak / Degne Gol, Lager 10, *Steppe* / 05.08.2013 930m / leg. Schnitter” (PS); 6 ♂♂, 3 ♀♀, “N 47°34’11.5” E 118°37’37.4” / Mongolei Dornod Aimak / Chalchgol E, *Steppensee* / 06.08.2013 684m / leg. Schnitter” (CTVR, PN, PS); 3 ♂♂, “N 47°53’07.3” E 111°29’34.2” / Mongolei Chentej-Aimak / Batnorov S, *Steppensee, Ufer* / 25.07.2012 1026m / leg.: Schnitter” (CTVR, PS); 1 ♀, “N 48°41’35.5” E 114°41’21.6” / Mongolei Dornod Aimak / Yakh Nuur SE, Tschojbalsan N, / *Steppensee* / 26.07.2013 801m / leg. Schnitter” (PS); 1 ♂, “N 45°43’21.9” E 108°38’44.9” / Mongolei Donorgov Aimak / Ich Nart, Ayrag W, Lager 17, / *Steppe* / 12-14.08.2013 1180m / leg. Schnitter” (PS); 1 ♀, “N 45°20’40.6” E 113°20’16.5” / Mongolei Suchbaatar Aimak / Uyzen Nuur, Daringanga W, / Lager 15, *Uferzone* / 10.08.2013 1048m / leg. Schnitter” (PS); 2 ♀♀, “N 47°49’37.7” E 112°46’37.4” / Mongolei Dornod Aimak / Tümenzagt NE, Kherlen Gol, / Lager 2 *Aue-Sandufer* / 23.07.2013 873m / leg. Schnitter” (PS); 1 ♂, “N 46°59’07.2” E 119°21’42.5” / Mongolei Dornod Aimak / Nömrög, Nömrög Gol, *Sandufer* / 04.08.2013 877m / leg. Schnitter” (PS); 4 ♂♂, 3 ♀♀, “N 51°13’45.3” E 99°24’00.4” / Mongolei Khövsgöl Aimak / Zöölön (Renchinkhumbé) 20km / E Snishkhed Gol: *Flussfer* / 20.07.2019 1540m / leg. Schnitter” (PS, PN); 6 ♂♂, 5 ♀♀, “N 48°19’59.7” E 88°48’30.3” / Mongolei Bajan-Ölgij Aimak / Dajan nuur *Salzee, W-Ufer* / 03-05.08.2014 2240m / leg. A. Stubbe” (PS, PN); 1 ♀, “N 48°27’43.4 E 114°53’05.6” / Mongolei Dornod Aimak / Khulstay Nuur, Tschojbalcan N, / Lager 4, *Steppensee* / 26.07.2013

685m / leg. Schnitter" (PS); 3 ♂♂, 2 ♀♀, "N 48°31'18.2" E 110°27'45.9" / Mongolei Chenteij Aimak / Binder 15km SSW, *Steppensee* / (Toirom Nuur); *Ufer (Sand-Feinkless)* / 04.08.2019 1050m / leg. Schnitter" (PS); 4 ♂♂, 4 ♀♀, "N 51°21'11.9" E 99°21'21.1" / Mongolei Khövsgöl Aimak / Zagannuur, Doob Zagan Nuur: / *Seeufer (Ton)* / 21.07.2019 1540m / leg. Schnitter" (PS, PN, KR); 1 ♂, "N 51°21'11.9" E 99°21'21.1" / Mongolei Khövsgöl Aimak / Zagannuur, Doob Zagan Nuur: / *Seeufer (Ton)* / 21.07.2019 1540m / leg. Schnitter" (PS); 2 ♂♂, "Mongol. c. Sangiyn Dalay / 100km W Mandalgov / lgt. A. Mikyška, 8.7.2005" (CTVR, KR); 2 ♀♀, "Mongolia SE 3.8 / Domogov reg. stepp / 28km SE Chatan-Bulag / M. Halada leg. 2007" (CTVR, PN); 1 ♂, "Mongolia sw, 12.7.2005 / 40km W Bayanbulag / N 45°05' E 98°35' / lgt. A. Mikyška" (PN); 1 ♀, "Mongolia E 24.7 / 15km W Choibalsan / Kherlan riv. 770m / J. Halada leg. 2007" (DW); 1 ♂, "Mongolia C / 100km W Mandagov / Sangiyn Dalay, 7.7 / J. Halada lg., 2005" (DW); 6 ♂♂, 13 ♀♀, "Mongolia E / 50km SW Choibalsan / 960m, 25.7.2007 / J. Halada leg." (DW, CTVR); 1 ♀, "Mongolia / Mongol Gobi / Govi Altain / Orgon 11.VII.2005 / P. Tyrmer lgt." (KR); 1 ♂, "♂ 1969 // Mongolia, Ostgobi aimak / Choibalsan / Kherlan riv. 770m / J. Halada leg. 2007" (DW); 1 ♂, "Mongolia C / 100km W Mandagov / Sangiyn Dalay, 7.7 / J. Halada lg., 2005" (DW); 6 ♂♂, 13 ♀♀, "Mongolia E / 50km SW Choibalsan / 960m, 25.7.2007 / J. Halada leg." (DW, CTVR); 1 ♀, "Mongolia / Mongol Gobi / Govi Altain / Orgon 11.VII.2005 / P. Tyrmer lgt." (KR); 1 ♂, "♂ 1969 // Mongolia, Ostgobi aimak / 3 Km O v. Zuum-Bajan / 750m / Exp. Dott. Z. Kaszab, 1963 // Nr. 41 / 27.VI.63 // *muchi* Jedl. [handwritten] / det. Jedlicka // nicht identisch / mit *infuscatum* [handwritten] / det. G. Müller 1985" (ZIMG); 1 ♂, 1 ♀, "Mongolia, Ostgobi aimak / 20 Km SO v. Čojren / 1200m / Exp. Dott. Z. Kaszab, 1963 // Nr. 69 / 1.VII.63 // *s. muchei* Jedl. [handwritten] / det. Jedlicka" (ZIMG); 1 ♀, "Mongolia, Uburchangaj / aimak, Changaj Gebirge / Ongijn gol, 10 km ONO / von Arbajcher, 1800 m / Exp. Dott. Z. Kaszab, 1963 // Nr. 220 / 29.VI.1964 // *s. muchei* Jedl. [handwritten] / det. Jedlicka" (ZIMG); 1 ♂, "label in cyrillic [Mongolia, Terhijn Cagaan nuur] (ZIMG); 2 ♂♂, "label in cyrillic [Mongolia, Middle Gobi, 30 km N Delger-Tsogt] (ZIMG); 3 ♀♀, "label in cyrillic [Mongolia, 50 km SE Čojbalsan] (ZIMG).  
Russia. 1 ♀, "URSS – Siberija / Novosibirsk / 1-15.7.1989 / Biža V. leg." (CTVR); 1 ♂, 1 ♀, "Russia, Altai Republic / Kosh-Agach Distr. / Chagan-Uzun env. / Krasnaja Gorka hill. // 50°05'00"N 88°25'15"E / 29.IV.2015, 1870m / Jan Šumpich leg." (CTVR); 1 ♂, 1 ♀, "Russia. Buryatia, / Dzhida distr. 6-VII-97 / Beloozersk vill., / A. Shavrin leg."; 3 ♀♀, "Russia. Buryatia, / Dzhida distr. Verhnii / Dyrestui. vill. 8-VII-97 / A. Anichtchenko leg."; 1 ♀, "Russia. Irkutsk reg., / Alar' vill. vicinity, salt / marsh 23-VI-1997 / A. Anichtchenko leg. (MT).

All labels, unless otherwise indicated, are printed. We added to all the paratypes the following label [red, printed]: *Bembidion (Asioperlyphus) pseudoinfuscatum* Neri, Toledano & Rébl, 2023 – PARATYPUS.

**Description of the Holotype** (figs 1, 2, 5). Total body length 6.20 mm. Colouration: head and pronotum blackish; elytra blackish with U-shaped apical spot reaching apex, interrupted at middle only by the light brown internal elytral border; antennae orange with last 4 or 5 antennomeres slightly darkened, palps completely orange, legs orange with femurs in part darkened.

Head: maximum width, including eyes, 1.16 mm; interocular distance 0.66 mm; frontal furrows smooth and more or less parallel, with only traces of microsculpture. Eyes protruding, temples almost disappearing. Antennae long 3.30 mm.

Pronotum: length along median line 1.26 mm; width of anterior margin 1.08 mm, maximum width 1.62 mm, width of base 1.06 mm; transverse, pronotal width/pronotal length ratio = 1.28; rectilinear hind margin; anterior margin slightly concave with rounded angles; sides rounded, entirely rebordered, narrowing with evident sinuosity towards base with which they form a large right angle; lateral gutter evident of homogeneous width; basal portion restricted long about 1/6th of the pronotal length; subquadrate laterobasal foveae, almost smooth; postangular carina evident; longitudinal line and transverse anterior line sharp; basal transverse depression between the laterobasal foveae, rugose-punctate. Microsculpture present only at sides, absent on the glossy disc.

Elytra: length 3.93 mm, maximum overall width, slightly beyond the middle, 2.32 mm; sides almost parallel, evident shoulders; completely microsculptured, with mixed sculpticells, almost isodiametric, subquadrate and, mostly, subrectangular, short (fig. 2); flat intervals; all striae with evident puncturation, visible also at apex, although more superficial. Macropterous species.

Aedeagus (fig. 5): mid-sized (1.11 mm), with ventral margin slightly concave, continuing with the apical third bent ventrally; apex rounded; endophallus barely protruding from basal opening, large central brush in the basal third with main tubular sclerite long and forming a coil in the median portion. Parameres with four apical setae.

**Paratypes and intraspecific variability.** Paratypes matching with the holotype in morphology; ♂♂ long from 5.70 to 6.40 mm, ♀♀ from 5.80 to 6.55 mm; the colouration of the elytra may be brown, dark brown or blackish with brownish reflections, but all specimens show an apical spot; the antennae may be darkened from third antennomere and also the penultimate palpomere can be darkened; the elytral microsculpture of the ♀♀ is mostly almost isodiametric.

Aedeagus from 1.06 to 1.12 mm long. Reservoir of spermatheca (0.33 mm) with distal cavity half as long as the proximal one and with slight transversal sharp rows (figs 8, 10).

**Derivatio nominis.** The name, provisionally given to this species by Prof. Gerd Müller-Motzfeld, derives from the striking similarity of the new species with *B. infuscatum* Dejean, 1831.

**Distribution.** The new species is known from Mongolia and Siberian areas north of Mongolia.

**Comparative notes.** *B. pseudoinfuscatum* differs from *B. infuscatum* and *B. altestriatum* Netolitzky, 1934, by the elytral microsculpture (figs 2, 3, 4): in *B. pseudoinfuscatum* it is made by mixed sculpticells, almost isodiametric, subquadrate and, mostly, subrectangular, short (in the ♂♂) or mainly isodiametric, subquadrate and subrectangular, short (in the ♀♀); in *B. infuscatum* the sculpticells are mainly subrectangular, short, similar to small bricks transversally arranged, or also almost isodiametric; in *B. altestriatum* the sculpticells are transverse. The aedeagus of *B. pseudoinfuscatum* is the only one showing a main tubular sclerite long and coiled at middle. The spermatheca of *B. pseudoinfuscatum* is larger than in the other two species, less curved than in *B. infuscatum* (fig. 9) and with a distal cavity as long as half the length of the proximal one, diversely from *B. altestriatum* (fig. 11). *B. pseudoinfuscatum* differs from *B. altestriatum* also by the pronotum with transverse basal impression not interrupted at middle.

### Acknowledgements

We wish to thank Peter Michalik (ZIMG), Marcos Toribio (Tres Cantos, Madrid), David Wrase (Berlin) and Peer Schnitter (Halle), for kindly having allowed us to study the material in their availability, Gabriele Fiumi (Forlì) for the computerized elaboration (Adobe Photoshop CS3) and layout of the table, Paolo Bonavita (Roma) for the critical revision of the text, Jon Cooter (Oxford University Museum of Natural History) for the linguistic revision and Fernando Pederzani (Ravenna) for check and some corrections.

### Literature

- KRYZHANOVSKIJ O.L., 1979 – Description of three species of *Bembidion* (Coleoptera, Carabidae) from the Asiatic part of the URSS and review of species group *B. (Peryphus) lunatum* from the Fauna of the URSS. *Trudy Zoologicheskogo Instituta, Akademiya Nauk SSSR*, 88: 26-38.
- LUTSHNIK V.N., 1928 – Popis nového druhu *Bembidion* Latr. z Číny. (Col., Carabidae). Description d'une nouvelle espèce chinoise du genre *Bembidion* Latr. (Col., Carabidae). *Sborník Entomologického Oddělení Národního Musea v Praze*, 6: 73.
- MARGGI W., TOLEDANO L. & NERI P., 2017 – Carabidae: Bembidiini: Bembidiina: 294-342. In: Löbl I. & Löbl D. (eds.) - Catalogue of Palaearctic Coleoptera. Volume I.

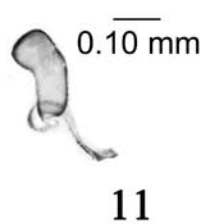
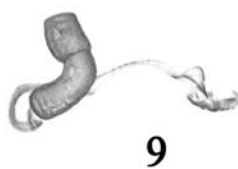
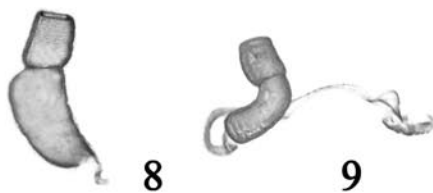
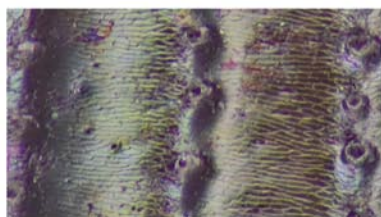
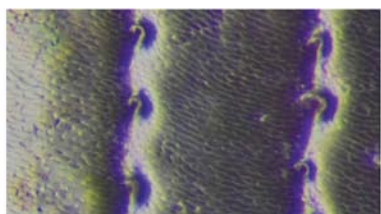
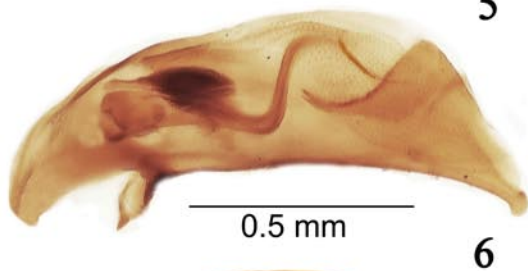
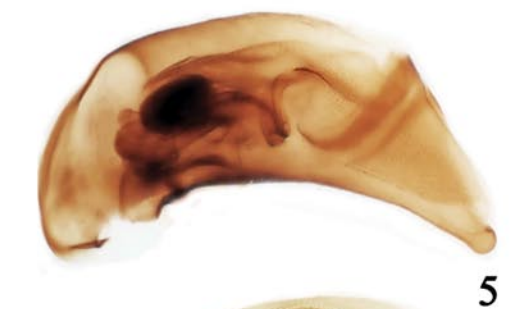
- Archostemata – Myxophaga – Adepaga. Brill, Leiden. 1446 pp.
- MÜLLER-MOTZFELD G., 1998 – Bemerkungen zur Systematik in der Gattung *Bembidion* Latreille, 1802 (Col., Carabidae). *Entomologische Nachrichten und Berichte*, 42: 73-75.
- NETOLITZKY F., 1943 – Bestimmungs-Tabellen europäischer Käfer (9. Stück). II. Fam. Carabidae, Subfam. Bembidiinae. 66. Gattung: *Bembidion* Latr. Bestimmungstabelle der *Bembidion*-Arten des paläarktischen Gebietes. (Mit Hinweisen auf holarktische, äthiopische und orientalische Arten.). *Koleopterologische Rundschau*, 28(4-6): 69/41-124/96.
- SCHNITTER P., 2016 – Vorläufige Checkliste der Laufkäfer (Coleoptera: Carabidae) der Mongolei 3. Beitrag zur Carabidenfauna der Mongolei. *Erforschung Biologischer Ressourcen der Mongolei (Halle/Saale)*, 197-220.
- VYSOKÝ V., 1986 – Příspěvek k poznání rodu *Bembidion* Latreille, 1802. [Contribution to the knowledge of genus *Bembidion* Latreille, 1802]. *Fauna Bohemiae Septentrionalis*, 11: 91-103.

---

**Figs 1-11.**

1. Habitus of *Bembidion (Asioperypus) pseudoinfuscatum* n. sp., holotype (CTVR), 6.20 mm;
2. Elytral microsculpture of *B. (A.) pseudoinfuscatum* n. sp., holotype (CTVR);
3. Elytral microsculpture of *B. (A.) infuscatum* Dejean, 1831, Siberia, Irkutsk Reg., Smolenkina Vill. (CTVR);
4. Elytral microsculpture of *B. (A.) altestriatum* Netolitzky, 1934, Ussuri Reg., Novovarvarovka) (CTVR);
5. Median lobe of aedeagus of *B. (A.) pseudoinfuscatum* n. sp., holotype (CTVR), 1.11 mm;
6. Median lobe of aedeagus of *B. (A.) infuscatum* Dejean, 1831, Siberia, Irkutsk Reg., Smolenkina Vill. (CTVR), 1.22 mm;
7. Median lobe of aedeagus of *B. (A.) altestriatum* Netolitzky, 1934, Ussuri Reg., Novovarvarovka (CTVR), 1.17 mm;
8. Spermatheca of *B. (A.) pseudoinfuscatum* n. sp., paratype from type locality (CTVR);
9. Spermatheca of *B. (A.) infuscatum* Dejean, 1831, Mongolei, Khovsggol Aimak, Zagannur, Doob Zagan Nuur, 1540 m. (CTVR);
10. Spermatheca of *B. (A.) pseudoinfuscatum* n. sp., paratype from Mongolia SE / Domogov reg. stepp / 28km SE Chatan-Bulag (CTVR);
11. Spermatheca of *B. (A.) altestriatum* Netolitzky, 1934, Russia, Primorje, Lazovsky distr., Luk'janov Long river, 800-900 m, taiga (CTVR).





---

Authors' addresses:

Paolo Neri  
via Alfredo Nobel, 11 scala A  
I – 47121 Forlì (FC)  
*e-mail*: nerolit.paolo.neri@gmail.com

Luca Toledano  
Museo Civico di Storia Naturale  
Lungadige Porta Vittoria 9  
I – 37129 Verona (VR)  
*e-mail*: lucatole3@gmail.com

Karel Rébl  
Žižkovo náměstí 976  
CZ-271 01 Nové Strašecí  
Czech Republic  
*e-mail*: k.rebl@seznam.cz