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Key words: Cerambycidae, Lamiinae, Eodorcadion, taxonomy, China, Mongolia.

Summary. The species rank *E. rubrosuturale* (Breuning, 1943) is restored. Several local populations of *E. chinganicum* (Suvorov, 1909) and *E. rubrosuturale* are partly described. Most of localities were never published before, so new distributional records are proposed for several taxa. Specimens from about all new localities are figured. Two names are downgraded to subspecies rank: *E. chinganicum mandschukuoense* (Breuning, 1944), stat. nov. and *E. chinganicum darigangense* Heyrovský, 1967, stat. nov. The taxon described as *E. chinganicum kerulenum* Danilevsky, 2007 is regarded as *E. rubrosuturale kerulenum* Danilevsky, 2007.

INTRODUCTION

A complete revision of the genus was published not long ago (Danilevsky, 2007) on the base of materials from Russian and West European Museums and collectors. Several specimens were also studied in National Museum of Natural History, Washington, USA. Unfortunately no materials were available from Chinese Museums, neither from Mongolian. Now we begin to study a very rich *Eodorcadion* collection of the Institute of Zoology, Chinese Academy of Sciences in Beijing.

A lot of *Eodorcadion* specimens close to poorly known *E. chinganicum* (Suvorov, 1909) are now available for study from numerous populations of North-East China from Inner Mongolia, Heilongjiang, Hebei and Liaoning. Nearly all of them were never reflected before in the publications.

The group is characterized by great degree of individual variability, that makes very difficult to join populations in natural
taxa. Among more than 50 specimens studied we cannot see a pair of beetles similar enough. Unfortunately most of populations are represented by single specimens only, so the reliable representation of their taxonomical rank is difficult. The present classification must be regarded as presumable. Now we are able to separate all populations in two species only with several subspecies: \textit{E. (s. str.) chinganicum} (Suvorov, 1909) and \textit{E. (s. str.) rubrosuturale} (Breuning, 1943).

First author of the present work is responsible for the taxonomical constructions, nomenclature and for the arrangement of photos. Second author is responsible for transliteration of China labels in English and for the identifications of localities.

Sometimes other spellings of Chinese geographical names are added in brackets.

Abbreviations of collections:
IZAS - Institute of Zoology, Chinese Academy of Sciences, Beijing, China.
MD – collection of M.L. Danilevsky, A.N. Severtzov Institute of Ecology and Evolution, Russian Academy of Sciences, Moscow, Russia.
MHNL - Muséum d’Histoire Naturelle, Lyon, France.
SMTD – Staatliches Museum für Tierkunde, Dresden, Germany.
ZIN – Zoological Institute , Russian Academy of Sciences, Sankt-Petersburg, Russia.
ZMM – Zoological Museum of Moscow University, Russia.

1. \textit{E. (s. str.) chinganicum} (Suvorov, 1909)
   (Figs. 1-23, 32-35)

\textit{Neodorcadion chinganicum} Suvorov, 1909: 90, part. - “In den Vorbergen von Chingan”.
\textit{Neodorcadion mandschukuense} Breuning, 1944: 15 - „Mandchourie: Moukden“.
\textit{Eodorcadion (s. str.) chinganicum}, Gressitt, 1951: 340, part. – “China: Manchuria (Chingan Shan)”. 
Eodorcadion (Ornatodorcadion?) mandschukoense, Gressitt, 1951: 344, part. – “China: Manchuria”.
Eodorcadion chinganicum, Plavilstshikov, 1958: 444, part. – China, Inner Mongolia.
Eodorcadion (s. str.) chinganicum, Breuning, 1962: 21, part. – “Chingan-Berge”
Eodorcadion (Ornatodorcadion) mandschukoense, Breuning, 1962: 25, part. – “Mandschurei: Mukden”.
Eodorcadion darigangense Heyrovský, 1967: 104 – Mongolia, „somon Dariganga“.
Eodorcadion jilinense Chiang, 1983: 60 (new name for mandschukoense Breuning).
Eodorcadion (s. str.) chinganicum chinganicum, Danilevsky, 2007: 35, part.; 2010: 256, part. – China;
Eodorcadion (s. str.) darigangense, Danilevsky, 2007: 48, part. – “South-East Mongolia”; Danilevsky, 2010: 256, part. – Mongolia;
Eodorcadion (s. str.) mandschukoense, Danilevsky, 2007: 49, part. – “China – Liaoning: Shenyang (Mukden)”; Danilevsky, 2010: 256, part. – China;

Type locality: China: Dalaj-Nor lake (43°15’N, 116°40’) environs in Inner Mongolia – according to the label of the lectotype (“from Mardyn-gol to Balairek-gol”) designated by Danilevsky (2007).

Description of available specimens. The species is characterized by extreme degree of individual variability known in each population with enough number of available specimens. Marginal forms of color and design can be observed in any part of its very big area. Typical population was known up to now after three rather different males only (see figs. 3a-1,2 in Danilevsky, 2007). But 3 females (see figs. 3a-6,7 in Danilevsky, 2007) available from Xilin-Gol Reserve (Xilinhot environs, about 100km only NNW from the presumable type locality) are rather similar to typical males and could be attributed to the typical population.

Now we know two more rather different males from near Xilinhot. Big male (19.0mm long - fig. 1) is totally reddish, very wide, with regularly oval elytra is very similar to known females. Small male (14.5mm - fig. 2) belongs to another form with black
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body. It is rather similar to Mongolian *E. chinganicum darigangense* Heyrovský, 1967, new rank distributed in about 200km north-westwards. Diffuse scattered white elytral pubescence in between longitudinal elytral stripes nearly indistinct, which is also normal for *E. darigangense*.

Four new populations are distributed along south-east slope of Khingan Ridge in Chifeng. The genital male structures were prepared in two males (figs. 32-35). Aedeagus apex is widely rounded, parameres distinctly curved.

Three specimens (2 males and 1 female) are available from Wengniuteqi (Ongniud B.), Haijinshanmuchang (42°55′53,83″N, 119°01′48,89″E). A female, (20.0mm, fig. 5), is similar to the typical form. Both males are considerably narrowed posteriorly; male (17.0mm, fig. 3) with black body has a very contrast system of longitudinal white elytral stripes: subsutural, two dorsal and humeral; reddish male (16.0mm, fig. 4) has less distinct longitudinal elytral stripes, and diffuse white pubescence between stripes is slightly arranged longitudinally.

Two black females (17.0mm and 20.0mm, figs. 6-7) from Balinyouqi (Bairin Right B.) (43°32′03,89″, 118°39′54,65″) in about 70km northwards have distinct longitudinal stripes. Bigger female is strongly elongated with rather wide internal dorsal elytral stripe, but subhumeral stripe is poorly pronounced. Smaller female is regularly oval with only internal dorsal and humeral stripes very distinct.

The population from Balinzuoqi (Bairin Left B.), Hadayinggexiang (43°55′20,85″, 119°18′35,36″) is represented in our materials by 10 males (14.0-16.0mm) and 5 females (16.0-21.0mm). All specimens (figs. 8-11) are totally black with more or less regular longitudinal white stripes. Elytra could be more narrowed posteriorly or regularly oval; subsutural elytral stripe always indistinct; internal elytral stripes sometimes (always in females) wider than others (figs. 10-11), but usually in males (fig. 8) elytral design consist of very narrow 7-9 irregular white stripes.

The population from Alukeerqinqi (Ar Horqin B.), Baichengzi, Tianshancun (43°45′24,83″, 120°14′36,84″) is represented in our materials by 5 males (14.5-16.0mm) and 10
females (15.0-23.0mm). All specimens (figs. 12-15) are totally black and in general very similar to the specimens from the previous population.

Certain males from Balinzuoqi (Bairin Left B.) and Baichengzi have just same elytral design as the holotype (see fig. 6 in Danilevsky, 2007) of Neodorcadion mandschukuoense Breuning, 1944.

The western most population of E. chinganicum is represented by a single male (fig. 16) from the eastern part of Inn Shan mountains (Inner Mongolia, Hohohot, Saihan, Jinhezhen, Dayijianfangcun, about 40°48’N, 111°42E). It also looks very close to the holotype of Neodorcadion mandschukuoense.

The available materials closest to the type locality of Neodorcadion mandschukuoense Breuning, 1944 („Mandchourie: Moukden“ = Liaoning: Shenyang) is represented by 2 males (14.0-17.0mm) and 1 female (18.0mm) from Liaoning, Zhangwu county, Zhanggutai (42°42’31,13”, 122°29’46,13). All 3 specimens (figs. 17-19) have elytral design similar to the holotype of Neodorcadion mandschukuoense, but body color is red or reddish.

Similar population (figs. 20-21) is situated in Jilin in about 250km north-eastwards in Changchun environs (43°49’01,50”’, 125°19’24,75”), but only 2 reddish males (15.5-16.2mm) are available from here.

**Taxonomic conclusions.** All populations mentioned above don’t show any constant differences on species level, but more or less geographical variability is clear. Unfortunately most of populations are represented by single specimens, so there morphological diagnoses cannot be arranged good enough.

Now we could preliminary include in the nominative subspecies E. ch. chinganicum (Suvorov, 1909) the typical population from near Dalaj-Nor (including Xilinhot environs ), all four populations of Hingan Ridge (4 from Chifeng and one from near Hailar) and a population from near Hohhot, though the last one should be described as a new taxon after more materials available. More materials from the area of the nominative subspecies are rather desirable as well as its detail taxonomical differentiation in several taxa.
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_E. ch. darigangense_ Heyrovský, 1967, _stat. nov._ (figs. 22-23) is characterized by regularly oval elytral shape and by usually scattered diffuse pubescence between longitudinal stripes, which is never longitudinally arranged; reddish forms are not known from here. Up to now it is known only from the south part of Suhe-Bator aimak in Mongolian Republic.

Three populations could be preliminary included in _E. ch. mandschukuoense_ Breuning, 1944, _stat. nov._ (figs. 17-21) Only holotype is known from the type locality, so its reality needs to be proved. Populations from near Zhangwu and from near Changchun need to be better studied. The subspecies is characterized by rather distinct wide dorsal internal stripes and numerous narrow stripes between wide dorsal stripe and humeral stripe. Totally red specimens seem to be dominating in certain populations.

**Available materials (IZAS).** _E. ch. chinganicum:_ 1 male, Inner Mongolia, Xilinhot, 19.07.1987; 1 male, Inner Mongolia, Xilingoule, Xilingol League, 43°56′00,43″, 116°02′53,60″, 25.07.1972; 2 males and 1 female, Inner Mongolia, Chifeng, Wengniuteqi (Ongniud B.), Haijinshanmunchang, 42°55′53,83″N, 119°01′48,89″E, 18.06.1957; 2 females, Inner Mongolia, Chifeng, Balinyouqi (Bairin Right B.), 43°32′03,89″, 118°39′54,65″, 23.06.1959; 10 males and 5 females, Inner Mongolia, Chifeng, Balinzuoqi (Bairin Left B.), Hadayinggexiang, 08.07.1980, Guan Jingqun leg.; 5 males and 10 females, Inner Mongolia, Chifeng, Alukeerqinqi (Ar Horqin B.), Baichengzi, Tianshancun, 43°45′24,83″, 120°14′36,84″, 18.08.1981; 1 male, Inner Mongolia, Hohohot, Saihan, Jinhezhren, Dayijianfangcun, about 40°48′N, 111°42E, on _Lespedeza bicolor_, 11.07.1960; 1 female, [?] Lyao Si, 15.06.1951, Chzhan U leg. [the original label is in Russian]; 2 females, Manchoukuo, [?] Ta-Yngtse, [?] Linsisien, 06.1940, E. Bourgault leg.

_E. ch. mandschukuoense:_ 2 males and 1 female, Liaoning, Zhangwu county, Zhanggutai, 42°42′31,13″, 122°29′46,13, 13.06.1958; 2 males, Jilin, Changchun, 43°49′01,50″, 125°19′24,75″, 15.06.1977, Yang Liming leg.

**Previously published materials** (Danilevsky, 2007): _E. ch. chinganicum_, as “_E. chinganicum_”: 1 male (see fig. 3a-1 in Danilevsky, 2007), lectotype with four labels: (1) in Russian [“Khingan, from Mardyn-gol to Balairek-gol, 25.VII-1.VIII.87, Garnak”], (2) “_Neodorcadion chinganicum_ Typ.m. G.Suworow. det.”; (3) “_Eodorcadion s.s. chinganicum_ Suv. Voříšek det. 1976”, (4) red: “LECTOTYPE, _Eodorcadion_ (s.str.) _chinganicum_ Suworov, 1909 M.Danilevsky det.,2004” - (ZIN); 1 male (see
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**fig. 3a-2** in Danilevsky, 2007), paralectotype [“from Mardyn-gol to Balairek-gol, 25.VII-1.VIII.87, Garnak”][in Russian] – (JV); 1 female (see **fig. 3a-5** in Danilevsky, 2007) with one label in Russian [“Khiingan, Imakhe-Khabu, 5.VII.99, Potanin exp.”] – (ZIN); 1 male, with same label – (ZMM); 1 male, [“Khiingan, from Mardyn-gol to Balairek-gol, 1.VIII.87, Garnak”][in Russian] – (ZMM); 3 females, "Mandzhuria bor.-occ., st. Chorchonte, 16.8.1933, Alin's coll." [near Hailar] – (ZMM); 3 females (see **fig. 3a-6,7** in Danilevsky, 2007), China, Nei Mongol., NW border of Xilin-Gol Reserve, near Xilinhot, 26.7.2002, T. Shimizu leg. – (MD).

*E. ch. mandschukoense* as "*E. mandschukoense*": 1 male (see **fig. 6** in Danilevsky, 2007), holotype with 5 labels: (1) “holotype” [red], (2) “Mukden, Mandschourie”, (3) “*Neodorcadion mandschukoense* mihi Typ det. Breuning” [Breuning’s hand], (4) “*Eodorcadion (Ornatodorcadion) mandschukoense* Br. P.Lepesme det.”, (5) “Coll. Lepesme 2002 Museum de Lyon” - (MHNL).

*E. ch. darigangense* as “*E. darigangense*”: holotype, male (represented by elytra only), “Mongolia, Suchebaator Aimak: Somon Dariganga, 1150m, 5.8.1965, exp. Dr. Z. Kaszab” – (HNHM); 5 males and 1 female (see **figs. 5-1-3** in Danilevsky, 2007), Suhe-Bator aimak, Dariganga env., Duut-Nuur, 20.7.1985, Ulykpan leg. – (MD); 1 male with same label – (JV); 1 male and 1 female, Dariganga env., Zeget-Nur, 20.7.1985, Ulykpan leg. – (MD); 1 male (see **fig. 5-4** in Danilevsky, 2007) and a pair of male elytra, 2km W Dariganga, 1230m, 45°18’N, 113°49’E, 14-15.8.2002, M.Danilevsky leg. – (MD).

### 2. *E. (s. str.) rubrosuturale* (Breuning, 1943), stat. rest.

(Figs. 24-31, 36-39)


*Eodorcadion* (s. str.) *chinganicum*, Gressitt, 1951: 340 (with “var. *melancholicum*”), part. – “China: Manchuria (Chingan Shan)”.

*Neodorcadion rubrosuturale* Breuning, 1943: 98 - “Inn-Chan”.


*Eodorcadion* (s. str.) *chinganicum*, Breuning, 1962: 21, part. – “Chingan-Berge”


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Eodorcadion (s. str.) chinganicum chinganicum, Danilevsky, 2007: 37, part. – “in China Manchzhuria from about Hailar to Dalaj-Nor lake environs”; 2010: 256, part. – China;
Eodorcadion (s. str.) chinganicum rubrosuturale, Danilevsky, 2007: 40, part. – “China - Inn-Shan mountains northwards Ordos in Inner Mongolia”; 2010: 256, part. – China;
Eodorcadion (s. str.) chinganicum kerulenum Danilevsky, 2007: 41, part. – “East part of Mongolian Republic”; 2010: 256, part. – Mongolia;

Type locality: China: Inn-Shan mountains northwards Ordos in Inner Mongolia - according to the original description.

Remark. The type series of Neodorcadion chinganicum Suvorov, 1909 includes two species. Specimens described as Neodorcadion chinganicum var. melancholicum Suvorov, 1909 (unavailable name.) belong to the species with first available name N. rubrosuturale Breuning, 1943.

One of available types designated by Suvorov as “var. melancholicum” is supplied with exactly same label as typical specimens (including lectotype): “Khingan, from Mardyn-gol to Balairek-gol, 27.VII.1887, Garnak”, so the author expressly gave infrasubspecific rank (Article 45.6.4 of ICZN) to the name “var. melancholicum”.

The areas of E. chinganicum and E. rubrosuturale are largely overlap, though the area of E. rubrosuturale is much larger, covering the whole eastern half of Mongolian Republic and reaching southwards the latitude of Beijing in Hebei. Specimens of both taxa were originally described inside one species from the type locality of Neodorcadion chinganicum. Such point of view was generally accepted up to now. New investigation of China materials show the morphological hiatus between corresponding specimens in spite of very wide range of individual variability of E. chinganicum.

E. rubrosuturale (figs. 24-31) is characterized by small regularly oval wide body, always totally red, never strongly narrowed posteriorly; subsutural white stripe always indistinct; lateral pronotal glabrous area usually present. Genital structure (figs. 36-39) was prepared in two males and are rather different, though aedeagus apex (figs. 37, 39) is always widely rounded similar to its shape in E. chinganicum. Parameres in male without geographical
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label are very narrow, relatively strait and strongly elongated (fig. 38) parameres in a male from Xilin Hot (fig. 36) are considerably shorter, so a little similar to parameres of *E. chinganicum*.

Only three localities are definitely known where both species are sympatric: Dariganga environs in Sukhe-Bator aimak of Mongolian Republic, Xilinhot environs in Inner Mongolia and Balinyouqi (Bairin Right B.) environs in Chifeng.

All China pupulations of *E. rubrosuturale* are preliminary attributed to the nominative subspecies because of too small number of specimens available. But three males from about type locality (Inner Mongolia, Siziwangqi, Wulanchabu City (Ulanqub L.), Siziwang Banner), allow to revise the difference between the typical population and *E. r. kerulenum*: body in *E. r. rubrosuturale* is really more elongated, but posterior pronotal protuberance of the holotype of *E. r. rubrosuturale* absent in new males; glabrous lateral areas of pronotum in *E. r. rubrosuturale* much better developed; lateral pronotal tubercles in ceratin specimens of *E. r. rubrosuturale* relatively longer or shorter.

**Available materials (IZAS).** *E. r. rubrosuturale*: 3 males (13.0-14.0mm, figs. 24-26), Inner Mongolia, Siziwangqi, Wulanchabu City (Ulanqub L.), Siziwang Banner, 41°32’00.46”, 111°42’23.82” [very close to the type locality], 28.06.1971; 1 male (12.5mm, fig. 27), Inner Mongolia, Xilinguolei, Zhongxinhe, 23.06.1971; 2 males (14.0-15.0mm, figs. 28-29), Inner Mongolia, Chifeng, Balinyouqi (Bairin Right B.), 43°32’03.89”, 118°39’54.65”, 23.06.1959; 1 female, Inner Mongolia, Chifeng, Kalaqinqi (Harqin Banner), Jinshanzhen, 890 m, 41°55’46”N, 118°40’32”E, 16.04.2006, Shi Hongliang leg.; 1 female (15.0mm, fig. 30), Inner Mongolia, Jalaid Banner (Zhalaiteqi), 46°43’28.92”, 122°54’25.85”, 21.06.1975; 1 male (13mm), Hebei, Chengde, 07.1981, Guan leg.; 1 female (15.0mm, fig. 31), Hebei, Weixian, Baile, 39°57’21.50”, 114°52’47.40”, 920m, 02.08.1964, Li Bingqian leg.; 1 male and 1 female with a label: “1.VII,27, Licent”; 1 female, Inner Mongolia, 26.06.1958.

E. r. rubrosuturale, as “E. chinganicum”: 3 males, paralectotypes of Neodorcadion chinganicum (syntypes of Eodorcadion chinganicum var. melancholicum Suv.): 1 male (see fig. 3a-3 in Danilevsky, 2007) with two labels: (1) in Russian [“Khingan, from Mardyn-gol to Balairek-, Garnak”], (2) “Neodorcadion chinganicum var. melancholicum Typ.m. G.Suworow. det.” – (ZIN); 1 male (see fig. 3a-4 in Danilevsky, 2007) with two labels: (1) in Russian: “Khingan, …[not readable], 25.VI.91, Garnak leg.”, (2) “Neodorcadion chinganicum var. melancholicum Typ.m. G.Suworow. det.” – (ZIN); 1 male with two labels, (1) in Russian [“Manchzhuria, Khuan-Tulutzy(?), 9.VI.1896”], (2) “Neodorcadion chinganicum var. melancholicum Typ.m. G.Suworow. det.” - (ZIN); 1 male and 1 female, “Charbin, Mandzhurei” wrongly designated by S.Breuning as “paratype” and “allotype” of “Eodorcadion chinganicum rubrosuturale Breun.” – (MHNL);

E. rubrosuturale kerulenum Danilevsky, 2007, as “E. chinganicum kerulenum Danilevsky, 2007”: 1 male, holotype (see fig. 3c-9 in Danilevsky, 2007), Mongolia, Suhe-Bator aimak, Tumen-Tzogt, 2.7.1983, K. Ulykpan leg. – (MD); 113 paratypes from different localities of Mongolian Republic (Central aimak, Suhe-Bator aimak, East aimak); a female from same locality as holotype was figured (fig. 3c-10 in Danilevsky, 2007).

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INSCRIPTION FOR FIGURES


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23 - male, Mongolia SE, Moltzog Else, 45°18’N, 113°51’E [near Dariganga], 1250m 27.7.2007 J.Halada leg. – MD.


**Figs. 32-35.** *E. ch. chinganicum,* male genitals.32-33 – Balinzuoki; 34-35 – Bauchengzi.

**Figs. 36-39.** *E. r. rubrosuturale,* male genitals, 36, 38 – parameres, 37, 39 - aedeagus; 36-37 – Balinyouqi (Bairin Right B.); 38-39 - NE China 1.7.1927 Licent.

**Map of localities.** 1-8 – *E. chinganicum chinganicum:* 1 - Dalaj-Nor lake (probable type locality); 2 – Xilingoulei, Xilingol League; 3 - Chifeng, Wengniuteqi (Ongniud B.), Haijinshanmuchang; 4 - Chifeng, Balinyouqi (Bairin Right B.); 5 – Chifeng, Balinzuqi (Bairin Left B.), Hadayinggexiang; 6 - Chifeng, Alukeerqinqi (Ar Horqin B.), Baichengzi, Tianshancun; 7 – Hohhot; 8 – Hailar environs; 9-11 - *E. chinganicum mandschukuoense:* 9 – Shenyang environs (type locality); 10 – Zhanggutai environs; 11 – Changchun environs; 12 - *E. chinganicum darigangense:* South-East Mongolia, Dariganga environs; 13-19 – *E. rubrosuturale rubrosuturale:* 13 – Yinn Shan Mountains (type locality); 14 - Wulanchabu City (Ulanqub L.), Siziwang Banner; 15 - Xilingoulei, Xilingol League; 16 - Chifeng, Balinzuqi (Bairin Left B.), Hadayinggexiang; 17 - Zhalai Teqi; 18 - Chifeng, Kalaqinqi, Jinshanzhen; 19 – Chengde; 20 - Hebei, Weixian, Baile; 21-22 - *E. rubrosuturale kerulenum:* 21 - localities in Mongolian Republic (according to Danilevsly, 2007); 22 - Suhe-Bator aimak, Tumen-Tzogt (type locality).