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Revision of the genus *Eodorcadion* Breuning, 1947 (Coleoptera, Cerambycidae)

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Abstract

Revision includes all 37 species of the genus from Russia, Kazakhstan, Mongolia and China. Three species from China are described as new : *E. oligocarinatum*, sp.n., *E. shanxiense*, sp. n. and *E. kadleci*, sp. n. as well as four new subspecies : *E. carinatum kiahtenum* ssp. n. from Transbaikalia, *E. chinganicum kerulenum* ssp. n. from Mongolia, *E. lutshniki burenum*, ssp. n. and *E. lutshniki bicoloratum*, ssp. n. - both from Tuva Republic. The name *Eodorcadion exaratum* (Ménetriés, 1854), sensu n. is regarded as valid for the species which was traditionally known as *E. argali* (Jakovlev, 1890). *E. altaicum* (Suvorov, 1909) is regarded as a species. *E. maurum* (Jakovlev, 1890) is regarded as consisting of four subspecies : nominative, *E. m. sajanicum* (Hammarström, 1893), *E. m. katharinae* (Reitter, 1898) and *E. m. quinquevittatum* (Hammarström, 1893). The name *E. m. sajanicum* (Hammarström, 1893) is restored as valid for the taxon, which was known before as *E. leucogrammum* (Suvorov, 1909). The real area in Mongolia is identified for *E. argaloides* (Breuning,1947), which was originally described without exact geographical data. Lectotypes are designated for : *Neodorcadion chinganicum* Suvorov,1909, *Neodorcadion maurum* Jakovlev, 1890, *Neodorcadion grumi* Suvorov, 1909, *Neodorcadion ptyalopleurum* Suvorov, 1909, *Dorcadion exaratum* Ménetriés *in* Motschulsky, 1854, *Neodorcadion lutshniki* Plavilstshikov, 1937. Twelve new synonyms are proposed. Each name is equipped with reference to original description and type materials. Each valid name is equipped with the list of all synonyms, infrasubspecific names, wrong determinations, references to all publications. Morphological differencial diagnosis of each taxon are equipped with the list of all studied specimens, list of all known localities, bionomy characters, taxonomical remarks, colored photos of different forms, maps of areas with all known localities marked and sometimes with photos of biotops.

Abstract

La révision inclu les 37 espèces du genre, originaires de Russie, du Kazakhstan, de Mongolie et de Chine. Trois espèces de Chine sont décrites comme nouvelles : *E. oligocarinatum*, sp. n., *E. shanxiense*, sp. n. et *E. kadleci*, sp. n., ainsi que quatre sous-espèces : *E. carinatum kiahtenum* ssp. n. de Transbaikalie, *E. chinganicum kerulenum* ssp. n. de Mongolie, *E. lutshniki burenum*, ssp. n. et *E. lutshniki bicoloratum*, ssp. n. - toutes deux originaires de la République de Tuva. Le nom *Eodorcadion exaratum* (Ménetriés, 1854), sensu n. est considéré comme valide pour les espèces qui sont traditionnellement connues comme *E. argali* (Jakovlev, 1890). *E. altaicum* (Suvorov, 1909) est considéré comme espèce. *E. maurum* (Jakovlev, 1890) regroupe quatre sous-espèces : nominative, *E. m. sajanicum* (Hammarström, 1893), *E. m. katharinae* (Reitter, 1898) et *E. m. quinquevittatum* (Hammarström, 1893). Le nom *E. m. sajanicum* (Hammarström, 1893) est restauré pour le taxon qui était précédement connu sous l'appellation *E. leucogrammum* (Suvorov,

1909). L'aire de répartition (en Mongolie) d'*E. argaloides* (Breuning,1947), qui n'était pas mentionnée dans description originale de ce dernier est établie. Des lectotypes sont désignés pour : *Neodorcadion chinganicum* Suvorov,1909, *Neodorcadion maurum* Jakovlev, 1890, *Neodorcadion grumi* Suvorov, 1909, *Neodorcadion ptyalopleurum* Suvorov, 1909, *Dorcadion exaratum* Ménetriés *in* Motschulsky, 1854 , *Neodorcadion lutshniki* Plavilstshikov, 1937. Douze nouvelles mises en synonymie sont proposées. Chaque nom est accompagné des références de la description originale, d'un paragraphe consacré au matériel typique et de la liste de tous les synonymes connus, des noms infrasubspecifiques, des déterminations fausses, et de sa bibliographie complète. Une diagnose est proposée pour chaque taxon, ainsi que la liste de tous les spécimens étudiés, de toutes les localités connues, les observations taxonomiques, une photo couleur des différentes formes, ainsi que les cartes de répartition avec la mention de toutes localités connues et, quelquefois, une photographie des biotopes.

Introduction

Up to now the genus *Eodorcadion* rests one the most misterious groups of Cerambycidae. It is one of the youngest genera among relatively young Dorcadionini, and natural limits of taxa often are not definite good enough. Many taxa are distributed in poorly investigated regions of Central Asia and are represented in collections by very small number of specimens. Populations of some of them are definitely very sparce even in the areas of their maximal density. Many natural groups are characterized by extraordinary great degree of individual variability, that makes extremely difficult to realise the true "face" of each population and understand the real limits of the taxon.

In XX century the genus was partly (Plavilstshikov, 1958) or totally (Breuning, 1962) revised. Still the generally accepted classification of the genus is far from being natural. Many taxa believed as "good species" are in subspecies relations, a lot of names regarded as valid are in fact synonyms, many taxa have to be described as new.

The present review is generally based on own materials, but also I had the possibility to study several collections of big museums and good amateurs. All studied specimens are listed with original labels and references to corresponding collections. I have succeeded in study the types of nearly all available names, as well as all original descriptions. The "types" of unavailable names were also studied.

The descriptions of areas are followed with the lists of the names of all available localities, shown at corresponding maps. Each locality name is equipped with references to corresponding specimens and/or publications.

The transliteration of Russian, Mongolian and China names with Latin letters was made according to the existing traditions, but in many cases it was important to show the original transliterations of corresponding labels or published records. Sometimes one locality has many different names; in such cases historical or current "synonyms" are often shown in brackets. The index of geographical names can help to find several different names of one locality.

For true location of certain toponyms were mostly used Russian maps (1 cm-5 km) published by Armed Forces Staff of the USSR, as well as many different modern English and Russian maps of USSR, Russia, Mongolia and China. I have also studied several descriptions of old and recent expeditions to Mongolia and China (Bianchi, 1916; Emeljanov et al., 1968, 1972, 1977, 1980; Garnak, 1888; Kerzhner, 1972, 1980; Kerzhner et al., 1982; Komarov, 1920, 1928; Kozlov, 1905, 1923; Potanin, 1901; Przhevalsky, 1883, 1948). Many old geographical Russian names were identified with "Atlas of Asian Russia" (1914, St.-Petersburg); several old names in German were identified with "Andrees Allgemeiner Handatlas" (sechste Auflage, 1914, Bielefeld und Leipzig, Verlag von Velhagen & Klasing). Sometimes a catalogue of China *Carabus* localities (Schütze, Kleinfeld, 1995) was useful.

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Abbreviations of collections

DEI – Deutsches Entomologisches Institut, Eberswalde, Germany.
HNHM - Hungarian Natural History Museum, Budapest, Hungary.
BPI - Institute of Biology and Pedology, Vladivostok, Russia
JV – Jirí Vorisek (Jirkov, Czech Republic)
MAK – Zoologisches Forschungsinstitut und Museum Alexander König, Bonn, Germany.
MD – Mikhail Danilevsky, Moscow, Russia.
MHNL - Muséum d'Histoire Naturelle, Lyon, France.
MNHP – Muséum National d'Histoire Naturelle, Paris, France.
NMNH - National Museum of Natural History, Washington, USA.
NMP - Národní Muzeum, Prague-Kunratíce, Czechia.
NMV – Naturhistorisches Museum, Vienna, Austria.
PR – Pierpaolo Rapuzzi, Via Cialla, Prepoto, Udine, Italy
SK – Stanislav Kadlec, Litvinov, Czech Republic.
SMTD – Staatliches Museum für Tierkunde, Dresden, Germany.
ZIN – Zoological Institute of Sankt-Petersburg, Russia.
ZMM – Zoological Museum of Moscow State University, Russia.

Genus *Eodorcadion* Breuning, 1947

A. Subgenus *Eodorcadion* s. str.

1. *carinatum* (Fabricius, 1781)
    - ssp. *carinatum* (Fabricius, 1781)
    - ssp. *blessigi* (Ganglbauer, 1884)
    - ssp. *bramsoni* (Pic, 1901)
    - ssp. *involvens* (Fischer von Waldheim, 1823)
    - ssp. *kiahtenum* ssp. n.
2. *altaicum* (Suvorov, 1909)
3. *chinganicum* (Suvorov, 1909)
    - ssp. *chinganicum* (Suvorov,1909)
    - ssp. *rubrosuturale* (Breuning, 1943)
    - ssp. *kerulenum* ssp. n.
4. *virgatum* (Motschulsky, 1854)
    - ssp. *virgatum* (Motschulsky, 1854)
    - ssp. *subvirgatum* (Pic, 1914)
5. *darigangense* Heyrovsky, 1967
6. *mandschukuoense* (Breuning, 1944)
7. *gansuense* (Breuning, 1943)
8. *shanxiense*, sp. n.
9. *multicarinatum* (Breuning, 1943)
10. *oligocarinatum*, sp.n.
11. *sifanicum* (Suvorov, 1912)
12. *sinicum* Breuning, 1948
13. *glaucopterum* (Ganglbauer, 1883)
14. *kadleci*, sp. n.
15. *maurum* (Jakovlev, 1890)
    - ssp. *maurum* (Jakovlev, 1890)
    - ssp. *sajanicum* (Hammarström, 1893)
    - ssp. *katharinae* (Reitter, 1898)
    - ssp. *quinquevittatum* (Hammarström, 1893)
16. *tuvense* Plavilstshikov, 1958
17. *ptyalopleurum* (Suvorov, 1909)

B. Subgenus *Ornatodorcadion* Breuning, 1947

18. *dorcas* (Jakovlev, 1901)
    - ssp. *dorcas* (Jakovlev, 1901)
    - ssp. *scabrosum* Namhaidorzh, 1972
19. *consentaneum* (Jakovlev, 1899)
20. *intermedium* (Jakovlev, 1890)

ssp. *intermedium* (Jakovlev, 1890)

ssp. *kozlovi* (Suvorov, 1912)

21. *gorbunovi* Danilevsky, 2004
22. *argaloides* Breuning,1947
23. *oryx* (Jakovlev, 1895)
24. *zichyi* (Csiki, 1901)
25. *heros* (Jakovlev, 1899)
26. *novitzkyi* (Suvorov, 1909)
27. *exaratum* (Ménetriés, 1854), sensu n.

ssp. *exaratum* (Ménetriés, 1854)

ssp. *argali* (Jakovlev, 1890)

28. *ornatum* (Faldermann, 1833)
29. *licenti* (Pic, 1939)
30. *kaznakovi* (Suvorov, 1912)
31. *jakovlevi* (Suvorov, 1912)
32. *potanini* (Jakovlev, 1889)
33. *egregium* (Reitter, 1897)
34. *brandti* (Gebler, 1841)
35. *oreadis* (Reitter, 1897)

C. Subgenus *Humerodorcadion* Danilevsky, Kasatkin, Rubenian, 2004

36. *humerale* (Gebler, 1823)

ssp. *humerale* (Gebler, 1823)

ssp. *impluviatum* (Faldermann, 1833)

ssp. *trabeatum* (Jakovlev, 1901)

37. *lutshniki* (Plavilstshikov, 1937)

ssp. *lutshniki* (Plavilstshikov, 1937)

ssp. *altanelsense* Heyrovsky, 1973

ssp. *burenum*, ssp. n.

ssp. *bicoloratum*, ssp. n.

Eodorcadion Breuning, 1947

Eodorcadion Breuning, 1947a : 142; 1958 : 2; 1962 : 5; Gressitt, 1951 : 335; Plavilstshikov, 1958 : 414; Namhaidorzh, 1972 : 516; 1976 : 209; Lobanov et al., 1982 : 264; Hua, 2002 : 206; Wang, 2003 : 289; Danilevsky et al., 2005 : 133.

Neodorcadion Ganglbauer, 1884 : 437, 508, part.; type species : *Lamia bilineata* Germar, 1824; Reitter, 1897 : 177-184, part.; Pic, 1901 : 67, part.; Jakovlev, 1901 : 146-166, part.; Winkler, 1929 : 1198, part.; Plavilstshikov, 1932c : 193.

Type species : *Lamia carinata* Fabricius, 1781 (original designation)

Diagnosis. – Body length in males : 9-24.7 mm; in females : 10.5-32 mm; body width in males : 3.4-8.9 mm; in females : 4.4-11.6 mm.

The genus is well definite by endophallic structures (Danilevsky et al., 2005) : apical phallomer glabrous, without microspines; apical bulb never developed; internal membrane between basal and apical phallomers absent or vestigial (Plans 1-5).

Endophallus relatively long and narrow – *E.* (*Ornatodorcadion*) (Plans 3-4), or very short and thick – *E.* (*Humerodorcadion*) (Plan 5). Basal tube (bt) short, never longer than its twice width. Ventral plates (vp) rather big, long and wide, trapezoidal. In *Eodorcadion* (s. str.) central bladder (cb) can be more or less distinct (Plans 1-2); in *E.* (*Ornatodorcadion*) (Plans 3-4) and *E.* (*Humerodorcadion*) (Plan 5) central bladder indistinct. Central trunk (ct) in *Eodorcadion* (s. str.) longer or shorter (Plans 1-2), sometimes totally fused with medial tube (*E. maurum quinquevittatum*, *E. virgatum*); in *E.* (*Ornatodorcadion*) central trunk (ct) always fused with medial tube (Plans 3-4); in *E.* (*Humerodorcadion*) (Plan 5) central trunk absent, and preapical bulb (pb) is connected directly with medial tube. Central bend (bd) indistinct in *E.* (*Ornatodorcadion*) and usually in *E.* (*Humerodorcadion*), or well developed (often in *Eodorcadion* s. str.). Preapical bulb (pb) is always strongly widened and densely covered with distinct microspicules or microtrichiae; usually without apical constriction along apical furrow (af), forming together with apical phallomer (ap) an apical mace (am). Only in *E.* (s. str.) *glaucopterum* apical constriction of preapical bulb is very distinct. Apical furrow without internal membrane, or with very narrow membrane in *E.* (*O.*) *brandti*. Apical phallomer (ap) without apical bulb. Apical bubble (bb) well developed; in *E.* (*Ornatodorcadion*) (Plan 3) with very long appendix (aa), or just strongly attenuated in *E.* (*O.*) *brandti* (Plan 4). Paired gonopores (gn) are situated near middle of the dorsal side of apical phallomer or even moved basally; internal distal parts of ejaculatory ducts can be easily everted in form of paired appendages (ee), specially in *E.* (*Ornatodorcadion*) (Plans 3-4).

In all other Dorcadionini apical phallomer always with basal microasperities and internal membrane well developed; in *Dorcadion* Dalman, 1817 apical bulb nearly always strongly pronounced; only in *Politodorcadion* Danilevsky, 1993 apical bulb indistinct and distal portion of endophallus is represented by apical mace as in *Eodorcadion*. In general *Politodorcadion* is an intermediate connecting group between *Eodorcadion* and *Dorcadion*.

External characters are not so definite : shining membrane between clypeus and frons usually visible (as in *Neodorcadion* Ganglbauer, 1883; while in *Dorcadion* connecting membrane usually invisible from outside); antennae in males usually longer than body, but sometimes (*E. humerale*, *E. altaicum*) shorter; scutellum relatively small, or rather wide (*E. intermedium*); 3d antennal joint relatively long. Pronotum never totally covered with pubescence, always with several glabrous areas. Elytral longitudinal stripes (if present) are rather special : humeral and external dorsal stripes (sometimes internal dorsal stripe also) are often divided forming more then 2 dorsal white lines; internal dorsal stripe is often fused with sutural stripe, forming more or less wide triangular area behind scutellum or very wide joint sutural stripe just like in *Politodorcadion*.

Many *Eodorcadion* species are characterized by extremely wide individual variability. Glabrous and pubescent form as well as smooth and striated forms of males and females can be represented in one population. (*E. maurum sajanicum, E. m. katharinae, E. ptyalopleurum, E. glaucopterum, E. dorcas, E. novitzkyi, E. egregium, E. lutshniki altanelsense*). Very rare glabrous form of males are accompanied with autochromal pubescent forms of females (*E. carinatum kiahtenum* ssp. n. and sometimes in *E. carinatum involvens, E. m. maurum, E. constantaneum* or *E. humerale trabeatum*), that is so often in *Dorcadion*. Sometimes autochromal females can be represented by glabrous form, which is not known in males - *E. exaratum* (like in *Dorcadion talyschense* Ganglbauer, 1883; *D. laeve* Faldermann, 1837; *D. shirvanicum* Bogatchev, 1934 and their relatives). Usually females have just a little wider elytral stripes than males; females pale elytral stripes are more often yellow or yellowish, than in males.

Larval characters also do not allow to distinguish definitely *Eodorcadion* from other genera of Dorcadionini. A. I. Tsherepanov (1983) mentioned only one distinguishing character for delimitation *Dorcadion* and *Eodorcadion*, which can not be regarded as good enough : white dorsal anterior membranous area of prothorax is rather wide, not narrower or even wider than neighbour transverse setose field; while in *Dorcadion* anterior membranous area is very narrow, much narrower than setose field.

Distribution. – North Asia : from South Urals in Russia (Orenburg region from about 60°E – no records from the territory westwards Ural river) and North Kazakhstan (Kustanaj region) to South-East Kazakhstan (Zaisan lake) and along South Siberia to Pacific Ocean; the whole territory of Mongolia; North China from east part of China Dzhungaria (from, about 85°E : Manas river) eastwards to Kuku-Nor lake environs, Alashan, Ordos, North Gansu, Shanxi, Beijing env., Inner Mongolia and along Great Khingan ridge to Manchzhuria; Korean peninsula. The records for Muzart (*E. oreadis*) and for Shanghai (*E. virgatum*) were wrong.

Bionomy. – Many of *Eodorcadion* species are very common in the corresponding localities of very big areas. Such species as *E. carinatum, E. maurum, E. intermedium, E. exaratum*, sens. n., and *E. egregium* have areas of several thousands of kilometers long and are often represented by very dense populations. Many local species like *E. ptyalopleurum, E. tuvense, E. brandti, E. lutshniki, E. dorcas, E. zichyi* and others are still very numerous in nature inside their relatively small areas. Other species, like *E. multicarinatum, E. ornatum* seem to be very rare in nature and even in good conditions are represented by very scattered specimens. Many species are up to now very rare in museum's collections, but it must be connected with the fact, that their areas were not visited by collectors (*E. gansuense, E. kaznakovi, E. jakovlevi*, and *E. potanini*). Certain species are represented up to now by holotypes only : *E. sinicum, E. mandschukuoense*.

Nearly all species are connected with steppe, semidesert and desert landscapes up to 1900 m above the level of the see (*E. c. involvens* in Mongolia – own materials). Chinese *E.* (s. str.) *glaucopterum* was often observed in alpine zone : at 3900 m near Labrang in Gansu and at 3400 m in East Qinghai. *E.* (*H.*) *humerale impluviatum* was observed by me in forest-steppe areas in Mongolia near Ulan-Bator. Forest glades are typical for certain population of *E. humerale humerale* from Russian Far East. Adults of all species are most numerous in the second half of summer in July-August – never in spring as it is so natural for *Dorcadion*. Only one exception seems to be known to me *E.* (s. str.) *multicarinatum* were collected in May in north-east China. Two types of adult activity could be ascertained. *Eodorcadion* (s. str.) and *E.* (*Humerodorcadion*) usually appear in June and are most numerous in July. Sometimes first imagoes could be evidently observed even in May : *E.* (s. str.) *carinatum carinatum* near Kokchetav in Kazakhstan or mentioned above *E.* (s. str.) *multicarinatum* from NE China.

Just contrary *E.* (*Ornatodorcadion*) are most active in August, though first specimens appear in July. According to my own observations *E.* (*O.*) *brandti* is extremely numerous at the beginning of August in sandy desert northwards Zaisan lake in Kazakhstan. While *E.* (s.str.) *altaicum* is very numerous nearby in the first half of July. Adults of several *Dorcadion* species are active in the region from April to June. In August 2002 in Mongolia I observed many very dense populations of *E.* (*O.*) *exaratum exaratum*, sens. n., *E.* (*O.*) *exaratum argali*, *E.* (*O.*) *intermedium kozlovi*, *E.* (*O.*) *gorbunovi* and *E.* (*O.*) *zichyi* in Mongolia. In Dariganga environs (South-Gobi aimak) several dead *E.* (s. str.) *darigangense* were collected in the middle of August among numerous young and fresh *E.* (*O.*) *exaratum exaratum*, sens.n. Adults of *E.* (s. str.) *darigangense* were active in the region in July. Such type of late imaginal activity is connected with the peculiarity of Central Asian climate with humid end of summer. But in very hot south areas even *E.* (*Ornatodorcadion*) can be active in June or even in May : *E.* (*O.*) *oreadis* in China Dzhungaria.

After emergence adults of all species feed on grass plants, often climb up along the stems. I observed males and females of *E. brandti*, *E. gordunovi*, *E. intermedium kozlovi* and *E. zichyi* feeding on *Lasiagrostis* often rather high above the ground level (up to 1.5m). Undoubtedly larvae of these taxa feed on roots of *Lasiagrostis*. Adults of other taxa (*E. maurum quinquevittatum*, *E. exaratum argali*) were observed by me feeding on stems of *Caragana*. Adults of *E. exaratum exaratum*, sens. n. in some populations feed on *Caragana*, in others - on *Lasiagrostis*, but sometimes on both. Each of such populations is a little special morphologically. Adults of most of *Eodorcadion* (s. str.) species and of both species of *E.* (*Humerodorcadion*) are connected with different Gramineae (*Stipa*, *Agropyron*, *Elymnus* and others).

Adults are active in the late morning before 12.00, but maximum of adult activity is in the afternoon: 16.00-18.00. In hot days beetles disappear at about noon.

Larvae always develop in soil feeding on grass roots.

The development of 6 taxa was investigated in details by A. I. Tsherepanov, N. E. Tsherepanova (1978) and A. I. Tsherepanov (1983) : *E. carinatum*, *E. maurum maurum*, *E. m. quinquevittatum*, *E. ptyalopleurum*, *E. tuvense*, and *E. lutshniki*. A generation of all taxa requires two years. Females need about 8 days after emergence before oviposition. They lay eggs in the soil at gramineous stem bases at the root collar just below ground line, or in the underground axils of Gramineae leaves (*E. maurum quinquevittatum*, *E. ptyalopleurum*), or at least in one species (*E. tuvense*) females chew small niches with mandibles in the underground part of stems of *Agropyron* and other Gramineae and then deposit inside the stem one egg or several (2-3) eggs in each site. Females are able to deposit up to 30 eggs each. Young larvae appear in about 3-4 weeks after oviposition. Newly hatched larvae bore into the stem and make galleries inside plant root. Half grown and mature larvae can be observed in soil. Larval soil mines are packed with grey and greenish frass and debris, so larvae feed on roots and green parts of the plants. Larval galleries are situated to about 10cm under the level of the soil. Pupation occurs from about June to July in soil cell after second overwintering at about 1-10cm under the soil surface. The pupal stage lasts from 2 to 3 weeks. Adults leave pupal cells in about 7 days after emergence from pupae. Adult longevity is about 3-4 weeks.

The genus includes 37 species arranged in 3 subgenera :

1. Subgenus *Eodorcadion* s. str. (Figs. 1-17)

Eodorcadion Breuning, 1947a : 142.

Eodorcadion (*Eodorcadion*), Breuning, 1962 : 14; Danilevsky et al., 2005 : 133.

Type species : *Lamia carinata* Fabricius, 1781 (original designation).

Diagnosis. – Body length in males : 9-22 mm; in females : 10.5-25 mm; body width in males : 3.4-8.1 mm; in females : 4.4-9.7 mm.

The subgenus is well definite by endophallic structures (Danilevsky et al., 2005) : endophallus relatively long and thin, central bend usually more or less distinct, central trunk present, apical phallomer without appendages and never elongated.

Endophallus (Plans 1-2) long and narrow, usually about as long as elytra; or in *E.* (s. str.) *virgatum* relatively short. Basal tube (bt) short about 2 times longer than wide or shorter, glabrous, often transversely rugose. Ventral plates (vp) rather big, long and wide, trapezoidal. Medial tube (mt) is about as long as aedeagus, curved ventrally, widened distally, often forming hardly delimited relatively glabrous central bladder (cb). Central bend (bd) is usually developed (in *E. carinatum involvens* often about 90°), more or less distinct (*E. maurum sajanicum*, *E. tuvense*, *E. ptyalopleurum*) or indistinct (*E. maurum quinquevittatum*, *E. virgatum*). Central trunk (ct) often long (*E. carinatum*), or very short (*E. glaucopterum, E. virgatum*, *E. sifanicum)*, totally or apically covered with microspicules. In *E. c. involvens* spicules are arranged along dorsal side of central trunk in so dense stripe, that it often looks like a sclerite. Central trunk fused with cone-shaped preapical bulb (pb) without (or with very small) constriction. Preapical bulb strongly widened (E. *maurum quinquevittatum*, *E. m. sajanicum*, *E. tuvense*, *E. ptyalopleurum*), or less widened (*E. carinatum*), or hardly widened (*E. virgatum*, *E. sifanicum*, *E. glaucopterum*) and densely covered with microspicules. Apical bubble (bb) more or less cone-shaped, big or (in *E. virgatum*, *E. glaucopterum*) small; joined to preapical bulb (pb) without constriction and without internal membrane in between; only in *E. glaucopterum* with distinct constriction. Paired gonopores (gn) are situated near middle of the dorsal side of phallomer or moved basally; each pore can be supplied (*E. carinatum*) with small sclerite. Striated forms of *Eodorcadion* (s.str.) always without sutural hair stripe; humeral stripe is often divided in two portions.

Distribution. – About whole genus area without South Mongolia, where only species of *E.* (*Ornatodorcadion*) are represented.

Remarks. – Endophallic characters allow separating three groups inside the nominative subgenus. First group consists of three species – *E.* (s.str.) *carinatum*, *E.* (s.str.) *altaicum* and *E.* (s.str.) *chinganicum*. It is characterized by moderate size of apical mace and very long central trunk. The isolated position of "*E. carinatum*-group" could be proved by its distribution : *E. carinatum* is often sympatric with other *Eodorcadion* (s.str.), but allopatric with *E.* (s.str.) *chinganicum* and *E.* (s.str.) *altaicum*, though in close contact. In Tuva Republic and North-West Mongolia *E.* (s.str.) c. *involvens* can occupy same localities as *E.* (s. str.) *maurum* and/or *E.* (*H.*) *lutshniki*, as well as *E.* (s. str.) *tuvense* or *E.* (s. str.) *ptyalopleurum*. In North Mongolia *E.* (s. str.) *c. involvens* was often collected by me together with *E.* (*H.*) *humerale*. According to the published collecting data in Central Mongolia *E.* (s. str.) *c. involvens* can live together with certain species of *E.* (*Ornatodorcadion*). *E.* (s.str.) *chinganicum* can be observed together with *E.* (*O.*) *novitzkyi*. Second group includes *E. maurum*, *E. tuvense* and *E. ptyalopleurum* and could be characterized by exceptionally big apical mace, while central trunk is relatively short. The members of "*E. maurum*-group" : *E.* (s. str.) *maurum*, *E.* (s. str.) *ptyalopleurum* and *E.* (s. str.) *tuvense* are also usually allopatric, but in south Tuva near Ishtii-Hem I observed *E.* (s. str.) *tuvense* in one locality with *E.* (s. str.) *maurum quinquevittatum*. Third group consists of species from NE China and does not look natural enough: *E. virgatum*, E. *gansuense*, *E. multicarinatum, E. sifanicum*, *E. sinicum*, *E. glaucopterum*, but here apical mace is relatively small and hardly pronounced, central bend indistinct. I preliminary attribute to this group two more closely related species without endophallic study : *E. darigangense* and *E. mandschukuoense*. Larval characters (Tsherepanov, Tsherepanova, 1978; Tsherepanov, 1983) prove partly this separation. Pronotum in *E. carinatum* is strongly sclerotized, while in species of "*E. maurum*-group" – without sclerotization.

1. *Eodorcadion* (s. str.) *carinatum* (Fabricius, 1781) (Fig. 1)

Lamia carinata Fabricius, 1781: 222 ("Siberia").

Dorcadion carinatum, Gebler, 1848 : 402; 1859 : 506; Thomson, 1867 : 45 ("Siberia"), part.; Blessig, 1873 : 201.

Neodorcadion involvens, Ganglbauer, 1884 : 512; 1889 : 483; Reitter, 1898 : 177; Jakovlev, 1901 : 150, 152.

Neodorcadion carinatum, Pic, 1901 : 67; Winkler, 1929 : 1199 ("= *blessigi* Gglb. = *bramsoni* Pic"), part.; Plavilstshikov, 1932a : 212-215.

Eodorcadion carinatum, Plavilstshikov, 1958 : 436, part.; Kostin, 1975 : 221,part.; Tsherepanov, Tsherepanova, 1978 : 109; Lobanov et al., 1982 : 264, part.; Tsherepanov, 1983 : 44; 1996 : 113.

Eodorcadion (s.str.) *carinatum*, Breuning, 1958 : 4, part.; 1962 : 14, part.; Danilevsky et al., 2005 : 131, 133, 148.

Eodorcadion carinatum involvens, Wang 2003 : 293.

Eodorcadion involvens, Wang 2003 : 297 (Inner Mongolia : Hailar), part.

Eodorcadion longjiangensis Wang, 2003 : 299, **syn. n.**

Eodorcadion longjiangnesis Wang, 2003 : 396 ("Heilongjiang, Yabuli"), wrong spelling.

Type locality. – West Siberia of Russia and Kazakhstan. The taxon was described (as Lamia) after one specimen from "Siberia". I do not know the type, but according to the traditional interpretation of the typical form as the most western representative of the species, I regard as typical the populations of the species from West Siberia (Russian regions : Orenburg, Cheliabinsk, Kurgan, Omsk, Novosibirsk; Kazakhstan regions : Kustanaj, Kokchetav, Astana, Semipalatinsk).

Diagnosis. – Body length in males : 9-18 mm; in females : 10.5-22 mm, body width in males : 3.4-7 mm; in females : 4.4-8.5 mm.

Red-brown, very rare black-brown, but never black, sometimes with black legs and antennae; antennae in males a little longer or a little shorter than body, in females antennae a little shorter than body or just reach elytral half; cicatrix indistinct; elytra totally glabrous, or with only humeral hair stripes, or with several more or less regular longitudinal white stripes (from 1 to 8 on each elytron), or totally densely covered with brownish pubescence (females of *E. c. kiahtenum* ssp. n., autochromal females of *E. c. involvens*), which can be slightly arranged in longitudinal rows (Fig. 1d–18-20; 1e–22-24); sutural and marginal elytral stripes always absent; elytral surface usually smooth, humeral carinae more or less sharp, often distinct only near humeri; very rare in females dorsal carinae are also visible.

Species differs from the closest *E. altaicum* by longer antennae, less convex elytra; subspecies with dull elytra (as in *E. altaicum*) always have humeral hair stripes, while in *E. altaicum* humeral stripes can be totally absent or in form of short apical rudiments. Sometimes autochromal pubescent females of *E. c. involvens* (Fig. 1d–18-20) or females of *E. c. kiahtenum*, ssp.n. (Fig. 1e–22-24) can be rather similar to typical females of *E. ch. chinganicum* (Fig. 3a–5-7) or *E. ch. kerulenum*, ssp.n. (Fig. 3c-10) with the same type of elytral design, but still the shape of elytral hair stripes is different : in pubescent females of *E. carinatum* all elytral stripes (if present, that is very rare !) are of about same width, while in *E. chinganicum* certain stripes are much narrover than others. Typical *E. lutshniki* (Fig. 37a) is also easily distinguished from all *E. carinatum* by rather peculiar elytral design, but glabrous *E. lutshniki bicoloratum*, ssp. n. (Fig. 37c) as well as glabrous forms of *E. lutshniki altanelsense* (Fig. 37d–14-16) can be very similar (and sympatric)

with *E. carinatum involvens*. Glabrous forms of *E. lutshniki* differ from *E. carinatum involvens* by usually wider body with well developed humeral carinae, besides in *E. lutshniki* legs, antennae and partly head are lighter than thorax and elytra, while in *E. carinatum* legs and antennae can be darker than elytra, but never lighter.

E. humerale humerale is also glabrous as *E. c. involvens* and often sympatric with it, but it is nearly always totally black (brown variations are known but extremely rare), that is nearly impossible in any *E. carinatum* (black *E. c. involvens* are known, but very rare).

Bionomy. – The species is connected with steppe and semidesert landscapes up to 1900m above the level of the see (*E. c. involvens* in Mongolia – own materials). Very numerous populations are known in all subspecies. It is the most ordinary species in the genus. The statement of the solitude mode of life of the beetles of *E. carinatum* without distinct colonies (Tsherepanov, Tsherepanova, 1978 : 113) is totally out of the reality.

The development of the species was investigated in details by A. I. Tsherepanov, N. E. Tsherepanova (1978) and A. I. Tsherepanov (1983). A generation requires two years. Adults appear in June and can be found until September. Some old materials are labelled as collected in May (from near Kokchetav in Kazakhstan). They are most numerous in July. Adults are active in the late morning before 12.00, but maximum of adult activity is in the afternoon : 16.00-18.00. In hot days beetles disappear at about noon. According to my own observation in Mongolia (near Ulan-Bator) the adults were rather numerous in the second half of July, but were all dead at the middle of August. In bad weather they were observed under small stones and dung-plates. After emergence adults feed on grass plants, sometimes climb up along the stems. Females need about 8 days before oviposition. They lay eggs in the soil at gramineous stem bases at the root collar just below ground line. Each female is able to deposit about 15 eggs. Young larvae appear in 3-4 weeks. Newly hatched larvae bore into the stem. Soon larvae leave the host plant and wander over the soil. Larval soil mines are packed with grey and greenish frass and debris, so larvae feed on roots and green parts of the plants. Larval galleries are situated to about 10 cm under the level of the soil. Larvae seem to be mostly connected with *Agropyron* ssp. and *Elymnus*. Pupation occurs from about May to June in soil cell after second overwintering. The pupal stage lasts about three weeks. Adults leave pupal cells soon after emergence.

Distribution (Map 1–1). – From South Urals in Russia (Orenburg region; from about 60°E – no records from the territory westwards Ural river) and North Kazakhstan (from Kustanaj region southwards up to Atbasar) to Altaj mountain system and along South Siberia to Transbaikalia. According to N. N. Plavilstshikov (1958) the species is distributed eastwards to about upper regions of Amur river valley, but several specimens are known from near Khabarovsk and one female is available from Primorje region (from near Spassk-Dalnij). Northern limit of the area recorded by Plavilstshikov (1958) is 59°N, but such record looks fantastic. One very small male with the label "Jakutia, 1876" is available (ZIN), but the occurrence of the species in Jakutia needs confirmation. It is widely distributed in Mongolia : northern half of the Republic and partly central territories. In China the species is known from three very distant areas; one population is definitely known from China Dzhungaria-Karlyk-Tag environs-(ZIN); the species is also distributed in the northern most part of Inner Mongolia -Hailar environs (Wang, 2003 : 297, as *E. involvens*) and in Manchzhuria ("Harbin"-according to M. Matsushita-1941 : 31). J. L. Gressitt (1951 : 340) recorded it for Chine East Mongolia.

The species consists of 5 subspecies : *E. c. carinatum* (Fabricius, 1781), *E. c. blessigi* (Ganglbauer, 1884); *E. c. bramsoni* (Pic, 1901); *E. c. kiahtenum* ssp. n. and *E. c. involvens* (Fischer von Waldheim, 1823).

Maps 1. Localities of ***E. carinatum***. 1. The whole area of the species with 5 subspecies

Remark. – The taxon was mentioned as three different species by Wang Zhicheng (2003 : 293, 297, 299 and 396) : first time as "*E. carinatum involvens*" – illustrated with the drawing of a male of *E. carinatum carinatum* from Plavilstshikov's (1958 : 438) monograph; second time, as "*E. involvens*" – illustrated with four original photos of *E. carinatum involvens* from Hailar; third time as "*E. longjiangensis* sp. n.", illustrated with original photo of a male of *E. carinatum involvens* from near Harbin.

1a. *Eodorcadion* (s.str.) *carinatum* ssp. *carinatum* (Fabricius, 1781) (Fig. 1a)

Lamia carinata Fabricius, 1781 : 222 ("Siberia").

Dorcadion involvens, Gebler, 1830 : 185 ("Barnaul").

Dorcadion carinatum, Gebler, 1848 : 402; 1859 : 506; Thomson, 1867 : 45 ("Siberia").

Neodorcadion involvens, Jakovlev, 1901 : 150, 152, part.

Neodorcadion involvens, Plavilstshikov, 1931 : 76 ("District Ischim").

Neodorcadion involvens ab. *blessigi*, Plavilstshikov, 1931 : 74 ("Belovetz[?], Distr. Ischim"].

Neodorcadion carinatum carinatum, Plavilstshikov, 1932a : 212.

Neodorcadion carinatum carinatum f. *humerolineatum* Plavilstshikov, 1932a : 214, part., unavailable name.

Neodorcadion carinatum, Winkler, 1929 : 1199, part.; Plavilstshikov, 1932c : 193.

Eodorcadion (s.str.) *carinatum* m. *nigrescens* Breuning, 1947b : 170 ("Tcheljabinsk, Siberie"), unavailable name.

Eodorcadion carinatum carinatum, Plavilstshikov, 1958 : 437 (= *bramsoni* Pic, = *altaicum* Suv.), part.; Lobanov et al., 1982 : 264, part.; Tsherepanov, 1983 : 44, part.; Hua, 2002 : 206, part. (= *altaicum* Suv.; "Heilongjiang, Inner Mongolia").

Eodorcadion (s. str.) *carinatum*, Breuning, 1958 : 4, part.; 1962 : 14, part.

Eodorcadion carinatum, Kostin, 1975 : 221, part.

Eodorcadion (s. str.) *carinatum carinatum*, Danilevsky et al., 2005 : 131, 133, 148.

Eodorcadion carinatum involvens, Wang, 2003 : 293, part.

Type locality. – West Siberia of Russia and Kazakhstan (see above).

Diagnosis. – Length in males : 12.7-14.7 mm, in females : 15.5-18.8 mm; width in males : 5.4-6.2 mm, in females : 6.2-8.2 mm.

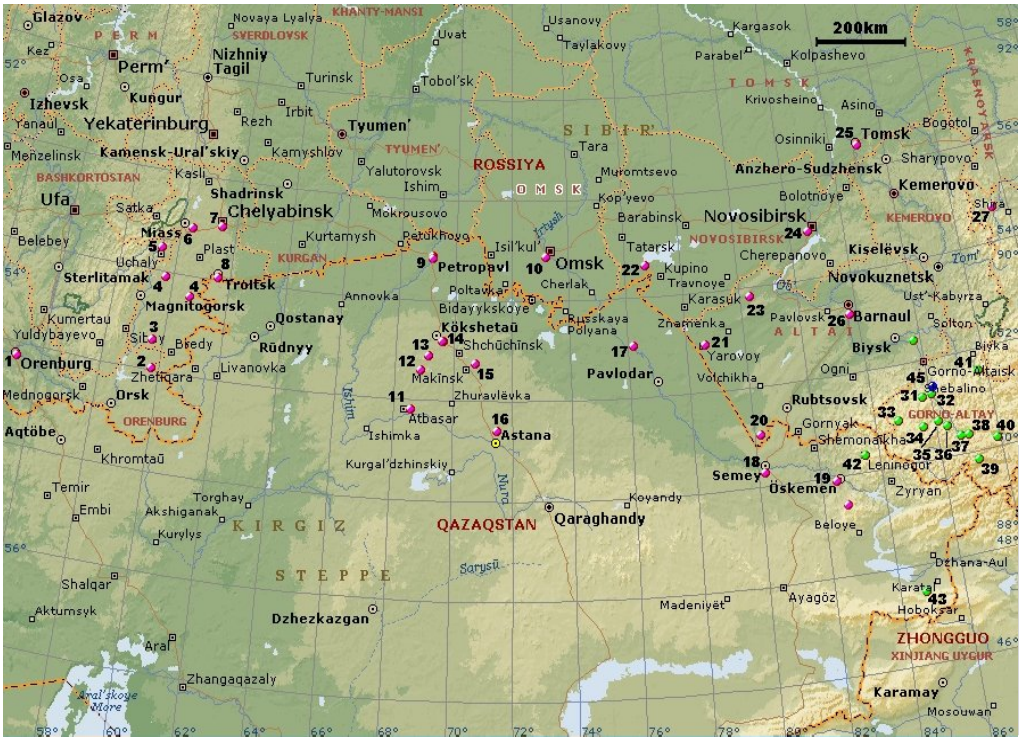
Red-brown; elytra relatively flat with special distinct punctation; without dorsal white stripes or sometimes dorsal stripes can be visible in females (very rare in males), humeral stripes always complete; autochromal females unknown.

E. c. involvens differs from the nominative subspecies by very fine elytral punctation, which usually nearly absent; elytra usually without distinct white stripes (in autochromal females dense elytral brownish pubescence can be slightly or very rare distinctly arranged in longitudinal rows). *E. c. blessigi* differs from the nominative subspecies by often presence (especially in females) of one or two dorsal white stripes on each elytron; besides elytral punctation is distinctly finer, though in certain specimens it could be about same as in *E. c. carinatum*. *E. c. bramsoni* differs from the nominative subspecies by presence from 4 to 8 regular white stripes on each elytron.

Distribution (Maps 1-2, 3; localities 1-30). – Russia, south of west and central Siberia : Orenburg (locality needs confirmation)-(ZIN); Orenburg region, Kvarkeno distr., Suunduk river -(private message of A.Shapovalov, 2004); Cheliabinsk -(Breuning, 1947b, MHNL); Kopeisk (near Cheliabinsk)-(ZMM); Bredy, Arkaim, 52°37'N, 59°3-(MD); Cheliabinsk region, Troitsk-(MD); Cheliabinsk, Chebarkul-(HNHM); Cheliabinsk region, Krasninskij (30 km E Verkhneuralsk)-(ZIN); Cheliabinsk region, Varna district, Solntzevo-(MD, coll. of P. Petrov); Republic of Bashkiria, Rysaevo (about 20km NW Uchaly)-(ZIN); Omsk-(ZIN, JV); Slavgorod, western most area of Altaj region-(ZIN, JV); Altaj region, Pankrushikha-(ZIN); Laptev Log, south-west of Altaj region-(ZIN); Novosibirsk env.-(ZIN); Novosibirsk reg., SW bank of Chany lake-(ZIN); Tomsk env. (needs confirmation)-(ZIN); Altaj region, Barnaul env.-(ZIN, JV, Gebler, 1830); Krasnoiarsk-(ZIN); Krasnoiarsk region, Minusinsk-(SK); Khakassia, Chernoje lake, Shira distr.-(MD); Khakassia, Abakan river, Askiz (about 90km SW Abakan)-(JV); Khakassia, Saragash-(ZMM). Kazakhstan, north and north-east : Kokchetav-(ZIN); Petropavlovsk-(ZIN); Petropavlovsk region, Yudino-(ZMM); North-Kazakhstan region, Zerendinskoe lake, about 40 km S Kokchetav-(ZIN); Sandyk-Tau near Balkhashino-(NMP); Kotyrkol lake-(ZIN); Semipalatinsk-(SK); Ust-Kamenogorsk-(ZIN); Kalbinsky ridge (north slope), Targyn-(ZMM); Ashchily lake near Astana-(ZIN); Astana region, Atbasar-(Plavilstshikov, 1958); Pavlodar region, Kachiry-(ZIN). The records of the subspecies for China by Hua Li-zhong (2002 : 206, "Heilongjiang, Inner Mongolia") are wrong.

Materials. – Russia : 1 male, Russia, ["Orenburg, Leman"] [in Russian]-(ZIN); 1 female (with very rough elytral sculpture and with two dorsal elytral stripes) with three labels: (1)"Holotype"(red); (2)"*Neodorcadion carinatum nigrescens* mihi Typ, det. Breuning";

(3)"Tscheljabinsk"- (MHNL); 1 female, Russia, ["Verkhneuralsk distr., Rysaevo, source of Ural river, VII.1896, Kisliakov"] [in Russian], now Bashkiria, Rysaevo (about 20 km NW Uchaly)-(ZIN); 1 male, ["Akmola prov., left bank of Irtysh river downwards Omsk, VI, Agentova *leg*."] [in Russian]-(ZIN); 1 male, ["south of forest-steppe zone of Tobolsk province (about Petropavlovsk-Omsk area), VI-VII.1896, Ruzsky *leg*."] [in Russian]-(ZIN); 1 male (with dorsal white stripes), Russia, Barnaul, 4.VI.1902, Z. Goretov *leg*.-(ZIN); 1 female, Russia, Altaj region, Barnaul, 13.VI.1904, Z. W. Goretovsky *leg*.-(ZIN); 1 male with similar label but "4.IV.1904" (wrong date ?)-(JV); 1 female (with dorsal stripes), Russia, Khakassia, Abakan river, Askiz (about 90 km SW Abakan), 4.VIII.1908, A. Jacobson *leg*.-(JV); 2 males, Altaj reg., ["Barnaul distr., Pankrushikha, 29.VI.1911, Vydrina *leg*."] [in Russian]-(ZIN); 1 male, "Tomsk (needs confirmation), VI-VII.1912, Agentov *leg*."-(ZIN); 1 male, ["Krasnoiarsk, 13.7.1912, Kazantseva *leg*."] [in Russian] -(ZIN); 1 male, 1 female, "Enisej river, Saragash, 1912" [Khakassia] – ZMM; 1 female, ["Barnaul, 15.VII.1913, Maslov and Luri *leg*."] [in Russian]-(ZIN); 1 male, 1 female, ["Omsk, 22.II.1922"] [in Russian]-(ZIN); 1 male, 1 female, ["Slavgorod env., Solonchaki, 26.VI.1922, A. N. Reichardt *leg*." [in Russian]-(ZIN); 1 female (with dorsal stripes), Slavgorod (western most point of Altaj region), 25.VI.1922, A. Reichardt *leg*."-(JV); 9 males, 3 females, ["Altaj reg., Laptev *leg*., 13.VI.1923"] [in Russian]-(ZIN); 2 males, 1 female, Russia, ["E Ural distr., Krasnenskij, 29 and 31.VII.1926, 1.VIII.1926, N. Umnov»] [in Russian], now : Cheliabinsk Reg., Krasninskij (30 km E Verkhneuralsk) – (ZIN); 1 male, ["Novosibirsk, 1.VIII.1926, Ginzburg *leg*."] [in Russian]-(ZIN); 1 male, Novosibirsk reg., ["Baraba Steppe, SW bank of Chany lake, 25.VI.1931, Formozov *leg*."] [in Russian]-(ZIN); 1 male, Russia, Omsk, 21.VI.1933, G. Troitsky *leg*.-(ZIN); 1 female (with dorsal stripes) with similar label, but "20.VII.1933"-(JV); 1 male, Russia, Krasnoiarsk region, Minusinsk, 21.VII.1936-(SK); 2 females, Kazakhstan, Petropavlovsk reg., Yudino, 12.VII.1939, A.Bulavin *leg*.–(ZMM); 1 male, Russia, Cheliabinsk region, Ilmen Natural Reserve, Chebarkul lake, 5.VIII.1945, P. Raspopov *leg*.-HNHM); 1 female, Chebarkul district, Bishkul, 18.VII.1945, P. Raspopov *leg*.-(HNHM); 1 female, Cheliabinsk reg., Kopejsk, 16.VII.1964, G. Podgornyj *leg*.-(ZMM); 1 female, Russia, Cheliabinsk region, Troitsk, 10.VII.1974, Orlov *leg*.–(MD); 1 male, Cheliabinsk reg., Varna distr., Solntze, 11.VII.1993, P. Petrov *leg*.-(MD); 2 males from same locality, 12.VII.1991 and 19.VII.1992-(coll. P. Petrov); 1 female, Russia, Khakassia, Chernoje lake, Shira distr., 14.VII.1995, I. Ermolaev *leg*.-(MD); 1 male, Russia, Cheliabinsk region, Bredy distr., Arkaim Natural Reserve [52°37'N, 59°34'E], 24.VII.1996, V. A. Gashek *leg*.-(MD). Kazakhstan : 1 male, Kazakhstan, ["Akmolinsk reg., Kokchetav, 5-10.VII.1899 Ingenitzky"] [in Russian]-(ZIN); 1 male, ["Akmolinsk (now Astana) reg., Pokrovskoe distr., Ashchily lake, 21.V.1899, Balykleisky *leg*."] [in Russian]-(ZIN); 1 male, Kazakhstan, ["Akmolinsk reg., Kokchetav distr., Zerendinskoe lake, 20.V.-10.VII.1902, Rubio *leg*."] [in Russian] (about 40 km S Kokchetav)-(ZIN); 1 male, Kazakhstan, ["Akmolinsk reg., Kokchetav distr., Kuturkul lake (Kotyrkol lake about 100 km SE Kokchetav near Shchuchinsk), 29.VI.1908, Karavaev *leg*."] [in Russian]-(ZIN); 2 males, ["Irtysh river, Ust-Kamenogorsk env., 29.VI.1925, Filatov *leg*."] [in Russian]-(ZIN); 3 males, Kazakhstan, ["Borovsk. forest farm (Borovoe environs near Kokchetav), Kokchetav district, Akmolinsk region, 25.VI.1932, 8 and 12.VII.1932, V. Popov"] [in Russian]-(ZIN); 1 male, Kazakhstan, Kokchetav reg., ["Kuturkul lake (=Kotyrkol) 18 km SE Borovoe, 25.VI.1937, L. Zimin *leg*."] [in Russian]-(ZIN); 1 male, 4 females, Kazakhstan, Kalbinsky ridge (north slope), Targyn, 26-27.VI.1949, I. Telishev *leg*.–(ZMM); 2 females (with a pair of dorsal elytral stripes), Pavlodar reg., ["NE Kazakhstan, Kachiry 12.VIII.1952"] [in Russian]-(ZIN); 1 male, 1 female, Kazakhstan, ["Akmolinsk, Balkhashino, Sandyk-Tau Mts., [52°37'N, 68°54'E], 16.VI.1954, N. Skopin *leg*."] in Russian]-(NMP); 1 male, 1 female (with dorsal elytral stripes), Kazakhstan, "Semipalatinsk, 15.VI.1952, T. P. Cerles *leg*."-(SK); 1 male, Kazakhstan, "Akmolinsk Reg., Kokcetau (=Kokchetav), VI.1954"-(NMP); 2 males, 1 female, Kazakhstan, ["Petropavlovsk, VI.1955, V. Shubin"] [in Russian]-(ZIN).



Map 1-2. ***E. carinatum*** : Russia, Kazakhstan, Mongolia, China.

Map 1-3. ***E. carinatum*** : Russia, Kazakhstan, Mongolia, China.

Remark. – A drawing of *E. carinatum carinatum* (male) from Plavilstshikov's monograph (1958 : 438) was used by Wang Zhicheng (2003 : 297) for the illustration of his "*E. carinatum involvens*".

Maps 1-2 and 1-3 :

E. c. carinatum (1-30) : 1. Orenburg; 2. Kvarkeno, Suunduk river; 3. Arkaim 52°37'N, 59°34'E; 4. Krasninskiy (30 km E Verhneuralsk); 5. Rysaevo; 6. Chebarkul; 7. Cheljabinsk; 8. Troitzk; 9. Petropavlovsk; 10. Omsk; 11. Atbasar; 12. Sandyktau near Balkhashino, 52°37'N, 68°54'E; 13. Zerendinskoe lake; 14. Kokchetav; 15. Kotyrkol Lake; 16. Ashchily lake; 17. Kachiry; 18. Semipalatinsk; 19. Ust-Kamenogorsk; 20. Laptev Log; 21. Slavgorod; 22. SW bank of Chany lake; 23. Pankrushikha; 24. Novosibirsk; 25. Tomsk; 26. Barnaul; 27. Shira, Chernoje lake; 28. Krasnoiarsk; 29. Minusinsk; 30. Abakan river, Askiz.

E. c. blessigi (31-44) : 31. Shebalino; 32. 10 km S Chemal, left bank of Katun river; 33. Ust-Kan; 34. Koerlyk river near Tenga; 35. Ongudai; 36. Chike-Taman pass, 50°38'N, 86°18'E; 37. mouth of Chuja river; 38. Iodro; 39. Karagem river; 40. Kuraj Steppe; 41. Cheliush river, Teletskoe lake; 42. Leninogorsk; 43. Zaisan env.; 44. Shaman ridge.

E. c. bramsoni : 45. Chemal, right bank of Katun river, type locality.

E. c. involvens (46-190) : Russia, Tuva : 46. Khondergej; 47. Ishtii–Kem; 48. Sagly river; 49. Adardash ridge; 50. Naryn river valley, 50°11'N, 95°39'E; Russia, Irkutsk reg. ; 51. Zima; 52. Balagansk; 53. Verkholensk; 54. about 100 km NW Irkutsk; 55. Kultuk; 56. Oiek; 57. Irkustk environs; 58. Olkhon Gate; 59. Sarma river; Russia, Burjatija : 60. Mondy; 61. Sangina river; 62. Taiozhnyj; 63. Naushki env., Kharankhoi; 64. Kiakhta env.; 65. Ulan-Ude environs. Russia, Chita region : 66. Chita env.; 67. Chita environs, Molokovka (about 10 km S Chita); 68. Chita env., Kruchina; 69. Chita reg., Urulcha; 70. Mitrofanovo near Shilka-city; 71. Nerchinsk district, Nizhniaia Hila; 72. Aginskoe; 73. Aginsk district, Onon river valley, Kunkur (about 80 km SE Aginskoe); 74. Tzagan-Oluj; 75. Priargunsk; Russia, Khabarovsk region; 76. Kazakevitchevo; Mongolia, Ubsu-Nur aimak; 77. 15 km S Ulangom; 78. 10 km N Mt. Han-Huhei-Ula; 79. Changilcagijn gol, 6 km SW from Barun-Turun; 80. 30 km NE Barun-Turun; 81. Under-Hangai; Kobd aimak; 82. Ikh-Ulan-Daba pass; Dzabhan aimak; 83. 15 km NW from somon Songino; 84. Uliasutai; 85. Tesijn-Gol river; 86. Telmen-Nur lake, Ider-Gol river; 87. Choit-Chunch, 26 km ENE from Telmen-Nur lake; Hubsugul aimak; 88. Tesijn-Gol river W Tzetzerleg; 89. 45 km E Tzetzerleg; 90. Tunamal-Nur lake, 26 km WSW from Sharga; 91. Sharga; 92. 20 km SW Buren-Khan; 93. 8 km N from Buren-Khan, Delger-Muren river; 94. 50-54 km WNW from Muren; 95. Ar-Bulak; 96. 8 km N from Alag-Erdene, Egijn-Gol river; 97. 25 km NNE Ulan-Ula; 98. 25 km W Muren; 99. Buren; 100. 25 km E from Muren; 103. Selenga river, 20 km SE Toson-Tzengel; 104. Between Toson-Tzengel and Ikh-Ula, 22 km E from Toson, Tzengel; 105. Mt. Ikh-Ula NE Ikh-Ula; 106. 17 km N Shine-Ider; 107. Ider river, Dzhargalant; Ara-Hangai aimak; 108. 20 km W Tariat; 109. 15 km NW Under-Ulan; 110. Bugat in Ara-Hangai; 111. Ikh-Tamir env.; 112. Hangai Mts., 8 km W Urdtamir near Tzetzerleg; 113. Tzetzerleg; 114. Tevshruleh; 115. 24 km N from Lun; 116. 20 km N from Charchorin; Bulgan aimak; 117. Namnan ridge, 23 km NW from Chutag; 118. Selenga river, 20 km NNW Unt; 119. Unt; 120. Selenge; 121. 7 km W Khan-Dzhargalant; 122. Bugat in Bulgan; 123. Khishig-Under; 124. 40 km NW Tola river; Selenga aimak; 125. Buteliyn-Nu Ridge, S Nam-Daba Pass, 50°07'N, 105°17'E; 126. N Buteliyn-Nu Ridge, Burgastain-Gol, 50°20'N, 105°50'E; 127. 18 km SW Sukhebator, Shamar env., 50°05'N, 106°02'E; 128. Between Ero-Gol and Hara-Gol rivers; 129. Ero-Gol River, 49°48'N, 106°35'E.

1b. *Eodorcadion* (s.str.) *carinatum* ssp. *blessigi* (Ganglbauer, 1884) (Fig. 1b)

Neodorcadion involvens var. *blessigi* Ganglbauer, 1884 : 512 ("Daurien"); 1889 : 483; Reitter, 1897 : 177; Jakovlev, 1901 : 150, 152; Pic, 1901 : 67 ("Daurie").

Neodorcadion involvens blessigi, Suvorov, 1909 : 90.

Neodorcadion carinatum a. *blessigi*, Winkler, 1929 : 1199.

Neodorcadion carinatum carinatum f. *dorsolineatum* Plavilstshikov, 1932a : 214, part., unavailable name.

Eodorcadion carinatum carinatum m. *blessigi*, Plavilstshikov, 1958 : 438; Tsherepanov, 1983 : 44.

Eodorcadion carinatum carinatum m. *bramsoni*, Plavilstshikov, 1958 : 438; Tsherepanov, 1983 : 44.

Eodorcadion (s.str.) *carinatum* m. *blessigi*, Breuning, 1958 : 4; 1962 : 15.

Eodorcadion (s. str.) *carinatum blessigi*, Danilevsky et al., 2005 : 131, 133, 148.

Type locality. – Russia, Altaj. According to the original description *N. involvens* var. *blessigi* is characterized by bright white humeral elytral stripe in males and several dorsal white stripes in females. Such form is known only from Altaj mountain system, that is why I regard Altaj as type locality. It is necessary to designate such syntype as lectotype, but I could not find it. Besides it was mentioned in the original description, that certain females could be totally covered with fine pubescence. Three syntype females with totally pubescent elytra (NMV), as well as another such syntype female (NMP) belong to that last form, which represents another taxon - *E. c. involvens (*m. *vestitum)*; such form absent in Altaj region and is known only as a morpha of *E. c. involvens*. Two forms "var. *blessigi*" and "var. *vestitum*" were distinctly separated by B. E. Jakovlev (1901).

Diagnosis. – Body length in males : 12-15.6 mm, in females : 12.4-19.8 mm; body width in males : 5-6.3 mm, in females : 5.5-8 mm.

Similar to the nominative subspecies; red-brown; humeral elytral stripes always present; elytral punctation from very distinct to very fine; elytra in males and in females without dorsal stripes or often with irregular dorsal stripes – one or two white dorsal stripes can be on each elytron; very rare a poor subhumeral stripe can be visible; internal dorsal stripe (if present) is always much wider than other dorsal stripes; autochromal females unknown. Specimens from the valley of Chuja river (Kuraj Steppe) are characterized by reduction of humeral stripes near humeri. One exceptional female (Fig. 1b-8) with the label : ["Tomsk province, Bijsk district, Sroski (Srostki in 36 km SE Bijsk), 8.VI.1905, Vereshchagin"] [in Russian]-(ZIN) has relatively distinct elytral furrows with two wide dorsal stripes on each elytron.

E. c. involvens differs from *E. c. blessigi* by small size, very fine elytral punctation, which usually nearly absent; elytra nearly always without distinct white stripes (in autochromal females dense elytral brownish pubescence can be arranged in longitudinal rows). *E. c. carinatum* differs from *E. c. blessigi* by usually more distinct elytral punctation and usual absence of dorsal elytral stripes. *E. c. bramsoni* differs from *E. c. blessigi* by presence from 4 to 8 white narrow regular stripes on each elytron.

Distribution (Maps 1-2, 3; localities 31-44). – Altaj area in Russia and Kazakhstan. Russia, Altaj region : Srostki, 36 km SE Bijsk-(ZIN); Lugovoe, about 30 km SE Srostki-(ZMM); Altaj Republic : Chike-Taman pass, 50°38'N, 86°18'E-(MD); Ongudai-(ZIN, NMV, MD); Shebalino-(MD, SK); left bank of Katun river, 10 km S Chemal-(MD); Ust-Kan-(JV); Kuraj Steppe (eastwards Aktash)-(ZIN); Kuraj steppe, 7 km SSW Kuraj, 50°12'N, 87°53.5'E,-(coll. of Yu. Mikhailov, Ekaterinburg); Chuj road, Iodro-(ZIN); mouth of Chuja river-(ZIN, coll. of Yu. Mikhailov, Ekaterinburg); Koerlyk river, about 16 km from Tenga-(ZIN); Elo, mouth of Koerlyk river-(ZIN); Karagem river near Argut river-(ZIN); Jaloman river near Katun river-(ZIN); Malyj Jaloman river, 50°25'N, 86°30'E (Photo. 1) – (coll. of Yu. Mikhailov, Ekaterinburg); Khakassia : Shaman ridge-(ZIN); Kazakhstan : Leninogorsk-(ZIN); Zaisan env. (needs confirmation)-(ZIN).

Materials. – 1 female, ["Tomsk, Shaman (Shaman ridge in south Khakassia), Jacobson *leg*."] [in Russian]-(ZIN); 2 females [with dorsal elytral stripes], Kazakhstan, "Riddersk [now Leninogorsk], Dahmberg" -(ZIN); 1 female, ["Altaj, Bijsk distr., Kuraj Steppe (eastwards Aktash), 25.VII.1897, Silantjev *leg*."] [in Russian]-(ZIN); 1 female, Altaj, ["Bijsk distr., Koerlyk river, 15 versts (about 16 km) from Tenga, 5.VII.1897, Silantjev *leg*."] [in Russian]-(ZIN); 1 male, 9 females, ["Ongudai, 8.VII-12.VIII.1898, Berezovsky *leg*."] [in Russian]-(ZIN); 1 male, Russia, ["N Ongudai, 23.7.1898, Berezovsky *leg*."] [in Russian]-(NMV); 2 females, Altaj, ["Chuja river valley, 22-23.6.1898, Clementz *leg*."] [in Russian]-(ZIN); 1 female (with distinct elytral furrows), ["Tomsk province, Bijsk district, Sroski (Srostki in 36 km SE Bijsk), 8.VI.1905, Vereshchagin"] [in Russian]-(ZIN); 13 males, 8 females, ["Tomsk province, Bijsk distr., Ursul river valley, Ongudai, 17.VI.1906 and 25.V.1908, A. Jacobson *leg*."] [in Russian]-(ZIN); 1 female, Altaj, ["Tomsk region, Sarykuldjuk – a tributary of Chuja river, 21.VII.1908, Vereshchagin *leg*."] [in Russian]-(ZIN); 1 male, ["Teletskoe lake, Cheliush river, 24.VI.1909, Emeljanov"] [in Russian]-(ZIN); 1 male, 1 female, ["Altaj, Elo, 22.VI.1909"] [in Russian]-(ZIN); 1 female, Altaj, ["Chuj road, Edra (now Iodro), 8.VI.1911, Jurganova *leg*."] [in Russian]-ZIN; 2 females, Altaj, ["Bijskij pass, 13.VIII.1912, Sushkin-Redikortsev *leg*."] [in Russian]-(ZIN); 1 female, ["down Jaloman river near Katun river, 26.VIII.1912, Sushkin-Redikortsev *leg*."] [in Russian]-(ZIN); 3 females, ["Altaj, down Karagem river near Argut (Arkhyt) river, 12.VIII.1912, Sushkin-Redikortsev *leg*."] [in Russian]-(ZIN); 3 males, 1 female (all with two dorsal stripes), "Bijsk, Logovoe, 26.VI.1924" (ZMM); 1 male, 3 females, Altaj, ["mouth of Chuja river, 8.VII.1925, 25.VII.1925, Bej-Bienko *leg*."] [in Russian]-(ZIN); 1 female, Altaj, ["between Ongudai river and Inja river, 6.VII.1925, Bej-Bienko *leg*."] [in Russian]-(ZIN); 1 male (very small), Kazakhstan, Zaisan env., 13.VII.1926-(ZIN); 1 female, Russia, Altaj, Ust-Kan, Kan Steppe, 1000-1200 m, 23-27.VII.1927, N.Gorbunov *leg*.-(JV); 1 male, "Altaj, Shebalino, 17.VII.1936, P. Valdis *leg*."-(SK); 2 males, 3 females, Russia, Altaj Republic, Shebalino, 2.VII.1937 and 16.VI.1981-(MD); 1 male, 1 female, "Altaj, Shebalino"-(SK); 2 males, 4 females, Russia, Altaj Republic, Cheke-Taman pass, 26.VI.1981, Prasolov *leg*.-(MD); 3 males, 3 females, Russia, Altaj Republic, left bank of Katun river, 10 km S Chemal, 22.VI.1991, A. Shnipp *leg*.-(MD); 4 males, 4 females, Russia, Altaj Republic, Ongudai, 900-1300 m, 11-13.VII.1999, O. Gorbunov *leg*.-(MD); 4 males, 2 females (with one dorsal stripe), Russia, Altaj Republic, Malyj Jaloman river, 50°25'N, 86°30'E, on Caragana, 22-23.VI.2006, Yu. Mikhailov *leg*.-(MD and coll. of Yu. Mikhailov, Ekaterinburg); 8 males, 1 female, Russia, Altaj Republic, Chuj road near confluence of Katun and Chuja rivers, 23.VI.2006, Yu. Mikhailov *leg*.-(MD and coll. of Yu. Mikhailov, Ekaterinburg); 1 male, Russia, Altaj Republic, Kuraj steppe, 7 km SSW Kuraj, 50°12'N, 87°53.5'E, 1.VII.2006, Yu. Mikhailov *leg*. – (coll. of Yu. Mikhailov, Ekaterinburg).

1c. *Eodorcadion* (s.str.) *carinatum bramsoni* (Pic, 1901) (Figs. 1c)

Neodorcadion carinatum var. *bramsoni* Pic, 1901 : 67 ("Altaj").

Neodorcadion gassneri Breit, 1917 : 65 ("Tschemal im Alatai"); Winkler, 1929 : 1199, part.; Plavilstshikov, 1932c : 193.

Neodorcadion carinatum carinatum f. *dorsolineatum* Plavilstshikov, 1932a : 214, part., unavailable name.

Eodorcadion gassneri, Plavilstshikov, 1958 : 441, part.; Lobanov et al., 1982 : 264; Hua, 2002 : 206 ("Xinjiang").

Eodorcadion (s. str.) *carinatum* m. *bramsoni*, Breuning, 1958 : 4 (= *gassneri* Breit, 1917); 1962 : 15 (= *gassneri* Breit, 1917).

Eodorcadion carinatum gassneri, Tsherepanov, 1983 : 45.

Eodorcadion (s. str.) *carinatum bramsoni*, Danilevsky et al., 2005 : 131, 133, 148.

Type locality. – Russia, Altaj Republic, Chemal environs (right bank of Katun river). According to all available materials, the taxon is definitely represented by only one population in Chemal environs (Altaj Mts.), so Chemal is regarded here as its type locality (Map 1–2, locality 45).

Diagnosis. – Body length in males : 14-16.5 mm, in females : 16-20 mm; body width in males : 5.9-6.1 mm, in females : 6.3-8.1 mm.

The subspecies is very close to *E. c. blessigi*, red-brown; elytra strongly convex; each elytron always with 4 to 8 white hair stripes and usually smooth, without carinae; or with low carinae between main stripes; all elytral white stripes are very thin and regular; marginal and sutural stripes absent; three dorsal (internal, central and external) and humeral stripe always present; usually one or two additional branches of humeral stripe present; internal additional branches of humeral stripe can be partly or totally reduced; sometimes short additional stripes present between three branches of humeral stripe and external dorsal stripe, as well as between external and central dorsal stripes; internal dorsal stripe usually shortened; central dorsal stripe very long and often fused apically with humeral stripe; autochromal females unknown.

E. c. blessigi differs from all other subspecies by the presence from 4 to 8 white narrow regular stripes on each elytron; besides, elytra are strongly convex like in *E. c. altaicum*, and elytral punctation is always very fine like im most smooth forms of *E. c. involvens*.

Distribution (Map 1-2, locality 45). – Up to now only one population is definitely known : near Chemal, right bank of Katun river (Russia, Altaj Republic). Numerous specimens in different collections were collected here. Most probably the subspecies is represented by a single population. The record of the taxon (as "*Eodorcadion gassneri*") for China by Hua Li-zhong (2002 : 206, "Xinjiang") is unbelievable.

Materials. – 1 male, with 5 labels : (1)"Sibéria", (2)"coll. Reitter", (3)"Holotypus 1901 *Neodorcadion bramsoni* Pic", (4)"*involvens* var. *Bramsoni* m. i.l. Altaj", (5)"*Eodorcadion carinatum bramsoni* Pic, det. Breuning 1955"-(HNHM); 1 male with 4 labels : (1)"W Altaj, a Irtysch"; (2)"Type"(red); (3)"ex. coll. Bramson"; (4)"var. *Bramsoni* Reitter"-(SMTD); 1 female, ["Altaj region, Bijsk (it means old Bijsk district), 10.VI.1953"] [in Russian]-(ZIN); 1 female, Russia, Altaj Republic, Chemal (right bank of Katun river), 2.VII.1981, Prasolov *leg.*-(MD); 1 male, 4 females from same locality, 20.VI.1991, E. Matveev *leg.*-(MD); 5 males, 2 females from same locality, 27.VI.1987 and 25.VI.1995, A. Gorodinsky *leg.*-(MD).

1d. *Eodorcadion* (s.str.) *carinatum involvens* (Fischer von Waldheim, 1823) (Fig. 1d)

Dorcadion involvens Fischer von Waldheim, 1823 : 240 (Dauria); 1832 : 66; Thomson, 1867 : 46 ("Fleuve Onon et rives septentrionales du fleuve Amour, Sibérie").

Dorcadion carinatum, Blessig, 1873 : 201, part.

Neodorcadion involvens, Ganglbauer, 1884 : 512, part.; Reitter, 1897 : 177(part.); Jakovlev, 1901 : 150, 152, part.; Pic, 1901 : 67 ("Daurie"); Plavilstshikov, 1932c : 193.

Neodorcadion involvens var. *vestita* Jakovlev, 1901 : 150, 152.

Neodorcadion carinatum v. *involvens*, Winkler, 1929 : 1199, part.

Neodorcadion carinatum involvens, Plavilstshikov, 1932a : 214-215.

Neodorcadion c. involvens f. *nigrum* Plavilstshikov, 1932a : 215, unavailable name.

Neodorcadion c. involvens f. *nigricollis* Plavilstshikov, 1932a : 215, unavailable name.

Neodorcadion c. involvens f. *humerolineatum* Plavilstshikov, 1932a : 215, unavailable name.

Neodorcadion c. involvens f. *dorsolineatum* Plavilstshikov, 1932a : 215, unavailable name.

Eodorcadion carinatum involvens, Plavilstshikov, 1958 : 439; Namhaidorzh, 1972 : 516; 1976 : 209; Lobanov et al., 1982 : 264; Tsherepanov, 1983 : 45; Hua, 2002 : 206 ("Heilongjiang"); Wang, 2003 : 293 (Heilongjiang prov., Harbin).

Eodorcadion (s.str.) *carinatum involvens*, Gressitt, 1951 : 337, 340; Danilevsky et al., 2005 : 131, 133, 148.

Eodorcadion (s.str.) *involvens*, Breuning, 1958 : 4; 1962 : 15.

Eodorcadion involvens, Heyrovsky, 1964 : 377; 1965 : 41; 1967 : 102; 1968 : 237; 1970 : 139; 1973a : 122; 1973b : 117; Wang, 2003 : 297 (Inner Mongolia : Hailar).

Eodorcadion carinatum, Tsherepanov, Tsherepanova, 1978 : 109; Heyrovsky, 1973a : 122.

Eodorcadion longjiangensis Wang, 2003 : 299, **syn. n.**

Eodorcadion longjiangnesis Wang, 2003 : 396 ("Heilongjiang, Yabuli"), wrong spelling.

Type locality. – Russia : Transbaikalia. The taxon was described from "Dauria" – that means a big area eastwards Baikal lake.

Diagnosis. – Body length in males : 9-15 mm; in females : 10.5-18.5 mm; body width in males : 3.4-6 mm; in females : 4.4-7.5 mm. The biggest specimens are known from near Ulan-Ude-(NMV), and smallest - from Ulan-Bator environs (MD).

Relatively small – the smallest subspecies; reddish, red-brown, brown, dark brown or nearly black (certain specimens from near Chita); antennae and legs are often darker than elytra; elytra very smooth, shining with hardly visible or indistinct punctation; totally glabrous, without any hair stripes; sometimes in autochromal females partly or totally covered by rather dense pubescence (suture is always glabrous), which can be arranged in hardly pronounced longitudinal rows; very rare longitudinal elytral hair stripes are very distinct (Fig. 1d-20): three dorsal pale stripes can be visible on each elytron; in autochromal pubescent females elytra always with more or less distinct humeral pale stripes; very rare glabrous male elytra with distinct humeral and dorsal white stripes: two dorsal stripes on each elytron, similar to *E. c. blessigi*; sometimes (certain females from Transbaikalia) each elytron with two fine dorsal carinae.

In Central Mongolia near Ulan-Bator some rather peculiar populations occur. Here the beetles are very small, dark brown and most part of specimens with totally black legs and antennae (Figs. 1d – 16-18) Probably these populations represent a new subspecies.

Distribution (Maps 1-4, 5; localities 46-190). – Russia – whole Tuva Republic, south of Irkutsk region; rather common in Transbaikalia: Buriatia and Chita region. According to N. N. Plavilstshikov (1958) the subspecies is distributed eastwards to about upper regions of Amur river valley, but several specimens are known from near Khabarovsk and one female is available from Primorje region (from near Spassk-Dalnij). Northern limits of the area recorded by Plavilstshikov (1958) – 59°N look totally fantastic (no materials are available from so far northern regions). One very small male (10 mm X 3.5 mm) with the label "Jakutia, 1876" is available (ZIN), but the occurrence of the species in Jakutia needs confirmation. Mongolia - very common in the north and central parts of the Republic, but rather rare in southern aimaks. China – three very distant areas are definitely known in China; one in Xinjiang : Dzhungaria, Karlyk-Tag environs; another – in the north of Inner Mongolia in Hailar environs; third in Heilongjiang prov. J. L. Gressitt (1951 : 340) recorded it for Chine East Mongolia "Koankiatien"[?]; M. Matsushita (1913) - for Harbin. Hua Li-zhong (2002 : 206) recorded it for Heilongjiang province, as well as Wang Zhicheng (2003 : 293, Heilongjiang, Harbin; 2003 : 396, Heilongjiang, Jabuli, as *E. longjiangensis*).

Known localities in Russia – Tuva Republic : Ishtii-Hem (about 40 km SW Shagonar)-(MD); Adardash ridge-(ZMM); Khondergei (about 15 km S Chadan)-(MD); Oviur distr., Sagly river-(MD); Naryn river valley, 1540 m, 50°11'N, 95°39'E-(MD); Irkutsk region : Irkutsk env.-(JV, PR); Oiek, about 30 km NE Irkutsk-(ZIN); Malta [about 60 km NW Irkutsk]-(ZIN); about 100 km NW Irkutsk-(JV); Zima-(ZIN); Verkholensk-(ZIN); Ust-Osa, Balagansk distr.-(ZIN); West Baikal lake, Olkhon Gate-(ZIN, JV); W Baikal lake, Small Sea, Mukhur bay [about same locality]-(ZIN); W Baikal lake, Kharin-Irga bay, S from Olkhon Is. [about same locality]-(ZIN); Baikal, Zanga bay(?)-(ZIN); "Irkutsk, Surinski (?)"-(NMV); Kultuk (about 20 km NW Angarsk)- (MD); Olkhon distr. (about middle of the west bank of Baikal lake), Sarma river-(MD); Lena river, Zhigalovo [3 males, VIII-IX 1968, L. M. Eltzov *leg.*]-(BPI – according to the personal message by G. Lafer, 2006]; Republic of Buriatia : Mondy-(ZIN, MHNL); Malyj Khamar-Daban ridge, Sangina river-(ZIN); Ulan-Ude environs-(NMV); Khamar-Daban ridge, Taiozhnyj (about 50 km S from south bank of Baikal lake)-(MD); Kiahta-(ZIN); Sudzhij (?) about 12 km from Kiahta-(ZIN); Naushki env., Kharankhoi-(MD); Chita region : Nerchinsk district, Nizhniaia Hila (about 30 km NW Nerchinsk)-(MD); Chita env.-(JV); Chita environs, Molokovka (about 10 km S Chita)-(MD); Chita env., Kruchina-(ZIN); Karymskoe-(ZMM); Urulcha (Urulga)-(ZIN); Aginskoe-(JV); Aginskoe district, Onon river valley, Kunkur (about 80 km SE Aginskoe)-(MD); Duroj, SW Priargunsk-(A. Koval's collection); Shilka river, Mitrofanovo-(ZIN); Tzagan-Oluj, about 300 km SE Chita near Borzja-(ZIN); Shilka river, Firsovo, 35 km E Sretensk [1 female, 5.VIII.1955, A. Kurentzov *leg.*]-(BPI-according to personal message by G. Lafer, 2006); Borzja, Chindant [2 females, 9.VIII.1977, Ler *leg.*]-(BPI – according to personal message by G. Lafer, 2006). Khabarovsk region : Khabarovsk env. (needs confirmation)-(ZIN); Kazakevichevo (needs confirmation)-(ZIN); Primorje region : Ewgeniewka, Spassk-Dalnij env. (needs confirmation)-(NMP). Mongolia-Ubsu-Nur aimak : 15 km S Ulangom-(ZIN, Namhaidorzh, 1972); 10 km N Mt. Han-Huhei-Ula-(ZIN, Namhaidorzh, 1972); 30 km NE Barun-Turun–(ZIN, Namhaidorzh, 1972); Under-Hangai-(Heyrovsky, 1973a, as *E. involvens*); Khangilcagijn-Gol, 6 km SW Barun-Turun-(Heyrovsky, 1973a, as *E. involvens*); Dzabkhan aimak : Ulan-Erig env. (near Uliasutaj)-(ZIN); near Uliasutaj-(Namhaidorzh, 1972); Telmen-Nur lake, Ider-Gol river-(Namhaidorzh, 1972); Tesijn-Gol river-(Namhaidorzh, 1972); 15 km NW Songino-(SK, Heyrovsky, 1973a, as *E. involvens*); Khoit-Khunkh, 26 km ENE Telmen-Nur lake-(Heyrovsky, 1973a, as *E. involvens*); Hubsugul aimak : Ider-Gol river, Dzhargalant-(ZIN); 8 km N Buren-Khan, Delger-Muren river-(Heyrovsky, 1973a, as *E. carinatum* and *E. involvens*); 20 km SW Buren-Khan-(ZIN, Namhaidorzh, 1972); Tunamal-Nur lake, 26 km WSW Sharga-(Heyrovsky, 1973a, as *E. involvens*); 8 km N Alag-Erdene, Egijn-Gol-(Heyrovsky, 1973a, as *E. involvens*); 50-54 km WNW Muren-(Heyrovsky, 1973a, as *E. involvens*); 25 km E Muren-(Heyrovsky, 1973a, as *E. involvens*); between Toson-

Tzengel and Ikh-ul [= Ikh-Ula], 22 km E Toson-Tzengel-(Heyrovsky, 173a, as *E. involvens*); Buren-(Namhaidorzh, 1976); Ar-Bulak (Namhaidorzh, 1976); Mt. Ikh-Ula NE Ikh-Ula-(ZIN, Namhaidorzh, 1972); 45 km E Tzetzerleg-(ZIN, Namhaidorzh, 1972); 25 km W Muren-(Namhaidorzh, 1972); Delger-Muren river-(Namhaidorzh, 1972); Tesijn Gol river W Tzetzerleg-(Namhaidorzh, 1972); 17 km N Shine-Ider-(ZIN); 25 km NNE Ulan-Ula-(ZIN); Khankh-(NMP); Selenga river, 20 km SE Toson-Tzengel–(ZIN); Ara-Hangai aimak : 20 km W Tariat-(ZIN); confluence of Sumijn and Chulutyn-Gol (about same locality)-(ZIN); Bugat-(ZIN); 20 km N Kharkhorin-(Heyrovsky, 1965, as *E. involvens*); Lun [about same locality]-(Heyrovsky, 1965, as *E. involvens*); 24 km N Lun-(Heyrovsky, 1965, as *E. involvens*); Hangai Mts., Tzetzerleg-(Heyrovsky, 1968, as *E. involvens*); Hangai Mts., 8 km W Urdtamir [near Tzetzerleg ?]-(Heyrovsky, 1968, as *E. involvens*); 20 km WSW Ikh-Tamir river-(ZIN, Namhaidorzh, 1972); Tevshrulekh-(Namhaidorzh, 1976); 15 km NW Under-Ulan–(Namhaidorzh, 1976); Tzetzerleg river–(Namhaidorzh, 1976); Bulgan aimak : Selenge-(MD); S Khishig-Under-(Heyrovsky, 1973a); Namnan Mts., 23 km NW Khutag-(Heyrovsky, 1973a); 7 km W Khan-Dzhargalant-(Heyrovsky, 1973a); 40 km NW Tola river-(Namhaidorzh, 1972); Unt-(Namhaidorzh, 1972); Selenga river 20 km NNW Unt-(Namhaidorzh, 1976); Bugat-(Namhaidorzh, 1976); Selenga aimak: between Ero-Gol and Hara-Gol river-(Namhaidorzh, 1972); Hara-Gol river-(Namhaidorzh, 1972); N Butelijn-Nu ridge, Burgastain-Gol, 50°20'N, 105°50'E-(MD); Buteliyn-Nu ridge, S Nam-Daba pass, 50°07'N, 105°17'E-(MD); 13 km SW Suhe-Bator, Shamar env., 49°38'N, 106°02'E-(MD); Ero-Gol river, 49°48'N, 106°35'E-(MD); Central aimak : Dzun-Moto-Gol, 60 km E Ulan-Bator-(Heyrovsky, 1964, as *E. involvens*); Baian-Dzhargalan, 30 km W Kerulen-(Heyrovsky, 1964, as *E. involvens*); Borulchin-Tala, about 90 km SE Ulan-Bator-(Heyrovsky, 1964, as *E. involvens*); Dzhanchiolin-Gol, about 85 km SE Ulan-Bator-(Heyrovsky, 1964, as *E. involvens*); 50 km ESE Ulan-Bator, Nalaicha env.—(Heyrovsky, 1964, as *E. involvens*); 101 km N Ulan-Bator-(Heyrovsky, 1964, as *E. involvens*); Boro-Gol, 20 km W Dzun-Khara-(Heyrovsky, 1964, as *E. involvens*); 65 km N Ulan-Bator-(Heyrovsky, 1964, as *E. involvens*); Dzun-Khara, left bank of Khara-Gol-(Heyrovsky, 1964, as *E. involvens*); 126 km N Ulan-Bator [about same locality]-(Heyrovsky, 1965, as *E. involvens*); 12 km W Lun-(Heyrovsky, 1965, as *E. involvens*); 26 km E Lun-(Heyrovsky, 1965, as *E. involvens*); 80 km SW Ulan-Bator, Tola valley-(Heyrovsky, 1968, as *E. involvens*); Ulan-Khodag, 16 km S "Öndörshiret" [Under-Shiret]-(Heyrovsky, 1968, as *E. involvens*); 11 km S Zosijn-Dava, about 98 km S Ulan-Bator-(Heyrovsky, 1970, as *E. involvens*); Tosgoni-Ovo, 5-10 km, N Ulan-Bator-(Heyrovsky, 1970, as *E. involvens*); Mant, 120 km S Ulan-Bator-(Heyrovsky, 1973b, as *E. involvens*); Sugnugur-Gol [= Sugu-Nur] river [right tributary of Khara-Gol, Kerzhner, 1972: 80] – (ZIN, Namhaidorzh, 1972); Baian-Gol river [about same locality, Kerzhner, 1972: 81]-(Namhaidorzh, 1972); Sudzukte [Mt. Noion-Ula, Kerzhner, 1972 : 81]-(Namhaidorzh, 1972); Songino-(Namhaidorzh, 1972); Mt. Bogdo-Ula [south environs of Ulan-Bator]-(Namhaidorzh, 1972); Baian-Tzogt-(Namhaidorzh, 1972); Altan-Obo SW somon Altan-Bulak-(Namhaidorzh, 1972); Mt. Dzamryn-Ula [Tola river valley, see Emeljanov et al. 1972 : 467, 468]-(Namhaidorzh, 1972); Kerulen river near mouth of Tenun-Gol river-(Namhaidorzh, 1972); Mungen-Mort [=Bulak], about same locality-(Namhaidorzh, 1972); Tereldzh river [about same locality]-(Namhaidorzh, 1972); Khulikhe-Gol river, right confluent of Kerulen [not far from the previous locality]-(ZIN, Namhaidorzh, 1972); Kerulen-(ZIN); 40 km E Ulan-Bator-(Namhaidorzh, 1972); 40 km ESE Ulan-Bator, Tola river, 47°50'N, 107°30'E (Photo. 2)-(MD); Galtatain-Gol river [upper level of Tola river]-(Namhaidorzh, 1972); Boroldzh-Nur lake near Baian-Dzhargalant-(Namhaidorzh, 1972); Ulan-Daba pass [50 km E Ulan-Bator]-(Namhaidorzh, 1972); Shadovlin[?]-(Namhaidorzh, 1972); Dzun-Baidlyg-Gol[= Dund-Baidlag-Gol, upper level of Kerulen, Kerzhner, 1972 : 73]-(Namhaidorzh, 1972); 70 km N Baian-Barat-(Namhaidorzh, 1976); Sharhai-Hundui Steppe [about same locality, Kerzhner, 1972 : 79]-(Namhaidorzh, 1972); between Erdene-Khuduk and Buhegijn-Gol river [about 60 km S Ulan-Bator]-(Namhaidorzh, 1972); between Buhegijn-Gol river and Dzhargalant [about same locality]-(Namhaidorzh, 1972); Mt. Uver-Undzhul-Ula-about 20 km N Undzhul-(MD); 10 km S Bornur,

Shivertijn-Gol, 48°23'N, 106°12'E-(MD); 27 km N Gatzurt, 48°05'N, 107°13'E-(MD); 30 km WNW Ulan-Bator, 1360m, 47°59'N, 106°32'E-(MD); 58 km E Ulan-Bator, 47°47'N, 107°35'E-(MD); Sharga-Mort, 30 km N Ulan-Bator-(MD); Mishik-Gun near Delger-Khan-(ZIN); Hentei aimak : Zhargalt-Khan-(Heyrovsky, 1967, as *E. involvens*); 30 km E Zhargalt-Khan-(Heyrovsky, 1967, as *E. involvens*); 10 km from Delger-Khan-(Heyrovsky, 1967, as *E. involvens*); 7 km NE Muren-(Heyrovsky, 1967, as *E. involvens*); Muren-(Heyrovsky, 1967, as *E. involvens*); Byrhyn-Gol-(Namhaidorzh, 1972); Iudegijn-Tzagan-Daba pass-(Namhaidorzh, 1972); Onon river-(Namhaidorzh, 1972); Tzenkher-Mandal env., Under-Khan, 47°42'N, 109°04'E-(MD); 8 km SE Tzenkher-Mandal, Tzenkher-Gol, 1360 m, 47°41'N, 109°07'E-(MD); Bor-Khudzhiriin-Daba pass, 47°49'N, 108°55'E – (MD); 8 km S Norovlin-(ZIN); 10 km W Dumd-Baian-(ZIN); Kobd aimak : Ikh-Ulan-Daba pass, 60 km SE Mt. Munkh-Khairkhan-Ula ["SW"-is a mistake by Namhaidorzh, 1972]-(ZIN, Namhaidorzh, 1972); Baian-Hongor aimak : Erdene-Tzogt (Namhaidorzh, 1972); Ikh-Bogdo-Ula Mts.-(Namhaidorzh, 1972); Uver-Hangai aimak : Orkhon river, Khudzhirt, Kharkhorin-(SK); Hangai Mts., 2 km S Shanh [northwards Khudzhirt]-(Heyrovsky, 1965, as *E. involvens*); 30 km N from Arbaj-Khere-(Heyrovsky, 1965, as *E. involvens*); Hangai Mts., 18 km S Khudzhirt-(Heyrovsky, 1965, as *E. involvens*); Hangai Mts., 15 km NE Khudzhirt-(Heyrovsky, 1965, as *E. involvens*); north part of Ongiin-Gol (= Ongin)-(ZIN, Namhaidorzh, 1972); Arbaj-Khere-(Namhaidorzh, 1972); Baian-Under-(ZIN); 20 km ENE Baian-Under-(ZIN); Central-Gobi aimak : "Datzyn-Hure" (="Datze") [= Ada-Tzag, according to Kerzhner, 1972 : 79]-(Namhaidorzh, 1972); Suhe-Bator aimak : Mt. Shilijn-Bogdo-(ZIN); 65 km NNW Dariganga-(ZIN); 10 km WSW Dariganga (Photo. 10)-(ZIN); East aimak : Duro-Nur lake, 15 km N Khuh-Nur lake-(ZIN); 45 km SW Baian-Dun-(ZIN). China - Dzhungaria, Karlyk-Tag-(ZIN, NMV); Inner Mongolia, Hailar -(Wang, 2003 : 297); East Mongolia, "Koankiatien"[?]-(Gressitt, 1951 : 340); Heilongjiang-(Hua, 2002 : 206); Manchzhuria, Harbin-(Matsushita, 1941); Heilongjiang, Harbin-(Wang, 2003 : 293, as *E. carinatum involvens*); Heilongjiang, Yabuli-(Wang, 2003 : 396, type locality of *E. longjiangensis* Wang = *E. c. involvens*, **syn. n.**); Inner Mongolia, Hailar-(Wang, 2003 : 297, as *E. involvens*).

Bionomy. – According to numerous collecting data from Mongolia recorded by Namhaidorzh (1972), imagoes are active from about end of June to about August. Several old records for the beginning of June or even for May are rather doubtful. According to my own observation in 2002 the specimens of the taxon were extremely numerous arround Ulan-Bator (Gatzurt environs, Tola river) in July and in Selenga aimak (Shamar, Ero-Gol river) at the end of July; but at about middle of August in Central aimak (eastwards Ulan-Bator) all imagoes were already dead.

Materials. – Russia : 1 female, Buriatia, ["source of Irkut river, Khanginskij Kardon (near Mondy ?), VIII.1871, Tchekanovsky *leg*."] [in Russian]-(ZIN); 1 male with three labels : (1)"paratype"[red]; (2)"*Neodorcadion humerale brunneipenne*, mihi, paratype, det. Breuning"; (3)"Chulugaischa, Mondy, Sajan Gbg., Burgät Republ."-(MHNL); 1 male, "Seraftschan, Turkestan" [wrong label]-(NMP); 1 female (ab. *vestitum*), syntype of *Neodorcadion involvens* var. *blessigi* Gangl., "Kiahta"-(NMV); 10 males, 5 females, Russia, "Verkhneudinsk [now Ulan-Ude] environs"-(NMV); 1 female, "Sibiria"-(MHNL); 1 female (ab. *vestitum*), syntype of *Neodorcadion involvens* var. *blessigi* Gangl., no locality label-(NMV);1 female, "Irkutsk, Surinski (?)-(NMV); 10 males, 4 females, Russia, Chita region, ["Tzagan-Oluj, Transbaicalia, Radde (about 300 km SE Chita near Borzja)"] [in Russian]-(ZIN); 1 female (with irregular dorsal white stripes), Russia, Buriatia, Naushki env, Khoronkhoi-(MD); 1 male, ["Olzon (about 100 km NW Irkutsk), between Irkutsk and Verkholensk regions, O. Tchekanovsky *leg*."] [in Russian]-(JV); 1 female, Russia, "Ewgeniewka, Ussuri, coll. Jul. Isaak"-(NMP); 1 male (totally black), ["Ingoda river near Chita, O. Tchekanovsky 66"] [in Russian]-(JV); 1 male (very small : length 10 mm, width 3.5 mm), "Jakutia, 1876"-(ZIN); 1 male, Chita reg. ["Transbaikalia, Shilka river, Mitrofanovo, 25.VI.1896, G. Suvorov *leg*."] [in Russian]-(ZIN); 1 male, ["Transbaikalia, Ust-Agi (now Aginskoe), 3.VI.1897, G. Suvorov *leg*."] [in

Russian]-(JV); 1 male, ["Irkutsk reg., Ust-Osa, Balagansk distr., 25.VII.1898, Ingenitsky *leg*."] [in Russian]-(ZIN); 6 females, Irkutsk reg., ["Verkholensk, 1901"] [in Russian]-(ZIN); 4 males, 3 females, Russia, Irkutsk region, West Baikal, Olkhon Gate, 19.VI.1908, I. Kuznetzov *leg*.-(ZIN); 3 females, Baikal, Zanga bay(?), 30.VI.1908, I. Kuznetzov *leg*.-(ZIN); 4 females, with same label-(JV); 1 female, ["Transbaikalia, Urulga, 29.VI.1909, A. Keller *leg*."] [in Russian]-(ZIN); 1 female, Irkutsk reg., Malta [about 60 km NW Irkutsk], 24.VII.1910, Tikhomirov *leg*.-(ZIN); 1 female, Russia, Irkutsk env., VII.1912, Zenkevitch *leg*.-(JV); 5 females, (glabrous with poor humeral stripes), Russia, Buriatia, ["Troitsko-Savsk (now Kiahta), 1.VII.1912, Maskova *leg*."] [in Russian]-(ZIN); 1 female, Russia, Buriatia, ["Sudzhij, 12 versts from Troitsko-Savsk, 18.VI.1912, Maskova *leg*."] [in Russian]-(ZIN); 1 male, ["Khabarovsk environs, 15.VI.1912, Speshilova-Petelina *leg*."]-(ZIN); 1 female, ["Irkutsk prov., Oiek, 22.VII.1912, Sergeeva *leg*."] [in Russian]-(ZIN); 1 male, Russia, Chita environs, Molokovka (about 10 km S Chita), 30.VI.1918-(MD); 1 female, Russia, Chita region, Nerchinsk district, Nizhniaia Hila (about 30 km NW Nerchinsk), VII.1918-(MD); 2 females (glabrous with poor humeral stripes), Russia, Buriatia, ["Troitsko-Savsk (now Kiahta), 24.VIII-1.9.1923, 9.IX.1923"] [in Russian]-(ZIN); 3 males, 6 females, Russia, ["Zima, Irkutsk, 21.VII.1924"] [in Russian]-(ZIN); 1 male, ["Transbaikalia, Kruchina (southwards near Chita), 7.VII.1925"] [in Russian]-(ZIN); 1 male, 1 female, Russia, ["Khabarovsk region, Kazakevichevo, 10.VII.1925"] [in Russian]-(ZIN); 1 female, W Baikal lake, Small Sea, Mukhur bay [about same locality], 1-3.VII.1927, Soldatov *leg*.-(ZIN); 1 male, W Baikal lake, Kharin-Irga bay, S from Olkhon Is. [about same locality]-(ZIN); 2 males, 2 females (all totally black), "Transbaikal., Tschita-Ost, 24.VI.1966, F. Hieke *leg*."-(JV); 1 female, Russia, Chita region, Aginskoe district, Onon river valley, Kunkur (about 80 km SE Aginskoe), 20.VII.1966, O. Tchernova *leg*.-(MD); 1 male, "Atartysh [Adardash rudge], 1970"-(ZMM); 2 males, 3 females, Russia, Tuva Republic, Ishtii-Hem (about 40 km SW Shagonar), 14.VI.1972 and 17.VIII.1973, M. Danilevsky *leg*.-(MD); 1 male, 1 female, Buriatia, Malyj Khamar-Daban ridge, Sangina river, 23.VII.1973, Yu. Korshunov *leg*.-(ZIN); 1 male, 1 female, Russia, Republic of Buriatia, Khamar-Daban ridge, Taiozhnyj (about 50 km S from south bank of Baikal lake), 17 and 21.VI.1976, A. Kompantzev *leg*.-(MD); 1 male, Russia, Tuva Republic, Oviur distr., Sagly river, 10.VII.1981, A. Dikij *leg*.-(MD); 1 male, 1 female, same locality, 4.VII.1982, V. Shilenkov *leg*.-(PR); 1 male, 1 female, Russia, Irkutsk region, Kultuk (about 20 km NW Angarsk), VII.1988-(MD); 2 males, Russia, Irkutsk region, Olkhon distr (about middle of the west bank of Baikal lake), Sarma river, 4.VII.1982, E. Samoderzhenkov *leg*.-(MD); 5 males, 3 females, Russia, Tuva Republic, Naryn river valley, 1540 m, 50°11'N, 95°39'E, 22.VI.1996, D. Obydov *leg*.-(MD); 3 males, 3 females (extremely dark, nearly black), Russia, Chita reg., Karymskoe, 25-28.VI.1997, A. Petrov *leg*.-(ZMM); 1 male, Chita reg., SW Priargunsk, Duroy, 17.VI.2000, B. Kataev *leg*.-(A. Koval's collection); 1 male, Russia, Tuva Republic, Khondergei (about 15 km S Chadan), 1700m, 2.VII.2003, A. Nikolaev *leg*.-(MD). Mongolia : 1 female (ab. *vestitum*), syntype of *Neodorcadion involvens* var. *blessigi* Gangl., "Nordl. Mongolei, Changai, Leder"-(NMV); 1 female, Central aimak, ["Khulikhe river, confluent of Kerulen, 29.VII.1897, Clementz *leg*."] [in Russian]-(ZIN); 1 female, Gobi-Altaj aimak, ["Datse (= Ada-Tsag), 12.VII.1909, Kozlov's exp."] [in Russian]-(ZIN); 1 female, Mongolia, Dzabkhan aimak, ["Ulan-Erig env. (near Uliasutaj), 9.VII.1913, K. V. Jurganova *leg*."] [in Russian]-(ZIN); 1 female, Central aimak, ["Sugunur (= Sugnugur-Gol) river, upper level of Khara-Gol river, 11.VII.1924, Kozlov *leg*."]-(ZIN); 5 males, Mongolia, Uver-Hangai aimak, ["Ongiin-Gol river valley, upper level of Khalh, 12.VII.1926, Kiritchenko *leg*."][in Russia]-(ZIN); 1 male, Central aimak, ["Mishik-Gun (according to Kerzhner, 1972 : 74, near Delger-Khan), 11.VII.1926"] [in Russian]-(ZIN); 2 males, 1 female, Hubsugul aimak, somon Khankh, 8.VIII.1959, A. Censuren *leg*.-(NMP); 1 male (with humeral stripe), "Mongolia, Mant, 120 km S Ulan-Bator [Central aimak], 19.VII.1963, B. Burakowski & H. Szelegiewicz *leg*."-(SK); 2 males, 1 female, Hubsugul aimak, 20 km SW Buren-Khan, 30.VI.1968, Arnoldi *leg*.-(ZIN); 3 males, 2 females, Ubsu-Nur aimak, 15 km S Ulangom,

30.VI.1968, Arnoldi *leg*.-(ZIN); 1 male, 2 females, Mongolia, Hubsugul aimak, 45 km E Tzetzerleg, 1.VII.1968, Arnoldi *leg*.-(ZIN); 1 female, Kobd aimak, Ikh-Ulan-Daba pass, 60 km SE Mt. Munkh-Khairkhan-Ula, 30.VII.1968, Arnoldi *leg*.-(ZIN); 5 males, 4 females, Ubsu-Nur aimak, 30 km NE Barun-Turun, 5.VII.1968, Kozlov *leg*.-(ZIN); 4 males, 1 female, "Mongolia, Zavchan [= Dzabkhan] Aimak, 15 km NW von Somon Songino, 1840 m, 13.VII.1968, exp. Dr. Z. Kaszab"-(SK); 2 males, Hubsugul aimak, Ikh-Ula, 27.VI.1968, Arnoldi *leg*.-(ZIN); 2 males, Ubsu-Nur aimak, 10 km N Mt. Han-Huhei-Ula, 7.VII.1968, Arnoldi *leg*.-(ZIN); 1 male, Uver-Hangai aimak, Baian-Under, 8.VII.1970, Kerzhner *leg*.-(ZIN); 1 male, Uver-Hangai aimak, 20 km ENE Baian-Under, 8.VII.1970, Zaitsev *leg*.-(ZIN); 2 males (both with white stripes), Mongolia, Bulgan aimak, Selenge sum, VII.1974, K. Ulykpan *leg*.-(MD); 3 males, 4 females, Ara-Hangai aimak, 10 km NNE Bugat, 6-7.VII.1975-(ZIN); 1 female, Ara-Hangai aimak, 20 km W Tariat, 29.VI.1975, Gurjeva *leg*.-(ZIN); 1 male, 5 females, Ara-Hangai aimak, confluence of Sumijn and Chulutyn-Gol (about same locality), 29-30.VI.1975, Narchuk and Gurjeva *leg*.-(ZIN); 2males, 1 female, Hubsugul aimak, 17 km N Shine-Ider, 21-22.VII.1975, Gurjeva *leg*.-(ZIN); 1 female, Hubsugul aimak, 25 km NNE Ulan-Ula, 15-16.VII.1975, Kozlov *leg*.-(ZIN); 1 female, Hubsugul aimak, Selenga river, 20 km SE Toson-Tzengel, 24-25.VII.1975, Nartchuk *leg*.-(ZIN); Hentei aimak, 10 km W Dumd-Baian, 27.VIII.1975, Gurjeva *leg*.-(ZIN); 2 females, Mongolia, Central aimak, "Ara-Undzhul-Ula" (= Mt. Urd-Undzhul-Ula = Mt. Uver-Undzhul-Ula – about 20 km N Undzhul), 25.VII.1976, Kozhemiakin *leg*.- (MD); 1 female, Suhe-Bator aimak, 65 km NNW Dariganga, 14.VII.1976, Gurjeva *leg*.-(ZIN); 1 female, Central aimak, Kerulen, 16.VIII.1976, Gurjeva *leg*.-(ZIN); 1 male, East aimak, Duro-Nur lake, 15 km N Khuh-Nur lake, 28.VI.1976, Gurjeva *leg*.-(ZIN); 2 males, East aimak, 45 km SW Baian-Dun, 12.VII.1976, Gurjeva *leg*.-(ZIN); 2 males, Hentei aimak, 8 km S Norovlin, 2.VII.1976, Gurjeva *leg*.-(ZIN); 1 male, Hubsugul aimak, Ider river near Dzhargalant, 19-20.VII.1976, Kozlov *leg*.-(ZIN); 3 males, 1 female, Mongolia, Uver-Hangai aimak, "Orchon river, ChuÏirt [= Khudzhirt], Carchorin [= Kharkhorin], 6-20.VII.1980, Z. Brus *leg*."-(SK); 4 males, 3 females, Mongolia, Central aimak, Sharga-Mort, 30 km N Ulan-Bator, 29.VII.1983, O. Gorbunov *leg*.-(MD); 1 male, 1 female, Mongolia, Ara-Hangai aimak, 20 km WSW Ikh-Tamir river, 1.VII.1995, Gurjeva *leg*.-(ZIN); 1 female, Suhe-Bator aimak, Mt. Shilijn-Bogdo, 19.VII.1996, Gurjeva *leg*.-(ZIN); 2 females, Suhe-Bator aimak, 10 km W Dariganga, 16.VII.1996, Gurjeva *leg*. -(ZIN); 72 males, 18 females, Mongolia, Central aimak, 40 km ESE Ulan-Bator, Tola river, 1400 m, 47°50'N, 107°30'E, 15.VII.2002, M. Danilevsky *leg*.-(MD); 1 male, 3 females, Mongolia, Central aimak, 27 km N Gatzurt, 1 900 m, 48°05'N, 107°13'E, 16-18.VII.2002, M. Danilevsky *leg*.-(MD); 2 males, 3 females (all dead), Mongolia, Hentei aimak, 8 km SE Tzenkher-Mandal, Tzenkher-Gol, 1360 m, 47°41'N, 109°07'E, 19-20.VIII.2002, M. Danilevsky *leg*.-(MD); 78 males, 19 females, Mongolia, Central aimak, 30 km WNW Ulan-Bator, 1360 m, 47°59'N, 106°32'E, 22.VII.2002, M. Danilevsky *leg*.-(MD); 6 males, 1 female, Mongolia, Central aimak, 10 km S Bornur, Shivertijn-Gol, 200 m, 48°23'N, 106°12'E, 23.VII.2002, M. Danilevsky *leg*.-(MD); 31 males, 8 females, Mongolia, Selenga aimak, 13 km SW Suhe-Bator, Shamar env., 600 m, 49°38'N, 106°02'E, 23-25.VII.2002, M. Danilevsky *leg*.-(MD); 1 female, Mongolia, Selenga aimak, Butelijn-Nu ridge, S Nam-Daba pass, 800 m, 50°07'N, 105°17'E, 25-26.VII.2002, M.Danilevsky *leg*.-(MD); 4 males, 4 females, Mongolia, Selenga aimak, N Butelijn-Nu ridge, Burgastain-Gol, 750 m, 50°20'N, 105°50'E, 26.VII.2002, M. Danilevsky *leg*.-(MD); 65 males, 38 females, Mongolia, Selenga aimak, Ero-Gol river, 650 m, 49°48'N, 106°35'E, 28-30.VII.2002, M. Danilevsky *leg*.-(MD); 3 males, 6 females (all dead), Mongolia, Hentei aimak, Bor-Khudzhirijn-Daba pass, 1642 m, 47°49N, 108°55'E, 20.VIII.2002, M. Danilevsky *leg*.-(MD); 6 males, 7 females (all dead), Mongolia, Central aimak, 58 km E Ulan-Bator, 1400 m, 47°47'N, 107°35'E, 20.VIII.2002, M. Danilevsky *leg*.-(MD); 1 male, 1 female, Mongolia, Hentei aimak, Tzenkher-Mandal env., "Öndöruhan" (Under-Khan), 1390 m, 47°42'N, 109°04'E, 22.VII.2004, A. Kotan *leg*.-(MD). China : 6 males, 8 females, China, "Dsungarei, Karlyk-Tag, V-VI, 1908"-(NMV); 1 female with same label-(ZIN).

Remarks. – *E. carinatum involvens* m. *bicoloratum* Plavilstshikov, 1958 : 440, as it was faithfully remarked by B. Namhaidorzh (1972 : 522), was in fact a form of *E. lutshnik*i Plav.

A male (MHNK) designated by S. Breuning as paratype of *Neodorcadion humerale brunneipenne* from near Mondy (Sajan Mts) is in fact *E. c. involvens*.

Eodorcadion longjiangensis Wang, 2003 was described on the base of a pair collected in Yabuli (Heilongjiang), 28.VI.1940 by Alin. According to the color photos it is rather typical *E. carinatum involvens,* which was known before from Harbin area (Matsushita, 1941). Only two distinguished characters ("body is non black brown" and "the first joint of hind tarsi is largely longer than the last") mentioned by the author have no taxonomy value, so *E. carinatum involvens* (Fischer von Waldheim, 1823) = *Eodorcadion longjiangensis* Wang, 2003 : 299, **syn. n.** *Eodorcadion "longjiangnesis"* Wang, 2003 : 396 was a wrong spelling.

E. c. involvens was mentioned by Wang Zhicheng (2003 : 293 and 297) as two more "species" : as "*E. carinatum involvens*" – illustrated with a drawing of a male of *E. carinatum carinatum* from Plavilstshikov's (1958 : 438) monograph; and as "*E. involvens*" – illustrated with four original photos of *E. carinatum involvens* from Hailar.

1e. *Eodorcadion* (s.str.) *carinatum kiahtenum*, ssp. n. (Fig.1e)

Type locality. – Russia, East Siberia, Transbaikalia, south Buriatia, Kiahta environs, Peschanoe lake, about 25 km NW Kiachta (Maps 1–3,4; locality 191).

Diagnosis. – The biggest subspecies - length in males : 16.5–18 mm, in females : 20.2-22 mm; width in males : 5.8-6.3 mm, in females : 8-8.5 mm.

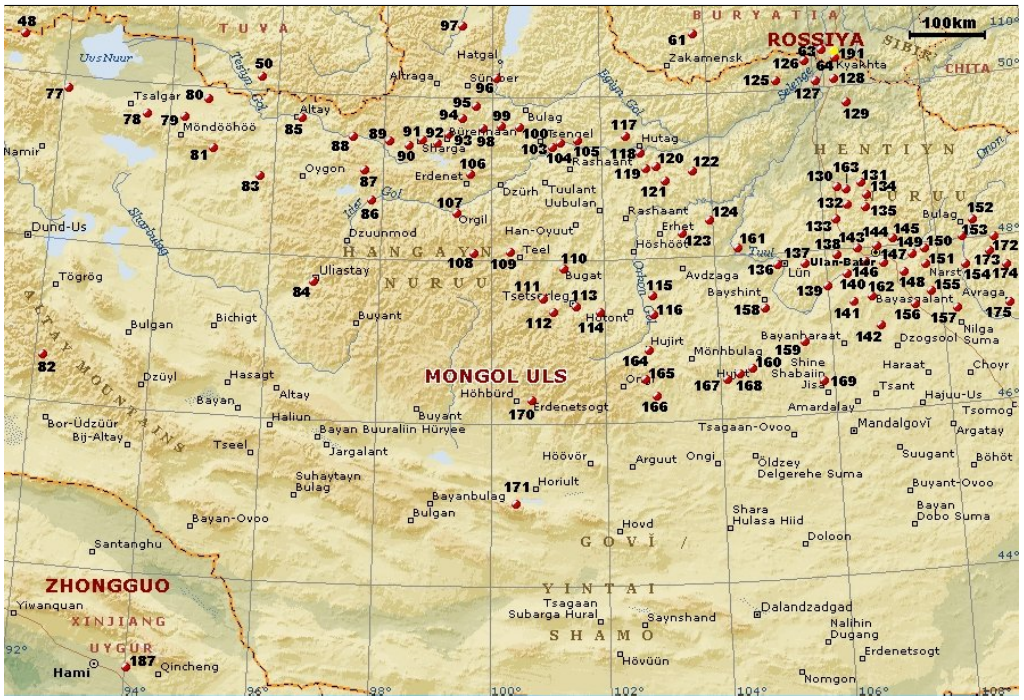
Body red-brown, with pale, white-grayish pubescence; antennae in males a little longer than body, in females reaching last elytral third, 3rd-8th antennal joints with more or less distinct pale basal hair rings; thoracic spines wide and long; pronotum (as well as head) with well developed pale pubescence, with a pair of longitudinal pale stripes; scutellum strongly transverse, with lateral pale hair spots; elytra convex, relatively narrow, in males about 1.8-1.9 times longer than wide, in females about 1.6 times longer than wide; humeral carinae anteriorly distinct, dorsal carinae absent, or sometimes in females two dorsal carinae hardly pronounced; male elytra glabrous, shining with very fine, indistinct punctation; humeral pale stripes absent; narrow basal elytral area, apical humeral areas and lateral (curved) elytral margins along epipleurae are covered with sparse pale pubescence; females only autochromal with totally pubescent elytra, only suture is glabrous; longitudinal structure of elytral pubescence more or less distinct similar to *E. c. involvens* var. *vestitum* : three dorsal pale hair rows can be visible on each elytron, sometimes with less pronounced narrower rows in between; ventral body surfaces densely covered with pale pubescence both in males and in females.

The new subspecies is very close to *E. c. involvens* by glabrous elytra in males without humeral stripes, as well as by the presence of var. *vestitum* in females. It differs from *E. c. involvens* first of all by extremely big body size; besides pronotum in males of *E. c. involvens* usually looks like totally glabrous, always without pale stripes, antennae without pale basal rings; females in *E. c. involvens* usually androchromal, with glabrous elytra, while in *E. c. kiahtenum*, ssp.n. androchromal females unknown.

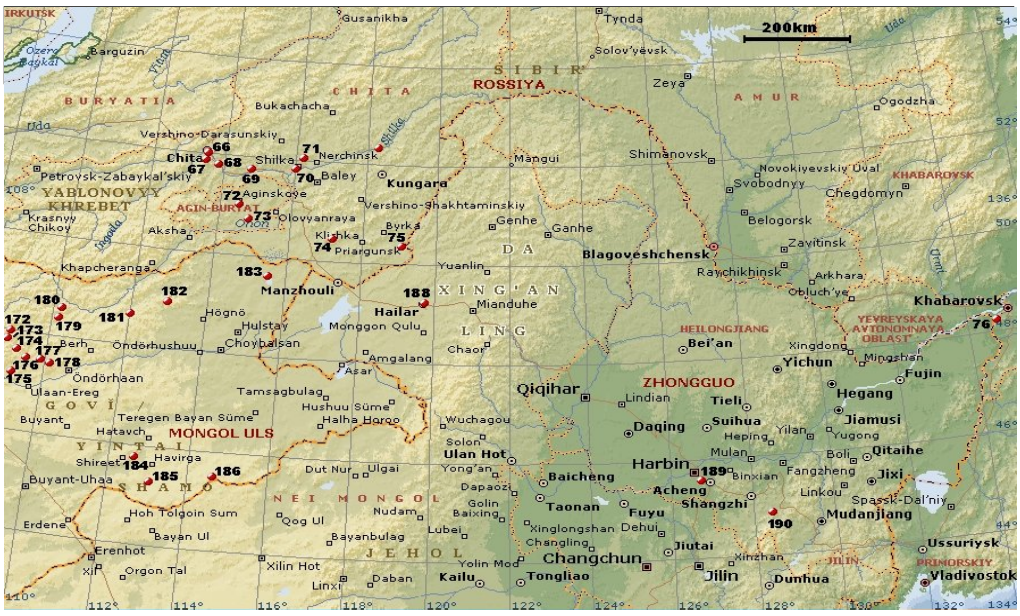
Distribution (Maps 1–3, 4; locality 191). – Russia : East Siberia, Transbaikalia, south Buriatia, Kiahta environs. At least two populations known: near Peschanoe lake (about 25 km NW Kiachta – type locality) and at Kumyn Mt. near Kiran lake (abou 50 km E Kiachta). Third locality from the labels of type series "Olgin Kliuch" is now unknown even for the local people.

Bionomy. – Imagoes are active in July.

Material. – 1 male, HOLOTYPE, Russia, Buriatia, ["Troitskosavsk env. (= Kiahta), Peschanoe lake, 2-3.VII.1924, Mikhno *leg*.] [in Russian]-(ZIN); 7 PARATYPES : 1 male with same label and 1 female from same locality, but 17.VII.1924, Mikhno *leg*.-(ZIN); 1 male, 2 females, Russia, Buriatia, ["Troitskosavsk env. (= Kiahta), Kumyn Mt., 12.VII.1923 and 24.VII.1925, Mikhno *leg*.] [in Russian]-(ZIN); 1 male, Russia, ["Troitsko-Savsk, Olgin Kliuch, 12.VII.1926, Naumov *leg*."]



Map 1(4) ***E. carinatum*** : Mongolian part of the area



Map 1(5) ***E. carinatum*** : Eastern part of the area : East Russia, East Mongolia, East China.

Maps 1-4 and 1-5

E. c. involvens (46-190) : Russia, Tuva : 46. Khondergej; 47. Ishtii–Khem; 48. Sagly river; 49. Adardash ridge; 50. Naryn river valley, 50°11'N, 95°39'E; Russia, Irkutsk reg.; 51. Zima; 52. Balagansk; 53. Verkholensk; 54. about 100 km NW Irkutsk; 55. Kultuk; 56. Oiek; 57. Irkustk environs; 58. Olkhon Gate; 59. Sarma river. Russia, Burjatija : 60. Mondy; 61. Sangina river; 62. Taiozhnyj; 63. Naushki env., Kharankhoi; 64. Kiakhta env.; 65. Ulan-Ude environs. Russia, Chita region : 66. Chita env.; 67. Chita environs, Molokovka (about 10 km S Chita); 68. Chita env., Kruchina; 69. Chita reg., Urulcha; 70. Mitrofanovo near Shilka-city; 71. Nerchinsk district, Nizhniaia Hila; 72. Aginskoe; 73. Aginsk district, Onon river valley, Kunkur (about 80 km SE Aginskoe); 74. Tzagan-Oluj; 75. Priargunsk. Russia, Khabarovsk region : 76. Kazakevitchevo; Mongolia, Ubsu-Nur aimak; 77. 15 km S Ulangom; 78. 10 km N Mt. Han-Huhei-Ula; 79. Changilcagijn gol, 6 km SW from Barun-Turun; 80. 30 km NE Barun-Turun; 81. Under-Hangai. Kobd aimak : 82. Ikh-Ulan-Daba pass; Dzabhan aimak; 83. 15 km NW from somon Songino; 84. Uliasutai; 85. Tesijn-Gol river; 86. Telmen-Nur lake, Ider-Gol river; 87. Choit chunch, 26 km ENE from Telmen-Nur lake. Hubsugul aimak : 88. Tesijn-Gol river W Tzetzerleg; 89. 45 km E Tzetzerleg; 90. Tunamal-Nur lake, 26 km WSW from Sharga; 91. Sharga; 92. 20 km SW Buren-Khan; 93. 8 km N from Buren-Khan, Delger-Muren river; 94. 50-54 km WNW from Muren; 95. Ar-Bulak; 96. 8 km N from Alag-Erdene, Egijn-Gol river; 97. 25 km NNE Ulan-Ula; 98. 25 km W Muren; 99. Buren; 100. 25 km E from Muren; 103. Selenga river, 20 km SE Toson-Tzengel; 104. Between Toson-Tzengel and Ikh-Ula, 22 km E from Toson –Tzengel; 105. Mt. Ikh-Ula NE Ikh-Ula; 106. 17 km N Shine-Ider; 107. Ider river, Dzhargalant. Ara-Hangai aimak : 108. 20 km W Tariat; 109. 15 km NW Under-Ulan; 110. Bugat in Ara-Hangai; 111. Ikh-Tamir env.; 112. Hangai Mts.,8 km W Urdtamir near Tzetzerleg; 113. Tzetzerleg; 114. Tevshruleh; 115. 24 km N from Lun; 116. 20 km N from Charchorin; Bulgan aimak; 117. Namnan ridge, 23 km NW from Chutag; 118. Selenga river, 20 km NNW Unt; 119. Unt; 120. Selenge; 121. 7 km W Khan-Dzhargalant; 122. Bugat in Bulgan; 123. Khishig-Under; 124. 40 km NW Tola river. Selenga aimak :125. Buteliyn-Nu Ridge, S Nam-Daba Pass, 50°07'N, 105°17'E; 126. N Buteliyn-Nu Ridge, Burgastain-Gol, 50°20'N, 105°50'E; 127. 18 km SW Sukhebator, Shamar env., 50°05'N, 106°02'E; 128. between Ero-Gol and Hara-Gol rivers; 129. Ero-Gol River, 49°48'N, 106°35'E. Central aimak : 130. Boro gol, 20 km W Dzun-Khara; 131. 101 km N Ulan-Bator; 132. Sudzukte, Mt. Noion-Ula; 133. 10 km S Bornur, Shivertiyn–Gol, 48°23'N, 106°12'E; 134. Sugu-nur (= Sugnugur-gol) river, upper level of Khara-gol river; 135. 65 km N Ulan-Bator; 136. 12 km W Lun; 137. 26 km E Lun; 138. Baian-Tzogt; 139. 80 km SW Ulan-Bator, Tola valley; 140. Altan-Obo SW Altan-Bulak; 141. 70 km N Baian-Barat; 142. 11 km S pass Zosijn-Dava, about 98 km S Ulan-Bator; 143. 30 km WNW Ulanbator, 47°59'N, 106°32'E; 144. Tosgoni-Ovo, 5-10 km, N Ulan-Bator; 145. 27 km N Gatsurt, 48°05'N, 107°13'E; 146. Songino; 147. Mt. Bogdo-Ula; 148. Nalaicha env., 50 km ESE Ulan-Bator; 149. 40 km E Ulan-Bator; 150. 60 km E Ulan-Bator; 151. 58 km E Ulan-Bator, 47°47'N, 107°35'E; 152. Kerulen River near mouth of Tenun-Gol river; 153. Dzun-Baidlyg-Gol; 154. Kerulen; 155. Borulcin-Tala, about 90 km SE from Ulan-Bator; 156. Mant, 120 km S von Ulan-Bator; 157. Baian-Dzhargalan, 30 km W from Kerulen; 158. Ulan-Khodag, 16 km S Under-Shiret; 159. Mt. Uver-Undzhul-Ula – about 20 km N Undzhul; 160. Mishik-Gun near Delger-Khan; 161. Dzamryn-Ula; 162. Between Erdene-Huduk and Buhegijn-Gol; 163. Dzun-Khara, left bank of Khara-gol. Uver-Hangai aimak : 164. Khudzhirt env.; 165. 30 km N from Arbaj-Khere – upper level of Ongijn-gol; 166. Arbaj-Khere env.; 167. Baian-Under; 168. 20 km ENE Baian-Under. Central-Gobi aimak : 169. Ada-Tzag. Baian-Hongor aimak : 170. Erdenetzogt; 171. Ikh-Bogdo-Ula Mts. Hentei aimak : 172. Iudegijn-Tzagan-Daba pass; 173. Bor-Khudzhirijn-Daba Pass, 47°49'N, 108°55'E; 174. 8 km SE Tzenkher-Mandal, Tzenkher gol, 47°41'N, 109°07'E; 175. Delger-Khan env.; 176. Zhargalt-Khan; 177. 30 km E from Zhargalt-Khan; 178. Muren env.; 179. 10 km W Dumd-Baian; 180. Byrhyn-Gol; 181. 8 km S Norovlin. East aimak : 182. 45 km SW Bajan-Dun; 183. Duro-Nur lake, 15 km N Khuh-Nur lake. Suhe-Bator aimak : 184. 65 km NNW Dariganga; 185. 10 km WSW Dariganga; 186. Mt. Shilijn-Bogdo. China : 187. Karlyk-Tag; 188. Hailar; 189. Harbin; 190. Yabuli.

E. c. kiahtenum : 191. Kiakhta env.

2. *Eodorcadion* (s.str.) *altaicum* (Suvorov, 1909) (Fig. 2)

Neodorcadion altaicum Suvorov, 1909 : 89 ("Im Altai": "Bolschenarymskaja","Altaiskaja").

Neodorcadion carinatum v. *altaicum*, Winkler, 1929 : 1199.

Neodorcadion carinatum carinatum, Plavilstshikov, 1932a : 212 ("*N. altaicum* Suv. = *N. carinatum* F."), part.

Neodorcadion carinatum carinatum f. *humerolineatum* Plavilstshikov, 1932 : a : 214, part., unavailable name.

Eodorcadion carinatum carinatum, Plavilstshikov, 1958 : 437, part.; Hua, 2002 : 206, part.

Eodorcadion (s.str.) *carinatum*, Breuning, 1958 : 4, part.; 1962 : 14, part.

Eodorcadion carinatum, Kostin, 1975 : 221, part.

Eodorcadion (s. str.) *carinatum altaicum*, Danilevsky et al., 2005 : 131, 133, 148.

Type locality. – Kazakhstan : Narym river valley - right tributary of Irtysh river: Bolshenarymskoe, Altajskaia (= Katon-Karagaj) – according to the original description.

Diagnosis. – Length in males : 13.8-17 mm, in females : 16.5-20.5 mm; width in males : 5.8-7 mm, in females : 6.9-8.4 mm.

Body red brown; antennae relatively short, in males often shorter than body; elytra strongly convex, dull, with very rough punctation; always glabrous – no elytral stripes present or only reduced humeral stripes present near elytral apices; autochromal females unknown.

The species differs from the closest *E. carinatum* by relatively big size, very convex elytra and absence of complete humeral stripes; *E. carinatum involvens* is also usually without humeral stripes, but it is small with very smooth and shining elytra, often without punctation.

Distribution (Map 2). – The species is distributed in East Kazakhstan along Narym river valley and headwaters of Bukhtarma river. Known localities are : Bolshenarymskoe-(syntype locality, JV), Katon-Karagaj [= Altajskaia]-(syntype locality, ZIN, JV, MD), Soldatovo-(MD), Uryl -(ZIN), Chernovoe-(ZIN).

The record by N. N. Plavilstshikov (1958) of *E. carinatum carinatum* for the mountains surrounding Marka-Kol lake in East Kazakhstan possibly concerns same population from Narym river valley, as no specimens of *E. altaicum* specimens are known from Marka-Kol depression. The labels of *E. altaicum* specimens with such geographical names as "Semipalatinsk", "Ust-Kamenogorsk", "Omsk" must be regarded as too general.

Bionomy. – Imagoes are active from June to August. Data for September are doubtful.

Materials. – 1 male, syntype, ["Altaj, Urylsk (= Uryl – about 50 km E Katon-Karagai), 10.VII.1896, Kalach *leg*."] [in Russian]-(ZIN); 1 male, 1 female, syntypes, ["Altaj, Prokhodnaja(?) river, 23.VI.1896, Kalach *leg*."] [in Russian]-(ZIN); 18 males, 5 females, ["Chernovaja Berezovka na Bukhtarme (Chernovoe – about 20 km E Katon-Karagaj), 10.VIII.1897, Silantjev *leg*."] [in Russian]-(ZIN); 11 males, 4 females, syntypes, ["Altaj, Altajskaia, 20-25.VI.1899, K.Kozlov's exp."] [in Russian]-(ZIN); 4 females, syntypes with same label-(JV); 1 male, syntype, ["Altaj, headwaters of Bukhtarma river, VII.1899, Kozlov's exp."] [in Russian]-(ZIN); 1 male, syntype, ["Chamerun (?) eastwards Khamadan (?), 14-18.IX.1899, Sameka *leg*."] [in Russian]-(ZIN); 29 males, 16 females, syntypes, ["Semipalatinsk region, Altaj, Altajskaia, 3-8.VII.1906, A. Jacobson *leg*."] [in Russian]-(ZIN); 1 male, syntype from same locality, 3.VII.1906, A. Jacobson *leg*.-(NMV); 5 males, syntypes from same locality, 3-5.VII.1906, A. Jacobson *leg*.-(JV); 16 males,

4 females, syntypes, ["Semipalatinsk region, Altaj, Irtysh, Bolshenarymskaia, 6-8.VI.1906, A. Jacobson *leg*."] [in Russian]-(ZIN); 2 males, 1 female, syntypes with same label-(JV); 1 male, syntype, ["Altajsk, Semipalatinsk region, 3.VII.1906, A. Jacobson *leg*."] [in Russian]-(ZIN); 2 females, syntypes with same label-(JV); 3 females, "Sibiria, Altai, Ustkamenogorsk"-(ZIN); 1 female, "Sibir. occ., Semipalatinsk"-(ZIN); 1 male, 2 females, "Omsk, 11.VI.1921, Rajevski *leg*." -(ZIN); 1 female, Kazakhstan, Narym river valley, Soldatovo, VII.1994, L. Plutenko *leg*.-(MD); 83 males and 39 females, Kazakhstan, Narym river valley, Katon-Karagaj [= Altajskaia] environs, 900 m, 11.VII.1998, V. Lukhtanov *leg*.-(MD).

Map 2. Localities of ***E. altaicum*** : East Kazakhstan. 1. Bolshenarymskoe (syntype locality); 2. Soldatovo; 3. Katon-Karagaj (syntype locality); 4. Chernovoe; 5. Uryl.

3. *Eodorcadion* (s.str.) *chinganicum* (Suvorov, 1909) (Fig. 3)

Neodorcadion chinganicum Suvorov, 1909 : 90 ("In den Vorbergen von Chingan"); Winkler, 1929 : 1199.

Neodorcadion chinganicum var. *melancholicum* Suvorov, 1909 : 91 ("in denVorbergen von Chingan"), not available name.

Eodorcadion chinganicum, Plavilstshikov, 1958 : 444 ("Inner Mongolia – Great Khingan : Imakhe-Khabu; Mardyn-Gol, Balairek-Gol"); Chiang et al., 1985 : 100; Hua, 2002 : 206 (= *rubrosuturale* Breun.; "Heilongjiang, Inner Mongolia, Shaanxi, Guizhou").

Eodorcadion (s.str.) *chinganicum*, Gressitt, 1951 : 336, 340 ["China : Manchuria (Chingan Shan)"]; Breuning, 1958 : 4; 1962 : 21.

Eodorcadion chinganium, Wang, 2003 : 293 (= *rubrosuturale* Breun.; Inner Mongolia : Chifeng; Liaoning: Zhangwu; Jilin : Baicheng; Shaanxi), incorrect subsequent spelling, part.

Eodorcadion melancholicum, Wang, 2003 : 300 (Southwest Liaoning; Inner Mongolia : Chifeng, Baotou, Khingan; Jilin : Baicheng; Russia), not available name, part.

Type locality. – China, Manshzhuria, Khingan ridge, "from Mardyn-gol to Balairek-gol", according to the lectotype label - **present designation**. The species was described after three males. Now only one syntype male is preserved in the collection of Zoological Institute (Sankt-Petersburg), that is why it is designated here as lectotype. The exact geographical label of the type series was not published in the original description, but the published collecting date : "Ende VII. 1887" agrees with the date of the lectotype label : "25.VII-1.VIII.87". I do not know the rivers with such names, more over the names "Mardyn-gol" and "Balairek-gol" absent on the map of Garnak (collector of the type series) expedition (Garnak, 1888). The description of the expedition (Garnak, 1888) contains no information about its location at the end of July, but we can see, that at the end of June it was near Kalgan (now Zhangjiakou at about 41°N) and on 22 of August it was near Nudom (at about 45°N) on the way to the north. So, the type locality must be situated at about between 41°N and 45°N, and according to the map of the expedition near Dalaj-Nor lake.

Diagnosis. – Body length in males : 10.7-17 mm, in available : 13.5-22 mm; body width in males : 4.1-6.5 mm, in females : 5.5-8.5 mm. Body length of the lectotype (**present designation**) male : 15 mm, width : 5.4 mm.

Close to *E. carinatum*; red brown; antennae in males a little longer than body, in females protrude beyond elytral middle; cicatrix indistinct; antennal joints with basal rings of rather sparse white pubescence; pronotum often with a pair of yellow hair spots; elytra smooth; humeral carinae obliterated, dorsal carinae absent, or sometimes in females of *E. ch. chinganicum* slightly exposed bellow dorsal stripes with strongly exposed suture; with more or less regular numerous yellow or white (or partly white) fine hair stripes of different width, which can be conjugated, fused or diffused, or indistinct in old specimens; sutural stripe absent; marginal stripe present or absent; humeral stripe is the widest; usually a normal pair of dorsal elytral stripes is more pronounced than other stripes; sometimes internal dorsal stripes are more pronounced than others; sometimes an additional subsutural branch of internal dorsal stripe present, it can be totally absent or poorly visible only near scutellum or very distinct; usually the area between glabrous suture and internal dorsal stripe is densely covered by yellow pubescence; two or three diffused additional stripes can be visible between dorsal stripes; additional stripes between humeral and external dorsal stripes usually indistinct. Typical glabrous *E. carinatum involvens* can be easily distinguished from pubescent *E. chinganicum*. Only rare autochromal pubescent females of *E. c. involvens* with distinct elytral stripes (Fig. 1d-20) as well as females of *E. c. kiahtenum* ssp.n. can be sometimes similar to certain females of *E. chinganicum*, but in autochromal females of *E. carinatum* all elytral stripes (if distinct) are of about same width.

Distribution (Map 3). – Mongolia, from the south and south-east part of Central aimak through Hentei (though no localities are known here) and East aimaks to the eastern border of the republic; about whole territoty of Suhe-Bator aimak. NE China – Manchzhuria : foothills of Khingan ridge; Inner Mongolia: Inn-Shan mountains northwards Ordos, Chifeng, Khingan area; Liaoning: Zhangwu; Jilin : Baicheng.

The record of the species for Guizhou province (Hua, 2002 : 206) is unbelievable; the records for Shaanxi province (Hua, 2002 : 206; Wang, 2003 : 293) need confirmation. The record for Russia (as "*E. melancholicum*" - unavailable name; Wang, 2003 : 300) is wrong.

The species consists of three subspecies : *E. ch. chinganicum* (Suv.), *E. ch. rubrosuturale* (Breun.) and *E. ch. kerulenum* ssp. n.

Bionomy. – Imagoes are active from June to August with maximal activity in the beginning of July. According to Hua Li-zhong (2002 : 206), the species is connected with *Aneurolepidium*.

Remarks. – Now only Mongolian specimens are well represented in many museums' collections. Specimens of closely related populations from China Manchzhuria are so peculiar, that often look like representatives of different species. Specimens designated by G. L. Suvorov as var. *melancholicum* look very similar to Mongolian specimens, but at least one of them was collected just in the type locality as typical form, so *melancholicum* is an individual aberration from the nominative population and the name is unavailable. I regard Mongolian populations as a different subspecies, described below as new.

Population from Inn-Shan mountains (Inner Mongolia) is represented by holotype male only. It was described as *Neodorcadion rubrosuturale* Breun. and is very distant from the areas of other subspecies - this is the main reason to keep it as a separate subspecies. In fact the unique male has at least one character, which is not observed in any other subspecies - posterior pronotal protuberance; besides the proportions of its body are not typical to the nearest Mongolian populations.

The taxon was mentioned as two different species with partly coincide areas by Wang Zhicheng (2003 : 293 and 300) : first time (: 293) as "*E. chinganicum*" – illustrated with four original photos of *E. chinganicum chinganicum* from Inner Mongolia and Liaoning; second time, as "*E. melancholicum*" – illustrated with two photos of *E. chinganicum kerulenum*, ssp. n. (described further) copied from "Atlas of the Cerambycidae photographs of the tribe Dorcadionini" (Danilevsky, 2006); figured specimens (MD) were collected in Mongolia (Suhe-Bator aimak, Tumen-Tzogt, 2.VII.1983, Ulykpan *leg*).

3a. *Eodorcadion* (s.str.) *chinganicum chinganicum* (Suvorov, 1909) (Figs. 3a)

Neodorcadion chinganicum Suvorov, 1909 : 90 ("In den Vorbergen von Chingan").

Neodorcadion chinganicum var. *melancholicum* Suvorov, 1909 : 91 ("in den Vorbergen von Chingan"), not available name.

Eodorcadion chinganicum, Plavilstshikov, 1958 : 444 ("Inner Mongolia – Great Khingan : Imakhe-Khabu; Mardyn-Gol, Balairek-Gol"); Chiang et al., 1985 : 100.

Eodorcadion (s.str.) *chinganicum*, Gressitt, 1951 : 336, 340 ["China : Manchuria (Chingan Shan)"]; Breuning, 1958 : 4; 1962 : 21.

Eodorcadion (s. str.) *chinganicum* m. *rubrosuturale*, Breuning, 1962, part. ("Charbin").

Eodorcadion chinganium, Wang, 2003: 293 (Inner Mongolia : Chifeng; Liaoning : Zhangwu; Jilin : Baicheng; Shaanxi), incorrect subsequent spelling, part.).

Eodorcadion chinganium, Wang, 2003 : 293 (= *rubrosuturale* Breun.; Inner Mongolia : Chifeng; Liaoning : Zhangwu; Jilin : Baicheng; Shaanxi), incorrect subsequent spelling, part.

Eodorcadion melancholicum, Wang, 2003 : 300 (Southwest Liaoning; Inner Mongolia : Chifeng, Baotou, Khingan; Jilin : Baicheng; Russia), not available name, part.

Type locality. – China, Manchzhuria, Khingan ridge, "from Mardyn-gol to Balairek-gol", according to the lectotype label. Most probably the locality is situated near Dalaj-Nor lake (see above).

Diagnosis. – Body length of the lectotype male (present designation, Fig 3a-1; ZIN) : 15 mm, width : 5.4 mm; length of other 3 paralectotype males (present designation, Figs. 3a-3-4; ZIN -syntypes of var. *melancholicum*) : 13-14 mm, width : 4.9-5.2 mm; body length of paralectotype male (present designation, Fig. 3a-2; JV) of *N. chinganicum* : 17 mm, width : 6.5 mm; body length in females : 16.5-22 mm, body width : 6.6-8.5 mm. So the size of the subspecies (up to 17 mm in males and up to 22 mm in females) is much longer than in other populations of the species.

Pronotum with or without pair of elongated central hair spots; elytra in lectotype 1.9 times longer, than wide; in syntypes of *E. ch. m. melancholicum* – 1.7 times longer than wide, in females – in 1.6-1.7 times; without dorsal carinae, or in females dorsal carinae can be slightly exposed bellow dorsal stripes, or suture in females can be exposed; pale elytral stripes usually white or sometimes – yellow, thought it could be possible, that humeral and two dorsal stripes were originally white (as in *E. ch. kerulenum* ssp. n.); sometimes elytral stripes are not regular, but more or less diffused or conjugated (Fig. 3a-4); marginal stripe and subsutural branch of dorsal stripe can be absent or present; internal dorsal stripe is often much wider than others, just a little narrower than humeral stripe; or internal dorsal stripe a little wider than other dorsal stripes; between two main dorsal elytral stripes can be from one to three narrow additional stripes; one additional stripe can be distinct between humeral and external dorsal strip.

Nominative subspecies differs from *E. ch. kerulenum*, ssp. n. first of all by relatively big size: up to 17 mm in males and up to 22 mm in females (though only 10 specimens are known), while in *E. ch. kerulenum* males are up to 14.5 mm, females – up to 17 mm (about 150 specimens are known); besides the nominative subspecies is characterized by strongly variable elytral design with the tendency to extension of white stripes to nearly totally white elytra, that is impossible in *E. ch. kerulenum*, ssp. n.; in general specimens of the nominative subspecies look more elongated : in *E. ch. chinganicum* male elytra are usually 1.7 times longer than wide (one abnormal male has shortened elytra), female elytra are 1.6-1.7 times longer than wide; while in *E. ch. kerulenum* male elytra are about 1.6 times longer than wide, female elytra 1.5 times longer than wide; other distinguishing characters, which could be noticed on available specimens must be connected with individual variability (presence or absence of yellow pronotal spots) or can be just artefacts (unique yellow color of all elytral stripes in very old specimens of the nominative subspecies).

Nominative subspecies has about same elytral proportions (1.7 times longer than wide), as a unique known male of *E. ch. rubrosuturale*, but this male differs from all other known *E. chinganicum* by strongly exposed protuberance in the middle of hind pronotal margin.

Distribution (Map 3; localities 1-6). – NE China - the taxon is distributed in China Manchzhuria from about Hailar to Dalaj-Nor lake environs. Just a few localities are more or less definitely known: between "Mardyn-gol" and "Balairek-gol" – (type locality-probably near Dalaj-Nor lake, according to the description of the expedition by Garnak, 1888; Plavilstshikov, 1958); "Imakhe-Khabu (Hailar environs in China)"-(ZIN, Plavilstshikov, 1958); Chorchonte (near Hailar)-(ZMM); Inner Mongolia : NW border of Xilin-Gol Reserve, near Xilinhot-(MD); Chifeng-(Wang, 2003 : 293); Khingan area-(Wang, 2003 : 293); Liaoning : Zhangwu-(Wang, 2003 : 293); Jilin: Baicheng-(Wang, 2003 : 293). The record of the taxon for Guizhou province (Hua, 2002 : 206) is unbelievable; the records for Shaanxi province (Hua, 2002 : 206; Wang, 2003 : 293) need confirmation.

According to the available label "Imakhe-Khabu" was situated in Khingan mountains and was visited by G. N. Potanin on 5.VII.1899. According to the description of Potanin's expedition (Komarov, 1928) on 19.VI.1899 G. N. Potanin was at the south part of Bujr-Nur lake (now in Mongolia Republic), then on 3.VII.1899 he was on the way from "Dolon-Nor" [= Dalaj-Nor] lake to Hailar (now in the territory of China Republic); on 5.VII.1899 the locality of the expedi-

tion is named as "Emele-Khobu" (="Imakhe-Khabu") and only on 10.VII.1899 he was at the foothills of Khingan ridge in the valley of "Ergeneten-gol". So, "Imakhe-Khabu" must be situated on the plane near Hailar city.

Materials. – 1 male, lectotype (**present designation**, Fig. 3a-1) with four labels : first label in Russian ["Khingan, from Mardyn-gol to Balairek-gol, 25.VII-1.VIII.87, Garnak"], second label : "*Neodorcadion chinganicum* Typ. m. G. Suworow. det."; third label : "*Eodorcadion* s.s. *chinganicum* Suv. Vorisek det. 1976" and my forth red label : "LECTOTYPE, *Eodorcadion* (s.str.) *chinganicum* Suvorov, 1909 M. Danilevsky det.,2004"-(ZIN); 1 male (with diffused longitudinal pale stripes), paralectotype (**present designation**, Fig. 3a-2) of *Neodorcadion chinganicum*, ["from Mardyn-gol to Balairek-gol, 25.VII-1.VIII.87, Garnak"] [in Russian]-(JV); 3 males, paralectotypes – (**present designation**) of *Neodorcadion chinganicum* (syntypes of *Eodorcadion chinganicum* var. *melancholicum* Suv.) : 1 male (Fig. 3a-3) with two labels, first label in Russian ["Khingan, from Mardyn-gol to Balairek-gol, 27.VII.1887, Garnak"], second label : "*Neodorcadion chinganicum* var. *melancholicum* Typ. m. G. Suworow. det."-(ZIN); 1 male (Fig. 3a-4) with two labels, first label in Russian : "Khingan, ...[not readable], 25.VI.91, Garnak *leg*.", second label : "*Neodorcadion chinganicum* var. *melancholicum* Typ. m. G. Suworow. det."-(ZIN); 1 male with two labels, first label in Russian ["Manchzhuria, Khuan-Tulutzy (?), 9.VI.1896"], second label : "*Neodorcadion chinganicum* var. *melancholicum* Typ. m. G. Suworow. det."-(ZIN); 1 female with one label in Russian ["Khing., Imakhe-Khabu, 5.VII.99, Potanin exp."]-(ZIN); 1 male with same label-(ZMM); ["Khingan, from Mardyn-gol to Balairek-gol, 1.VIII.87, Garnak"] [in Russian]-(ZMM); 1 male and 1 female, "Charbin, Mandzhurei" wrongly designated by S. Breuning as "paratype" and "allotype" of "*Eodorcadion chinganicum rubrosuturale* Breun."-(MHNL); 3 females, "Mandzhuria bor. occ., st. Chorchonte, 16.VIII. 1933, Alin's coll." [near Hailar]-(ZMM); 3 females, China, Nei Mongol., NW border of Xilin-Gol Reserve, near Xilinhot, 26.VII.2002, T. Shimizu *leg*.-(MD).

Remarks. – *Neodorcadion chinganicum* was described after three males ("In den Vorbergen von Chingan, Ende VII. 1887 gesammelt"). The type series of *N. chinganicum* (including var. *melancholicum*) consists of rather different specimens, which could represent different taxa, so the designation of lectotype is necessary. I designate as lectotype a male (ZIN, Fig. 3a-1) with four labels : first label in Russian ["Khingan, from Mardyn-gol to Balairek-gol, 25.VII-1.VIII.87, Garnak"], second label : "*Neodorcadion chinganicum* Typ. m. G. Suworow. det."; third label : "*Eodorcadion* s.s. *chinganicum* Suv. Vorisek det. 1976" and my forth red label : "LECTOTYPE, *Eodorcadion* (s.str.) *chinganicum* Suvorov, 1909 M. Danilevsky det., 2004". Other availbale syntypes are designated as paralectotypes (see materials).

Neodorcadion chinganicum var. *melancholicum* Suv. was described after 6 males ("Gleichfalls in den Vorbergen von Chingan den 25.VI.1891"). All three syntypes available now in the collection of Zoological Museum in Sankt-Petersburg are undoubtedly real syntypes, though only one of them (Fig. 3a-4) has same collecting date as it was originally published ("25.VI.1891"). That male differs by rather poor scattered elytral pubescence without distinct hair stripes. Such character was wrongly accepted by N. N. Plavilstshikov (1958) as typical for var. *melancholicum*, but in the original description specimens with normal elytral stripes are also mentioned (like in other two syntypes). According to the original description, the main distinguishing characters of var. *melancholicum* are smaller size and the absence of pronotal yellow hair spots – the characters of all syntypes.

The name "*melancholicum* Suv." must be regarded as unavailable because at least one of syntypes was collected just in same locality as the lectotype of *E. chinganicum*, and so G. Suvorov (1909) accepted it as infrasubspecific.

The record of "*E. ch. m. rubrosuturale*" by S. Breuning (1962) for Harbin – (the area of the distribution of the nominative subspecies) was based on the external similarity of the certain specimens of the nominative subspecies and *E. ch. rubrosuturale*. Two specimens (MHNL), male and female designated by S. Breuning as "paratype" and "allotype" of "*Eodorcadion chinganicum rubrosuturale* Breun." from Harbin do not belong to the type series of *Neodorcadion rubrosuturale* Breuning, 1943, as it was described after one male from Inn-Shan.

The taxon was mentioned as two different species with partly coincide areas by Wang Zhicheng (2003 : 293 and 300) : first time (: 293) as "*E. chinganicum*" – illustrated with four original photos of *E. chinganicum chinganicum*; second time, as "*E. melancholicum*" – illustrated with two photos of *E. chinganicum kerulenum*, sp. n. (described further) from my WEB Dorcadionini gallery (Danilevsky, 2006); figured specimens from my collection were collected in Mongolia (Suhe-Bator aimak, Tumen-Tzogt, 2.VII.1983, Ulykpan *leg*).

3b. *Eodorcadion* (s.str.) *chinganicum rubrosuturale* (Breuning, 1943) (Figs. 3b)

Neodorcadion rubrosuturale Breuning, 1943 : 98 ("Inn-Chan").

Eodorcadion (s. str.) *rubrosuturale*, Gressitt, 1951 : 336, 341.

Eodorcadion (s. str.) *chinganicum* m. *rubrosuturale*, Breuning, 1962 : 22(part.).

Eodorcadion chinganicum rubrosuturale, Namhaidorzh, 1972 : 519.

Eodorcadion chinganicum, Wang, 2003 : 293 ("= *rubrosuturale* Br.), part.

Eodorcadion melancholicum, Wang, 2003 : 300 (Inner Mongolia, Baotou), unavailable name, part.

Type locality. – China : Inn-Shan mountains northwards Ordos (Map 3; locality 7) in Inner Mongolia - according to the original description.

Diagnosis. – Only male, holotype, is known; body length : 14.7 mm, body width : 5.9 mm.

The taxon is very close to the nominative subspecies: body also elongated - elytra longer than wide in 1.7 times; pronotum without yellow spots; posterior middle pronotal swelling is strongly exposed; thoracic spines acute and relatively longer; elytral lines bicolored, as it is typical for *E. ch. kerulenum* ssp. n.; subsutural branch of dorsal stripe and marginal elytral stripe indistinct; humeral and internal dorsal stripes white, dorsal stripes much narrower than sutural; external dorsal stripes are similar to a pair of narrow additional stripes situated between two dorsal stripes and of about same yellowish color.

The subspecies differs from *E. ch. kerulenum* first of all by elongated body, similar to the nominative subspecies, but posterior pronotal protuberance of *E. ch. rubrosuturale* is not known in any other specimen of the species.

Distribution (Map 3; locality 7). – China - Inn-Shan mountains northwards Ordos in Inner Mongolia; the record of "*E. melancholicum*" by Wang Zhicheng (2003 : 300) for Baotou (Inner Mongolia) is most probably connected with *E. m. rubrosuturale* (Breun.).

Materials. – 1 male, holotype with 6 labels : "spec. angebot. aus Inn Shan, Mongol.", "ex coll. Dr. Noesske", "TYPE" [red], "Coll. Prof. Dr. Noesske Ankauf 1947", "Staatl. Museum für Tierkunde, Dresden", "*Neodorcadion rubrosuturale* mihi Typ det. Breuning"-(SMTD).

Remarks. – The locality of the holotype is very far southwards from the species area and it is the main reason to regard Inn-Shan population as a subspecies, but morphology of the holotype is so close to other subspecies that type locality looks wrongly mentioned.

The name *rubrosuturale*, as *E. ch.* m. *rubrosuturale* was recorded by S. Breuning (1962) for Harbin – (the area of the distribution of the nominative subspecies). The mistake was evidently based on the external similarity of certain specimens of the nominative subspecies and *E. ch. rubrosuturale*.

3c. *Eodorcadion* (s.str.) *chinganicum kerulenum*, ssp. n. (Figs. 3c)

Eodorcadion chinganicum rubrosuturale, Heyrovsky, 1964 : 378; 1967 : 102; 1973a : 122; 1973b : 117.

Eodorcadion darigangense, Namhaidorzh, 1976 : 210.

Eodorcadion melancholicum, Wang, 2003 : 300, unavailable name, part.

Type locality. – Mongolia, Suhe-Bator aimak, Tumen-Tzogt.

Diagnosis – Body length in males : 10.7-14.5 mm, in females : 13.5-17 mm; body width in males : 4.1-5.5 mm, in females : 5.5-6.1 mm.

Prothorax with longer or shorter lateral spines; pronotum usually with a pair of central elongated hair spots, which can be absent; elytra in males usually 1.5-1.6 times longer than wide, very rare – 1.7 times; in females – about 1.4-1.5 times; elytral design is rather regular and constant: subsutural branch of dorsal stripe and marginal stripe indistinct (sometimes a short basal part of subsutural branch present near scutellum); humeral stripe is the widest; usually a normal pair of dorsal elytral stripes is more pronounced than other stripes; humeral and two pairs of dorsal stripes usually (or always in fresh specimens ?) white, while additional stripes yellowish; sometimes external dorsal stripes are more pronounced than others; two diffused additional stripes usually present between dorsal stripes; additional stripes between humeral and external dorsal stripes usually indistinct.

New subspecies differs from both other subspecies by relatively wide body; elytra of males in *E. ch. chinganicum* and *E. ch. rubrosuturale* are about 1.7 times longer than wide, in females of the nominative subspecies in 1.6-1.7 times longer than wide.

Nominative subspecies differs from *E. ch. kerulenum*, ssp. n. first of all by relatively big size: up to 17 mm in males and up to 22 mm in females (though only 10 specimens are known), while in *E. ch. kerulenum* males are up to 14.5 mm, females – up to 17 mm (about 150 specimens are known); besides the nominative subspecies is characterized by strongly variable elytral design with the tendency to extension of white stripes to nearly totally white elytra, that is impossible in *E. ch. kerulenum*, ssp. n.; other distinguishing characters, which could be noticed on available specimens can be connected with individual variability (presence or absence of yellow pronotal spots) or can be just artefacts (unique yellow color of all elytral stripes in very old specimens of the nominative subspecies).

Distribution (Map 3; localities 8-20). – East part of Mongolian Republic – Central aimak : Kerulen river valley, Njalga, Burgastin-Khoshu-(HNHM, Heyrovsky, 1964, as *E. ch. rubrosuturale*); Baian-Dzhargalan, 30 km W from Kerulen river-(HNHM, SK, Heyrovsky, 1964, as *E. ch. rubrosuturale*); Mant, 120 km S Ulan-Bator-(SK, Heyrovsky, 1973b, as *E. ch. rubrosuturale*); Suhe-Bator aimak : Tumen-Tzogt (type locality)-(MD); 90 km SE Barun-Urt-(MD); 9 km WSW Dariganga-(ZIN); 27 km S Baian-Terem-(SK, Heyrovsky, 1973a, as *E. ch. rubrosuturale*); near

Dariganga (Photo. 10)-(ZIN, JV, Namhaidorzh, 1976, as "E. *darigangense*"); 10 km W Erdene-Tzagan-(ZIN, Namhaidorzh, 1976, as "*E. darigangense*"); East aimak : Khamar-Daba near Khalkh-Gol-(Namhaidorzh, 1976, as "*E. darigangense*"); valley of Numrag-Gol [=Numregin-Gol] river-(Namhaidorzh, 1976, as "*E. darigangense*"); Numregin-Gol, 32 km SE Mt. Salkhit (same locality)-(ZIN); "Somon Chalchin-Gol" [= Khalkh-Gol]-(Heyrovsky, 1967); Choibalsan environs-(HNHM); 30 km SSW Choibalsan-(ZIN).

Bionomy. – Imagoes are active at the end of June and in July.

Materials. – Holotype, male, Mongolia, Suhe-Bator aimak, Tumen-Tzogt, 2.VII.1983, K. Ulykpan *leg*.-(MD) and 113 paratypes : 3 males, 1 female, with same label-(MD); 1 male, "north Mongolia, I. Strekbitizky"-(ZMM); 2 males, "Mong. bor."-(ZMM); 23 males, 6 females, "Mongolia: Central aimak, Baian-Djargalant somon, 1380 m, 4.VII.1963, Exp. Dr. Z. Kaszab"-(HNHM, PR); 2 males with same label-(SK); 3 males, 3 female with same label-(NMP); 22 males, 15 females, "Mongolia : Central Aimak, Kerulen, Njalga s., Burgastin chosu [Burgastin-Khoshu], 1200 m, 3.VII.1963, Exp. Dr. Z. Kaszab"-(HNHM); 1 male, 4 females with same label-(SK); 3 males, 2 females with same label-(SMTD); 2 males with same label-(NMP); 1 male, "Mongolia, Mant, 120 km S Ulan-Bator [Central aimak], 19.VII.1963, B. Burakowski & H. Szelegiewicz *leg*."-(SK); 1 male, "Mongolia : Coibalsan [= East] aimak, somon Chalchingol, 22.VI.1965, *leg*. Dr. Eregdendaghva"-(HNHM); 1 male, 1 female, "Mongolia, Suhe-Bator aimak, 27km S von Bajanterem, VII-VIII.1966, Gy. Marton *leg*."-(SK); 1 female, "Chojbalsan, 1969, *leg*. Gy. Marton"-(HNHM); 2 males, 1 female, Mongolia, Suhe-Bator aimak, 9 km WSW Dariganga, 8.VII.1971, B. Namhaidorzh and L. Chogsomzhav *leg*.-(ZIN); 2 males, ["Mongolia, Suhe-Bator aimak, spring Ikh-Bulak, 9 km WSW Dariganga, 8.VII.1971, G. Medvedev *leg*."] [in Russian]-(ZIN); 1 male with same label-(JV); 1 male, Mongolia, Suhe-Bator aimak, 10 km W Erdene-Tzagan, 13.VII.1971-(ZIN); 1 male, Mongolia, Suhe-Bator aimak, 90 km SE Barun-Urt, 13.VII.1971-(MD); 1 male, East aimak, 30 km SSW Choibalsan, 13.VII.1976, Gurjeva *leg*.-(ZIN); 7 males, 1 females, East aimak, Numregin-Gol, 32 km SE Mt. Salkhit, 8.VIII.1976, Gurjeva *leg*.-(ZIN).

Remarks. – The taxon was misidentified by B. Namhaidorzh (1976) as "*E. darigangense*" and true *E. darigangense* Heyr. was unknown to him. The distinguishing characters described by B. Namhaidorzh for his "*E. darigangense*" were just the differences between nominative form of *E. chinganicum* and E. *chinganicum kerulenum*, spp.n. That is why he mentioned, that his "*E. darigangense*" was "similar to *E. chinganicum* m. *melancholicum* by all characters", with the exception of bicolored elytral pubescence : normal hair elytral stripes (humeral, and two dorsal) in *E. chinganicum kerulenum* ssp. n. are usually white, while interspaces are covered with yellow pubescence, which often is also arranged in more or less regular stripes. There is a male of *E. chinganicum kerulenum*, ssp.n. in the collection of Jiri Voricek, which belongs to the series (Dariganga env., 8.VII.1971, G. Medvedev *leg*.) that was wrongly identified by B. Namhaidorzh (1976 : 210) as "*E. darigangense*".

Same taxon was recorded for Mongolia by L. Heyrovsky (1964 : 378; 1967 : 102; 1973a : 122), as *Eodorcadion chinganicum rubrosuturale* partly from about same localities as were mentioned by B. Namhaidorzh for his "*E. darigangense*".

Two photos (male-holotype and female-paratype) used by Wang Zhicheng (2003 : 300) for illustration of his "*E. melancholicum*" (unavailable name) were copied from my WEB Dorcadionini gallery (Danilevsky, 2006). Figured specimens belong now to the type series of *E. ch. kerulenum*, ssp. n. from my collection and were collected in Mongolia (Suhe-Bator aimak, Tumen-Tzogt, 2.VII.1983, Ulykpan *leg*.).

Map 3. Localities of ***E. chinganicum*** : China (1-6) and Mongolia (7-20). ***E. ch. chinganicum*** (1-6): 1. Hailar env.; 2. Baicheng; 3. Zhangwu; 4. Chifeng; 5. Dalaj-Nor lake (type locality); 6. Xilin-Gol; ***E. ch. rubrosuturale*** : 7. Inn-Shan Mts.; ***E. ch. kerulenum***, ssp. n. (8-20) : Central aimak : 8. Mant, 120 km S Ulan-Bator; 9. Baian-Dzhargalan, 30 km W from Kerulen river; 10. Kerulen river valley, Njalga env.; Suhe-Bator aimak : 11. Tumen-Tzogt (type locality); 12. 27 km S Baianterem; 13. 90 km SE Barun-Urt; 14. 9 km WSW Dariganga; 15. 10 km W Erdene-Tzagan; East aimak : 16. Choibalsan environs; 17. 30 km SSW Chojbalsan; 18. somon Chalchingol; 19. Khamar-Daba near Halh-Gol; 20. Numregin-Gol, 32 km SE Mt. Salkhit.

4. *Eodorcadion* (s. str.) *virgatum* (Motschulsky, 1854) (Fig. 4)

Dorcadion virgatum Motschulsky, 1854 : 65 ("Shangai"); Heyden, 1886 : 288 ("Pecking").

Neodorcadion virgatum, Ganglbauer, 1883 : 512 ("Mongolei, Nord-China (Peking)"); 1889 : 483; Reitter, 1897 : 178 ("Mongolei, China"); Jakovlev, 1889 : 244 ("sur le plateau montagneux qui sépare la plaine de Pékin de l'Ordos, près du village Sin-Irchja-Sagne et aux environs de la ville Koukou-Khotò"); 1901 : 151, 152 ("Mongolie : Chingan. Corée. Chine : prov. Schansi; Pékin ! Kuku-choto !"); Pic, 1901 : 67 ("Mong., Chine"); 1935 : 12 ("Hutjertugol"); Winkler, 1929 : 1199; Liu, 1934 : 636.

Neodorcadion virgatum var. *subvirgatum* Pic, 1914 : 74 ("Mongolie"); 1915 : 7.

Eodorcadion virgatum, Plavilstshikov, 1958 : 443; Lee, 1982 : 54; Chiang et al., 1985 : 100; Hua, 2002 : 206 ("Inner Mongolia, Hebei, Shanxi, Shaanxi, Zhejiang, Hunan, Guizhou"); Wang, 2003 : 303 (Heilongjiang; Jilin; Liaoning; Inner Mongolia areas : Khingan (= Ulanhot region), Hulunbuir (= Yakeshi region), Hohhot, Xilin-Gol, Ulanqab (= Jining region), Alxa (western most region including Alashan); Shaanxi; Hebei : Baoding area; Beijing; Tianjin; Shanxi; Shanghai; Hunan; Zhejiang; Mongolia; Korea).

Eodorcadion (s. str.) *virgatum*, Gressitt, 1951 : 336, 341; Breuning, 1958 : 4; 1962 : 23; Danilevsky et al., 2005 : 132-133, 147.

? *Eodorcadion consentaneum*, Wang, 2003 : 294, part.

Type locality. – North east China: "Shangai"(?) [Khingan?]. J. L.Gressitt (1951 : 341) recorded the locality as : N.China ("Shingai"). The last record was repeated by S. M. Lee (1982) as : "Shingai, North China". According to the old specimens from N. N. Plavilstshikov's collection (ZMM), which could be at disposal of V. Motschulsky, the taxon was most probably described from the area north-westwards Beijing.

Diagnosis. – Body length in males : 14-17.9 mm, in females : 17-20.5 mm; body width in males : 6-7 mm, in females : 7.4-8.3 mm; according to N. N. Plavilstshikov (1958) the length of males : 12-19 mm, females : 14-22mm.

Black or red brown; antennae in males a little shorter or a little longer than body, in females usually protruding beyond elytral middle, but do not reach apical elytral third; cicatrix indistinct; antennal joints without basal rings of white pubescence; prothorax with sharp lateral spines; pronotum with wide central longitudinal glabrous partly smooth line accompanied by longitudinal hair stripes; elytra smooth or finally carinated (especially in females), usually with a lot of similar thin hair stripes; glabrous lines between strips smooth or with distinct punctation, usually narrower than hair stripes, but sometimes partly wider; sutural stripe always absent; marginal stripe usually absent or sometimes present (for example, in certain specimens from near Beijing); each elytron usually with up to 9 stripes : three branches of internal dorsal stripe, two branches of external dorsal stripe and 4 branches of humeral stripe are usually present, but sometimes 2 marginal branches of humeral stripe are fused; sometimes pairs of dorsal stripes are also fused; or hardly divided, so external dorsal stripe and external branch of internal dorsal stripe are wide, or each of wide dorsal stripes with a hardly pronounced central glabrous line; sometimes all lines are more or less diffused; in *E. v. subvirgatum* hair stripes near suture and near elytral margin are strongly widened and partly fused; all stripes are usually yellowish, but sometimes partly white, sometimes only marginal branch of humeral stripe is white and much wider than other stripes, or all 4 portions of humeral stripe are more or less white, as well as two branches of internal dorsal line, while subsutural branch and two portions of external dorsal line are yellow; in *E. v. subvirgatum* all elytral stripes are more or less white. The species can be easily recognized by peculiar elytral design.

Distribution (Map 4). – NE China. According to B. E. Jakovlev (1889) the species is distributed on "plateau montagneux qui séparent la plaine de Pékin de l'Ordos, près du village Sin-Irchja-Sagne et aux environs de la ville Koukou-Khotò." According to N. N. Plavilstshikov (1958) the area of the species is extremely big : from China Ordos (westwards to about 108°E) along Inner Mongolia to Korean Peninsula. In China the species is distributed southwards to about 35°N. The area definitely includes five China provinces : Inner Mongolia, Shaanxi (Hua, 2002 : 206), Shanxi, Beijing, Tianjin. Several old specimens are known from Gansu. The records for Alxa area (the western most region of Inner Mongolia), as well as for Ulanhot region (Wang, 2003 : 303) needs confirmations.

The records for south China provinces (Hunan, Guizhou, Zhejiang) by Hua Li-zhong (2002) look wrong, as well as the records for Shanghai, Hunan and Zhejiang by Wang Zhicheng (2003 : 303). The species was recorded for the Korean peninsula by S. M. Lee (1982), but without any locality, with the references to old publications. One female from "Korea" (ZIN) is available. N. N. Plavilstshikov definitely recorded the species for East Mongolia (Khingan foothills), but it was not mentioned by B. Namhaidorzh in his papers and most probably the species absent in the Republic (no materials available).

E. virgatum consists of al least two subspecies : *E. v. virgatum* (Motschulsky, 1854) and *E. v. subvirgatum* (Pic, 1914).

Bionomy. – Imagoes are mostly active in July. Hua Li-Zhong (2002 : 206) listed several trees (?!) as host plants : *Populus*, *Juglans regia* and *Robinia pseudoacacia*.

Remarks. – The type locality from the original description – "Shangai" (or "Shingai", according to Gressitt, 1951) was not connected with Shanghai-city, as no *Eodorcadion* penetrates so far southwards. I do not know the type, but according to the morphology of old specimens without geographical labels from N. N. Plavilstshikov's collection (ZMM), which could be in disposal of V. Motschulsky, the taxon was most probably described from the area north-westwards Beijing.

The records of several *Eodorcadion* taxa (*E. virgatum*, *E. oryx*, *E. humerale impluviatum*) for "Hutjertugol" (Pic, 1935) are not clear. There are no localities in Mongolia or in China, where all three species could be observed.

Two females figured by Wang Zhicheng (2003) under the name "*E. consentaneum*" are most probably *E. virgatum*.

4a. *Eodorcadion* (s. str.) *virgatum virgatum* (Motschulsky, 1854) (Fig. 4a)

Dorcadion virgatum Motschulsky, 1854 : 65 ("Shangai"); Heyden, 1886 : 288 ("Pecking").

Neodorcadion virgatum, Ganglbauer, 1883 : 512 ("Mongolei, Nord-China (Peking)"); Reitter, 1897 : 178 ("Mongolei, China"); Jakovlev, 1889 : 244 ("sur le plateau montagneux qui sépare la plaine de Pékin de l'Ordos, près du village Sin-Irchja-Sagne et aux environs de la ville Koukou-Khotò"); 1901 : 151, 152 ("Mongolie : Chingan. Corée. Chine : prov. Schan-si; Pékin ! Kuku-choto!"); Pic, 1901 : 67 ("Mong., Chine"); 1935 : 12 ("Hutjertugol"); Winkler, 1929 : 1199, part.; Liu, 1934 : 636.

Eodorcadion virgatum, Plavilstshikov, 1958 : 443, part; Lee, 1982 : 54; Hua, 2002 : 206 ("Inner Mongolia, Hebei, Shanxi, Shaanxi, Zhejiang, Hunan, Guizhou"), part.; Chiang et al., 1985 : 100.

Eodorcadion (s. str.) *virgatum*, Gressitt, 1951 : 336, 341, part.; Breuning, 1958 : 4, part.; 1962 : 23, part.; Danilevsky et al., 2005 : 132-133, 147.

? *Eodorcadion consentaneum*, Wang, 2003 : 294 (Inner Mongolia : Tongliao,Xilin-Gol), part.

Type locality. – North east China : "Shangai"(?). J. L.Gressitt (1951 : 341) recorded the type locality as : N.China ("Shingai"). The last record was repeated by S. M. Lee (1982) as : "Shingai, North China". Possibly it simply means Khingan ?

Diagnosis. – Body length in males : 14-17.9 mm, in females: 17-20.5 mm; body width in male : 6-7 mm, in females : 7.4-8.3 mm.

Body relatively wider; hair elytral stripes usually narrow and very regular; each elytron usually with up to 9 stripes; subsutural branch of internal dorsal stripe is always complete, internal dorsal stripe is usually divided in two, external dorsal stripe is represented by three branches, humeral stripe is usually divided in 4 branches, but sometimes in 3; sometimes pairs of dorsal stripes are also fused; or hardly divided, so external dorsal stripe and external branch of internal dorsal stripe are wide, or each of wide dorsal stripes with a hardly pronounced central glabrous line; sometimes all lines are more or less diffused; all stripes are usually yellowish, but sometimes partly white, sometimes only marginal portion of humeral stripe is white and much wider than other stripes, or all 4 portions of humeral stripe are more or less white, as well as two branches of internal dorsal stripe, while subsutural branch and two other branches of external dorsal line are yellow.

Distribution (Map 4; localities 1-11). – NE China : east part of Inner Mongolia, north Gansu, Shanxi and further eastwards to Korean Peninsula. In North China the species is distributed southwards to about 35°N. The species is known from Korea. It was mentioned for the peninsula by S. M. Lee (1982), but without any locality, with the references to old publications. One female from "Korea" (ZIN) is available.

Several known localities from China are : Beijing env.-(SK, MNHP); Inner Mongolia : Zhangjiakou (= Kalgan)-(MAK, DEI, MD, Breuning, 1962); Hohhot (= Kuku-hoto)-(Breuning, 1962); southwards Dalaj-Nor-(ZIN); Inn-Shan-(DEI); Tongliao (Wang, 2003 : 294, as "*E. consentaneum*"); Xilin-Gol (Wang, 2003 : 294, as "*E. consentaneum*"); Shanxi : Datong environs -(MD); "Fan-sze-U-Taï (?)-(NMP); Hebei : Kangzhuang-(MD); Chengde-(MNHP); Gansu-(SMTD) : "Tukiang"-(NMV), according to the supposition by Mr. Fengbo (Chongqing, China – private message, 2005) it is Gulang near Wuwei. Several localities were originally added by J. L. Gressitt (1951) : "Hopei (Tientzin); Chahar (Yangkiaping, Chilankow)".

Materials. – 1 male, China, "Kalgan, Mong."-(MAK); 1 male, 2 females with same label -(NMP); 1 male, 1 female with same label-(MD); 2 males, 1 female, China, "Kalgan, Mong., coll. Winkler"-(DEI); 4 males, 6 females, China, "Inn Shan, Mongol."-(DEI); 1 male with same label-(ZIN); 1 male with same label-(MD); 1 female with same label-(NMP); 1 male with same label-(NMV); 2 males, 2 females with same label-(SK); 1 male, China, "Shi-wan-tze[?], Hiu-mou, Kiang-Keou"-(DEI); 1 male with same label-(ZIN); 3 males, 1 female with same label-(NMV); 1 female with same label-(NMP); 1 male, China, "Shi-wan-tsze, 1167 m, VI.VII."-(NHM); 1 male, China, "Shi-wan-tsze"-(NHV); 1 female, China, "Tientzin [= Tianjin], Raffray"(DEI); 1 male, China, "Tientzin"-(NMV); 1 male, 1 female, "Shohchow, Shansi, China"-(NMP); 4 males, 1 female, "Kansu, Tukiang [Gulang near Wuwei ?]"-(NMV); 1 male, China, "Ransont, 1801"- (HNHM); 3 males (with diffused elytral stripes), each with two labels, (1)"Jehol"[= Chengde], (2)"Nord Pekin, A. David 1865"-(MNHP); 1 female, ["near Pekin, VII.1916"] [in Russian]-(ZIN); 1 male, 2 females, "Peking"-(ZIN); 1 female, ["Central Mongolia, 1.VIII.1882, Potanin *leg*."] [in Russian]-(ZIN); 1 male, 2 female, "Shansi, Potanin, 1884"-(ZIN); 1 male, ["steppe before Dovnor (? = Dalaj-Nor), 10-11.VII.1887, Garnak *leg*."] [in Russian}-(ZIN); 1 male, "Fan-sze-U-tai, nord Shansi, VII.1936"-(NMP); 2 females (with diffused elytral stripes), "Nord-Kansu, 1939, M. Beich *leg*."-(SMTD); 2 males, 1 female, "China bor., Kangzhuang [about 80 km NW Beijing] 2.VII.1990, R. Cervenka *leg*."-(MD); 1 male, 1 female, "Shansi, Shen-tu, VI-IX.1991"-(SK); 3 males, 1 female, China, Shanxi, Datong environs, 14-15.VII.2000, E. Kucera *leg*.-(MD); 1 male, China, Shanxi, Hunyuan (about 60 km southwards Datong), 16-18.VII.2000, E. Kucera *leg*.-(MD); 1 female, "Korea"-(ZIN); 1 female, "Transcapia, Aschabad, 6.VI.[19]06, A. Lebdev *leg*., [wrong label]-(NMP).

Remark. – Two females figured by Wang Zhicheng (2003) under the name "*E. consentaneum*" are most probably *E. virgatum* (a male is a real *E. consentaneum* from Mongolia). Two localities of such "*E. consentaneum*" are recorded - Inner Mongolia : Tongliao and Xilin-Gol.

4b. *Eodorcadion* (s.str.) *virgatum subvirgatum* (Pic, 1914) (Fig. 4b)

Neodorcadion virgatum var. *subvirgatum* Pic, 1914 : 74 ("Mongolie"); 1915 : 7.

Neodorcadion virgatum a. *subvirgatumm*, Winkler, 1929 : 1199; Gressitt, 1951 : 341 ("S. Mongolia").

Eodorcadion (s. str.) *virgatum* m. *subvirgatum*, Breuning, 1958 : 4; 1962 : 23.

Eodorcadion virgatum ab. *subvirgatum*, Plavilstshikov, 1958 : 443; Hua, 2002 : 206.

Type locality. – China, Ordos – according to the syntype labels (Map 4; locality 12).

Diagnosis. – Body length in males : 15,5-20 mm, females : 21.3-23 mm; body width in males : 6.4-7,5 mm, in females : 8.2-9 mm.

Body relatively narrow; all hair elytral stripes more or less white; elytral stripes near suture and near elytral margin are strongly widened and partly fused; often (Fig. 4b-7) subsutural branch of internal dorsal stripe and both other branches of internal dorsal stripe are independent, but widened; both branches of external dorsal stripes are narrow; two external branches of humeral stripe are widened and fused forming very wide humeral line, two other internal branches of humeral stripe more or less independent, but very narrow; or (Fig. 4b-8) all branches of internal dorsal stripe are totally fused forming wide subsutural white area, both branches of external dorsal stripe are independent and relatively narrow, all branches of humeral stripe are also fused forming very wide humeral white area.

Distribution (Map 4; locality 12). – China, Ordos, known from the right bank of Huang He river.

Materials. – 10 syntypes : 6 males, 3 females, each with two labels : (1)"Ordos, Mongol.", (2)"var. *subvirgatum* Pic"[Pic's hand] and 1 female with two labels : (1)"Ordos, Mongol.", (2)"*N. virgatum subvirgatum*" [Pic's hand]-(MNHP); 1 male "Ordos", "75574" - number from Potanin's handwritten note-book preserved in Zoological Museum in Sankt-Petersburg correponds to second half of july 1884 : medows along right bank of Huang He river-(ZIN).

Map 4. Localities of ***E. virgatum*** : China. ***E. v. virgatum*** (1-11) : 1. Chengde; 2. Tientzin [= Tianjin]; 3. Kangzhuang; 4. Datong environs; 5. Zhangjiakou (= Kalgan); 6. Hohhot environs; 7. Inn-Shan; 8. North Gansu, Wuwei environs (Tukiang); 9. Southwards Dalaj-Nor lake; 10. Tongliao; 11. Xilin-Gol; ***E. v. subvirgatum*** : 12. Ordos.

5. *Eodorcadion* (s.str.) *darigangense* Heyrovsky, 1967 (Fig. 5)

Eodorcadion darigangense Heyrovsky, 1967 : 104 ("somon Dariganga").

? *Eodorcadion darigaugense*, Wang, 2003 : 294, wrong spelling.

Type locality. – Mongolia : Dariganga environs (Map 5; photo 10) in Suhe-Bator aimak - according to the original description.

Diagnosis. – Body length in males : 12.5-16.5 mm, in females : 16.8-18.2 mm; body width in males : 4.8-6.2 mm, in females : 6-6.9 mm.

Black; antennae in males a little longer or a little shorter than body, in females – protruding up to the apical elytral forth; cicatrix indistinct; antennal joints with basal rings of rather sparse white pubescence; prothorax with narrow central glabrous line, which is usually partly smooth, accompanied by two white narrow hair stripes; lateral spines moderately long; elytra smooth, with narrow whitish hair stripes and more or less dense fine scattered pubescence in between; sutural stripe absent; narrow marginal stripe present; humeral, external dorsal stripes and two branches (including subsutural) of internal dorsal stripe usually complete and similar narrow (Fig.5-1); or humeral and internal branch of internal dorsal stripes wider than others; usually additional very narrow stripes present between two dorsal stripes and between humeral and external dorsal stripes; so maximal number of longitudinal elytral stripe is 7 (marginal, humeral, external dorsal, two branches of internal dorsal and two additional stripes); very rare additional stripes almost totally absent (Fig. 5-3); sometimes subsutural branch is reduced to a short stroke near scutellum; very rare elytral pubescence is strongly developed and elytra look white-yellowish, while elytral stripes are diffused (Fig. 5-2). The species is characterized by peculiar elytral design; it differs from other species of the region with smooth elytra by black cuticle; in *E. carinatum* or in *E. chinganicum* body is red-brown or black-brown.

Distribution (Map 5). – South-East Mongolia. All three known localities are situated in Suhe-Bator aimak in the nearest environs of somon Dariganga (Photo. 10)-(Heyrovsky, 1967; HNHM, MD).

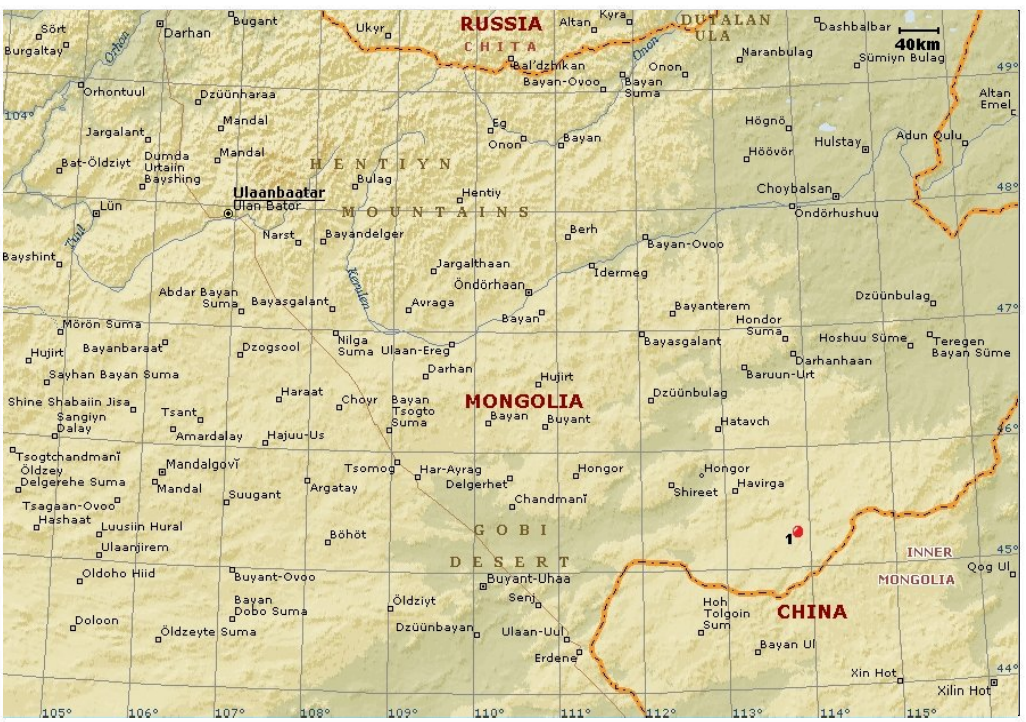
Bionomy. – According to my materials, imagoes are active in July and totally disappear in August. My own specimen was found in the plain landscape with numerous spots of Lasiagrostis not far from sandy dunes at the bank of a small lake westwards Dariganga. The species is definitely sympatric with *E. (O.) exaratum exaratum*, sens.n., which is active in August, when imagoes of *E. darigangense* are mostly dead. According to the available labels of *E. chinganicum kerulenum*, ssp. n. it can be also sympatric with *E. darigangense*. So, *E. darigangense* belong to an independent group of species.

Materials. – Holotype, male (represented by elytra only), "Mongolia, Suchebaator Aimak: Somon Dariganga, 1150 m, 5.VIII.1965, exp. Dr. Z. Kaszab"-(HNHM); 5 males and 1 female, Suhe-Bator aimak, Dariganga env., Duut-Nuur, 20.VII.1985, Ulykpan *leg*.-(MD); 1 male with same label-(JV); 1 male and 1 female, Dariganga env., Zeget-Nur, 20.VII.1985, Ulykpan *leg*. -(MD); 1 male and a pair of male elytra, 2 km W Dariganga, 1230 m, 45°18'N, 113°49'E, 14-15.VIII.2002, M. Danilevsky *leg*.-(MD).

Remarks. – The identification of my series of the species was proved by the comparison with holotype. The original description of the species was based on elytra (9 mm long) only.

The taxon, which was recorded by B. Namhaidorzh (1976) as "*E. darigangense*", was in fact *E. chinganicum kerulenum*, ssp. n. The distinguishing characters described by B. Namhaidorzh for his "*E. darigangense*" were just the differences between nominative form of *E. chinganicum* and *E. chinganicum kerulenum*, ssp. n. That is why he supposed : that *E. darigangense* and *E. chinganicum* both "are possibly geographical forms of one species".

The species looks to be very close (or possibly conspecific?) to rather distant Chinese *E. mandschukuoense*, which is not known good enough. A single known specimen of *E. mandschukuoense* (male-holotype) has rather special shape of body – too narrow and strongly narrowed posteriorly (fig. 6). The relations between *E. darigangense* and *E. mandschukuoense* need investigations of China specimens. Two females (designated as male and female) were figured by Wang Zhicheng (2003 : 294) as "*E. darigaugense*" from Inner Mongolia (Kailu) and Jilin (Baicheng). I have preliminary identified both as *E. mandschukuoense*, though the first one has elytral design of *E. chinganicum chinganicum*.



Map 5. Locality of ***E. darigangense*** : Mongolia. 1. Dariganga env.

6 *Eodorcadion* (s. str.) *mandschukuoense* (Breuning, 1944) (Fig. 6)

Neodorcadion mandschukuoense Breuning, 1944 : 15 ("Mandchourie: Moukden").

Eodorcadion (*Ornatodorcadion* ?) *mandschukuoense*, Gressitt, 1951 : 344.

Eodorcadion (*Ornatodorcadion*) *mandschukuoense*, Breuning, 1958 : 4; 1962 : 25.

Eodorcadion jilinense Chiang, 1983 (= *mandschukuoense* Breun.); Hua, 2002 : 206 (= *mandschukuoense* Breun.; "Jilin"); Wang, 2003 : 304 (= *mandschukuoense* Breun.; North-East China), part.

Eodorcadion mandschukuoense, Dessart, 1983 : 319 (= *jilinense* Chiang, 1983).

? *Eodorcadion darigaugense*, Wang, 2003 : 294 (Inner Mongolia, Kailu; Jilin, Baicheng), incorrect wrong spelling, part.

Type locality. – China – Liaoning : Shenyang (Mukden), according to the original description.

Diagnosis. – Only holotype, male known; body length : 13.9 mm, body width : 4.9 mm.

Black, rather narrow, strongly narrowed posteriorly; antennae in males must be a little longer than body (in holotype apical joints missing); cicatrix indistinct; antennal joints with basal rings of rather sparse white pubescence; prothorax with narrow central glabrous line, which is usually partly smooth, accompanied by two white narrow hair stripes; lateral spines long and sharp; elytra without carinae, but not quite smooth with fine distinct sculpture; with very bright longitudinal white narrow stripes; each elytron with 4 complete longitudinal stripes: very narrow marginal stripe along epipleurae, very wide humeral stripe, moderately wide internal dorsal stripe and very narrow shortened subsutural stripe; sutural stripe absent; between humeral and dorsal stripes numerous short strokes of reduced stripes present; elytra between stripes with regularly scattered white setae. The species is characterized by peculiar elytral design. In *E. virgatum*, which also has a lot of elytral pale stripe, body much wider, elytral cuticle distinctly smooth and shining. In *E. chinganicum* with similar elytral design body and elytra red-brown (as well as usually in *E. virgatum*).

Distribution (Map 6). – North-East China; holotype was collected in Liaoning near Shenyang (Mukden); 1 preliminary attribute to the species two females figured by Wang Zhicheng (2003 : 294) as male and female of *E. darigangense* from Inner Mongolia (Kailu) and Jilin (Baicheng).

Map 6. Localities of ***E. mandschukuoense*** : China. 1. Shenyang (Mukden); 2. Kailu; 3. Baicheng.

Materials. – 1 male, holotype with 5 labels : "holotype" [red], "Mukden, Mandschourie", "*Neodorcadion mandschukuoense* mihi Typ det. Breuning" [Breuning's hand], "*Eodorcadion (Ornatodorcadion) mandschukuoense* Br. P. Lepesme det." "Coll. Lepesme 2002 Museum de Lyon"-(MHNL).

Remarks. – According to the available labels, the species seems to be sympatric with *E. virgatum virgatum* and *E. chinganicum chinganicum*. It looks to be very close (or possibly conspecific?) to rather distant Mongolian *E. darigangense*, but all known *E. darigangense* are wider and regularly oval. The relations between *E. darigangense* and *E. mandschukuoense* need investigations of more China specimens. Two females (designated as male and female) were figured by Wang Zhicheng (2003 : 294) as "*E. darigaugense*" from Inner Mongolia (Kailu) and Jilin (Baicheng). I have preliminary identified both as *E. mandschukuoense*, though the first one has elytral design more similar to *E. chinganicum chinganicum*.

7. *Eodorcadion* (s. str.) *gansuense* (Breuning, 1943) (Fig. 7)

Neodorcadion gansuense Breuning, 1943 : 99 ["province du Kan-Sou (monts Richthofen, Liangchov)"].

Eodorcadion (Ornatodorcadion) gansuense, Gressitt, 1951 : 337, 342; Breuning, 1958 : 4; 1962 : 26.

Eodorcadion gansuense, Hua, 2002 : 206.

Type locality. – China, North Gansu : Wuwei (= Liangzhou) environs (easternmost part of Qilian Shan mountains) – according to the original description (Map 7).

Diagnosis. – Body length in male : 16.9 mm, in female : 19 mm; body width in male : 6.8 mm, in female : 8.1 mm.

Black, female slightly reddish; antennae with black basal joint in male and in female [reddish apical parts of antennae in both known specimens seem to be getting from another species. It was specially mentioned in the original description : "Les antennes cassées chez les deux individus que je connais"]; cicatrix indistinct; prothorax with moderately long lateral spines; pronotum with indistinct glabrous central line; elytra with rough punctation; with numerous roughly sculptured partly irregular carinae with dense grey (male) or grey-yellowish (female) pubescence in between; each elytron in male with 6 carinae between suture and humeral carinae, with a less pronounced carina along curved elytral margin; dorsal internal carinae are represented only near elytral base; two central carinae are more distinct; each elytron in female with 7 carinae between suture and humeral carinae, two pairs of central carinae are strongly shortened.

The species seems to be close to *E.* (s. str.) *shanxiense*, sp. n., but pronotum without distinct glabrous line; elytral carinae much stronger; elytra roughly sculptured. Another species with strongly carinated elytra - *E.* (s. str.) *multicarinatum*, has reddish wider body with scattered pubescence.

Distribution (Map 7). – China, North Gansu, only one locality known : Wuwei (= Liangzhou) environs (easternmost part of Qilian Shan mountains).

Materials. – 1 male, holotype with 5 labels : "holotype" [red], "Kansu sept., Liangchow, Richthof mont.", "*Neodorcadion gansuense* mihi Typ det. Breuning" [Breuning's hand], "*Eodorcadion (Ornatodorcadion) gansuense* Br., P. Lepesme det." "Coll. Lepesme 2002 Museum de Lyon"-(MHNL); 1 female, paratype with 4 labels : "allotype" [red], "Kansu sept. Liangchow, Richthof mont.", "*Neodorcadion gansuense* mihi Paratyp det. Breuning" [Breuning's hand], "Coll. Lepesme 2002 Museum de Lyon"-(MHNL).

Remarks. – Sometimes *E*. (s. str.) *glaucopterum* was wrongly identified as "*E. gansuense*" because of same type locality, but *E*. (s.str.) *glaucopterum* never has carinated elytra. A female (Fig. 13-10) from F. Tippman's collection (NMNH) designated as paratype of *Neodorcadion gansuense* does not belong to the type series. It was clearly mentioned in the original description that only two similar specimens (male and female) were available. More over that female belong to another species – *E. glaucopterum*. Holotype (male) and paratype (female) of *N. gansuense* from P. Lepesme's collection (MHNL) are totally fitting to the original descripion. According to available labels and published type localities, the species is sympatric with *E*. (s. str.) *glaucopterum*, *E*. (s. str.) *multicarinatum*, *E*. (s. str.) *sifanicum*.

Map 7. Locality of ***E. gansuense*** : China. 1. Wuwei (= Liangzhou) environs.

8. *Eodorcadion* (s. str.) *shanxiense*, sp. n. (Fig. 8)

Type locality. – China, Shanxi, Yuangping [= Yuanping] environs between Datong and Taiyuan (Map 8).

Description. – Only males are known; body length : 14-14.1 mm; body width : 5.8-5.9 mm.

The species is close to *E. gansuense*. Body dark brown; antennae a little longer than body; cicatrix distinct; thoracic spines relatively short; central pronotal glabrous area wide, with very rough irregular sculpture, without smooth areas, roughly sculptured, delimited by two narrow pale hair stripes; each elytron with 7 very fine oblique carinae with narrow yellowish stripes in between, or two pairs of narrow dorsal stripes partly whitish; humeral carinae obliterated; dorsal carinae smooth, without punctation; marginal stripes wide and dense, epipleurae also covered with pubescence; sutural stripe absent; subsutural stripe complete and rather wide, about as wide as humeral stripe; 7 regu-

lar oblique narrow elytral stripes of each elytron fused apically with subsutural branch. In *E. gansuense* pronotum without glabrous line; elytral carinae much stronger; elytra roughly sculptured. From the first view *E. shanxiense* is similar to small *E. virgatum*, but in *E. virgatum* elytral carinae usually totally indistinct, glabrous pronotal line with smooth areas, elytral stripes never so oblique; subsutural stripe usually as wide as dorsal stripes; marginal stripes usually absent.

Distribution (Map 8). – Only one population is known : China, Shanxi, Yuangping [Yuanping] environs (between Datong and Taiyuan).

Bionomy. – Imagoes are active in July.

Materials. – Holotype, male, China, Shanxi, Yuangping environs (between Datong and Taiyuan), 10-11.VII.2000, E. Kuçera *leg*.-(MD); 1 male, paratype with same label-(MD).

Map 8. Locality of ***E. shanxiense*** : China. 1. Yuangping.

9. *Eodorcadion* (s. str.) *multicarinatum* (Breuning, 1943) (Fig. 9)

Neodorcadion multicarinatum Breuning, 1943 : 99 ("province du Kan-Sou").

Eodorcadion (Ornatodorcadion) multicarinatum, Gressitt, 195 : 337, 344; Breuning, 1958 : 4; 1962 : 29 ("Provinz Kansu ...- Tu-Kiang").

Eodorcadion multicarinatum, Hua, 2002 : 206 ("Gansu").

Type locality. – China, Gansu province, Tu-Kiang (according to the original description and to the labels of old specimens, designated by S. Breuning as «paratypes» after publishing of the original description). I do not know such locality, but according to the supposition by Mr. Fengbo (Chongqing, China – private message, 2005) it is Gulang near Wuwei.

Diagnosis. – Body length in males : 14.5-16.5 mm, in a female : 12.8 mm; body width in males : 5.8-6.7 mm, in a female : 6.4 mm. According to the original description body length of the species : 16-18 mm, width : 7-8 mm.

Red-brown or nearly black; male antennae much longer than body or a little longer than body, in female antennae reaching posterior elytral fourth; cicatrix distinct; antennal joints with pale basal hair rings; prothorax with sharp and narrow lateral spines; pronotum with roughly sculptured wide central line, with glabrous posterior tubercle; with a pair of central hair stripes; elytra roughly sculptutred with very distinct longitudinal carinae, covered with sparse pale pubescence; all elytral carinae are more or less equally developed and rather numerous – about 9 between suture and humeral pale stripe; several carinae are partly fused before schoulders and obliterated, but go to about elytral apex, with more rough sculpture; internal dorsal carinae are shortened, so internal pair of carinae goes to about elytral middle; wide area along sutuire not carinated, densely covered with pale hairs; humeral hair stripe is more or less distinct; curved elytral margin also covered with pale pubescence (including epipleurae), but without distinct stripe, with distinct central longitudinal carina; humeral carinae obliterated; suture a little elevated. The species differs from two other *Eodorcadion* with similar elytral carinae : *E. gansuense* and *E. shanxiense* by red-brown body. It differs from close *E. oligocarinatum* sp. n. by numerous dorsal carinae, which are more or less equally developed, while in *E. oligocarinatum* sp. n. two or three dorsal elytral carinae are strongly exposed.

Distribution (Map 9). – China - according to the available data the area must be rather big from Qinghai to Gansu and to Shanxi; known localities are : Gansu province, "Tu-Kiang" (NMNH, Breuning, 1962), according to the supposition by Mr. Fengbo (Chongqing, China – private message, 2005) it is Gulang near Wuwei; Lanzhow-(MHNL); Shanxi province, Xian-(MD); Qinghai prov., Tchejbsen-(according to V. L. Komarov, 1920 : 38, it is south slope of South Datong ridge (= Daban Shan); the locality is shown on the map, about 40 km NE Xining – see Przhevalsky, 1883, 1948)-(ZIN).

Map 9. Localities of ***E. multicarinatum*** : China. 1. Gulang (? type locality); 2. Lanzhou env.; 3. Luliang-Shan, Xian; 4. Tchejbsen, about 80km NE Xining.

Bionomy. – Imagoes are active in May.

Materials. – 1 male with 3 labels : (1)"Holotype"[red]; (2)"*Neodorcadion multicarinatum*, mihi, Typ, det. Breuning"; (3)"Kansu, China"-(MHNL); 1 male with 3 labels : (1) "Paratypes"[red]; (2)"*Eodorcadion multicarinatum*, mihi, Breuning det."; (3)"Lanchoufu, Kansu"-(MHNL); 1 female with 3 labels : (1)"Paratypes"[red]; (2)"*Eodorcadion multicarinatum*, mihi, Breuning det."; (3)"Kansu, Tukiang [near Wuwei]"-(MHNL); 1 male designated as "paratype", China, "Kansu, Tu-Kiang" – F. Tippmann's collection-(NMNH); 3 males, Qinghai prov., ["N17766 Tchejbsen, north Gansu, VII.1873 (the date is wrong, according to V. L. Komarov, 1920 : 38, N. M. Przhevalksy was near Tchejbsen in July 1872), Przhevalsky *leg*."] [in Russian]-(ZIN); 1 male, China, Shanxi province, L[uliang]-Shan, Xian, 1000 m, V.1997-(MD).

Remark. – The label of a male designated as "paratype" in F. Tippmann's collection (NMNH) was not published in the original description, but was published by S. Breuning (1962) much later (just as in the case with "paratype" of "*E. gansuense*" from same collection). According to its type locality the species can be sympatric with *E.* (s. str.) *glaucopterum*, *E.* (s. str.) *gansuense*, *E.* (s. str.) *sifanicum*.

10. *Eodorcadion* (s. str.) *oligocarinatum*, sp. n. (Fig. 10)

Type locality. – China, Shanxi province, Zhongtiao mountains (Zhongtiao Shan), Yongji, 111°27´E, 34°80´N (Map 10) - the south most point of the province.

Diagnosis. – body length in males : 15.1-17.4 mm, width : 5.8-6.7 mm; body length in females : 19.5-20 mm; width : 8-8.3mm.

Red-brown or nearly black; antennae in male a little longer than body, in females – a little shorter; cicatrix distinct; antennal joints with pale basal hair rings; prothorax with sharp and narrow lateral spines; pronotum with roughly sculptured wide central line, with glabrous posterior tubercle; a pair of central hair stripes more or less distinct; elytra roughly sculptutred with very distinct longitudinal carinae, covered with sparse pale pubescence; each elytron in male with three strongly exposed longitudinal carinae between suture and pale humeral stripe: two dorsal and one subhumeral; in female two dorsal carinae are also well developped, a very fine additional carina is hardly visible between dorsal carinae; subhumeral carinae in female is represented by two longitudinal glabrous lines, which are hardly exposed; elytral areas between carinae in males with much more rough punctation than in female; curved elytral margin with distinct central longitudinal carina; humeral carinae obliterated; suture a little elevated. The new species differs from close *E. multicarinatum* by strongly exposed two or tree dorsal elytral carinae, while in *E. multicarinatum* numerous dorsal carinae are more or less equally developed.

Distribution (Map 10). – China - Shanxi province, Zhongtiao mountains (Zhongtiao Shan), Yongji, 111°27´E, 34°80´N (type locality).

Materials. – 1 male, holotype, China, Shanxi province, Zhongtiao mountains (Zhongtiao Shan), Yongji, 111°27´E, 34°80´N [the south most point of the province], 23-25.V.2001, E. Kuçera *leg*.-(MD); 11 paratypes : 1 female with same label-(MD); 4 males and 3 females with same label -(collection E. Kucera); 1 male, 1 female with same label - (SK); 1 female with same label-(PR).

Map 10. Locality of ***E. oligocarinatum*** sp.n. : China. 1. Yongji.

11. *Eodorcadion* (s. str.) *sifanicum* (Suvorov, 1912) (Fig. 11)

Neodorcadion sifanicum Suvorov, 1912 : 74 ("Ljan-tshou"); Heyrovsky, 1939 : 28; Winkler, 1929 : 1200.

Eodorcadion (Ornatodorcadion) sifanicum, Gressitt, 337, 345; Breuning, 1958 : 4; 1962 : 30.

Eodorcadion (s. str.) *sifanicum*, Danilevsky et al., 2005 : 132-133, 147.

Eodorcadion sifanicum, Hua, 2002 : 206 ("Inner Mongolia, Siberia").

Type locality. – China, Central Gansu : Lanzhou environs – according to the original description.

Diagnosis. – Body length in males : 13-15.5 mm, in females : 14.8-16.4 mm; body width in males : 5-6.5 mm, in females : 6.5-7 mm.

Black, rather wide, covered with grey pubescence; antennae in males considerably longer than body, protruding beyond elytral apex with about 3 apical joints, in females – a little shorter than body; cicatrix indistinct; antennal joints without pale basal rings; prothorax with long and narrow lateral spines in males, in females lateral spines wide, conical; pronotum with a pair of distinct central tubercles, with very narrow central glabrous line in between, which often nearly absent, being represented by several shining granules; elytra flat, always with very high humeral and internal dorsal carinae; humeral carinae wide, with very rough sculpture; external dorsal carinae less pronounced, sometimes totally absent; suture more or less exposed; curved elytral margin (including epipleurae) covered with same greyish pubescence as dorsal elytral surface.

The species can be easily distinguished from all other species of the genus because of peculiar elytral sculpture.

Distribution (Map 11). – China, North and Central Gansu. Known localities are : Lanzhou – type locality; Wuwei-(NMP); Zhangye environs, Qilian Shan-(MD); Yuzhong envirions, Mt. Xinglong-(MD). The record for Inner Mongolia (Hua, 2002 : 206) needs confirmation. The record for "Siberia" (Hua, 2002 : 206) is wrong.

Bionomy. – According to available labels, the species prefers very high biotopes, up to 4500 m above the level of the sea. Imagoes are active in June.

Materials. – 2 males, 2 females, China, NW Gansu, Zhangye environs [Qilian Shan], 4495 m, Peng *leg*.-(MD); 2 males, 1 female, China, "Kansu sept, Liangchow [= Wuwei]"-(NMP); 1 male, 1 female with same label-(NMNH); 2 females with same label(MHNL); 7 males, 3 females, China, Gansu, Yuzhan (= Yuzhong), Mt. Xinglong, 3500 m, VI.2000-(MD).

Remark. – The taxon was described on the base of a single male collected by P. K. Kozlov's expedition on 27.7.1908. According to its type locality the species can be sympatric with *E. glaucopterum*, *E. multicarinatum*, *E. gansuense*.

Map 11. Localities of ***E. sifanicum*** : China. 1. Lanzhow, type-locality; 2. Wuwei (= Liangzhou) environs; 3. Zhangye; 4. Yuzhong, Mt. Xinglong.

12. *Eodorcadion* (s. str.) *sinicum* Breuning, 1948 (Fig. 12)

Eodorcadion (Ornatodorcadion) sinicum Breuning, 1948 : 57 ("Chine boréale"); 1958 : 4; 1962 : 26.

Eodorcadion sinicum, Hua, 2002 : 206 ("N. China").

Type locality. – China, north-east part of the country (according to the morphology of the holotype).

Diagnosis. – Only male-holotype is known: body length : 14 mm, body width : 5.5 mm.

Body short and wide, black, covered with dense whitish and brownish pubescence; vertex with a pair of wide, contrast, whitish stripes; antennae black, a little longer than body, cicatrix distinct, antennal joints (3^{rd}–10^{th}) with very narrow pale basal hair rings; thorax anteriorly wider, than posteriorly, a little shorter than basal width; lateral thoracic spines wide but acute; pronotum with deep irregular punctation, without glabrous lines or tibercles; with a pair of of narrow contrast whitish hair stripes; scutellum wide, with wide central glabrous shining line and brownish-grey pubescent lateral areas; elytra wide-oval, about 1.4 times longer than wide, widest near middle; elytral carinae absent; suture is not prominent; humeral margin obliterated; suture glabrous; each elytron with 6 longitudinal hair stripes (typical for certain specimens of *E. glaucopterum*) delimited by black glabrous lines: three whitish stripes (two dorsal and humeral) and three yellowish stripes (wide subsutural, narrow stripe between dorsal whitish stripes and narrow stripe between humeral and external dorsal stripe, which is divided in two branches by glabrous line; each of two whitish dorsal elytral stripes is also divided by glabrous line along middle; erect elytral setae absent.

Distribution. – According to the morphology of the holotype, it was collected in North-East China.

Materials. – Only holotype male is known – the specimen without geographical label (NMNH).

Remark. – The species is close to *E. shanxiense*, sp. n. so undoubtedly its location is situated in North-East China.

13. *Eodorcadion* (s. str.) *glaucopterum* (Ganglbauer, 1883) (Fig. 13)

Neodorcadion glaucopterum Ganglbauer, 1883 : 511 ("Nord-China"); 1889 : 483 ("Amur"); Frivaldsky, 1892 : 118 ("Inter fluvium Ta-tung-ho[= Datong-He] et Lantschou-fu [= Lanzhou, see Schütze, Kleinfeld, 1995 : 85]"); Reitter, 1897 : 177 ("Nord China"); Jakovlev, 1901 : 149, part.; Pic, 1901 : 67 ("Amour., Chine"), part.; Winkler, 1929 : 1199, part.

Neodorcadion przewalskyi Jakovlev, 1887 : 317 ("Zaïdam Oriental et au pied des monts Bourkhane-Boudda"); 190 : 71; 1901 : 151, 153, part. ("Zajdam orient.; défilé de Mudshik, à l'E du lac Kuku-nor."); Pic, 1901 : 68 ("Asie Cle"); Winkler, 1929 : 1199, part.

Neodorcadion przewalskyi v. *atrata* Jakovlev, 1901 : 153.

Neodorcadion albescens Breuning, 1943 : 99, ["province du Kan-Sou (monts Richthofen, 3000 m.)"], **syn. n.**

Eodorcadion (Ornatodorcadion) annulicorne Breuning, 1947a : 142 ("province du Kansou, Monts Richthofen, Kulang [= Gulang]"), **syn. n.**; 1958 : 4, part.; 1962 : 29, part.

Eodorcadion (Ornatodorcadion) grisescens Breuning, 1947a : 142 ("Chansi"), **syn. n.**; 1958 : 4, part.; 1962 : 29, part.

Eodorcadion (Ornatodorcadion) glaucopterum m. *albovestitum* Breuning, 1947b : 171 ("Lanchow-fu [= Lanzhou], province du Kansu"), unavailable name.

Eodorcadion (Ornatodorcadion) glaucopterum m. *subdenudatum* Breuning, 1947b : 171 ("Lanchow-fu [= Lanzhou], province du Kansu"), unavailable name.

Eodorcadion (Ornatodorcadion) glaucopterum, Gressitt, 1951 : 337, 343, part. (= *przewalskyi* Jakovlev, 1887); Breuning, 1958 : 4, part.; 1962: 27, part.

Eodorcadion (Ornatodorcadion) albescens, Gressitt, 1951 : 337, 342, part. Breuning, 1958 : 4, part.; 1962 : 28, part.

Eodorcadion przewalskyi, Plavilstshikov, 1958 : 416, part.

Eodorcadion glaucopterum, Plavilstshikov, 1958 : 446, part.; Hua, 2002 : 206, part.; Wang, 2003 : 295 (Jilin, Inner Mongolia, Gansu, Qinghai; Siberia).

Eodorcadion albescens, Hua, 2002 : 206, part.

Eodorcadion grisescens, Hua, 2002 : 206 («Shanxi»), part.

Eodorcadion annulicornis, Hua, 2002 : 206, part.

Eodorcadion (s. str.) *glaucopterum*, Danilevsky et al., 2005 : 132-133, 147.

Type locality. – China, Qinghai province, Datong river valley. The taxon was described from "Nord-China" without more precise data, but one of available syntypes (HNHM) was collected in Datong river valley (Qinghai) – south part of Qilian Shan ridge.

Diagnosis. – Body length in males : 10.7-18.5 mm, in females :15.6-21.5 mm; body width in males : 4.5-7.1 mm, in females : 6.9-8.5 mm.

Body black; usually covered with very dense grey or yellowish pubescence and strong short erected setae; elytra smooth, sometimes with two dorsal hardly developed carinae; usually covered with very dense unicolored grayish pubescence (Figs. 13-1,3,12), with numerous hardly visible short erect black setae, which sometimes can be longer and very distinct (Figs. 13-7,10), sometimes with scattered spots of paler pubescence (Figs. 13-2,4), pale spots can be concentrated near carinae forming hardly visible pale stripes; sometimes (usually in females) elytra with more or less distinct longitudinal lines of paler and darker pubescence (Figs.13-7,8,10,11); very rare (ab. subdenudatum; Figs. 13-8) with glabrous elytral lines; antennal joints with white basal rings; cicatrix distinct; glabrous forms are known (as rare aberration atratum; Figs.13-15-16) both in males and in females, as well as transitional forms with very fine pubescens (Fig. 13-14).

Distribution (Map 12). – China, Gansu : Lanzhou env.-(NMP, MHNL, NMNH, SMTD, ZIN); between Lanzhou and Datong-He (Frivaldsky, 1892); northern slope of Qilian Shan ridge, Gulang environs-(type locality of *E. glaucopterum*, *E. albescens* and *E. annulicorne*); Xiahe [near Labrang about 200 km SW Lanzhou], 3000-3900 m-(HNHM, MD, PR); Shi-ban-gau-ku [near Xining – see Bianchi, 1916 : 94]-(ZIN); North-East Qinghai: SE bank of Kuku-Nor lake – (ZIN); Kuku-Nor lake environs-(Jakovlev, 1901; NMW); east bank of Kulu-Nor lake, Haihu env.-(NMP); Datong river valley-(HNHM); Datong environs-(MD); 15 km E Guide-(MD); Mudzhik canyon (southwards Guide = Guj-Duj)-(Jakovlev, 1901; HNHM, NMP, ZIN); Nanshan ridge, Caka env.-(MD); Xining env.-(MD); east Tzaidam, north foothills of Burhan Budai Shan-(type locality of *Neodorcadion przewalskyi*); Shanxi (type locality of *E. grisescens* – needs confirmation); and very probably prov. Ningxia. The records of the species for Russia and for Jilin prov. of China by Wang Zhicheng are wrong.

Materials. – 1 female, syntype of *N. glaucopterum* with 3 labels : (1) "Mongolia Gr. Gr. 1891", (2) "Sievers Russia'94", (3) "TYPUS" [red]-(NMV); 1 female, designated as "paratype" of *N. glaucopterum*, "Nord China, Tatung-ho [= Datong river along south slope of Qilian Shan], 30.VI.1879, Exp. Szechenyi"-(HNHM); 1 male, 1 female with same geographical label-(HNHM); 1 male, holotype of *Neodorcadion albescens* Breuning, 1943 with 5 labels: "holotype" [red], "Richthofen mont. Sept. Kulang-Kansu 3000 m Juli", "*Neodorcadion albescens* mihi Typ det. Breuning" [Breuning's hand], "*Eodorcadion (Ornatodorcadion) albescens* Br. P. Lepesme det." "Coll. Lepesme 2002 Muséum de Lyon"-(MHNL); 1 male, holotype of *Eodorcadion annulicorne* Breuning, 1943 with 6 labels : "holotype" [red], "Richthofen Mts., Kulang, Kansu", "Koulanghien 30.VII.18" "*Eodorcadion annulicorne* mihi Typ det. Breuning" [Breuning's hand], "*Eodorcadion (Ornatodorcadion) annulicorne* Br. P.Lepesme det." "Coll. Lepesme 2002 Muséum de Lyon"-(MHNL); 1 female, paratype of *Eodorcadion annulicorne* Breuning, 1943 with 4 labels : "allotype" [red], "Koulangien, 30.VII.18" "*Eodorcadion annulicorne* mihi Paratyp det. Breuning" [Breuning's hand], "Coll. Lepesme 2002 Muséum de Lyon"-(MHNL); 1 male with 3 labels : "Mts. Richthofen, Kansu, China", "*Eodorcadion annulicorne* mihi, Breuning det.", "Coll. Lepesme 2002 Muséum de Lyon"-(MHNL); 1 female, holotype of *Eodorcadion grisescens* Breuning, 1947 with 6 labels : "holotype" [red], "China Prov. Shansi", "6.VIII.18 Licent", "*Eodorcadion grisescens* mihi Typ Breuning det." [Breuning's hand], "*Eodorcadion (Ornatodorcadion) grisescens* Br. P. Lepesme det." "Coll. Lepesme 2002 Muséum de Lyon"-(MHNL); 1 male, "China bor., Coll. Kläger"-(DEI); 1 female, "Nördliche China, Coll. Kläger"-(DEI); 1 female, "Coll. Kraatz"- (DEI); 1 male, "China, Tibet Orient."-(DEI); 1 male (ab. atrata), "China, Tibet Orient."-(DEI); 2 males, China, "Lanchow fu [= Lanzhou], Kansu"-(NMP, MHNL); 2 females with same label (1 female wrongly designated as "paratype" of "*Neodorcadion gansuensis*")-(NMNH); 2 males, 1 female with same label (female with very distinct elytral stripes and strong erected elytral setae; one male is designated as "holotype" of *E. glaucopterum albovestitum* by S. Breuning)-(MHNL); 1 male and 3 females with same label (male with distinct hair stripes and glabrous elytral lines is designated as "Type" of "*N. glaucopterum subdenudatum* Breun."; all with numerous erected elytral setae, 2 females with elytral stripes, one – with uniform elytra)-(SMTD); 18 males, 20 females (including several glabrous specimens) with same label, ["Mudzhik canyon (southwards Guide = Guj-Duj), before 7.VII.1890, before 8.VII.1890, before 13.VII.1890, 13.VII.1890, Grum-Grzhimailo *leg*."] [in Russian]-(ZIN); 1 female (identified as "*Neodorcadion przevalskyi atrum*", China, ["Mudzhik canyon, before 13.VII.1890, Grum-Grzhimailo *leg*."] [in Russian]-(HNHM); 1 male, 1 female with same label-(MD); 1 male, China, "lac Kuku-nor, defile Mudzhik (southwards Guide = Guj-Duj), VII.1890, Grum-Grzhimailo *leg*."-(NMP); 1 male, 1 female (female glabrous), "Thibet, Kuku-Nor, 3200 m, F. Hauser, 1896"-(NMV); 1 female, China, "CH, 22.VII.1955, Landzow, Rysnvy go-la [?], 1900 m"-(NMP); 2 males, China, East Qinghai, "Datang", S Xining (or Sining, or Sinin of old authers), 10.VII.1989, J. Volak *leg*.-(MD); 6 males with same label-(SK); 1 male, 2 females, ["Kandukhudeng, Lanchzhoufu, 2-3.VIII.1908, Kozlov's exp"] [in Russian]-(ZIN); 1 male, 1 female, [" Segoneving, Kandukhudeng, 2.VIII.1908, Kozlov's exp"] [in Russian]-(ZIN); 1 female, ["SE bank of Kuku-Nor, 18-22.VIII.1908, Kozlov's exp"] [in Russian]-(ZIN); 2 males, 1 female, ["Tetun ridge, Sinin-he, 25-29.7.1908, Kozlov' exp."][in Russian]-(ZIN); 1 male, ["north Gansu, Shi-ban-gau-ku, 4.VIII.1908, Kozlov's exp" (near Xining – see Bianchi, 1916 : 94)] [in Russian]-(ZIN); 1 female, China, "Gansu, Xiahe [near Labrang about 200 km SW Lanzhou], 3000-3900 m, VII.1990, I. Rapuzzi *leg*.-(PR); 2 males, same locality, VII.1990, J. M. Bousquet *leg*.-(PR); 3 males, 3 females, same locality, 17-18.VII.1990, M. Nicodym *leg*.-(MD); 1 male (identified as "*E. gansuense*"), same locality, 20-25.VI.1991, Paulus *leg*."-(HNHM); 1 male, 1 female with same label-(PR); 8 males, China, East Qinghai, Nanshan ridge, Caka env., 3400 m, 9-13.VII.1994, L. Bieber *leg*.-(MD); 7 males, 4 females, China, East Qinghai, 15 km E Guide, 2300-3420 m, 12.VII.1997, A. Shamaev *leg*.-(MD); 2 males, same locality, 2700 m, 10.VII.1997, A. Gorodinsky *leg*.-(PR); 2 males, Qinghai, Haihu env. near Kuku-Nor lake, 36°48.4'-49.8'N, 100°45.4-49.7'E, 3190-3270 m, 13-15.VII.2005, J. Hajek, D. Kral, J. Ruzicka *leg*.-(NMP).

Map 12. Localities of ***E. glaucopterum*** : China. 1. Gulang in the south of Qilian Shan Ridge [= Richthofen Mts] – type locality; 2. East Tzaidam, north foothills of Burhan Budai Shan; 3. Nanshan Ridge, Caka env.; 4. Datong env.; 5. Xining environs; 6. 5 km E Guide; 7. Mudzhik canyon; 8. Xiahe (near Labrang about 200 km SW Lanzhou); 9 . Lanzhou env.; 10. Shanxi prov.

Remarks. – *Neodorcadion glaucopterum* was described after a male ("Long. 13mm. Lat. 5mm") and a series of females ("Long. 18-19mm. Lat. 7.5-8mm."). Now in the collection of L. Ganglbauer (NMV) only one syntype female is available (Fig. 13-11). *Neodorcadion albescens* Breuning, 1943 was described after one male (Fig. 13-5) from Gulang in the south of Qilian Shan mountains ("Mts. Richthofen") – northern Gansu, so from about same region as *E. glaucopterum*. A unique known male-holotype (body length : 16 mm, body width : 7 mm) is just totally similar to the local *E. glaucopterum*, so : *Neodorcadion glaucopterum* Ganglbauer, 1883 = *Neodorcadion albescens* Breuning, 1943, **syn. n.**

Eodorcadion annulicorne Breuning, 1947 was described after a pair of specimens (Fig 13 – 3-4) from Qilian Shan mountains ("Mts. Richthofen") in northern Gansu, from Gulang environs (about 150 km northwards Lanzhou), so, according to the holotype label of *Neodorcadion albescens* (not published in the original description) from just same population as *N. albescens* ! Holotype (male) is just a little smaller (body length : 14.4mm; body width : 6.2mm), than holotype of *N. albescens* and totally similar to it by other characters; paratype (female) is rather big (body length : 18.5 mm; body width : 8.5 mm), but still represents a very typical female of *E. glaucopterum*; another available male (also from Qilian Shan) determinated by S. Breuning as "*Eodorcadion annulicorne*", is also normal small *E. glaucopterum*, so, *Neodorcadion glaucopterum* Ganglbauer, 1883 = *Eodorcadion annulicorne* Breuning, 1947, **syn. n.**

Eodorcadion grisescens Breuning, 1947 was described after one female (Fig. 13-6) from Prov. Shanxi (China), though in the original description and later in 1962 it was regarded by S. Breuning as a male. A unique known female-holotype (body length : 16 mm, width : 6.8 mm) is just a partly glabrous form of *E. glaucopterum* (ab. *atratum*); it has all typical characters of the species : rather wide body, strong short erect elytral setae, two hardly developed dorsal carinae along each elytron; pronotum nearly totally glabrous; elytra partly glabrous with sparse reduced grey pubescence, so *Neodorcadion glaucopterum* Ganglbauer, 1883 = *Eodorcadion grisescens* Breuning, 1947, **syn. n.**

The geographical variability of the species is not investigated good enough, as too small number of specimens is known from each locality; still it is quite evident now, that several populations are rather peculiar morphologically and will be described as new subspecies in future. The geographical location of Mudzhik canyon as well as several other localities of old Russian expedition to China can be seen on the map of N. M. Przhevalski's expeditions (Przhevalsky, 1883, 1948).

E. glaucopterum was illustrated by Wang Zhicheng (2003: 295) with a photo from "Atlas of the Cerambycidae photographs of the tribe Dorcadionini" (Danilevsky, 2006); the specimen is preserved in my collectiom with the label : "China, East Qinghai, 15 km E Guide, 2300-3420 m, 12.VII.1997, A. Shamaev *leg*.".

14. *Eodorcadion* (s. str.) *kadleci*, sp. n. (Fig. 14)

Type locality. – China, Gansu, Dingxi, 35°40'N, 104°30'E, according to the holotype label (Map 13).

Diagnosis. – Only two males available. Body length : 12-12.8 mm, width : 5.2-5.6 mm.

Body short and wide, dark brown, covered with dense brown or brownish pubescence; frons and vertex densely covered with spotted (pale-grey and brown) pubescence; with scattered hardly visible semierect stout short black setae; vertex densely randomly punctated; antennae black, about as long as body, antennal joints with very narrow pale basal hair rings; 1st joint slightly longer than 3rd and about 1.5 times longer than 4th joint; cicatrix indistinct; thorax anteriorly wider, than posteriorly, about 1.1 times shorter than basal width; lateral thoracic spines wide but acute; pronotum with deep regular punctation, with a pair of central tubercles, with smooth exposed glabrous central line, without white hair stripes, with spotted (grey and brown) pubescence, with hardly visible semierect stout short black setae; scutellum with wide central glabrous shining spot and brownish-grey pubescent lateral areas; elytra wide-oval, about 1.4-1.5 times longer than wide, widest near middle; elytral carinae absent; suture is not prominent; humeral margin obliterated; elytra totally covered with pubescence, without glabrous areas; each elytron with 6-7 longitudinal hair stripes (typical for certain specimens of *E. glaucopterum*); two pale dorsal elytral stripes rather distinct and are of the same colour as wide humeral stripe; wide sutural stripe is a little darker; there are narrow dark-brown stripes between each pair of paler stripes; between humeral and external dorsal stripes a pair of narrow darker stripe can be visible; wide pale marginal stripe is distinct followed by a dark stripe internally; all elytral surface is regularly covered with relatively long and distinct erect stout black setae; ventral body side with dense brownish pubescence.

Distribution (Map 13). – Only type locality known : China, Gansu, Dingxi, 35°40'N, 104°30'E.

Materials. – 1 male, holotype, China, Gansu, Dingxi, 35°40'N, 104°30'E, 28-30.VII.1997, E. Kuçera *leg.-(SK)*; 1 male, paratype with same label-(SK).

Remarks. – *E. kadleci* sp. n. is very close (both geographically and morphologically) to *E. glaucopterum*. But in *E. glaucopterum* similar strong development of long erect elytral setae and longitudinal elytral stripes are known only in rather rare female aberration; besides the character of elytral desighn is rather special.

Map 13. Locality of ***E. kadleci*** sp.n. : China. 1. Dingxi, 35°40'N, 104°30'E.

15. *Eodorcadion* (s. str.) *maurum* (Jakovlev, 1890), sensu nov. (Fig. 15)

Neodorcadion maurum Jakovlev, 1890 : 247 ("de l'Altaï" and "en Mongolie"); 1901 : 159, part.; Reitter, 1897 : 177 ("Altaj und der Mongolei"), part; Pic, 1901 : 67 ("Altaj, Mong."), part.; Winkler, 1929 : 1199, part.

Neodorcadion hirtipes Jakovlev, 1901 : 159 ("Nord-Oest de la Mongolie").

Neodorcadion grumi Suvorov, 1909 : 80 ("Tale des Flusses Namira, von Kobdo", "längs den nördlichen Abhängen des Gebirgsrückens Tanny-Ola"); Winkler, 1929 : 1200, part.

Eodorcadion (Ornatodorcadion) hirtipes, Gressitt, 1951 : 338, 343, part.

Eodorcadion maurum, Plavilstshikov, 1958 : 448 (= *hirtipes* Jakovlev, 1901), part.; Namhaidorzh, 1972 : 519 (= *grumi* Suvorov, 1909 = *boldi* Heyrovsky, 1965), part.; 1976 : 211, part.; Lobanov et al., 1982 : 264, part.; Hua, 2002 : 206 (= *hircus* Jakovlev, 1906 [syn.n.?] = *hirtipes* Jak.; "Inner Mongolia"), part.; Wang, 2003 : 299 (Inner Mongolia), part.

Eodorcadion grumi, Plavilstshikov, 1958 : 449, part.; Heyrovsky, 1970 : 140; 1973a : 122, part.; Tsherepanov, Tsherepanova, 1978 : 107; Tsherepanov, 1983 : 53, part.; Hua, 2002 : 206 ("Inner Mongolia"), part.

Eodorcadion (Ornatodorcadion) grumi, Gressitt, 1951 : 338, 343, part.; Breuning, 1958 : 3, part.; 1962 : 32, part.

Eodorcadion (Ornatodorcadion) maurum, Gressitt, 1951: 338, 344, part.; Breuning, 1958 : 3, part.; 1962 : 34, part.

Eodorcadion (Ornatodorcadion) boldi Heyrovsky, 1965 : 45 ("Uvs Aimak, Somon Sagil bei Örög Nur"); 1973 : 123, part.

Eodorcadion (s.str.) *maurum*, Danilevsky et al., 2005 : 133, 147.

Type locality. – Mongolia : Ubsu-Nur aimak, Ulangom. The description of the taxon was based on three syntypes : 2 males "trouvés en 1879 par Mr G. Potanin en Mongolie" and 1 female "venant de l'Altaï" – the last locality is an evident mistake. According to B. Namhaidorzh (1972) the type series was collected near Ulangom.

Diagnosis. – Body length in males : 11.5-22 mm, in females : 13.5-25 mm; body width in males : 4.7-8.1 mm, in females : 5.5-9.7 mm.

Body usually totally black, but sometimes in certain specimens red-brown; elytra smooth, shining (with or without narrow hair stripes) or carinated with wider hair stripes; in striated forms each elytron usually with 5 hair stripes: two dorsal, two branches of humeral stripe and marginal stripe; both branches of humeral stripe are often fused; sutural stripe always absent; shoulders without granules; ventral body side usually with sparse white pubescence.

The species is characterized by extremely big degree of individual and geographical variability. It differs from the nearest *E. tuvense* by the absence of very typical for the latter white scattered elytral pubescent, which makes specimens of E. tuvense pale-grey. It differs from *E. ptyalopleurum* by the absence of several granules at elytral base on shoulders; glabrous forms (the most numerous in *E. ptyalopleurum*) without reduced humeral elytral stripes, which are usually represented in *E. ptyalopleurum* by short apical strokes; ventral body side in *E. ptyalopleurum* with very dense white pubescence.

Distribution (Map 14). – Russia : south part of Krasnoiarsk region from about Minusinsk to Us river and Tuva Republic. In Tuva : central area and norther slope of Tannu-Ola from about Chadan to Kyzyl and Saryg-Sep and then southards to Mongolian border; south slope of Tannu-Ola eastwards Mugur-Aksu. In Mongolia it is distributed in north-west parts : along Tesijn-Gol river (Dzabkhan aimak), arround Ubsu-Nur lake (Ubsu-Nur aimak), along Hovd-Gol river (Baian-Ulegei aimak) and the southernmost locality recorded by B.Namhaidorzh (1972) is Tzagan-Nur lake near Dzereg (Kobd aimak). The species absent in China; records (as "*E. maurum*", "*E. grumi*", *E. leucogrammum*", "*E. quinquevittatum*" and "*E. katharinae*") for Chinese Inner Mongolia (Hua, 2002 and partly Wang, 2003) are wrong.

E. maurum consists of 4 subspecies : *E. m. maurum* (Jakovlev, 1890), *E. m. sajanicum* (Hammarström, 1893), *E. m. katharinae* (Reitter, 1898), stat.n., comb.n., *E. m. quinquevittatum* (Hammarström, 1893). All four taxons are vicariants and are connected by transitional populations.

Remarks. – The description of *Neodorcadion maurum* was based on three syntypes : 2 males "trouvés en 1879 par Mr G. Potanin en Mongolie" and 1 female "venant de l'Altaï" – the last locality is an evident mistake. According to B. Namhaidorzh (1972) the type series was collected near Ulangom. I have designated as lectotype a male (Fig. 15a-1; ZIN) with 3 labels : (1) "Potanin 1879", (2) "Type" [red], (3) [collection of V. Jakovlev] [in Russian]. According to my observations (1974) in the northern slope of the central part of East Tannu-Ola near Ishtii-Hem *E. maurum quinquevittatum* occurs sympatrically with *E. tuvense* Plav., so the latter must be regarded as a separate species. As well as *E. tuvense* is known to be sympatric with *E. m. sajanicum* near Chaa-Hol; with *E. m. maurum* and *E. ptyalopleurum* (Suv.) near Aryg-Uziu. Wrong synonyms "*Eodorcadion maurum* (Jak.) = *Neodorcadion hircus* Jak.", published by Hua Li-zhong (2002 : 206) without any comments, seems to be original and were never proposed before.

15a. *Eodorcadion* (s. str.) *maurum maurum* (Jakovlev, 1890), stat. nov. (Fig. 15a)

Neodorcadion maurum Jakovlev, 1890 : 247 ("de l'Altaï" and "en Mongolie"); 1901 : 159, part.; Reitter, 1897 : 177 ("Altai und der Mongolei"); Pic, 1901 : 67 ("Altai, Mong."); Winkler, 1929 : 1199, part.

Neodorcadion hirtipes Jakovlev, 1901 : 159 ("Nord-Oest de la Mongolie"); Winkler, 1929 : 1199, part.

Neodorcadion grumi Suvorov, 1909 : 80 ("längs dem Tale des Flusses Namüra, von Kobdo... und längs den nördlichen Abhängen des Gebirgsrückens Tanny-Ola"); Winkler, 1929 : 1200, part.

Neodorcadion grumi var. *leucotaenium* Suvorov, 1909 : 82 (same locality as typical form), unavailable name.

Eodorcadion (Ornatodorcadion) hirtipes, Gressitt, 1951 : 338, 343, part.

Eodorcadion maurum, Plavilstshikov, 1958 : 448 (= *hirtipes* Jakovlev, 1901), part.; Namhaidorzh, 1972 : 519 (= *grumi* Suvorov, 1909 = *boldi* Heyrovsky, 1965), part.; 1976 : 211; Lobanov et al., 1982 : 264; Hua, 2002 : 206 (= *hircus* Jakovlev, 1906 [syn.n.?] = *hirtipes* Jak.; "Inner-Mongolia"), part.; Wang, 2003 : 299 (Inner Mongolia), part.

Eodorcadion grumi, Plavilstshikov, 1958 : 449, part.; Heyrovsky, 1970 : 140; 1973a : 122, part.Tsherepanov, Tsherepanova, 1978 : 107; Tsherepanov, 1983 : 53; Hua, 2002 : 206 ("Inner Mongolia"), part.

Eodorcadion grumi m. *apiatotaenium* Plavilstshikov, 1958 : 451, unavailable name; Heyrovsky, 1973 : 123, part.

Eodorcadion grumi ab. *imperfectotaenium* Plavilstshikov, 1958 : 451, unavailable name.

Eodorcadion (Ornatodorcadion) grumi, Gressitt, 1951 : 338, 343, part.; Breuning, 1958 : 3, part.; 1962 : 32, part.

Eodorcadion (Ornatodorcadion) maurum, Gressitt, 1951 : 338, 344, part.; Breuning, 1958 : 3, part.; 1962 : 34, part.

Eodorcadion ornatum m. *exaratum*, Heyrovsky, 1965 : 43 ("Uvs Aimak : Sagil sum bej Chjargas Nur [wrong name of the lake ! See the type locality of *E. boldi* !]").

Eodorcadion ornatum m. *atricorne* Heyrovsky, 1965 : 43, 46, part. ("Uvs Aimak : Beschmeren sum bei Atschit Nur; Uvs Nur; Umgebung Uvs Nur, Zuungobi sum"), unavailable name.

Eodorcadion (Ornatodorcadion) boldi Heyrovsky, 1965 : 45 ("Uvs Aimak, Somon Sagil bei Örög Nur"); 1973 : 123, part.

Eodorcadion (Ornatodorcadion) grumi m. *rufipedis* Breuning, 1966 : 258 ("15 km S.W. Aimak Chovd, 46°N, 92°Ost" and "Char-us-Nur, N.W. Ecke, Aimak Chovd, 48°25'N, 92°03'Ost"), unavailable name.

Eodorcadion grumi m. *imperfectotaeniatum*, Heyrovsky, 1968 : 237; 1973 : 123.

Eodorcadion grumi annulatum Heyrovsky, 1968 : 237 ("Chovd Aimak : Jamatin Dolon, ca. 40km N von Somon Manchan, an SW-Ecke des Char us nuur"), *nomen nudum*.

Eodorcadion brandti m. *nigrolineatum*, Heyrovsky, 1968 : 238.

Eodorcadion brandti m. *apicale* Heyrovsky, 1968 : 238 ("Chovd Aimak: Jamatin Dolon, ca. 40km N von Somon Manchan, an SW-Ecke des Char us nuur"), *nomen nudum*.

Eodorcadion dorcas annulatum Heyrovsky, 1969 : 229 ("Zergalan, Zarghan- Niederung [Dzabkhan lowland]", "Altaj-Somon", "Chovd Aimak, Jamatin Dolon, ca. 40 km N von Somon Manchan, an SW-Ecke des Char us nuur"), part.; 1973a : 123; Namhaidorzh, 1972 : 524, part.

Eodorcadion boldi m. *mutatum* Heyrovsky, 1973a : 123 ("Uvs Aimak: 19 km NW von der Stadt Ulangom"), unavailable name.

Eodorcadion dorcas m. *morosum*, Heyrovsky, 1973a : 123, part.

Eodorcadion dorcas ab. *interruptolineatum*, Heyrovsky, 1973a : 123.

Eodorcadion grumi m. *rufipedis*, Heyrovsky, 1973a : 123.

Eodorcadion dorcas fortecostatum Heyrovsky, 1975 : 22 ("Ulangom"), **syn. n.**

Eodorcadion (s.str.) *maurum*, Danilevsky et al., 2005 : 133, 147.

Type locality. – Mongolia : Ubsu-Nur aimak, Ulangom. The description of the taxon was based on three syntypes : 2 males "trouvés en 1879 par Mr G. Potanin en Mongolie" and 1 female "venant de l'Altaï" – the last locality is an evident mistake. According to B. Namhaidorzh (1972) the type series was collected near Ulangom. A male from Mongolia (ZIN) was designated by me as lectotype (see above).

Diagnosis. – Body length in males : 11.5-22 mm, in females : 17.2-21.1 mm; body width in males : 4.7-8 mm, in females : 6.8-9.5 mm.

Body black, sometimes brownish or with red-brown legs; elytra usually smooth, often shining, sometimes with fine traces of longitudinal carinae (ab. *fortecostatum*; Fig. 15a-6-7); specimens with well developed elytral carinae and white elytral stripes are well known as female form (ab. *leucotaenium*; Fig. 15a – 11, 13-16,), which sometimes dominates in the populations (Toraglyk env.); one striated male is known to me from Sagly env. in Tuva (Fig. 15a-12); in striated forms each elytron usually with 5 hair stripes: two dorsal, two branches of humeral stripe and marginal stripe; both branches of humeral stripe are often fused.

Distribution (Map 14; localities 1-46). – South and west part of the species area. Russia, Tuva Republic : planes and hills around Tannu-Ola ridge; along north foothills: from about Khondergei river to Hadyn lake and Durgen; along south slope : from about Mugur-Aksy to Samagaltaj. Mongolia : Ubsu-Nur, Baian-Ulegei and Kobd aimaks : from the west part of Greate Lakes valley – Ureg-Nur lake eastwards to Ulangom, southwards to Kobdo from one side and to Dzereg (Tzagan-Nur lake) from another. The area of the taxon described by N. N. Plavilstshikov (1958) is totally fantastic : there is nothing similar to the taxon in Transbaikalia or in Selenga and Orkhon vallies. The taxon absent in China; records for Chinese Inner Mongolia (Hua, 2002 : 206, as *E. maurum* and *E. grumi*; Wang, 2003 : 299, as *E. maurum*) are wrong.

Several known localities are : Russia, Republic of Tuva: Hadyn lake, 40 km S Kyzyl – (SK, PR, typical form); 50 km WSW Kyzyl - (SK, typical form); Durgen, 60 km S Kyzyl (5 km SE Bai-Haak)-(MD, typical form); Torgalyk, 30 km S Shagonar-(MD – typical males and females of ab. *leucotaenium*); north slope of Tannu-Ola ridge, «Khundurgung [= Khondergei] river»– (ZIN); Mugur-Aksy (30 km NW Ureg-Nur lake)-(ZIN, MD, typical form); Sagly (about 30 km NE Ureg-Nur lake)-(ZIN, MD, typical form with a single striated male, with several females of ab. *leucotaenium*); Ulatai river (near Handagaity, northwards Ubsu-Nur lake)-(Tsherepanov, 1983); Handagaity-(ZIN); Hol-Ezhu (south slope of East Tannu-Ola) – (Tsherepanov, 1983 : 56, as *E. grumi*); Irbitei river (typical form)-(ZIN); 50 km E Amdaigyn–Hol-(ZIN); Ak-Chaara, 20 km NE Ubsu-Nur lake-(Tsherepanov, 1983; MD, typical form); the easternmost slope of East Tannu-Ola, Samagaltaj environs-(MD, typical form with several females of ab. leucotaenium); Moren, 25 km NE Erzin, Mt. Ulug-Haiyrakhan-Dag-(MD, typical male and a female of ab. *leucotaenium*). Mongolia : Ubsu-Nur aimak : Sagil eastwards Ureg-Nur lake (HMNH; Heyrovsky, 1965 as *E. ornatum exaratum* and as the type locality of *E. boldi*); 19-20 km NW Ulangom (HNHM and Heyrovsky, 1973a as *E. boldi*, *E. boldi* m. *mutatum* and *E. dorcas* m. *morosum* and Heyrovsky, 1975 as *E. d. fortecostatum*); Chundlen-Gol river, 32 km (or 35 km) NW Ulangom-(MD, HNHM, Heyrovsky, 1973a, as *E. grumi*, *E.*

dorcas m. *morosum* and as *E. d. annulatum* and Heyrovsky, 1975 as *E. d. fortecostatum*); 19-32km NW Ulangom (typical form)-(MD); 20 km S Ulangom (Heyrovsky, 1975 as *E. d. fortecostatum*); N Khirgis-Nur lake ("Chjargas nuur"), 48 km ESE Naran-Bulak- (HNHM, Heyrovsky, 1973a, as *E. grumi*); NW bank of Khirgis-Nur ("Chjargas nuur") lake, 27 km ESE Naran-Bulak-(Heyrovsky, 1973a); Chag, between Ureg-Nur lake and pass Ulan-Daba, 14 km (or 10 km, according to the publication) WSW from the pass-(MD, HNHM and Heyrovsky, 1973a, as *E. grumi* m. *rufipedis* and *E. dorcas morosum*; Heyrovsky, 1975 as *E. d. fortecostatum*); SW Ureg-Nur lake, 14 km WSW from Ulan-Daba (typical form) – about same locality-(MD); Ogotor-Hamryn-Daba pass (about 20 km SE Ureg-Nur lake)-(Namhaidorzh, 1972); Buch-Muren river, NE somon Buch-Muren-(Namhaidorzh, 1972); Buch-Muren northwards Atchit-Nur lake (HMNH, NMP, Heyrovsky 1965 as *E. ornatum* m. *atricorne*-"type locality"); NE bank of Ureg-Nur lake- (Namhaidorzh, 1972); south bank of Ureg-Nur lake-(HNHM and Heyrovsky, 1973a, as *E. dorcas* m. *morosum*); south-west bank of Ureg-Nur lake-(HNHM); south bank of Ubsu-Nur lake, 50 km E Ulangom (only typical form)-(ZIN); Ulan-Daba pass, 30 km W Ulangom (typical form)-(ZIN, Namhaidorzh, 1972); NW bank of Ureg-Nur lake (typical male and *ab.leucotaenium*)-(ZIN); Iamatyn-Ama, 20 km NW Mt.Turgen-Ula (typical form)-(ZIN, Namhaidorzh, 1972); Mt. Turgen-Ula-(Namhaidorzh, 1972); Namiur-Gol river-(UNHM, ZIN, MD, paralectotype of *Neodorcadion grumi*); north bank of Ubsu-Nur lake-(Namhaidorzh, 1972); Davst env. between Ubsu-Nur lake and Russian border-(NMP); 45 km ESE Ulangom-(ZIN, Namhaidorzh, 1972); Baian-Ulegei aimak : Kobdo river valley, mouth of Katy river [?]-(Namhaidorzh, 1972); Kobd aimak : 15 km SW Chovd, "46°N, 91°E" [wrong date ! must be : 47°51'N, 91°30'E]-(Breuning, 1966, as *E. grumi*); NW bank of Khara-Us-Nur lake, Chovd, 48°25'N, 92°03'E-(Breuning, 1966, as *E. grumi*); Bujant [near Kobdo]-(NMP); Kobdo-(Namhaidorzh, 1972); Jamatin-Dolon, about 40 km N from Mankhan, SW bank of Khara-Us-Nur lake-(HNHM; Heyrovsky, 1968, as *E. brandti*; Heyrovsky, 1969, as *E. dorcas annulatum*); "Botgon chavcan" [?], (HNHM, Heyrovsky, 1970, as *E. grumi* and *E. grumi* ab. *leucotaenium*); Miangad (near Khara-Us-Nur lake)-(HNHM, Heyrovsky, 1970 as *E. grumi*, *E. grumi* ab. *rufipedis*, *E. grumi* ab. *apicetaenium* and *E. grumi* ab. *leucotaenium*); Erdene-Buren-(HNHM, Heyrovsky, 1970, as *E. grumi*); Tzagan-Nur lake near somon Dzereg-(Namhaidorzh, 1972); Teregty pass [?]-(Namhaidorzh, 1972).

Bionomy. – The species is connected with steppe and semidesert landscapes up to 1900 m above the level of the see (in Tuva Republic, D. Obydov *leg*.-in my collection). Several known to me areas are very densely populated. Often rather big series are preserved in museums from many localities.

The development of the taxon (under the name "*Eodorcadion grumi*") was investigated in details by A. I. Tsherepanov, N. E.Tsherepanova (1978) and A. I. Tsherepanov (1983). A generation requires two years. Adults appear in June and can be found until August. They are most numerous in July. Adults are active in the late morning before 12.00, but maximum of adult activity is in the afternoon : 16.00-18.00. In hot days beetles disappear at about noon. After emergence adults feed on grass plants. Females make small hole with mandibles near stem base and then deposit one egg in each site in soil or just on the root. *Elymnus*, *Agropyron* and *Allium* were observed as food plants. Young larvae appear in about 3 weeks after oviposition from July to September. Half grown and mature larvae can be observed in soil. Larval soil mines are packed with grey and greenish frass and debris, so larvae feed on roots and green parts of the plants. Pupation occurs from about May to July in soil cell after second overwintering at about 10 cm under the soil surface. The pupal stage lasts about three weeks. Adults leave pupal cells soon after emergence.

Materials. – Russia : 1 male, lectotype of *Neodorcadion maurum* Jak. (**present designation**; Fig. 15a-1) with three labels : (1) "Potanin 1879", (2) "Type" [red], (3) "[collection of V. Jakovlev]" [in Russian], according to B. Namhaidorzh (1972), it was collected in Mongolia near Ulangom; 1 male, Russia, Tuva Republic, lectotype (**present designation**) of *Neodorcadion grumi* Suv. with two labels : ["north slope of Tannu-Ola ridge, 3-5.VIII.1903, Grum-Grzhimailo"] [in Russian] and "*Neodorcadion grumi* typ. m. G. Suworow det."-(ZIN); 12 males, paralectotypes (**present designation**) of *Neodorcadion grumi*, with same labels-(ZIN); 2 males, paralectotypes (**present designation**) of *Neodorcadion grumi*, with same labels-(NMW, MD); 1 male, 1 female (syntype of *Neodorcadion grumi* ab. *leucotaenium* Suv.), paralectotypes (**present designation**) of *Neodorcadion grumi*, ["north slope of Tannu-Ola ridge, Khundurgung river (= Khondergei), 5-8.VIII.1903, Grum-Grzhimailo *leg*."] [in Russian]-(ZIN); 1 male, ["Tannu-Ola ridge, Khemchik valley, 10.VIII.1903, Grum-Grzhimailo *leg*."] [in Russian]-(ZIN); 3 males (typical form), 5 females (ab. *leucotaenium*), Russia, Tuva Republic, Torgalyk (30 km S Shagonar), 21.VII.1949, Tsherepanov *leg*.-(MD); 1 female, ["Tuva, Ka-Hem district, Bren'[?], 20.VI.1951"] [in Russian]- (ZIN); 1 male, ["Ubsu-Nur depression, 50 km E Adygain-hol (Amdaigyn–Hol near Ak-Chaara ?), 26.VII.1962, Mordkovitch *leg*."] [in Russian]-(ZIN); 1 female (ab. *leucotaenium*), ["Ubsu-Nur depression, Dus-Hol lake, 24.VII.1962, Mordkovitch *leg*."] [in Russian]-(ZIN); 6 males, 7 females (typical form with several females of ab. *leucotaenium*), Russia, Tuva Republic, the easternmost slope of East Tannu-Ola, Samagaltaj, 28.VII.1970, Tsherepanov *leg*.-(MD); 2 females (typical form), Russia, Tuva Republic, Mugur-Aksy, 18-22.VII.1970, B. Korotyaev *leg*.-(ZIN); 2 females (typical form) from same locality, 11.VII.1970, B. Korotyaev *leg*.-(MD); 4 males, 2 females (typical form), Russia, Tuva Republic, Sagly, water-meadow of the river (about 30 km NE Ureg-Nur lake), 8.VII.1971, B. Korotyaev *leg*.-(MD); 1 male, Tuva, Handagaity, 10.VII.1971, B. Korotyaev *leg*.-(ZIN); 1 male with same label-(ZIN); 7 males, 1 female (typical form), Russia, Tuva Republic, Ak-Chaara (20 km NE Ubsu-Nur lake), 19.VII.1976, Tsherepanov *leg*.-(MD); 2 males (typical form), Russia, Tuva Republic, Irbitei river, 4.VIII.79, B. Korotyaev *leg*.-(ZIN); 1 male, 1 female (typical male and ab. *leucotaenium*), Samagaltaj, Tes-Hem river, 1990, S. Ryzhovsky *leg*.-(MD); 4 males, 4 females (typical form), Russia, Tuva Republic, Hadyn lake (40 km S Kyzyl), 29-30.VI.1994, Z. Kletecka *leg*.-(SK); 1 male, 1 female (typical form), same locality, 30.VI.1994, Novotny *leg*.-(PR); 1 female (typical form), same locality, 29.6.1994, M.Galant leg. – (PR); 1 male, 1 female (typical form), Russia, Tuva Republic, Durgen, 60 km S Kyzyl, 12.VI.1998, Ryzhovsky *leg*.-(MD); 1 male and 1 female (ab. *leucotaenium*), Russia, Tuva Republic, Moren, 25 km NE Erzin, Mt. Ulug-Haiyrakhan-Dag, 23.VI.1999, Yu. Mikhailov *leg*.-(MD); 1 male (striated form), Russia, Tuva Republic, Sagly, 1900 m, 50°35'N, 91°29'E, 25.7.2000, D. Obydov *leg*.-(MD); 1 male, 1 female (typical form), Russia, Tuva, 50 km WSW Kyzyl, 18.VII.2002, J. Hron, M. Cesanek *leg*.-(SK); 2 males, 6 females (typical form and ab. *leucotaenium*), Russia, Tuva, Sagly, 1600 m, 5.VII.2003, R. Mishustin *leg*. - (MD). Mongolia : 1 male, paralectotype (**present designation**) of *Neodorcadion grumi*, Mongolia, "fl. Namür, 7.1903, Grum."-(HNHM); 3 males, paralectotypes (**present designation**) of *Neodorcadion grumi*, Mongolia, ["Namiur river between Kobdo river and Ulangom, 18.VII.1903, Grum-Grzhimailo"] [in Russian]-(ZIN, NMV, MHNL); 1 female (syntype of *Neodorcadion grumi* ab. *leucotaenium* Suv.) paralectotype (**present designation**) of *Neodorcadion* grumi with same label-(ZIN); 19 males, 1 female, with same label-(ZIN); 1 male, paralectotype (**present designation**) of *Neodorcadion grumi*, "Mongolei, Kobdo, 17.VII.1903, Grum."-(MHNL); 1 male, 1 female, paralectotypes (**present designation**) of *Neodorcadion grumi* with same label-(MD); 1 female, paralectotype (**present designation**) of *Neodorcadion grumi*, ["northwards Kobdo, Namiur river, 18.VII.1903, Grum-Grzhimailo"] [in Russian]-(NMP); 20 males, 1 female with same label-(ZIN); 1 male, ["northwards from Kobdo to Ulangom, 15-16.VII.1903, Grum-Grzhimailo *leg*."] [in Russian]-(ZIN); 1 female, paralectotype of *Neodorcadion grumi* (**present designation**) with

three labels : (1)"paratype"[red]; (2)["northwards Kobdo, Namiur river, 18.VII.1903, Grum-Grzhimailo"] [in Russian]; (3) "*Neodorcadion grumi* ab. *leucotaenium*, Typ. m., G. Suvorov det."-(MHNL); 1 female, paralectotype of *Neodorcadion grumi* **(present designation),** syntype of *Neodorcadion grumi* ab. *leucotaenium* Suv., with same geographical label-(ZIN); 1 female, paralectotype of *Neodorcadion grumi* **(present designation)** syntype of *Neodorcadion grumi* ab. *leucotaenium* Suv., ["mountains northwards Kobdo 14.VII.1903, Grum-Grzhimailo *leg.*"]-(ZIN); 1 male designated as : "*Neodorcadion leucogrammum*, Typ. m. G. Suworow det."[wrong designation ! *N. leucogrammum* was described from another area !], ["northwards Kobdo, Namiur river, 18.VII.1903, Grum-Grzhimailo *leg.*"] [in Russian]-(ZIN); 1 male, holotype of *Neodorcadion hirtipes* Jak. (17.5 mm long – just as in original description) without geographical label, but with a label "*hirtipes*" by Jakovlev's hand, with very old blue scrap of paper-(ZIN); 1 male (22 mm long - the biggest known specimen of the taxon) without geographical label, but probably from same series as the previous male, as it is equiped with similar very old blue scrap of paper, and as its elytral sculture is just same with similar poor longitudinal sculpture mentioned in the original description of *N. hirtipes* (identified as *E. ornatum* v. *exaratum* by M. Namhaidorzh)-(ZIN; Fig. 15a-3); 1 male "Mongol. bor. Chanchai [Hangai]"-(NMP); 1 male, ["Kobdo river, Kety canyon, 3.VII.1898, Clementz *leg.*"] [in Russian]-(ZIN); 1 male (typical form), "Mong. bor., Jarai-Chuty, 3.VIII.1911"-(NMP); 8 males, 2 females, ["north bank of Uvs lake, Kobdo, 6.VII .1914, Tomashinsky *leg.*"] [in Russian]-(ZIN); 3 males, 2 females, ["North Mongolia, Kobdo, 24.VII.1923, Sevko and Sizova *leg.*"] [in Russian]-(ZIN); 2 males, 2 females, "Mongolia : Chovd aimak, Mjangad, *leg.* Cendsuren"-(HNHM); 1 female, "Mongolia : Chovd aimak, somon Erdeneburen, *leg.* Cendsuren"-(HNHM); 1 female, holotype of *E. boldi* Heyr., "Mongolia : Uvs Aimak, Somon Sagil bei Örög Nur [Ureg-Nur], 12.VIII.1963, *leg.* A. Bold"-(HNHM); 1 female, "holotype" of *E. ornatum* m. *atricorne* Heyr., "Mongolia : Uvs Aimak, Bechmeren sum bei Atschit Nur, 3-4.VIII.1963, *leg.* A. Bold"-(HMNH); 1 female, "paratype" of *E. ornatum* m. *atricorne* Heyr. with same label-(NMP); 1 female identified as *E. ornatum exaratum* by L. Heyrovsky, "Mongolia : Uvs Aimak, Sagil sum bei Chjargas Nur [Khirgis-Nur, but in fact it was Sagil near Ureg-Nur, see the type locality of *E. boldi*-12.VIII.1963], 15.VIII.1963, *leg.* A. Bold"-(HNHM); 1 male, 1 female, "Mongolia : Chovd aimak, Botgon chavcan (?), 1964, *leg.* Cendsuren"-(HNHM); 1 male, Mongolia, Kobd aimak, "Bujant, 20.VII", "Mongol. Deutsch. Exp. 1964"-(NMP); 1 male, Mongolia, Kobd aimak, "Am Char.us.Nur. 18.VII", "Mongol. Deutsch. Exp. 1964"-(NMP); 1 female identified as *E. dorcas* m. *morosum* by L. Heyrovsky, Mongolia, "Davst-Somon [between Ubsu-nur and Russian border], 5.VIII", "Mongol. Deutsch. Exp. 1964"-(NMP); 2 males, paratypes of *Eodorcadion dorcas annulatum*, 1 female identified as *E. brandti* m. *nigrolineatum* Rtt. by Heyrovsky and 2 females (one was identified as *E. brandti* m. *apicale* Heyr. - *nomen nudum*), "Chovd Aimak, Jamatin Dolon, ca. 40 km N von Somon Manchan [Mankhan], an SW Ecke des Char us nuur, 1200 m, 11-12.VII.1966, exp. Dr. Z. Kaszab"-(HNHM); 4 males, Mongolia, Ubsu-Nur aimak, NE bank of Ubsu-Nur lake, 15.VII.1968 Arnoldi leg.-(ZIN); 4 males, 1 female (typical form), Mongolia, Ubsu-Nur aimak, south bank of Ubsu-Nur lake, 50 km E Ulangom, 10-11.VII.1968 and 6.VIII.1970, Emeljanov *leg.*-(ZIN); 1 female (typical form), Mongolia, Ubsu-Nur aimak, 45 km ESE Ulangom, 12.VII.1968, Kozlov *leg.*-(ZIN); 62 males, 29 females, including male-holotype and 26 paratypes (9 males, 17 females) of *E. dorcas fortecostatum* Heyr., "Mongolia : Uvs Aimak, am Fluss Chöndlön gol, [Khundlen-Gol] 32 km (or 35 km) NW von der Stadt Ulangom, 1200 m, 27.VI.68 and 7.VII.68, exp. Dr. Z. Kaszab"-(HNHM); 3 males, 1 female identified by L. Heyrovsky as "*E. grumi*" and "*E. dorcas* m. *morosum*", "Mongolia : Uvs Aimak, am Fluss Chöndlön gol, 32 km NW von der Stadt Ulangom, 1200 m, 27.VI.-7.VII.68 and 7.VII.68, exp. Dr. Z. Kaszab"-(MD); 42 males, 54 females, including 1 female designated by L. Heyrovsky as "male, allotypus" of *E. boldi* Heyr., including 5 females identified by L. Heyrovsky as *E. boldi*, including 3 females – holotype and paratypes of

E. boldi m. *mutatum* Heyr. and including 30 paratypes of *E. dorcas fortecostatum* (6 males and 24 females), "Mongolia : Uvs Aimak, 19 km NW von der Stadt Ulangom, 1150 m, 8.VII.68, exp. Dr. Z. Kaszab"- (HNHM); 1 male, typical form with same label, identified as "*E. dorcas* m. *morosum*" by L. Heyrovsky-(MD); 72 males, 25 females, including 3 paratypes of *E. dorcas fortecostatum* (2 males, 1 female), "Mongolia : Uvs Aimak, Chag, zw. See Örog nuur und Pass Ulaan davaa, 14 km (or 10 km) WSW von Pass, 1900 m (or 1850 m), 6.VII.1968, exp. Dr. Z. Kaszab"-(HNHM); 1 male (typical form), Ubsu-Nur aimak, 30 km W Ulangom, Ulan-Daba pass, 13.VII.1968, Arnoldi *leg*.-(ZIN); 1 male, 1 female, same locality, 24.VII.1972, B. Korotyaev *leg*.-(ZIN); 1 female (typical form with Heyrovsky's identification : "*E. dorcas morozum*"), "Mongolia : Uvs Aimak, Chag, zw. See Örög nuur [Ureg-Nur] und Pass Ulan davaa, 14 km WSW from Pass, 1900 m, 6.VII.1968, Exp. Dr. Z. Kaszab"-(MD); 1 male (typical form), Ubsu-Nur aimak, Iamatyn-Ama defile, 20 km NW Mt.Turgen-Ula, 20.VII.1968, Arnoldi-(ZIN); 1 male, 2 females, "Mongolia : Uvs Aimak, Mogoin arschaan, N-Rand des Sees Chjargas nuur [Khirgis-Nur], 48 km OSO von Somon Naranbulag, 1100-1200 m, 9.VII.1968, exp. Dr. Z. Kaszab"-(HNHM); 2 males, 2 females (typical male and ab. *leucotaenium*), Mongolia, Ubsu-Nur aimak, NW bank of Ureg-Nur lake, 17.VII.1968, Arnoldi-(ZIN); 1 male, 1 female (typical form), same locality, 15.VII.1968, Emeljanov *leg*.-(ZIN); 1 female, "Mongolia : Uvs Aimak, S Rand des Sees Örog nuur [Ureg-Nur], 1500 m, 28.VI.1968, exp. Dr. Z . Kaszab"-(HNHM); 1 male, "Mongolia : Uvs Aimak, SW Ecke des Sees Örog nuur, 1500 m, 29.VI.1968, exp. Dr. Z. Kaszab"-(HNHM); 1 male (typical form), 1 female (ab. *leucotaenium*), "West Mongolia, Mongol-Bulak (?), 2-6.VII.1971, Shnitnikov *leg*."-(MD).

Remarks. – The taxon is extremely variable (different specimens of *E. m. maurum* were identified by L. Heyroysky as 7 different taxa). I attribute to the nominative subspecies all populations of the species with glabrous males. Striated males in such populations can occur as rare exceptions (male from Sagly : Fig. 15-12-MD, male from Namiur river-ZIN). Females are extremely variable : from smooth and glabrous to striated and carinated with all transitional forms; elytral pubescence can be white or yellow; in certain populations striated forms are not known (Ulangom env. in Mongolia; Ak-Chaara env. in Tuva), or just contrary – glabrous females are not know (Torgalyk env. in Tuva), but usually both forms present with many transitional forms.

Neodorcadion grumi Suv. was described from two very different localities, one in Mongolia ("Namiur river between Kobdo river and Ulangom"), another in Russia ("north slope of Tannu-Ola ridge"). Further investigations can show the different subspecies status of both populations, so a lectotype designation is necessary. I have designated as lectotype of *Neodorcadion grumi* Suvorov, 1909 a male with two labels : ["north slope of Tannu-Ola ridge, 3-5.VIII.1903, Grum-Grzhimailo"] [in Russian] and "*Neodorcadion grumi* typ. m. G. Suworow det."-(ZIN); I have designated as paralectotypes : 12 males, with same labels-(ZIN); 2 males, with same labels-(NMW,MD – Fig. 15a-2); 1 male, 1 female (syntype of *Neodorcadion grumi* ab. *leucotaenium* Suv.), ["north slope of Tannu-Ola ridge, Khundurgung river (= Khondergei), 5-8.VIII.1903, Grum-Grzhimailo *leg*."] [in Russian]-(ZIN); 1 male and 1 female each with two labels : (1) ["Namiur river between Kobdo river and Ulangom, 18.VII.1903, Grum-Grzhimailo"] [in Russian], (2)"*Neodorcadion grumi*, typ.m., G. Suworow det."-(MD); 2 males with same labels-(NMV, MHNL); 1 male with two labels : (1)"Mongolei, Kobdo, 17.VII.1903, Grum.", (2)"*Neodorcadion grumi*, typ. m., G. Suworow det."-(MHNL); 1 male with three labels : (1)"Paratypus 1909-10", (2)"*Neodorcadion grumi* Suvorov", (3)„fl. Namür, VII.1903, Grum."-(HNHM); 1 female with two labels : (1)"northwards Kobdo, Namiur river, 18.VII.1903, Grum-Grzhimailo"] [in Russian], (2)"*Neodorcadion grumi*, typ. m., G. Suworow det."-(NMP).

Several paralectotypes were collected by G. E. Grum-Grzhimailo in Khondergei river valley – north slope of Tannu-Ola ridge, so most probably this valley area is the real lectotype locality of *N. grumi*. Population of *E. m. maurum* from Durgen and population *E. m. sajanicum* from Bai-Haak are so close geographically (5km in between according to the labels), that it is not clear, if both are sympatric or not. Similar unclear situation exists now near Hadyn lake. Homogenous series of *E. m. maurum* and *E. m. quinquevittatum* were collected there (by different collectors in different years). Most probably two populations of different subspecies in both areas are very close. geographically, but no sympatric, or available labels are not exact.

A striated male (ZIN) of *E. m. maurum* collected in Namiur (= Namir) river valley (also not far from Ulangom – type locality of *N. maurum*) with the label by Suvorov's hand : "*Neodorcadion leucogrammum*, Typ. m. G. Suworow det." does not belong to the syntypes of *N. leucogrammum* as it was not mentioned in the original description.

Glabrous specimens of *E. m. katharinae* from Dzabkhan aimak and from north environs of Barun-Turun (Ubsu-Nur aimak) were recorded by B. Namhaidorzh (1972 : 520) as "*E. maurum*".

The first introduction of the name "*E. grumi* ssp. *annulatum*" Heyrovsky, 1968 (nomen nudum) was published without description for real *E. maurum maurum* from south-west bank of Khara-Us-Nur lake (Kobd aimak) together with "*E. grumi* m. *imperfectotaeniatum* Plav." from same population. Then *E. dorcas annulatum* Heyrovsky, 1969 was described on the base of three series of two species. Two series from Gobi-Altaj aimak : from Dzhargalan (type locality : "Zergalan, Zarghan-Niederung, 23.VI.1964" – 2 paratype-males in Heyrovsky's collection in Prague Národní Museum.) and from Altaj ("Altaj-Somon, 13.VII.1964" – 1 male in same collection) consist of glabrous specimens of *E. dorcas dorcas* m. *morosum*. Third series – 2 paratype males (Fig. 15a-5) in Kaszab's collection in Budapest : "Chovd Aimak : Jamatin Dolon, ca. 40 km von Somon-Manchan, an SW Ecke des Char-us-nur, 1200 m, 11-12.VII.1966" – from Khara-Us-Nur lake (Kobd aimak), as it was published by L. Heyrovsky originally, belongs to *E. maurum maurum* (= *E. grumi*). Later (Heyrovsky, 1973a) the name "*E. dorcas annulatum*" was attributed to a population of *E. maurum maurum* from near Ulangom ("32 km NW Ulangom") together with two other names : "*E. grumi*" and "*E. dorcas morosum*". B. Namhaidorzh (1972 : 524) believed, that somon Altaj sensu L. Heyrovsky (1969) is another Altaj in Kobd aimak, where only *E. egregium* is distributed.

According to the type series, original description and to the type locality, *E. dorcas fortecostatum* Heyrovsky, 1975 (described after several series from near Ulangom, Ubsu-Nur aimak, Fig. 15a - 6-7) is a corresponding carinated form of *E. m. maurum*, so *E. m. maurum* (Jakovlev, 1890) = *E. dorcas fortecostatum* Heyrovsky, 1975, **syn. n.**

Glabrous forms of *E. m. maurum* were often identified by L. Heyrovsky (1973a), as *E. dorcas* m. *morosum*. I've got a homogenous series of *E. m. maurum* from one locality (Ubsu-Nur aimak, 32 km NW Ulangom, 1200 m, 27.VI-7.VII.1968, Exp. Dr. Z. Kaszab) with two different identifications by L. Heyrovsky : "*E. dorcas* m. *morosum*" and "*E. grumi*" – both identifications were published by L. Heyrovsky (1973a : 122-123), as well as third name for the specimens of same population : *E. dorcas annulatum* (Heyrovsky, 1975).

The records of *E. ornatum* m. *exaratum* and *E. ornatum* m. *atricorne* by L. Heyrovsky (1965 : 43, 46) were connected (as it is clear from the localities) with *E. m. maurum*. The corresponding specimens of *E. m. maurum*, identified by L. Heyrovsky as *E. ornatum* m. *exaratum* (one female) and *E. ornatum* m. *atricorne* (2 males and 1 female) were studied by me in Hungarian Natural History Museum (Budapest).

The label by A. Bold of his female, which was identified by L. Heyrovsky (1965 : 46) as *E. ornatum exaratum* : "Mongolia : Uvs Aimak, Sagil sum bei Chjargas Nur 15.VIII.1963, *leg*. A. Bold", contains the wrong name of the lake. In fact it was Ureg-Nur, where somon Sagil is situated (see the label of the holotype of *E. boldi*, collected on about same day – 12.VIII.1963.

The record of *E. brandti* for Kobd aimak by Heyrovsky (1968) was concerned with striated females of *E. m. maurum*. The corresponding specimens of *E. m. maurum*, identified by L. Heyrovsky as *E. brandti* m. *nigrolineatum* Rtt. (one female) and *E. brandti* m. *apicale* Heyr., *nomen nudum* (1 female) were studied by me in Hungarian Natural History Museum (Budapest). The taxon was recorded by Breuning (1966) for same locality as *E. grumi*. *E. brandti* absent in Mongolia.

According to the holotype female (Fig. 15a-15) of *E. boldi* (HNHM), described from near Sagil (Ubsu-Nur aimak, Ureg-Nur lake), as well as to the female, designated by L. Heyrovsky as "male-allotype" (HNHM, Fig. 15a-16) of *E. boldi* (Ubsu-Nur aimak, 19 km NW from Ulangom) and 7 other females of *E. m. maurum* (HNHM), identified by L. Heyrovsky as *E. boldi*, the synonymization *E. maurum* = *E boldi* by Namhaidorzh (1972) is correct. Most of those females have longitudinal elytral carinae with white hair stripes (like in holotype), but two females are glabrous with smooth elytra, like in typical *E. m. maurum*.

I know a female (SK) of *E. maurum*, identified by S. Breuning as *E. dorcas* m. *interruptolineatum* Br. Still all specimens of *E. dorcas* (MHNL) used by S. Breuning (1947b) for the decriptions of his morphs of *E. dorcas* (m. *irregulare*, m. *transitivum*, m. *granulosum*) are real *E. dorcas*. So, I suppose, that *E. dorcas* m. *interruptolineatum* Breuning, 1947(b) was also *E. dorcas*.

The description of *Eodorcadion ornatum* m. *atricorne* Heyrovsky, 1965 was based on three series of specimens : "Beschmeren sum bei Atschit Nur" [Buch-Muren northwards Atchit-Nur], "Uvs Nur" and "Umgebung Uvs Nur, Zuungobi sum". Only first series from near Buch-Muren belongs to *E. maurum maurum*. Two other series consist of glabrous specimens of *E. m. katharinae*.

Wrong synonyms "*Eodorcadion maurum* (Jak.) = *Neodorcadion hircus* Jak.", published by Hua Li-zhong (2002 : 206) without any comments, seem to be original and was never proposed before.

E. maurum was illustrated by Wang Zhicheng (2003 : 299) with a copy of photo of a syntype (male, MD) of *Neodorcadion grumi* Suv. from "Atlas of the Cerambycidae photographs of the tribe Dorcadionini" (Danilevsky, 2006). Figured specimen (MD) has a label : ["north slope of Tannu-Ola ridge, 3-5.VIII.1903, Grum-Grzhimailo"] [in Russian].

15b. *Eodorcadion* (s. str.) *maurum sajanicum* (Hammarström, 1893) (Fig. 15b), stat. rest., comb n.

Neodorcadion sajanicum Hammarström, 1893 : 192 ("Nagra exemplar tagna invid floden Kemtschik i Mongoliet."); Reitter, 1897 : 184 ("Mongolei : Kemtschik"), part.; Jakovlev, 190 : 151 ("Kemtschik"), part.; Pic, 1901 : 68 ("Mong."), part.; Winkler, 1929 : 1200, part.; Plavilstshikov, 1932c : 193, part.

Neodorcadion quinquevittatum sajanicum, Reitter, 1897 : 183, 184, part.

Eodorcadion (Ornatodorcadion) sajanicum, Gressitt, 1951 : 338, 345, part.

Neodorcadion leucogrammum Suvorov, 1909 : 82 ("auf den nördlichen Abhängen des Gebirgsrückens Tanny-Ola"), **syn. n.**; Winkler, 1929 : 1200, part.

Eodorcadion (s.str.?) *leucogrammum*, Gressitt, 1951 : 336, 341.

Eodorcadion leucogrammum, Plavilstshikov, 1958 : 457; Lobanov et al., 1982 : 265; Wang (2003 : 298), part.

Eodorcadion leucogrammum ab. *emancipatum* Plavilstshikov, 1958 : 458, unavailable name.

Eodorcadion (s. str.) *leucogrammum*, Breuning, 1958 : 3.

Eodorcadion (Ornatodorcadion) leucogrammum, Breuning, 1962 : 32.

Eodorcadion (s. str.) *leucogrammum*, Danilevsky et al., 2005 : 131, 133, 147.

Type locality. – Russia, Tuva Republic, Khemchik river valley (most probably the mouth of the river). The description of *Neodorcadion sajanicum* Hamm. was based on "Nagra exemplar tagna invid floden Kemtschik i Mongoliet" with poorly developed elytral striae.

Diagnosis. – Body length in males : 13.2-21 mm, in females : 13.5-24 mm; body width in males : 5-7.6 mm, in females : 5.5-8.8 mm.

Body black, sometimes brownish or with red-brown legs; elytra with less developed carinae and white stripes, than in *E. m. quinquevittatum*; often carinae and stripes are hardly distinguishable or elytra totally smooth and glabrous; each population usually consists of all such forms; in striated forms each elytron usually with 5 hair stripes : two dorsal, two branches of humeral stripe and marginal stripe; both branches of humeral stripe are often fused. The unique population from south part of Krasnoiarsk region (Us river valley) is rather stable with moderately developed elytral stripes and carinae (Fig. 15b – 28-29).

Distribution (Map 14-1; localities 47-65). – Russia; south of central Siberia, southwards Minusinsk, very numerous in Tuva, where it is distributed northwards and eastwards Kyzyl with several populations along north slope of Tannu-Ola ridge and along Enisej river – westwards Shagonar.

Absent in China and Mongolia. The record (as "*E. leucogrammum*") for Inner Mongolia (Hua, 2002 : 206) is unbelievable.

Known localities are : Russia - Krasnoiarsk region : Minusinsk environs-(NMV); southmost area of Krasnoiarsk region near Tuva border, Us river valley in Verkhneusinsk environs-(MD); Khakassia : Sajanogorsk (about 70 km S Abakan)-(SK); Tuva : north and east limits of the species area with several populations south-westwards Kyzyl in the northern foothills of East Tannu-Ola; mouth of Khemchik river (type locality); 10 km W Chaa-Hol-(ZIN); Chaa-Hol- (ZIN); northern slope of Tannu-Ola, Elegest river, Chal-Kezhig-(MD); northern slope of Tannu-Ola, Bai-Haak-(MD); 3-10 km N Kyzyl-(MD); Siserlig (20 km N Kyzyl)-(MD); Ujukskij [Ujuk] ridge, 25 km N Kyzyl-(MD); Sush (40 km N Kyzyl)-(MD); Turan, Mt. Khai-Bar (70 km N Kyzyl)-(MD); 8 km E Kyzyl along left bank of Ka-Hem-(ZIN); Kok-Tei (20 km E Kyzyl), left bank of Ka-Hem river -(MD); Sug-Bazhi (30 km E Kyzyl), right bank of Ka-Hem river-(MD); Saryg-Sep (80 km E Kyzyl), right bank of Ka-Hem river-(MD); Buren-Hem (about 90 km E Kyzyl)-(MD); Balgazyn ["Balgassin"] (about 100 km SE Kyzyl)-(PR); Ust-Ujul (= ? Ust-Ujuk – about 40 km N Kyzyl), Bij-Hem river [1 male, 4 females, 20-31.VII.1974, Yu. Korotkov *leg*.]-(BPI – according to photos and personal message by G. Lafer, 2006).

Bionomy. – Imagoes are active from July to August, sometimes in June.

Materials. – 1 female, syntype of *Neodorcadion leucogrammum* Suv., Russia, Tuva Republic, ["North slope of Tannu-Ola ridge, 3-5.VIII.1903, Grum-Grzhimailo *leg*."] [in Russian] -(ZIN); 1 male, 1 female, "Minussinsk"-(ZIN); 1 male, "Sibiria, Minussinsk"-(NMV); 1 male, 1 female (both with very narrow striae), Russia, "Usinskoe" (Us river valley, south of Krasnoiarsk reg.), 29.VIII.1903-(ZIN); 1 female (with obliterated striae), Russia, "Verkhne-Usinskoe" (about same locality), 27-30.VII.1922, Kozhantchikov *leg*.-(ZIN); 1 female (striated form), Russia, Tuva Republic, northern slope of Tannu-Ola, Bai-Khaak, 11.VII.1959, S. V. Sharova *leg*.-(MD); 3 males, 1 female (striated form), same locality, 15.VII.1990-(MD); 1 male (with distinct elytral carinae), Russia, Tuva Republic, Chaa-Hol, 16.VII.1962, Mordkovitch *leg*.-(ZIN); 1 female (with poor elytral carinae and white stripes, from about type locality), Russia, Tuva Republic, 10 km W Chaa-Hol, 16.VII.1962, Mordkovitch *leg*.-(ZIN); 1 female Russia, Tuva Republic, Turan, Mt. Khai-Bar, (70 km N Kyzyl), 22.VII.1963-(MD); 2 males, 1 female, Tuva, 4 km E "Soviet Tuva"

state farm [about 8 km E Kyzyl along left bank of Ka-Hem], 27.VI.1979, B. Korotyaev *leg.*-(ZIN); 6 males, 2 females, Russia, Tuva Republic, Saryg-Sep (about 80 km E Kyzyl), right bank of Ka-Hem river, 2.VII.1990 (about half of specimens are glabrous and smooth)-(MD); 1 female (striated form), Russia, Tuva Republic, Buren-Hem (about 90 km E Kyzyl), 6.VII.1990-(MD); 1 male, Tuva Republic, Balgazyn ["Balgassin"] (about 100 km SE Kyzyl), 12.VII.1990, Sokolov *leg.*-(PR); 1 male, Russia, Khakassia, Sajanogorsk (about 70 km S Abakan), 23.V.1991"-(SK); 11 males, 1 female (no glabrous smooth specimens), Russia, Tuva Republic, 3-10 km N Kyzyl, 20.VII-10.VIII.1994, A. Klimenko *leg.*-(MD); 3 males, 1 female (with very distinct longitudinal furrows), Russia, Tuva Republic, Siserlig (20 km N Kyzyl), 20.VI.97, V. Patrikeev *leg.*-(MD); 10 males, 9 females (many glabrous, smooth specimens), Russia, Tuva Republic, Sush (40 km N Kyzyl), 15.VI.97, S. Vashchenko *leg.*-(MD); 6 males, 5 females (distinctly striated form), Russia, Tuva Republic, Ujukskij (Ujuk) ridge, 25 km N Kyzyl, 1200 m, 16-17.VI.2001, R. Yakovlev *leg.*-(MD); 1 female (striated form), Russia, Tuva Republic, Sug-Bazhi (30 km E Kyzyl), right bank of Ka-Hem river, 27.VII.2002, Yu. Mikhailov *leg.*-(MD); 6 males, 2 females (with a few glabrous males), Russia, Tuva Republic, northern slope of Tannu-Ola, Elegest river, Chal-Kezhig, VII.2002, Yu. Mikhailov *leg.*-(MD); 28 males, 3 females (no smooth glabrous specimens), Russia, Krasnoiarsk region, Verkhneusinsk, Us river valley, 5.VII.2002, A. Brinev *leg.*-(MD); 5 males, 6 female (several males and females are nealy glabrous), Russia, Tuva Republic, Kok-Tei (20 km E Kyzyl), left bank of Ka-Hem river, 7.VII.2003, A. Nikolaev *leg.*-(MD).

Remarks. – The taxon was described from Kemchik river. The type locality is evidently connected with mouth of Khemchik river situated in about 25 km westwards Chaa-Hol in Tuva, as upper levels of Khemchik are well investigated, and only other *Eodorcadion* species are known from there (*E. ptyalopleurum*). According to B. E. Yakovlev (1901), specimens from Kemchik river were accepted by R. Hammarström, as "*Neodorcadion sajanicum*". I do not know the type, but according to N. N. Plavilstshikov (1958), it is similar to the type of *N. quinquevittatum*, but looks like old specimen. According to a single available specimen from the type population (a female, 10 km W Chaa-Hol-ZIN), it is really characterized by partly reduced elytral striae. So, the name can not be a synonym of *Neodorcadion quinquevittatum* Hamm., as it was regarded by Plavilstshikov (1958) and others. Population of specimens with partly reduced elytral sculpture and design and populations of specimens with strongly developed elytral carinae and stripes are in subspecies relations, as it was reliably declared by E. Reitter (1897) with his "*Neodorcadion quinquevittatum sajanicum*". I treat here all populations of *E. maurum* with partly reduced elytral carinae and stripes as one subspecies (though such populations are spread in different directions from the populations of *E. m. quinquevittatum*, wich were regarded before (Plavilstshikov, 1958) as "*E. leucogrammum* (Suv.)"; *Neodorcadion sajanicum* Hammarström, 1893 = *Neodorcadion leucogrammum* Suvorov,1909, **syn.n.**

Neodorcadion leucogrammum Suvorov, 1909 was described from "nördlichen Abhängen des Gebirgsrückens Tanny-Ola Anfang VIII.1903 gesammelt." Typical population (Fig. 15b-17) can be situated near Chal-Kezhig in Elegest river valley (Fig. 15b – 18-20), where striated specimens are mixed with glabrous; near Baj-Haak, where rather striated specimens are known from or in Khemtchik river valley where "*Neodorcadion sajanicum* Hamm." was described from. Original description of *N. leucogrammum* was based on 3 males and 1 female with hardly developed elytral carinae and white stripes.

A male (ZIN) with two hand labels by Suvorov : "*Neodorcadion leucogrammum* typ.m." and "Namiur river to the north from Kobdo, 18.VII.1903, Gr.-Gr. *leg.*" does not belong to the type series; it was collected out of the type locality much before than the expedition of G. E. Grum-Grzhimailo reached Tuva territory. It is a striated form of *E. m. maurum*.

The population from Us river valley with moderately developed elytral carinae and hair stripes (Fig. 15b-28-29) is charcterized by relatively low level of individual variability (no smooth glabrous specimens are known), that is unusual for the taxon. It seems to be strongly isolated from the species area and possibly could be regarded as a separate subspecies.

The populations from Tannu-Ola and populations from western, northern and eastern limites of the taxon area seem to have independent origin and after more detail morphological study could be recognised as different subspecies.

E. leucogrammum was illustrated by Wang Zhicheng (2003: 298) with a photo of a female of *E. jakovlevi* from Huolinguole of Tongliao area, as well as with several drawings of immature stages of *E. maurum sajanicum* (= *E. leucogrammum*) from Tuva republic copied from Tsherepanov's monograph (1983 : 63).

15c. *Eodorcadion* (s. str.) *maurum katharinae* (Reitter, 1898), stat. nov., comb. n. (Fig. 15d)

Neodorcadion katharinae Reitter, 1898 : 21 ("Nördliche Mongolei"); Winkler, 929 : 1200.

Neodorcadion catharinae Jakovlev, 1901 : 158 (unjustified emendation); Pic, 1901 : 67 ("Mong.").

Eodorcadion katharinae, Plavilstshikov, 1958 : 456; Namhaidorzh, 1972 : 521, part.; Lobanov et al., 1982 : 265; Hua, 2002 : 206 (Inner Mongolia); Wang, 2003 : 298 (Inner Mongolia : East Wuzhu of Xilin-Gol area; Mongolia).

Eodorcadion (Ornatodorcadion) katharinae, Gressitt, 1951 : 339, 343; Breuning, 1958 : 3; 1962 : 33.

Eodorcadion ornatum m. *atricorne* Heyrovsky, 1965 : 43, 46, part. ("Uvs Aimak: Beschmeren sum bei Atschit Nur; Uvs Nur; Umgebung Uvs Nur, Zuungobi sum"), part., unavailable name.

Eodorcadion quinquevittatum, Heyrovsky, 1965 : 43 ("Uvs Nur"); Namhaidorzh, 1972 : 521, part.

Eodorcadion maurum, Namhaidorzh, 1972 : 519, part.

Type locality. – Mongolia : Ubsu-Nur lake valley. The taxon was described after a single male ("19 mm") from North Mongolia, but all arround its area it is represented by rather special morphological forms, and only specimens from near Ubsu-Nur lake are similar to the holotype.

Diagnosis. – Body length in males : 14.6-20 mm; in females : 18-25.5 mm; body width in males : 5.8-8.1 mm, in females : 7.1-9.5 mm.

Body relatively wide, wider in south populations, black; antennae, legs and elytra are always black; elytra glabrous or with very strong carinae and with the widest white elytral stripes known in the species (Figs. 15d–36,48), sometimes specimens are nearly totally white, especially females (Figs. 15d-40,49); all transitions between glabrous and striated forms known and can be represented in one population; in striated forms each elytron with 5 stripes : marginal, humeral (always devided in two portions) and two dorsal; several populations (typical – south bank of Ubsu-Nur, south Erzin environs, east Mongolian part of Tes river valley) demonstrate greate degree of individual variability; specimens (males and females) of one population can be totally smooth and glabrous without stripes and carinae to strongly carinated with wide white stripes with many intermediate forms; another populations (from near Tere-Hol lake) do not have glabrous smooth specimens.

Distribution (Map 14; localities 66-77). – South-east of the species area; Russia, Tuva : all populations along Tes river and Tere-Hol lake environs; Mongolia : north part of Ubsu-Nur aimak : south-eastwards Ubsu-Nur lake and along Tesijn-Gol river; north part of Dzabkhan aimak : also along Tesijn-Gol river. The records of the taxon (as "*E. katharinae*") for Chinese Inner Mongolia (Hua, 2002 : 206; Wang, 2003 : 298) are wrong.

Known localities : Mongolia - Ubsu-Nur aimak : south bank of Ubsu-Nur lake (typical form), possible type locality-(MD); Ubsu-Nur lake environs (HNHM; Heyrovsky, 1965 as *E. quinquevittatum*); 40 km ESE Dzun-Goby, near Barun-Turun (typical form)-(MD); 30 km NE Barun-Turun, sands Altan-Els (including strongly widened carinated males and females and very white females, as well as specimens with partly reduced carinae and white stripes to totally smooth and glabrous)-(ZIN); Baga-Nur lake, 6 km NE Dzun-Gobi - (HNHM, SK, Heyrovsky, 1973a as *E. dorcas* m. *morosum* and *E. dorcas* m. *morosum* ab. *interruptolineatum*; Heyrovsky, 1975 as *E. d. fortecostatum*); Dzun-Gobi (ZIN, "type locality" of *E. ornatum* m. *atricorne* Heyrovsky 1965); Dzabkhan aimak: 10 km NW Tes (Delgerekh) (typical form)-(MD); 30 km WNW Tes (males with reduced carinae and elytral stripes to totally smooth and glabrous)- (ZIN). Russia – Tuva Republic : 10 km SSE Erzin, Mt. Kyzyl-Khai-(MD); valley of Tes-Hem SW Samagaltaj, Shara-Sur-(MD); Erzin env. (Photo. 3)-(ZIN, MD); Baj-Dag, 6 km NW Erzin, Tes-Hem river valley-(MD); 5 km S Erzin, Tes-Hem river valley-(MD); sands south-eastwards Tere-Hol lake just near Mongolian border along left bank of Tes-Hem river-(ZIN, MD).

Bionomy. – The subspecies seems to be specially connected with plane sandy landscapes. Neighbour hilly areas are occupied by the populations of *E. m. maurum* without striated males.

Imagoes are active from July to September. The representatives of Russian populations were collected among Caragana shrubs often rather high feeding on the twigs (observations by A. Saldaitis near Tere-Hol lake and Yu. Mikhailov near Erzin).

Materials. – Mongolia : 1 male – holotype of *Neodorcadion katharinae* Reitter with two labels : "Mongolia bor. Reitter" and "*N. katharinae* m. 1897"-(ZIN); 1 male, "paratype" of *E. ornatum* m. *atricorne* Heyr., "Mongolia : Uvs aimak, Uvs Nur, 31.VII.1963, *leg*. A. Bolb"-(HNHM); 1 male (most probably a part same series) "Mongolia : Uvs Aimak, Umg. Uvs nuur, 3.VII.1963, *leg*. A. Bold"-(HNHM); 16 males, 5 females (incl. strongly widened carinated males and females, and very white females, as well as specimens with partly reduced carinae and white stripes to totally smooth and glabrous), Mongolia, Ubsu-Nur aimak, 30 km NE Barun-Turun [Sands Altan-Els], 5.VII.1968, Arnoldi and Emeljanov *leg*.-(ZIN); 1 male and 2 females (strongly carinated form) from same locality, 2-3.IX.1968, Kozlov *leg*.-(ZIN); 4 males (with reduced carinae and elytral stripes to totally smooth and glabrous), Mongolia, Dzabkhan aimak, 30 km WNW Tes (= Delgerekh), 3-4.VII.1968, Emeljanov *leg*.-(ZIN); 3 males, 2 females, "Mongolia : Uvs Aimak, am See Bag nuur, 6 km NO von Somon Zuungobi, 1000 m, 25.VI.1968, exp. Dr. Z. Kaszab"-(HNHM); 3 males, 1 female (the female is equipped with a red label "paratype" [wrong designation, because m. *interruptolineatum* was decribed by S. Breuning in 1947] and a label by Breuning's hand : "*Eodorcadion dorcas interruptolineatum* m.") – with same geographical label-(SK); 2 males (typical form), Mongolia, Ubsu-Nur aimak, Dzun-Gobi, 9.VIII.1970, Emeljanov-(ZIN); 1 male Mongolia, Ubsu-Nur aimak, 40 km ESE Dzun-Goby (near Barun-Turun), 12.VIII.1975, L. Medvedev *leg*.-(MD); 1 male Mongolia, Ubsu-Nur aimak, south bank of Ubsu-Nur lake [possible type locality], 10.VIII.1975, L. Medvedev *leg*.-(MD); 1 male (typical form), Mongolia, Dzabkhan aimak, 10 km NW Tes (Delgerekh), 13-16.VIII.1975, L. Medvedev *leg*.-(MD). Russia, Tuva: 5 males (2 glabrous and 3 carinated specimens), Russia, Tuva Republic, valley of Tes-Hem SW

Samagaltaj, Shara-Sur ridge, 15.VII.1968, Ju. Kostiuk *leg*.-(MD); 7 males, 3 females (including carinated males and females), Russia, Tuva Republic, Erzin, 1 and 17.VII.1972, 27.VII.1980, B. Korotyaev *leg*.-(ZIN, MD); 2 males, 1 female (including carinated male and female), same locality, 4.VIII.1977, P. Bogdanov *leg*.-(MD); 1 male, 1 female (typical specimens), Russia, Tuva Republic, Tere-Hol lake (about 30 km S Erzin), 10.VIII.1976, Chabovsky *leg*.-(ZIN); 3 males (typical specimens), same locality, 26.VII.1971, Antropova *leg*.-(MD); 6 males, 6 females (including several males with partly reduced elytral sculpture, as well as several females with widened white stripes), same locality, 10.VII.1996, D. Obydov *leg*.-(MD); 3 females (with widened elytral stripes), Russia, Tuva Republic, Erzin distr., 12.VII.1978, Yu. Kostiuk *leg.-(MD)*; 2 males, 2 females (one pair with deep striae, another pair with obliterated striae), Russia, Tuva Republic, Erzin env., 27.VII.1980, B. Korotyaev *leg*.-(ZIN); 3 males, 1 female (typical form), Russia, Tuva Republic, 10 km SSE Erzin, Mt. Kyzyl-Khai, 10.VII.1994, A. Klimenko *leg*.-(MD); 24 males, 10 females (about half of specimens glabrous, another half are more or less striated), Russia, Tuva Republic, Baj-Dag, 6 km NW Erzin, Tes-Hem river valley, 24.VI.1999, Yu. Mikhailov-(MD); 38 males and 14 females (most of specimens are more or less striated), Russia, Tuva Republic, 5 km S Erzin, Tes-Hem riv. valley, 22.VI.1999, Yu. Mikhailov *leg*.-(MD).

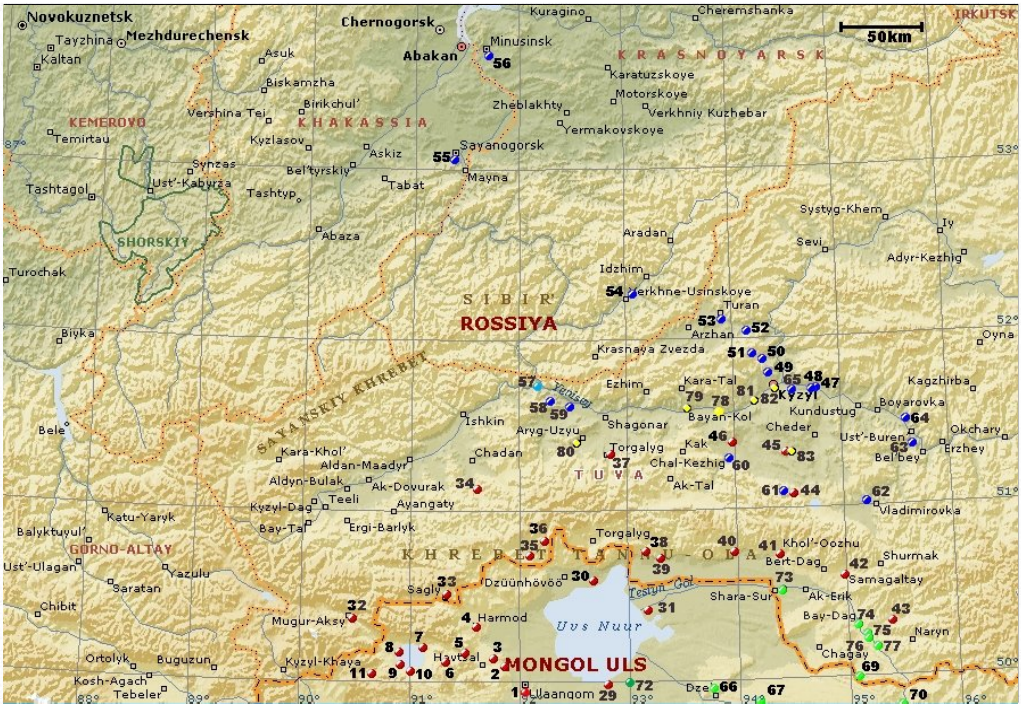
Remarks. – B. Namhaidorzh (1972) supposed, that a unique specimen from Zoological Institute (St.-Petersburg) was not a real type, as the real type had to be in Budapest (according to the original description). But in Hungarian Natural History Museum (Budapest), where most of E.Reitter's types are preserved, the type of *Neodorcadion katharinae* is absent. The specimen from St. Petersburg has a label written by E. Reitter's hand : "*N. katharinae* m. 1897" of same size as it was published by E. Reitter. More over, B. Namhaidorzh (1972) supposed this specimen to be *E. maurum* m. *leucotaenium* Suv. and so a female, but that was an evident mistake, because the specimen is a male, as it was reliably mentioned by E. Reitter in the original description.

I attribute to *E. m. katharinae* all populations of the east part of Ubsu-Nur depression. Most of them are characterized by strong individual variability (from glabrous to deeply striated forms); more stable populations with only striated forms are characterized by rather wide body and very strong development of white stripes in females.

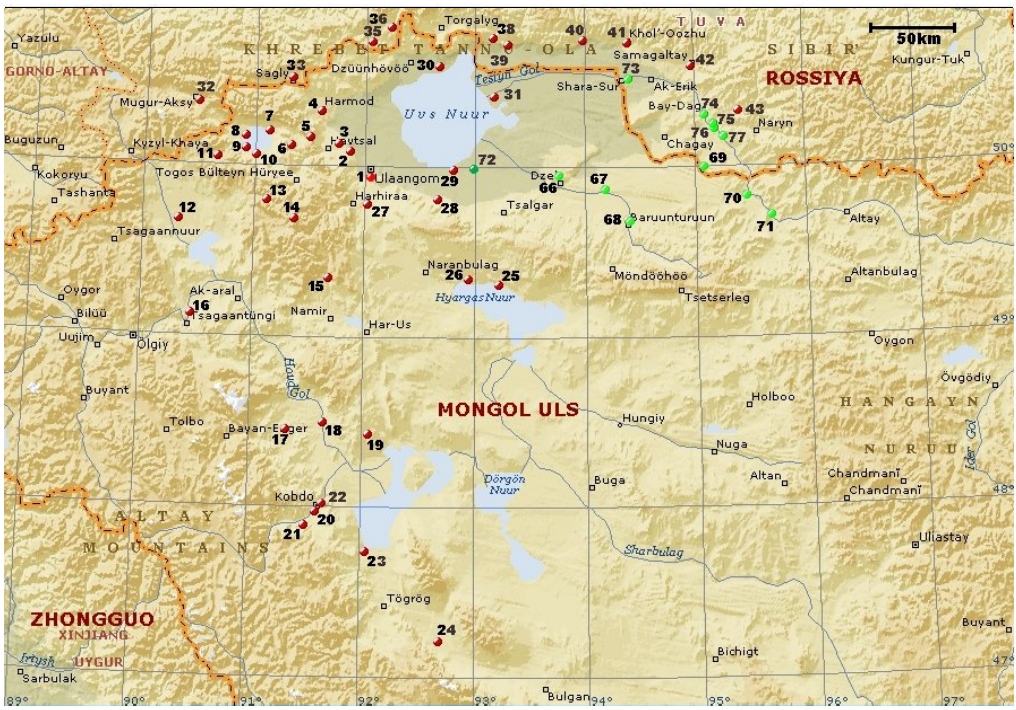
Rather different specimens observed in the population from near Erzin (Tuva) with mixed smooth, glabrous and carinated, pubescent forms (Figs. 15d – 41-44) belong to one species, as all transitional forms were collected here and more over male and females of all forms were often observed copulated (Yu. Mikhailov, personal communication of 2003). The presence of both forms in one population is rather typical for *E. m. katharinae*.

Glabrous specimens of *E. m. katharinae* from Dzabkhan aimak and from northern environs of Barun-Turun (Ubsu-Nur aimak) were recorded by B. Namhaidorzh (1972 : 520) as "*E. maurum*".

The description of *Eodorcadion ornatum* m. *atricorne* Heyrovsky, 1965 was based on three series of specimens : "Beschmeren sum bei Atschit Nur" [Buch-Muren northwards Atchit-Nur], "Uvs Nur" and "Umgebung Uvs Nur, Zuungobi sum". Only two series: first from near Ubsu-Nur lake and second from near Dzun-Gobi belong to *E. m. katharinae*. Certain specimens from the first series (Ubsu-Nur) were also identified by L. Heyrovsky (1965 : 43) as *E. quinquevittatum*. The series from near Buch-Muren consists of *E. maurum maurum*.



Map 14(1) Localities of ***E. maurum*** : Northern part of the area



Map 14(2) Localities of ***E. maurum*** : Southern part of the area

Maps 14. Localities of ***E. maurum*** : Russia and Mongolia.

1. north (Russian) part of the area; 2. South (Mongolian) part of the area.

List of localities :

E. m. maurum (1-46) : 1. Ulangom environs (type locality); 2. 19-20 km NW from Ulangom; 3. Chundlen-Gol river, 32 km (or 35 km) NW from Ulangom; 4. Sagil eastwards Ureg-Nur lake (type locality of E. boldi Heyr.); 5. Ulan-Daba pass, 30km W Ulangom; 6. Chag, between Ureg-Nur lake and pass Ulan-Daba, 14 km WSW from the pass; 7. NE bank of Ureg-Nur Lake; 8. NW bank of Ureg-Nur Lake; 9. South-west bank of Ureg-Nur lake; 10. South bank of Ureg-Nur lake; 11. Ogotor-Hamryn-Daba pass (about 20 km SE Ureg-Nur Lake); 12. Buch-Muren river, NE somon Buch-Muren; 13. Iamatyn-Ama, 20 km NW Mt.Turgen-Ula; 14. Mt. Turgen-Ula; 15. Namir-Gol river; 16. Kobdo River valley, mouth of Katy River; 17. Erdene-Buren; 18. Miangad (near Khara-Us-Nur lake); 19. NW bank of Khara-Us-Nur lake, Chovd, 48°25'N, 92°03'E; 20. Bujant [near Kobdo]; 21. 15 km SW Chovd, 47°51'N, 91°30'E; 22 – Kobdo; 23. Jamatin Dolon,about 40 kmN from Manchan,SW bank of Khara-Us-Nur lake; 24. Tzagan-Nur Lake near somon Dzereg; 25. N from Khirgis-Nur lake, 48 km ESE from from Naran-Bulak; 26. NW bank of Khirgis-Nur, 27 km ESE Naran-Bulak; 27. 20 km S from Ulangom; 28. 45 km ESE Ulangom; 29. South bank of Ubsu-Nur Lake, 50 km E Ulangom; 30. North bank of Ubsu-Nur Lake; 31. NE bank of Ubsu-Nur Lake; 32. Mugur-Aksy (30 km NW Orog-Nur Lake); 33. Sagly (about 30 km NE Orog-Nur Lake); 34. Khondergej river; 35. Handagaity; 36. Ulatai river (near Handagaity, northwards Ubsu-Nur Lake); 37. Torgalyk, 30km S Shagonar; 38. Irbitei river; 39. Ak-Chaara, 20km NE Ubsu-Nur Lake; 40. 50 km E Amdaigyn–hol; 41. Hol-Ezhu (south slope of East Tannu-Ola); 42. The easternmost slope of East Tannu-Ola, Samagaltai environs; 43. Moren, 25 km NE Erzin, Mt. Ulug-Haiyrkhan-Dag; 44. Durgen, 60 km S Kyzyl (5km SE Bai-Haak); 45. Hadyn Lake, 40 km S Kyzyl; 46. 50 km WSW Kyzyl;

E m. sajanicum (47-65) : 47. Sug-Bazhi (30 km E Kyzyl), right bank of Ka-Hem River; 48. Kok-Tei (20 km E Kyzyl), left bank of Ka-Hem River; 49. 3-10 km N Kyzyl; 50. Siserlig (20 km N Kyzyl); 51. Ujutzkij Ridge, 25 km N Kyzyl; 52. Sush (40 km N Kyzyl); 53. Turan, Mt. Khai-Bar (70 km N Kyzyl); 54. Us River Valley in Verhneusinsk environs; 55. Sajanogorsk (about 70 km S Abakan); 56. Minusinsk environs; 57. 10 km W Chaa-Hol; 58. Mouth of Kemchik river (type locality); 59. Chaa-Hol; 60. Chal-Kezhig in Elegest River Valley (possible type locality of *N. leucogrammum*); 61. Bai-Haak; 62. Balgazyn (about 100 km SE Kyzyl); 63. Buren-Hem (about 90 km E Kyzyl); 64. Saryg-Sep (80 km E Kyzyl), right bank of Ka-Hem River; 65. 8 km E Kyzyl along left bank of Ka-Hem;

E. m. katharinae (66-77): 66. Baga-Nur Lake, 6 km NE Dzun-Gobi and Dzun-Gobi env.; 67. 30 km NE Barun-Turun, sands Altan-Els; 68. 40 km ESE Dzun-Goby, near Barun-Turun; 69. SE of Tere-Hol lake; 70. 30 km WNW Tes; 71. 10 km NW Tes (= Delgerekh); 72. South bank of Ubsu-Nur Lake (type locality); 73. Valley of Tes-Hem SW Samagaltai, Shara-Sur; 74. Baj-Dag, 6 km NW Erzin, Tes-Hem river valley; 75. Erzin; 76. 5 km S Erzin, Tes-Hem river valley; 77. 10 km SSE Erzin, Mt. Kyzyl-Khai;

E. m. quinquevittatum (78-83) : 78. Ust-Elegest environs (about 40km W Kyzyl) – type locality; 79. Baian–Kol (about 50 km W Kyzyl); 80. West Tannu-Ola Ridge, Ishtii-Kem; 81. 15 km W Kyzyl; 82. 1 km S Kyzyk; 83. Hadyn lake.

15d. *Eodorcadion* (s. str.) *maurum quinquevittatum* (Hammarström, 1893), stat. n., comb. n. (Fig. 15c)

Neodorcadion quinquevittatum Hammarström, 1893 : 192 ("Soldan invid Jenisei (Ulukem)"); Reitter, 1897 : 183 ("Saldan"), part.; Jakovlev, 1901 : 151, 157, part.; Pic, 1901 : 68 ("Mong."), part.; Winkler, 1929 : 1200; Plavilstshikov, 1932c : 193, part.

Eodorcadion quinquevittatum, Plavilstshikov, 1958 : 453 (= *sajanicum* Hamm.), part.; Namhaidorzh, 1972 : 521, part.; Tsherepanov, Tsherepanova, 1978 : 131; Lobanov et al., 1982 : 265; Tsherepanov, 1983 : 66; Hua, 2002 : 206 (= *sajanicum* Hamm.; "Inner Mongolia"); Wang, 2003 : 303 (Inner Mongolia : Khingan area; Hulunbuir; South Siberia).

Eodorcadion quinquevittatum ab. *semidissociatum* Plavilstshikov, 1958 : 455, unavailable name.

Eodorcadion quinquevittatum ab. *semiexolutum* Plavilstshikov, 1958 : 455, unavailable name.

Eodorcadion quinquevittatum ab. *subconjugatum* Plavilstshikov, 1958 : 455, unavailable name.

Eodorcadion quinquevittatum ab. *multiconjugatum* Plavilstshikov, 1958 : 455, unavailable name.

Eodorcadion (Ornatodorcadion) quinquevittatum, Gressitt, 1951 : 338, 345, part.; Breuning, 1958 : 3 (= *sajanicum* Hamm.), part.; 1962 : 30 (= *sajanicum* Hamm.), part.

Eodorcadion (s. str.) *quinquevittatum*, Danilevsky et al., 2005 : 131, 132, 147.

Type locality. – Tuva : Ulug-Hem valley near Ust-Elegest between Shagonar and Kyzyl (according to the original description). Soldan was situated eastwards Ust-Elegest. S. Breuning (1962) recorded type locality as : "Governement Minoussinsk". Minusinsk was an administrative centre of a very big region.

Diagnosis. – Body length in males : 13.4-21.5 mm, in females : 16.1-25 mm; body width in males : 4.7-7.7 mm, in females : 6.5-9.7 mm.

Body, antennae, legs and elytra are always black; elytra always with well developed carinae; furrows between carinae with narrow hair stripes; each elytron with 5 stripes : marginal, humeral (always devided in two portions) and two dorsal; glabrous smooth forms (without hair stripe and elytral carinae) are unknown. *E. m. quinquevittatum* differs from all other subspecies by constantly deeply carinated elytra.

Distribution (Map 14-1; localities 78-83). – Russia, Tuva Republic : central area of the Republic and northern slope of Tannu-Ola from about Chadan to Kyzyl; known localities are : "Saldan" – east environs of Ust-Elegest, about 40 km W Kyzyl-(type locality, ZIN); from Ulug-Hem to "Urchailyk"(?)-(ZIN); Baian–Kol (about 50 km W Kyzyl)-(PR); 15 km W Kyzyl-(SK); West Tannu-Ola ridge, Ishtii-Hem-(MD); 1 km S Kyzyl-(MD); Hadyn (= Svatikovo) lake (about 40 km S Kyzyl)-(MD); Absent in Mongolia and China; records (as "*E. quinquevittatum*") for Chinese Inner Mongolia (Hua, 2002 : 206; Wang, 2003 : 303) are wrong.

Bionomy. – The taxon is connected with steppe and semidesert landscapes up to 1200 m above the level of the see (Tuva Republic – own observations). Several known to me areas are very densely populated. Often rather big series are preserved in museums from several localities.

The development of the taxon (under the name "*Eodorcadion quinquevittatum*") was investigated in details by A. I. Tsherepanov, N. E. Tsherepanova (1978) and A. I. Tsherepanov (1983). A generation requires two years. Adults were observed from June to August. They are most numerous in July. Adults are active in the late morning before 12.00, but maximum of adult activity is in the afternoon. In hot days beetles disappear at about noon. After emergence adults feed on grass plants often climb up along the stems of *Caragana*, *Lasiagrostis* and other plants. Females deposit eggs in the underground axils of *Stipa* and other Gramineae. Half grown and mature larvae can be observed in soil. Many larvae were collected in soil among roots of *Lasiagrostis*. Pupation occurs from about June to July in soil cell after second overwintering. The pupal stage lasts from 2 to 3 weeks. Adults leave pupal cells soon after emergence. Adult longevity is about 4 weeks.

Materials. – 1 male (from type locality), ["Enisej river, Saldan (near Ust-Elegest), 30.VII.1902, Sushkin *leg*."] [in Russian]-(ZIN); 5 males, Russia, Tuva, ["from Ulug-Hem to Urchailyk, Uriankhai region, 10.VI.1914, Tomashevsky *leg*.] [in Russian-(ZIN); 1 male, Russia, Tuva Republic, "Tannu-Tuva, vall. fl. Cha-Chem [= Ka-Hem], 23.VI.1928"-(NMP); 51 males, 16 females (only typical form), Russia, Tuva Republic, Hadyn (= Svatikovo) lake (about 40 km S Kyzyl), 5.VII.1959, S. V. Sharova *leg*.-(MD); 2 females, Tuva, Kyzyl env., right bank of Enisej river, 3.VII.1973, B. Korotyaev *leg*.-(ZIN); 1 males, 1 female (typical form), Russia, Tuva Republic, West Tannu-Ola ridge, Ishtii-Hem, 1200 m, 21.VII.1974, M. Danilevsky *leg*.-(MD); 1 male, 6 females, same locality, June-July, 1974, M. Krivosheina *leg*.; 1 female (typical form), Russia, Tuva Republic, VII-VIII.1984, V. Kukuruza *leg*.)-(MD); 2 males, 2 females (typical form), Russia, Tuva, Enisej river near Baian-Kol (about 50 km W Kyzyl), 10.VII.1989, A. Moskvin *leg*.-(PR); 1 female, Russia, Tuva Republic, 1 km S Kyzyl, 12.VIII.1993, A. A. Benediktov *leg*.-(MD); 5 males, 5 females (including a male with partly obliterated elytral carinae), Russia, Tuva, 15 km W Kyzyl, 26.VI.1994, Z. Cletecka *leg*.-(SK); 56 males, 41 females (only typical form), same locality, 29.VII.1995, A. Avdeev *leg*.-(MD); 4 males, 3 females, same locality (typical form), 28.VIII.1998, D.Obydov *leg*.-(MD); 3 females, same locality, 20.VI.2003, D. Obydov *leg*.-(MD); 3 males, Kyzyl env., Ka-Hem, 21.VI.2003, D. Obydov *leg*.-(MD).

Remarks. – I do not know the type of *Neodorcadion quinquevittatum*, but a male with very deep stripes from the type locality is available : ["Enisej river, Saldan (near Ust-Elegest), 30.VII.1902, Sushkin *leg*."] [in Russian]-(ZIN). Unclear situation exists now near Hadyn lake. Homogenous series of *E. m. maurum* and *E. m. quinquevittatum* were collected here (by different collectors in different years). Most probably in fact two populations are separated geographically. N. N. Plavilstshikov (1958) and S. Breuning (1962) attributed to their "*E. quinquevittatum*" (and so to *E. m. quinquevittatum* of the present work) the specimens from south part of Krasnoiarsk region. I regard now that population as *E. m. sajanicum*.

16. *Eodorcadion* (s. str.) *tuvense* Plavilstshikov, 1958 (Fig. 16)

Eodorcadion tuvense Plavilstshikov, 1958 : 451 (USSR, Tuva region : Chadan-steppe – holotype, Urguzun, Atartysh, Ishtii-Hem, Akkhem, Chadan, Chaa-Hol, Khendergei, Boiarovka, Znamenka); Lobanov et al., 1982 : 265.

Eodorcadion (Ornatodorcadion) tuvense, Breuning, 1962 : 34.

Eodorcadion tuvense m. *semivirgulatum* Plavilstshikov, 1958 : 452, unavailable name.

Eodorcadion leucogrammum, Tsherepanov, Tsherepanova, 1978 : 127-131 ("= *tuvense* Plav."); Tsherepanov, 1983 : 61 ("= *tuvense* Plav.")

Eodorcadion (s. str.) *tuvense*, Danilevsky et al., 2005 : 131, 133.

Type locality. – Russia, Tuva Republic : Chadan environs – according to the original description.

Diagnosis. – Body length in males : 12.3-20.5 mm, in females : 16.8-24 mm; body width in males : 4.7-7.3 mm; in females : 6.2-9.2 mm. According to N. N. Plavilstshikov (1958 : 452), the minimal length of males and females is respectively : 11 mm and 15 mm.

Body black, sometimes brownish or with red-brown legs; elytra usually smooth, dull, without humeral granules and without apical stripes; always with very special white sparse pubescence; mostly without carinae and dorsal stripes, but forms with regular white elytral stripes, with or without deep longitudinal furrows are known both in males and in females (ab. *semivirgulatum*, Figs. 16 – 4, 5, 9-12); each elytron can be with 5 stripes : marginal, humeral (devided in two portions) and two dorsal, sutural stripe absent; elytral stripes can be partly reduced.

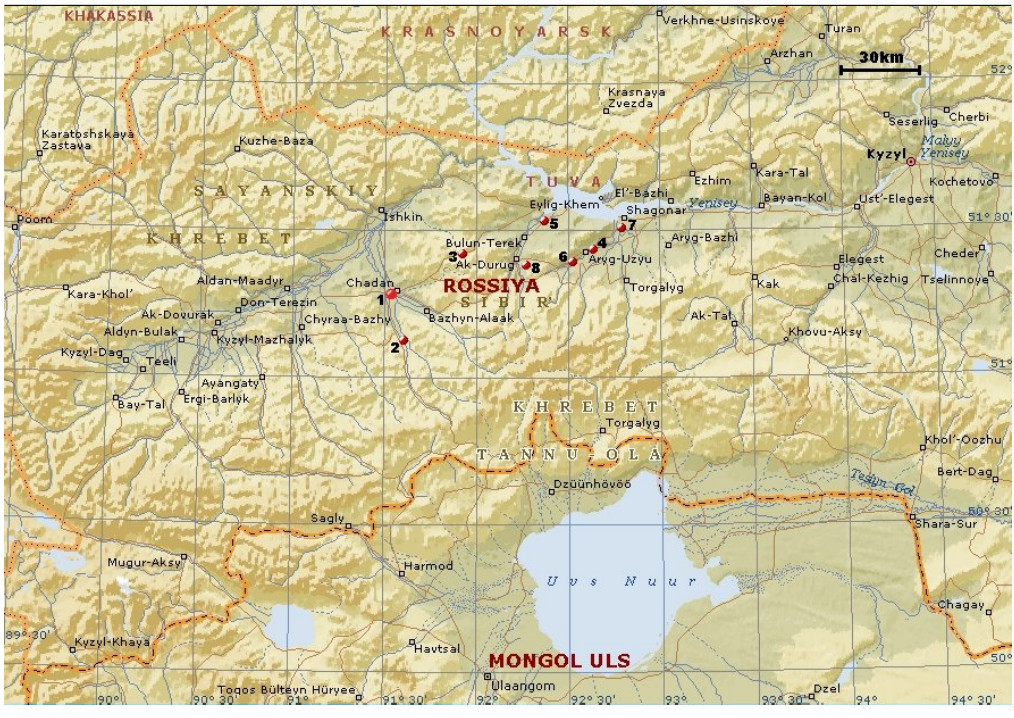
Distribution (Map 15). – Russia, Tuva Republic : central part of the Republic from about Chadan to Shagonar. Planes along south bank of Khemchik river valley and north slopes of West Tannu-Ola ridge. Absent in Mongolia. Known localities are : Chadan, type locality-(Plavilstshikov, 1958; ZIN); Chaa-Hol-(Plavilstshikov, 1958; MD); Urguzun (= Aryg-Uziu, about 20 km S Chaa-Hol)-(ZIN, Plavilstshikov, 1958); Ishtii-Hem-(Plavilstshikov, 1958, MD); Akkhem-(Plavilstshikov, 1958); Khendergei-(Plavilstshikov, 1958); Boiarovka (?)-(Plavilstshikov, 1958); Znamenka (?)-(Plavilstshikov, 1958), Shagonar environs (Photo. 5)-(ZIN, MD); Ak-Durug, between Chadan and Shagonar,-(coll. of S. Vashchenko, Kherson); Atartysh (about same locality)-(Plavilstshikov, 1958).

Bionomy. – The species is connected with steppe and forest-steppe landscapes up to 1200 m above the level of the see (Tuva Republic – own observations). Sometimes it was observed by me in forest glades. Several known to me areas are very densely populated. Sometimes rather big series are preserved in museums from several localities.

The development of the taxon (under the name "*Eodorcadion leucogrammum*") was investigated in details by A. I. Tsherepanov, N. E. Tsherepanova (1978) and A. I. Tsherepanov (1983). A generation requires two years. Adults appear from June to August. They are most numerous in July. Adults are active in the late morning before 12.00, but maximum of adult activity is in the afternoon. In hot days beetles disappear at about noon. After emergence adults feed on grass plants often climb up along the stems. Each female is able to deposit about 24-30 eggs. Females chew small niches with mandibles in the undeground part of stems of *Agropyron* and other Gramineae and then deposit inside the stem one egg or several (2-3) eggs in each site. Young larvae appear in about 3-4 weeks. If the soil is too humid the development can be much longer. New hatched larvae make galleries inside plant root. Half grown and mature larvae can be observed in soil. Pupation occurs from about June to July in soil cell after second overwintering at about 1-5cm under the soil surface, or deeper. The pupal stage lasts from 2 to 3 weeks. Adults leave pupal cells in about 7 days after emergence from pupae. Adult longevity is about 3-4 weeks. Imagoes were observed by Yu. Mikhailov near Shagonar climbing up *Caragana* stems.

Materials. – 41 paratypes : 7 males, 1 female, paratypes, Tuva, Chadan Steppe, 28.VII.1948, A. Tsherepanov *leg*. [same label was published for the holotype]-(ZMM); 2 males, 1 female, paratypes, Tuva, between Chadan and Atartysh, 28.VII.1948, A. Tsherepanov *leg*.- (ZMM); 1 female, paratype,Tuva, Boiarovka, 7.VII.1948, Perevozchikova *leg*.-(ZMM); 2 males, 1 female, paratypes,Tuva, Atartysh, 6.VII.1947, A. Tsherepanov *leg*.-(ZMM); 3 males, paratypes,Tuva, Urgu-

zun, 13.VII.1947, A. Tsherepanov *leg*.-(ZMM); 8 males, 3 females, paratypes, Tuva, Urguzun, 18.VII.1947, 20.VII.1947 and 24.VII.1947, Fedorova *leg*.-(ZMM); 1 male, paratype, Tuva, Znamenka, 25.VII.1947, A. Tsherepanov *leg*.-(ZMM); 3 males, 2 female, paratypes, Tuva, Ishtii-Hem, 2.VIII.1947, Fedorova *leg*.-(ZMM); 1 male, 2 females, paratypes, Tuva, Shagonar, 22.VIII.1947, Fedorova *leg*.-(ZMM); 1 female, paratype, Tuva, 15 km W Chadan, 6.VII.1949, A. Tsherepanov *leg*.-(ZMM); 1 male, 1 female, paratypes, Tokha station [locality not mentioned in the original description], 13.VIII.1949, A. Tsherepanov *leg*.-(ZMM); 9 males, 7 females (including males and females of ab. *semivirgulatum*), Russia, Tuva Republic, Shagonar, 5-20.VII.1970, 8.VII.1976, A. I. Tsherepanov *leg*.-(MD); 2 males from same locality, 4.VII.1958-(ZIN); 8 males, 11 females (including males and females of ab. *semivirgulatum*), same locality, A. Napolov *leg*.-(MD); 5 males, 4 females (typical form), Russia, Tuva Republic, Ishtii-Hem (30 km S Chaa-Hol), 1200 m, VIII.1973, M. Danilevsky *leg*.- (MD); 3 males, 2 females (typical form), same locality, 10.VII.1979, S. Korolev *leg*.-(MD); 12 males, 11 females (including males and females of ab. *semivirgulatum*), Russia, Tuva Republic, Chaa-Hol, 7.VII.1976, A. I. Tsherepanov *leg*.-(MD); 3 females, Tuva, Aryg-Uziu, 2.VII.1980, B. Korotyaev *leg*.-(ZIN); 4 females, Tuva, N Chadan, 3.VIII.1980, B. Korotyaev *leg*.-(ZIN); 124 males, 86 females (about half of specimens belongs to ab. *semivirgulatum*), same locality, 5.VIII.1995, I. Avdeev *leg*.-(MD); 8 males, 4 females, Tuva, Ak-Durug, between Chadan and Shagonar, 5.VII.2003, S. Vashchenko *leg*.-(coll. of S. Vashchenko, Kherson).



Map 15. Localities of ***E. tuvense*** : Russia, Tuva Republic. 1.Chadan, type locality; 2. Khondergej; 3. Atartysh; 4. Aryg-Uzu; 5. Chaa-Hol; 6. Ishtii-Hem; 7. Shagonar; 8. Ak-Durug.

Remarks. - Type series in Plavilstshikov's collection (Zoological Museum of Moscow University) has no special author's labels. All 41 specimens were marked as "paratypes" by me. I did not find any type specimen in Zoological Institute in St.-Petersburg, where holotype (as well as a number of paratypes) must be preserved according to the original description.

Most probably holotype was not designated at all, as well as paratypes, and no specimens of type series were delivered to St.-Petersburg Museum. According to my observations near Ishtii-Hem, *E. tuvense* occurs sympatrically with *E. m. quinquevittatum*, so it is undoubtedly a separate species. According to personal message (2005) by S. Vashchenko, *E. ptyalopleurum* is sympatric with *E. tuvense* near Chadan in Chadan river valley, as well as along Adardash ridge, near Khondergei and Aryg-Uzu – according to the available labels. The true *E. m. sajanicum* (Suv.) was not known to A. I. Tsherepanov. He did not mentioned any locality of that taxon. The materials identified by A. I. Tsherepanov as *E. leucogrammum* (and so *E. m. sajanicum* of the present work) were collected from the populations used by N. N. Plavilstshikov for the description of his *E. tuvense* : Shagonar and Chaa-Hol (Tsherepanov, Tsherepanova, 1978 : 129), possibly, with only one exception – "Uspenka" - if it is Uspenka near Bai-Haak, then real *E. m. sajanicum* is possible here.

17. *Eodorcadion* (s. str.) *ptyalopleurum* (Suvorov, 1909) (Fig. 17)

Neodorcadion ptyalopleurum Suvorov, 1909 : 84 ("Auf den nördlichen Abhängen des Gebirgsrückens Tanny-Ola und in dem Bassin des Flusses Barlyk"); Winkler, 1929 : 1200.

Eodorcadion (Ornatodorcadion) ptyalopleurum m. *multivittatum* Breuning, 1947b : 171 ("Kobdo, Mongolie"[wrong locality]), unavailable name.

Eodorcadion ptyalopleurum, Plavilstshikov, 1958 : 462; Tsherepanov, Tsherepanova, 1978 : 107; Lobanov et al., 1982 : 265; Tsherepanov, 1983 : 57 (+ *multivittatum* Breun.); Hua, 2002 : 206 ("Inner Mongolia"); Wang, 2003 : 302 (Inner Mongolia : Chifeng; East Wuzhu of Xilin-Gola-rea; Russia), part.

Eodorcadion ptyalopleurum ab. *multivittatum*, Plavilstshikov, 1958 : 463, unavailable name.

Eodorcadion (Ornatodorcadion) ptyalopleurum, Gressitt, 1951 : 338, 345; Breuning, 1958 : 3; 1962 : 34.

Eodorcadion (s.str.) *ptyalopleurum*, Danilevsky et al., 2005 : 131, 133, 147.

Type locality. – Russia, Tuva Republic : Barlyk river valley near Khemchik river, according to the present lectotype designation.

Diagnosis. – Body length in males : 12.5-19.7 mm, in females : 15-23 mm; body width in males : 4.9-7.5 mm, in females : 5.8-9 mm.

Body usually black; sometimes brownish or with red-brown legs; elytra usually smooth, shining with several granules on shoulders, and usually without elytral carinae and without white elytral stripes; only bright white apical parts of humeral elytral stripes are usually present (Fig.17-1,17); abdomen with dense white pubescence; dorsal elytral carinae with dorsal stripes are known in males as ab. *multivittatum* (Fig. 17-6-8); similar female aberration also exists (Fig. 17-4,9), but seems to be never published; in striated forms each elytron usually with 5 hair stripes : two dorsal, two branches of humeral stripe and marginal stripe; both branches of humeral stripe are often fused; sutural stripe always absent; elytral stripes and carinae may be partly reduced.

Distribution (Map 16). – Russia, Tuva Republic : the westernmost regions of the Republic westwards from about Shagonar; foothills and small montains of the west part of Western Tannu-Ola and Alash mountains and planes in between. Absent in Mongolia. Several known loca-

lities are : Russia, Tuva Republic : Barlyk river valley near Khemchik river, lectotype locality, **present designation**-(ZIN, NMV, HNHM, MHNL); Khemchik river valley-(Tsherepanov, 1983); Teeli (30 km SW Ak-Dovurak)-(MD); Kyzyl-Mazhalyk-(MD); Chadan-(Tsherepanov, Tsherepanova, 1978; MD; SK); Chadan river valley-(Tsherepanov, 1983); Khondergei (20 km S Chadan)-(Tsherepanov, Tsherepanova, 1978; ZIN, MD); Shui river (30 km S Teeli)-(MD); Ak-Sug river upper Monchurek (30 km NE Ak-Dovurak)-(MD); Aryg-Uziu-(NMNH); Ak-Durug, between Chadan and Shagonar-(MD); Ak-Sug river, 60 km NW Ak-Dovurak (Photo. 6) – (according to personal message of Yu. Mikhailov, 2006).

The record of *E. ptyalopleurum* for Mongolia ("Kobdo") by S. Breuning (1946) was not repeated later (Breuning, 1962). The wrong record was connected with 2 males of *E. ptyalopleurum* (MHNL) with wrong locality label. The species absent in China; the records for "Inner Mongolia" (Hua, 2002 : 206; Wang, 2003 : 302) are wrong.

Bionomy – The species is connected with steppe and semidesert landscapes. Several known to me areas are very densely populated. Often rather big series are preserved in museums from many localities.The development of the species was investigated in details by A. I. Tsherepanov, N. E. Tsherepanova (1978) and A. I. Tsherepanov (1983). A generation requires two years. Adults appear from June to August. They are most numerous in July. Adults are active in the late morning before 12.00, but maximum of adult activity is in the afternoon. In hot days beetles disappear at about noon. After emergence adults feed on grass plants. Females deposit eggs in the underground axils of *Agrostis*, *Agropyron* and other Gramineae. Each female is able to deposit about 25-37 eggs. Young larvae appear in about 3 weeks, or sometimes in 4 weeks after oviposition from August to September. Half grown and mature larvae can be observed in soil. Larval soil mines are packed with grey and greenish frass and debris, so larvae feed on roots and green parts of the plants. Pupation occurs from about June to July in soil cell after second overwintering at about 5 cm under the soil surface. The pupal stage lasts from 2 to 3 weeks. Adults leave pupal cells soon after emergence.

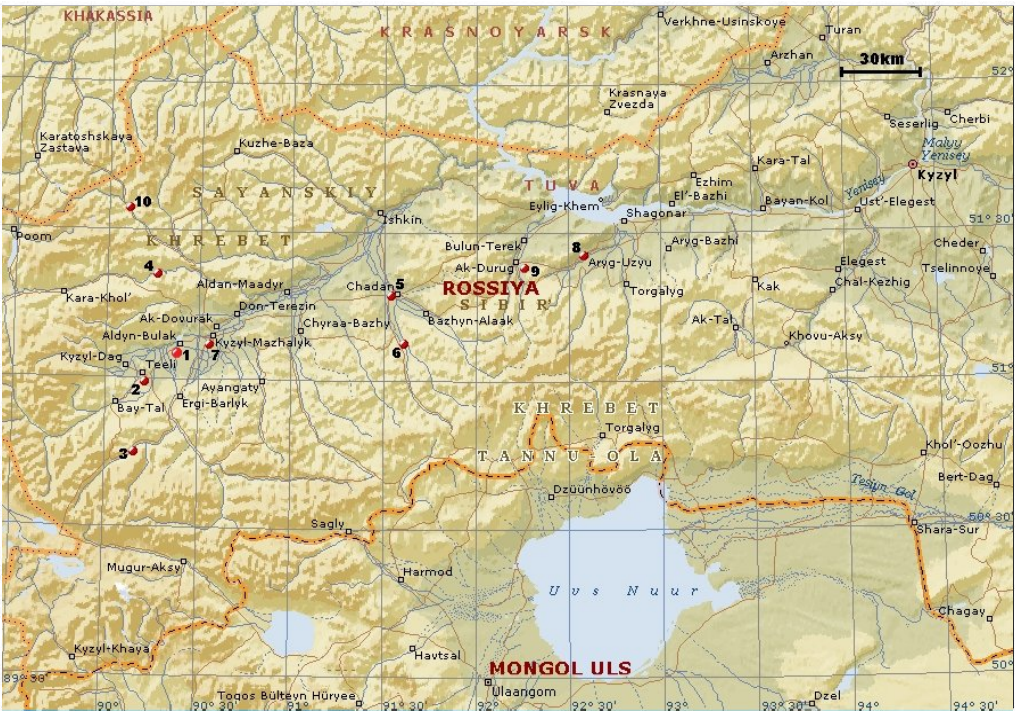
Materials. – 1 male, lectotype (**present designation**) of *Neodorcadion ptyalopleurum* with the label : ["Khemchik river, Barlyk river valley, 11.VIII.1903, Grum-Grzhimailo *leg*."] [in Russian]-(ZIN); 22 male and 2 females, paralectotypes (**present designation**) from same locality, 10-11.VIII.1903, 13.VIII.1893, 15.VIII.1893, Grum-Grzhimailo *leg*.-(ZIN); 1 male, paralectotype (**present designation**) from same locality : 10-11.VIII.1903, Grum-Grzhimailo *leg*.-(NMV); 1 male, paralectotype (**present designation**) with the label : "Fl. Kemtshik, Bassin d. Barlyk, VIII.03, Grum." [wrong date !]– (NMV); 11 males and 7 females, paralectotypes (**present designation**), ["Barlyk river valley, 12-13.VIII.1903, Grum-Grzhimailo *leg*."] [in Russian]-(ZIN); 1 male, paralectotype (**present designation**) with same label-(NMP); 1 male, 1 female, paralectotypes (**present designation**) with the label : ["Barlyk river valley, 12-15.VIII.903, Grum-Grzhimailo *leg*."] [in Russian]-(NMV); 1 male, paralectotype (**present designation**) with same label-(HNHM); 1 male, paralectotype (**present designation**) with same label-(MHNL); 1 male, paralectotype (**present designation**) with the label : "Geb. Tanny-Ola, VIII.1903, Grum."-(HNHM); 1 male paralectotype, (**present designation**), "Mongolei, Kobdo, 17.VII.1903, Grum."[wrong label]-(MHNL); 5 males, 6 females, paralectotype (**present designation**), ["north slope of Tannu-Ola ridge, Khundurgung river (= Khondergei), 5-8.VIII.1903, Grum-Grzhimailo *leg*."] [in Russian]-(ZIN); 30 males, 14 females, ["Tannu-Ola ridge, Khemchik river valley, 10.VIII.1903, Grum-Grzhimailo *leg*."] [in Russian]-(ZIN); 3 males, 1 female, ["Khemchik river valley, Sodyk-Terek, 10-12.VIII.1903, Grum-Grzhimailo *leg*."] [in Russian]-(ZIN); 1 female, ["Barlyk river valley, 12-15.VIII.1903, Grum-Grzhimailo *leg*."] [in Russian]-(ZIN]; 1 male with three labels : (1) "Holotype"[red], (2)"*E. ptyalopleurum*

multivittatum, mihi, Typ., Breuning det.", (3)"Mongolei, Kobdo, VI.1903, Grum." [wrong label]-(MHNL); 20 males, 30 females (including numerous males and females of ab. *multivittatum*), Russia, Tuva Republic, Teeli (30 km SW Ak-Dovurak), 14-25.VII.1976, Tsherepanov *leg*.-(MD); 2 males, 2 females (typical form), same locality, 26-27.VI.1971, Korotyaev *leg*.-(MD); 5 males, 2 females (including males and females of ab. *multivittatum*), Russia, Tuva Republic, Khondergei (20 km S Chadan), 6.VII.1976, Tsherepanov *leg*.-(MD); 1 female (typical form), same locality, 18.VIII.1968-(MD); 5 males, 2 females (typical form), Russia, Tuva Republic, Shui river (30 km S Teeli), 16.VII.1976, Tsherepanov *leg*.-(MD); 1 female (ab. *multivittatum*), Russia, Tuva Republic, Barun [= Kyzyl-Mazhalyk], 21.VI.1972 B. Korotyaev *leg*.-(MD); 19 males, 12 females, (including males and females of ab. *multivittatum*), Russia, Tuva Republic, Chadan, 19.VII.1970 and 17.VII.1976 Tsherepanov *leg*.-(MD); 1 female, Russia, Tuva, Chadan, 1-2 km from Chadan river, 12.VII.1971, B. Korotyaev *leg*.-(SK); 2 females, Russia, Tuva, Aryg-Uziu, 2.VII.1980, Korotyaev *leg*.-(NMNH); 12 males, 6 female (typical form), Russia, Tuva Republic, Ak-Sug river upper Monchurek (30 km NE Ak-Dovurak), 2.VIII.2000, D. Obydov *leg*.-(MD); 2 males from same locality-(NMNH); 8 males, 1 female, Tuva, between Chadan and Shagonar, 5.VII.2003, S. Vashchenko *leg*.-(MD).

Remarks. – *Neodorcadion ptyalopleurum* Suv. was described from two different localities : "Auf den nördlichen Abhängen des Gebirgsrückens Tanny-Ola" and "in dem Bassin des Flusses Barlyk", which is situated in the south-west slope of Tannu-Ola. Further investigations can show the different subspecies status of both populations, so a lectotype designation is necessary. I have designated as lectotype of *Neodorcadion ptyalopleurum* Suvorov, 1909 a male (ZIN) with the label : ["Barlyk river valley, 11.VIII.1901, Grum-Grzhimailo *leg*."] [in Russian]. I have designated as paralectotypes of *Neodorcadion ptyalopleurum* : 1 male and 1 female, from same locality, 11-13.VIII.1903, Grum-Grzhimailo *leg*; 1 male, from same locality : 10-11.VIII.1903, Grum-Grzhimailo *leg*.-(NMV);1 male, with the label : ["Barlyk river valley, 12-13.VIII.901, Grum-Grzhimailo *leg*."] [in Russian]-(HNHM); 1 male, with same label-(MHNL); 1 male, with the label : "Geb. Tanny-Ola, VIII.1903, Grum."-(HNHM); 1 male, 1 female, with the label : ["Barlyk river valley, 12-15.VIII.903, Grum-Grzhimailo *leg*."] [in Russian]-(NMV); 1 male, with the label : "Fl. Kemtshik, Bassin d. Barlyk, VIII.03, Grum."-(NMV); 1 male, "Mongolei, Kobdo, 17.VII.1903, Grum." [wrong label]-(MHNL); 1 male, ["north slope of Tannu-Ola ridge, Khundurgung river (Khondergei), 5-8.VIII.1903, Grum-Grzhimailo *leg*."] [in Russian]-(ZIN).

According to personal message (2005) by S. Vashchenko, *E. ptyalopleurum* is sympatric with *E. tuvense* near Chadan in Chadan river valley. The species is close to *E. tuvense* and *E. maurum*. It differs from both by usual presence of apical elytral humeral strokes, besides *E. tuvense* is characterized by special sparse white elytral pubescence.

Among two specimens, male and "female" (in fact two males) figured by Wang Zhicheng (2003 : 302) as "*E. ptyalopleurum*" only first male is a real *E. ptyalopleurum* from Tuva Republic. This photo was copied from "Atlas of the Cerambycidae photographs of the tribe Dorcadionini" (Danilevsky, 2006). The specimens (MD) has the label : "Tuva, Teely, 14.VII.1976, Tsherepanov *leg*.". Second male from Inner Mongolia (East Wuzhu of Xilin-Gol area) has no connection with *E. ptyalopleurum* and needs better determination (*E. humerale* ?). For figures of immature stages were used drawings of larvae and pupa of *E. ptyalopleurum* from Tuva from Tsherepanov's (1983 : 63) monograph.



Map 16. Localities of ***E. ptyalopleurum*** : Russia, Tuva Republic. 1. Barlyk river valley near Khemchik river, type locality; 2. Teeli; 3 – Shuj river; 4. Ak-Sug river, 30 km NW Ak-Dovurak; 5. Chadan; 6. Khondergej; 7. Kyzyl-Mazhalyk; 8. Aryg-Uzju; 9. Ak-Durug; 10. Ak-Sug river, 60 km NW Ak-Dovurak.

2. Subgenus *Ornatodorcadion* Breuning, 1947 (Figs. 18-35)

Eodorcadion (Ornatodorcadion) Breuning, 1947a : 142; 1962 : 25; Danilevsky et al., 2005 : 133, 147.

Type species. – *Dorcadion ornatum* Faldermann, 1833 (original designation).

Diagnosis. – Body length in males : 11.3-24.7 mm, in females : 14.3-32 mm; body width in males : 4.5-8.9 mm, in females : 5.4-11.6 mm.

The subgenus is well definite by endophallic (Plans 3-4) structures (Danilevsky et al., 2005) : endophallus relatively long and thin, central bend hardly developed or indistinct, central trunk present, apical phallomer witht long appendage or strongly elongated.

Endophallus long and narrow about as long as elytra. Basal tube (bt) short about 1.5 times longer than wide, widened distally, glabrous, transversely rugose. Ventral plates (vp) rather big, long and wide, trapezoidal. Medial tube very long, much longer than aedeagus, straight or curved ventrally, narrowed distally, with hardly visible spicules, fused with central trunk (mt+ct); central bend absent. Apical mace (am) big and well pronounced, connected with the area of central trunk without constriction. Apical mace often more or less compressed laterally and sometimes longitudinally. Preapical bulb (pb) cone-shaped, always strongly widened and covered with microspines or elongated microtrichiae (*E. brandti*). Apical bubble (bb) big, depressed or cone-

shaped; joined to preapical bulb without constriction and without (or with vestigial in *E. brandti*) internal membrane in between, usually with very long wide appendix (Plan 3, aa), which is supplied with more or less distinct dorsal tubercle near base (dt); only in *E. brandti* (Plan. 4) apical bubble long, cone-shaped without distinct appendix. Paired gonopores are situated near middle of the dorsal side of apical bubble; apical portions of distal parts of ejaculatory ducts can be easily everted (ee). Striated forms of imagoes with or without sutural hair stripe.

Distribution. – East Kazakhstan : sands near Zaisan lake. Mongolia : central, south and partly north regions. China : from China Dzhungaria to Alashan and Ordos and along Inner Mongolia to the North-East. The records by N. N. Plavilstshikov (1958) for Russia (Altaj) looks doubtful – no material available.

Remarks. – The species of *E. (Ornatodorcadion)* are much closer to each other than in the previous subgenus. All of them are vicariants. Up to now no exact records of two *E. (Ornatodorcadion)* species from one locality are known (with the exception of very old uncertain records from several regions in Inner Mongolia). Three main groups of species could be recognized. Small group of west species includes only *E. brandti* and *E. egregium*; both without humeral hair stripe. Among all investigated *E. (Ornatodorcadion)* only *E. brandti* does not have appendage of apical phallomer (*E. egregium* was not investigated). Possibly the western most species - rather special *E. oreadis* also belongs to this group. "*E. intermedium*"-group of species consiststs of so close relatives, that all of them could be regarded as subspecies : *E. intermedium*, *E. oryx*, *E. exaratum*, sens. n., *E. novitzkyi*, *E. gorbunovi*, *E. argaloides*, *E. zichyi*, *E. heros*. All species of the group are characterized by apical phallomer of endophallus with long narrow appendage; sutural elytral stripe usually present; elytra usually with well developed white stripes and usually two dorsal stripes present. Only in *E. heros* and *E. zichyi* usually only one dorsal stripe present and these two species could be regarded as a transition to the next south group. *E. consentaneum* and *E. dorcas* with constantly or usually glabrous males also belong to "*intermedium*"-group because of very typical endophallus, though pubescent females of *E. consentaneum* are without sutural white stripe. The southmost "*E. ornatum*"-group is chracterized by species with only one dorsal elytral white stripe (in pubescent forms); sutural stripe always present. "*E.ornatum*-group" includes 5 species from Alashan, Ordos and Inner Mongolia : *E. ornatum*, *E. licenti*, *E. kaznakovi*, *E. jakovlevi*, *E. potanini*.

18. *Eodorcadion (Ornatodorcadion) dorcas* (Jakovlev, 1901) (Fig. 18)

Neodorcadion ornatum, Ganglbauer, 1883 : 513, part.; Reitter, 1897 : 178 ("Mongolei").

Neodorcadion dorcas Jakovlev, 1901 : 156, 163 ("Nord de la Mongolie") (= *ornatum*, Reitter, 1897, nec Faldermann, 1833); Winkler, 1929 : 1199, part.

Neodorcadion morosum Jakovlev, 1901 : 154, 162 ("Nord-Ouest de la Mongolie"); Suvorov, 1909 : 85 ("Bergen nördlich von Kobdo", female description); Winkler, 1929 : 1199, part.

Eodorcadion (O.) dorcas m. *interruptolineatum* Breuning, 1947b : 171 ("Mongolie septentrionale"), unavailable name.

Eodorcadion (O.) dorcas m. *transitivum* Breuning, 1947b : 171 ("Mongolie septentrionale"), unavailable name.

Eodorcadion (O.) dorcas m. *irregulare* Breuning, 1947b : 172 ("Mongolie septentrionale"), unavailable name.

Eodorcadion (O.) dorcas m. *granulosum* Breuning, 1947b : 172 ("Urga, Mongolie"-wrong data), unavailable name .

Eodorcadion (O.) dorcas, Gressitt, 1951 : 338, 339, 342, part.; Breuning, 1958 : 3 ("Dzongarie, Mongolie"); 1962 : 35; Danilevsky et al., 2005 : 133.

Eodorcadion (O.) morosum, Gressitt, 1951 : 344, part.

Eodorcadion dorcas, Plavilstshikov, 1958 : 471 (= *morosum* Jakovlev, 1901); Namhaidorzh, 1972 : 523, part.; Lobanov et al., 1982 : 265; Hua, 2002 : 206 (= *morosum* Jak., "Inner Mongolia"); Wang, 2003 : 294 (= *morosum* Jak., Inner Mongolia, Mongolia, Russia), part.

Eodorcadion dorcas annulatum Heyrovsky, 1969 : 229 ("Zergalan, Zarghan-Niederung [Dzabkhan lowland]", "Altaj-Somon", "Chovd Aimak, Jamatin Dolon, ca. 40 km N von Somon Manchan, an SW-Eckedes Char us nuur"), part.; Namhaidorzh, 1972 : 524, **syn. nov.,** part.

Eodorcadion ornatum, Wang, 2003: 301, part.

Type locality. – Mongolia : south of Dzabkhan aimak, Shurgyn-Gol river valley.

E. dorcas was described (as *Neodorcadion*) from "Nord de la Mongolie" on the base of striated pair (male and female), which was treated before as "*N. ornatum*" by E. Reitter. Syntype specimens belong to a big series of typical (striated) *E. dorcas* with the label "Mongolia bor., Reitter", which is represented in many European collections. Striated forms of *E. dorcas* are very different in different populations. I have in my collection a male from Shurgyn-Gol river (Fig 18a-1), which is absolutely same as the males labelled as "Mongolia bor., Reitter". So, I accept Shurgyn-Gol river valley as the type locality of the species.

Diagnosis. – Body length in males : 15-20.8 mm, in females : 18-24.5 mm; body width in males : 5.5-7 mm, in females : 7-9.2 mm. According to the original description of *E. dorcas scabrosum*, body length in females can be up to 26 mm.

Body black, sometimes antennae and legs are reddish, often legs with reddish tibiae and red bases of femora; very rare 1st antennal joint with reddish base; elytra usually strongly granulated (especially near humeri), but sometimes (population from near Uliasutaj) rather smooth (Figs. 18a–11-12); typical form (Fig. 18a–1) with fine pale stripes of sparse setae, situated between hardly pronounced carinae; each elytron can be with 6 stripes: marginal, humeral, two dorsal and sutural; all stripes can be more or less reduced (Figs. 18a–6,7 – ab. *interruptolineatum*) or only in females distinct; or very wide, nealy totally cover elytral surface (m. *irregulare*; Figs. 18a–3-5); or represented as numerous white spots (m. *irregulare*; Fig. 18a–2); usually elytral stripes totally absent – ab. *morosum*; Figs. 18a–8-12); roughly sculptured elytra can be covered with sparce dark pubescence, with fine white sutural stripe (m. *transitivum*; Fig. 18a-13).

Distribution (Map 17). – Mongolia; from the north part of Kobd aimak to central part of Dzabkhan aimak and north part of Gobi-Altaj aimak. The species definitely absent near Ulan-Bator; records for "Urga" (Breuning, 1947b; Namhaidorzh, 1972) were based on a female with wrong locality label. The record for Ubsu-Nur aimak (Namhaidorzh, 1972 : 523) was based on the wrong attribution of the label : "[mountains northwards Kobdo river, 14-16.VII.1903, Grum-Grzhimailo leg."] [in Russian]; the locality is situated in Kobd aimak (Altan-Khukhej ridge, according to Kerzhner,1972 : 68). N.N. Plavilstshikov (1958) described too wide area for *E. dorcas*; in Russia : east Sajans and south slopes of Tannu-Ola ridge; in Mongolia : Hangai ridge, Ubsu-Nur lake environs, Kobdo, Uljasutaj, headwaters of Selenga river, the area along north border of Mongolian Republic near Baikal. In fact the species absent in Russia and its area in the central Mongolia is very far from Russian border (absent near Ubsu-Nur lake and in Selenga valley). *E. dorcas* absent in China; records of the species for Chinese Inner Mongolia (Hua, 2002 : 206; Wang, 2003 : 294) are wrong, as well as the record for Russia (Wang, 2003 : 294).

Remarks. – *Neodorcadion morosum* Jakovlev, 1901 was described in same publlication as *N. dorcas* Jakovlev, 1901, just one page before. According to the holotype of *Neodorcadion morosum* Jak. (Fig. 18a-9), it is just a glabrous form (without pale stripes) of *E. dorcas*. It was N. N. Plavilstshikov (1958), who established the synonymy of two names and accepted the name "*N. dorcas*" as valid for the species (as "First Riviser" according to the article 24.2.23 of ICZN, 1999).

L. Heyrovsky usually mixed *E. dorcas* ab. *morosum* with *E. maurum maurum*. I've got a homogenous series of *E. maurum maurum* from one locality (Ubsu-Nur aimak, 32 km NW Ulangom, 1200 m, 27.VI-7.VII.1968, Exp. Dr. Z. Kaszab) with two different identifications by L. Heyrovsky : "*E. dorcas* m. *morosum*" and "*E. grumi*". In fact, the usual very peculiar rough elytral sculpture of *E. dorcas* normally makes the identification of the species very easy. All records of the species by L. Heyrovsky for Ubsu-Nur aimak concern *E. m. maurum*.

Eodorcadion dorcas fortecostatum Heyr. (Fig. 15a–6-7) is a synonym of *E. maurum maurum* (see above).

E. dorcas seems to be very close to *E. consentaneum*. The areas of two species are in contact in Gobi-Altaj aimak near somon Altaj. So, here could be discovered transitional populations. According to the available materials local *E. d. dorcas* differ from *E. consentaneum* by convex elytra and more or less distinct scattered elytral setae.

S. Breuning (1958 : 3) recorded *E. dorcas* for "Dzongarie" without any reasons. The species absent in Dzhungaria.

Wrong record of *E. dorcas* for China (Wang, 2003 : 294) were illustrated with two males of *E. d. dorcas* (designated as male and female) from Mongolia, preserved in my collection. Both photos were copied from "Atlas of the Cerambycidae photographs of the tribe Dorcadionini" (Danilevsky, 2006). First male (typical form) has the label : "Shurgyn-Gol river" – Dzabkhan aimak; second male (ab. *morosum*) has the label : "Dzabkhan aimak, 170 km W Aldar-Khan, 15.VII.1971, L. Medvedev *leg*."

Eodorcadion ornatum was illustrated by Wang Zhicheng (2003 : 301) with a photo of Mongolian male of *E. dorcas dorcas* (m. *irregulare*) from "Atlas of the Cerambycidae photographs of the tribe Dorcadionini" (Danilevsky, 2006). The specimen (MD) has the label : "Mongolia bor. Reitter".

18a. *Eodorcadion (Ornatodorcadion) dorcas dorcas* (Jakovlev, 1901) (Fig. 18a)

Neodorcadion dorcas Jakovlev, 1901 : 163 ("Nord de la Mongolie"); Winkler, 1929 : 1199, part.; Winkler, 1929 : 1199, part.

Neodorcadion dorcas var. *pruinosum* Jakovlev, 1901 : 154, 163.

Neodorcadion morosum Jakovlev, 1901 : 154, 162 ("Nord-Oest de la Mongolie"); Suvorov, 1909 : 85 ("Bergen nördlich von Kobdo", female description); Winkler, 1929 : 1199, part.

Eodorcadion (O.) dorcas m. *interruptolineatum* Breuning, 1947b : 171 ("Mongolie septentrionale"), unavailable name.

Eodorcadion (O.) dorcas m. *transitivum* Breuning, 1947b : 171 ("Mongolie septentrionale"), unavailable name.

Eodorcadion (O.) dorcas m. *irregulare* Breuning, 1947b : 172 ("Mongolie septentrionale"), unavailable name.

Eodorcadion (O.) dorcas m. *granulosum* Breuning, 1947b : 172 ("Urga, Mongolie", wrong data), unavailable name.

Eodorcadion (O.) dorcas, Gressitt, 1951 : 338, 339, 342, part.; Breuning, 1958 : 3; 1962 : 35; Danilevsky et al., 2005 : 133.

Eodorcadion (O.) morosum, Gressitt, 1951 : 344, part.

Eodorcadion dorcas, Plavilstshikov, 1958 : 471 (= *morosum* Jakovlev, 1901); Heyrovsky, 1968 : 237; Namhaidorzh, 1972 : 523, part.; Lobanov et al., 1982 : 265; Hua, 2002 : 206 (= *morosum* Jak., "Inner Mongolia"); Wang, 2003 : 294 (= *morosum* Jak., Inner Mongolia, Mongolia, Russia), part.

Eodorcadion dorcas ab. *separatum* Plavilstshikov, 1958 : 472, unavailable name.

Eodorcadion dorcas m. *morosum*, Heyrovsky, 1965 : 43; 1968 : 237.

Eodorcadion dorcas annulatum Heyrovsky, 1969 : 229 ("Zergalan, Zarghan-Niederung [Dzabkhan lowland]", "Altaj-Somon", "Chovd Aimak, Jamatin Dolon, ca. 40 km N von Somon Manchan, an SW-Eckedes Char us nuur"), part.; Namhaidorzh, 1972 : 524, **syn. nov.**, part.

Eodorcadion ornatum, Wang, 2003 : 301, part.

Eodorcadon dorcas dorcas, Danilevsky et al., 2005 : 133.

Type locality. – Mongolia : south of Dzabkhan aimak, Shurgyn-Gol river valley (see above).

Diagnosis. – Body length in males : 13-20.8 mm, in females : 18-24.5 mm; body width in males : 4.4-7 mm, in females: 7-9.2 mm.

Body elongated; elytra convex; elytral sculpture moderately rough; granulation is usually limited at humeral elytral area or absent; elytra sometimes with complete white stripes (marginal, humeral, two dorsal and sutural – typical form), which can be very narrow (Fig. 18a-7) and many times interrupted (m. *interruptolineatum*, Fig. 18a-6) or very wide, nealy totally cover elytral surface (m. *irregulare*; Figs. 18a–3-5); or represented as numerous white spots (m. *irregulare*; Fig. 18a-2) or reduced to scattered pale elytral pubescens with several white spots along curved elytral margin and very narrow sutural stripe (Fig. 18a-13; m. *transitivum*); in pubescent forms pronotum and scutellum partly covered with white pubescens; very often pronotum, scutellum and elytra are relatively glabrous, with only short dark scattered setae – m. *morosum* (Fig. 18a–9-12); antennae usually without white rings; tibiae are often reddish, as well as femora bases.

Populations from near Uliasutaj (Jaro-Hutyk = Jarain-Khuduk, Ulan-Erig) are characterized by very smooth, shining elytra always without hair stripes (Fig. 18a–11-12); elytral granules usually totally absent; such specimens are very similar to smooth forms of *E. maurum* : several specimens from ZIN were wrongly identified by M. Namhaidorzh. *E. maurum* belongs to another subgenus and can be easily distinguished by endophallus analysis. Such specimens of *E. d. dorcas* also differ from *E. maurum* by specially colored legs with reddish tibiae and reddish femora bases.

Distribution (Map 17; localities 1-13). – Mongolia, most part of the species area from about Kobdo environs to the west and south parts of Dzabkhan aimak and then to the north part of Gobi-Altaj aimak. Several known localities are – Dzabkhan aimak : Shurgyn-Gol river (north tributary of Dzabkhan river in the south part of the aimak south-eastwards Uliasutaj)-(Namhaidorzh, 1972, MD); between Shurgyn-Gol river and Khudzhirt (near confluence of Tumert-Gol and Shurgyn-Gol–see below) (together with m. *morosum*)-(ZIN, Namhaidorzh, 1972); 170 km W Aldar-Khan-(MD); "Songino"-(HNHM and Heyrovsky, 1965, as *E. dorcas morosum*); Uliasutaj-(type locality of *N. morosum* – see below, NMP, ZIN, Namhaidorzh, 1972 : 523); Ulan-Erig env. (near Uliasutaj-(ZIN, Namhaidorzh, 1972 : 523); Jaro-Hutyk [not far from Uliasutaj]-(ZIN, Namhaidorzh, 1972); 10 km WNW somon Erdene-Khairan-(Namhaidorzh, 1976); 70 km SW Uliasutaj, Bogdyn-Gol river valey, 1520 m, 47°28'26N, 96°11'10E-(MD); Gobi-Altaj aimak: Baga-Nuryn-Urd els, SE bank of Durgen-Nur lake (together with m. *morosum*)-(HNHM, Heyrovsky, 1968); NW part of Khasagt-Khajrchan ridge, 4 km east from

Bichigt-(HNHM and Heyrovsky, 1968); Ereen lake (together with m. *morosum*)-(MD); Altaj (m. *morosum*)-(NMP, type locality of *E. dorcas annulatum*); Dzabkhan river, Dzhargalan env., 46°50'N, 95°54'E (Photo. 7)-(MD, type locality of *E. dorcas annulatum*, NMP); Kobd aimak : mountains northwards Kobdo river-(ZIN, JV, Suvorov, 1909 : 85; Namhaidorzh, 1972 : 523); Kobd environs-(JV).

The record of *Eodorcadion (O.) dorcas* m. *granulosum* Breuning, 1947 for «Urga, Mongolie» was based on a wrong label.

The record for Ubsu-Nur aimak (Namhaidorzh, 1972 : 523) was based on the materials with the label : "[mountains northwards Kobdo river, 14-16.VII.1903, Grum-Grzhimailo leg."] [in Russian]. But according to I. M. Kerzhner (1972 : 68), that days G. E. Grum-Grzhimailo was near Altan-Khukhej ridge (now in Kobd aimak).

The label of a single elytron of *E. d. dorcas* ab. *morosum* (HNHM) : "Mongol Els, 10 km S from Chechmort" (published by L. Heyrovsky, 1968) needs confirmation, as *D. dorcas scabrosum* is known from that locality.

E. d. dorcas absent in China; records of the species for Chinese Inner Mongolia (Hua, 2002 : 206; Wang, 2003 : 294) are wrong, as well as the record for Russia (Wang, 2003 : 294).

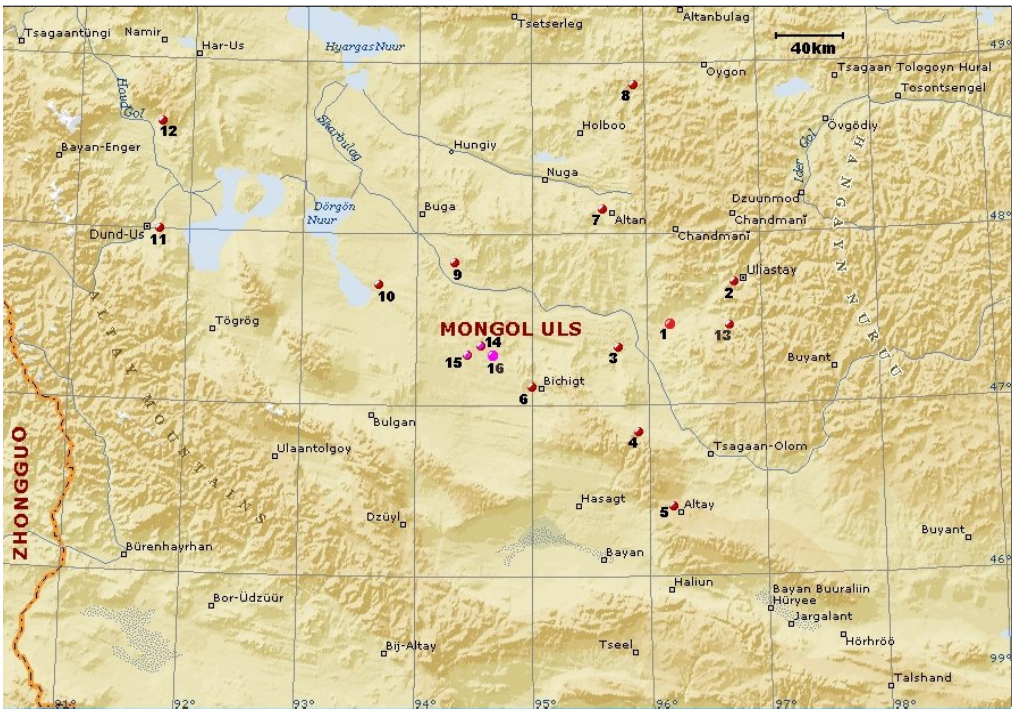
Materials. – 1 male (striates form), holotype of *N. dorcas* Jak. with three labels : (1)"Mongolia bor., Reitter", (2)"*dorcas* m.", (3)["coll. of V. Jakovlev"] [in Russian]-(ZIN); 1 male (striated form identified as "*N. ornatum*" by Suvorov), "Mongolia bor., Reitter"-(ZIN); 10 males, 4 females, with same label, all belong to striated form, including 2 males and 3 females with well developed white elytral pubescence, identified as "*E. ornatum*" by L. Heyrovsky-(HNHM); 3 males, 1 female (only striated form) with same label-(DEI); 1 male with same label, with well developed white elytral pubescence, identified as "*E. ornatum*" by L. Heyrovsky-(MD); 3 males, 2 females (striated form) with same label-(NMP); 1 male, 1 female (typical form with very wide white stripes) each with three labels : (1)"paratype"[red] (though the name was based on a single male), (2)"*Ornatodorcadion dorcas irregulare* mihi, det. Breuning" and "*Eodorcadion dorcas irregulare* mihi det. Breuning", (3)"Mongolia bor., Reitter"-(MHNL); 1 male (only narrow sutural white stripe is distinct) with 3 labels : (1)«holotype»[red]; (2)"*Neodorcadion ornatum* [sic! *lapsus calami*?] *transitivum* mihi, type, Breuning det.» [Breuning's hand]; (3)"Mongolia bor., Reitter"-(MHNL); 1 male, holotype of *Neodorcadion morosum* Jak., ["N-W Mongolia (near Uliasutaj, see Kerzhner, 1972 :75), 8.VII.1894, Clemenz"-[in Russian]-(ZIN); 22 males, 1 female (m. *morosum*), ["N-W Mongolia, 20.VI-7.VII.1894 and 8.VII.1894, Clementz]" [in Russian]-(ZIN); 5 males (m. *morosum*), Mongolia, "[mountains northwards Kobdo river, 14-16.VII.1903, Grum-Grzhimailo *leg*."] [in Russian]-(ZIN); 1 male (typical), 1 female (m. *morosum*) with same label-(JV); 1 female (with very rough elytral sculture) with 3 labels : (1)"holotype"[red]; (2)"*E. d. granulosum* mihi, type, Breuning det."; (3)"Urga" [wrong label]-(MHNL); 2 females (one – totally glabrous, another – strongly pubescent, white), Mongolia, ["between Khudzhirt and Shurgyn-Gol, 22.VII.1877, Potanin *leg*."] [in Russian] (according to V. L. Komarov, 1928 : 241, G. N. Potanin was near confluence of "Temurtu" [=Tumert-Gol] and "Shuryk" [= Shurgyn-Gol] rivers on 24.VII.1877, and area Khudzhirt [not a river, as it was published by B. Namhaidorzh, 1972] was nearby)-(ZIN); 17 males, 5 females (all m. *morosum*), Mongolia, Dzabkhan aimak, ["Jaro-Khutyk (= Jarain-Khuduk, not far from Uliasutaj), 3.VIII.1911, K. V. Jurganova *leg*."] [in Russian]-(ZIN); 6 males (all m. *morosum*; 1ex. identified by M. Namhaidorzh as "*E. grumi*", though not published), Mongolia, Dzabkhan aimak, ["Ulan-Erig env. (near Uliasutaj), 17.VII.1913, K. V. Jurganova *leg*."] [in Russian]-(ZIN); 1 male, "Mongolia occ., Uliasutaj [Dzabkhan aimak], VII.1916, I. Malkin *leg*."-(NMP); 1 male, 2 females (including a female with totally pubescent pale elytra, only

elytral carinae glabrous), Mongolia, "Gobi, 7.VII. and 1.VIII.63"-(SK); 1 male (m. *morosum*), "Mongolia, Zavchan aimak, Songino, 16.VIII.1963, A. Bold *leg.*"-(HNHM); 1 male, 1 female (both m. *morosum*), "Chovd, 48°N, 91'44E, 1200 m, 15.VII.1964, Mong.-Deut. Biol. exp."-(JV); 2 males, paratypes of *Eodorcadion dorcas annulatum*, "Zergalan, Zawhan-Niederung [Dzabkhan lowland], 23.VI.1964, Mongol. Deutsch. Exp."-(NMP); 1 male (m. *morosum*), Mongolia, Gobi-Altaj aimak, "Altaj-Somon, 13.VII.1964", "Mongol. Deutsch. Exp."-(NMP); 1 male, "Mongolia, Gobi-Altaj Aimak, Baga Nuuryn urd els, an SO-Ecke des Döröö nuur [Durgen-Nur], 1200 m, 12.VII.66, exp. Dr. Z. Kaszab"-(HNHM); 1 male, with same label-(SK); 2 males (with poor traces of white elytral stripes), "Mongolia, Gobi-Altaj Aimak, NW Ecke des Chasagt chajrchan ul Gebirge, 4 km Ost von Somon Bicigt, 1800 m, 15.VII.1966, exp. Dr. Z. Kaszab" - (HNHM); 1 male, with same label-(SK); 1 male (m. *morosum*-only elytron available), "Mongolia, Gobi-Altaj Aimak, Mongol Els, 10 km S von Somon Chechmort, 13-14.VII.66, exp. Dr. Z. Kaszab"-(HNHM); 1 male (typical form), Shurgyn-Gol river-(MD); 2 males, 2 females (m. *morosum*), Dzabkhan aimak, 170 km W Aldar-Khan, 15.VII.1971, L. Medvedev *leg.*-(MD); 1 male, 2 females (including specimen with white stripes), "Mongolia, Gobi-Altaj, lake Ereen [North-East of Gobi-Altaj aimak, easternmost part of Mongol Els on the left bank of Dzabkhan river], 1500 m, 16.VIII.2002, Callegari *leg.*"-(MD); 2 males, 1 female (1 male with white stripes), Mongolia, Dzabkhan aimak, 70 km SW Uliasutaj, Bogdyn-Gol river valey, 1520 m, 47°28'26N, 96°11'10E, 29.VI.2004, A. Saldaitis *leg.*-(MD); 2 males, 2 females, Gobi-Altaj aimak, Dzabkhan river, Dzhargalan env., 46°50'N, 95°54'E, 10-15.VII.2004, S. Churkin & A. Saldaitis *leg.*-(MD).

Remarks. – The original description of *Neodorcadion morosum* Jak was based on a single male (Fig. 18a-9; ZIN) collected on 8.VII.1894 by Clemenz. According to I. M. Kerzhner (1972 : 75), E. N. Clementz was near Uliasutaj (Dzabkhan aimak) on 8.VII.1894. According to the holotype of *N. morosum* Jak., it is just a glabrous form (without pale stripes) of *E. dorcas*. It is evident now, that typical form (with white elytral stripes) and m. *morosum* can be represented in one population. All transitional populations seem to be possible, sometimes typical form is dominating in the population (40 km SW Uliasutaj), sometimes it seems to be totally absent (70 km SW Uliasutaj and Jaro-Khutyk) or very rare and hardly pronounced (Dzhergalan env. and Ereen lake env.). Most probably several subspecies could be described on the base of the number of different forms in certain populations.

L. Heyrovsky (1969, 1973a, 1975) usually attributed to normal *E. maurum maurum* different names of *E. dorcas*. The type series of *E. dorcas annulatum* Heyrovsky, 1969 consists of glabrous forms of two different species. Two series from Gobi-Altaj aimak : from Dzhargalan (type locality : "Zergalan, Zarghan-Niederung, 23.VI.1964" – 2 paratype-males in Heyrovsky's collection in Prague Národní Museum.) and from Altaj ("Altaj-Somon, 13.VII.1964" – 1 male in same collection) consist of glabrous specimens of *E. dorcas dorcas* m. *morosum*. So, *E. dorcas dorcas* (Jak.) = *E. dorcas annulatum* Heyrovsky, 1969, **syn. n.** Third series (2 paratype males in Kaszab's collection in Budapest : "Chovd Aimak: Jamatin Dolon, ca. 40 km von Somon-Manchan, an SW Ecke des Char-us-nur, 1200 m, 11-12.VII.1966") from Khara-Us-Nur lake (Kobd aimak) belongs to *E. grumi grumi*. Later (Heyrovsky, 1973a) the name "*E. dorcas annulatum*" was attributed to a population of *E. maurum maurum* from near Ulangom ("32 km NW Ulangom") together with two other names : "*E. grumi*" and "*E. dorcas morosum*".

B. Namhaidorzh (1972 : 524) believed that somon Altaj sensu L. Heyrovsky (1969) is another Altaj in Kobd aimak, where only *E. egregium* is distributed.



Map 17. Localities of ***E. dorcas*** : Mongolia.

E. d. dorcas (1-13) : 1.Shurgyn gol river – type locality and 70 km SW Uliasutay, Bogdyn gol river valey, 1520 m, 47°28'26N, 96°11'10E; 2. Uljasutaj; 3. Lake Ereen; 4. Dzabkhan river, Dzhargalan env., 46°50'N, 95°54'E; 5. Somon Altaj; 6. NW part of Khasagt Khajrchan ridge, 4 km east from Bichigt; 7. 10 km WNW somon Erdene-Khairan; 8. Songino; 9. 170 km W Aldar-Khan; 10. Baga-Nuryn-Urd els, SE bank of Durgen-Nur lake; 11. Chovd, 48°N, 91°44E; 12. Mountains northwards Kobdo river (Altan-Khukhej ridge); 13. Confluence of Tumert-gol and Shurgyn-gol.

E. dorcas scabrosum (14-16) : 14. Mongol Els, Somon Chechmort; 15. Mongol Els, 10 km SW von Somon Chechmort; 16. Mongol Els, 10 km SE von Somon Chechmort – type locality.

18b. *Eodorcadion (Ornatodorcadion) dorcas scabrosum* Namhaidorzh, 1972 (Figs. 18b)

Eodorcadion dorcas scabrosum Namhaidorzh, 1972 : 524 ("Gobi-Altai aimak, 10 km SE Khukh-Mort; 10 km SW Khukh-Mort; Khukh-Mort environs; Dzabkhan aimak, Khungui river").

Type locality. – Mongolia : Gobi-Altaj aimak, 10 km SE Khukh-Mort (according to the original description).

Diagnosis. – Body length in available male : 18.3-19.6 mm; in female : 22.5-26 mm; body width in male : 6.6-7 mm, in female : 9.2-9.8 mm. According to the original description, body legth in males : 17.5-20.8 mm, in females : 25-26 mm.

Elytra with extremely rough sculpture; granulation covers anterior elytral half or two thirds, granules are often conjugated transversely; usually glabrous, but one paratype female has poorly developed pale hair stripes.

Distribution (Map 17; localities 14-16). – Mongolia, Gobi-Altaj aimak : 10 km SE Khukh-Mort (type locality)-(ZIN, Namhaidorzh, 1972); Khukh-Mort environs (Namhaidorzh, 1972); 10 km SW somon Khukh-Mort-(Namhaidorzh, 1972); 28 km WNW Khukh-Mort-(MD); Dzabkhan aimak : Khungui river-(Namhaidorzh, 1972).

Materials. – 1 male, holotype, ["Mongolia, Gobi-Altaj aimak, 10 km SE Khukh-Mort, 21.VIII.1968, Arnoldi *leg*."] [in Russian]-(ZIN); 1 male, 1 female, paratypes with same labels- (ZIN); 1 male, paratype with same label-(JV); 1 male, 1 female, Mongolia, Gobi-Altaj aimak, 28 km WNW Khukh-Mort, VIII.1977, L. Saveliev *leg*.-(MD).

19. *Eodorcadion (Ornatodorcadion) consentaneum* (Jakovlev, 1899) (Fig. 19)

Neodorcadion consentaneum Jakovlev, 1899 : 241 ("inter Urga et Uliassutaj"); 1901 : 149; Pic, 1901 : 68 ("Mong."); Winkler, 1929 : 1200.

Neodorcadion consentaneum var. *hirticollis* Jakovlev, 1901 : 149, 154 (no locality).

Neodorcadion consentaneum var. *insignis* Jakovlev, 1901 : 160 ("Nord-Ouest de la Mongolie").

Eodorcadion consentaneum, Plavilstshikov, 1958 : 460; Namhaidorzh, 1972 : 522; 1976 : 212; Hua, 2002 : 206 ("Inner Mongolia"); Wang, 2003 : 294, part.

Eodorcadion (O.) consentaneum, Gressitt, 1951 : 337, 339, 342; Breuning, 1958 : 3; 1962 : 43 ("Ala-shan" – wrong record of type locality); Danilevsky et al., 2005 : 132-133.

Type locality. – Mongolia-valley of Beger-Nur lake, north east part of Gobi-Altaj aimak. The species was described from between Urga and Uliasutaj on the base of a single female collected by D. A. Clementz "9.7-10.VIII.1894"[in fact E. N. Clementz ?]. According to I. M. Kerzhner (1972 : 75), this period the usual insect collector of the expedition of D. A. Clementz– his wife E. N. Clementz – was on the way from Uliasutaj to Altaj and Taishirin-Altaj ridge (now Gobi-Altaj aimak), then further south-eastwards to Ikh-Bogdo-Ula ridge (Baian-Khongor aimak) and Artz-Bogdo ridge (Uver-Hangai aimak). Clementz's route crossed a very dense population of *E.consentaneum* in Beger-Nur depression, so most probably this area is the type locality of the species. Nearly all known specimens (with the exception of one locality in Kobd aimak) were collected in Beger-Nur environs.

Diagnosis. – Body length in males : 15.2-22.6 mm, in females : 22-27 mm; body width in males : 5.5-8.3 mm, in females : 8.3-11 mm.

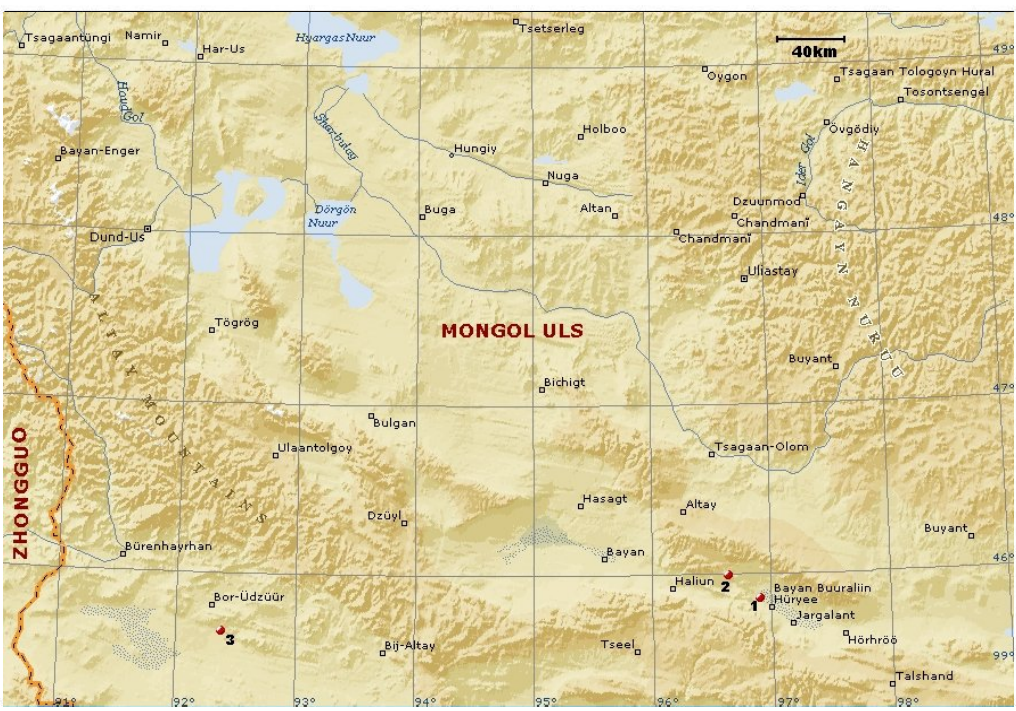
Body black, tibiae and femora bases often reddish; elytra flat; in males and sometimes in females glabrous (Figs. 19–1-2,4-6) and relatively smooth, shining or more or less roughly, or very roughly sculptured, granulated (similar to *E. dorcas scabrosum*); without any hair stripes, with indistinct scattered setae; females often with well developed wide white (Fig. 19-3) or partly yellowish elytral stripes : wide marginal, humeral and two dorsal; external dorsal stripe partly fused with humeral stripe; internal dorsal stripe usually in form of numerous white spots; sutural stripe absent; transitional, partly pubescent forms of females are also known (Fig. 19-7).

Distribution (Map 18). – Mongolia, north-east part of Gobi-Altaj aimak : 30 km NW Beger, Ushijn-Bulak spring-(ZIN, MD); 25 km SE Altaj (old name Jusun-Bulak)-(ZIN, Namhaidorzh, 1976 : 212); 15 km SE Naran, Tzakhir-Bulak spring-(ZIN, SK, JV); Kobd aimak : Elkhon, 20 km SW somon Altaj (JV). According to known localities the species can be distributed along the latitude 46 in Kobd aimak and across Gobi-Altaj aimak. It is absent in China and in Russia. The record of the species for Chinese Inner Mongolia (Hua, 2002 : 206) is wrong, as well as records for China and Russia by Wang Zhicheng (2003).

Materials. – 1 female, holotype, "N-W Mongolia, 9.VII-10.VIII.1894, Clementz"-(ZIN); 9 males, 1 female "N-W Mongolia, 9.VII-10.VIII.1894 (2.VII.-10.VIII.1894, 3.VII.-3.VIII.1894, 20.VI-7.VII.1894) Clementz"-(ZIN); 18 males, 5 females (including 2 glabrous females), Mongolia, Gobi-Altaj aimak, Ushijn-Bulak spring, 30 km NW Beger, 13.VII.1970, Emeljanov, Kozlov, Namhaidorzh, Narchuk, *leg*.-(ZIN); 4 males, 6 females (including 2 glabous females), with same geographical label, Kozlov *leg*.-(JV); 1 male, 1 female with same label-(MD); 9 males, Mongolia, Gobi-Altaj aimak, Tzakhir-Bulak spring, 15 km SE Naran, 12.VII.1970, Zaitzev *leg*.-(ZIN); 3 males with same label-(JV); 1 male from same locality with same date, Kozlov *leg*.-(SK); 1 male, Mongolia, Gobi-Altaj aimak, 25 km SE Altaj (old name Jusun-Bulak), 12.VII.1970, Namhaidorzh *leg*.-(ZIN); 1 male, Mongolia, Kobd aimak, 20 km SW somon Altaj, Elkhon, on Bodonchi (= Bodonchijn–Gol), 27.VII.1970, Zaitzev *leg*.-(JV).

Remarks. – *E. consentaneum* seems to be in vicariant relations with *E. dorcas*. The areas of two species are in contact in Gobi-Altaj aimak near somon Altaj. So, here could be discovered transitional populations. According to the available materials *E. consentaneum* differ from local *E. d. dorcas* by flat elytra and more or less indistinct scattered elytral setae.

Three specimens are figured by Wang Zhicheng (2003) under the name "*E. consentaneum*". The first of them (male of *E. consentaneum*) was copied from "Atlas of the Cerambycidae photographs of the tribe Dorcadionini" (Danilevsky, 2006); that specimen (MD) was collected in Mongolia (Gobi-Altaj aimak, Ushijn-Bulak spring, 30 km NW Beger, 13.VII.1970, Kozlov *leg*.). Two other specimens (females) of China origin have no connection with *E. consentaneum* and need good identification (*E. virgatum* ?). Several localities of that taxon were recorded - Inner Mongolia : Nongmu (?) colleage farm (= Nongmu Xueyuan Nongchang), Tongliaoshi (?), Dongwuzhuqi (?).



Map 18. Localities of ***E. consentaneum*** : Mongolia.

1. Ushijn-Bulak spring, 30 km NW Beger; 2. Tzakhir-Bulak spring, 15 km SE Naran; 3. 25 km SE Altaj (Jasun-Bulak), Elkhon.

20. *Eodorcadion (Ornatodorcadion) intermedium* (Jakovlev, 1890) (Fig. 20)

Neodorcadion intermedium Jakovlev, 1890 : 246 ("Nord du Gobi, près de la fontaine Ourdjume et á Outben-Kotel" – South-Gobi aimak); 1901 : 150, 157, part.; Reitter, 1897 : 182 ("Gobi"), part.; Pic, 1901 : 68 ("Mong."), part.; Winkler, 1929 : 1200, part.

Neodorcadion mongolicum Jakovlev, 1895 : 508 ("dans la Mongolie"); Reitter, 1897 : 179 ("Mongolei : Changai Geb."), part.; Jakovlev, 1901 : 150, 157; Pic, 1901 : 57 ("Mong."), part.; Winkler, 1929 : 1199, part.

Eodorcadion (O.) intermedium, Gressitt, 1951 : 339, 343, part.; Breuning,1958 : 3; 1962 : 42, part.

Eodorcadion (O.) kozlovi, Gressitt, 1951 : 339, 343, part. ("Tzaganlor [?]"); Breuning, 1962 : 42, part.

Eodorcadion (O.) mongolicum, Gressitt, 1951 : 339, 344, part. ("Tzaganlor [?]"); Breuning, 1958 : 3, part.; 1962 : 42, part.

Eodorcadion (O.) kaszabi Heyrovsky, 1965 : 42, 44-45 ("Bajanchongor Aimak : 5km S von Somon Bogd, unweit von Tujn gol, 1200 m" and "Ubur-changai Aimak : Arc Bogd ul, Umgebung Somon Chovd, 1600 m").

Eodorcadion intermedium, Namhaidorzh, 1972 : 626, part.; Hua, 2002 : 206 ("Inner Mongolia"), part.; Wang, 2003 : 297 (Inner Mongolia).

Eodorcadion mongolicum, Plavilstshikov, 1958 : 468, part.; Namhaidorzh, 1972 : 525 (part.); 1976 : 212, part.; Hua, 2002 : 206 ("Inner Mongolia"), part.; Wang, 2003 : 300 (Jilin prov., Changchun, Zhenlai of Baicheng area; Inner Mongolia; Mongolia), part.

Eodorcadion intermedium, Danilevsky, 2004 : 2 (= *mongolicum* Jakovlev, 1895 = *kaszabi* Heyrovsky, 1965).

Type locality. – Mongolia – South-Gobi aimak: Kotel-Usu well or Khutel-Us (about 43°27'N, 100°43'E) in the south-west part of the aimak between two mountain ridges Tost-Ula and Nemegt-Ula (Namhaidorzh, 1972 : 526).

Diagnosis. – Body length in males : 13.5-21.5 mm, in females : 17.2-35 mm; body width in males : 4.5-8.2 mm, in females : 6.2-9.7 mm.

Body moderately big, black, tibiae and basal parts of antennal joints can be more or less reddish; antennae usually with white hair rings, which can be sometimes indistinct; elytral sculpture very rough; elytra usually more or less granulated anteriorly and dentated along shoulders; hair stripes always present; glabrous forms unknown; each elytron usually with 5 stripes : very wide marginal, wide humeral and external dorsal, very narrow sutural; internal dorsal elytral stripe free (Fig. 23a–1-6, 8-11, 13, 22) or fused (partly or totally) with sutural stripe forming large central white area (Fig. 23a–7, 12, 14-20, 23); sometimes humeral and external dorsal stripes can be partly (Fig. 23a–12,16,18) or totally fused (Fig. 23a–19,23); elytral carinae usually indistinct, obliterated or sometimes slightly exposed.

Distribution (Map 19). – Mongolia from north part of Gobi-Altaj aimak (Dzabkhan river valley) to Baian-Hongor aimak, Uver-Hangai aimak (totally), south part of Ara-Hangai aimak, south part of Central aimak, Central-Gobi aimak, South-Gobi aimak, north half of East-Gobi aimak.

The species is undoubtedly distributed in Chinese Inner Mongolia as it was collected just along south Mongolian border. It was recorded for Inner Mongolia as "*E. intermedium*", "*E. mongolicum*" and "*E. kozlovi*" by Hua Li-zhong (2002 : 206) and as "*E. intermedium*" and "*E. kozlovi*" by Wang Zhicheng (2003 : 297, 298).

Remarks. – *E. intermedium* was described after two syntypes (Figs. 20–1-2). According to B. Namhaidorzh (1972), the type locality, Kotel-Usu well or Khutel-Us, is situated in South-Gobi aimak between two mountain ridges Tost-Ula and Nemegt-Ula (south-west part of the aimak). Both syntypes do not correspond good enough to the original description. Both are males, while B. Jakovlev mentioned male and female; both males are about 16.5 mm long, while Jakovlev's male must be 15 mm and "female"– 18 mm. Elytra of both males are abnormal and rather different, but such situation is not reflected in the original description, which is too general. Still, I regard both specimens as true syntypes, as they are characterized by very special character reflected in the original description – antennae, legs, elytral borders and partly frons are reddish.

Neodorcadion mongolicum was described after series of specimens "trouvés en 1893 dans la Mongolie par M. Clementz"[in fact by E. N. Clementz in 1893 : 75]. B. Jakovlev mentioned the size of one male ("17 mm") and one female ("20 mm"), but according to the text he used several males for his description.

Now in Zoological Institute (St.-Petersburg) three similar males (Fig. 20a-4)-14.5-16.5 mm long – are equipped with original Jakovlev's red type labels, but all without any geographical labels. A female (Fig. 20a-3) – 19.5mm, undoubtedly belongs to the syntype series, though has only one original label in Russian ["V. Jakovlev's coll."]. Besides, there is a very similar pair of males (17.5 mm and 20 mm) without Jakovlev's labels, but with the geographical labels in Russian ["N-W Mongolia, 20.VI-7.VII.1894, Clementz" and "N-W Mongolia, 9.VII-10.VIII.1894, Clemenz"]. All these specimens look like members of one population.

The syntype series of *N. mongolicum* does not allow to identify exactly its geographical origine, as very similar specimens (ZIN) are known from very wide area from Dzabkhan river valley in the north part of Gobi-Altaj aimak (Fig. 20a-5) to Ushugin-Obo Mt. in the east part of Uver-Hangai aimak (Fig. 20a-6). Besides, I've got similar specimens from near Beger in the east part of Gobi-Altaj aimak. So the type locality of *N. mongolicum* could be delimited as Mongolian area southwards Hangai mountain system.

The syntypes of *N. intermedium* do not possess any character, which could distinguish *E. intermedium* as a taxon from *E. mongolicum*. In general elytral and thoracic punctation as well as design are same. The locality of *E. intermedium* is situated at the south part of *E. mongolicum* type area. So, *E. intermedium* = *E. mongolicum*, as it was proposed by M. Danilevsky (2004).

E. kaszabi (Figs. 20a–10-11) was described from two localities: Bogd environs in Baian-Hongor aimak and Khovd environs in Uver-Hangai aimak. Both localities are inside the area of *E. intermedium*. The original description is equipped with photos of a male and a female, besides, I've studied the type series (HMNH and NMP). The specimens used by L. Heyrovsky for his description are nearly identical to syntypes of *E. mongolicum*. So, *E. intermedium* = *E. kaszabi*, as it was proposed by M.Danilevsky (2004).

L. Heyrovsky did not compare his new species with any other species, but mentioned : "Dem *E. ornatum* Fald. nahestehend.", which was totally out of the reality.

All localities, mentioned above, are situated westwards from 103°E. So, I accept the area of the nominative form as the western half of the species area.

I can suppose now several local subspecies inside the very big area of *E. intermedium*, but delimination of several geographicval forms needs new materials; anyway now all infraspecific names definitely belong to the nominative form and to *E. i. kozlovi* (Suvorov, 1912).

Two males and one "female" (in fact all three are males) figured by Wang Zhicheng (2003 : 300) as "*E. mongolicum*" have no connections with *E. intermedium* (Jak.) (= *N. mongolicum* Jak.). This taxon is recorded for the west of Jilin prov : Changchun, Zhenlai of Baicheng area and must be described as a new species.

20a. *Eodorcadion (Ornatodorcadion) intermedium intermedium* (Jakovlev, 1890) (Fig. 20a)

Neodorcadion intermedium Jakovlev, 1890 : 246 ("Nord du Gobi, près de la fontaine Ourdjume et á Outben-Kotel" – South-Gobi aimak); Winkler, 1929 : 1200, part..

Neodorcadion mongolicum Jakovlev, 1895 : 508 ("dans la Mongolie"); Winkler, 1929 : 1199, part.

Eodorcadion (O.) intermedium, Gressitt, 1951 : 339, 343, part.; Breuning,1958 : 3; 1962 : 42, part.

Eodorcadion (O.) mongolicum, Breuning, 1958 : 3, part.; 1962 : 42, part.

Eodorcadion mongolicum, Plavilstshikov, 1958 : 468; Namhaidorzh, 1972 : 525 (part.); 1976 : 212, part.; Hua, 2002 : 206 ("Inner Mongolia"), part.

Eodorcadion mongolicum ab. *recurvatum* Plavilstshikov, 1958 : 470, unavailable name.

Eodorcadion mongolicum ab. *coagmentatum* Plavilstshikov, 1958 : 470, unavailable name.

Eodorcadion mongolicum ab. *extrasignatum* Plavilstshikov, 1958 : 470, unavailable name.

Eodorcadion (O.) kaszabi Heyrovsky, 1965 : 42, 44-45 ("Bajanchongor Aimak : 5km S von Somon Bogd, unweit von Tujn gol, 1200 m" and "Ubur-changai Aimak: Arc Bogd ul, Umgebung Somon Chovd, 1600 m").

Eodorcadion kaszabi, Namhaidorzh, 1972 : 526.

Eodorcadion intermedium, Namhaidorzh, 1972: 626, part.; Hua, 2002: 206 ("Inner Mongolia"), part.

Eodorcadion sp., Namhaidorzh, 1972 : 525 ("Baian-Khongor aimak, 25 km WSW Dalangijn-Udzur-Daba pass").

Eodorcadion intermedium intermedium, Danilevsky, 2004 : 4.

Type locality. – Mongolia – South-Gobi aimak : Kotel-Usu well or Khutel-Us (about 43°27'N, 100°43'E) in the south-west part of the aimak between two mountain ridges Tost-Ula and Nemegt-Ula (Namhaidorzh, 1972 : 626).

Diagnosis. – Body length in males : 14.5-21 mm, in females : 18-25.3 mm; body width in males : 4.7-8.2 mm, in females : 6.2-9.7 mm.

Elytra usually with regular dorsal white stripes; both dorsal stripes are often similar; internal dorsal stripe usually well developed, free, not fused with sutural stripe, so white sutural triangular area absent; humeral and external dorsal stripe usually without basal fusion.

In general the taxon is characterized by great individual and geographical variability. A population from Nugryn-Els seems to consist of very big roughly sculptured specimens (Figs. 20a–7-9), which are often covered with yellow pubescence. It could be regarded as a local subspecies.

Distribution (Map 18; localities 1-26). – Mongolia, in general along east and south foothills of Hangai mountain ridge and in Lakes Valley eastwards to about 103°E. The taxon is undoubtedly distributed in Chinese Inner Mongolia as it was collected just near south border of South-Gobi aimak. It was recorded for Inner Mongolia (as "*E. intermedium*" and "*E. mongolicum*") by Hua Li-zhong (2002: 206).

Known localities are : South-Gobi aimak : Kotel-Usu well or Khutel-Us (about 43°27'N, 100°43'E) in the south-west part of the aimak between two mountain ridges Tost-Ula and Nemegt-Ula (type locality); Noion ridge, 10 km N somon Noion-(JV); from Dalan-Dzadgad to Tzagan-

Deresun [43°21'N, 103°09'E] (most probably near Baian-Dalaj, as further eastwards *E. i. kozlovi* is distributed)-(ZIN); 30 km W Tost-Ula ridge-(ZIN); Gobi-Altaj aimak : Dzabkhan river-(ZIN, Namhaidorzh, 1972 – as *E. mongolicum*); Beger-(MD); 45 km SE Beger, 45°30'N, 97°36'E-(MD); Baian-Hongor aimak: Erdene-Tzogt-(ZIN, Namhaidorzh, 1972 – as *E. mongolicum*); middle level of Tuin-Gol river valley-(ZIN, Namhaidorzh, 1972 – as *E. kozlovi*); Orog-Nur lake -(Namhaidorzh, 1972 – *as E. kozlovi* and as *E. mongolicum*); 25 km WSW Dalangijn-Udzur-Daba pass-(ZIN, Namhaidorzh, 1972 – as *Eodorcadion* sp.); 5 km S from Bogd, Tujn-Gol river-(HNHM and Heyrovsky, 1965 – as type locality of *E. kaszabi*); between Baian-Gobi and Baian-leg-(HNHM and Heyrovsky, 1970, as *E. mongolicum*); 8 km ESE Baian leg-(HNHM and Heyrovsky, 1970, as *E. mongolicum*); 10 km NW Baian-Hongor-(HNHM); 50 km E from Shine-Dzhinst-(HNHM); 18 km S Shine-Dzhinst-(ZIN); Khulsyn river, 20 km SW Bon-Tszaium lake [?]-(MD); Bakhar [?]-(MD); Bu-Tzagan-(NMV); 35 km S Bu-Tzagan-(ZIN); Uver-Hangai aimak: Nugryn-Els, 15 km ESE Barun-Baian-Ulan-(MD); south slope of Ushugin-Obo Mt.-(ZIN); 70 km E Bogdo (Namhaidorzh, 1972 – as *E. kozlovi*); between Arbaj-Khere and Gun-Narijn (Namhaidorzh, 1976 – as *E. mongolicum*); Artz-Bogdo ridge, Khovd environs-(HNHM and Heyrovsky, 1965 – as *E. kaszabi*); Ara-Hangai aimak : Tevshrulekh-(MD); Central aimak : Undzhul (MD) - the locality is situated far north-eastwards from the known area of the subspecies, but only two available females are not enough for exact identification of the population at subspecific level.

Materials. – 1 male, syntype of *Neodorcadion intermedium* with two labels : "Mong. centr., 20-21.VIII.1886, G. Potanin" "Type",-(ZIN); 1 male, syntype of *Neodorcadion intermedium* with two labels : "Mong. centr., 20-21.VIII.1886, G. Potanin" "*intermedium* Jak. type"-(ZIN); 3 males, syntypes of *N. mongolicum*, each with two labels : "Type", "Jakovlev's coll."-(ZIN); 1 female, (?) syntype of *Neodorcadion intermedium* with one label : "V. Jakovlev's coll."-(ZIN); 1 female, "Mong. centr., 17.VIII.1886, G. Potanin"-(ZMM); 2 males, "NW Mongolia, 20.VI-7.VII.1894 and 9.VII.-10.VIII.1894, Clementz-(ZIN); 1 male, "North Mongolia"-(ZIN); 2 males, 1 female, "Nordl. Mongolei, Changai, Leder"-(HNHM); 1 male with same label-(NMP); 1 female, Baian-Hongor aimak, Tunin-Gol (= Tujn-Gol), middle level of Khalh, 28-30.VII.1926, Kiritchenko *leg*.-(ZIN); 3 males, Gobi-Altaj aimak (according to Kerzhner, 1972 : 95), "left bank of Dzapkhyn river [Dzabkhan], 14.VIII.1927, Sevko *leg*."-(ZIN); 11 males, 4 female (very typical big specimens with always independent internal dorsal stripe), Mongolia, South-Gobi aimak, from Dalan-Dzadgad to Tzagan-Deresun, 3.VIII.1949, Eglon *leg*.-(ZIN); 1 male, Mongolia, Baian-Hongor aimak, Erdene-Tzogt, 14.VII.1949, Eglon *leg*.-(ZIN); 1 male, 1 female, holotype and paratype of *Eodorcadion kaszabi* Heyr., "Mongolia : Bajanchongor Aimak, 5 km S von Somon Bogd, unweit von Tujn gol, 1200 m, 24.VI.1964, exp. Dr. Z. Kaszab"-(HNHM); 1 female, paratype of *Eodorcadion kaszabi* Heyr. with same label-(NMP); 1 female, paratype of *Eodorcadion kaszabi* Heyr., "Mongolia : Uburchangaj Aimak, Arc Bogd ul, Umgebung Somon Chovd, 1600 m, 21.VI.1964, exp. Dr. Z. Kaszab"-(HNHM); 12 males, 2 females, Uver-Hangai aimak, Barun-Baian-Ulan, 18.VIII.1966, Dlabola *leg*.-(NMP); 1 male, Baian-Hongor aimak, 25 km WSW Dalangijn-Udzur-Daba pass, 26.VIII.1967, Emeljanov and Kerzhner *leg*.-(ZIN); 1 male, 1 female, "Mongolia, Bajanchongor Aimak, Zinst ul Gebirge, 50 km O von Somon Schine-Zinst, 2000 m, 30.VI.1967, exp. Dr. Z. Kaszab"-(HNHM); 74 males, 23 females, "Mongolia, Bajanchongor Aimak, zw. Somon Bajangobi und Somon Bajanleg, 26 km SO von Somon Bajanleg, 1450 m, 1-2.VII.1967, exp. Dr. Z. Kaszab"-(HNHM); 47 males, 39 females, "Mongolia, Bajanchongor Aimak, 8 km OSO von Somon Bajanleg, 1350 m, 2.VII.1967, exp. Dr. Z. Kaszab"-(HNHM); 1 male, "South-Gobi aimak, Noion ridge, 10 km N somon Noion, 22-23.VIII.1969, Zaitzev *leg*."-(JV); 1 male, "Uver-Khangai aimak, south slope of Ushugin-Obo Mt., 2.VIII.1969, Zaitzev *leg*."-(ZIN); 1 male, Mongolia, Baian-Hongor aimak, 35 km S Bu-Tzagan, 10.VII.1970, Narchuk *leg*.-(ZIN); 1 female, Ara-Hangai aimak, Tevshru-

lekh, VII.1972-(MD); 2 males, "Mongolia, Bajanchongor aimak, 10 km NW Bajanchongor, 11.VIII.1973, *leg*. Zs. Peregi"-(HNHM); 1 female, Baian-Hongor aimak, Khulsyn river, 20 km SW Bon-Tszaium lake, 5-6.VII.1975, L. Medvedev *leg*.-(MD); 1 male and 3 females, Uver-Hangai aimak, Nugryn-Els, 15 km ESE Barun-Baian-Ulan, 19.VIII.1976, L. Medvedev *leg*.-(MD); 2 females, Central aimak, Undzhul, 1976-(MD); 1 female, Baian-Hongor aimak, Bakhar [?], 30-31.VII.1980-(MD); 2 males, 1 female, South-Gobi aimak, 30 km W Tost-Ula ridge, 8.VII.1981, Lvovsky *leg*.-(ZIN); 2 males, 1 female, Mongolia, Baian-Hongor aimak, 18 km S Shine-Dzhinst, 21-28.VII.1981, Korotyaev *leg*.-(ZIN); 2 females, "Mongolia centr., Bu Cagan [Bu-Tzagan in Baian-Hongor aimak], 4.VII.1988, O. Majzlan *leg*."-(NMV); 2 males and 1 female, Mongolia, Gobi-Altaj aimak, 45 km SE Beger, 45°30'N, 97°36'E, 2000 m, 26.VI.2002, S. Churkin *leg*. (MD).

Remarks. – *Eodorcadion* sp. by B. Namhaidorzh (1972 : 525) from "Baian-Hongor aimak, 25 km WSW Dalangijn-Udzur-Daba pass" is just a local form of *E. i. intermedium*, as it does not differ too much from his "*E. mongolicum*" and its locality is situated inside the area of *E. i. intermedium*.

20b. *Eodorcadion (Ornatodorcadion) intermedium kozlovi* (Suvorov, 1912) (Fig. 20b)

Neodorcadion kozlovi Suvorov, 1912 : 71 ("Zentral Mongolei; Chutzen-shanda Brunnen"); Winkler, 1929 : 1199.

Neodorcadion oryx var. *hedini* Pic, 1926 : 12 ("S Mongoliet").

Eodorcadion kozlovi, Plavilstshikov, 1958 : 482; Namhaidorzh, 1972 : 525 (part.); Hua, 2002 : 206 (Inner Mongolia); Wang, 2003 : 298 (Inner Mongolia).

Eodorcadion kozlovi ab. *petri* Plavilstshikov, 1958 : 482, unavailbale name.

Eodorcadion kozlovi ab. *kutshinense* Plavilstshikov, 1958 : 482, unavailable name.

Eodorcadion (O.) kozlovi, Gressitt, 1951 : 339, 343 ("Tzaganlor"[?]); Breuning, 1962 : 45.

Eodorcadion (O.) mongolicum, Breuning, 1958 : 3, part.

Eodorcadion (O.) mongolicum ab. *kozlovi*, Breuning, 1958 : 3.

Eodorcadion intermedium, Heyrovsky, 1964 : 379.

Eodorcadion intermedium m. *gobicum* Heyrovsky, 1964 : 379 ("65 km SO von Zuun-Bajan"), unavailable name.

Eodorcadion mongolicum m. *recurvatum*, Heyrovsky, 1965 : 41.

Eodorcadion mongolicum, Heyrovsky, 1970 : 140; 1973b : 117; Namhaidorzh, 976 : 212, part.

Eodorcadion princeps, Namhaidorzh, 1972 : 529 ("Barun-Sair, somon Altan-Shire").

Eodorcadion oryx, Heyrovsky, 1973 : 123.

Eodorcadion intermedium kozlovi, Danilevsky, 2004 : 5 (= *Neodorcadion oryx* var. *hedini* Pic, 1958, **syn. n.**).

Eodorcadion (O.) intermedium kozlovi, Danilevsky et al., 2005 : 132-133.

Type locality. – Mongolia, South-Gobi aimak : Khutzen-Shanda well near Mandal-Obo (44°08'N, 104°05'E). According to I. Kerzhner (2003, personal communication), the well Khutzen-Shanda is situated in the north part of South-Gobi aimak near Mandal-Obo (44°08'N, 104°05'E).

Diagnosis. – Body length in males : 13.5-21.5 mm, in females : 17.2-35 mm; body width in males : 4.5-7 mm, in females : 6.5-9 mm.

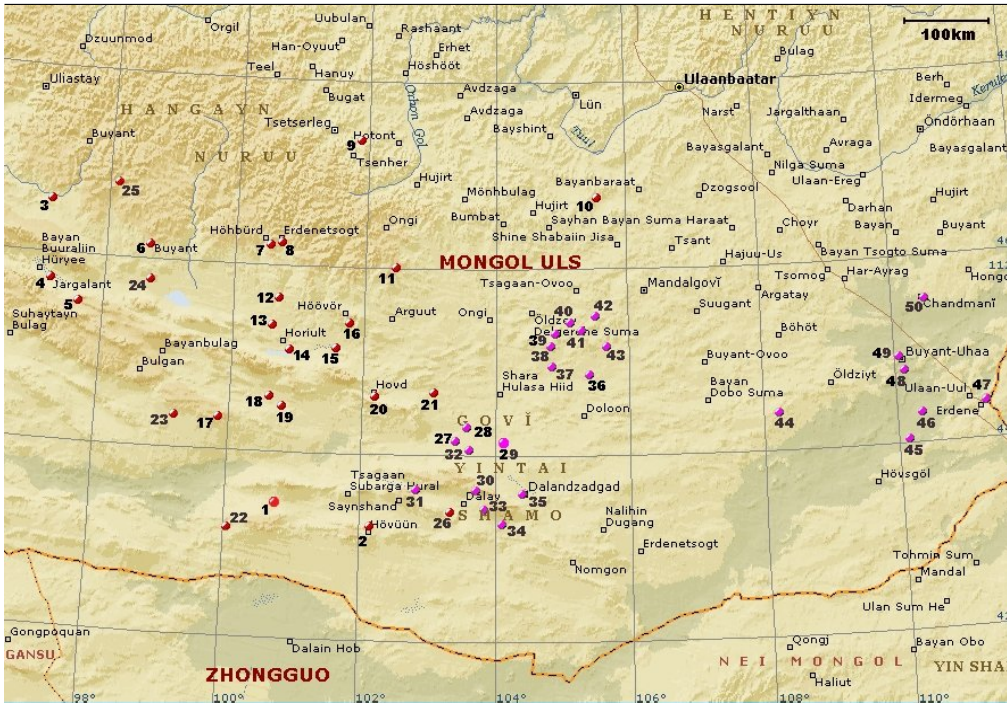
Elytra with usual humeral fusion between humeral and external dorsal stripes (Figs. 20b –15-16, 20-22); internal dorsal stripe usually totally or partly fused with sutural stripe forming wide white sutural area widened anteriorly (Figs. 20b–12,14-19), similar to those of *E. oryx*; sometimes all stripes are more or less free (Figs. 20b–13,21-22); very rare humeral and external dorsal stripe are fused (Figs. 20b–12,18-19, 23); the last aberration is similar to the holotype of *Neodorcadion princeps* Jakovlev 1899.

Distribution (Map 18; localities 27-50). – Mongolia, the east part of the species area, in general eastwards from about 103°E in Central-Gobi aimak, South-Gobi aimak and East-Gobi aimak. The taxon is undoubtedly distributed in Chinese Inner Mongolia as it was collected just on the east border of East-Gobi aimak. It was recorded for Inner Mongolia (as "*E. kozlovi*") by Hua Li-zhong (2002 : 206) and Wang Zhicheng (2003 : 298).

Known localities are : South-Gobi aimak : Khutzen-Shanda well, near Mandal-Obo, 44°08āN, 104°05'E-(type locality of *Neodorcadion kozlovi*); Tzosto [southwards Gurvan-Saikhan ridge, according to Kerzhner, 1972 : 79]-(ZIN); Mandal-Obo-(ZIN); Ulan-Bulak, Mt. Dund-Saikhan [central of three ridges of Gurvan-Saikhan Mts. – see Kerzhner, 1972 : 79 – about 43°35'N, 103°45'E]-(Namhaidorzh, 1972, as *E. kozlovi*); Bain-Dzak, 30 km NNE Bulgan-(ZIN; Namhaidorzh, 1972, as *E. kozlovi*); Dzhandzhin-Khuduk, S somon Khurmen-(Namhaidorzh, 1972, as *E. kozlovi*); Khongoryn-Els, 60 km WNW Baian-Dalaj-(Namhaidorzh, 1972, as *E. kozlovi*); 16 km NW somon Bulgan-(Namhaidorzh, 1972, as *E. kozlovi*); 25 km ESE Baian-Dalaj-(Namhaidorzh, 1972, as *E. kozlovi*); Dalan-Dzadgad-(ZIN); between Dalan-Dzadgad and Tzagan-Dersun [?]-(Namhaidorzh, 1972, as *E. kozlovi*); somon Bulgan, Tugreg-Us [?] (Namhaidorzh, 1976, as *E. mongolicum*); Bulgan environs-(HNHM, MD; Namhaidorzh, 1976, as *E. mongolicum*); 25 km N from Bulgan- (Heyrovsky, 1965 – as *E. mongolicum*); Takhilga-Ula Mt., between Dalan-Dzadgad and Tzogt-Obo, 68 km S from Tzogt-Obo-(HNHM and Heyrovsky, 1970 – as *E. mongolicum*); 33 km W Dalan-Dzadgad-(NMP, SMTD); Gurvan-Sajkhan ridge between Baian-Dalaj and Khurmen, 24 km NW Khurmen-(HNHM and Heyrovsky, 1970 – as *E. mongolicum*); east part of Dzelen-Ula ridge, 58 km and 34 km SW from Baian-Dalaj-(HNHM and Heyrovsky, 1970 – as *E. mongolicum*); Kholbogijn-Khuloi, 25 km N Bulgan-(HNHM); Manlai, 44°03'N, 107°02'E-(MD); Central-Gobi aimak : 6 km S Delger-Hangai-(HNHM); Khot-Bulak, between Khuld and Delger-Hangai, 38 km ENE from Delger-Hangai-(HNHM and Heyrovsky, 1970, as *E. mongolicum*); 100 km S Mandal-Gobi, 44°52'N, 105°23'E-(MD); 90 km S Mandal-Gobi, 45°10'N, 105°39'E-(MD); 10 km NE Delger-Hangai, (Namhaidorzh, 1972, as *E. kozlovi*); 30 km NE Delger-Hangai (JV, Namhaidorzh, 1972, as *E. kozlovi*); 30 km S Delger-Hangai-(Namhaidorzh, 1972, as *E. kozlovi*); 20 km W Lus-(Namhaidorzh, 1972, as *E. kozlovi*); East-Gobi aimak : 2 km SE Mandakh, 44°24'N, 108°13'E (Photo. 8)-(MD); 11 km S Sain-Shand, 44°47'N, 110°07'E-(MD); 10 km NW Erdene-(ZIN); Barun-Sair near somon Altan-Shiret-(ZMM, Namhaidorzh, 1972, as *E. kozlovi* and *E. princeps*); Argalant, 65 km SE from Dzun-Baian-(HNHM, NMP, Heyrovsky, 1964, as *E. intermedium* and *E. i.* m. *gobicum*); 8 km NNW from Sain-Shand-(HNHM, Heyrovsky, 1964, as *E. intermedium*); 30 km SE Dzun-Baian-(HNHM and Heyrovsky, 1973a, as *E. oryx* ab. *semisegregatum*); "Helgyn-ul-Gebirge" [Khalgyn-Ula] S Sain-Shand – (Heyrovsky, 1973b, as *E. mongolicum*).

Bionomy. – The taxon inhabits depressions of hilly landscapes covered with big and numerous plants of *Lasiagrostis*. Males and females were often observed feeding rather high on the stems of the plants.

Materials. – 1 male, syntype of *Neodorcadion kozlovi*, ["Zentral Mongolei, Chutzen-shanda Brunnen, 16-20.VII.1909, Kozlov's exp."] [in Russian]-(MHNL); 4 males, syntypes of *Neodorcadion kozlovi*, ["Zent. Mongolei, Chutzen-shanda Brunnen, 16.VI.1909, Kozlov's exp."] [in Russian]-(JV); 1 male, 1 female, syntypes of *Neodorcadion kozlovi*, each with two labels : ["Zent. Mongolei, Chutzen-shanda Brunnen, 16.VII.1909, Kozlov's exp."] [in Russian] and "*Neodorcadion kozlovi*, type m., G. Suvorov det."-(ZIN); 1 male, syntype? (not mentioned in the original description) with two labels : "Cent. Mongolia, Tzosto [South-Gobi aimak, according to Kerzhner, 1972 : 79], 28.VI-2.VII.1909, Kozlov's exp." and "*Neodorcadion kozlovi*, type m., G. Suvorov det."-(ZIN); 1 male, holotype (?) of *Neodorcadion oryx* var. *hedini* Pic, 1935, "S Mongoliet 1927"-(MNHP); 1 male, 1 female (both identified as "*E. oryx*" by Namhaidorzh, but later recorded as "*E. kozlovi*" by Namhaidorzh,1972), Mongolia, East-Gobi aimak, Altyn-Shiret, somon Barun-Sair, 29.VIII.1958, Dementiev"-(ZMM); 1 male (without antennae and legs) and another male (without hind body half) designated as holotype of *E. intermedium* m. *gobicum* by L. Heyrovsky "Mongolia, Ostgobi Aimak, Argalant ulan shire [Argalantyn-Ulan-Shire], 65 km SO von Zuun-Bajan [Dzun-Baian], 800 m, 25.VI.1963, exp. Dr. Z. Kaszab"-(HNHM); 1 male with same label-(NMP); 1 female, "Mongolia, Ostgobi Aimak, 8 km NNW von Sainschand, 1000 m, 28.VI.1963, exp. Dr. Z. Kaszab"-(HNHM); 2 males, "Mongolia : Südgobi Aimak, 25 km N von Somon Bulgan, Schovongin chooloi [Kholbogijn-Khuloi], 1030 m, 19.VI.1964, exp. Dr. Z. Kaszab"-(HNHM); 2 males, "Mongolia : Südgobi Aimak, 33 km W Dalanzadgad, 1200 m, 2-8.VII.1965, *leg*. Muche"-(NMP); 1 male, South-Gobi aimak, Mandal-Obo, Baianzot [= Bain-Dzak, 30 km NNE Bulgan, see Emeljanov et al., 1968], 26.VII.1967, Namhaidorzh *leg*.-(ZIN); 1 male, "Omnogov aimak (= South-Gobi aimak), Mandal-Obo, 26.VII.1967, B. Namhaidorzh *leg*."-(ZIN); 1 female, "Mongolia : Südgobi Aimak, Zölöön ul. [Dzelen-Ula ridge], 58 km WSW von Somon Bajandalaj, 1500 m, 6.VI.1967, exp. Dr. Z. Kaszab"-(HNHM); 2 males, 2 females, "Mongolia : Südgobi Aimak, Gurban Sajchan ul., zw. Somon Churmen und Somon Bajandalaj, 1550 m, 14.VI.1967, exp. Dr. Z. Kaszab"-(HNHM); 1 male, "Mongolia : Südgobi Aimak, 34 km WSW von Somon Bajandalaj, 1600 m, 15.VI.1967, exp. Dr. Z. Kaszab"-(HNHM); 1 male, "Mongolia: Südgobi Aimak, Somon Bulgan, Talynbulag, 1350 m, 5.VII.1967, exp. Dr. Z. Kaszab"-(HNHM); 10 males, 1 female, "Mongolia : Südgobi Aimak, Tachilga ul., zw. Zogt-Ovoo und Dalanzadgad, 1550, 8-9.VII.1967 [and 12.VII.1967], exp. Dr. Z. Kaszab"-(HNHM); 1 male [one of the biggest : 21 mm X 7 mm], South-Gobi aimak, Dalan-Dzadgad, VII-VIII.1967, Dulamzhav *leg*.-(ZIN); 1 male, "Mongolia, Mittelgobi Aimak, Delgerchangaj ul., 6 km S von Somon Delgerchangaj, 1650 m, 10-11.VII.1967, exp. Dr. Z. Kaszab"-(HNHM); 1 male, "Central-Gobi aimak, 30 km NE Delger-Hangai, 24.VII.1967, Zaitzev *leg*."-(JV); 38 males, 12 females, "Mongolia, Mittelgobi Aimak, Choot [Khot] bulag, zw. Chuld [Khuld] und Delgerchangaj, 1480 m, 12.VII.1967, exp. Dr. Z. Kaszab"-(HNHM); 1 male, Mongolia, Choibalsan aimak, Bajan uul (?), Doriat Bajan-uul (?), *leg*. Eregdendeghva [wrong label?]-(HNHM); 1 male, "Mongolia, Ostgobi aimak, 30 km SE from Dzun-Baian, 24.VII.1968, *leg*. B. Burakowskii et H. Szelegiewicz"-(HNHM); 1 male and 3 females, South-Gobi aimak, Bulgan, 1.VIII.1970, 27.VII.1971, 17.7-15.VIII.1972, L. Medvedev *leg*.-(MD); 1 male (with B. Namhaidorzh hand label : "*Eodorcadion ornatum* d. Namhaidorzh"), East-Gobi aimak, 10 km NW Erdene, 13.VIII.1975, Gurieva *leg*.-(ZIN); 13 males, 1 female with same label-(SMTD); 6 males, "Mongolia mer., Mandalgov [Mandal-Gobi in Central-Gobi aimak], 30.VI.1987, O. Majzlan *leg*."-(NMV); 1 male, "Mongolia, Dungovi [Central-Gobi] aimak, 100 km S Mandalgovi, 105°23'E, 44°52'N, 24.VII.1988, *leg*. Szaboky Cs."-(NMV); 6 males and 1 female with same label-(MD); 1 female, Central-Gobi aimak, 90 km S Mandal-Gobi, 45°10'N, 105°39'E, 3.VIII.2002, 1250 m, M. Danilevsky *leg*.-(MD); 3 females, South-Gobi aimak, Manlai, 44°03'N, 107°02'E, 1300 m, M. Danilevsky *leg*.-(MD); 262 males and 44 females, Mongolia, East-Gobi aimak, 2 km SE Mandakh, 44°24'N, 108°13'E, 1300 m, 5-7.VIII.2002, M. Danilevsky *leg*.-(MD); 5 males and 1 female, Mongolia, East-Gobi aimak, 11 km S Sain-Shand, 44°47'N, 110°07'E, 950 m, 11.VIII.2002, O.V. Gorbunov *leg*.-(MD).



Map 19. Localities of ***E. intermedium*** : Mongolia.

E. i. intermedium (1-26) : 1. Kotel-Usu well or Khutel-Us (about 43°27'N, 100°43'E) between two mountain ridges Tost-Ula and Nemegt-Ula – type locality; 2. Noion Ridge, 10 km N somon Noion; 3. Dzabkhan River; 4. Beger; 5. 45 km SE Beger, 45°30'N, 97°36'E; 6. Bu-Tzagan; 7. 10 km NW Baian-Hongor; 8. Erdene-Tzogt; 9. Tevshrulekh (the locality needs confirmation); 10. Undzhul – (the locality needs confirmation); 11. between Arbai-Here and Gun-Nariyn; 12. middle level of Tuin-Gol River Valley; 13. 5k m S from Bogd, Tujn-gol river (type locality of *Eodorcadion kaszabi* Heyr.); 14. Orog-Nur lake; 15. 70 km E Bogdo; 16. south slope of Ushugin-Obo Mt.; 17. 50 km E Shine-Dzhinst; 18. between Baiangobi and Baianleg; 19. 8 km ESE Baianleg; 20. Artz-Bogdo Ridge, Khovd environs (paratype locality of *Eodorcadion kaszabi* Heyr.); 21. Nugryn-Els, 15 km ESE Barun-Baian-Ulan; 22. 30 km W Tost-Ula ridge; 23. 18 km S Shine-Dzhinst; 24. 35 km S Bu-Tzagan; 25. 25 km WSW Dalangijn-Udzur-Daba pass; 26. between Tzagan-Deresun and Baian-Dalaj.

E. i. kozlovi (27-50) : 27. 16 km NW somon Bulgan; 28. 25 km N from Bulgan; 29. Chutzen-Shanda well near Mandal-Obo (44°08'N, 104°05'E, type locality); 30. Ulan-Bulak, Mt. Dund-Sajhan about 43°35'N, 103°45'E; 31. Khongoryn-Els, 60 km WNW Baian-Dalay; 32. Bulgan environs; 33. 25 km ESE Baian-Dalay; 34. Dzhandzhin-Khuduk, S somon Khurmen; 35. Dalan-Dzadgad; 36. 100 km S Mandal-Gobi, 44°52'N, 105°23'E; 37. 30 km S Delger-Hangai; 38. 6 km S Delger-Hangai; 39. 10 km NE Delger-Hangai; 40. 30 km NE Delger-Hangai; 41. Choot bulag, between Chuld and Delger-Hangai, 38 km ENE from Delger-Hangai; 42. 20 km W Lus; 43. 90 km S Mandal-Gobi, 45°10'N, 105°39'E; 44. 2 km SE Mandakh, 44°24'N, 108°13'E; 45. Argalant, 65 km SE from Dzun-Baian; 46. 30 km SE Dzunbaian; 47. 10 km NW Erdene; 48. 11 km S Sain-Shand (Khalgyn-Ula Mts), 44°47'N, 110°07'E; 49. 8 km NNW from Sainshand; 50. Barun-Sair near somon Altan-Shiret.

Remarks. – *Neodorcadion kozlovi* was described from "Zentral Mongolei; Chutzenshanda Brunnen 16.VII.1909 (Expedition P. K. Kozlov, coll. P. P. Semenov-Tian-Shansky)." after series of males ("16-20 mm") and a female ("22 mm"). Now a syntype series with original Suvorov's type labels (ZIN) from type locality consists of two specimens: male (15.5 mm) and a female (22.5 mm – Fig. 20b-13). Another male (Fig. 20b-14) designated as a type by G. Suvorov has a label : "Cent. Mongolia, Tzosto, 28.VI-2.VII.1909, Kozlov's exp.", which was not mentioned in the original description. A syntype male from Museum d'Histoire Naturelle (Lyon) represents a rare aberration with fused humeral and external dorsal stripes (Fig. 20b-12). B. Namhaidorzh (1972) had 10 syntypes in his disposal. One more male from about type locality (ZIN) has a label : "ımnogov aimak, Mandal-Obo, 26.VII.1967, B. Namhaidorzh *leg*." All specimens from type locality are very similar to my series collected in 2002 (Figs. 20b–15-23). I regard all these populations as *E. intermedium* ssp. *kozlovi*. Still certain specimens of *E. i. kozlovi* are indistinguished from the nominative form.

N. N. Plavilstshikov (1958) used in the key only one character for separation of his "E. *mongolicum*" from his "*E. kozlovi*": the wide fusion between humeral elytral stripe and external dorsal stripe at elytral base. According to the original description only one syntype male (the biggest) had a connection between humeral elytral stripe and external dorsal stripe at elytral base. This character is really absent in all known to me *E. i. intermedium*, but present in about 80% of *E. i. kozlovi* (Figs. 20b - 15-16, 20-22).

A male of "*E. princeps*", mentioned by B. Namhaidorzh (1972) as the first record of the species for Mongolia, must be just a corresponding form of *E. i. kozlovi* (normal "*E. kozlovi*" was also mentioned by him from same locality) with fused humeral and external dorsal stripes (Figs. 20b–12,18-19, 23), as it was published by M. Danilevsky (2004).

Neodorcadion oryx var. *hedini* Pic, 1935 (with reddish legs) is in fact *E. intermedium kozlovi*. A male of the taxon (most probably holotype) is preserved in Pic's collecion in Museum nationale d'Histoire naturelle (Paris) with the label (by Pic's hand) : "S Mongoliet 1927" and "Sven Hedins Exp. Ctr. Asien Dr. Hummet". All records of *E. oryx* for East-Gobi aimak by L. Heyrovsky (1964 - based on one elytrum only, 1973) belong to *E. intermedium kozlovi*, as it is clear after study of the materials (HMNH) and just from the position of the locality.

The record of "*E. mongolicum*" for "Coibalsan aimak : Bajan ul" [= East aimak] by L. Heyrovsky (1970 : 140), which is connected with a single male of *E. intermedium* (HNHM) with the label : "Mongolia, Choibalsan aimak, Bajan uul, Doriat Bajan-uul, *leg*. Eregdendeghva"- looks unbelievable and most probably was based on a mistake, as the species absent in East aimak, but the name Baian-Ul (Ula) is very common all over Mongolia.

21. *Eodorcadion (Ornatodorcadion) gorbunovi* Danilevsky, 2004 (Fig. 21)

Eodorcadion gorbunovi Danilevsky, 2004 : 7 ("East-Gobi aimak, 7 km SW Khatan-Bulak, 43°07'N, 109°03'E").

Type locality. – Mongolia, East-Gobi aimak, 7 km SW Khatan-Bulak, 43°07'N, 109°03'E.

Diagnosis. – Body length in males : 14.5-21.2 mm, in females : 15.9-25.7 mm; body width in males : 4.7-6.9 mm, in females : 6-9.3 mm.

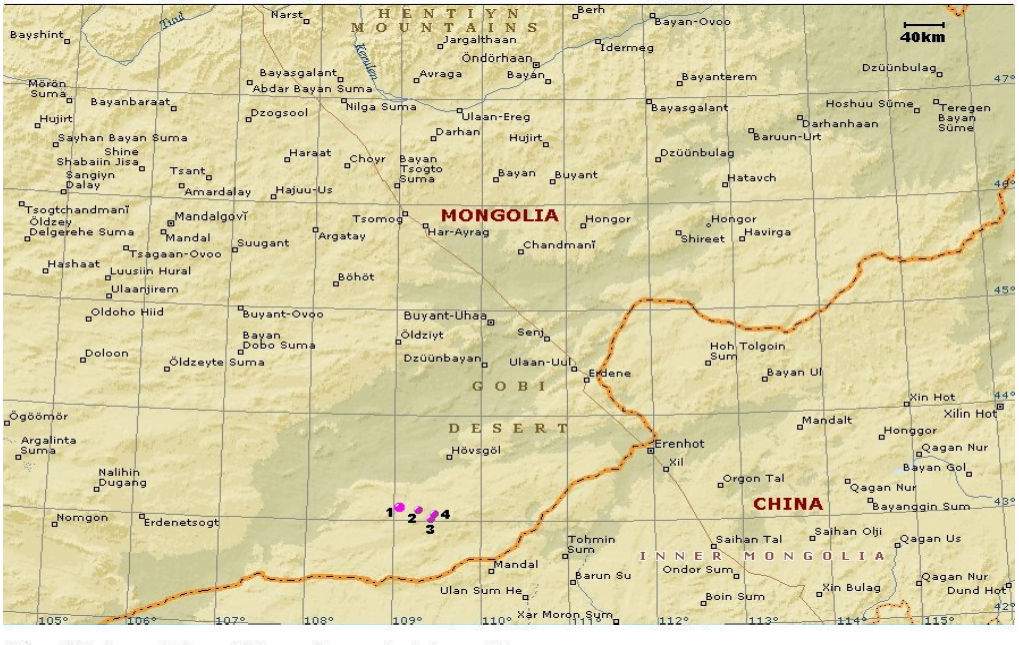
Body from moderately big to rather small; antennae and legs are always totally black (only one specimen has reddish anterior tibiae and reddish bases of middle and posterior tibiae); antennal joints always with white basal hair rings; vertex with dense pubescent areas hiding cuticula; elytra usually more or less granulated anteriorly and dentated along shoulders, but sometimes without gra-

nules at all; elytral carinae well developed, usually roughly sculptured and anteriorly granulated, but sometimes more or less obliterated, without granules; humeral stripe and external dorsal stripe usually without humeral fusion; sutural stripe and internal dorsal stripes are never totally fused forming central white area (usual situation in *E. i. kozlovi* and typical for *E. oryx*).

Distribution (Map 20). – Mongolia : south part of East-Gobi aimak southwards sandy landscapes of Gulon-Mankhany-Els and Elsen-Usny-Els. Known localities are : east-Gobi aimak : 7 km SW Khatan-Bulak, 43°07'N, 109°03'E, type locality-(MD); 11 km SE Khatan-Bulak, 43°06'N, 109°16'E-(MD); 24 km SE Khatan-Bulak, 43°01'N, 109°23'E-(MD); 23 km SE Khatan-Bulak, 43°04'N, 109°25'E-(MD). The area of *E. gorbunovi* is delimited from the area of *E. intermedium* (the most similar species) by the area of *D. zichyi*.

Bionomy. – The taxon inhabits depressions of stony hilly landscapes covered with big and numerous plants of *Lasiagrostis*. Males and females were often observed feeding rather high on the stems of the plants.

Materials. – 1 male, holotype, Mongolia, East-Gobi aimak, 7 km SW Khatan-Bulak, 43°07'N, 109°03'E, 1120 m, 8-9.VIII.2002, M. Danilevsky *leg*. (MD); 87 paratypes of *E. gorbunovi*-(MD) : 10 males and 9 females, same days, same locality, M. Danilevsky and O. Gorbunov *leg*.; 34 males and 15 females, Mongolia, East-Gobi aimak, 11 km SE Khatan-Bulak, 43°06'N, 109°16'E, 1240 m, 9.VIII.2002, M. Danilevsky and O. Gorbunov *leg*.; 15 males and 3 females, Mongolia, East-Gobi aimak, 24 km SE Khatan-Bulak, 43°01'N, 109°23'E, 1000 m, 9.VIII.2002, M. Danilevsky and O. Gorbunov *leg*.; 1 male, Mongolia, East-Gobi aimak, 23 km SE Khatan-Bulak, 43°04'N, 109°25'E, 1000 m, 9.VIII.2002, O. Gorbunov *leg*.



Map 20. Localities of ***E. gorbunovi*** : Mongolia.

1. 7 km SW Khatan-Bulak, 43°07'N, 109°03'E – type locality; 2. 11 km SE Khatan-Bulak, 43°06'N, 109°16'E; 3. 24 km SE Khatan-Bulak, 43°01'N, 109°23'E; 4. 23 km SE Khatan-Bulak, 43°04'N, 109°25'E.

Remarks. – *E. gorbunovi* is rather similar to *E. intermedium*, but differs by many small characters connected with cuticula color, punctation and pubescence : antennae and legs nearly always totally black; vertex with dense pubescent areas hiding cuticula; sutural stripe and internal dorsal stripes are never totally fused forming central white area (usual situation in *E. i. kozlovi* and typical for *E. oryx*); humeral stripe and external dorsal stripe usually without humeral fusion. *E. gorbunovi* is very close to *E. argaloides*, but differs by usually big body, relatively rough elytral sculpture and presence of white hair antennal rings; besides, the reduction of internal dorsal stripes is not known in *E. gorbunovi* (neither in *E. intermedium*).

22. *Eodorcadion (Ornatodorcadion) argaloides* Breuning,1947 (Fig. 22)

Eodorcadion argaloides Br., 1947b : 172 ("Mongolie méridionale"); 1958 : 2; 1962 : 43.

Eodorcadion oryx, Namhaidorzh, 1976 : 212.

Eodorcadion argaloides, Hua, 2002 : 206 ("Inner Mongolia").

Eodorcadion gorbunovi Danilevsky, 2004 : 14, part. ("30km SSE Tenger-Nur lake", "Sulan-Here and Shokhoi-Nur lake").

Type locality. – Mongolia, south most part of East-Gobi aimak, according to the available identified materials.

Diagnosis. – Body length in males : 14.6-15.8 mm, in females : 17.8-18.5 mm; body width in males : 5.1-5.4 mm, in females : 6.4-7 mm.

Antennae and legs are usually black (only in males from near Tenger–Nur lake tibiae are brownish); antennal joints usually without white hair rings (only antennae of one female from Mt. Nomt-Ula with distinct white hair rings); vertex with dense pubescent areas hiding cuticula; elytral carinae distinct or slightly obliterated, never roughly sculptured; humeral elytral areas more or less granulated, or totally smooth, without granules; sutural stripe and internal dorsal stripes are never fused forming central white area (that is typical for *E. oryx* and usual in *E. i. kozlovi*); sometimes internal dorsal stripe absent, being represented by a short basal stroke only; humeral stripe and external dorsal stripe usually without humeral fusion.

Distribution (Map 21). – Mongolia : south most part of East-Gobi aimak : 30 km SSE Tenger-Nur lake-(ZIN, Namhaidorzh, 1976 : 212, as "*Eodorcadion oryx*"); Mt. Khutag-Ula, N Sulan-Here-(Namhaidorzh, 1976 : 212, as "*Eodorcadion oryx*"); 25 km E Shokhoi-Nur lake-(Namhaidorzh, 1976 : 212, as "*Eodorcadion oryx*"); Shokhoi-Nur lak (Namhaidorzh, 1976). All known localities are situated just near China border, so the species is undoubtedly distributed in neighbour China areas. It was recorded for "Inner Mongolia" by Hua Li-zhong (2002 : 206).

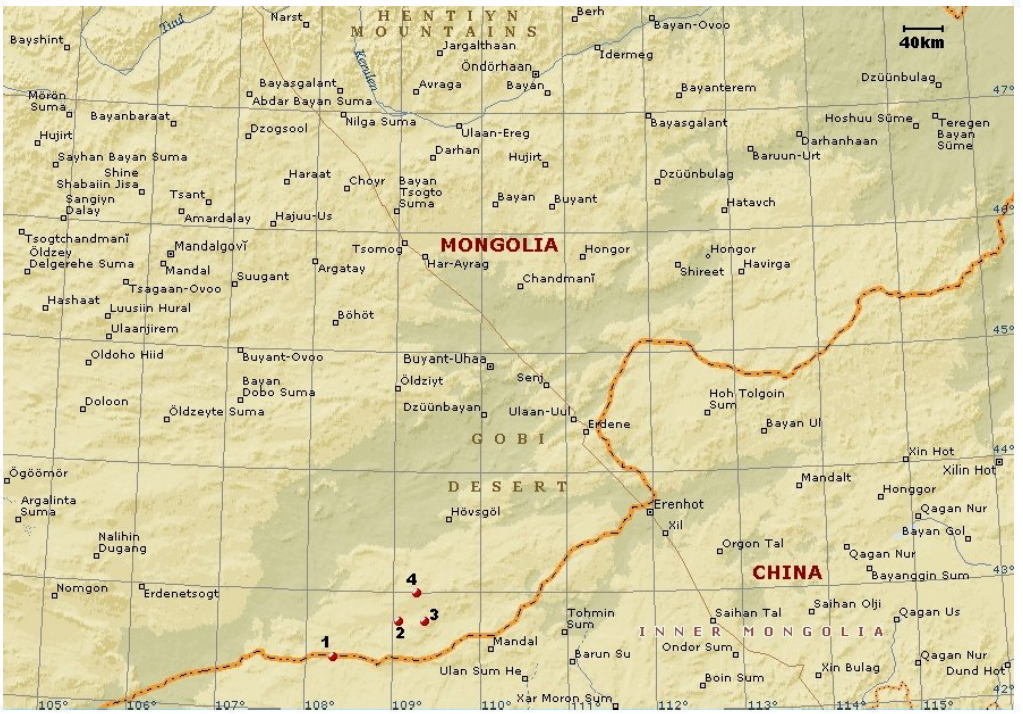
Bionomy. – According to B. Namhaidorzh (1976 : 212), the taxon is connected with *Lasiagrostis* and *Caragana*.

Materials. – 1 female, holotype with three labels : (1)"Holotype"; (2)"*Eodorcadion argaloides* mihi, type, det. Breuning"; (3)"Mongol. merid."-(MHNL); 1 female, with three labels : (1)"Paratype"[wrong designation !]; (2)"*Eodorcadion argaloides* mihi, det. Breuning"; (3)"S. Mongoliet 1927"-(MHNL); 2 males, Mongolia, ["Dornogov aimak (= East-Gobi aimak), 30 km SSE Tenger-Nur lake, 4.VIII.1971, D. Magmarsuren *leg*. (or B. Namhaidorzh *leg*.)"] [in Russian], both identified as "*Eodorcadion oryx*" by B. Namhaidorzh-(ZIN); 1 male (identified as *E. kaznakovi* by J. Vorisek, 1976), ["Mongolia, East-Gobi aimak, Mt. Nomt-Ula, 30 km SSE Shokhoi-Nur lake, 4.VIII.1971, G. Medvedev *leg*."] [in Russian]-(ZIN); 1 male and 1 female with same label-(JV); 1 female with same label-(MD); 1 male with same date from same locality, Kozlov *leg*.-(MD).

Remarks. – *E. argaloides* was described from "Mongolie méridionale" after one female (Fig. 22-1), so another female (Fig. 22-2) from Museum d'Histoire Naturelle (Lyon) designated as "paratype" by S. Breuning is not a paratype. In the original description it was compared with *E. mongolicum*, but latter (Breuning, 1962), with *E. ornatum* and *E. kaznakovi*.

The comparison of available specimens collected in south part of Gobi-Altaj aimak with holotype female of *E. argaloides* allows to identify them definitely.

E. argaloides is very close to *E. intermedium* and neighbour *E. gorbunovi*. It differs from *E. gorbunovi* by small body, relatively smooth elytra and usual absence of white hair antennal rings; besides, the reduction of internal dorsal stripe is not known in *E. gorbunovi* (neither in *E. intermedium)*.



Map 21. Localities of ***E. argaloides*** : Mongolia.

1. 30 km SSE Tenger-Nur Lake; 2. Shokhoi-Nur Lake; 3. 25 km E Shokhoi-Nur Lake; 4. Mt. Khutag-Ula (109°15',43°00'), N Sulan-Here.

23. *Eodorcadion (Ornatodorcadion) oryx* (Jakovlev, 1895) (Fig. 23)

Neodorcadion oryx Jakovlev, 1895 : 506 (no locality); 1901 : 150, 155 ("M-ts Hanhai"); Reitter, 1897 : 179 ("Mongolei"); Pic, 1901 : 67 ("Mong."); 1935 : 12 ("Hutjertugol"); Winkler, 1929 : 1199.

Eodorcadion oryx, Plavilstshikov, 1958 : 480, part.; Namhaidorzh, 1972 : 526; Hua, 2002 : 206 ("Inner Mongolia, Shanghai"); Wang, 2003 : 301, [Inner Mongolia, Chifeng: Balin; Baotou; Xilin-Gol (= Xilinhot reg.); Ulanqab (= Jining reg.); Alxa (the western most reg.); Helan Shan; Mongolia; Russia], part.; Danilevsky, 2004 : 14.

Eodorcadion oryx ab. *semisegregatum* Plavilstshikov, 1958 : 481, unavailable name.

Eodorcadion oryx ab. *segregatum* Plavilstshikov, 1958 : 481, unavailable name.

Eodorcadion oryx ab. *inconstructum* Plavilstshikov, 1958 : 481, unavailable name.

Eodorcadion ornatum ab. *praeligatum* Plavilstshikov, 1958 : 475, unavailable name.

Eodorcadion ornatum ab. *illustratum* Plavilstshikov, 1958 : 475, unavailable name.

Eodorcadion (O.) oryx, Gressitt, 1951 : 339, 345, part.; Breuning, 1958 : 3, part.; 1962 : 44 (part.).

Type locality. – Mongolia : Uver-Hangai aimak along south-east slope of Hangai ridge, according to available materials (see below).

Diagnosis. – Body length in males : 12.5-17.3 mm, in females : 17.5-20.7 mm; body width in males : 5-6.1 mm, in females : 6.8-7.8 mm.

Body small, always totally black; elytra relatively smooth, much smoother than in *E. intermedium*; humeri often with several granules, which can be totally indistinct; antennae and legs are totally black; antennae often with white hair rings, which sometimes can be indistinct; elytra always with white hair stripes; glabrous forms unknown; each elytron with three wide stripes (marginal, humeral and external dorsal) and wide sutural white triangular area composed of internal dorsal stripe fused with sutural stripe; elytral carinae usually indistinct, obliterated or sometimes slightly exposed.

E. oryx easily differs from *E. intermedium* by smooth elytra and from *E. exaratum*, sens. n. by wide sutural white area; sometimes in *E. e. exaratum*, sens. n. wide sutural white area also present (Fig. 27a-3), especially in females (Fig. 27a-8), but elytra in *E. exaratum*, sens. n. smoother, than in *E. oryx*, shoulders always without granules.

Distribution (Map 22). – Mongolia - only two localities are definitely known to the south-east from Hangai mountains in Uver-Hangai aimak : 50 km NW Aiverkhei, 45°51'N, 101°58'E and "Barun-Baian-Ulan". But location of Barun-Baian-Ulan in Uver-Hangai aimak shown on the map can be different from Barun-Baian-Ulan sensu Dlabola's label (see materials), as now *E. i. intermedium* is known here and two this species are allopatric. The species absent in China and Russia; the records for "Inner Mongolia" and "Shanghai"[!?] by Hua Li-zhong (2002 : 206) are wrong, as well as numerous records for China (connected with wrong determinations) by Wang Zhicheng (2003 : 301) and his record for Russia.

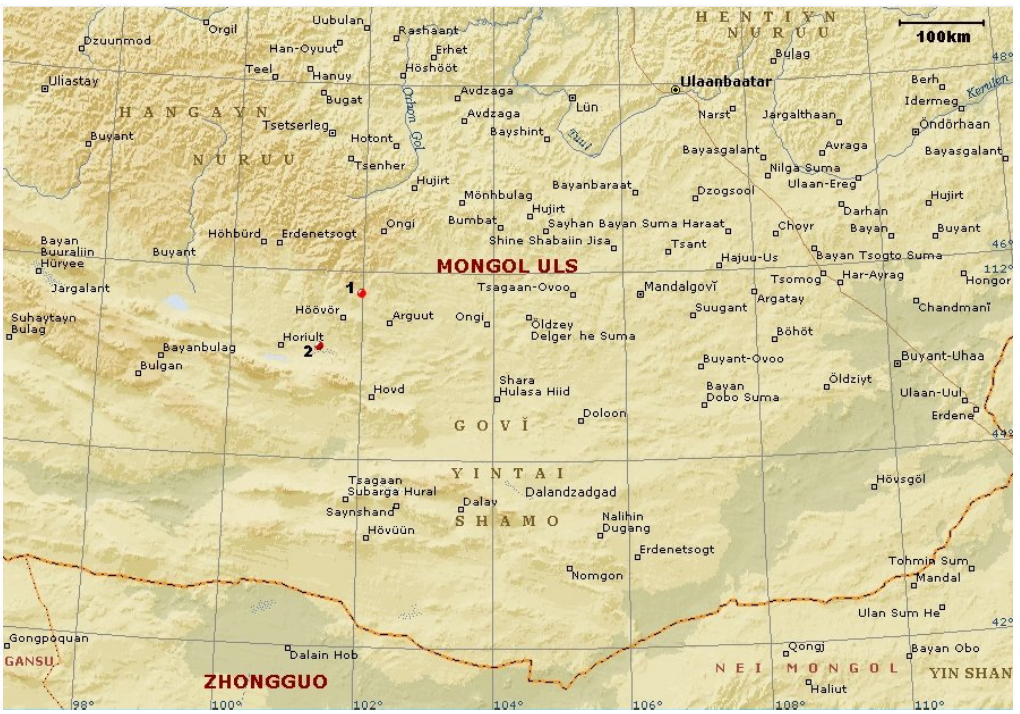
Materials. – 1 male, holotype, with two labels : "*oryx* Jak." and "Type" [red]-(ZIN); 3 males, 1 female, with label : "Nordl. Mongolei, Changai, Leder"-(ZIN); 6 males, 1 female with same label-(DEI); 6 males, 2 females with same label-(HNHM); 1 male with same label-(NMP); 5 males, 1 female with same label-(NMV); 1 male, 1 female (both identified as *Neodorcadion ornatum* by N. N. Plavilstshikov), "Mongolia, Leder, 1892"-(ZMM); 1 female, "Typus" of "*Eodorcadion ornatum* ab. *illustratum*" Plav., "Mongolia, Bodemeyer"-(ZMM); 1 female, "typus" of "*Eodorcadion ornatum* ab. *praeligatum*" Plav., "Nordl. Mongolei, Changai, Leder"-(ZMM); 1 male, "Mong. mer., Barun-Bajan—Ulan [Uver-Hangai aimak], 18.VIII.1966, Dlabola *leg*."-(MD); 1 female with same label-(NMP); 32 males and 24 females, Mongolia, Uver-Hangai aimak, 50 km NW Aiverkhei, 45°51'N, 101°58'E, 1800 m, 19.VII.2002, S. Churkin *leg*.-(MD).

Remarks. – *E. oryx* was described without any geographical data (and without size data). The original description was undoubtedly based on a single male 15.4 mm long (ZIN). The holotype (Fig. 23-1) is characterized by exceptional elytral design (abnormally narrow sutural white stripe and so abnormally wide internal dorsal glabrous carinae), which is precisely reflected in the original description. Other four *E. oryx* (ZIN), identified by Suvorov and Baeckmann, are sure conspecific with holotype, though differ from the later by less deep elytral punctation and by normally wide sutural stripe and narrower glabrous dorsal internal carina. All 4 specimens and holotype have several granules near humeri, which are nearly indistinct in one male; so the main Plavilstshikov's (1958 : 480) distinguishing character of *E. oryx* – the presence of humeral granules – is not totally adequate. These granules are also indistinct in all my specimens of *E. oryx*.

As far as I know, the first exact locality data of *E. oryx* were published by M. Danilevsky (2004) - Uver-Hangai aimak : Barun-Baian-Ulan and 50 km NW Aiverkhei, 45°51'N, 101°58'E. Most probably the holotype was also collected in this area.

So, *E. oryx* seems to be represented by several small populations near south-east part of Hangai mountains. It must be in vicariant relations with neighbour populations of *E. intermedium*.

Three localities from East-Gobi aimak (near Tenger-Nur lake, near Shokhoi-Nur lake and near Sulan-Khere) published by Namhaidorzh (1976) [and wrongly attributed by him to South Gobi aimak], as it was mentioned above, concern *E. argaloides*. I've studied two males from near Tenger-Nur (ZIN) identified by Namhaidorzh as *E. oryx*.



Map 22. Localities of ***E. oryx*** : Mongolia.

1. 50 km NW Aiverkhei, 45°51'N, 101°58'E (type-locality ?); 2. Barun-Baian-Ulan (locality needs confirmation).

Neodorcadion oryx var. *hedini* Pic, 1935 (with reddish legs) is in fact *E. intermedium kozlovi*. A male of the taxon (most probably holotype) is preserved in Pic's collection in Museum nationale d'Histoire naturelle (Paris) with the label (by Pic's hand) : "S Mongoliet 1927" and "Sven Hedins Exp. Ctr. Asien Dr. Hummet".

The records of several *Eodorcadion* taxa (*E. virgatum, E. oryx, E. humerale impluviatum*) for "Hutjertugol"[?] (Pic, 1935) are not clear. There are no localities in Mongolia or in China, where all three species could be observed.

All *Eodorcadion*, identified as "*E. ornatum*" by N. Plavilstshikov in his collection (1 male and 3 females) are in reality *E. oryx* from Mongolia, so his new aberrations : *Eodorcadion ornatum* ab. *praeligatum* Plavilstshikov, 1958 and *Eodorcadion ornatum* ab. *illustratum* Plavilstshikov, 1958 : belong to *E. oryx*.

The record of *E. oryx* for East-Gobi aimak by L. Heyrovsky (1964) is connected with a single male elytron (HNHM) of *E. exaratum argali*.

The records of *E. oryx* for East-Gobi aimak by L. Heyrovsky (1973) is connected with a single male (HNHM) of *E. intermedium kozlovi*.

Two females figured by Wang Zhicheng (2003 : 301) as "*E. oryx*" from Balin (Inner Mongolia, Chifeng area) are most probably *E. ornatum* (Fald.). A male figured as "*E. oryx*" is a real Mongolian *E. oryx*. The photo was copied from "Atlas of the Cerambycidae photographs of the tribe Dorcadionini" (Danilevsky, 2006); specimen (MD) has the label : "Mong. mer., Barun-Bajan—Ulan, 18.VIII.1966, Dlabola *leg*."

24. *Eodorcadion (Ornatodorcadion) zichyi* (Csiki, 1901) (Fig. 24)

Neodorcadion zichyi Csiki, 1901 : 115 ("Wüste Gobi, Naran"); Jakovlev, 1901 : 151; Winkler, 1929 : 1200.

Eodorcadion zichyi, Plavilstshikov, 1958 : 417; Danilevsky, 2004 : 16; Hua, 2002 : 206 ("Inner Mongolia, Xinjiang"); Wang, 2003 : 304 (Inner Mongolia : East Ujimqin of Xilin-Gol area; Xinjiang), part.

Eodorcadion (*Ornatodorcadion* ?) *zichyi*, Gressitt, 1951 : 345.

Eodorcadion (O.) zichyi, Breuning, 1958 : 3; 1962 : 41; Danilevsky et al., 2005 : 132-133.

Eodorcadion heros, Namhaidorzh, 1972 : 528, part.

Type locality. – Mongolia, sands in the south part of East-Gobi aimak (sands Elsen-Usny-Els). *E. zichyi* was described from Naran environs in Gobi Desert (situated in sands Elsen-Usny-Els, about 43°31'N, 109°07'E).

Diagnosis. – Body length in males : 16-24.7 mm, in females : 22.7-32 mm; body width in males: 5.8-8.9 mm, in females : 9-11.6 mm. The biggest known Dorcadionini species.

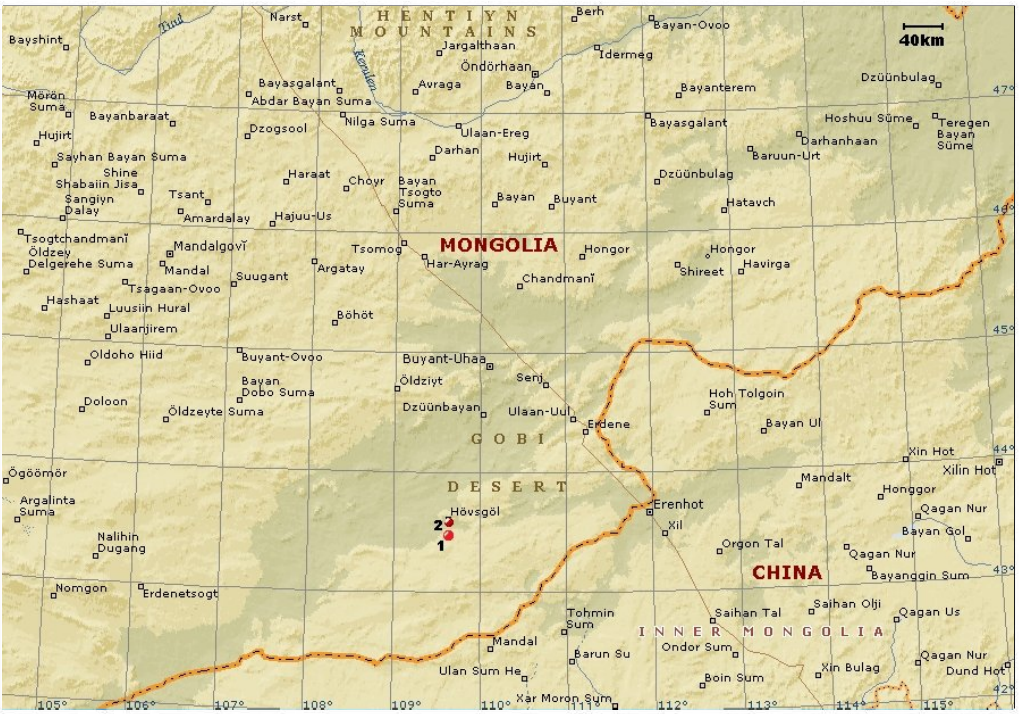
Body, antennae and legs totally black; antennae usually with white hair rings, which can be totally indistinct; lateral thoracic spines very long; elytra strongly convex both in males and in females; with very rough sculpture, strongly granulated anteriorly; always with several hair stripes, glabrous forms absent; glabrous lines between stripe are more or less exposed, forming more or less prominent (especially in females) elytral carinae; each elytron with usually 4 hair stripes: wide marginal stripe, moderately wide humeral and external dorsal stripes, very narrow sutural stripe; internal dorsal stripe usually totally absent; sometimes humeral and external dorsal stripes widened and glabrous line in between is much narrower, than each of the stripes (Fig. 24-3); or just contrary both stripes are very narrow and partly interrupted (Fig. 24-

2); sutural stripes also can be widened; sometimes (especially in females) internal dorsal stripes present in form of short basal strokes; very rare internal dorsal stripes complete (Fig. 24 - 3-4, 7-8); among about 150 specimens of *E. zichyi* known to me, 6 males and 5 females (all in my collection) have complete internal dorsal stripes; internal dorsal stripe very rare can be fused with sutural stripe forming wide white sutural area (Fig 24 – 4).

Specimens with internal dorsal elytral stripes can be very similar to big specimens of *E. gorbunovi* (or to *E. intermedium*). But among all known to me *E. gorbunovi* and all known to me (several hundreds) *E. intermedium* specimens with total absence of internal dorsal stripes are absent.

Distribution (Map 23). – Mongolia, south part of East-Gobi aimak: Gulon-Mankhany-Els and Elsen-Usny-Els.

All known localities are situated very close to each other in East-Gobi aimak : Naran, about 43°31'N, 109°07'E-(type locality); 18 km SSW Khuvsgel, 43°28'N, 109°35'E-(MD); 2 km SE Khuvsgel, 43°36'N, 109°41'E; 18 km SSW Khuvsgel, 43°28'N, 109°35'E-(MD); Khatan-Bulak [= Ergel] [about same locality]-(MD); Ergil-Obo sands [about same locality]-(Namhaidorzh, 1972 : 528, as *E. heros*). The species absent in China; the records for Inner Mongolia and Xinjiang (Hua, 2002 : 206; Wang, 2003 : 304) are wrong.



Map 23. Localities of ***E. zichyi*** : Mongolia.

1. 18 km SSW Khuvsgel, 43°28'N, 109°35'E (type locality); 2. 2 km SE Khuvsgel, 43°36'N, 109°41'E.

Bionomy – Imagoes are active relatively late, when the activity period of such species as *E. carinatum*, *E. chinganicum* or *E. darigangense* is already over. According to my observations (2002), they were very numerous at first third of August.

Materials. – 1 male, holotypus with 5 labels : "Mongolia, Naran [sands Elsen-Usny-Els, about 43°31'N, 109°07'E].", "exp. Zichy, leg. Csiki", "Holotypus, 1901, *Neodorcadion zichyi* Csiki", "*Neodorcadion zichyi* det. Csiki", "*Neodorcadion zichyi* m. det. Csiki, typus"-(HNHM); 1 male, paratypus with 4 labels : "Mongolia, Naran", "exp. Zichy, *leg*. Csiki", "Paratypus, 1901, *Neodorcadion zichyi* Csiki", "*Neodorcadion zichyi* m. det. Csiki, typus"-(HNHM); 2 males with labels in Mongolian : "Omnogov [in fact Dornogov = East-Gobi aimak], Khatan-Bulak [= Ergel] sum, Gashuuny els [= Elsen-Usny-Els], 15.VII.1974 and 15.VII.1975-(MD); 1 female, Khoer-Dzan, 4-15.VIII.1987, V. Skrypnik *leg*.-(MD); 104 males and 26 females, Mongolia, East-Gobi aimak, 18 km SSW Khuvsgel, 43°28'N, 109°35'E, 1300 m, 9-10.VIII.2002, M Danilevsky *leg*.-(MD); 7 males and 6 females, Mongolia, East-Gobi aimak, 2 km SE Khuvsgel, 43°36'N, 109°41'E, 940 m, 10.VIII.2002, O. Gorbunov *leg*.-(MD).

Remarks. – As it was published before (Danilevsky, 2004), I do not regard *E. zichyi* and *E. heros* (described from China Alashan) as one species (as it was proposed by B. Namhaidorzh, 1972) because the areas of both taxa are widely separated by the areas of *E. gorbunovi* and *E. argaloides*, vicariant species of the same group. *E. zichyi* is very close to *E. heros* morphologically. The following distinguishing characters must be regarded as preliminal because of too small number of *E. heros* specimens known to me: male elytra in *E. zichyi* are always convex, pronotum with much rougher sculpture; legs are always totally black.

25. *Eodorcadion (Ornatodorcadion) heros* (Jakovlev, 1899) (Fig. 25)

Neodorcadion heros Jakovlev, 1899 : 237 ("*montibus Alaschanicis, meridionalibus*..."); 1901 : 149; Pic, 1901 : 67 ("Mong."); Winkler, 1929 : 1199.

Eodorcadion heros, Plavilstshikov, 1958 : 484; Namhaidorzh, 1972 : 528, part.; Hua, 2002 : 206; Wang, 2003 : 296 (Russia, Mongolia, north-west of Inner Mongolia, Inner Mongolia : East Wuzhu belonging to Xilin-Gol area), part.; Danilevsky, 2004 : 15.

Eodorcadion (O.) heros, Gressitt, 340, 343; Breuning, 1958 : 3; 1962 : 41.

Type locality. – China, south of Alashan ridge [= Helan Shan], according to the original description (Map 24).

Diagnosis. – Only one pair is known to me. Body length in male : 21.5 mm, in female : 24.6 mm; body width in male : 7 mm, in female : 9 mm.

Body very big; body and antennae black, antennae in male with narrow, hardly pronounced white rings, in female antennal rings wider; femora and epipleurae reddish; lateral thoracic spines very long; elytra (especially in male) relatively flat; with very rough sculpture, strongly granulated anteriorly; each elytron with 4 hair stripes: wide marginal stripe, moderately wide humeral and external dorsal stripes and narrow sutural stripe; internal dorsal stripe absent; sutural stripe in female a little widened near middle; glabrous lines between stripes are moderately exposed, forming two dorsal elytral carinae.

Distribution (Map 24). – North China - south of Alashan ridge [= Helan Shan]-(type locality). The records for Russia and Mongolia (Wang, 2003 : 296) are wrong.

Materials. – 1 female, holotype, 2 labels: 1st - in Russian : ["S Alashan, VI and beginning of VII.1873, Przhevalsky"], 2nd - "*heros*"-(ZIN); 1 male with 3 labels : 1st - in Russian : ["China"], 2nd - "*heros* m.", 3rd – in Russian : ["coll. of V. Jakovlev"]-(ZIN).

Remarks. – *Neodorcadion heros* Jakovlev, 1899 was described after one female ("24 mm" – Fig. 25-2). *E. heros* is very close to *E. zichyi*. Both names were regarded as synonyms by B. Namhaidorzh (1972). It differs from *E. zichyi* by rather flat male elytra, less rough pronotal sculpture and red femora (that is impossible in *E. zichyi*). Besides the area of *E. zichyi* is delimited from Alashan desert by the areas of *E. gorbunovi* and *E. argaloides*. So *E. heros* and *E. zichyi* are different species.

E. heros is illustrated with photos of two males (designated as male and female) by Wang Zhicheng (2003 : 296). First male is a copy of photo of Mongolian *E. zichyi* from "Atlas of the Cerambycidae photographs of the tribe Dorcadionini" (Danilevsky, 2006); the specimen is preserved in my collection with the label : "Khatan-Bulak sum., Gashuuny els, 15.VII.1974" [East-Gobi aimak]. Second male from Inner Mongolia (East Wuzhu belonging to Xilin-Gol area) was collected in the locality of *E. ornatum* and most probably is a male of *E. ornatum*.

Map 24. Locality of ***E. heros*** : China.

1. South of Alashan Ridge [= Helan Shan].

26. *Eodorcadion (Ornatodorcadion) novitzkyi* Suvorov, 1909 (Fig. 26)

Neodorcadion novitzkyi Suvorov, 1909 : 87 ("Auf dem Wege von Kerulen nach Chingan"); Winkler, 1929 : 1200 (+ ab. *inalbatum* Suv.).

Neodorcadion novitzkyi v. *inalbatum* Suvorov, 1909 : 88 ("Auf dem Wege von Kerulen nach Chingan").

Eodorcadion (O.) novitzkyi, Gressitt, 1951 : 344 (+ ab. *inalbatum*); Breuning, 1962 : 40, part.; Danilevsky et al., 2005 : 132-133.

Eodorcadion novitzkyi, Plavilstshikov, 1958 : 475, part.; Heyrovsky, 1967 : 102; Namhaidorzh, 1972 : 527, part.; Hua, 2002 : 206 (+ ab. *inalbatum* Suv.; "Inner Mongolia"); Wang, 2003 : 301 (Jilin prov.; North and Northeast Inner Mongolia; Mongolia).

Eodorcadion ornatum m. *exaratum*, Plavilstshikov, 1958 : 475, part. ("= *hircus* Jakovlev, 1906 = *novitzkyi* v. *inalbatum* Suvorov, 1909, syn. n."), part.

Eodorcadion novitzkyi ab. *permixtum* Plavilstshikov, 1958 : 475, unavailable name.

Eodorcadion novitzkyi ab. *suprastriatum* Plavilstshikov, 1958 : 475, unavailable name.

Eodorcadion (O.) exaratum, Breuning, 1958 : 3, part (= *hircus* Jak. = *novitzky* Suv. = *inalbatum* Suv.)

Eodorcadion (O.) ornatum m. *exaratum*, Breuning, 1962 : 40, part. (= *hircus* Jak. = *novitzkyi* v. *inalbatum* Suv.)

Eodorcadion novitzkyi m. *longestriatum* Heyrovsky, 1967 : 104 ("Cojbalsan Aimak [= East aimak], somon, Tamzagbulak"), unavailable name.

Eodorcadion ornatum ab. *exaratum*, Namhaidorzh, 1972 : 528, part.

Type locality. – Mongolia, Suhe-Bator aimak between Bajan-Terem and Matad, according to the description of the travel of B. F. Novitzky (Novitzky, 1909), see corresponding remark.

Diagnosis. – Body length in males : 12-16.5 mm, in females : 14.3-18.5 mm; body width in males : 4.3-5.9 mm, in females : 5.4-8 mm.

Body small, black; antennae without white rings; pronotal white lines very narrow, sometimes indistinct; elytra smooth, shining, with deep longitudinal furrows bearing very narrow white or yellowish hair stripes; each elytron usually with 4 stripes : wide marginal stripes and very narrow humeral, external dorsal and sutural stripes; sometimes internal dorsal stripe also present near elytral base as a short stroke; totally glabrous form is known as var. *inalbatum* Suv. both in males and in females - elytra without hair stripes and longitudinal furrows (Figs. 26 – 5-6).

The species is close to *E. exaratum* sens. n., but easily differs by extremely narrow elytral stripes.

Distribution (Map 25). – Mongolia, east part of the Republic, from the west border of Hentei aimak (Bor-Khudzhirijn-Daba pass, 47°49N, 108°55'E) to the Chinese border.

Known localities in Mongolia : Suhe-Bator aimak : between Bajan –Terem and Matad – type locality; East aimak : Bujr-Nur lake-(JV); "Tamzagbulak" [Tamsag-Bulak] (HNHM, NMP and Heyrovsky, 1967); 80 km WSW from SW-bank of Bujr-Nur lake, Menengijn valley-(HNHM); Hentei aimak : Bor-Khudzhirijn-Daba pass, 47°49N, 108°55'E-(MD); Uver-Hangai aimak : 137 km NE Arbaj-Khere, 47°20'N, 103°40'E-(SK).

The data for Central-Gobi aimak and East-Gobi aimak (Namhaidorzh, 1972 : 528) for "*E. ornatum* ab. *exaratum*" are connected with glabrous females of *E. exaratum exaratum*, sens. n. China, north-west of Inner Mongolia : Great Khingan ridge; according to N. N. Plavilstshikov (1958) : "Yakeshan ridge (?)"; "Inner Mongolia" was also mentioned by Hua Li-zhong (2002 : 206) and Wang Zhicheng (2003 : 301). The record of the species fro Jilin prov of China (Wang, 2003 : 301) needs confirmation.

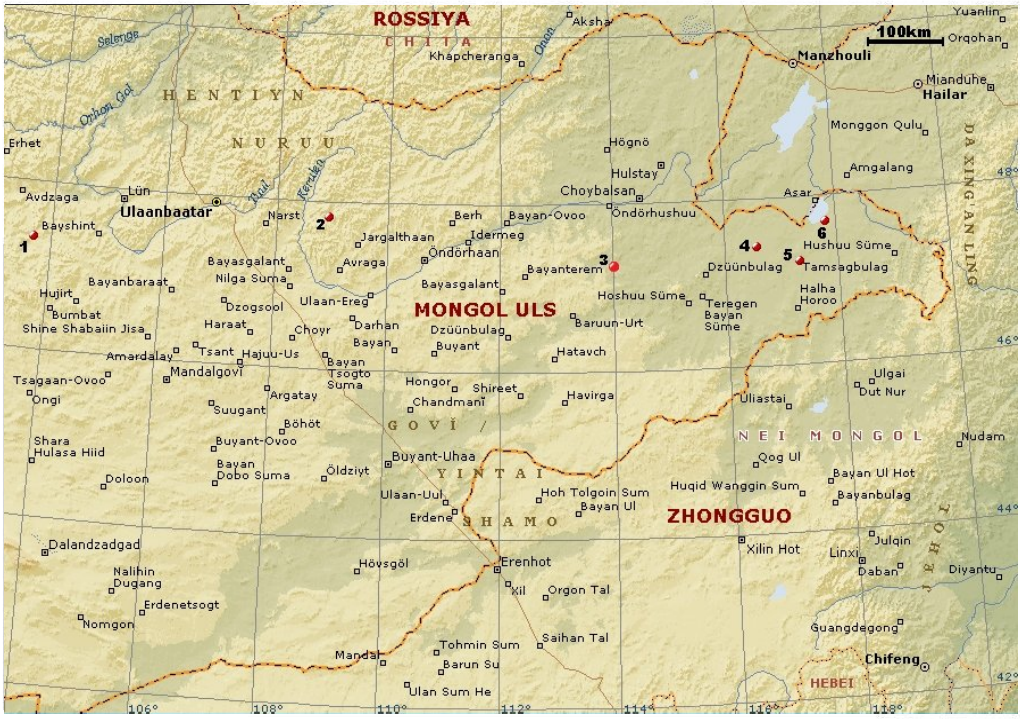
Materials. – 1 male, syntype of *Neodorcadion novitzkyi* Suv., Mongolia, ["from Kerulen to Khingan, 2500-4000 f. above the level of the sea, 20-25.VIII.1906, Novitzky"] [in Russian]-(ZIN); 1 female, syntype of *Neodorcadion novitzkyi* Suv., with same label-(ZMM); 1 male and 1 female, syntypes of *Neodorcadion novitzkyi* var. *inalbatum* Suv., Mongolia, ["from Kerulen to Khingan, 2500-4000 f. above the level of the sea, 20-24.VIII.1906, Novitzky"] [in Russian]-(ZIN); 2 males, syntypes of *Neodorcadion novitzkyi* var. *inalbatum* Suv. with same label-(ZMM); 1 male, syntype of *Neodorcadion novitzkyi* var. *inalbatum* Suv. with same label-(JV); 1 male (glabrous form) with same label-(JV); 2 males, 2 females, "Mongolia, Nula prope, l. Puir-Nor [= Bujr-Nur], 12/25.VIII"-(ZMM); 1 male, ["Bujr-Nor, 25.VIII.1928, A. Ivanov *leg*."] [in Russian]-(JV); 2 males, 1 female, "Mongolia : Coibalsan Aimak, 80 km WSW von SW-Ecke des Sees Bujr Nur, Menengijn Tal, 600 m, 14.VIII.1965, exp. Dr. Z. Kaszab"-(HNHM); 4 males and 4 females, "Mongolia : Coibalsan aimak, somon Tamzagbulak, 600 m, 10-11.VIII.65 , exp. Dr. Z.Kaszab", including two females ("holotypus" and "paratypus") of *E. n.* m. *longestriatum*-(HNHM); 1 male with same label-(MD); 4 males, 2 females, including 1 female, "paratypus" of *E. n.* m. *longestriatum* with same label-(NMP); 28 males and 14 females, Mongolia, Hentei aimak, Bor-Khudzhirijn-Daba pass, 1642 m, 47°49'N, 108°55'E, 18.VIII.2002, M. Danilevsky *leg*.-(MD); 1 male, "Övörkhangai [Uver-Hangai aimak], 137 km NE Arbayheer, 47°20'N, 103°40'E, 1250 m, 2.VII.2004, J. Halada *leg*."-(SK).

Remarks. – Original descripton was based on 5 striated males and a female with label : ["from Kerulen to Khingan, 2500-4000 f (about 750-1200 m) above the level of the sea, 20-25.VIII.1906, Novitzky"] [in Russian]. One syntype male is still available (ZIN). According to I. M. Kerzhner (1972 : 89), the expedition of V. F. Novitzky was on the territory of Mongolian Republic until 8.IX.1906, then moved to China Khingan. So, the type locality is situated in Mongolia. According to B. F. Novitzky (1909), his expedition crossed Kerulen to its right side on 15 August near Tzetzen-khana (now Under-Khan) and in four days arrived to Dalaj-Bejse ? (near Narin-Sume ?), where they stayed 2 days. On 24 August the expedition was in Ahaj-Tzasak (?) and then went further to Daichin-gun (?) along Shargen-Gobi (?). So, the type locality is situated in about 4-8 days moving eastwards from Under-Khan, so from about 200 to 400 km between Bajan – Terem and Matad, most probably in Sukhe-Bator aimak near its border-line with East aimak.

The description of glabrous form of the species - var. *inalbatum* (male and female are available-ZIN; Figs. 26 - 3-4) was based on specimens collected contemporary with typical striated form and was included in the original description.

According to S. Breuning (1958 : 3), *E. (O.) exaratum* is a species (not a form of *E. ornatum*, as it was traditionally accepted), distributed from China to Mongolia, and both names "*hircus*" and "*novitzkyi*" are its synonyms. So, here S. Breuning accepted "m. *novitzkyi*" as pubescent form of his *E. exaratum*. The presence of pubescent and glabrous forms in *E. novitzkyi* was also accepted by J. L. Gressitt (1951).

It was N. N. Plavilstshikov (1958), who first identified the types of *E. novitzkyi* var. *inalbatum* as "*E. ornatum* ab. *exaratum*" without any reasons. In fact all three available type females described as *Dorcadion exaratum* Mén. strongly differ from available female of *E. novitzkyi* var. *inalbatum* by very sparse abdominal pubescence and coarse frons punctation. The area of *E. ornatum* is rather far from Mongolian Republic, and *E. ornatum* females are usually much bigger than types of *D. exaratum*. More over for *E. ornatum* group of species glabrous forms are impossible. The position of N. N. Plavilstshikov was accepted by S. Breuning (1962 : 40) who also treated var. *inalbatum* as *E. ornatum* m. *exaratum*. Such a wrong identification was the base for B. Namhaidorzh (1972 : 528) for including of *E. ornatum* in Mongolian fauna, though he underlined that only (!) glabrous form of *E. ornatum* is reperesented in Mongolia.



Map 25. Localities of ***E. novitzkyi*** : Mongolia.

Uver-Hangai aimak : 1. 137 km NE Arbai-Here, 47°20'N, 103°40'E; Hentei aimak : 2. Bor-Khudzhiriin-Daba Pass, 47°49N, 108°55'E; Suhe-Bator aimak : 3. Between Bajan –Terem and Matad – type locality; East aimak (4-6) : 4. 80 km WSW from SW-bank of Bujr-Nur lake, Menengijn valley; 5. Tamsag-Bulak; 6. Bujr-Nur lake.

27. *Eodorcadion (Ornatodorcadion) exaratum* Ménétriés *in* Motschulsky, 1854, sensu nov., (Fig. 27)

Dorcadion exaratum Ménétriés in Motschulsky, 1854 : 38 ("dans la Mongolie chinoise et aux environs de Pékin"); Thomson, 1867 : 51 ("Mongolia").

Neodorcadion ornatum var. *exaratum*, Ganglbauer, 1884 : 514; 1889 : 483; Jakovlev, 1901 : 150.

Neodorcadion argali Jakovlev, 1890 : 249 ("dans la Mongolie septentrionale, [G. N. Potanin] pendant son dernier voyage en Ourga, en 1888."), **syn. n.**; 1901 : 147-149 (= *Neodorcadion miraculum* Reitter, 1897, **syn n.**); Reitter, 1897 : 183 ("Mongolei, Urga"), part.; Pic, 1901 : 68 ("Mong."), part.; Winkler, 1929: 1199, part.

Neodorcadion miraculum Reitter, 1897 : 182 ("Mongolei : Chingai-Gebirge"), part.; Pic, 1901 : 68 ("Mong."), part.; Winkler, 1929 : 1199, part.

Neodorcadion exaratum, Pic, 1901 : 67 ("Mong."), part.

Neodorcadion [*ornatum* f.] *exaratum*, Reitter, 1897 : 180 ("Mongolei.- Soll die Kahlform von *N. ornatum* sein")

Neodorcadion hircus Jakovlev, 1906 : 1 ("Mongolie or.: Cherlun-gol supér. : entre Tzarabulun et Arahonchor-nur"), **syn. n.**; Winkler, 1929 : 1199, part.

Neodorcadion ornatum a. *exaratum*, Winkler, 1929 : 1199, part.

Eodorcadion (O.) argali, Gressitt, 1951 : 339, 342, part.; Breuning, 1958 : 3; 1962 : 46, part.; Danilevsky et al., 2005 : 132-133.

Eodorcadion (O.) hircus, Gresitt, 1951 : 338, 343, part.

Eodorcadion argali, Plavilstshikov, 1958 : 477, part.; Namhaidorzh, 1972 : 527, part.; Lobanov et al., 1982 : 265; Hua, 2002 : 206 ("Inner Mongolia (?)"); Wang, 2003 : 293 (Outer Mongolia; Inner Mongolia, Chifeng), part.

Eodorcadion argali ab. *offensum* Plavilstshikov, 1958 : 479, unavailable name.

Eodorcadion argali ab. *delimitatum* Plavilstshikov, 1958 : 479, unavailable name.

Eodorcadion argali ab. *latesuturatum* Plavilstshikov, 1958 : 479, unavailable name.

Eodorcadion (O.) exaratum Breuning, 1958 : 3, part.

Eodorcadion ornatum, Gressitt, 1951 : 344, part. (+ *D. exaratum* Mén.); Plavilstshikov, 1958 : 473, part. (as morpha *exaratum* Mén. = *hircus* Jak.); Namhaidorzh, 1972 : 528, part. (as ab. *exaratum* Mén. = *hircus* Jak.).

Eodorcadion (O.) ornatum, Breuning, 1962 : 40, part. (as morpha *exaratum* Mén. = *hircus* Jak.).

Eodorcadion argali rugipenne Heyrovsky, 1967 : 103 ("Suchebaator Aimak : Molzog Elis, 2 km S von Somon Dariganga") **syn. n.**; 1970 : 140

Eodorcadiom exaratum, Wang, 2003 : 295 (= *hircus* Jak., East Inner Mongolia), part.

Type locality. – North China (Inner Mongolia, Xilin Gol) and South East Mongolia (Suhe-Bator aimak) – according to the morphology of the type series (see corresponding remark).

Diagnosis. – Body length in males : 11.3-20 mm, in females : 14.6-24 mm; body width in males : 4.5-6.7 mm, in females : 5.4-9 mm.

Body of moderate size, black; antennae usually with white hair rings, which can be indistinct; elytra with deap longitudinal furrows bearing white or yellowish hair stripes, very smooth and shining in between; forms with totally glabrous smooth elytra (Figs. 27 - 10-15,24) are known only in females of certain populations of *E. exaratum*; each elytron usually with 4 narrow stripes: marginal, humeral, external dorsal and sutural; sutural stripe sometimes more or less widened; sometimes internal dorsal stripe also present near elytral base, as a short stroke; or (sometimes in *E. e. exaratum*, sens.n.) internal dorsal stripe can be nearly complete (Fig. 27a–3), especially in females (Fig. 27a-5), or internal dorsal stripe fused with sutural stripe forming white (or yellow) triangular area behind scutellum (Fig. 27a-8).

In general the species is rather variable. Sometimes two distinct colour forms occur in one population : with white elytral stripes (more common) and with yellow elytral stripes (rather rare). Yellow form is more numerous among females.

The species differs from *E. novitzkyi* by much wider elytral stripe and from *E. intermedium* by smoth elytral surface between pale stripes.

Distribution (Map 26). – Mongolia, from Central aimak and Bulgan aimak to Central-Gobi aimak, Hentei aimak, East-Gobi aimak and Suhe-Bator aimak. China, north part of Inner Mongolia, according to the occurense of the species southwards Naran in the border area between Suhe-Bator aimak and China. The species was supposed for Inner Mongolia by Hua Li-zhong (2002 : 206).

Remarks. – *Dorcadion exaratum* Ménétriés, 1854 was described without special type locality, but there is a note concerning all species mentioned in the title the article : "Ces insectes avaient été récoltés dans les steppes de la Mongolie chinoise, jusqu'aux environs de Pekin". According to S. Breuning (1962) : "Von Ménétriés nach Stücken aus dem Umgebung von Peking beschrieben (falsche Angabe)." In fact such animals absent in Beijing area.

Three syntypes females (body length : 17.7-20.5 mm, body width : 7.6-8.4 mm) without geographical labels are available (Figs. 27a – 10-12); one of them was originally designated as male (Fig. 27a-11) and described as a male : "le mâle est un peu moins large et plus allongé". I am not sure, that all three available syntypes belong to one population, as the area of the glabrous form of the species is very large, so the designation of lectotype is necessary. I designate as lectotype a female from Zoological Museum (Sankt-Petersburg) with three labels (Fig. 27a-10) : (1) "*Dorcadion exaratum* m.", Ménétriés hand, (2) "?. China", Ménétriés hand, (3)"[coll. V. Jakovleva]"[printed in Cyrillic]. Two other available syntypes are designated as paralectotypes (Figs. 27a – 11-12). A female (MHNL : Fig. 27a-13) with a label : "China" – also looks as a member of same series.

I have a good series of glabrous females (30 ex.) of *E. argali rugipenne* Heyr. (Figs. 27a –14-15) from different localities of south-east part of Mongolian Republic (East-Gobi and Suhe-Bator aimaks) just to the China border. Type series of *D. exaratum* is undoubtedly conspecific with glabrous females of *E. argali rugipenne*. Certain specimens of these females are just indistinguished from corresponding syntypes of *Dorcadion exaratum* Mén. *Dorcadion exaratum* Ménétriés, 1854 = *Eodorcadion argali rugipenne* Heyrovsky, 1967, **syn. n**. So, I accept the south-east part (close to China) of the Mongolian area of this form (Suhe-Bator aimak) and neighbour regions of NE China (Inner Mongolia, Xilin Gol) for the type locality of *D. exaratum*.

Traditionally females described, as *Dorcadion exaratum* were regarded as glabrous form of *E. ornatum* (Ganglbauer, 1884 : 514; Reitter, 1897 : 180; Jakovlev, 1901 : 150; Gressitt, 1951 : 344; Plavilstshikov, 1958 : 475; Breuning, 1962 : 40; Namhaidorzh, 1972 : 528) without any reasons. More over N. N. Plavilstshikov (1958) mentioned : "glabrous form does not have own area, but usually does not occur together with pubescent form". The reasons for the attribution of glabrous females to *E. ornatum* are totally not clear. In fact in "*E. ornatum* group" of species glabrous forms are impossible.

According to S. Breuning (1958 : 3), *E. (O.) exaratum* is a species (not a form of *E. ornatum*), distributed from China to Mongolia, and both names "*hircus*" and "*novitzkyi*" are its synonyms. So, here S. Breuning accepted "m. *novitzkyi*" as pubescent form of his *E. exaratum*.

The north-western subspecies of *E. exaratum* – *E. e. argali*, comb. n. was traditionally known as *E. argali argali*.

The description of *Neodorcadion argali* Jak. was based on a single female ("21 mm"), collected by G. N. Potanin in North Mongolia in 1888. According to I. M. Kerzhner (1972 : 93), in 1888 G. N. Potanin collected only in Selenga aimak (where *E. exaratum* absent) and in Central aimak near Altan-Bulak (east-southwards Ulan-Bator), where *E. exaratum* is known, so I regard this area as the type locality of *Neodorcadion argali* Jak.

Two specimens (ZIN) of *E. exaratum* were designated by B. Jakovlev as "Type" of his N. argali : male and female. The female is holotype, which agree with its size – 21.5 mm. The male (16mm) designation was not published in the original description.

Neodorcadion hircus Jak. was described after a single glabrous female collected by I. V. Palibin from Kerulen river valley between "Tzara-bulun" and "Arahonchor-nur" 21.VII.1899 during his joined expedition with N. I. Damaskin, see I. M. Kerzhner (1972 : 90). Type locality is situated in Kerulen valley ESE Baian-Dzhargalan (on 20.VII.1899 the expedition was on the bank of the river). I do not know the holotype, but three glabrous females (ZIN-Fig. 27a-24; JV) are

available from same expedition with labels : ["valley of Kheruliun (Kerulen), VII.1899, Dr. Damaskin *leg.*"] [in Russian], identified as "*N. ornatum* var. *exaratum*" by G. Suvorov. All glabrous females of *E. exaratum* differ considerably (because of very rough frons sculpture and scarce abdomen pubescence) from glabrous form of *E. novitzkyi* (var. *inalbatum*), distributed nearby north-eastwards. More over a pubescent striated male (ZIN) of *E. e. argali* belong to same series from between "Tzara-bulun" and "Arahonchor-Nur" collected on 21.VII.1899 by I. V. Palibin, so *Neodorcadion argali* Jakovlev, 1890 = *N. hircus* Jakovlev, 1906, **syn. n.** *N. hircus* Jak., was traditionally regarded (Plavilstshikov, 1958 : 473; Breuning, 1962 : 40; Namhaidorzh, 1972 : 528) as a synonym (glabrous form) of *E. ornatum*.

According to N. N. Plavilstshikov (1958) the area of his "*E. argali*" is very large, including headwaters of Onon valley, valleys of Orhon and Selenga rivers and Hangai ridge, protruding far to the north from Ulan-Bator and possibly reaching the territory of Russia. The occurrence of the species in Russia is totally unbelievable.

According to N. N. Plavilstshikov (1958), the south border of the species area is limited by 47°N, so all his data were connected with E. *exaratum argali*. The area of *E. (O.) e. exaratum* is situated southwards from 47°N.

The record for Selenga valley (Jakovlev, 1901 : 148, as *N. argali*) is rather doubtful. B. Namhaidorzh (1972) did not mention Selenga aimak nor Bulgan aimak in the description of the species area (as *E. argali)*. A male figured by Wang Zhicheng (2003 : 293) under the name "*E. argali*" from Inner Mongolia (Chifeng – about 42°16'N, 118°57'E) has no connection with real *E. exaratum*. It looks like a striated form of *E. glaucopterum* and needs better identification.

27a. *Eodorcadion (Ornatodorcadion) exaratum exaratum* Ménétriés in Motschulsky, 1854 (Fig. 27a)

Dorcadion exaratum Ménétriés in Motschulsky, 1854 : 38 ("dans la Mongolie chinoise et aux environs de Pékin"); Thomson, 1867 : 51 ("Mongolia").

Neodorcadion ornatum var. *exaratum*, Ganglbauer, 1884 : 514; Jakovlev, 1901 : 150.

Neodorcadion [*ornatum* f.] *exaratum*, Reitter, 1897 : 180 ("Mongolei.- Soll die Kahlform von *N. ornatum* sein")

Neodorcadion exaratum, Pic, 1901 : 67 ("Mong."), part.

Neodorcadion ornatum a. *exaratum*, Winkler, 1929 : 1199, part.

Eodorcadion ornatum, Gressitt, 1951 : 344, part. (+ *D. exaratum* Mén.).

Eodorcadion (O.) exaratum Breuning, 1958 : 3, part.

Eodorcadion ornatum, Plavilstshikov, 1958 : 473, part. (as morpha *exaratum* Mén. = *hircus* Jak.); Namhaidorzh, 1972 : 528, part. (as ab. *exaratum* Mén. = *hircus* Jak.).

Eodorcadion (O.) ornatum, Breuning, 1962 : 40, part. (as m. *exaratum* Mén. = *hircus* Jak.).

Eodorcadion argali rugipenne Heyrovsky, 1967 : 103 ("Suchebaator Aimak : Molzog Elis, 2 km S von Somon Dariganga"); **syn. n.**; 1970 : 140; Namhaidorzh, 1972 : 527; Danilevsky, 2004 : 6.

Eodorcadion argali rugipenne m. *brevestriatum* Heyrovsky, 1967 : 104 ("Dariganga"), unaivalable name.

Eodorcadion argali rugipenne m. *pseudoffensum* Heyrovsky, 1967 : 104 ("Suchebaator Aimak : 5 km S von Somon Chongor [= Dariganga]"), unavailable name.

Eodorcadion argali, Namhaidorzh, 1976 : 212 ("Suhe-Bator aimak, Khongor [= Dariganga], sands Ongon-Els".)

Eodorcadion (O.) argali rugipenne, Danilevsky et al., 2005 : 132-133.

Type locality. – North China (Inner Mongolia, Xilin Gol) and South East Mongolia (Suhe-Bator aimak) – according to the morphology of the type series (see corresponding remark above).

Diagnosis. – Body length in males : 11.3-20 mm, in females : 16-24 mm; body width in males : 4.5-6.7 mm, in females: 6.1-9 mm. Elytral sculpture is in general rather rough; elytral stripes are on average wider.

The taxon is characterized by big degree of individual and geographical variability : population in Dariganga environs iclude neither glabrous females, nor forms with yellow pubescence; in populations from near Baian-Munkh (9 km NE Baian-Munkh, 45°21'N, 111°18'E) about third of all known females is yellow (Fig. 27a–6-7), another third is glabrous (Fig. 27a–14); yellow males are known only from near Baian-Delger (10 km ESE Baian-Delger, 45°43'N, 112°29'E), where yellow and glabrous females are also present; numerous glabrous females (about 2% of all females) are known to me in three populations : 16 km WSW Dariganga, 45°15'N, 113°39'E; 9 km NNW Naran, 45°12'N, 113°39'E (Fig. 27a–15); 38 km ENE Baian-Delger, 45°50'N, 112°49'E; single glabrous females are also known from several more populations : 30 km ENE Dariganga, 45°33'N, 113°43'E; 12 km SW Baian-Delger, 45°40'N, 112°13'E; Tuvshin-Shire; Ongon sands; elytral stripes often more or less widened or fused; sometimes internal dorsal stripe is well developed (Fig. 27a–3,5); often (especially in females) short internal dorsal stripe fused with sutural stripe forming wide triangular area behind scutellum (Fig. 27a-8) or very rare external dorsal stripe is fused with humeral stripe forming very wide longitudinal white humeral area.

Distribution (Map 26; localities 22-34). – South-east part of Mongolian Republic, north part of East-Gobi aimak and Suhe-Bator aimak. The abundance of the specimens just on the border with China makes me sure that *E. e exaratum* is also distributed in North China (Inner Mongolia, Xilin Gol).

Known localities are : Mongolia, East-Gobi aimak, 9 km NE of Baian-Munkh, 45°21'N, 111°18'E-(MD); Suhe-Bator aimak : 12 km SW Baian-Delger, 1050 m, 45°40'N, 112°13'E-(MD); 10 km ESE Baian-Delger, 980 m, 45°43'N, 112°29'E-(MD); 38 km ENE Baian-Delger, 930 m, 45°47'N, 112°49'E-(MD); 36 km N Ongon, 1100 m, 45°41'N, 113°03'E-(MD); Dariganga environs, 45°18'N, 113°49'E (Photo. 10, 11)-(type locality of *E. argali rugipenne* Heyr., MD); Ongon Els, 10 km S from somon Khongor-(MD, Heyrovsky, 1967); Tuvshin-Shire-(MD); 16 km WSW Dariganga, 45°15'N, 113°39'E-(MD); 9 km NNW Naran, 45°12'N, 113°39'E-(MD); 5 km ENE Naran, 45°10'N, 113°40'E – (MD); 17 km ESE Naran, 45°04'N, 113°53'E-(MD); 30 km N Dariganga, 45°33'N, 113°43'E-(MD).

Materials. – 1 female, lectotype (**present designation**) of *Dorcadion exaratum* Ménétriés, with three labels : (1) "?. China", Ménétriés hand, (2)"*Dorcadion exaratum* N.", Ménétriés hand, (3) ["coll. of V. Jakovlev"] [in Russian]-(ZIN); 1 female, paralectotype (**present designation**) of *Dorcadion exaratum* Ménetriés, with two labels : (1)"*Dorcadion exaratum* N. ? China", Ménétriés hand, (2) ["coll. of V. Jakovlev"] [in Russian]-(ZIN); 1 female, paralectotype (**present designation**) of *Dorcadion exaratum* Ménetriés, with three labels : (1)"6." (2)"*exaratum*", (3) ["coll. of V. Jakovlev"] [in Russian]-(ZIN); 1 female (glabrous form) with three labels : (1)"*exaratum* Men, China Mén.", (2)"*Eodorcadion exaratum* Mén., Breuning det.", (3)"*Eodorcadion (Ornatodorcadion) exaratum* Mén., P. Lepesme det."-(MHNL); 1 male, holotypus of *E. argali rugipenne* Heyr., "Mongolia : Suchebaator Aimak, Molzog elis, 2 km S von Somon Dariganga, 1150 m, 6.VIII.1965, exp. Dr. Z. Kaszab"-(HNHM); 1 male, 1 female, paratypes of *E. argali rugipenne* Heyr., with same label-(HNHM); 2 females, paratypes of *E. argali rugipenne* Heyr., with same label-(NMP); 1 female, paratype of *E. argali rugipenne* Heyr., "Mongolia : Suchebaator Aimak, Ongon Elis, 10 km S von Somon Chongor [= Dariganga], 900 m, 3-

5.VIII.1965, exp. Dr. Z. Kaszab"-(HNHM); 1 male, "holotype" and 8 males "paratypes" of "*E. argali rugipenne* m. *brevestriatum*", "Mongolia : Suchebaator Aimak, Molzog elis, 2 km S von Somon Dariganga, 1150 m, 6.VIII.1965, exp. Dr. Z. Kaszab"-(HNHM); 1 male, 1 female, "paratypes" of "*E. argali rugipenne* m. *brevestriatum*" with same label-(NMP); 1 male, paratype of "*E. argali rugipenne* m. *brevestriatum*", "Mongolia, Suchebaator Aimak, Ongon elis, 10 km S von Somon Chongor, 900 m, 3-5.VIII.1965, exp. Dr. Z. Kaszab"-(HNHM); 1 female, "holotype", 17 males and 2 females "paratypes" of "*E. argali rugipenne* m. *pseudoffensum*" with same label-(HNHM); 2 males, "paratypes" of "*E. argali rugipenne* m. *pseudoffensum*" with same label-(NMP); 1 female (typical glabrous form), East-Gobi aimak, Dalan-Dzhargalan, 12.VIII.1975, Gurjeva *leg.*-(ZIN); 2 males, 2 females (including 1 glabrous female), Mongolia, Suhe-Bator aimak, Tuvshin-Shire, 3.VIII.1983, K. Ulykpan *leg.*-(MD); 15 males, 6 females (including 1 glabrous female), Mongolia, Suhe-Bator aimak, Tuvshin-Shire, 3.VIII.1983, K. Ulykpan *leg.*-(MD); 15 males, 15 (including 4 females with yellow pubescence and 6 glabrous females), Mongolia, East-Gobi aimak, 9 km NE of Baian-Munkh, 45°21'N, 111°18'E, 700 m, 12-13.VIII.2002, M. Danilevsky *leg.*-(MD); 1 female (glabrous form), Mongolia, Suhe-Bator aimak, 12 km SW Baian-Delger, 1050m, 45°40'N, 112°13'E, 13.VIII.2002, M. Danilevsky *leg.*-(MD); 4 males, 4 females (including yellowish males and females and 1 glabrous female), Mongolia, Suhe-Bator aimak, 10 km ESE Baian-Delger, 980 m, 45°43'N, 112°29'E, 13.VIII.2002, M. Danilevsky *leg.*-(MD); 29 males, 18 females (including 4 glabrous females), Mongolia, Suhe-Bator aimak, 38 km ENE Baian-Delger, 93 0m, 45°47'N, 112°49'E, 14.VIII.2002, M. Danilevsky *leg.*-(MD); 1 male, Mongolia, Suhe-Bator aimak, 36 km N Ongon, 1100 m, 45°41'N, 113°03'E, 14.VIII.2002, M. Danilevsky *leg.*-(MD); 195 males, 56 females (no glabrous forms), Mongolia, Suhe-Bator aimak, 2 km W Dariganga, 1230 m, 45°18'N, 113°49'E, 14-16.VIII.2002, M. Danilevsky *leg.*-(MD); 136 males, 60 females (including 6 glabrous females), Mongolia, Suhe-Bator aimak, 16 km WSW Dariganga, 1200 m, 45°15'N, 113°39'E, 16-17.VIII.2002, M. Danilevsky *leg.*-(MD); 91 males, 80 females (including 16 glabrous females), Mongolia, Suhe-Bator aimak, 9 km NNW Naran, 1200 m, 45°12'N, 113°39'E, 16.VIII.2002, M. Danilevsky *leg.*-(MD); 2 males, 1 female, Mongolia, Suhe-Bator aimak, 5 km ENE Naran, 1210 m, 45°10'N, 113°40'E, 16.VIII.2002, M. Danilevsky *leg.*-(MD); 115 males, 128 females (no glabrous forms), Mongolia, Suhe-Bator aimak, 17 km ESE Naran, 1350 m, 45°04'N, 113°53'E, 16.VIII.2002, M. Danilevsky *leg.*-(MD); 1 male, 1 female (glabrous form), Mongolia, Suhe-Bator aimak, 30 km N Dariganga, 1150 m, 45°33'N, 113°43'E, 17.VIII.2002, M. Danilevsky *leg.*-(MD).

Remarks. – The taxon, which was recorded as *Eodorcadion argali*, Namhaidorzh, 1972 is in fact *E. e. exaratum*, as its locality was just near the type locality of *E. argali rugipenne* Heyr. (= *E. e. exaratum*), "Khongor" of older maps is modern Dariganga.

27b. *Eodorcadion (Ornatodorcadion) exaratum argali* (Jakovlev, 1890), comb. n. (Figs. 27b)

Neodorcadion argali Jakovlev, 1890 : 249 ("dans la Mongolie septentrionale, pendent son [G. N.Potanin] dernier voyage en Ourga, en 1888."); Winkler, 1929 : 1199, part.

Neodorcadion miraculum Reitter, 1897 : 182 (Changai); Winkler, 1929 : 1199, part.

Neodorcadion hircus Jakovlev, 1906: 1 ("Mongolie or .: Cherlun-gol supér.: entre Tzarabulun et Arahonchor-Nur").

Eodorcadion (O.) hircus, Gresitt, 1951 : 338, 343, part.

Eodorcadion argali, Plavilstshikov, 1958 : 477.

Eodorcadion argali ab. *offensum* Plavilstshikov, 1958 : 479, unavailable name.

Eodorcadion argali ab. *delimitatum* Plavilstshikov, 1958 : 479, unavailable name.

Eodorcadion argali ab. *latesuturatum* Plavilstshikov, 1958 : 479, unavailable name.

Eodorcadion argali, Heyrovsky, 1965 : 41; 1973a : 123; 1973b : 117.

Eodorcadion quadricarinatum Heyrovsky, 1970 : 139, 141 ("Central Aimak : 12 km S von Somon Bajanburaat"), **syn. n.**

Eodorcadion argali, Namhaidorzh, 1972 : 527.

Eodorcadion oryx m. inconstructum, Heyrovsky, 1964 : 379 ("Ostgobi Aimak : Ulan chosu, 38km SO von Cojren").

Eodorcadion (O.) argali argali, Danilevsky et al., 2005 : 132-133.

Type locality. – Mongolia, Central aimak near Altan-Bulak (see corresponding remark).

Diagnosis. – Body length in males : 12-17.1 mm, in females : 14.6-19.8 mm; body width in males : 4.5-6.2 mm, in females : 5.4-8 mm.

Elytral sculpture is in general smoother; elytral stripe are on average narrower; internal dorsal stripe never well developed, so triangular white elytral area always absent. Glabrous form of females are known only from the most south-eastern extremity of the area (Fig. 27b-24; Kerulen valley in Hentei aimak). The taxon is characterized by relative stability of morphology and elytral design : yellow forms are unknown, elytral stripes never strongly widened or fused.

Distribution (Map 26; localities 1-21). – Centre of the north half of Mongolian Republic; absent in Russia and in China.

Known localities are : Mongolia : Central aimak : Altan-Bulak – type locality; Sharkhajn-Khundij valley, 47°12'N, 106°10'E-(DEI, Namhaidorzh, 1972); Baian-Khoshun [?] at the headwaters of Tola river [locality needs confirmation]-(Namhaidorzh, 1972); 120 km SW Ulan-Bator, 47°00'N, 106°00'-(MD); 125 km SW Ulan-Bator-(Namhaidorzh, 1972); 70 km SW Ulan-Bator-(Namhaidorzh, 1972); Buren env., Tukhmijn-Nur lake-(ZIN); Baian-Barat env.-(ZIN); 12 km S from Baian-Barat-(HNHM), type locality of *Eodorcadion quadricarinatum*); Bulgan aimak : S from Baian-Nur lake-(HNHM, NMP and Heyrovsky, 1965); 11 km from Baian-Nur, south bank of Baian-Nur lake-(HMNH, Heyrovsky, 1973a); Uver-Hangai aimak : Arbaj-Khere-(NMP); Hentei aimak : Bombotu-Khuduk well (about 35 km NW Darkhan)-(ZIN), this locality was recorded by B. Namhaidorzh (1972 : 527) for wrong aimak (Central) as "Bumbut-Khuduk" with wrong date : 12.VII.1897, see I. M.Kerzhner (1972 : 79); Baian-Munkh-(Namhaidorzh, 1972); "between Tzara-Bulun and Ara-khongor-Nur" [ESE Baian-Dzhargalan]-(type locality of *N. hircus* Jak., ZIN, JV, Namhaidorzh, 1972); Central-Gobi aimak "Datze" (Ada-Tzag, according to Kerzhner, 1972 : 79)-(ZIN); Datzyn-Khure (same locality)-(Namhaidorzh, 1972); 8 km WNW Ada-Tzag, 46°40'N, 105°38'E (Photo. 9)-(MD); 10 km SE Tzagan-Delger (near Delger-Tzogt), 46°20'N, 106°17'E-(MD); 12 km N Mandal-Gobi, 1450 m, 45°50'N, 106°19'E-(MD); Khuchin well northwards Delger-Hangai-(Namhaidorzh, 1972); 20 km SW Mandal-Gobi-(ZIN, Namhaidorzh, 1972); East-Gobi aimak : Khara-Airag; "Ulan chosu"(?), 38 km SE Choiren (?) [Choir ?]"-(HNHM, Heyrovsky, 1964, as *E. oryx* m. *inconstructum*); 15 km SW Choir-(Heyrovsky, 1973b); Ara-Hangai aimak, near Tzetzerleg-(SK).

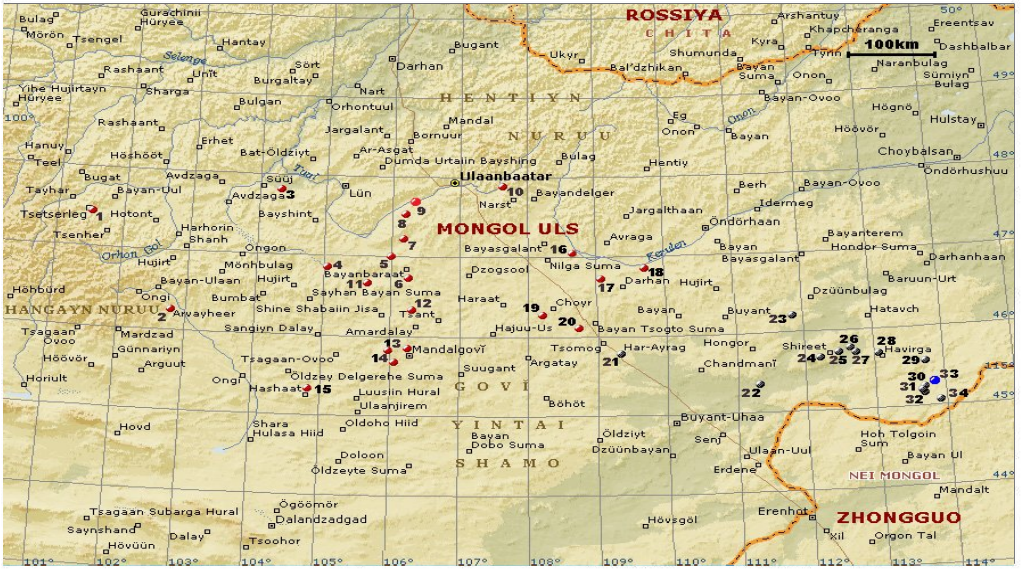
Bionomy. – Imagoes are active in July-August. All imagoes, collected by me, were feeding on *Caragana* stems.

Materials. – 1 male, ["Mongolia, between Tzara-bulun and Arahonchor-nur (type locality of *N. hircus*), 21.VII.1899, Palibin *leg*."] [in Russian]-(ZIN); 2 females (glabrous form identified as *Neodorcadion ornatum* var. *exaratum*" by G. Suvorov) ["valley of Kheruliun (Kerulen), VII.1899, Dr. Damaskin *leg*."] [in Russian], Hentei aimak, ESE Baian-Dzhargalan-(ZIN); 1 similar female with same labe-(JV); 1 female (21.5 mm), holotype of *N. argali* Jak. with three labels : (1) "Type" [red], (2)"*argali*", (3) ["coll. of V. Jakovlev"] [in Russian]-(ZIN); 1 male with four labels : (1) "Type"[red, wrong designation, as the original description was based on a single female], (2) "N. Mongol., Jadrintz.", (3)"*argali* V. Jakovlev", (4) ["coll. of V. J akovlev"] [in Russian]-(ZIN); 1 female, syntype of *Neodorcadion miraculum* Rtt., "Changai, Leder, Coll. Reitter"-(HNHM); 1 male, syntype of *Neodorcadion miraculum* Rtt., "Mongolie bor.")-(NMV); 2 males, syntypes of *Neodorcadion miraculum* Rtt., "Nordl. Mongolei, Changai, Leder"-(NMV); 2 males, 1 female, syntypes of *Neodorcadion miraculum* Rtt. with same label-(HNHM); 2 males with same label-(NMP); 1 male with same label-(ZIN); 1 male, "Urga"-(HNHM); 1 male, Mongolia, ["Bombotu-Khuduk, to the west from Urga, 12.VIII.1897, Clementz"] [in Russian]-(ZIN); 3 males, 1 female, ["North Mongolia, Datze, 22.VII.1909, Kozlov's exp."] [in Russian]-(ZIN); 2 males, "Nord. Mongolei, Charchaj-Chun-duy [Sharkhajn-Khundij valley, 47°12'N, 106°10'E], 1909 [24-25.VII, according to Kerzhner, 197 2 : 79], Kozlov"-(DEI); 3 males, 1 female, ["North Mongolia, Kuchin [Khuchin] well (Central-Gobi aimak, northwards Delger-Hangai), 20.VII.1909, Kozlov's exp."] [in Russian]-(ZIN); 1 male (elytron only), "Mongolia, Ostgobi Aimak, Ulan chosu, 38 km SO von Cojren (?) [Choiren], 1200 m, 30.VI.1963, exp. Dr. Z. Kaszab"-(HNHM, Heyrovsky, 1964, as *E. oryx* m. *inconstructum*); 4 males, 2 females, "Mongolia : Bulgan Aimak, S vom See Bajan Nur, 1010 m, 3.VII.1964, exp. Dr. Z. Kaszab"-(HNHM); 2 males, with same label-(NMP); 3 males, "Mong. c., Arbaj-Chere [Uver-Hangai aimak], 13.VIII.1966, Dlabola *leg*." [wrong label !]-(NMP); 1 male, 1 female, ["North Mongolia, Bajan-Barat env. (Central aimak), 8.VII.1966, O. Fedosimov *leg*."] [in Russian]-(ZIN); 1 female and 1 male, holotype and paratype of *Eodorcadion quadricarinatum* Heyr., "Mongolia : Central Aimak, 12 km S von Somon Bajanburaat, 1380 m, 8.VI.1967, exp. Dr. Z. Kaszab"-(HNHM); 19 males, 28 females, "Mongolia : Bulgan Aimak, 11 km W von Somon Bajannuur, am See Bajan nuur, 1000 m, 24.VII.1968, exp. Dr. Z. Kaszab"-(HNHM); 1 male, Mongolia, Central aimak, Buren env., Tukhmijn-Nur lake, 31.VII.1969, Kerzhner *leg*.-(ZIN); 1 female, Mongolia, Central-Gobi aimak, 10 km SE Tzagan-Delger, 14.VIII.1976, Ju. Popov *leg*.-(MD); 1 male, 1 female, Mongolia, Ara-Hangai aimak, "near Tzetzerleg, 16.VII.2002, J. Straka *leg*."(SK); 1 female (elytra only), Mongolia, Central aimak, 120 km SW Ulan-Bator, 47°00'N, 106°00', 1300 m, WNW Ada-Tzag, 46°40'N, 105°38'E, 1400 m, 2-3.VIII.2002, M. Danilevsky *leg*.-(MD); 4 males, Mongolia, Central-Gobi aimak, 10 km SE Tzagan-Delger (near Delger-Tzogt), 46°20'N, 106°17'E, 3.VIII.2002, M. Danilevsky *leg*.-(MD); 10 males, 1 female, Mongolia, Central-Gobi aimak, 12 km N Mandal-Gobi, 1450 m, 45°50'N, 106°19'E, 3.VIII.2002, M. Danilevsky *leg*.-(MD).

Remarks. – The description of *Neodorcadion argali* Jak. was based on a single female ("21 mm"), collected by G. N. Potanin in North Mongolia in 1888. According to I. M. Kerzhner (1972 : 93) in 1888 G. N. Potanin collected only in Selenga aimak (where *E. exaratum* is absent) and in Central aimak near Altan-Bulak (east-southwards Ulan-Bator), where *E. exaratum* is known, so I regard this area as the type locality of *Neodorcadion argali* Jak. According to N. N. Plavilstshikov (1958), the south border of the species area is limited by 47°N, so all his data were connected with *E. exaratum argali*. The area of another subspecies - *E. (O.) e. exaratum* is situated southwards from 47°N.

E. quadricarinatum Heyr., described from the south part of Central aimak, is a synonym of *E. exaratum argali*, as it was faithfully supposed by Namhaidorzh (1972, as *E. argali*) and quite evident from the original description and study of type materials (HNHM). So, *E. exaratum argali* (Jakovlev, 1890) = *E. quadricarinatum* Heyrovsky, 1970, **syn. n.** Holotype (female–Fig. 27b-25) and paratype (male–Fig. 27b-26) of *E. quadricarinatum* Heyr. were collected already dead in very poor condition, each is represented by about half of body without legs and antennae, with lost natural colour.

The record of *E. oryx* for East-Gobi aimak by L. Heyrovsky (1964) is connected with a single male elytron (HNHM) of *E. exaratum argali*.



Map 26. Localities of ***E. exaratum*** : Mongolia.

E. e. argali (1-21) : Ara-Hangai aimak : 1. near Tzetzerleg; Uver-Hangai aimak : 2. Arbaj-Chere (wrong label!); Bulgan aimak: 3. 11 km from Baian-Nur, south bank of Baian-Nur lake; Central aimak : 4. Buren env., Tukhmijn-nur lake; 5. 120 km SW Ulan-Bator, 47°00'N, 106°00'; 6. 12 km S from Baian-Barat - (type locality of *Eodorcadion quadricarinatum*); 7. Sharkhajn-Khundij valley, 47°12'N, 106°10'E; 8 - 70 km SW Ulan-Bator; 9. Altan-Bulak env. (type locality of *Neodorcadion argali* Jak.); 10. Baian-Khoshun at the upper level of Tola River; Central-Gobi aimak : 11. 8 km WNW Ada-Tzag, 46°40'N, 105°38'E; 12. 10 km SE Tzagan-Delger (near Delger-Tzogt), 46°20'N, 106°17'E; 13. 12 km N Mandal-Gobi, 1450 m, 45°50'N, 106°19'E; 14. 20 km SW Mandal-Gobi; 15. Khuchin well northwards Delger-Hangai; Hentei aimak : 16. Between Tzara-Bulun and Ara-khongor-Nur [ESE Baian-Dzhargalan]; 17. Bombotu-Khuduk or Bumbut-Khuduk (about 35 km NW Darkhan); 18. Baian-Munkh; East-Gobi aimak: 19. 15 km SW Choir; 20. Choir; 21. Khara-Airag;

E. e. exaratum (22-34) : East-Gobi aimak : 22. 9 km NE of Baian-Munkh, 45°21'N, 111°18'E; Suhe-Bator aimak : 23. Tuvshin-Shire, 46°13'N, 111°50'E; 24. 10 km ESE Baian-Delger, 980 m, 45°43'N, 112°29'E; 25. 12 km SW Baian-Delger, 1050 m, 45°40'N, 112°13'E; 26 - 38 km ENE Baian-Delger, 930 m, 45°47'N, 112°49'E; 27. Ongon Els, 10 km S from somon Khongor; 28. 36 km N Ongon, 1100 m, 45°41'N, 113°03'E; 29. 30 km N Dariganga, 45°33'N, 113°43'E; 30. 16 km WSW Dariganga, 45°15'N, 113°39'E; 31. 9 km NNW Naran, 45°12'N, 113°39'E; 32 5 km ENE Naran, 45°10'N, 113°40'E; 33. Dariganga environs, 45°18'N, 113°49'E (type locality of *E. argali rugipenne* Heyr.); 34. 17 km ESE Naran, 45°04'N, 113°53'E.

28. *Eodorcadion (Ornatodorcadion) ornatum* (Faldermann, 1833) (Fig. 28)

Dorcadion ornatum Faldermann, 1833 : 64, pl. 2, f. 1 ("Hab. Mongoliae").

Neodorcadion ornatum, Ganglbauer, 1884 : 513, part.; 1889 : 483, part.; Jakovlev, 1901: 150, 155 ("Chingan"); Pic, 1901 : 67 ("Mong."), part.; Winkler, 1929 : 1199, part.; Liu, 1934 : 636 (Hopei, Paotingfu [?]).

Neodorcadion princeps Jakovlev, 1899 : 239 (no locality); 1901 : 151, 153, part. ("Mongolie?"); Pic, 1901 : 69 ("Mong."), part.; Winkler, 1929 : 1199, part.

Eodorcadion ornatum m. *rufimembre* Breuning, 1948 : 57 ("Mongolie"), unavailable name.

Eodorcadion (O.) princeps, Gressitt, 1951 : 338, 345, part.; Breuning, 1958 : 3, part.; 1962 : 41, part.

Eodorcadion (O.) ornatum, Gressitt, 1951 : 344, part.; Breuning, 1958: 2 (+ m. *exaratum* Mén.), part.; 1962 : 38, part.

Eodorcadion ornatum, Plavilstshikov, 1958 : 473 (+ m. *exaratum* Mén.), part.; Hua, 2002 : 206 (+ var. *exaratum* Mén.; "Inner Mongolia, Hebei, Shaanxi"), part.; Wang, 2003 : 301 (Heilongjiang, Jilin, Liaoning, East Inner Mongolia, Shaanxi : Yulin; Hebei : Baoding; Mongolia, Russia), part.; Danilevsky, 2004 : 7 ("= *princeps* Jakovlev, 1899").

Eodorcadion princeps, Hua, 2002 : 206 ("Inner Mongolia ?"), part; Wang, 2003 : 302 (Inner Mongolia : Alxa area, Khingan area), part.

Eodorcadion oryx, Wang, 2003 : 301 [Inner Mongolia : Chifeng, Balin, Baotou, Xilin-Gol (= Xilinhot reg.), Ulanqab (= Jining reg.), Alxa (western most reg.); Helan Shan; Mongolia; Russia], part.

Type locality. – NE China, Inner Mongolia (according to available materials and published localities)

Diagnosis. – Body length in males : 18-19.4 mm, in females : 20.5-24 mm; body width in males : 6.2-7.5 mm, in females : 7.8-8.8 mm.

Body of moderate size, black; legs and antennae are also totally black (m. *rufimembre*, described after one female "par les pattes rouges" has in fact black legs, as the specimen is very old and partly lost its natural colour); antennal joints with narrow white basal rings, which often can be indistinct; elytral carinae relatively smooth, usually without granules, but with distinct punctation; sometimes anterior part of humeral carinae with several granules; each elytron with 4 white stripes: marginal, humeral, external dorsal and sutural – all stripes relatively wider than in *E. exaratum*, sens. n.; sometimes internal dorsal stripe present as a short basal stroke; humeral and external stripes can be fused (ab. *princeps*, Fig. 28-9); pronotum densely covered with white pubescence, which is usually represented in other close species by several scattered spots.

Distribution (Map 27). – China, Inner Mongolia. According to N. N. Plavilstshikov (1958), the species is distributed along west slopes of Khingan ridge. Known localities are : Dalaj-Nur lake (Plavilstshikov, 1958); NW border of Xilin-Gol Reserve, near Xilinhot-(MD); Balin (Wang, 2003). The records for Hebei and Shaanxi provinces by Hua Li-zhong (2002 : 206) need confirmation. Absent in Mongolia. The records for Mongolia and "Former USSR" by Hua Li-zhong (2002 : 206) are wrong, as well as records for Mongolia and Russia by Wang Zhicheng (2003 : 301). I preliminary identify two females from Balin (Inner Mongolia, Chifeng area) figured by Wang Zhicheng (2003 : 301) for his "*E. oryx*" as *E. ornatum* (Fald.). Numerous geographical data [Baotou; Xilin-Gol (= Xilinhot reg.); Ulanqab (= Jining reg.); Alxa (the western most reg. of Inner Mongolia); Helan Shan] for "*E. oryx*" sensu Wang Zhicheng (2003: 301) can be connected with rather different species of striated China *Eodorcadion*.

The records of typical *E. ornatum* for Mongolia by N. N. Plavilstshikov (1958) were based on wrong identified specimens of *E. oryx* from his collection (ZMM); the records of *E. ornatum* ab. *exaratum* for Mongolia (Plavilstshikov, 1958; Namhaidorzh, 1972) were based on wrong identified glabrous specimens of *E. novitzkyi* and *E. exaratum*, sens. n..

The records of *E. ornatum* m. *exaratum* and *E. ornatum* m. *atricorne* by L. Heyrovsky (1965 : 43, 46) from Ubsu-Nur aimak were connected (as it is clear from the locality) with *E. maurum*.

Materials. – 1 female (Fig. 28-2), syntype (without geographical label)-(ZIN); 1 male (Fig. 28-1) "Mongol."-(JV); 2 males and 1 female with only one label : "Fischer von Waldheim"-(SMTD); 1 male (Fig. 28-9), holotype of *Neodorcadion princeps* Jak., (without geographical label)(ZIN); 1 female, with only one label : "Chadoir, 1859"-(NMV); 2 males, "Mongolia"-(MHNL); 1 female with 3 labels : (1)"Holotype"[red]; (2)"*Eodorcadion ornatum rufimembre*, type, mihi, Breuning det."; (3)"Mongolia"-(MHNL); 1 male with one label : "Mongolia, *Eodorcadion ornatum* Fald."-(NMV); 1 female, China, Nei Mongol., NW border of Xilin-Gol Reserve, near Xilinhot, 26.VII.2002, T. Shimizu *leg*.-(MD).

Remarks. – *E. ornatum* (Faldermann, 1833) was described (as *Dorcadion*) from "Mongoliae" on at least one male and one female (without size data). The original description is equipped with a good color drawing of a male, but I dont know that specimen. A syntype female (22.5mm-ZIN) without any geographical label (Fig. 28-2) has just same elytral design as figured male with one dorsal white stripe. The description of *Neodorcadion princeps* Jakovlev, 1899 was based on a single male ("18 mm") without exact geographical data. The holotype (18 mm-ZIN; Fig. 28-9) without geographical label has an original label by Ménétriés hand "*D. ornatum* var." mentioned in the original description and totally corresponds to it. The holotype is characterized by totally fused humeral and external dorsal elytral stripes forming rather wide joined humeral stripe, sutural stripe is also wide. In fact such elytral design is simply a very rare aberration known to me in many different taxa : *E. exaratum exaratum*, sens. n., *E. i. intermedium*, *E. i. kozlovi*, *E. oryx*. Among more than hundred *E. i. kozlovi*, collected by me in East-Gobi aimak only 6 males and 2 female have similar elytral design.

I treat the holotype of *N. princeps* as the corresponding aberration of *E. ornatum* (as it was reflected in the original label by Ménétriés) because of : black legs, black antennae, absence of internal dorsal elytral stripe (so, not *E. intermedium* or *E. oryx*), moderately rough elytral sculpture near humeri similar to *E. e. exaratum*, sens. n. (so not *E. intermedium*, or *E. zichyi*, or *E. heros* – besides much smaller than *E. heros* or *E. zichyi*), rather rough elytral sculpture near middle – just same as in syntype female of *E. ornatum* (so, not *E. e. exaratum*). Besides, the syntype female of *E. ornatum* (and several other available specimens) has very special strongly developed white pubescence of pronotum which is unknown to me in any specimen of related species, but just same as in holotype of *N. princeps*. So, *E. ornatum* = *E. princeps*, as it was published by M. Danilevsky (2004).

All *Eodorcadion*, identified as "*E. ornatum*" by N. Plavilstshikov in his collection (1 male and 3 females) are in reality *E. oryx* from Mongolia, so his new aberrations : *Eodorcadion ornatum* ab. *praeligatum* Plavilstshikov, 1958 and *Eodorcadion ornatum* ab. *illustratum* Plavilstshikov, 1958 : belong to *E. oryx*.

I preliminary regard as *E. ornatum* a single male (NMV) without exact geographical label (Fig. 27-11), which can represent a new species; body length : 15 mm, width : 4.3 mm; totally black, covered with dense white pubescence; frons and vertex densely covered with white pubescence, vertex densely randomly punctated; antennae a little longer than body, antennal joints with wide white basal hair rings; 1st joint as long as 3rd, with nearly indistinct cicatrix; 4th joint 1.25 time shorter than 3rd; thorax anteriorly wider, than posteriorly, about as long as basal width; lateral thoracic spines short but acute; pronotum roughly sculptured, but without distinct tubercles, with

smooth glabrous central line, with a pair of wide longitudinal white hair stripes, accompanied by short curved narrow white spots; scutellum with wide central glabrous shining line and white pubescent lateral areas; elytra oval, about 2.2 times longer than wide, widest near middle; elytral carinae are distinct only anteriorly and here granulated; suture is not prominent; short subsutural carina near scutellum is represented by a raw of granules; long internal dorsal carina covered with granules along 1st elytral third, posteriorly smooth and obliterated; short and narrow external dorsal carina only anteriorly with several small granules, posteriorly smooth; humeral carinae widely roughly sculptured, granulated, anteriorly dentated, only its apical 5th relatively smooth; each elytron with 5 longitudinal pale hair pale stripes; narrow sutural stripe white; internal dorsal narrow stripe shortened with sparse, partly brownish pubescence; dense humeral and external white dorsal stripes wide, widely fused anteriorly and posteriorly; dense marginal white stripes also wide; ventral body side with dense white pubescence. This male was mentioned by E. Reitter (1897 : 178) : "… und kleineres Maennchen von ganz verschiedenem Aussehen und weiss geringelten Fühlergliedern ist vielleicht das Potanini Jakowl., Horae XXI. 317. Long. 17 mm., von Zaidam." In fact *E. potanini* was described from Ordos. It was *Neodorcadion przewalskyi* Jakovlev, 1887 : 317 (of 17 mm long.), which was described from Tzaidam *in* "Horae XXI. 317".

Traditionally (Reitter, 1897 : 180; Ganglbauer, 1884 : 514; Jakovlev, 1901 : 150; Gressitt, 1951 : 344; Plavilstshikov, 1958 : 473; Breuning, 1962 : 40; Namhaidorzh, 1972 : 528) *Dorcadion exaratum* Mén. (described without distinct type locality) was regarded as glabrous form of *E. ornatum* without any reasons. In fact *Dorcadion exaratum* represent a glabrous form of the taxon, which was later described as *E. argali rugipenne* Heyr. (see above). No such forms are known from the area of *E. ornatum*.

Map 27. Localities of ***E. ornatum*** : China.

1. Dalaj-Nor lake; 2. NW border of Xilin-Gol Reserve, near Xilinhot; 3. Balin.

Eodorcadion ornatum was illustrated by Wang Zhicheng (2003 : 301) with a photo of Mongolian *E. dorcas dorcas* male (m. *irregulare*) from "Atlas of the Cerambycidae photographs of the tribe Dorcadionini" (Danilevsky, 2006). The specimen (MD) has the label : "Mongolia bor. Reitter". Probably several of numerous China geographical data for "*E. ornatum*", sensu Wang (2003) are connected with real *E. ornatum* : Heilongjiang, Jilin, Liaoning, East Inner Mongolia, Shaanxi : Yulin; Hebei : Baoding.

Two females figured by Wang Zhicheng (2003 : 301) as "*E. oryx*" from Balin (Inner Mongolia, Chifeng area) are most probably *E. ornatum* (Fald.). A male figured as "*E. oryx*" is a real Mongolian *E. oryx*. The photo was copied from "Atlas of the Cerambycidae photographs of the tribe Dorcadionini" (Danilevsky, 2006); specimen (MD) has the label : "Mong. mer., Barun-Bajan-Ulan, 18.VIII.1966, Dlabola *leg*."

29. *Eodorcadion (Ornatodorcadion) licenti* (Pic, 1939) (Fig. 29)

Neodorcadion licenti Pic, 1939 : 25 ("Chine, Balgassin").

Eodorcadion (O.) licenti, Gressitt, 1951 : 338, 344 ["Mongolia (? (Balgassin)"]; Breuning, 1958 : 3 ("Mong. mer."); 1962 : 42 ("Süd Mongolei : Balgassin").

Eodorcadion licenti, Hua, 2002 : 206 ("Inner Mongolia"); Wang, 2003 : 299 (North-East Inner Mongolia).

Type locality. – "China, Balgassin", according to the original description. I do not know such geographical name in China, and it was not known for J. L. Gressitt (1951), as well as for other authors.

Diagnosis. – Body length : "12-20 mill." (Pic, 1939).

According to the original description : "Se rapproche de *N. Zichyi* Csiki, dont il se distingue facilement par les antennes annelées et les parties noires des élytres (entre les bandes blanches) ornées de poils épars, au lieu d'être tout a fait glabres. Se distingue d'autre part, de *Kaznakovi* Sum. (sic!), par la forme plus allongée, le thorax moins robuste, le fond des élytres moins brillant, avec ses organes moins élargis et plus longs." and several lines before : "La femelle présente une forme plus robuste que le mâle.". But according to S. Breuning (1962), female is unknown; male : "Dem *ornatum* Fald. nahestehend, ..., aber die Nahtbinde durchweg breit, die Humeralbinde auch basal mit der Dorsalbinde vereinigt, der Interval zwischen diesen beiden Binden auf eine kurze schmale Längsbinde reduziert, keine Praesuturalbinde, alle Fühlerglieder vom dritten ab basal weiß geringelt.".

I have studied one male (MHNL) with red paratype label identified by S. Breuning as "*E. licenti* Pic". I regard it as a real syntype as it is fitting enough to the original description and especially because of scattered white long elytral setae, which are not usual for any other *Eodorcadion*.

Body length : 15.7 mm (without strongly exposed abdominal apex), body width : 5.7 mm; body totally black, rather narrow; antennae must be a little longer than body (both without 3 apical joints); 3rd–8th antennal joints with distinct white basal rings; prothorax with long lateral spines; scutellum big, triangular with dense white pubescence, with wide central glabrous line; each elytron with four distinct white stripes : rather wide lateral, humeral, external dorsal and very narrow sutural stripe; internal dorsal stripe totally absent; interval between sutural and dorsal stripes very wide, about as wide as basal part of joint sutural stripe; interval between humeral and dorsal stripe very narrow; all intervals between elytral white stripes with very rough deep and wide punctation (especially anteriorly), but without granules, with distinct relatively long white setae; external elytral interval strongly raised in form of distinct carina, internal elytral carinae hardly pronounced.

The unique known to me specimen of *E. licenti* looks to be very close to *E. kaznakovi* Sem. and very probably conspecific with it, though usually elytral sculpture in *E. kaznakovi* is not so rough, without distinct dorsal elytral carinae; white setae of black elytral areas are much shorter.

Distribution. – China, Inner Mongolia : "Balgassin". I do not know such name in China, but undoubtedly (according to the original morphological description and moprphology of the specimen identified by Breuning) all specimens were collected in its north part. The species was recorded for Inner Mongolia by Hua Li-zhong (2002 : 206) and Wang Zhicheng (2003 : 299) without any comments.

Materials. – 1 male with 4 labels : (1)"China bor.", (2)"paratype"[red], (3)"*Eodorcadion licenti* Pic, Breuning det.", (4) "*Eodorcadion (Ornatodorcadion) licenti* Pic, P. Lepesme det."-(MHNL).

Remarks. – The species was described after a series of specimens. Two syntypes (male and female) must be preserved in M. Pic's collection in Museum National d'Histoire Naturelle (Paris), but both are absent.

30. *Eodorcadion (Ornatodorcadion) kaznakovi* (Suvorov, 1912) (Fig. 30)

Neodorcadion kaznakovi Suvorov, 1912 : 73 ("Ala-Shan, oazis Dyn-juan-ing" [= Helan Shan, Baian Hot, 38°50'N, 105°40'E]); Winkler, 1929 : 1199, part.

Eodorcadion kaznakovi, Plavilstshikov, 1958 : 484; Hua, 2002 : 206 (Inner Mongolia, Ningxia); Wang, 2003 : 298 (Inner Mongolia : Chifeng, Ningxia).

Eodorcadion (O.) kaznakovi, Gressitt, 1951 : 340, 343; Breuning, 1958 : 3; 1962 : 42.

Type locality. – China, Alashan : "oazis Dyn-juan-ing", according to the original description [= Helan Shan, Baian Hot, 38°50'N, 105°40'E].

Diagnosis. – Body length in males : 12.7-19.5 mm, width : 4.5-6.8 mm.

Males (females unknown) : body totally black, wide; antennae much longer than body; 3rd–10th antennal joints with distinct white basal rings; prothorax with long lateral spines; scutellum big, oval with dense white pubescence, with wide central glabrous line; each elytron with four distinct white stripes: rather wide lateral, moderately wide humeral and external dorsal stripes and very narrow sutural stripe; internal dorsal line totally absent or represented by short basal stroke; interval between sutural and dorsal stripe very wide, wider than basal part of joint sutural stripe; interval between humeral and dorsal stripe very narrow; all intervals between elytral white stripes with very rough deep and wide punctation (especially anteriorly), but without granules or with several granules near base, with distinct very short white setae; external elytral interval usualy flat, but in the biggest male (ZNN; Fig. 30-4) strongly raised in form of distinct carina, internal elytral carinae hardly pronounced.

Distribution (Map 28). – China, Alashan; two localities known : Helan Shan, Baian Hot, 38°50'N, 105°40'E – (type locality); "South Alashan, bed of Dolone gol" [south most locality of the road along west environs of the Alashan ridge, see Kozlov, 1923]-(ZMM). The species was recorded for Ningxia province (Hua, 2002 : 206), that could be connected with the previous locality.

Materials. – 2 males, syntypes, each with two labels : (1)["Alashan, Dyn-iuan-in, 26.VI.1908, Kozlov's exp."] [in Russian], (2)"*Neodorcadion Kaznakovi*, Type m. G. Suvorov det."-(ZIN); 1 male with two labels : (1)["Alashan, Dyn-iuan-in, 5-14.VI.1908, Kozlov's exp."] [in Russian] [the date absent in the original description], (2)"*Neodorcadion Kaznakovi*, Type m. G. Suvorov det."-(MHNL); 1 male (identified as *E. kaznakovi* Suv. by B. Namhaidorzh), China, ["Alashan Desert, South Gobi, end of IX.1901, Kozlov" (near Dyn-iuan-in = Baian Hot, see Kozlov, 1902 : 37)] [in Russian]-(ZIN); 1 male with two labels : (1) ["Alashan, IX.1901, Kozlov's exp."] [in Russian] [the date absent in the original description], (2)"*Neodorcadion Kaznakovi*, Type m. G. Suvorov det."-(JV); 1 male (much bigger, than others), designated as "Type m." of *Neodorcadion kaznakovi* Suv., but not published in the original description, China, ["South Alashan, bed of Dolone gol, 13.VII.1908, Kozlov's expedition"] [in Russian]-(ZMM).

Remarks. – *E. kaznakovi* (Suvorov, 1912) was described after series of males (15-19mm). The date of type series (26.VI.1908) is well agree with the description of Kozlov's expedition. According to P. K. Kozlov (1923 : 235), his expedition was in June in Dyn-iuan-in. But originally was published another date (20.VI.1908) for the type series. It left Dyn-iuan-in on 6.VII.1908 moving southwards and crossed the south border of Alashan area on 14.VII.1908. So, Dolone-Gol river (13.VII.1908) is situated on the south border of Alashan area, may be already in modern Ningxia prov. The record of the species for Chifeng (Wang, 2003 : 298) is rather doubtful (too far from the type locality) and needs confirmation.

Map 28. Localities of ***E. kaznakovi*** : China.

1. Ala-Shan, oazis Dyn-juan-ing [= Helan Shan, Baian Hot, 38°50'N, 105°40'E] – type locality; 2. Bed of Dolone-gol.

31. *Eodorcadion (Ornatodorcadion) jakovlevi* (Suvorov, 1912) (Fig. 31)

Neodorcadion jakovlevi Suvorov, 1912 : 70 ("Alashan-Gebirge [= Helan Shan], Schlucht Chaten-gol"); Winkler, 1929 : 1199.

Eodorcadion jacovlevi, Plavilstshikov, 1958: 484 (wrong spelling).

Eodorcadion (O.) jakovlevi, Gressitt, 1951: 340, 343; Breuning, 1958: 3; 1962 : 47.

Eodorcadion jakovlevi, Hua, 2002 : 206; Wang, 2003 : 298 (Inner Mongolia : Chifeng; Mongolia), part.

Eodorcadion leucogrammum, Wang, 2003 : 298 (Inner Mongolia, Huolinguole of Tongliao area; Russia), part.

Type locality. – China, Ala-Shan, Khoten-Gol (according to the original description) – west foothills of the ridge near Baian Hot : 38°50'N, 105°40'E.

According to the original description the type series consists of several males and one female from "Ala-shan-Gebirge, Schlucht Chaten-gol, 5-10.VI.1908 (Expedition von P. Kozlov, coll. P. P. Semenov-Tian-Shansky)." The locality is situated (Bianchi,1916 : 91) in the west foothills of the ridge near Baian Hot [38°50'N, 105°40'E]. It was published in Russian as "Khotyn-gol near Dyn-juan-in". The expedition was based in Dyn-juan-in [= Baian Hot] in June 1908 (Kozlov, 1923).

Diagnosis. – Body length in males : 13-16 mm, in females : 15-17 mm; body width in males : 4.5-5.5 mm; in females : 6.2-6.4 mm. According to the original description, body length of a syntype female : 16.5 mm, body width : 6.5 mm.

Body black or reddish, with red legs and antennae; white hair antennal rings indistinct; elytra black, smooth, shining, each with 4 white hair stripes: marginal, humeral, external dorsal and sutural; sometimes reduced internal dorsal stripe present near elytral base.

Distribution (Map 29). – China, Inner Mongolia : Ala-Shan, Khoten-Gol – west foothills of the ridge not far from Baian Hot : 38°50'N, 105°40'E (type locality), Chifeng-(Wang, 2003 : 298), Tongliao (Wang, 2003 : 298, as *E. leucogrammum*). The record for Mongolia (Wang, 2003 : 298) is wrong.

Materials. – 3 males, 2 females, syntypes of *Neodorcadion jakovlevi* Suvorov, ["Alashan mountains, Khoten-Gol defile, 5-10.VI.1908, Kozlov's expedition"] [in Russian]-(ZIN); 2 male syntype of *Neodorcadion jakovlevi* Suvorov with same label-(JV); 1 male syntype of *Neodorcadion jakovlevi* Suvorov with same label-(MHNL); 1 male, syntype of *Neodorcadion jakovlevi* Suvorov, with similar label, but the date is "5-10.VI.1909" (*lapsus calami* ?)-(MD); 1 male, syntype of *Neodorcadion jakovlevi* Suvorov, "Gobi, Alashan, 12.VI.1908 Kozlov"-(DEI); 1 male, syntype of *Neodorcadion jakovlevi* Suvorov, "Mongolia, Alashan"-(MHNL).

Remarks. – The species was illustrated with 4 males (designated as male and 3 females) by Wang Zhicheng (2003 : 298). First figure is a copy of the photo of a syntype of *Neodorcadion jakovlevi* Suv. (preserved in my collection) from "Atlas of the Cerambycidae photographs of the tribe Dorcadionini" (Danilevsky, 2006). Three other males (Inner Mongolia : Chifeng) look like real *E. jakovlevi*, but their locality (if the label is adequate) is situated very far from the type locality, and such situation needs additional study.

E. leucogrammum was illustrated by Wang Zhicheng (2003 : 298) with an original photo of a female of *E. jakovlevi* from "Huolinguole of Tongliao area", as well as with several drawings of immature stages of *E. maurum sajanicum* (= *E. leucogrammum*) from Tuva republic copied from Tsherepanov's monograph (1983 : 63). The reality of that label also needs confirmation.

Map 29. Localities of ***E. jakovlevi*** : China.

1. Helan Shan (= Ala-Shan) – type locality; 2. Chifeng; 3. Tongliao.

32. *Eodorcadion (Ornatodorcadion) potanini* (Jakovlev, 1889) (Fig. 32)

Neodorcadion potanini Jakovlev, 1889 : 245 ("de l'Altaï", "en Mongolie"); 1901 : 151; Reitter, 1897 : 179 ("Ordos"); Pic, 1901 : 67 ("Ordos"); Winkler, 1929 : 1199.

Eodorcadion (O.) potanini, Gressitt, 1951 : 340, 345 ("Suiyuan"); Breuning, 1958 : 3; 1962 : 41.

Eodorcadion potanini, Plavilstshikov, 1958 : 484 (Ordos); Hua, 2002 : 206 ("Inner Mongolia"); Wang, 200 3: 302 (Inner Mongolia : Ordos area, Kexigten of Chifeng area).

Type locality. – China, Inner Mongolia, Ordos (Map 30), according to the syntypes label.

Diagnosis. – Body length in males : 15.3-17.9 mm, in female : 20,1-24 mm; width in males : 4.9-5.5 mm, in female : 7-9 mm. According to the original description, body length in males : 16-16.2 mm, in female : 16 mm; body width in males : 5.5-6 mm, in female : 6 mm.

Body elongated, totally red or red-brown, very rare totally black (Fig. 32-3); white antennal rings indistinct; elytra dull, roughly sculptured; each elytron with 4 white hair stripes : marginal, humeral, external dorsal and sutural; glabrous elytral areas often with numerous hair spots.

Distribution (Map 30). – China, Inner Mongolia, Ordos region; one specimen is wrongly labelled as being collected in Gansu. The record for Chifeng area (Kexigten) by Wang Zhicheng (2003 : 302) needs confirmation.

Materials. – 2 males, syntypes, each with two labels : "Ordos, 1884, G. Potanin", "*Potanini*, Jak., Type"-(ZIN, MD); 2 males, 1 female, "Ordos, 1884, G. Potanin"-(ZIN); 2 males, 1 female with same label-(JV); 1 female (totally black), "Kan-ssu, 1884, G. Potanin" [wrong label]-(JV); 1 female, "25.VIII.1923, Licent"-(MNHP); 2 females, "16.VIII.1920, Brahm"-(MNHP); 1 female, "1920, Brahm-(MNHP).

Remarks. – The original description was based on a female ("de l'Altaï", and two males "trouvés en 1879 par Mr G. Potanine en Mongolie". Both known syntypes of the species are labelled as collected by G. Potanin in 1884 in Ordos. There is a mistake in the species data ("1899" instead of 1889) by S. Breuning (1962 : 41).

Map 30. Locality of ***E. potanini*** : China.

1. Ordos.

33. *Eodorcadion (Ornatodorcadion) egregium* (Reitter, 1897) (Figs. 33)

Neodorcadion egregium Reitter, 1897 : 180 ("Dsungarei: Barkul"); Jakovlev, 1901 : 149 ("Bar-kul", "Gutschen", "au SE de Muliche", "Dshimi-sarom", "chaîne Bajtyk-Bogdo"); Winkler, 1929 : 1200.

Neodorcadion egregium ab. *apiceconjunctum* Plavilstshikov, 1932b : 184 ("Barkul"), unavailable name.

Eodorcadion egregium, Plavilstshikov, 1958 : 463; Namhaidorzh, 1972 : 522; 1974 : 174 (= *albitarsale* Breuning, 1966); Chiang et al., 1985 : 100, Pl. 7-105; Hua, 2002 : 206; Wang, 2003 : 295 (Inner Mongolia : Dahuangshan [?] Park; Russia), part.

Eodorcadion (O.) egregium, Gressitt, 1951 : 339, 342; Breuning, 1958 : 3; 1962 : 48.

Eodorcadion (O.) albitarsale Breuning, 1966 : 257-258 ("Mongolei : Ueno-gol [= Uench-Gol], Ueno-Somon, Aimak Chovd, 46°03'N, 92°Ost" and "Ul-jastajn-gol (Uliasutajn-Gol], 25 km nördl. Bulgan, Aimak Chovd, 46°15'N, 91°35 Ost").

Eodorcadion albitarsale, Heyrovsky, 1967 : 103 ("Chovd Aimak : Somon Mengad, Altan Chochai); 1968 : 238; Namhaidorzh, 1972 : 529.

Eodorcadion kabaki Kadyrbekov, 2004 : 93 ("Western China, Eastern Tien-Shan, southern slope of Bogdo-Ula, range, Juldus-Terekbol river", wrong spelling ! In fact : Iulgun-Terek-Gol), **syn. n.**

Type locality. – China, Dzhungaria : environs of Barkul lake (according to the original description).

Diagnosis. – Body length in males : 12.5-24 mm, in females : 14.4-25 mm; body width in males : 4.9-8.2 mm, in females : 5.8-9.6 mm.

Body black, relatively wide; antennae usually with distinct white hair rings; elytra flat, shining, usually with distinct carinae and wide white stripes in between; sutural stripe absent; each elytron with 4 stripes: marginal, humeral, external dorsal and internal dorsal; glabrous forms of males and females (glabrous females are not available in my materials, but one figured by R. Kadyrbekov, 2004) are known both in Mongolian and in China populations (ab. *kabaki*, Fig. 33–4-5) : elytra are smooth and stripes are nearly or totally indistinct; transitional forms with hardly developed stripes and carinae are also known.

The species differs from *E. brandti* with similar elytral design by smaller and wider body, elytra between stripes much smoother.

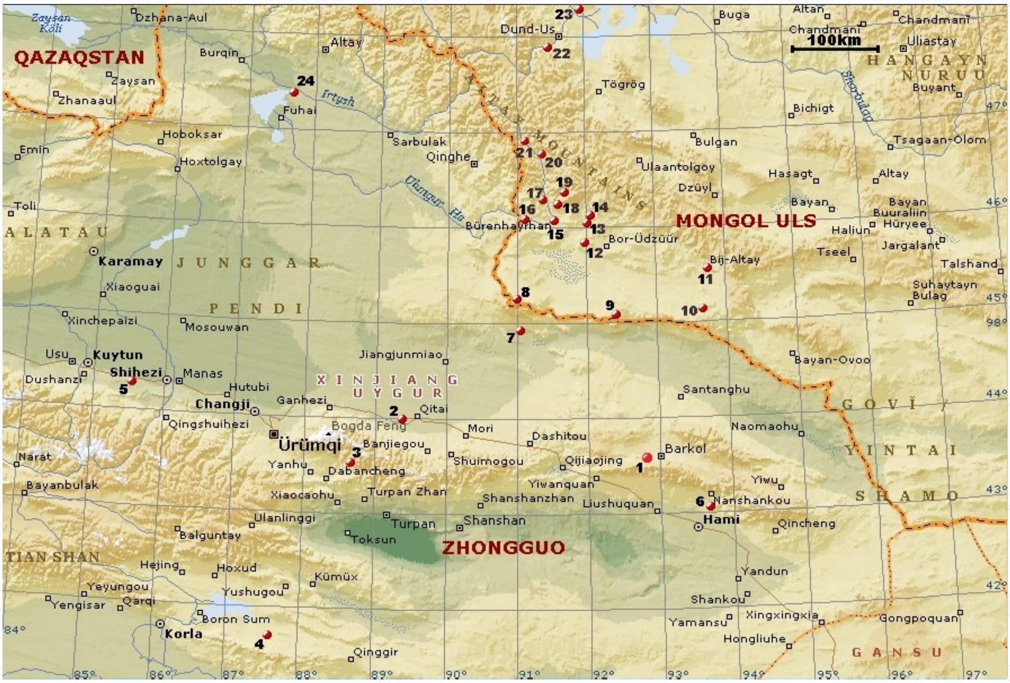
Distribution (Map 31). – North-West China, east Xinjiang from about 85°E and northwards to about 48°N – known from Ertex He (= Chernyi Irtysh) river valley from near Ulungur lake; South-East Mongolia – Kobd, Baian-Ulegei and Gobi-Altaj aimaks. The species absent in Russia; the record for Russia by Wang Zhicheng (2003 : 295) is wrong.

Known localities are : China, Xinjiang : Sha-wan environs, Niujuanzi-(MD); "Guchen (= Gucheng)" or "Gutschen" (eastwards Mt. Bogdo)-(Jakovlev, 1901; Plavilstshikov, 1958; ZIN, NMV, MD); south slope of Bogdo-Ula ridge, Iulgun-Terek-Gol [according to I. Kabak (personal message, 2006) it is about between Dzhimsar and Dabancheng]-(MD, type locality of *E. kabaki* Kad.-"Juldus-Terekbol" from the original description is just a wrong spelling); "mountains around Lukchan (= Turpan) Depression"-(Plavilstshikov, 1958); Baityk-Bogdo ridge (= Baityk-Shan on the Mongolian border)-(ZIN, Plavilstshikov, 1958); "Kuruk-Tag ridge" (south-eastwards Bagratch-Kul lake)-(Plavilstshikov, 1958); "Karlyk-Tag ridge (Hami)"-(HNHM, MD, Plavilstshikov, 1958); Barkul lake-(HNHM, NMP); "Muli-he" (near Guchen)-(ZIN, NMV, JV, Jakovlev, 1901); Ertex He river (= Chernyj Irtysh) near Ulungur lake-(ZIN); Mongolia, Kobd aimak : "Uenc-gol [= Uench-Gol], Ueno-Somon, 46°03'N, 92°Ost"-(type locality of *E. albitarsale*, JV); "Ul-jastajn-gol [Uliasutajn-Gol], 25 km nördl. Bulgan, 46°15'N, 91°35 Ost"-(Breuning, 1966); middle of Uliasutajn-Gol (northwards Bulgan)-(MD); Buiant-Gol river-(Namhaidorzh, 1972); Uench-Gol river-(Namhaidorzh, 1972); Iarantai, Bulgan-Gol river - (Namhaidorzh, 1972); northeast part of Ikh-Havtgijn-Nuru ridge-(Namhaidorzh, 1972); Narin-Bulak, Ikh-Havtgijn-Nuru ridge (same locality)-(ZIN); "Somon Mengad, Altan Chochai"-(HNHM and Heyrovsky, 1967, as *E. albitarsale*); 10 km N Uench-(ZIN, JV); 3 km N from Uench, Uench-Gol valley (HNHM, NMP and Heyrovsky, 1968, as *E. albitarsale*); Mongolian Altaj Mts, Uljasutaj-Gol valley, 45 km NNE from Bulgan-(HNHM and Heyrovsky, 1968, as *E. albitarsale*); Bulgan-(NMP); Bulgan-Gol, 25 km NW Bulgan-(ZIN); 45 km SW Bulgan, Uvkhod-Ula Mt.-(MD); Bailal-Bogd-Nuru (= Bajtag-Bogdo-Nuru ridge ?)-(MD); Bala-Havtgijn-Nuru (= Ikh-Havtgijn-Nuru ridge ?)-(MD); Baian-Ulegei aimak: upper Bulgan-Gol-(MD); 15 km SW Munkh-Khairkhan-Ula Mt. [Turgen-Gol]-(ZIN); Gobi-Altaj aimak : Bidzhijn-Gol river-(Namhaidorzh, 1972); Khairkhan-Bulak (45°07'N, 93°39'E)-(ZIN).

Bionomy. – Imagoes are active from June to September. According to Hua Li-zhong (2002 : 206), the species is connected with *Euphorbia pekinensis*.

Materials. – China : 1 male from China with 3 labels : "Holotypus 1897 *Neodorcadion egregium* Reitter", "m. Barkul", "Mongolie"-(HNHM); 1 male, Ulungur lake ["Chernyj Irtysh, 23-27.VIII.1976, Potanin" "98813"] [in Russian]-(ZIN, according to Potanin's handwritten note-book preserved in Zoological Museum in Sankt-Petersburg, the number "98813" corresponds to Ulungur lake); 14 males, 6 females, China, ["Gucheng, 11.IX.1889, Gr. Grzhimailo"] [in Russian]-(ZIN); 2 males, China, "Gu-tschen, Dsungaria, IX.1889, Grum-Grz."-(NMV); 1 female, China, "Gutschen, Sinkiang"-(MD); 44 males, 3 females, China, ["Muli-He (near Guchen), 11-16.IX.1889 Gr. Grzhimailo"] [in Russian]-(ZIN); 3 males, 2 females with same label (14.IX.1889 and 15.IX.1889)-(NMV); 1 female (glabrous form, identified as *E. ornatum exaratum*) with same label (16.IX.1889)-(JV); 6 males, ["river to SE from Muli-He, 17.IX.1889, Gr. Grzhimailo"] [in Russian]-(ZIN); 2 males, 1 female, ["Ulant-Su (?), 18.IX.-1.X.1889, Gr. Grzhimailo"] [in Russian]-(ZIN); 1 male, 1 female, China, "Mongolia, Kurutsh-Dagh (= Kuruk-Tag)"-(HNHM); 4 males, China, "Dsungarei, Karlyk-Tag, V.-VI.1908"-(HNHM); 5 males, 3 females with same label-(NMV); 1 male, with same label-(MD); 3 males, 1 female, China, ["Hami, VI.1910, Riukbejl"] [in Russian]-(ZIN); 1 male, China, "Barkul"-(NMP); 1 male, China (?), "Mongolei"-(NMP); 2 males, 1 female, China, "Mongolia, Gr. Gr. 1891"-(NMV); 3 females, Baityk-Bogdo Mts., Jamantau ridge, Bold-Gol river, 4.VIII.1898, Clementz *leg*.-(ZIN); 1 male (glabrous form), China, "East Tian-Shan, S Bogdo-Ula Mts., Iulgun-Terek-Gol, 2400 m, 13.VII.1999, I. Belousov *leg*.-(MD); 2 males (glabrous form), "China, Xinjiang, Shawan environs, Niujuanzi, VI.2001, coll. Li Jingke"-(MD and coll. of Eric Jiroux). Mongolia : 1 male, 1 female, paratypes of *E. albitarsale* Br., "Uenc-Gol, Ueno-Somon, Aimak Chovd, 46°03'/92°00', 2.VII.1964, Mongol. Deutsch. Biol. Exp."-(JV); 1 male, Kobd aimak, Bulgan-Gol, 25 km NW Bulgan, 2.VII.1960, G. Medvedev *leg*.-(ZIN); 1 female, "Mongolia, Chovd aimak, Somon Mengad, Altan Chochai, 28.VI.1963, *leg*. Congsonzav"-(HNHM); 1 male (identified as *E. albitarsale* by L. Heyrovsky), Mongolia, "Uenc, 10.VII", "Mongol. Deutsch. Biol. Exp. 1964"-(NMP); 1 female, (identified as *E. albitarsale* by L. Heyrovsky), Mongolia, "Bulgan, 2.VII", "Mongol. Deutsch. Exp. 1964"-(NMP); 4 males, "Mongolia : Chovd aimak, Mongol Altaj Gebirge, Uljasutaj Gol, 45 km NNO von Somon Bulgan, 1400 m, 6.VII.1966, exp. Dr. Z. Kaszab"-(HNHM); 8 males, 2 females, "Mongolia : Chovd Aimak, 3 km N von Somon Uenã, im Tal Uenã gol, 1450 m, 3.VII.1966, exp. Dr. Z. Kaszab"-(HNHM); 1 male, 1 female with same label-(MD); 2 males, 1 female with same label-(NMP); 1 male (glabrous form), Mongolia, Kobd aimak, Tzagan-Nur lake, near Dzereg, 23-24.VIII.1968, Emeljanov *leg*.-(JV); 14 males, Kobd aimak, Ikh-Havtgijn-Nuru ridge, Narin-Bulak, 9.VIII.1968 and 24.VII.1970, *leg*.: Arnoldi, Emeljanov, Kerzhner, Kozlov, Namhaidorzh-(ZIN); 1 male (glabrous form), Mongolia, Central-Gobi aimak, 20 km W Lus, Emeljanov *leg*. (wrong label ?)-(JV); 1 male, ["Kobd aimak, 10 km N Uench, 28.VII.1970, Narchuk *leg*."] [in Russian]-(ZIN); 1 male, 1 female with similar label, but Namhaidorzh *leg*.-(JV); 1 male, "Mongolia, Chovd aimak, Bailal-Bogd-Nuru, 1850 m, 25.VII.1975, L. Medvedev *leg*.-(MD); 1 male, 1 female, "Mongolia, Chovd aimak, Bala-Havtgijn-Nuru, 24.VII.1975, L. Medvedev *leg*.-(MD); 1 male, "Mongolia, Chovd aimak, 50 km W Tzargin, 1700 m, 22.VII.1975, L. Medvedev *leg*.-(MD); 1 female, Mongolia, Baian-Ulegei aimak, 15 km SW Munkh-Khairkhan-Ula Mt. [Turgen-Gol], 3.VII.1980, G. Medvedev *leg*.-(ZIN); 7 males, Gobi-Altaj aimak, Khairkhan-Bulak [45°07'N, 93°39'E], 14.VII.1984, Terbit *leg*.-(ZIN); 1 female, Mongolia, Kobd aimak, middle of Uliasutaj-Gol, 2500-3000 m, 25-26.VII.2004, R. Yakovlev, D. Ryzhkov *leg*.-(MD); 5 males, 4 females, Mongolia, Kobd aimak, 45 km SW Bulgan, Uvkhod-Ula Mt., 1200 m, 18-19.VI.2004, R. Yakovlev, D. Ryzhkov *leg*.-(MD); 2 males, Mongolia, Kobd aimak, Dod-Narujn-Gol (right tributary of Bulgan-Gol), 26.VI.2005, R. Jakovlev *leg*.-(MD); 2 males, Mongolia, Khovd aimak, middle level of Bulgan-

Gol, 26.VI.2005, R. Jakovlev *leg.*-(MD); 1 male, Mongolia, Baian-Ulegei aimak, upper Bulgan-Gol, 30.VI.2005, R. Jakovlev *leg.*-(MD); 1 male (glabrous form), with label : "China, Sichuan, Wanxian city, Mt. Hu-T-Shan, 1-6.VII.2004" [wrong label !]-(coll. of P. Rapuzzi); 5 males (glabrous form) with labels : "China, Shaanxi province, Mt. Qining, VII.2003 and 4.VII.2003" [wrong label !]-(coll. of P. Rapuzzi).



Map 31. Localities of ***E. egregium*** : China and Mongolia.

China (1-7) : 1. Barkul lake – type locality; 2. Guchen; 3. S slope of Bogdo ridge, Iulgun-Terek-Gol; 4. Kuruk–Tag; 5. Shawan; 6. Karlyk–Tag, near Hami; 7. Baityk–Bogdo; Mongolia (8-23) : 8. Bajtag-Bogdo-Nuru Ridge; 9. North-east part of Ich-Havtgijn-Nuru Ridge; 10. Bidzhijn-Gol river; 11. Khairkhan bulak (45°07'N, 93°39'E); 12. 45 km SW Bulgan, Uvkhod-Ula Mt.; 13. 10 km N Uench; 14. Uench-Gol – (type locality of *E. albitarsale*); 15. Bulgan; 16. Iarantai, Bulgan-Gol River; 17. Uljasutajn-Gol valley, 45 km NNE from Bulgan; 18. Uliasutain-Gol, 25 km N Bulgan, 46°15'N, 91°35'E; 19. Bulgan-gol, 25 km NW Bulgan; 20. Upper Bulgan-gol; 21. 15 km SW Munkh-Khairkhan-Ula (Turgen-Gol); 22. Buiant-Gol river; 23. Mengad.

Remarks. – *E. kabaki* Kadyrbekov, 2004 was described from "Western China, Eastern Tien-Shan, Southern Slope of Bogdo-Ula, range, Juldus-Terekbol river" (so, from the area of *E. egregium*) on the base of glabrous specimens (and specimens with hardly developed hair stripes) of *E. egregium*, which are known now in several populations of *E. egregium*, so *E. egregium* (Reitter, 1897) = *E. kabaki* Kadyrbekov, 2004, **syn. n.**

A specimen (JV) from "Central-Gobi aimak" is undoubtedly wrongly labelled, as the area of the species is situated far westwards.

I identify a series of rather similar glabrous males from "Sichuan" and "Shaanxi" (coll. of P. Rapuzzi, who received them from Mr. Li Jingke) as wrongly labeled *E. egregium* from NE China, though all specimens of this series are not very similar to my glabrous *E. egregium*, neither to specimens of "*E. kabaki*" figured by R. Kadyrbekov (2004). The difference is in the shape of body, details of pronotal punctation, in certain specimens elytra are rather flat.

E. egregium absent in north-east China. Its wrong record for north-east China (Wang, 2003) was based on a wrong determination of a male from "Inner Mongolia : Dahuangshan Park [?]", which look similar to *E. ornatum*. Other three photos (designated as 2 males and 1 female, but in fact all three are males) belong to real *E. egregium* and were copied from "Atlas of the Cerambycidae photographs of the tribe Dorcadionini" (Danilevsky, 2006). All three specimens are preserved in my collection: first male was collected in China ("Dsungarei, Karlyk-Tag, V.-VI.1908"); second male (m. *kabaki*) is also from China ("East Tian-Shan, S Bogdo-Ula Mts., Iulgun-Terek-Gol, 2400 m, 13.VII.1999, I. Belousov *leg*."); third male is from Mongolia ("Mongolia : Chovd Aimak, 3 km N von Somon Uench, im Tal Uench gol, 1450 m, 3.VII.66, exp. Dr. Z. Kaszab").

34. *Eodorcadion (Ornatodorcadion) brandti* (Gebler, 1841) (Fig. 34)

Dorcadion brandti Gebler, 1841 : 610 (Nor-Saisan); Thomson, 1867 : 43 ("Siberia"); Kraatz, 1869 : 335.

Neodorcadion dux Jakovlev, 1894 : 120 ("Altai : ad lac. Marka-kul."); Reitter, 1897 : 180 ("Altai"), part.; Pic, 1901 : 67 ("Altai, Mong."), part.; Plavilstshikov, 1932c : 193, part.; Winkler, 1929 : 1200, part.

Neodorcadion brandti, Ganglbauer, 1884 : 513; 1889 : 483; Reitter, 1897 : 181 ("Songorei : Nor-Saissan"); Jakovlev, 1901 : 149 (= *dux* Jak.; "Dshungarie russe; Nor Zaisan; Altaj; lac Marka-kul"); Pic, 1901 : 68 ("Songarie"),part.; Winkler, 1929 : 1200, part.; Plavilstshikov, 1931 : 74 ("Stsheglovsk" [Kemerovo]); 1932c : 193, part.

Neodorcadion brandti var. *nigrolineatum* Reitter, 1897 : 182 ("Altai"); Pic, 1901 : 68 ("Altai").

Eodorcadion brandti, Plavilstshikov, 1958 : 465; Namhaidorzh, 1972 : 523; Kostin, 1975 : 221; Lobanov et al., 1982 : 265; Tsherepanov, 1983 : 70; Hua, 2002 : 206 ("China : Shaanxi, Xinjiang"); Chiang, 1985 : 100-101, Pl. 7-106.

Eodorcadion (O.) brandti, Gressitt, 1951 : 342, 339; Breuning, 1958 : 3; 1962 : 47; Danilevsky et al., 2005 : 132-133.

Type locality. – Kazakhstan, north environs of Zaisan lake (according to the original description).

Diagnosis. – Body length in available males : 18.9-24.6 mm, in females : 20.9-29 mm; body width in males : 7-9 mm, in females : 8-11 mm. According to N. N. Plavilstshikov (1958 : 467), body length in males can be up to 26 mm.

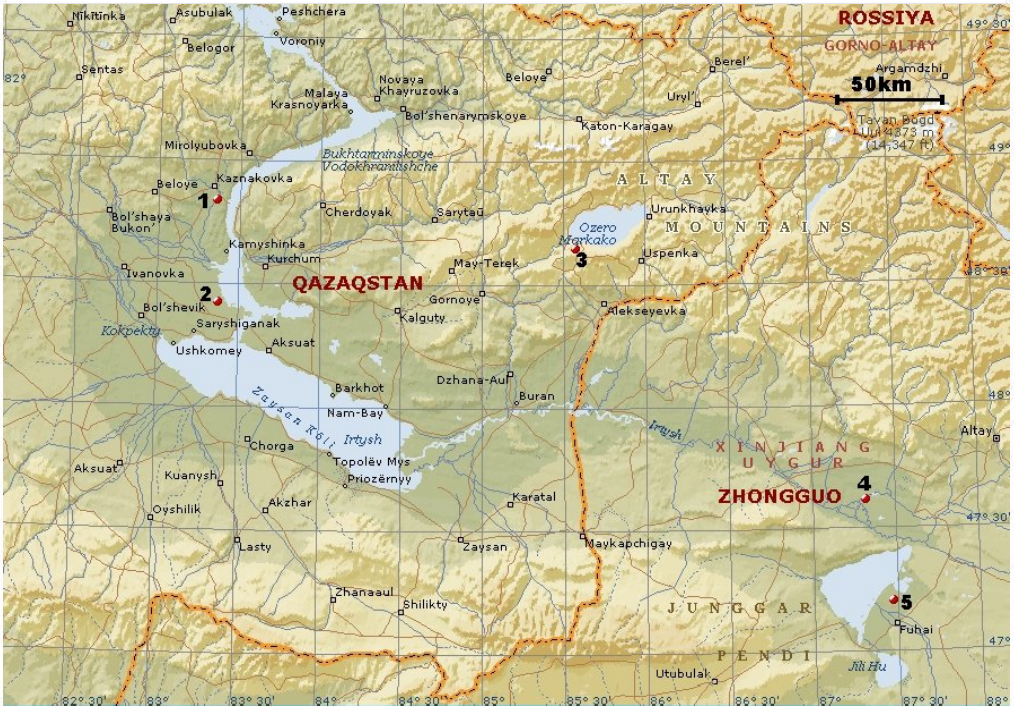
Body big, black; antennae with very bright white rings; elytra convex with relatively rough sculpture (especially along shoulders), though shining; sutural stripe absent; each elytron with 4 wide white stripes : marginal, humeral, external dorsal and internal dorsal; glabrous forms or forms with reduced elytral stripes absent.

The species differs from *E. egregium* with similar elytral design by bigger and narrower body, elytra between stripes with relatively rougher sculpture.

Distribution (Map 32). – East Kazakhstan, Zaisan lake depression; the record from near Marka-Kol lake (type locality of *Neodorcadion dux*) is rather doubtful and needs confirmation (no new specimens available). China, North Xinjiang, valley of Ertix-He.

Known localities are: Kazakhstan : north bank of Zaisan lake-(type locality); about 50 km N Zaisan lake, sands on the left bank of Irtysh river southwards Kaznakovka, valley of Kuldzhun river-(MD, SK); Marka-kol lake-(ZIN, type locality of Neodorcadion dux), the locality is very doubtful, as no new specimens are known from here; China : Kran river (right tributary of Ertix-He northwards Ulungur lake-(JV); Ulungur lake, according to V. L. Komarov, 1922 : 210, south bank (most probably sands along SE bank)-(SK). All other records are rather doubtful. According to N. N. Plavilstshikov (1958), it is distributed in Kazakhstan around Zaisan lake : north slopes of Saur ridge and Monrak ridge, valley of Chernyj Irtysh, Naryn and Kalba (Kalbinskij) ridge, Marka-Kol lake; as well as in Russia (Gorno-Altaj region, south slope of Chuj ridge and Kuznetzky Alatau, Shcheglovsk [now Kemerovo]). According to I. A. Kostin (1975), the species occurs from Marka-Kol lake to Saur ridge. The record of the species for "Shaanxi" (Hua, 2002 : 206) is unbelievable. It is definitely absent in Mongolia – numerous published records were based on wrong identifications (usually of striated females of *E. maurum maurum*) or wrong labels.

Bionomy. – According to my observations imagoes are very numerous in sandy dunes along left bank Irtysh river in the beginning of August, often rising rather high on the stems of *Lasiagrostis*.



Map 32. Localities of ***E. brandti*** : East Kazakhstan and North-West China.

Kazakhstan (1-3) : 1. about 50 km N Zaisan Lake, sands on the left bank of Irtysh river southwards Kaznakovka, valley of Kuldzhun river; 2. North bank of Zaisan lake; 3. Marka-kol lake – type locality of *Neodorcadion dux* (locality needs confirmation); China (4-5) : 4. Kran river (right tributary of *Ertix* He) northwards Ulungur lake; 5. Ulungur lake.

Materials. – Kazakhstan : 1 male, with four labels : (1)"*Dorcadion brandtii*", (2) "TYPE" [red], (3)"ex Museo Mniszech", (4)"Museum Paris, coll. J. Thomson 1952" – (MNHP); 1 male, holotype of *Neodorcadion dux* Jak. with four labels : (1)"*dux* m.", (2)" Type", (3)["Marka-kul", (4)"coll. of B. Jakovlev"] [in Russian]-(ZIN); 1 female, "Staud., Altaj"-(NMP); 1 female, "Altai, Staudinger Bang-H."-(NMV); 2 males, "Semipalatinsk, Saisan-Steppe"-(NMV); 2 females, "Semipalatinsk, 17.VIII.1908, Batii"-(ZIN); 69 males, 34 females, Kazakhstan, about 50 km N Zaisan lake, sands on the left bank of Irtysh river southwards Kaznakovka, 450 m, 1.VIII.1994, M. L. Danilevsky and G. B. Danilevskaja *leg*.-(MD); 1 male, Kazakhstan, near Bukhtarma water reserve (same locality ?), 4.VIII.1978-(MD); 2 males, Kazakhstan, 30 km S Samarka (about same locality), 4.VIII.1978, Narchuk *leg*.-(MD); 6 males, 4 females, same locality, August, 1980, G. Nikolaev *leg*.-(MD); 3 males, "Kazakhstan, Kuldzhun river, 10.IX.1980, Badenko *leg*." (same locality)-(SK). China : 1 male, China, ["NE Dzhungaria, Kran river (right tributary of Ertix-He northwards Ulungur lake), 1876, Potanin leg."] [in Russian] – (JV); 1 female, ["NW Mongolia, Ulungur, IV.1876, Potanin *leg*." -in fact it was the beginning of August, see Komarov, 1922 : 210] [in Russian]-(JV); 1 male, 1 female, "Mongolia, Kobdo" (wrong label !)-(JV).

Remarks. – The record of *E. brandti* for Kobd aimak of Mongolia by Heyrovsky (1968) was concerned with striated females of *E. m. maurum*. The corresponding specimens of *E. m. maurum*, identified by L. Heyrovsky as *E. brandti* m. *nigrolineatum* Rtt. (one female) and *E. brandti* m. *apicale* Heyr., *nomen nudum* (1 female) were studied by me in Hungarian Natural History Museum (Budapest). Old labels of several real *E. brandti* : "Mongolia, Kobdo" are wrong.

35. *Eodorcadion (Ornatodorcadion) oreadis* (Reitter, 1897) (Fig. 35)

Neodorcadion oreadis Reitter, 1897 : 179 ("Mongolei, Barkul"); Jakovlev, 1901 : 151, 154; Pic, 1901 : 67 ("Mong."); Winkler, 1929 : 1199.

Eodorcadion oreadis, Plavilstshikov, 1958 : 467; Hua, 2002 : 206.

Eodorcadion (O.) oreadis, Gressitt, 1951 : 344; Breuning, 1958 : 3; 1962 : 49.

Type locality. – China, Dzhungaria : environs of Barkul lake (according to the original description).

Diagnosis. – Body length in males : 13-17 mm, in females : 16-21 mm. body width in males : 5-6.5 mm; in females : 6.9-8 mm.

Body black; white antennal rings indistinct; elytra dull, sometimes with rough sculpture near bases; only one narrow elytral sutural white stripe present; ventral body side in males also nearly glabrous, in females with scattered pale pubescence.

Distribution (Map 33). – China, Dzhungaria. Known localities are : Barkul lake (type locality); Karlyk-Tag ridge-(NMP, MD); Hami-(Plavilstshikov, 1958). The record for Muzart (Breuning, 1962) is unbelievable.

Materials. – 1 female with two labels : "Holotypus, 1897, *Neodorcadion oreadis* Reitter", "Barkul Umg."-(HNHM); two females, each with two labels : "Paratypus, 1897, *Neodorcadion oreadis* Reitter", "Barkul Umg."-(HNHM); 91 males, 22 females, "Burkul, VI.1910, Riukbejl"-(ZIN); 1 male, China, "Dsungarei, Karlyk-Tag"-(NMP); 1 male, China, "Staudin., Mongolia"-(NMP); 1 male, China, "Mongolia, Barkul"-(MD); 12 males, 3 females (several specimens pale-brown), "Dsungarei, Karlyk-Tag, V-VI.1908"-(NMV); 1 male, 1 female, China, Xinjiang, Karlyk Mts., 10 km E Koumenzi, 2100 m, 4-5.VII.1997-(MD).

Map 33. Localities of ***E. oreadis*** : North-West China.

1. Barkul Lake - type locality; 2. Karlyk-Tag Ridge near Hami.

3. Subgenus *Humerodorcadion* Danilevsky, Kasatkin, Rubenian, 2004 (Figs. 36-37)

Eodorcadion (Humerodorcadion) Danilevsky et al., 2005 : 133.

Type species. – *Dorcadion humerale* Gebler, 1823 (original designation)

Diagnosis. – Body length in males : 9.8-19.6 mm, in females : 12.8-23 mm; body width in males : 4-7 mm, in females : 5.2-8.5 mm.

The subgenus is well definite by endophallic structures (Danilevsky et al., 2005) : endophallus relatively short and thick, central bend indistinct, central trunk absent – apical bulb connected directly with medial tube, apical phallomer without appendages and never elongated (Plan. 5).

Endophallus short and thick, shorter than elytra. Basal tube short about 1.5 times longer than distal width, widened distally, glabrous, transversely rugose. Ventral plates (vp) rather big, long and wide, trapezoidal. Medial tube (mt) very short and wide, about only two times longer than wide, widened distally (*E. lutshniki*) or about cylindrical (*E. humerale*). Central trunk absent. Preapical bulb (pb) is connected directly to medial tube. Medial tube is constricted before fusion with cone-shaped preapical bulb. Short glabrous narrow curved area of constriction between preapical bulb and medial tube is homologous to central trunk. Preapical bulb is always strongly widened and covered with microspines, which are concentrated on dorsal and ventral sides; dorsal spined area looks like a sclerite. Apical bubble (bb) semi-spherical or cone-shaped; joined to preapical bulb without constriction and without internal membrane

in between, with three small protuberances central (longer) and two lateral. Paired gonopores are situated near middle of the dorsal side of apical bubble. Antennae in males hardly or considerably longer than body; cicatrix indistinct; elytra smooth, without hair stripes, or striated with several stripes (in both species); in striated forms sutural stripe absent; very rare (in certain forms of *E. humerale trabeatum*) elytra with rough sculpture; humeral carinae always well developed, sharp.

Distribution. – Russia : from Tuva Republic along South Siberia to Pacific Ocean. Mongolia : north part of the Republic. China : Manchzhuria and southwards to about Beijing. *E. (P.) humerale* was recorded for the North part of Korean Peninsula (Plavilstshikov, 1958), but without exact data.

Remarks. – The subgenus includes only two species, wich are in vicariant relations. Both species of the subgenus are nearly always sympatric with other *Eodorcadion* species (with the exception of far east regions): usually with *E.* (s.str.) *carinatum* in Tuva, Mongolia and Transbaikalia and also with *E.* (s.str.) *maurum quinquevittatum* in Tuva and north-west Mongolia.

36. *Eodorcadion (Humerodorcadion) humerale* (Gebler, 1823) (Fig. 36)

Dorcadion humerale Gebler, 1823 : 130 ("... in pratis fabricae Petrovsk prope Werchnei-Udinsk [Ulan-Ude]."); Fischer von Waldheim, 1823 : 241; Thomson, 1867 : 45 ("Mongolia, Dauria, embouchure du fleuve Amour"), part.; Solsky, 1870 : 387; Kraatz, 1873 : 36; Blessig, 1873 : 202.

Neodorcadion humerale, Ganglbauer, 1884 : 512; 1889 : 483; Reitter, 1897 : 177 ("Daurien"), part.; Jakovlev, 1901 : 148-152; Pic, 1901 : 67 ("Daurie"), part; Winkler, 1929 : 1199, part.; Plavilstshikov, 1932c : 193, part.

Neodorcadion quadrilineatum Breit, 1915 : 355 ("bei Kalgan in der Mongolei"); Winkler, 1929 : 1199, part.

Eodorcadion (s. str.) *quadrilineatum*, Gressitt, 1951 : 335, 341, part. ("Kalgan, Leangpaofu"); Breuning, 1958 : 5, part. ("Mongolie").

Eodorcadion humerale, Plavilstshikov, 1958 : 432; Namhaidorzh, 1973 : 518; 1976 : 210; Tsherepanov, Tsherepanova, 1978 : 107 (larval morphology); Tsherepanov, 1983 : 41; 1996 : 112; Lobanov et al., 1982 : 264; Hua, 2002 : 206 (= *trabeatum* Jak. = *quadrilineatum* Breit; Beijing, Shandong; former USSR, Korea, Mongolia), part.; Wang, 2003 : 296 (Jilin : Baicheng; Heilongjiang: Mohe, Luoguhe; Inner Mongolia : North-East; Shandong; Korea, Mongolia, Russia), part.

Eodorcadion (s. str.) *humerale*, Gressitt, 1951 : 336-337, 341, part.; Breuning, 1958, 4, part.; 1962 : 17.

Eodorcadion (s. str.) *impluviatum*, Gressitt, 1951 : 337, 341 : part.; Breuning, 1958, 4, part.

Eodorcadion impluviatum, Wang, 2003 : 297, part.

Eodorcadion quadrilineatum, Wang, 2003 : 303 (Inner Mongolia : Chifeng area, Khingan area, Baotou area, Alxa area), part.

Eodorcadion xingana Chiang et Wang in Wang, 2003 : 304, 396 ("Jilin, Baicheng"), **syn. n.**

Eodorcadion (H.) humerale, Danilevsky et al., 2005 : 132-133, 147.

Type locality. – Russia, Transbaikalia : Ulan-Ude environs (according to the original description).

Diagnosis. – Body length in males : 12.5-19.6 mm, in females : 14.5-23 mm; body width in males : 5-7 mm, in females : 6.3-8.5 mm. According to N. N. Plavilstshikov (1958 : 433), the length of females can be up to 25 mm.

Body totally black (very rare totally brown - ab. *brunneipenne*); antennae with or without pale hair rings; pronotum with or without a pair of large or narrow hair spots; elytra usually smooth (very rare roughly sculptured – ab. *coriarium* Plav.), glabrous, without any traces of longitudinal dorsal carinae (Figs. 36a–1-2); or with scattered white hair spots (Figs. 36b–3,5,7); or smooth with longitudinal hair stripes (Fig. 36c-11); or with longitudinal carinae covered by narrow hair stripes (Fig. 36c–8-10); in striated forms each elytron can be with three dorsal carinae and humeral carinae; all four carinae of each elytron and epipleurae with narrow hair stripes; all cases of reduction of elytral carinae are known; sometimes only external elytral carinae with corresponding hair stripes present (together with humeral carinae and stripes); all transitions between all forms are known; or just contrary hair stripe (in certain females) can be strongly widened, so elytra are totally covered with pale pubescence (Fig. 36c-14).

Distribution (Map 34). – Russia, south Siberia; from Transbaikalia to Pacific Ocean with Primorje region, reaching northwards to the latitude of Amur river mouth (Plavilstshikov, 1958). Absent in Tuva; the species was definitely recorded for Tuva Republic (without exact data) by N. N. Plavilstshikov (1958 : 436), A. I. Tsherepanov, N. E. Tsherepanova (1978 : 109), A. I. Tsherepanov (1983 : 43), though I have never seen any specimens of *E. humerale* from Tuva and such specimens absent in Tsherepanov's collection (Novosibirsk). The species also absent in Mongolian aimaks close to Tuva Republic. China : from Manchzhuria (North Inner Mongolia and Heilongjiang prov.) to Jilin prov. and Beijing environs southwards to Shandong (Qingdao) prov. The records of the species for Baotou and Alxa areas of Inner Mongolia (Wang, 2003: 303, as *Eodorcadion quadrilineatum*) are wrong. The records of the species for northern Korea by N. N. Plavilstshikov (1958 : 436), A. I. Tsherepanov (1996 : 112), Hua Li-zhong (2002), Wang Zhicheng (2003) need to be confirmed. The species was not mentioned for Korea by S. M. Lee (1982).

The species consists of 3 subspecies : *E. h. humerale* (Gebler, 1823), *E. h. impluviatum* (Faldermann, 1833), *E. h. trabeatum* (Jakovlev, 1901).

Bionomy. – The species is connected with steppe and forest-steppe landscapes up to 1400 m above the level of the see (*E. h. impluviatum* near Ulan-Bator in Mongolia – own observations). Sometimes it was observed by me in forest glades. Several known to me areas are very densely populated. Often rather big series are preserved in museums from many localities. Adults appear in June and can be found until August. They are most numerous in July. Adults are active in the late morning before 12.00, but maximum of adult activity is in the afternoon. In hot days beetles disappear at about noon. According to my own observation in Mongolia (near Ulan-Bator) the adults were rather numerous in the second half of July.

Remarks. – All three subspecies of *E. humerale* were accepted by B. Namhaidorzh (1973), but numerous locality data of studied series were not specified by him for two Mongolian subspecies neither in the first publication, nor in the next one (Namhaidorzh, 1976).

S. Breuning (1962) attributed the description of *Dorcadion humerale* to G. Fischer von Waldheim, as he wrongly regarded G. Fischer von Waldheim as the author of the paper in *Mém. Soc. Nat. Mosc.*, 1823, 6.

36a. *Eodorcadion (Humerodorcadion) humerale humerale* (Gebler, 1823) (Fig. 36a)

Dorcadion humerale Gebler, 1823: 130 ("... *in pratis fabricae Petrovsk prope* Werchnei-Udinsk [Ulan-Ude]").

Neodorcadion humerale, Reitter, 1897 : 177 ("Daurien"), part.; Pic, 1901 : 67 ("Daurie"); Winkler, 1929 : 1199, part.; Plavilstshikov, 1932b : 183; 932c : 193.

Neodorcadion humerale ab. *nigroantennatum* Plavilstshikov, 1932b : 184 ("Transbaikalia, statio Bjankino [near Nerchinsk]"), unavailable name.

Neodorcadion humerale ab. *anthracinum* Plavilstshikov, 1932b : 184 ("Transbaikalia, statio Bjankino"), unavailable name.

Neodorcadion humerale f. *coriarium* Plavilstshikov, 1932b : 184 ("Transbaikalia, statio Bjankino"), unavailable name.

Neodorcadion humerale m. *bilunatum* Breuning, 1947b : 171 ("Urga, Mongolie") unavailable name.

Neodorcadion humerale m. *brunneipenne* Breuning, 1947b : 171 ("Monastirsk [near Nerchinsk], Douarie"), unavailable name.

Eodorcadion (s. str.) *humerale*, Gressitt, 1951 : 336-337, 341, part. Breuning, 1958, 4, part.; 1962 : 17.

Eodorcadion humerale, Plavilstshikov, 1958 : 432, part.; Heyrovsky, 1973a : 122; Namhaidorzh, 1976 : 210, part.; Tsherepanov, Tsherepanova, 1978 : 107 (Nerchinsk env., larval morphology); Tsherepanov, 1983 : 41, part.; 1996 : 112, part.; Lobanov et al., 1982 : 264, part.

Eodorcadion humerale m. *humerale*, Plavilstshikov, 1958 : 434.

Eodorcadion humerale humerale, Namhaidorzh, 1973 : 518.

Eodorcadion humerale, Heyrovsky, 1973a : 122.

Eodorcadion humerale m. *melan*, Heyrovsky, 1967 : 102.

Eodorcadion humerale ab. *anthracinum*, Heyrovsky, 1970 : 116.

Eodorcadion humerale f. *typica*, Tsherepanov, 1983 : 42.

Eodorcadion (H.) humerale humerale, Danilevsky et al., 2005 : 132-133.

Type locality. – Russia, Transbaikalia : Ulan-Ude environs (according to the original description).

Diagnosis – Body length in males : 13-17.1 mm, in females : 18-20.8 mm; body width in males : 5-6 mm, in females : 6.8-8.2 mm.

Antennae with or without hair rings; pronotum usually with several small scattered hair spots, or with a pair of longitudinal hair stripes (m. *bilunatum*), or totally glabrous (especially in East aimak of Mongolia); elytra rather convex, smooth, glabrous, shining, without white spots or longitudinal dorsal carinae; sometimes in females from Transbaikalia external dorsal carinae present together with corresponding hair stripes, as well as humeral white stripes; in certain populations can occur specimens with white elytral spots, as rare variation.

Distribution (Map 34; localities 1-39). – Russia, Transbaikalia : Buriatia and Chita region. Absent in Tuva; the taxon was definitely recorded for Tuva Republic (without exact data) by N. N. Plavilstshikov (1958 : 436), A. I. Tsherepanov, N.E. Tsherepanova (1978 : 109), A. I. Tsherepanov (1983 : 43), though I have never seen any specimens of *E. humerale* from

Tuva and such specimens absent in Tsherepanov's collection (Novosibirsk), neither in Plavilstshikov's collection (Moscow). The species also absent in Mongolian aimaks close to Tuva Republic. Mongolia : east part of the species area. China : north of Inner Mongolia and north of Manchzhuria (Heilonjiang prov).

Known localities are : Russia, Buriatia : Ulan-Ude environs (type locality); Kiahta-(DEI); Novoselenginsk, in about 100 km SW Ulan-Ude-(ZIN, JV); "Irkhirik river (?), Verkhneudinsk prov."-(ZIN); left bank of Vitim river, Nakholondy env. [53°17'N, 112°02'E]; Chita region : Chita env.-(ZIN); Ivan lake, about 50 km NW Chita-(ZIN); Makkaveevo (about 30 km SE Chita)-(SK); Aksha-(ZIN); Vershino-Darasunskij, Bogatuj Mt.-(MD); mouth of Aga river-(ZIN, JV); Aginskoe-(ZIN); Aginskoe district, Kunkur-(MD); Nerchinsk-(DEI, SK, NMP); Nerchinsk distr., Arbagar-(ZIN); Koltomokon, about 100 km N Nerchinsk-(ZIN); Bjankino near Nerchinsk-(ZIN, Plavilstshikov, 1932); Chiron in Onon river valley (about 60 km SW Nerchinsk)-(ZIN, JV); Gornyj -Zarentuj, Argun river,(ZIN); Khojta-Kurba river (?)-(ZIN); Shilka river, Mitrofanovo-(ZIN); Tzagan-Oluj, about 300 km SE Chita near Borzja-(ZIN); Barun-Torej lake, mouth of Ulza-(ZIN); Urulga (= Urulcha), mouth of Ingoda river. Mongolia, Central aimak : Mungen-Mort (= Bulak), Dzum-Burkhijn-Gol river (HNHM, SK, Heyrovsky, 1973, as *E. humerale*); Tereldzhin river, 80 km NE Ulan-Bator-(SK); Kerulen river near mouth of Tenun-Gol river-(ZIN); Khulikhe river, confluent of Kerulen, about same locality-(ZIN); Hentei aimak : Onon-river-(ZIN); Tzenkher-Mandal, 47°42'N, 109°04'E-(MD); 20 km W from Bashiret, 48°35'N, 110°04'E-(MD); Umne-Delger-(SK); 8 km NW Umne-Delger-(ZIN); Suhe-Bator aimak: Chadatin-Bulan, 60 km N from Baian-Terem-(HNHM, Heyrovsky, 1967, as *E. humerale* m. *melan*); 120 km NNW from Barun-Urt-(HNHM); East aimak : Khorin-Tzagan-Nur, 18 km NE Dash-Balbara-(ZIN); Bujr-Nur lake- (ZIN); "Chamardavaa am Chalchin gol [Khamar-Daba, Khalkhin–Gol river]"-(HNHM, Heyrovsky, 1967, as *E. humerale* m. *melan*); Khalkhin-Gol, 70 km E Baian-Nur lake (about same locality)-(ZIN); Baian-Kher Mt. (the most eastern point of the republic)-(MD); Numregijn-Gol river, 32 km SE Mt. Salkhit-(ZIN); Dege-Gol, 10 km SE Salkhit Mt.-(ZIN); Mt. Derkhin-Tzagan-Obo, 60 km ENE Baian-Burd-(ZIN, JV); Ulza (= Uldza) river-(ZIN); East-Gobi aimak : "Coir" (= Choir)-(Heyrovsky, 1973b, as *E. humerale* ab. *anthracinum*). China : "Imakhe-Khabu" [near Hailar, according to the description of Potanin's expedition (Komarov, 1928)]-(JV); "Kuya, Er-lun-cun County, Hu-Lun-Bei-Er, Inner Mongolia" [southwards Hailar]-(collection of Jingke Li); "Manchzhuria, Lamtiandzy (?)"-(ZIN).

Materials. – Russia : 1 male, 2 females, Russia, Buriatia, "Kiachta"-(DEI); 2 males, 1 female, Russia, Chita reg., "Ost Sibirien, Nertschinsk, J. Wagner"-(DEI); 1 female with humeral stripe, "Sibirien, Reitter, Leder"-(ZIN); 2 males, 1 female, Buriatia (?), ["Transbaikalia, Verkhneudinsk prov., Irkhirik river"] [in Russian]-(ZIN); 5 males, 8 females with humeral stripes, Russia, Chita region, "Tzagan-Oluj, Trandbaicalia, Radde" [about 300 km SE Chita near Borzja]-(ZIN); 1 female with same label-(SK); 1 female with red label "paratype" and with label by Breuning's hand : "*N. humerale humerofasciatum* mihi, det. Breuning" [wrong designation, as *N. h. m. humerofasciatum* was based on a single female from Manchzhuria], Russia, Transbaikalia, "Monastirsk [near Nerchinsk], Dauria"-(SK); 16 males, 5 females, "Daurien, Monastirsk, Carl Rost" (all typical, but 1 female with white humeral stripe is wrongly designated as "co-type" of *Neodorcadion humerale humerofasciatum* Breun)-(SMTD); 1 male with three labels : (1)"holotype"[red]; (2)"Daurien, Monastirsk, Carl Rost"; (3)"*Neodorcadion humerale brunneipenne*, mihi, type, det. Breuning"-MHNL; 3 males, 4 females (females with poor traces of subhumeral carinae, with poor humeral and subhumeral stripes – transition to *E. h. trabeatum*), "Transbaik., Berezovka, b. Werchne-Udinsk [now : Ulan-Ude], Neupärtl"-(NMV); 3 male, 3 female (including 1 male and 2 females with white elytral spots), "Transbaikal."-(SMTD); 3 males, 2 females, Chita

reg., ["Transbaikalia, Gornyj-Zarentuj [Argun river], VI.1891, Vagner *leg*."] [in Russian]-(ZIN); 2 males (with numerous white spots), ["Transbaikalia, Onon, Chiron, 20.VI.1897, G. Suvorov l*eg*."] [in Russian]-(ZIN); 3 males with same label-(JV); 3 females (with scarce white spots), ["Transbaikalia, mouth of Aga river [Chita reg.], 22.VI.1897, G. Suvorov *leg*."] [in Russian]-(ZIN); 2 males, 1 female, with same label-(JV); 1 female (very spotted), ["Transbaikalia, Aginskoe, st. Sindamskij Karaul, 14.VI.1897"] [in Russian]-(ZIN); 2 females, Chita reg. ["Transbaikalia, Shilka river, Mitrofanovo, 25.VI.1898, G. Suvorov *leg*."] [in Russian]-(ZIN); 1 male, 1 female, Chita (?) reg. ["upper level of Khojta-Kurba river, 1899, Makarov *leg*."] [in Russian]-(ZIN); 1 male, 1 female, ["Selenginsk (now Novoselenginsk in about 100 km SW Ulan-Ude), 14.VII.1899, Melnikov *leg*."]-(ZIN); 3 males, 3 females (females with elytral carinae and traces of longitudinal stripes), ["Transbaikalia, Urulcha [Urulga, mouth of Ingoda], 28-29.VI.1909, A. Keller *leg*."] [in Russian]-(ZIN); 1 female (strongly spotted), Chita reg., ["Nerchinsk, Arbagar, 27.VIII.1911"] [in Russian]-(ZIN); 1 female with external dorsal line, ["Transbaikalia, Olekno [Olekma river ?], 1911, Maksimovich *leg*."] [in Russian]-(ZIN); 1 female, ["Tranbaicalia, Selenginsk, 29.VI.1912, Melnikov *leg*."] [in Russian]-(JV); 1 male, 1 female, [" Koltomokon, 100 versts[N] from Nerchinsk, 27.VI.1912, Mokeev *leg*."] [in Russian]-(ZIN); 21 males, ["Chita env., Ingoda river, 25-27.VII.1913, Gavriljuk *leg*."] [in Russian]-(ZIN); 1 male (glabrous), 3 females (with humeral strokes), Buriatia, "[Transbaikalia, Ust-Kiran (Kiahta env., Chikoj river), 20.VI.1913] S. Rodionoff "[in Russian]-(ZIN); 2 males (without spots), 3 females (spotted), Chita reg., ["Nerchinsk env., Biankino, 28.VI.-1.VII.1915, Podgorbunsky *leg*."]-(ZIN); 1 female, Russia, Chita region, "Transbaical. Nertshinsk, 1.VII.1915"-(NMP); 1 male, ["Ivan lake, 45 versts NW Chita, 13.VII.1925, Vinogradov *leg*."] [in Russian]-(ZIN); 2 males, 1 female (totally glabrous), Chita reg., ["Transbaikalia, Barun-Torej lake, mouth of Ulza, 30.VI.1925, Vinogradov *leg*."] [in Russian]-(ZIN); 1 female, Chita reg., ["Aksha, 13.VII.1927, Vulberson"] [in Russian]-(ZIN); 1 male (with a few hair spots, so a transition to *E. h. impluviatum*), Russia, Transbaikalia, Zaviton [?] env., VI-VII.1950-(MD); 1 male, Russia, Buriatia, Transbaikalia, left bank of Vitim river, Nakholondy env. [53°17'N, 112°02'E], 6.VII.1961, O. Tchernova *leg*.-(MD); 1 male, Russia, Transbaikalia, Vitim river, 8.VII.1961, O. Tchernova *leg*-(MD); 1 female, Russia, Transbaikalia, Chita region, Aginskoe district, Kunkur, 16.VII.1966, O. Tchernova *leg*.-(MD); 3 females (typical), Russia, "Chita, Makkaveevo (about 30 km SE Chita), 20.VI.1993, Z. Kletecka *leg*."-(SK); 9 males, 3 females, Russia, Chita region, Vershino-Darasunskij, Bogatuj Mt., 950-1220 m, 9-24.VII.2002, D. Obydov *leg*.-(MD); Mongolia: 1 male, 1 female, ["Mongolia, Kerulen, 9.VI.1894 and 1.VII.1894, Koshar"[in Russian]-ZIN; 1 female with 3 labels : (1)"holotype"[red]; (2)"*Neodorcadion humerale bilunatum* mihi, type, Breuning det."; (3)"Urga, Mongolie"-(MHNL); 1 female with 3 labels : (1)"paratype"[red]; (2)"*Neodorcadion humerale bilunatum* mihi, type, Breuning det."; (3)"Urga, Mongolie"-(MHNL); 1 male and 1 female, "Mongolia, Onon, 9.VII.1894"-(ZIN); 1 male, 1 female, Mongolia, Central aimak, ["Kerulen river at front of Tene defile [= Tenun-Gol], 26.VII.1897, Clementz *leg*."] [in Russian]-(ZIN); 2 males, ["Central aimak, Khulikhe river, confluent of Kerulen, 29.VII.1897, Clementz *leg*."]-(ZIN); 2 males (both ab. *brunneipenne*), 1 female, Mongolia, ["Tola river valley, Ubulun, 21-30.VI.1925, P. Kozlov] [in Russian]-(JV); 1 male (monstrous specimen with deformed carinated elytra, identified as "*E. ornatum exaratum*" by B. Namhaidorzh, but pronotum is smooth, shining and abdomen with very dense pubescence, ["Bujr-Nur lake, 25.VIII.1928, Ivanov *leg*."] [in Russian]-(ZIN); 2 females (glabrous), East aimak, ["Mongolia, Ulza, 10.VII.1929, Kazansky *leg*."] [in Russian]-(ZIN); 1 male, 1 female, Mongolia, Central aimak, "Terels river (="Tereldzhijn), 80 km nad Ulan-Bator, 15.VII.1965"-(SK); 1 male, "Mongolia : Suhebaator Aimak, Chadatin-bulan, 60 km N von Somon Bajanterem, 950 m, 31.VII.1965, exp. Dr. Z.Kaszab"-(HNHM); 1 female, "Mongolia : Coibalsan [= East] aimak, Chamardavaa, Chalchin gol, 2.VII.1965, *leg*. Dr. Eregdendaghva"-(HNHM); 1 male, "Mongolia : Coibalsan [= East] aimak, Chamardavaa ul, 80 km SO von Somon Chalchingol, 700 m,

2.VII.1965, exp. Dr. Z.Kaszab"-(NMP); 5 males, 1 female, "Mongolia, Töv [= Central] Aimak, Somon Möngönmort (= Mörngönmort = Mungen-Mort), Zuun burok gol, 3.VII.1968, *leg*. A. Bold-(HNHM); 1 male with same label-(SK); 7 males, 4 females, Mongolia, East aimak, Numregin gol, 32 km SE Mt. Salkhit, 21-24.VII.1971, Gurjeva and Kozlov *leg*.-(ZIN); 1 female with same label, G. Medvedev *leg*.-(JV); 1 male, 1 female, Mongolia, East aimak, Mt. Derkhin-Tzagan-Obo, 60 km ENE Baian-Burd, 21.VII.1971, G. Medvedev, Kozlov *leg*.-(ZIN) 1 female with same label-(JV); 1 female, "Mongolia : Suhebaator Aimak, 120 km NNW von Baruun-Urt, 11-18.VIII.1972, *leg*. F. Mészáros"-(HNHM); 1 male, Mongolia, Hentei aimak, "Umundelger [= Umne-Delger], 15.VII.1974, Marek *leg*."-(SK); 1 female, Mongolia, East aimak, Khorin-Tzagan-Nur, 18 km NE Dash-Balbara, 23.VIII.1975, Emeljanov *leg*.-(ZIN); 1 male, Mongolia, East aimak, Dege-Gol, 10 km SE Salkhit Mt., 5.VIII.1976, Gurieva *leg*.-(ZIN); 2 males, 2 females, Mongolia, East aimak, Khalkhin-Gol, 70 km E Baian-Nur lake, 1.VIII.1975, Gurieva *leg*.-(ZIN); 1 male, Mongolia, Hentej aimak, 8 km NW Umne-Delger, 27.VIII.1975, Gurjeva *leg*.-(ZIN); 1 male, 2 females, Mongolia, East aimak, Baian-Kher Mt. (the most eastern point of the republic), 1.VIII.1985, K. Ulykpan *leg*.-(MD); 1 male, Mongolia, East aimak, somon Sumber, "Nomrog" (Numregin-Gol) river (near China border), 9.VII.1985, K. Ulykpan *leg*.-(MD); 1 male and 1 female, Mongolia, Hentei aimak, 20 km W from Bashiret, 1200 m, 48°35'N, 110°04'E, 12-19.VIII.2001, J. Schneider *leg*.-(MD); 4 males, 4 females, Mongolia, Hentei aimak, Tzenkher-Mandal env., Under-Khan, 47°42'N, 109°04'E, 1390 m, 22.VII.2004, A. Kotan *leg*.-(MD); China : 1 male, Inner Mongolia, ["Eastwards Imakhe-Khabu (near Hailar, according to the description of Potanin's expedition by V. L. Komarov, 1928), 5.VII.1899, Potanin's exp."] [in Russian]-(JV); 9 males, 7 females (all glabrous and narrow), ["Manchzhuria, Lamtiandzy (?), 25.VI.1902, Litvinov *leg*."] [in Russian]-(ZIN); 11 males, 8 females (all glabrous and narrow), "Kuya, Er-lun-cun County, Hu-Lun-Bei-Er, Inner Mongolia" [southwards Hailar]-(collection of Jingke Li).

Remarks. – The exact subspecies attribution of several population is now impossible, as they are represented by small number of rather different specimens. For example, specimens labelled as "Nerchinsk" (Chita region of Russia) are usually glabrous (and so belong to typical subspecies), but sometimes with numerous white spots (like in *E. h. impluviatum*). Possibly spotted specimens represent here just a rare individual aberration of the nominative subspecies, but also possible that in fact they were collected in another population from near Nerchinsk, which consists mostly of spotted specimens and so belongs to *E. h. impluviatum*.

Type series (2 males) of *Neodorcadion humerale* m. *brunneipenne* Breun. (MHNL) consists of two different species: one male is *E. h. humerale* from near Nerchinsk, another male is *E. carinatum involvens* from Sajans.

36b. *Eodorcadion (Humerodorcadion) humerale impluviatum* (Faldermann, 1833)
(Figs. 36b)

Dorcadion impluviatum Faldermann, 1833 : 66 ("E Mongolia"); Thomson, 1867 : 46 ("Siberia").

Dorcadion humerale var. *impluviatum*, Solsky, 1870 : 387; Kraatz, 1873 : 36.

Neodorcadion humerale var. *impluviatum*, Ganglbauer, 1884 : 512; 1889 : 483; Jakovlev, 1889 : 245 ("Mongolie centrale, à Khangaï, près de la rivière Touï [?]"); 1901 : 148-149, 152 (= *Neodorcadion irroratum* Reitt.).

Neodorcadion irroratum Reitter, 1893 : 224 (China : Hangai); Pic, 1901 : 67, part.; 1935 : 12 ("Hutjertugol").

Neodorcadion impluviatum, Reitter, 1897 : 177 (= *Neodorcadion irroratum* Reitt.; "Mongolei : Urga"); Pic, 1901 ("Mong., Altai"), part.; Jacobson, 1911, pl. 69, fig.4; Winkler, 1929 : 1199; Plavilstshikov, 1932c : 193.

Neodorcadion impluviatum a. *irroratum*, Winkler, 1929 : 1199, part.

Eodorcadion humerale m. *densevestitum* Breuning, 1947b : 171 ("Troitskossawsk [Kiahta], Douarie"), unavailable name.

Eodorcadion (s. str.) *impluviatum*, Gressitt, 1951 : 337, 341; Breuning, 1958 : 5 ("Sibér. orient., Mongolie").

Eodorcadion humerale, Plavilstshikov, 1958 : 432, part.; Namhaidorzh, 1976 : 210, part.; Lobanov et al., 1982 : 264, part.; Tsherepanov, 1983 : 41, part.

Eodorcadion humerale m. *impluviatum*, Plavilstshikov, 1958 : 435, part.; Tsherepanov, 1983 : 42, part.

Eodorcadion humerale ab. *impluviatolineatum*, Plavilstshikov, 1958 : 435.

Eodorcadion (s.str.) *humerale*, Breuning, 1962 : 17, part.

Eodorcadion (s.str.) *humerale* m. *impluviatum*, Breuning, 1962 : 20, part.

Eodorcadion (s.str.) *humerale impluviatum*, Heyrovsky, 1967 : 102; 1970 : 139.

Eodorcadion humerale impluviatum, Namhaidorzh, 1972 : 519.

Eodorcadion impluviatum, Chiang et al., 1985 : 100; Hua, 2002 : 206 "Inner Mongolia"); Wang, 2003 : 297 (Inner Mongolia: Khingan city; Chifeng city; Ulanqab city).

Eodorcadion (H.) humerale impluviatum, Danilevsky et al., 2005 : 132-133.

Type locality. – The taxon was described from "E Mongolia", that most probably means Urga (= Ulan-Bator) environs, as here it is very common.

Diagnosis. – Body length in males : 13.5-15.6 mm, in females : 15.2-20.5 mm; body width in males : 5.1-6.2 mm, in females : 6.7-8 mm.

Antennae with or without pale hair rings; pronotum usually with wide or narrow pair of white or yellow hair stripes, which can be totally indistinct; elytra smooth, shining with numerous scattered white or yellow hair spots, which sometimes can be partly or totally absent in all known populations; sometimes (in certain females) elytra nearly totally covered with pale pubescence. Populations situated in south-east part of Hangai mountains (Map 34-1, loc. : 41-45) differs by extremely numerous wide pale spots, which are often yellow (Fig. 36b-7) and total absence of glabrous specimens. Possibly only that region was treated by B. Namhaidorzh (1972) as the area of typical *E. h. impluviatum*, as the area around Ulan-Bator ("between two lines : Ulan-Bator to Tzenkher-Mandal and Suhe-Bator to upeer Kerulen and upper Tola") he regarded as transitional zone between *E. h. impluviatum* and *E. h. humerale*.

Distribution (Map 34–1; localities 40-62). – Mongolia, Central aimak : Ulan-Bator-(ZIN, NMP); Baian-Dzhargalan, 30 km from Kerulen river-(Heyrovsky, 1964); Nalaicha env. 50 km ESE Ulan-Bator-(Heyrovsky, 1964); Baian-Delger, 90 km E from Ulan-Bator-(NMP); Boral, Dzhanchiolin-Gol river, about 85 km SE Ulan-Bator-(NMP, HNHM, Heyrovsky, 1964); Bogdo-Ula, 12 km SE from the centre of Ulan-Bator-(Heyrovsky, 1970); Baian-Dzurkh (about 30 km SE Ulan-Bator) [a single available female is without elytral spots, but the locality is inside the subspecies area]-(SK); Gatzurt, Davat pass-(MD); Terejl, 47°58'69N, 107°28'31E-(MD); 27 km N Gatzurt, 48°05'N, 107°13'E (Photo. 12)-(MD); 40 km ESE Ulan-Bator, Tola river, 1100 m, 47°50'N, 107°30'E-(MD); 58 km E Ulan-Bator, 47°47'N, 107°35'E-(MD); Sharga-Mort, 30 km

N Ulan-Bator-(MD); Songino, Tola river-(ZIN); Sugu-Nur river, upper level of Khara-Gol river-(ZIN); Hentei aimak: between Tzenkher-Mandal and Dzhargalt-Khan, 10 km E from Tzenkher-Mandal-(HNHM, Heyrovsky, 1967); Uver-Hangai aimak : Khairkhan-Dulan-(NMV); 15 km W Baian-Teg, Tatzyn-Gol-(MD); Kholt [45°08'N, 102°03'E, according to Kerzhner, 1972 : 83]-(ZIN); Ongin-Gol-(ZIN); East aimak : Choibalsan environs-(HNHM); Baian-Hongor aimak : Tuin-Gol river valley-(ZIN); Ongin-Gol-(ZIN); Suhe-Bator aimak: Ikh-Bulak, 9 km WSW Dariganga (Photo. 10)-(ZIN); Tzeget-Nur (?) near Dariganga-(MD); Tumen-Tzogt-(MD). The record of "*Neodorcadion humeralis* var. *impluviatum* Fald." for "Khangaï près de la rivière Touï" (Jakovlev, 1889) is unclear. Russia : no good series of the subspecies are known from Russia, but several populations in East Siberia undoubtedly includes specimens with numerous hair elytral spots : Gornyj-Zarentuj in Argun river valley-(ZIN), Kiahta env. (as *E. humerale* m. *densevestitum* Breuning, 1947 after one male), Sindamskij Karaul near Aginskoe-(ZIN), Nerchinsk env.-(ZIN, DEI, SK, NMP), Chiron in Onon river valley-(ZIN). Most probably such specimens represent rare pointed aberrations of the nominative subspecies. I do not know specimens from China, but a pair figured by Wang Zhicheng (2003 : 297) from Chifeng looks like real *E. h. impluviatum*. Such specimens could represent a new subspecies if the label is adequate.

Materials. – 1 male, "Holotypus 1893", "*Neodorcadion irroratum* Reitter", "Nordl. Mongolei, Changai, Leder"-(HNHM); 2 males, 1 female, "Paratypus 1893", "*Neodorcadion irroratum* Reitter", "Nordl. Mongolei, Changai, Leder"-(HNHM); 7 males, 1 female, ["80 versts E Urga, Tzagan-Tcholotej, 4.VIII.1897, Clementz"] [in Russia]-(ZIN); 1 female, "Urga (= Ulan-Bator) env., 1-2.VI.1905, Kozlov's exp."] [in Russian]-(ZIN); 3 males, 4 females (including of a glabrous pair), Central aimak, ["Sugu-nur river, upper level of Khara-Gol river, 10-20.VII.1924, 3-23.VIII.1924, Kozlov *leg*."]-(ZIN); 2 males, 2 females (all with most dense, contrast, yellowish spots), Uver-Hangai aimak, ["Mongolia, Kholt [45°08'N, 102°03'E, according to Kerzhner, 1972 : 83], 20.VI, 16-27.VII.1926, Kozlov *leg*."] [in Russian]-(ZIN); 13 males, 8 females (all with most dense, contrast, yellowish spots), Baian-Hongor aimak, ["Tuin-Gol river valley, middle level of Khalh, 26-31.VII.1926, Kiritchenko *leg*."] [in Russia] [according to Kerzhner,1972, at the beginning of the plane]-(ZIN); 4 males, 3 females, Uver-Hangai aimak, ["Ongiin-Gol (= Ongin) river valley, upper level of Khalh, 12-14.VII.1926, Kiritchenko *leg*."] [in Russia]-(ZIN); 5 males, 5 females, Mongolia, ["Uver-Hangai aimak, from Khan-Khugshin-Ula to Arbaj-Here, 16.VII.1949, Eglon *leg*."]-(ZIN); 1 male, "Mongolia, Ulan-Baator, V-VI, 1959, C. Purkynû *leg*.- (NMP); 109 males and 83 females, "Mongolia : Central Aimak, Boral, Dzhantschiolin gol, 85 km SO von Ulan-Baator, 1500 m, 5.VII.1962, exp. Dr. Z. Kaszab"-(HNHM); 1 male, 5 females with same label- (NMP); 2 males, 1 female, "Mongolia, Ulan-Baator, VI.1964, *leg*. Muche"-(NMP); 1 male, "Mongolia : Central Aimak, Somon Bajandelger, 90 km O v. Ulan-Baator, 1450 m, 27.VI.1965, exp. Dr. Z. Kaszab"-(NMP); 2 males, 1 female, "Mongolia : Chentei Aimak, zwischen Somon Zenchermandal und Somon Zargaltchaan, 1400 m, 27.VII.1965, exp. Dr. Z. Kaszab"-(HNHM); 12 males, 2 females, "Mongolia : Coibalsan, 1969, *leg*. Gy. Marton"-(HNHM); 1 female, Mongolia, Central aimak, Songino, 3-4.IX.1969, Gurjeva *leg*.-(ZIN); 1 male, Suhe-Bator aimak, Ikh-Bulak, 9 km WSW Dariganga, 8.VII.1971, G. Medevedev *leg*.-(ZIN); 1 female, Mongolia, Uver-Hangai aimak, 15 km W Baian-Teg, Tatzyn-Gol, 18.VII.1972, Sladkov *leg*.-(MD); 1 male, Mongolia, Central aimak, Gatzurt, Davat pass, 13.VII.1973, L. Chogsomzhav *leg*.-(MD); 1 female (without spots), "Mongolia, Central aimak, Bajandzürch (about 30 km SE Ulan-Bator), 7.VII.1979, J. M. Stusak *leg*."(SK); 2 males, Mongolia, Central aimak, Sharga-Mort, 30 km N Ulan-Bator, 29.VII.1983, O. Gorbunov *leg*.-(MD); 1 male, "Suhe-Bator aimak, Dariganga, Zeget nuur, 20.VII.1985, K. Ulykpan *leg*."-(MD); 2 females, "Suhe-Bator aimak, Tumen-Tzogt, 3.VIII.1985 and 30.VIII.1985, K. Ulykpan *leg*."-(MD); 2 males, 3 females, "Mongolia centr., Chajrchan-Dulaan [Uver-Hangai aimak], 23.VII.1988, O. Majzlan *leg*."-(NMV); 1 male, 1 female, Central aimak, Terejl, 47°58'69N, 107°28'31E, 1600m, 23-27.VIII.2001, J. Schneider *leg*.-(MD); 120 males, 105 females, Mongolia, Central aimak, 27 km N Gatzurt, 1900 m, 48°05'N, 107°13'E, 16–18.VII.2002, M. Danilevsky *leg*.-(MD); 8 males, Mongolia, Central

aimak, 40 km ESE Ulan-Bator, Tola river, 1100 m, 47°50'N, 107°30'E, 15.VII.2002, M. Danilevsky *leg*- (MD); 1 female (dead), Mongolia, Central aimak, 58 km E Ulan-Bator, 1 400 m, 47°47'N, 107°35'E, 20.VIII.2002, M. Danilevsky *leg*.-(MD). Russia : 1 female, Russia, "Sibir, Amur"[wrong label ?]-(HNHM).

Remarks. – The exact subspecies attribution of several population is now impossible, as they are represented by rather different specimens. For example, specimens labelled as "Nerchinsk" (Chita region of Russia) are usually glabrous (and so belong to typical subspecies), but sometimes with numerous white spots (and so belong to *E. h. impluviatum*). In certain cases spotted specimens represent just a rare aberration of the nominative subspecies, but if spotted elytra are often enough in the population, then it can be attributed to *E. h. impluviatum*. Further collecting materials are necessary.

The records of several *Eodorcadion* taxa (*E. virgatum*, *E. oryx, E. humerale impluviatum*) for "Hutjertugol"[?] (Pic, 1935) are not clear. There are no localities in Mongolia or in China, where all three species could be observed.

36c. *Eodorcadion (Humerodorcadion) humerale trabeatum* (Jakovlev, 1901) (Figs. 36c)

Neodorcadion humerale var. *trabeata* Jakovlev, 1901 : 148, 152, 159 ("Mandshurie chinoise : U-ko-schu (?)").

Neodorcadion humerale var. *mogissemium* Suvorov, 1909 : 88 ("Vorbergen von Chingan").

Neodorcadion humerale v. *melan* Suvorov, 1909 : 89 ("Vorbergen von Chingan").

Neodorcadion quadrilineatum Breit, 1915 : 355 ("bei Kalgan in der Mongolei").

Neodorcadion humerale a. *trabeatum*, Winkler, 1929 : 1199, part.

Neodorcadion humerale a. *mogissemium*, Winkler, 1929 : 1199, part.

Neodorcadion humerale a. *melan*, Winkler, 1929 : 1199, part.

Neodorcadion humerale, Ohbayashi, 1939 ("Tâ-hei-hô", "Cheng-Chin").

Neodorcadion humerale m. *humerofasciatum* Breuning, 1947b : 171 ("Buchalu, Mandchourie"), unavailable name.

Eodorcadion (s.str.) *humerale* var. *mogissemium*, Gressitt, 1951 : 341, part.

Eodorcadion (s.str.) *humerale* ab. *trabeata*, Gressitt, 1951 : 336, part.

Eodorcadion (s. str.) *quadrilineatum*, Gressitt, 1951 : 335, 341, part. ("Kalgan, Leangpaofu"); Breuning, 1958 : 5 ("Mongolie").

Eodorcadion humerale ab. *alini* Heyrovsky, 1955 : 2 ("Charbin"), unavailable name.

Eodorcadion humerale, Plavilstshikov, 1958 : 432, part.; Lobanov et al., 1982 : 264, part.; Tsherepanov, 1983 : 41, part.; Hua, 2002 : 206 (= *trabeatum* Jak. = *quadrilineatum* Breit; Beijing, Shandong, former USSR, Mongolia, Korea), part.; Wang, 2003 : 296 (Jilin: Baicheng; Heilongjiang : Mohe, Luoguhe; Inner Mongolia : North-East; Shandong; Korea, Mongolia, Russia), part.

Eodorcadion humerale m. *mogissemium*, Plavilstshikov, 1958 : 434, part.; Tsherepanov, 1983 : 41, part.

Eodorcadion humerale m. *trabeatum*, Plavilstshikov, 1958 : 435, part.; Tsherepanov, 1983 : 41, part.

Eodorcadion (s. str.) *humerale*, Breuning, 1958 : 5, part.; 1962 : 17, part.

Eodorcadion (s. str.) *humerale* m. *quadrilineatum*, Breuning, 1962 : 19, part.

Eodorcadion (s. str.) *humerale* m. *mogissemium*, Breuning, 1962 : 18, part.

Eodorcadion (s. str.) *humerale* m. *trabeatum*, Breuning, 1962 : 19, part.

Eodorcadion quadrilineatum, Wang, 2003 : 303, part.

Eodorcadion xingana Chiang et Wang in Wang, 2003 : 304, 396 ("Jilin : Baicheng"), **syn. n.**

Type locality. – China, "Mandshourie chinoise : U-ko-schu"[?].

Diagnosis. – Body length in males : 13.5-19.6 mm, in females : 18.1-23 mm; body width in males : 5-7 mm, in females : 6.5-8.5 mm.

Antennae with or without pale hair rings; body usually big and wide, especially in females; pronotum usually without big hair spots, relatively glabrous or with small spots; elytra usually flattened with more or less distinct dorsal carinae covered by narrow hair stripes and smooth in between; in striated forms each elytron can be with three dorsal carinae and humeral carinae; all four carinae of each elytron and epipleurae with narrow hair stripes (Fig. 36c–8-10) besides subsutural stripes sometimes present; all cases of reduction of elytral carinae are known; sometimes only external elytral carinae with corresponding hair stripes present together with humeral carinae and stripes (Fig. 36c-13), or only humeral carinae present with corresponding hair stripes(Fig. 36c-15); often carinae are nearly (or totally) indistinct and only white stripes present (Fig. 36c-11); all transitions between all forms are known; sometimes hair stripes (in certain females) can be strongly widened, so elytra are totally covered with pale pubescence (Fig. 36c-14); often elytral stripes are mixed with hair spots; in many populations (always in Russia) only females can be carinated and striated, while males are glabrous and very similar to the nominative subspecies (Fig. 36c-12); sometimes elytra are glabrous but not smooth : with more or less rough sculpture; sometimes carinated elytra are roughly sculptured between carinae – ab. *alini*; populations from the north and west part of the subspecies area have females with less number of dorsal stripes and carinae (Fig. 36c-13,15); it seems that in certain regions of the area of *E. h. trabeatum* (for example near Harbin) rather different populations can occur near each other.

It is absolutely evident, that many local populations of the taxon are rather peculiar morphologically and will be described as new subspecies.

Distribution (Map 34-2; localities 63-84). – Russia, from Amur region to Pacific Ocean with Primorje region, reaching northwards to the latitude of Amur river mouth (Plavilstshikov, 1958). Specimens from Russia are usually without dorsal stripes, or without any stripes at all, but females are typically big and wide. China – from Manchzhuria (North Inner Mongolia and Heilongjiang prov.) to Jilin prov. and Beijing environs southwards to Shandong (Qingdao) prov.

The record of the taxon for northern Korea by N. N. Plavilstshikov (1958 : 436) is very doubtful. The species was not mentioned by S.M. Lee (1982).

Known localities are : Russia, Amur region : Pokrovka-(NMV); Svobodnyj-(MD); Blagoveshchensk env.-(ZIN); Zeia river, about 50 km N Blagoveshchensk-(JV); "Ignatjevka" [Ignatjevo near Blagoveshchensk?]-(ZIN); Klimoutzy, 40 km W Svobodnyj-(ZIN); Pashkovo, Obluchje distr.-(ZIN, DEI); Nataljino, Tom river, Blagoveshchensk distr.-(ZIN); Jewish Autonomous Region : Radde-(NMV, NMP, ZIN); Primorje region : Osinovka near Ussurijsk-(ZMM); national reserve "Kedrovaia Pad"-(MD); Vladivostok-(NMV); Khanka lake, Troitsk-(JV); Khanka lake, Kamen-Rybolov-(ZIN, JV); Khanka lake, 3 km NW Platonovka [1 male, 1 female, 3.VII.1974, A. S. Lelej *leg.*]-(BPI, according to personal message by G. Lafer, 2006). China, Beijing (Pekin)-

(MHNL; Hua, 2002); Jilin : Baicheng (Wang, 2003 : 296, as *E. humerale* and type locality of *E. xingana* Chiang et Wang); Hebei, Zhangjiakou (= Kalgan)-(Breit, 1915); Inner Mongolia : Khingan, from Mardyn-Gol to Balairek-Gol [most probably near Dalaj-Nor lake, according to Garnak, 1888)-(ZIN, JV); sands before Dolonar (?)-(ZIN); Great Khingan ridge, "Chzhalan-tun" station (about 400 km NW Harbin)-(JV, ZIN); "Pchailantoum"[same locality?]-(HNHM); Chorchonte eastwards Hailar-(ZMM); Manchuria : U-ko-schu (?)-(type locality of *N. h.* var. *trabeata* Jak.); Harbin environs-(NMP, SMTD, ZMM, MD); Qiqihar env.- (MAK); Mohe-(Wang, 2003 : 296, as *E. humerale*); Luoguhe-(Wang, 2003 : 296, as *E. humerale*); "Chersoumin" [?]-(HNHM); "Anbga" [?]-(MD); "Tâ-hei-hô"[?], "Cheng-Chin"[?]-(Ohbayashi, 1939); "Yablonya" [?], "Imiempo" [?]-(Gressitt, 1951); Maoershan [?]-(SMTD); Shandong [= Shantung]-(Hua, 2002) : Tsintao (= Qingdao)-(Gressitt, 1951).

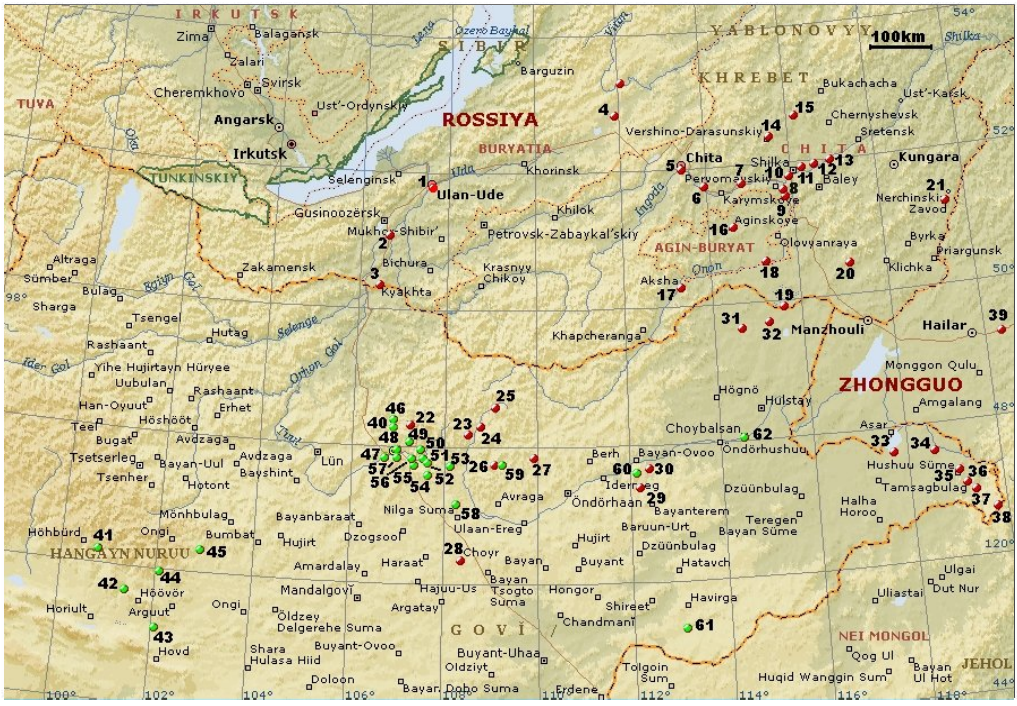
Materials. – Russia : 3 males, 2 females (only one female with distinct dorsal, humeral and subhumeral elytral stripes), Russia, "Koltze 89 Pokrofka [the western most point of Amur river]"-(NMV); 2 males, 2 females (females very wide with distinct humeral stripes), "Koltze 87", "Raddeka [sic! ? Raddevka]"-(NMV); 1 female (with distinct humeral stripes) with two labels: "Raddefka", "Koltze 89 Pokrofka"-(NMV); 1 male, 2 females, Russia, "Pashkowa, Amur, B. v. Bodemeyer"-(DEI); 3 males, 5 females, "Amur"-(DEI); 1 male (identified as *E. h. m. coriarium* by N. N. Plavilstshikov), Russia, "Radde, Amur"-(NMP); 1 female with humeral stripe, "Amur, Radde, 15.VI.1896, Komar *leg*."-(NMP); 2 males, "Wladivostok"-(NMV); 1 female with external dorsal stripe, ["Pokrovka at Amur river [the western most point of Amur river]", Amur region, 1908, Jakovlev *leg*."] [in Russian]-(ZIN); 1 female, Russia, Primorje region "Khanka lake, Kamen-Rybolov, 16.VII.1908, Tchersky *leg*."] [in Russian]-(JV); 1 male, Russia, Primorje region "Khanka lake, Kamen-Rybolov, 9.VIII.1908, Tarabarov *leg*."] [in Russian]-(ZIN); 3 males, 2 females with external dorsal stripes, Russia, Primorje region, ["Khanka lake, Troitsk, 25-27.VI.1909, 1-8.VII.1909, Tchersky *leg*."] [in Russian]-(ZIN); 1 female with same label, 14.VI.1909-(JV); 1 female with humeral stripes, Russia, "Primorje region, ["Khanka lake, 9.VI.1916"] [in Russian]-(ZIN); 1 female, Russia, Amur region, ["W Birsherta, Zeia river, 50 versts from Blagoveshchensk, VII.1914, Popov *leg*."] [in Russian]-(JV); 3 females (with distinct humeral white lines along humeral carinae and short subhumeral strokes), "Ussuri, Ossinovka, 20.VI.1917, P. Elsky"-(ZMM); 1 male, ["Khabarovsk, Kazakevichevo, 10.VII.1925"] [in Russian]-(ZIN); 1 female, with external dorsal stripes, Amur region, ["Blagoveshchensk, 30.VI.1927"] [in Russian]-(ZIN); 14 males, 14 females (all glabrous, but 7 females with diffused elytral stripes) "Radde, Amur, 1928"-(SMTD); 1 male, "Amur, Blagoveshchensk, Ignatjevka, 3.IX.1928, Formozov *leg*.-(ZIN); 2 males, 1 female (with external dorsal stripe), ["Amur reg., Klimoutzy, 40 km W Svobodnyj, 30.VI.1959, Zinoviev *leg*."] [in Russian] -(ZIN); 1 female, Russia, Primorje region, national reserve "Kedrovaia Pad", 4.VIII.1964-(MD); 1 female with humeral stripes, Amur reg., Blagoveshchensk distr., Nataljino, Tom river, 9.VI.1975, V. Kuztnetzov *leg*.-(ZIN); 1 male, Jewish Autonomous Region, Obluchje distr., Pashkovo, VI-VIII.1977, S. Murzin *leg*.-(ZIN); 1 male, Russia, Amur region, "Murav. reserve" [?], 1.VIII.1983, M. Korovin *leg*.-(MD); 1 female, Russia, Amur region, Svobodnyj, 29.VI.1989, A. Surakov *leg*.-(MD). China : 18 males, 23 females (nearly all males and females with carinated elytra and regular dorsal stripes), including 1 female "holotypus" of *Eodorcadion humerale* ab. *alini* Heyr., China, "Charbin, Mantchuria"-(NMP); 4 males, 2 females (all striated), Kharbin, 6.VII.1950, V. Alin *leg*.-(ZMM); 1 male, 2 females (all striated), "Mandzhuria, st. Chorchonte [eastwards Hailar], 16.VIII.1933, V. Alin *leg*."-(ZMM); 1 male, "Khingan"-(ZIN); 1 female, "Van-li-ho-tun (?). 17.VII.1897"-(ZIN); 1 male, 1 female (both with narrow dorsal elytral stripes) with same

label-(SMTD); 3 males, 2 females (including striated males), syntypes of *Neodorcadion h.* var. *mogissemium* Suv., China, "Khingan, ... [not readable]"-(ZIN); 2 males with similar label, but including a date : "25.VI.1891"-(ZIN); 2 males, 5 females without stripes, syntypes of var. *melan* Suv. without geographical label, but according to the original description, collected in the foothills of Khingan on 25.VI.1891 together with var. *mogissemium* Suv.-(ZIN); 2 males, 1 female without stripes, but rather widened with several elytral spots, China, ["Khingan, from Mardyn-Gol to Balairek-Gol (Dalaj-Nor env.), 17.VII.1887 and 25.VII.1887, Garnak"] [in Russian]-(ZIN); 1 female, sands before Dolonar (?), 15-21.VII.1887, Garnak *leg.*-(ZIN) 1 male with same label 25.VII.1887-(JV); 1 male, 1 female, China, "Mantschguria, Chersoumin [?], VI.1905 (or 1903?), N.Starck"-(HNHM); 1 male, 1 female with same label-(JV); 1 female, China, "Mantschguria, Pchailantoum, 1904, N. Starck"-(HNHM); 1 female with external dorsal stripe, China, ["Chzhalan-Tun station (about 400 km NW Harbin), Great Khingan, Manchzhuria, 1905, Lakshevitz *leg.*"] [in Russian]-(ZIN); 1 female with same label-(JV); 1 male with 3 labels : (1)"allotype"[red]; (2)"*N. humerale bilunatum*, mihi, Breuning det."; (3)"Mandschur. sept. occ., Buchalu, Chingan mont. sept."-(MHNL); 2 females (with hardly pronounced elytral stripes), "Maoershan, Mandshuria or."-(SMTD); 1 male (with white elytral spots), "Peking"-(MHNL); 1 male with two labels : (1)"Kalgan, Mongolie, VIII.1911"; (2)"*Neodorcadion quadrilineatum* Breit. det. Breuning"-(MHNL); 1 male with two labels : (1) "Kalgan, Mongolie"; (2)"*Neodorcadion quadrilineatum* Breit. det. Breuning"-(MHNL); 1 male with two labels : (1)"18.VI.1927, Licent"; (2)"*Dorcadion 4-lineatum* Breit. det. Breuning"-(MHNL); 7 males, 7 females, China, "Tsitsikar [Qiqihar], Manchukuo, 29.VI.36, Ruf"-(MAK); 3 males, 3 females (glabrous males, but females very big with external dorsal elytral carinae covered by white stripes), "N China, Anbga env, 17.VII.1982"-(MD); 2 females, "N China, Charbin env., 5.VII.1982"-(MD).

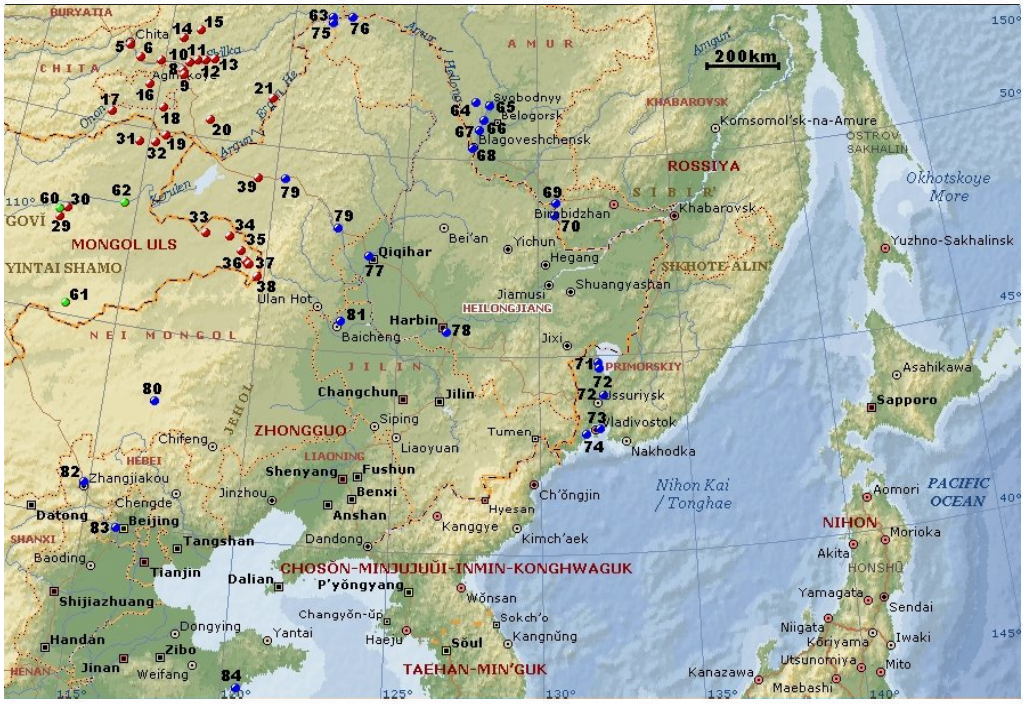
Remarks. – The original description of the taxon was based on a single striated female collected by Grombczewsky on 4.VII.1897. *E. h. trabeatum* is not strongly delimited geographically from the nominative subspecies. Transitional specimens with a few number of elytral dorsal carinae and stripes are known from Transbaikalia, as well as typical males and females are known from the whole area of *E. h. trabeatum*. According to N. N. Plavilstshikov (1958 : 435), big series of *N. humerale* collected by V. N. Alin near Harbin included 1% of typical (glabrous) specimens. In general materials of *E. humerale trabeatum* from near Harbin are rather different. It seems to be possible that in certain populations only females are striated, or striated specimens totally absent. Most probably such geographical variability of the subspecies is typical for its whole area. For example a series from Qiqihar (MAK) consists of glabrous, shining males and majority of females is similar, but sometimes females have hardly developed elytral carinae with distinct longitudinal hair stripes; body is relatively small : males : 13-14.5 mm, females : 16-18 mm. Specimens with numerous white elytral spots are also known from the area of *E. h. trabeatum* : a male from "Peking"-(MHNL)

The description of *Neodorcadion humerale* var. *mogissemium* Suv. was based on a series of striated males and females collected on 25.VI.1891. A part of specimens from this series without stripes were separated as var. *melan* Suv., so all the syntypes (ZIN) of var. *melan* Suv. also belong to *E. h. trabeatum*.

Eodorcadion xingana Chiang et Wang in Wang, 2003 was described on the base of a single totally pubescent female (24 mm long) from Baicheng (Jilin). According to the color photo, it is well known female form *E. humerale trabeatum*, so *E. humerale trabeatum* (Jakovlev, 1901) = *Eodorcadion xingana* Chiang et Wang in Wang, 2003, **syn. n.**



Map 34(1) Localities of ***E. humerale*** : Western part of the area.



Map 34(2) Localities of ***E. humerale*** : Eastern part of the area.

Maps 34. Localities of ***E. humerale*** : Russia, Mongolia and China.

1. Western part of the area - Russian South Siberia and Mongolia; areas of *E. h. humerale* and *E. h. impluviatum*; 2. Eastern part of the area – Russian Far East and eastern China; area of *E. h. trabeatum*.

List of localities : ***E. h. humerale*** (1-39) : Russia, Buriatia (1-4) : 1. Ulan-Ude environs (type locality); 2. Novoselenginsk; 3 – Kiakhta; 4. Ivan lake, about 50 km NW Chita; Chita region (5-21) : 5. Chita env.; 6. Makkaveevo (about 30 km SE Chita); 7. Urulcha (Urulga), mouth of Ingoda; 8. Chiron in Onon river valley (about 60 km SW Nertchinsk); 9. Mouth of Aga river; 10. Shilka river, Mitrofanovo; 11. Arbagar; 12. Nertchinsk; 13. Bjankino near Nertchinsk; 14. Vershino-Darasunskij, Bogatuj Mt.; 15. Koltomokon, about 100 km N Nertchinsk; 16. Aginskoe; 17. Aksha; 18. Aginsk district, Kunkur; 19. Barun-Torej lake, mouth of Ulza; 20. Tzagan-Oluj, about 300 km SE Chita near Borzja; 21. Gornyj-Zarentuj, Argun river; Mongolia, Central aimak: 2. Tereldzhijn river; 23. Mungen-Mort (=Bulak), Dzum-Burkhijn-Gol river; 24. Kerulen River near mouth of Tenun-Gol river; Hentei aimak: 25. 20 km W from Bashiret, 48°35'N, 110°04'E; 26. Tzenher-Mandal, 47°42'N, 109°04'E; 27. Umne-Delger; East-Gobi aimak : 28. Choir; Suhe-Bator aimak: 29. 120 km NNW from Barun-Urt; 30. Chadatin-bulan, 60 km N from Baian-Terem; East aimak : 31. Khorin-Tzagan-Nur, 18 km NE Dash-Balbara; 32. Ulza env.; 33. Bujr-Nur lake; 34. Khamardava, Khalkhin-Gol river valley; 35. Mt. Derkhin-Tzagan-Obo, 60 km ENE Baian-Burd; 36. Dege-gol, 10 km SE Salkhit Mt.; 37. Numregijn-Gol river, 32 km SE Mt. Salkhit; 38. Baian-Kher Mt.; China : 39. Hailar env.

E. h. impluviatum (40-62) : Baian-Hongor aimak : 41 - Tuin-Gol; Uver-Hangai aimak : 42. 15 km W Baian-Teg, Tatzyn-Gol : 43. Kholt, 45°08'N, 102°03'E; 44. Khairkhan-Dulan; 45. Ongin-gol; Central aimak : 40. Sharga-Mort; 46. Sugu-nur (= Sugnugur-gol) river, upper level of Khara-gol river; 47. Songino, Tola river; 48. Ulan-Bator env.; 49. 27 km N Gatsurt, 48°05'N, 107°13'E; 50. Terejl, 47°58'69N, 107°28'31E; 51. 40 km ESE Ulanbator, Tola River, 47°50'N, 107°30'E; 52. 8 km SE Ulan-Bator, 47°47'N, 107°35'E; 53. Baian-Delger, 90 km ESE from Ulan-Bator; 54. Dzhanchiolin gol, about 85 km SE Ulan-Bator; 55. Nalajcha env. 50 km ESE Ulan-Bator; 56. Baian-Dzurkh; 57. Bogdo-Ula; 58. Baian-Dzhargalan; Hentei aimak : 59. 10 km E Tzenkher-Mandal; Suhe-Bator aimak : 60. Tumen-Tzogt; 61. Ikh-Bulak, 9 km WSW Dariganga; East aimak : 62. Chojbalsan env.;

E. h.trabeatum (63-84) : Russia, Amur region : 63. Pokrovka; 64. Klimoutzy, 40 km W Svobodnyj; 65. Svobodnyj; 66. Tom river near Nataljino; 67. Zeja river, 50 km N Blagoveshchensk; 68. Blagoveshchensk env.; 69. Pashkovo; Jewish Region : 70. Radde; Primorie Region : 71. Khanka Lake, Troitsk; 72. Khanka Lake, Kamen-Rybolov; 73. Vladivostok; 74. National reserve "Kedrovaia Pad"; China, Heilongjiang : 75. Luoguge; 76. Mohe; 77. Harbin env.; 78. Qiqihar env.; Inner Mongolia : 79. 400 km NW Harbin; 80. Dalaj-Nor environs; Jilin : 81. Baicheng; Hebei : 82. Zhangjiakou (= Kalgan); Beijing : 83. Beijing; Snandong: 84. Qingdao.

37. *Eodorcadion (Humerodorcadion) lutshniki* (Plavilstshikov, 1937) (Figs. 37)

Neodorcadion lutshniki Plavilstshikov, 1937: 33 ("Mongolie bor. occ.: republic de Tuva, vall. fl. Cha-kem, ..., fl. Ulukem – village Urtshajlyk").

Eodorcadion (Ornatodorcadion) lutshniki, Gressitt, 1951 : 338, 344; Breuning, 1958 : 4.

Eodorcadion lutshniki, Plavilstshikov, 1958: 458, part.; Namhaidorzh, 1972: 522; Tsherepanov, Tsherepanova, 1978 : 114; Lobanov et al., 1982 : 265; Hua, 2002 : 206 ("Inner Mongolia"); Wang, 2003 : 299 (Inner Mongolia : Chifeng, Baotou).

Eodorcadion lutschniki, Tsherepanov, 1983 : 49 (wrong spelling).

Eodorcadion (s. str.) *lutshniki*, Breuning, 1962 : 22, part.

Eodorcadion (H.) lutshniki, Danilevsky et al., 2005 : 132-133, 147.

Type locality. – Russia, Tuva Republic : Ka-Hem river valley (not far from Kyzyl), according to the present lectotype designation.

Diagnosis. – Body length in males : 9.8-16 mm, in females : 12.8-19.3 mm; body width in males : 4-6.4 mm, in females : 5.2-7.5 mm.

Antennae always without hair rings; body rather wide, black or red-brown with red (or dark-red) legs, antennae, elytral margins and partly red head; elytra smooth, or with hardly developed dorsal carinae, very rare elytral carinae are well developed; usually with numerous white or yellowish narrow stripes, but sometimes glabrous either in males and in females (*E. l. bicoloratum*, ssp. n.; figs. 37c–10-11); each elytron with up to 7 stripes (*E. l. lutshniki*; figs. 37a–1-4); marginal (sometimes not complete), three branches of humeral stripe (usually two external portions are fused), two portions of external dorsal stripe and internal dorsal stripe wide and never divided, sutural stripe absent; or each elytron with 5 hair stripes (usually in *E. l. altanelsense*; figs. 37d–12,15) : both branches of internal dorsal stripe are fused as well as two external branches of humeral stripe; or each elytron with only 3 hair stripes (usually in *E. l. burenum*, ssp. n.; Fig. 37b-5,9) : two branches of humeral stripe and internal dorsal stripe (marginal stripes and external dorsal stripe are totally absent).

Distribution (Map 35). – Russia, Tuva Republic : from Shagonar to Kyzyl environs and then southwards to Mongolian border. Mongolia – northern part of Ubsu-Nur aimak and northern part of Dzabkhan aimak. The species absent in China; the record for Inner Mongolia (Hua, 2002 : 206; Wang, 2003 : 299) are wrong.

The species consists of 4 subspecies : *E. l. lutshniki* (Plavilstshikov, 1937); *E. l. altanelsense* Heyrovsky, 1973; *E. l. burenum*, ssp. n.; *E. l. bicoloratum*, ssp. n.

Bionomy. – The species is connected with steppe and semi desert landscapes up to 1500 m above the level of the sea. Several known to me areas are very densely populated. Often rather big series are preserved in museums from several localities. The development of the species was investigated in details by A. I. Tsherepanov, N. E. Tsherepanova (1978) and A. I. Tsherepanov (1983). A generation requires two years. Adults were observed from june to august. They are most numerous in July. Adults are active in the late morning before 12.00, but maximum of adult activity is in the afternoon. In hot days beetles disappear at about noon. After emergence adults feed on grass plants often climb up along the stems. Females are able to deposit up to 35 eggs each. Eggs were deposited in soil near Gramineae roots. Oviposition was observed from June to August. Young larvae appear from July to September, usually in 15-17 days after oviposition, but sometimes it can be in about 4 weeks. Young larvae make galleries inside roots of food

plants. Half and full-grown larvae were observed in soil. Pupation occurs in June in soil cell after second overwintering. The pupal stage lasts about 2 weeks. Adults leave pupal cells in about 7 days after emergence from pupae in June-July.

Remarks. – Glabrous forms of *E. lutshniki*, as it was reliably mentioned by B. Namhaidorzh (1972), were described by N. N. Plavilstshikov (1958) as "*Eodorcadion carinatum involvens* m. *bicoloratum*" from Tuva. *E. lutshniki* is illustrated by Wang Zhicheng (2003 :299) with Plavilstshikov's (1958 : 459) drawing of male from Tuva and Tsherepanov's (1983 : 50) drawings of immature stages.

37a. *Eodorcadion (Humerodorcadion) lutshniki lutshniki* (Plavilstshikov, 1937) (Figs. 37a)

Neodorcadion lutshniki Plavilstshikov, 1937 : 33 ("Mongolie bor. occ. : republic of Tuva, vall. fl. Cha-kem, … , fl. Ulukem – village Urtshajlyk [?]").

Eodorcadion (Ornatodorcadion) lutshniki, Gressitt, 1951 : 338, 344; Breuning, 1958 : 4.

Eodorcadion lutshniki, Plavilstshikov, 1958 : 458; Namhaidorzh, 1972 : 522; Tsherepanov, Tsherepanova, 1978 : 114; Lobanov et al., 1982 : 265.

Eodorcadion lutshniki ab. *victori* Plavilstshikov, 1958 : 459, unavailable name.

Eodorcadion lutschniki, Tsherepanov, 1983 : 49 (wrong spelling).

Eodorcadion (s. str.) *lutshniki*, Breuning, 1962 : 22.

Eodorcadion (H.) lutshniki, Danilevsky et al., 2005 : 132-133, 147.

Type locality. – Russia, Tuva Republic : Ka-Hem river valley (not far from Kyzyl), according to the present lectotype designation.

Diagnosis. – Body length in males : 9.8-16 mm, in females : 13.8-19.3 mm; body width in males : 4.0-6.4 mm, in females : 5.2-7.5 mm.

Elytra smooth, with hardly developed dorsal carinae; with numerous white or yellow narrow stripes; each elytron usually with 7 stripes : marginal (sometimes not complete), three branches of humeral stripe (usually two external portions are fused), two portions of external dorsal stripe and internal dorsal stripe wide and never divided, sutural stripe absent.

Distribution (Map 35; localities 1-9). – Russia, Tuva Republic : Enisej river valley from Shagonar to Kyzyl environs and then southwards to Tannu-Ola ridge; known localities arec : Kyzyl environs-(ZIN, MD); 10 km E Kyzyl, Ka-Hem valley-(MD, JV); 30 km SW Kyzyl (Ust-Elegest env.)-(ZIN, ZMM); Shagonar env.-(MD); Khajyrakan, 20 km E. Shagonar-(ZMM); 10 km N Kyzyl, Ujukskij (Ujuk) ridge-(MD); Hadyn lake, 40 km S Kyzyl-(MD); Balgazyn env., 110 km SE Kyzyl-(ZIN, MD); Bai-Haak-(ZIN); 20 km S Bai-Haak-(SK); Urchailyk [?]-(Plavilstshikov, 1937; ZIN, JV).

Materials. – 1 female, lectotype (**present designation**), "Tannu-Tuva, vall. fl. Cha-Kem [= Ka-Hem], 19.VI"-(ZMM); 1 male, lectotype, **present designation**, "Tannu-Tuva, vall. fl. Cha-Kem [= Ka-Hem], 19.VI"-(ZMM); 3 males, 1 female, paralectotypes, **present designation**, "Tannu-Tuva, vall. fl. Cha-Kem [= Ka-Hem], 19.VI, 21.VI and 23.VI. 1928"-(ZMM); 8 males, 5 females, paralectotypes, **present designation**, ["from Ulug-Hem to Urchailyk, Uriankhai region [Tuva], 10.VI.1914, [the dates in the original description : "23.VI.1914"],Tomashevsky *leg*."] [in Russian]-(ZIN); 1 male, 2 females, paralectotypes with same label, **present designation**-(JV); 1 female, paralectotype, **present designation**, ["Ka-Hem, Uriankhai region (now Tuva), 8.VI.1914 [the dates in the original description :

"21.VI.1914"], Tomashevsky *leg.*] [in Russian]-(ZIN); 1 male, 2 females, paralectotypes with same label, **present designation**-(JV); 1 male, 1 female, Tuva, Kyzyl env., 23.VI.1947, A. Tsherepanov *leg.*-(ZMM); 2 males, 1 female, Tuva, mouth of Elegest river, 27.VI.1947, A. Tsherepanov leg.-(ZMM); 1 male, 1 female, Tuva, "Shagonarsky Khaar-Khan" [Khajyrakan, 20 km E Shagonar], 24.VI.1949, A. Tsherepanov *leg.*-(ZMM); 1 female, Tuva, Tandyn distr., 20.VI.1953-(ZMM); 1 male, Kyzyl env., 1954-(ZIN); 3 males, Tuva, Balgazin forest, 110 km SE Kyzyl, VII.1956, Galkin *leg.*-(ZIN); 1 female, Tuva, Bai-Haak, 26.VI.1959, N. N. Filippov *leg.*-(ZIN); 45 males, 26 females, Russia, Tuva Republic, Hadyn (= Svatikovo) lake (about 40 km S Kyzyl), 5.VII.1959, S. V. Sharova *leg.*-(MD); 47 males, 43 females, same locality, 29.VII.1995, I. Avdeev *leg-* (MD); 1 male, 2 females, 30 km SW Kyzyl [Ust-Elegest env], 4.VII.1962, Mordkovitch *leg.*-(ZIN); 1 male, 3 females, Russia, Tuva Republic, Shagonar, 6.VII.1970, A. Tsherepanov *leg.*-(MD); 1 male, Russia, Tuva Republic, 10 km E Kyzyl, 22.VI.1970, A. Tsherepanov *leg.*-(MD); 1 female, Russia, Tuva Republic, Kyzyl environs, 28.VI.1972, B. Korotyaev *leg.*-(MD); 1 male, Kyzyl env., Ka-Hem, 2.VII.1962-(MD); 1 male, 2 females, same locality, 28.VI.1998, D. Obydov *leg.*-(MD); 3 males, same locality, 21.VI.2003, D. Obydov *leg.*-(MD); 4 males, Russia, Tuva Republic, 110 km SE Kyzyl, Balgazyn env., 9.VII.1996, D. Obydov *leg.*-(MD); 1 male, Russia, Tuva Republic, 10 km N Kyzyl, Ujuksky (Ujuk) ridge, 1200 m, 16.VI.2001, R. Yakovlev *leg.*-(MD); 2 male, 1 female, Russia, Tuva, 20 km S Bai-Haak, 20-21.VII.2002, J. Hron, M. Cesanek *leg.*-(SK).

37b. *Eodorcadion (Humerodorcadion) lutshniki burenum*, ssp. n. (Figs. 37b)

Type locality. – Russia, Tuva Republic, Buren river, Buren-Baj-Haak.

Diagnosis. – Body length in males : 10.8-13.4 mm, in females : 12.7-16.5 mm; body width in males : 4.2-5.2 mm, in females : 5.2-6.6 mm.

Elytra smooth, each elytron usually with only 3 hair stripes (Figs. 37b–5,8-9): two branches of humeral stripe and internal dorsal stripe (marginal stripes and external dorsal stripe are totally absent); sometimes (Fig. 37b-7) dorsal stripes are also absent and only two branches of external dorsal stripe are more or less visible; very rare (one male only Fig. 37b-6) both branches of external dorsal stripe are present.

Distribution (Map 35; locality 10). – Only one population is know in Buren-Baj-Haak environs (Buren river valley in Tuva Republic of Russia), the north-eastern most part of the species area.

Materials. – Holotype, male, Russia, Tuva Republic, Buren river, Buren-Baj-Haak, 1200 m, 18.VI.2002, V. A. Vashchenko *leg.*-(MD); 58 paratypes with same label : 23 males and 15 females-(MD); 8 males and 8 females with same label (collection of S. N. Vashchenko, Kherson); 3 males, 1 female with same label (collection of D. Kasatkin, Rostov-on-Don).

37c. *Eodorcadion (Humerodorcadion) lutshniki bicoloratum*, ssp. n. (Figs. 37c)

Eodorcadion carinatum involvens m. *bicoloratum* Plavilstshikov, 1958 : 440 (Tuva region), unavailable name.

Eodorcadion (s.str.) *involvens* m. *bicoloratum*, Breuning, 1962 : 16, unavailable name.

Eodorcadion lutshniki ab. *bicoloratum*, Namhaidorzh, 1972 : 522, part., unavailable name.

Eodorcadion (H.) lutshniki ab. *bicoloratum*, Danilevsky et al., 2005 : 132-133

Type locality. – Russia, Tuva Republic, south slope of East Tannu-Ola ridge, Terektig river valley near Bert-Dag.

Diagnosis. – Body length in males : 10-15 mm, in females : 12.8-18.8 mm; body width in males : 4.2-5.8 mm, in females : 5.5-6.7 mm.

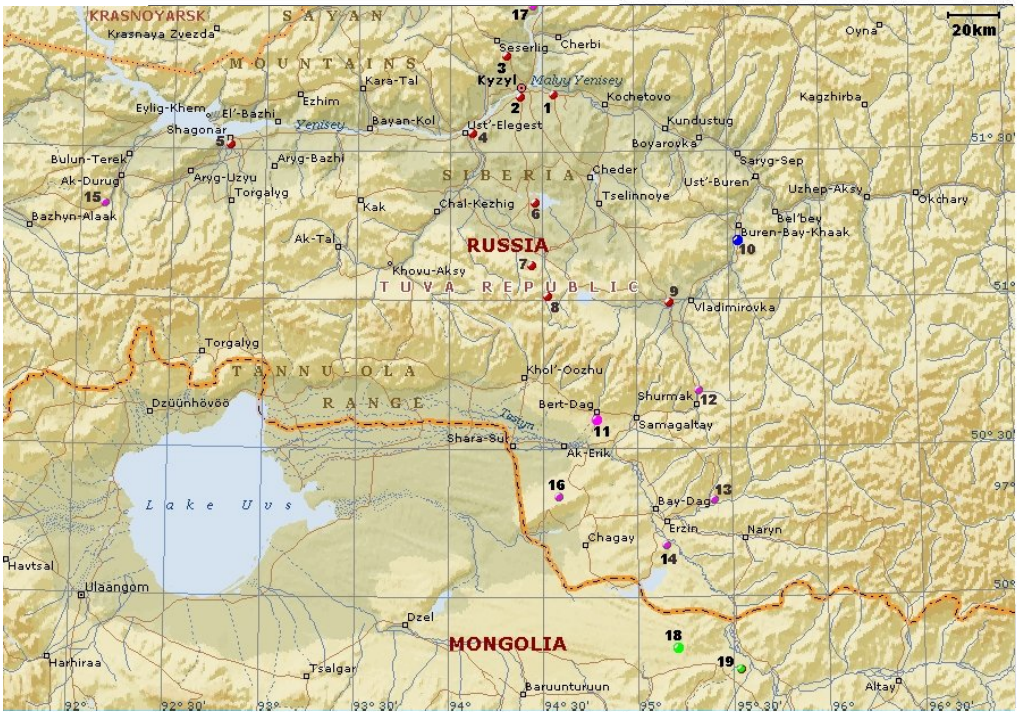
Elytra smooth, glabrous, without white stripes; or very narrow humeral stripe present (especially in females), as well as several small white spots along internal dorsal stripe.

Distribution (Map 35; localities 11-15). – Russia. The subspecies is represented by several more or less isolated populations in Tuva Republic : vallies and foothills eastwards Chadan to Bij-Hem valley and to the south-east part of East Tannu-Ola ridge, then to Tere-Hol lake; known localities are : south slope of Atartash ridge (between Chadan and Shagonar)-(NMNH); south-east slope of East Tannu-Ola in Terektig-Hem valley near Bert-Dag-(ZMM); Shuurmak environs-(MD); 10 km S Erzin (Photo. 13)-(MD); Tere-Hol lake (same population ?)-(ZIN); Erzin distr., Agar-Dag ridge (SW Tes-Hem river valley)-(MD); south slope of Ulug-Haiyrakhan-Dag, 10 km NE Moren, about 25 km NE Erzin-(ZIN); Tuva, Ust-Ujul (? Ust-Ujuk), tributory of Bij-Hem [2 males and 2 females, 20-31.VII.1974, Yu. Korotkov *leg.*]-(BPI, according to the photo and personal message by G. Lafer, 2006).

Materials. – 1 male, holotype, ["Tuva, Terekhty-Hem (= Terektig river), 26.VII.1947, A.Tsherepanov *leg.*"] [in Russian]-(ZMM); 86 paratypes : 1 male, 2 females (whole series was the base for the description of *Eodorcadion carinatum involvens* m. *bicoloratum* Plavilstshikov, 1958, unavailable name) ["Tuva, Terekhty-Hem (= Terektig river), 26.VII.1947, A. Tsherepanov *leg.*"] [in Russian]-(ZMM); 1 male, 1 female, "Tuva, Kyzyl, 30.V.1961 and 22.VI.1972, B. Korotyaev *leg*"-(SK); 2 males, 1 female, Tuva, Tere-Hol, 18.VIII.1976, Chabovsky *leg.*-(ZIN); 2 females, Russia, Tuva, east slope of Mt. Atartash [between Chadan and Shagonar], 6.VII.1980, B. Korotyaev *leg.*-(NMNH); 6 males, 6 females, "Tuva, 30 km N Samagaltaj [same locality], 20.VI.1994, Z. Kletecka *leg.*"(SK); 15 males, 11 females, Russia, Tuva Republic, easternmost extremity of Tannu-Ola ridge, Shuurmak, 1500 m, 25.VI.-1.VII.1997, R. Mishustin and S. Vashchenko *leg.*-(MD); 4 males and 5 females from same locality-(collection of S. N. Vashchenko, Kherson); 1 male and 1 female from same locality-(NMNH); 18 males, 7 females, Tuva, south slope of Ulug-Haiyrahan-Dag, 10 km NE Moren [about 25 km NE Erzin], 5.VI.1999, B. Kataev *leg.*-(ZIN); 1 male, Tuva, Erzin distr., Agar-Dag ridge (SW Tes-Hem river valley), 1-20.VII.1961-(MD); 4 males, 7 females, Russia, Tuva Republic, 10 km S Erzin, 26.VI.2004, R. Yakovlev *leg.*-(MD).

Remarks. – There are several small rivers in Tuva Republic with the name "Terektig-Hem". According to S. Tshernyshev (personal message, 2005), "Terekhty-Hem" sensu Tsherepanov's labels of 1947 is Terektig-Hem on the south slope of East Tannu-Ola ridge near Bert-Dag.

The representatives of the taxon were described by N. N. Plavilstshikov (1958) as *Eodorcadion carinatum involvens* m. *bicoloratum* (unavailable name), and that determination was accepted by S. Breuning (1962). Then B. Namhaidorzh (1962) after study of Plavilstshikov's materials reliably mentioned, that this form belonged to *E. lutshniki* (but did not make the name available), and also attributed to it glabrous specimens from Mongolia. In fact glabrous specimens from Tuva represent a very distinct subspecies, which can never include striated specimens, while glabrous specimens from Mongolia really represent a glabrous aberration of a local subspecies.



Map 35. Localities of ***E. lutshniki*** : Russia, Tuva Republic and Mongolia.

E. l. lutshniki (1-9) : 1. Ka-Hem river, 10 km E Kyzyl; 2. Kyzyl environs; 3. 10 km N Kyzyl; 4. Ust-Elegest env. (about 30 km SW Kyzyl); 5. Shagonar; 6. Hadyn lake; 7. Bai-Haak; 8. 20 km S Baj-Haak; 9. Balgazin.

E. l. burenum, ssp. n. : 10. Buren-Baj-Haak.

E. l. bicoloratum, ssp. n. (11-15) : 11. Terektyg-Hem (type locality of the subspecies); 12. Shuurmak; 13. South slope of Ulug-Haiyrahan-Dag, 10 km NE Moren; 14. 10 km S Erzin; 15. East slope of Atartash ridge; 16. Erzin distr., Agar-Dag Ridge; 17. Ust-Ujuk, Bij-Hem river

E. l. altanelsense (18-19) : 18. 35 km WNW Tes (type locality of the subspecies); 19. 20 km WNW Tes.

37d. *Eodorcadion (Humerodordadion) lutshniki altanelsense* Heyrovsky, 1973a (Figs. 37d)

Eodorcadion lutshniki, Namhaidorzh, 1972 : 522.

Eodorcadion lutshniki ab. *bicoloratum*, Namhaidorzh, 1972: 522, part., unavailable name.

Eodorcadion lutshniki altanelsense Heyrovsky, 1973a : 124 ("Uvs Aimak : Sandgebiet von Altan-els, 35 km WNW von Somon Tes")

Type locality. – Mongolia, Ubsu-Nur aimak, sands Altan-els, 35 km WNW from somon Tes (Delgerekh) (according to the original description).

Diagnosis. – Body length in males : 12-14 mm, in females : 14-15.3 mm; body width in males : 5-5.5 mm, in females : 5.6-5.8 mm.

Antennae relatively short, a little longer than body in males (but never shorter than body in males as it was mentioned in the original description); elytra with distinct furrows; each elytron with 5 hair stripes (Figs. 37d – 12-13,15) : both branches of internal dorsal stripe are fused as well as two external branches of humeral stripe; or sometimes elytra totally glabrous (Figs. 37d – 14,16).

Distribution (Map 35; localities 16-17). – Mongolia, sandy deserts in the north-west part of the republic, the south-eastern most part of the species area.

Known localities are : Ubsu-Nur aimak, sands Altan-Els, 35 km WNW Tes (type locality); sands Altan-Els, NE Barun-Turun-(Namhaidorzh, 1972); Harhir ridge, 15 km S Ulangom-(Namhaidorzh, 1972); Dzabkhan aimak : 20 km WNW Tes-(ZIN).

Materials. – Male, holotype, "Mongolia : Uvs Aimak, Altan els, 35 km WNW von Somon Tes, 1400 m, 23.VI.1968, Exp. Dr. Z. Kaszab"-(HNHM); 1 male, paratype with same label-(HNHM); 1 male, Mongolia, Dzabkhan aimak, 20 km WNW Tes, 3.VII.1968, Arnoldi *leg*.-(ZIN); 1 female (glabrous form), Dzabkhan aimak, 20 km WNW Tes, 3.VII.1968, Emeljanov *leg*.-(ZIN); 1 male (glabrous form), 1 female (typical form), Dzabkhan aimak, 30 km WNW Tes, 3-4.VII.1968, Emeljanov *leg*.-(JV).

Remarks. – Glabrous form from Mongolia was represented by 3 specimens among 12 specimens from Tes environs mentioned by B. Namhaidorzh (1972).

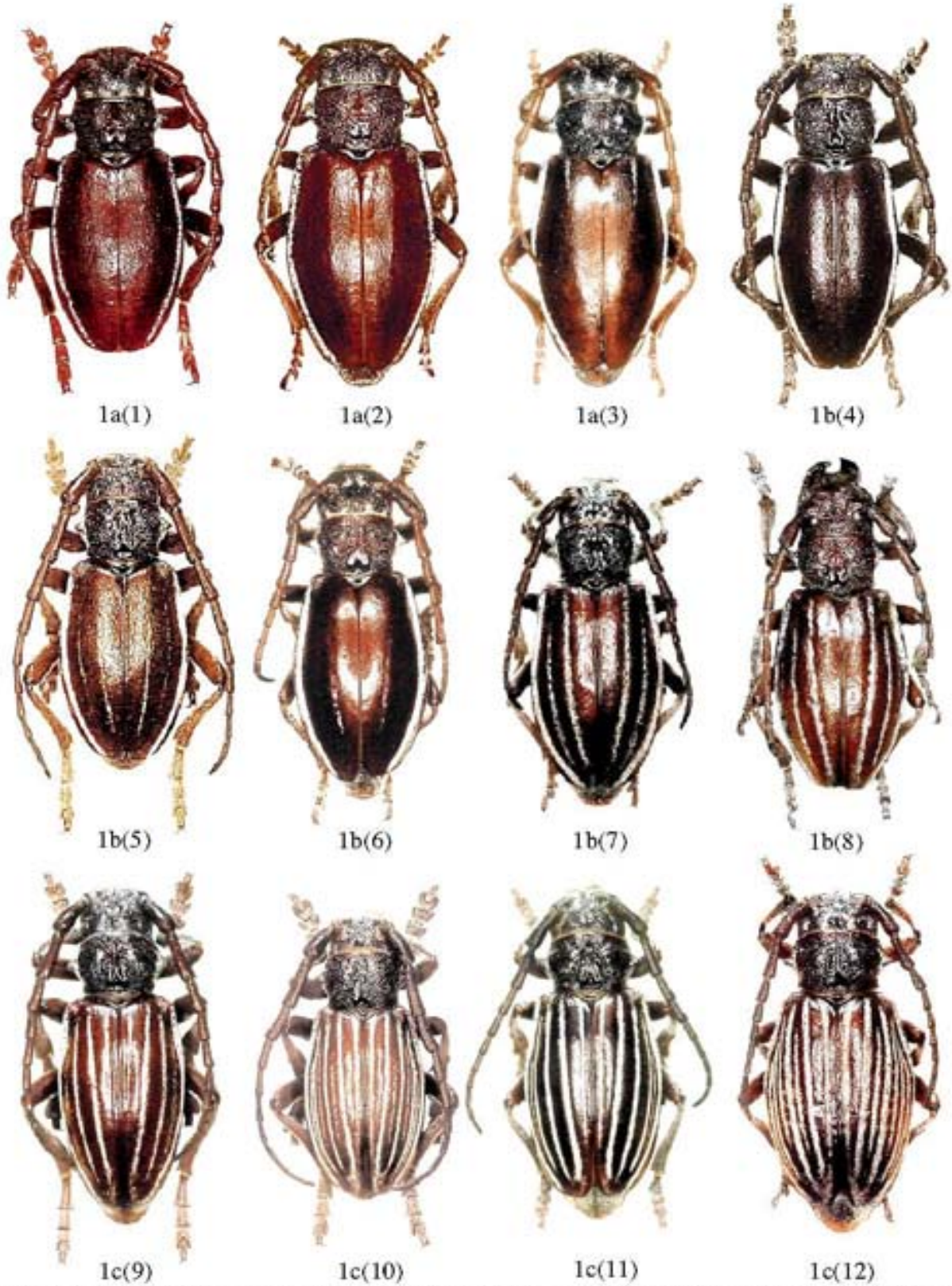
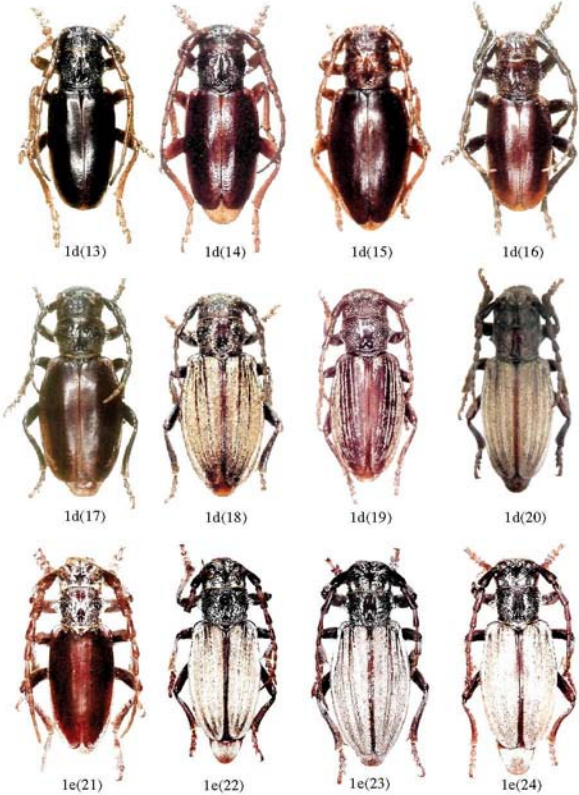


Fig. 1. *E.* (s str.) *carinatum*; 1a (1-3) – *E. carinatum carinatum* : 1 – male, Russia, Cheliabinsk Reg., Bredy District, Arkaim Natural Reserve; 2 - female, Russia, Cheliabinsk Reg., Krasninskij (30km E Verhneuralsk); 3 – female, Russia, Cheliabinsk Reg., Troitzk; 1b (4-8) – *E. carinatum blessigi* : 4 – male, Russia, Altaj, Ongudaj; 5 – male, Russia, Altaj, Shebalino; 6 – female, Russia, Altaj, Ongudaj; 7 – female, Altaj, Katun river, 10km S Chemal; 8 – female, "Tomsk province, Bijsk distr., Sroski"; 1c (9-12) – *E. carinatum bramsoni* : 9–10 - males, Russia, Altaj, Chemal; 11-12 – females, same locality.



1d(13-20) – E. carinatum involvens: 13-14 – males, Russia, Tuva, Naryn river valley; 15 – female, same locality; 16 – male, Mongolia, 30km WNW Ulan-Bator; 17-18 – females, same locality; 19 – female, Mongolia, Selenga nimak, Ero-Gol river valley; 20 – female, "Siberia" (MHNL).1e(21-24) – E. carinatum kiahtenum, 21 – male, holotype, Russia, Burjatija, Kjahta env., Peschanoe lake; 22 – female, paratype, same locality; 23-24 – females, paratypes, Russia, Burjatija, Kjahta env., Mt. Kumyn.

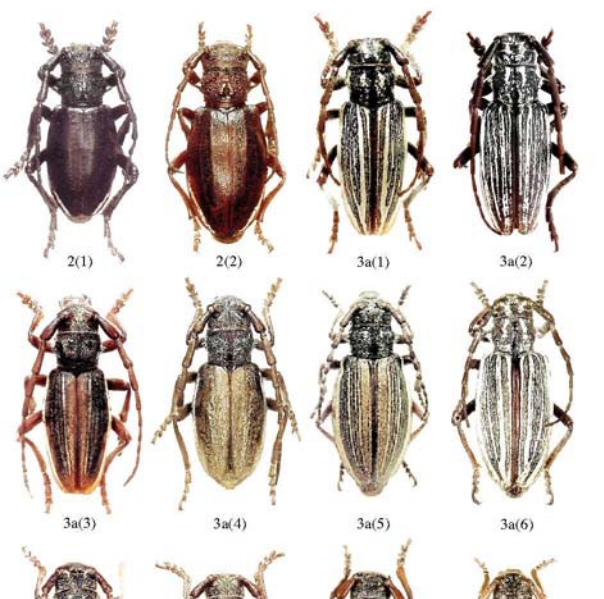


Fig. 2. *E.* (s.str.) *altaicum* : (1) - male and (2) female, Kazakhstan, East-Kazakhstan reg., Katon-Karagaj. Fig. 3. *E.* (s.str.) *chinganicum*; 3a (1-6) - *E. chinganicum chinganicum* : 1 - male, lectotype, China, Khingan ridge, from "Mardyn-gol" to "Balairek-gol"; 2 - male, paralectotype, same locality; 3 - male, syntype of *Neodorcadion chinganicum* var. *melancholicum*, same locality; 4 - male, syntype of *Neodorcadion chinganicum* var. *melancholicum*, China, "Chingan"; 5 - female, China, Khingan ridge, "Imakhe-Khabu"; 6-7 - females, China, Inner Mongolin, NW border of Xilin-Gol Reserve, near Xilinhot; 3b (8) - *E. chinganicum rubrosuturale*: male, HOLOTYPE, China, Inn-Shan; 3c (9-10) - *Eodorcadion chinganicum kerulenum* ssp. n. : 9 - male, HOLOTYPE, Mongolia, Sube-Bator aimak, Tumen-Tzogt; 10 - female, PARATYPE, same locality.

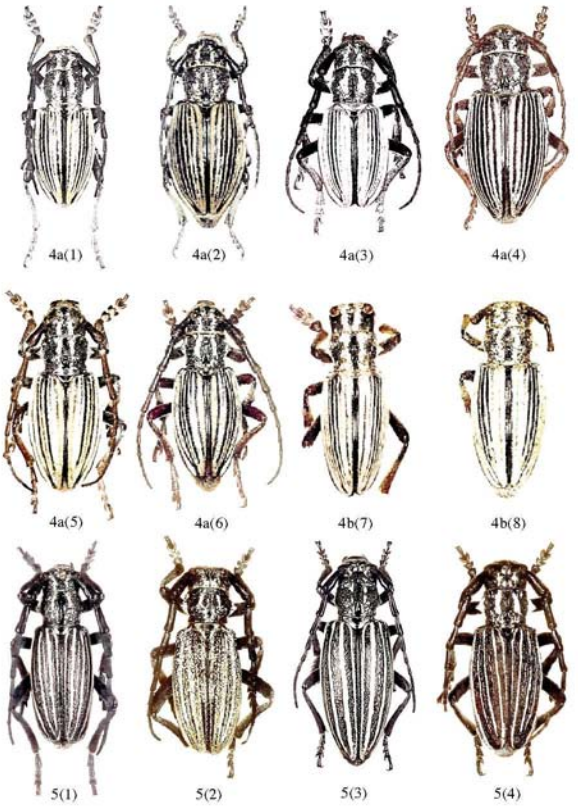


Fig. 4. *E.* (s.str.) *virgatum*; 4a (1-6) - Eodorcadion virgatum virgatum: 1 - male, China, Kangzhuang, about 80km NW Beijing; 2 – female, same locality; 3 – male, China, Kalgan; 4 – female, same locality; 5 – male, China, Beijing env.; 6 – male, China, Inn-Shan; 4b(7-8) – *E. virgatum subvirgatum* : (7) - male and (8) female, syntypes, China, Ordos. Fig. 5. *E.* (s.str.) *darigangense* : 1-2 – males, Mongolia, Sukhe-Bator aimak, Dariganga env., Duut-Nuur; 3 – female, same locality; 4 – male, Mongolia, Sukhe-Bator aimak, 2km W Dariganga.

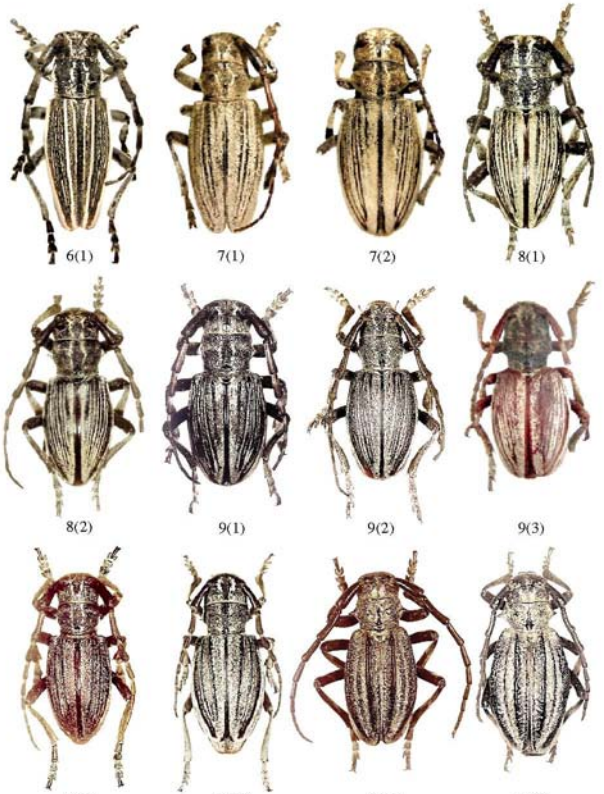


Fig. 6. *E.* (s.str.) *mandschukuoense* : 1 - male, HOLOTYPE, China, Shenyang (Mukden).Fig. 7. *E.* (s.str.) *gansuense* : 1 - male, HOLOTYPE, China, Gansu, Wuwei (Liangzhou) environs; 2 - female, PARATYPE, same locality. Fig. 8. E. (s.str.) shanxiense, sp. n. : 1 - male, HOLOTYPE, China, Shanxi, Yuangping environs (between Datong and Taiyuan); 2 - PARATYPE, male, same locality. Fig. 9. *E.* (s.str.) *multicarinatum* : 1 - male, China, Luliang-Shan, Xian; 2 - male, China, Gansu; 3 - female, China, Gansu (MHNL). Fig. 10. *E.* (s.str.) *oligocarinatum*, sp.n.: 1 - male, HOLOTYPE, China, Shanxi province, Yongji; 2 - female, PARATYPE, same locality.Fig. 11. *E.* (s.str.) *sifanicum* : 1 - male, China, Gansu, Yuzhan (=Yuzhong), Mt. Xinglong; 2 - female, China, Gansu, Zhangye environs (Qilian Shan).

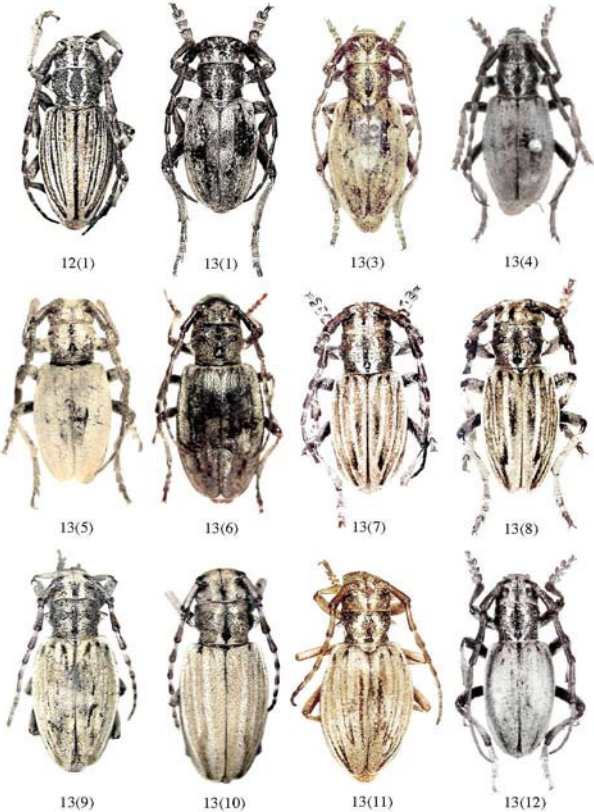


Fig. 12. *E.* (s.str.) *sinicum* : 1 - male, HOLOTYPE, China. Fig. 13. *E.* (s.str.) *glaucopterum* : 1 - male, China, Gansu, Xiahe; 2 – female, same locality; 3 - male, HOLOTYPE of *Eodorcadion annulicorne*, China, northern slope of Qilian Shan Ridge, Gulang environs; 4 – female, paratype of *Eodorcadion annulicorne*, same locality; 5 – male, HOLOTYPE of *Neodorcadion albescens*, same locality; 6 - female, ALLOTYPE of *Neodorcadion grisescens*, China, prov. Shanxi; 7 - male, m. *albovestitum*, China, Gansu, Lanzhou (MHNL); 8 – male, m. *subdenudatum* (TYPE of m. *albovestitum*), China, Gansu, Lanzhou (MHNL); 9-10 – females, China, Gansu, Lanzhou (NMNH); 11 - female, SYNTYPE of *E. glaucopterum*, N China (NMV).

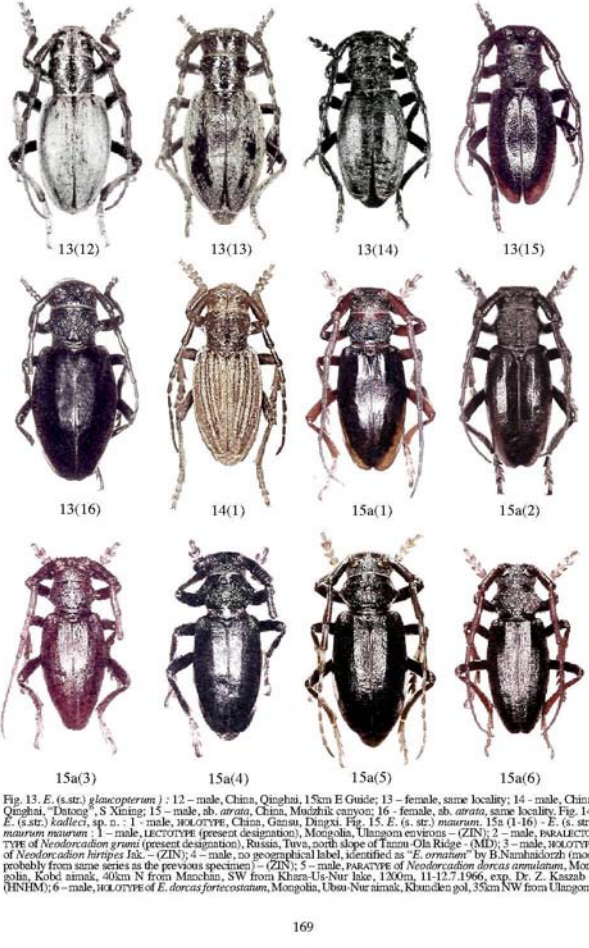


Fig. 13. *E.* (s.str.) *glaucopterum*) : 12 – male, China, Qinghai, 15km E Guide; 13 – female, same locality; 14 - male, China, Qinghai, "Datong", S Xining; 15 – male, ab. *atrata*, China, Mudzhik canyon; 16 - female, ab. *atrata*, same locality. Fig. 14. *E.* (s.str.) *kadleci*, sp. n. : 1 – male, HOLOTYPE, China, Gansu, Dingxi. Fig. 15. *E.* (s. str.) *maurum*. 15a (1-16) - *E.* (s. str.) *maurum maurum* : 1 – male, LECTOTYPE (present designation), Mongolia, Ulangom environs – (ZIN); 2 – male, PARALECTOTYPE of *Neodorcadion grumi* (present designation), Russia, Tuva, north slope of Tannu-Ola Ridge - (MD); 3 – male, HOLOTYPE of *Neodorcadion hirtipes* Ink. – (ZIN); 4 – male, no geographical label, identified as "*E. ornatum*" by B.Namhaidorzh (most probably from same series as the previous specimen) – (ZIN); 5 – male, PARATYPE of *Neodorcadion dorcas annulatum*, Mongolia, Kobd aimak, 40km N from Manchan, SW from Khara-Us-Nur lake, 1300m, 11-12.7.1966, exp. Dr. Z. Kaszab – (HNHM); 6 – male, HOLOTYPE of *E. dorcas forticostatum*, Mongolia, Ubsa-Nur aimak, Khanchei gol, 35km NW from Ulangom.

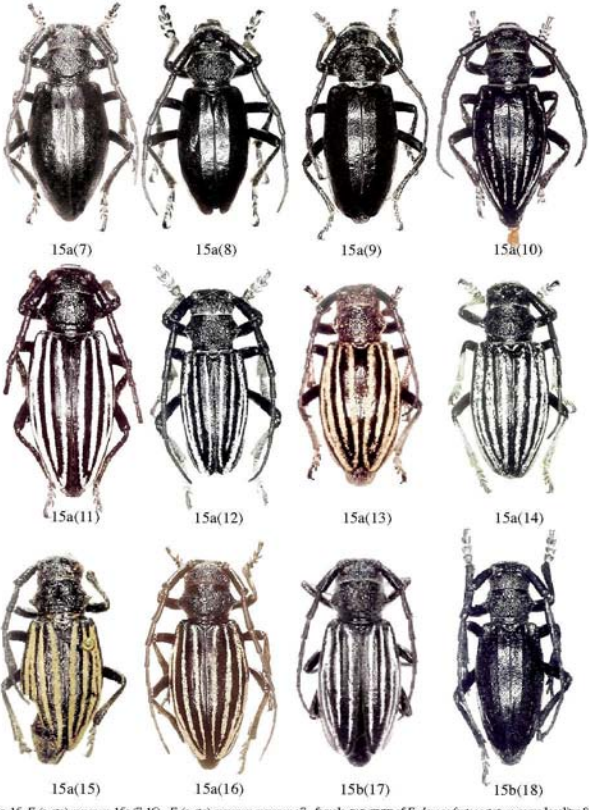
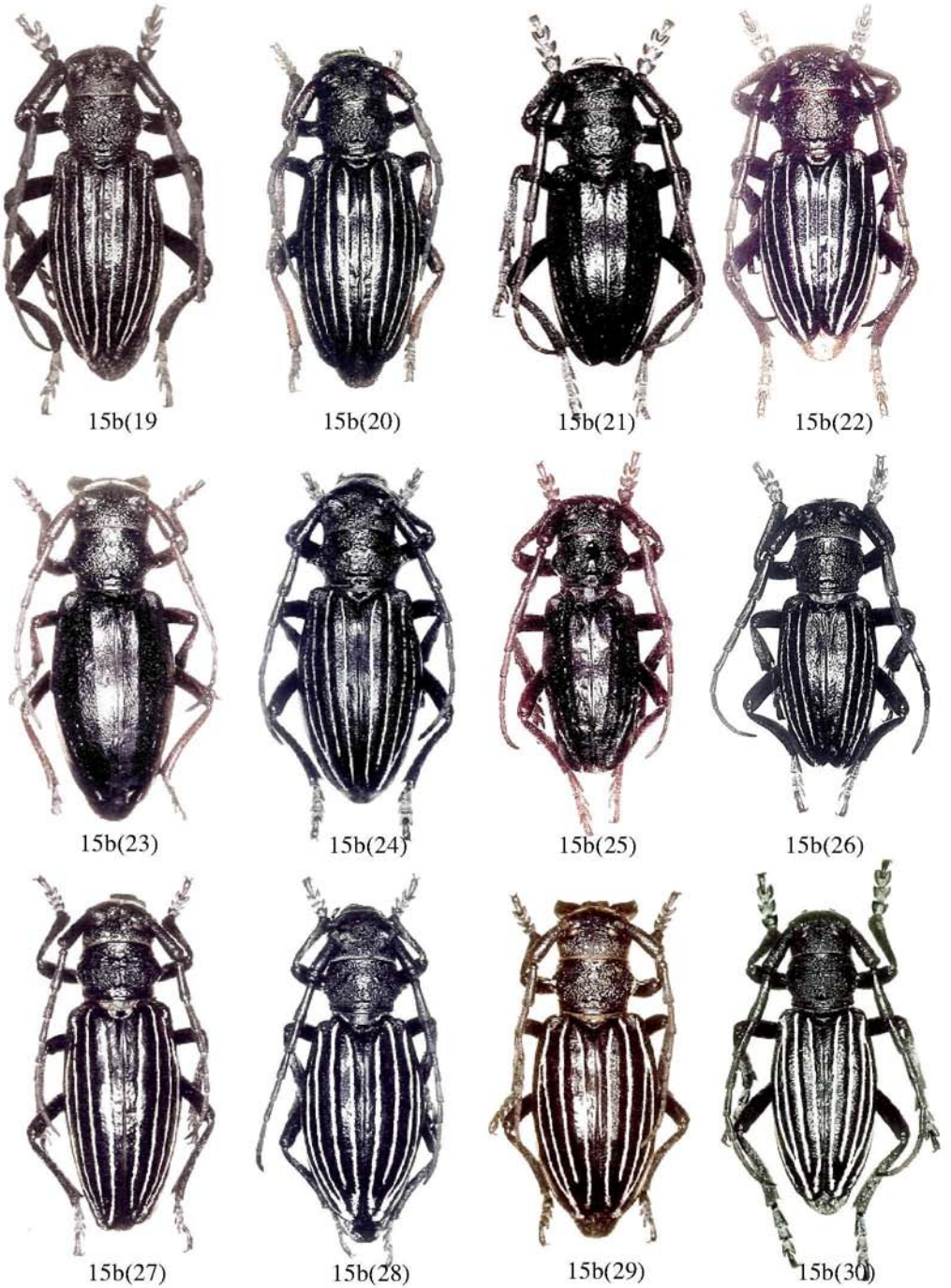
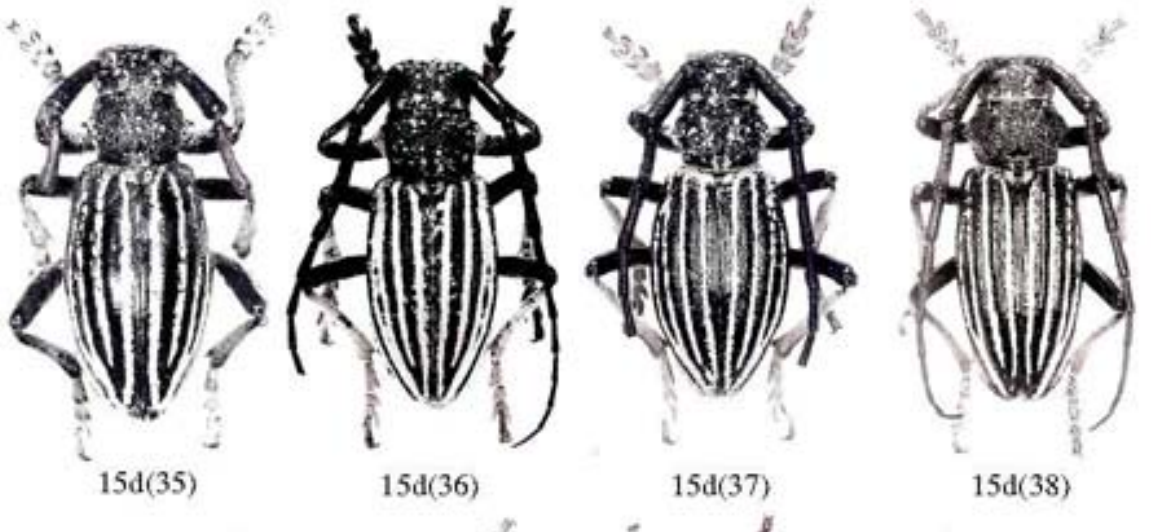


Fig. 15. *E.* (s. str.) *mauran*. 15a (7-16) - *E.* (s. str.) *maurum mauran* : 7 - female, PARATYPE of *E. dorcas fortecostatum*, same locality; 8 - male, Russia, Tuva, Samagaltaj env., Tes river; 9-11 - females, same locality; 12 – male, Russia, Tuva, Sagly env.; 13 – female, same locality; 14 – female, "W Mongolia, Mongol Bulak"; 15 – female, HOLOTYPE of *E. boldi*, Mongolia, Ubsu-Nur aimak, Sagil neur Oreg-Nur lake; 16 – female, designated by L.Heyrovsky as "male-ALLOTYPE" of E. boldi, Mongolia, Ubsu-Nur aimak, 19km NW from Ulangom; 15b (17-34) - *E.* (s. str.) *maurum sajanicum* : 17 - female, SYNTYPE of *Neodorcadion leucogrammum* Suv., Russia, Tuva Republic, north slope of Tannu-Ola ridge; 18– male, Russia, Tuva Republic, north slope of Tannu-Ola ridge, Elegest river, Chal-Kezhig.

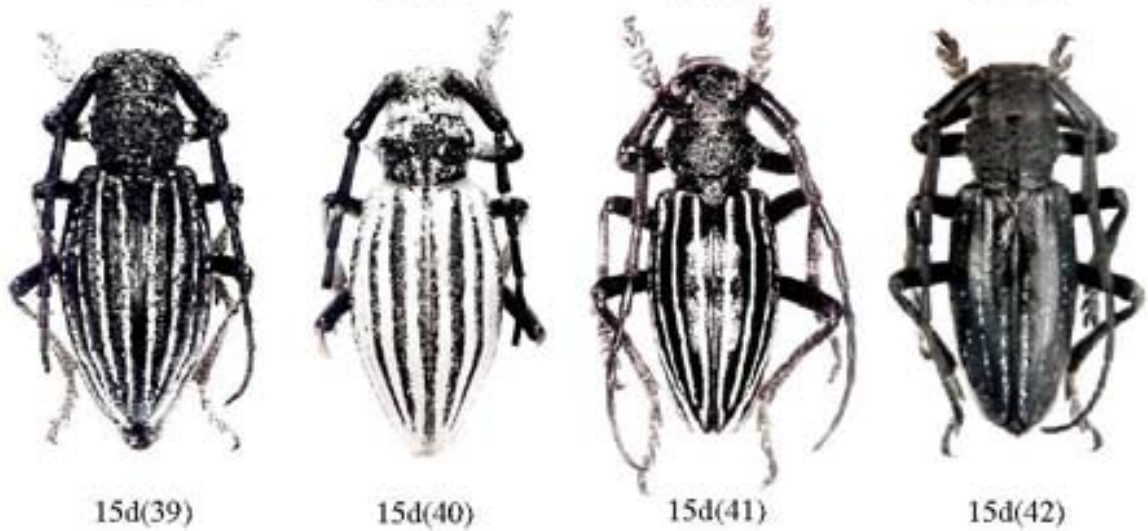


F. 15b (19-30) - *E.* (s. str.) *maurum sajanicum* : 19 – male, Russia, Tuva Republic, north slope of Tannu-Ola ridge, Elegest river, Chal-Kezhig;20 – female, same locality; 21-22 - males, Russia, Tuva Republic, Sush (40km N Kyzyl); 23-24 – females, same locality; 25-26 – males, Russia, Tuva Republic, Saryg-Sep (80km E Kyzyl; 27 – female, same locality; 28 – male, Russia, Krasnoiarsk reg., Us river; 29 – female, same locality; 30 – males, Russia, Tuva Republic, north Kyzyl environs

15b(31) 15b(32) 15b(33) 15b(34)



15d(35) 15d(36) 15d(37) 15d(38)



15d(39) 15d(40) 15d(41) 15d(42)

Fig. 15b (31-34) - *E.* (s. str.) *maurum sajanicum* : 31 – male, Russia, Tuva Republic, north Kyzyl environs; 32 – female, same locality; 33 – male, Tuva Republic, Kyzyl env., N bank Bij-Hem; 34 – female, same locality. 15d (35-42) - *E.* (s. str.) *maurum katharinae* : 35 – male, holotype, Mongolia, Ubsu-Nur lake depression; 36 – male, Mongolia, Ubsu-Nur aimak, south bank of Ubsu-Nur lake; 37-38 - males, Mongolia, Ubsu-Nur aimak, 30km NE Bsrun-Turun; 39-40 – females, same locality; 41-42 – males, Russia Republic, Tuva, Bsj-Dag, 6km NW Erzin

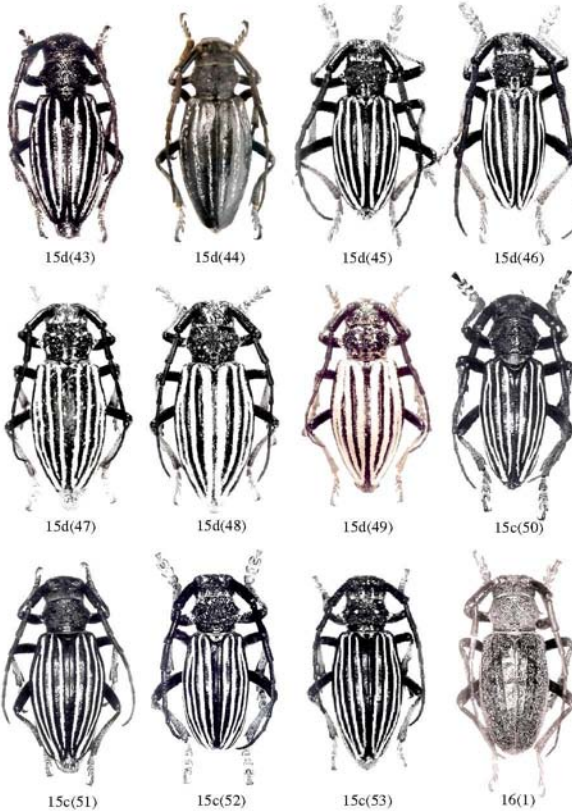


Fig. 15d (43-49) - *E.* (s. str.) *maurum katharinae*: 43-44 – females, same locality; 45-46 – males, Russia, Tuva Republic, Tere-Hol lake; 47-49 – females, same locality. Fig. 15c (50-53) - *E.* (s. str.) *maurum quinquevittatum*: 50 – male, Russia, Tuva Republic, Hadyn lake; 51 – female, same locality; 52 – male, Russia, Tuva Republic, West Tannu-Ola ridge, Ishtii-Hem; 53 – female, same locality. Fig. 16. *E. (s. str.) tuvense*: 1- male, Russia, Tuva Republic, Chaa-Hol.

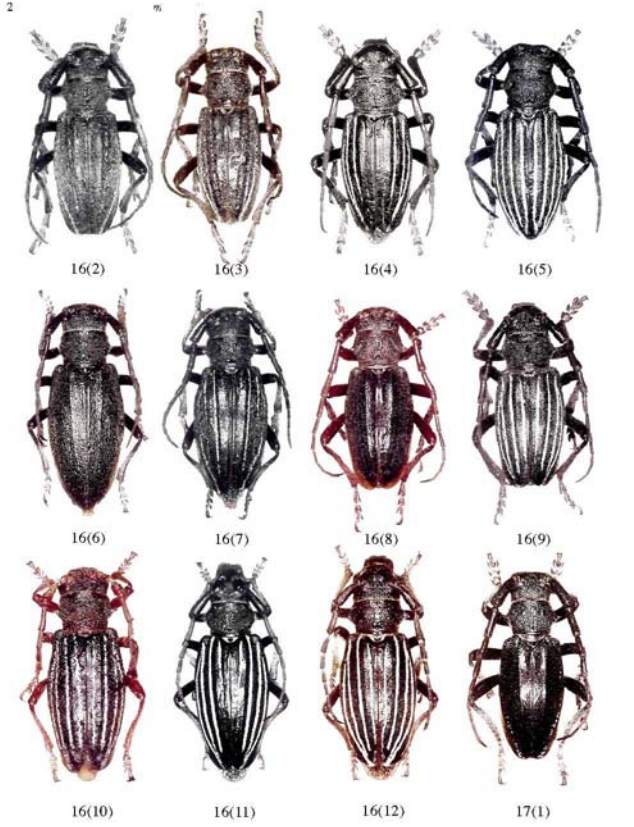


Fig. 16. *E. (s. str.) tuvense* : 2-5 – males, Russia, Tuva Republic, Chaa-Hol; 6-7 – females, same locality; 8-9 – males, Russia, Tuva Republic, Shagonar env.; 10-12 – females, same locality. Fig. 17. *E.* (s. str.) *ptyalopleurum*: 1- male, Russia, Tuva Republic, Shui river valley, Teeli environs.

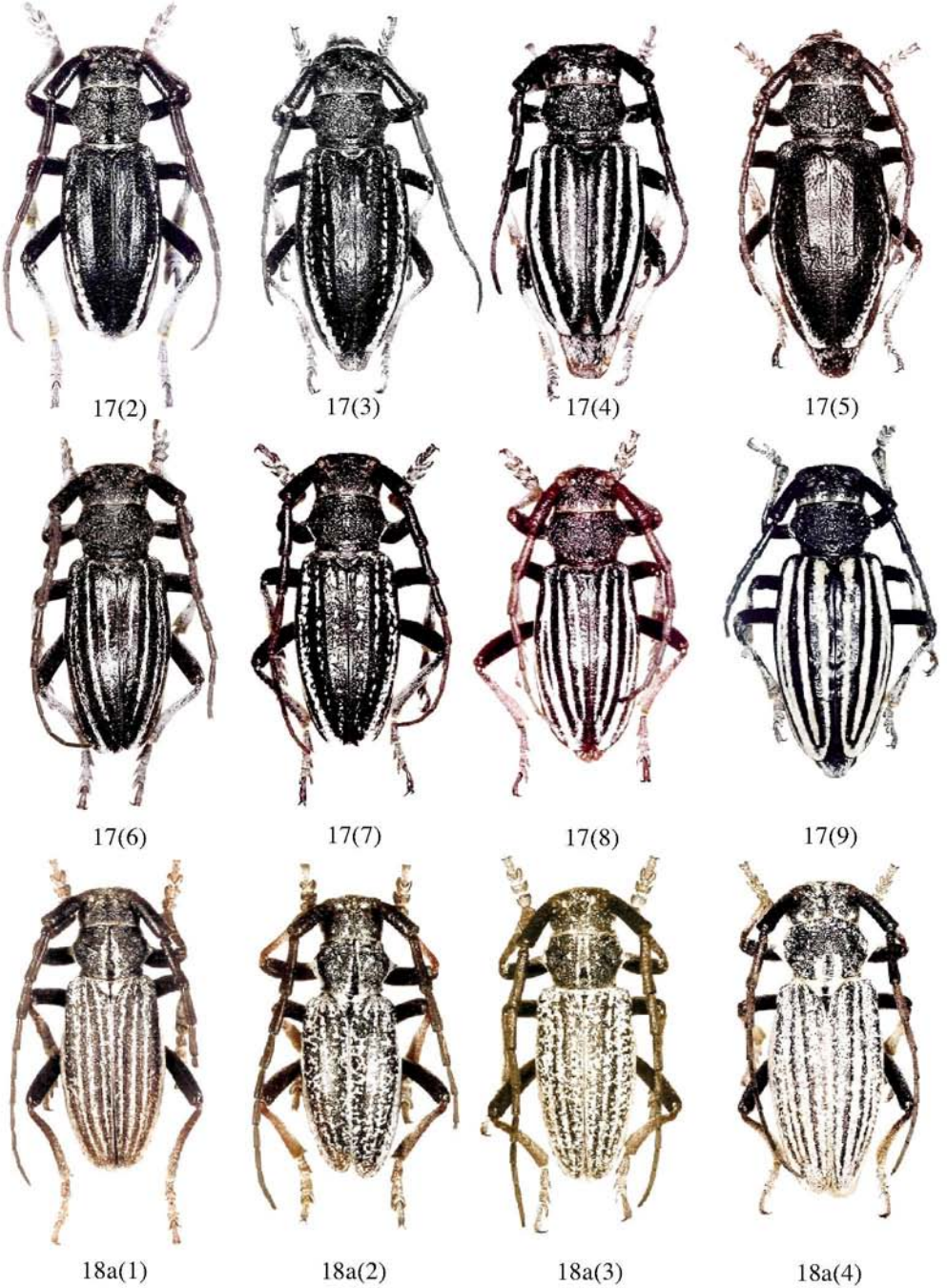


Fig. 17. *E.* (s. str.) *ptyalopleurum* : 2- male, Russia, Tuva Republic, Shui river valley, Teeli environs; 3-4 – females same locality; 5 – female, Russia, Tuva Republic, Ak-Sug river valley, 30km NE Ak-Dovurak; 6 - male, Russia, Tuva Republic, Khondergej; 7-8 – males, Russia, Tuva Republic, Chadan env.; 9– female, same locality. Fig. 18. *E. (O.) dorcas* : 18a (1-13) - *E. (O.) dorcas dorcas* : 1 – male, Mongolia, Dzabkhan aimak, Shurgyngol River - about type locality; 2 – male, m. *irregulare*, "Mong. bor."; 3 – male, PARATYPE of *m. irregulare* Breun., "Mongolia bor., Reitter"; 4 – female, HOLOTYPE of m. *irregulare* Breun., "Mongolia bor., Reitter".

18a(5)

18a(6)

18a(7)

18a(8)

18a(9)

18a(10)

18a(11)

18a(12)

18a(13)

18b(14)

18b(15)

19(1)

F18a (5-13) - *E. (O.) dorcas dorcas* : "; 5 – female, HOLOTYPE of m. *granulosum* Breun., "Mongolia bor., Reitter"; 6 – female, m. *iterruptolineatum*, Mongolia, Gobi-Altaj aimak, lake Ereen; 7 - male, Mongolia, Dzabkhan aimak, 70km SW Uhasutaj, Bogdyn gol; 8 – female, same locality; 9 – male, HOLOTYPE of *Neodorcalion morosum*, "NW Mongolia"; 10 – male, Mongolia, Dzabkhan aimak, 170km W Aldar-Khan; 11 – male, Mongolia, Dzabkhan aimak, Jaro-Hutyk, not far from Uhasutaj; 12 – female, same locality; 13 – male, HOLOTYPE of m. *transitivum* Breun., "Mongolia bor., Reitter";18b(14-15) - *E.* (O.) *dorcas scabrosum*: 14 – male, PARATYPE, Mongolia, Gobi-Altaj aimak, 10km SE Khukh-Mort; 15 – female, PARATYPE, same locality. Fig. 19. *E.* (O.) *consentaneum* : 1 male, Mongolia, Gobi-Altaj aimak, 30km NW Beger, Ushijn-Bulak spring.

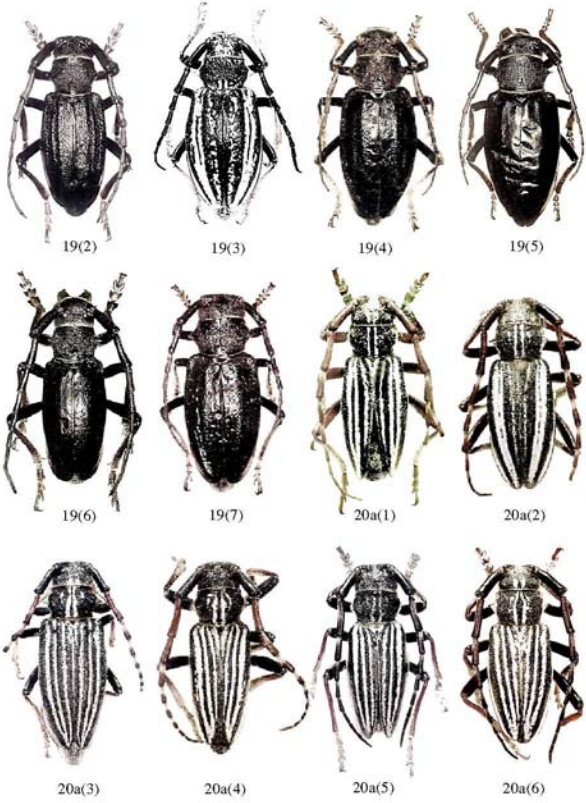


Fig. 19 (2-7) *E.* (O.) *consentaneum* : 2 male, Mongolia, Gobi-Altaj aimak, 30km NW Beger, Ushijn-Bulak spring.3-5 – females, same locality; 6 – male, Mongolia, Gobi-Altaj aimak, 25 km SE Altaj (Jusun-Bulak); 7 – female, "N-W Mongolia" Fig. 20. *E.* (O.) *intermedium*; 20a (1-6) - *E.* (O.) *intermedium intermedium* : 1-2 - males, SYNTYPES, Mongolia, South-Gobi aimak, about 43°27'N, 100°43'E;); 3 – female from V.Jakovlev's coll., most probably also SYNTYPE of *N. intermedium*; 4 – male, SYNTYPE of *E. mongolicum*; 5 – male, Mongolia, Gobi-Altaj aimak, Dzabkhan river valley; 6 – male, Mongolia, Uver-Khangai aimak, south slope of Ushugin-Obo Mt..

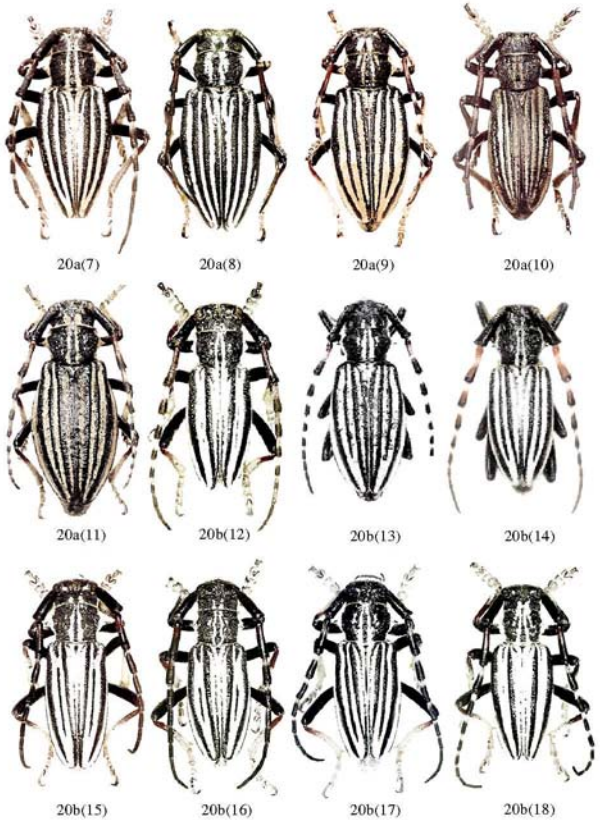


Fig. 20a (7-11) - *E.* (O.) *intermedium intermedium* : 7 – male, Mongolia, Uver-Hangai aimak, Nugryn-Els, 15km ESE Barun-Baian-Ulan; 8-9 – females, same locality; 10 – male, HOLOTYPE of *E. kaszabi*, Mongolia, Baian-Hongor aimak, 5km S from Bogd, valley of Tujn gol; 11 – female, PARATYPE of *E. kaszabi*, Mongolia, Uver-Hangai aimak, Khovd environs; 20b(12-18) - *E. (O.) intermedium kozlovi* : 12 - male, SYNTYPE of *Neodorcadion kozlovi*, Mongolia, South-Gobi aimak, Khutzen-Shanda well - (MHNL); 13 – female, SYNTYPE of *Neodorcadion kozlovi* Suv., same locality; 14 - male, SYNTYPE(?) of *Neodorcadion kozlovi*, Mongolia, South-Gobi aimak, Tzosto river; 15-18 – males, Mongolia, East-Gobi Aimak, 2km SE Mandakh.

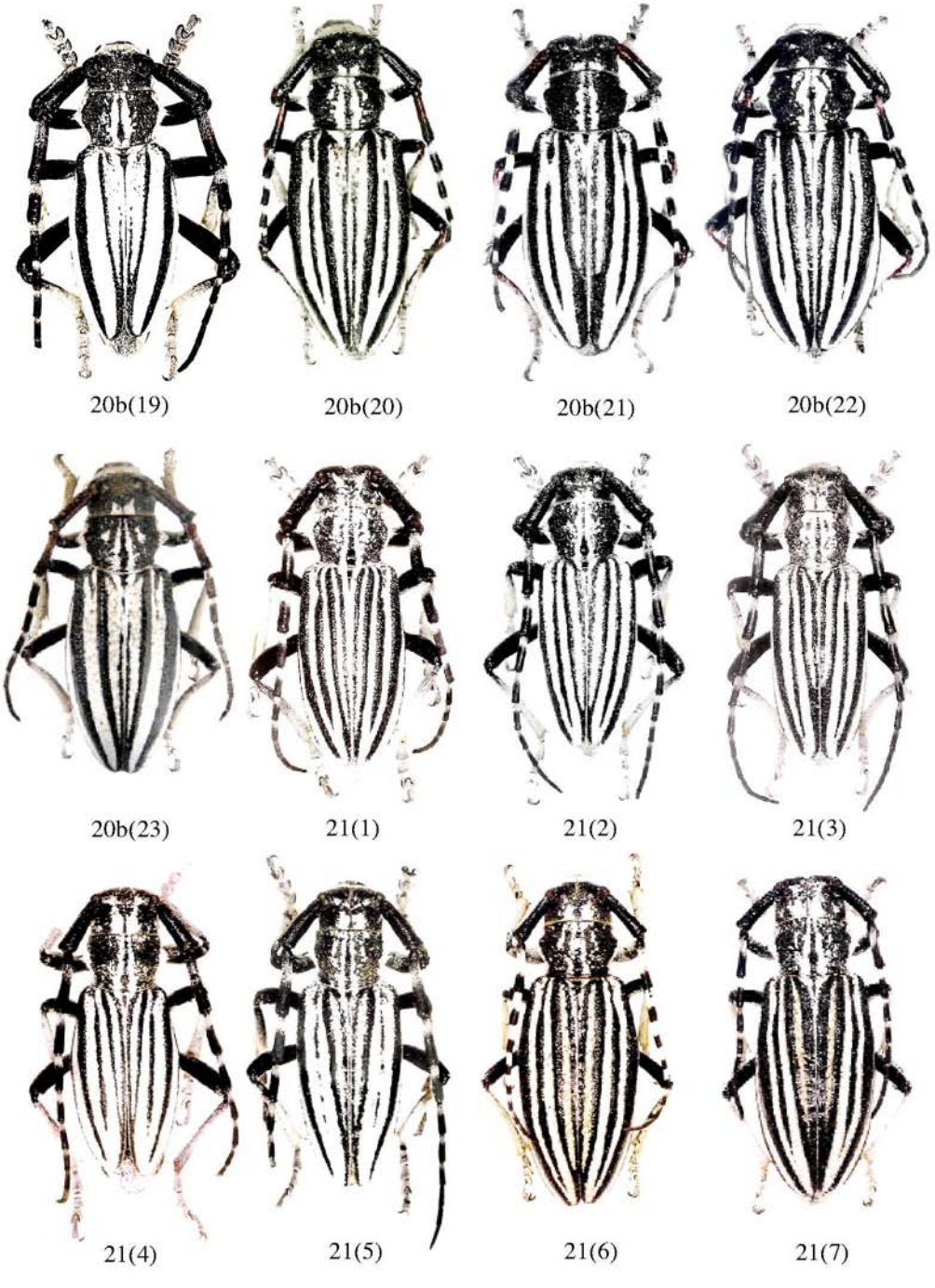


Fig. 20b (19-23) - *E. (O.) intermedium kozlovi* : 19 – male, Mongolia, East-Gobi Aimak, 2km SE Mandakh; 20-23 – females, same locality. Fig. 21. *E. (O.) gorbunovi* : 1 – male, HOLOTYPE, Mongolia, East-Gobi Aimak, 7km SW Khatan-Bulak; 2 – male, PARATYPE, Mongolia, East-Gobi Aimak, 24km SE Khatan-Bulak; 3 – male, PARATYPE, Mongolia, East-Gobi Aimak, 23km SE Khatan-Bulak; 4-5 – males, PARATYPES, Mongolia, East-Gobi Aimak, 11km SE Khatan-Bulak; 6-7 – females, PARATYPES, same locality.

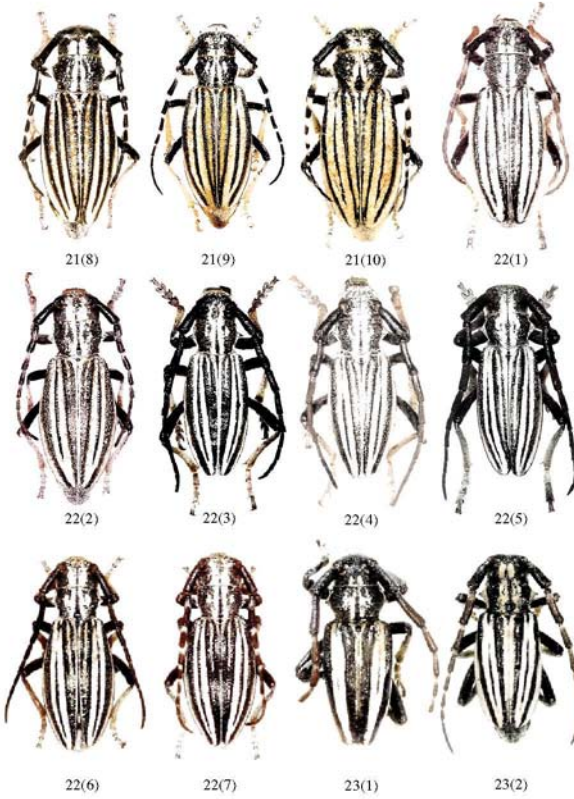


Fig. 21. *E. (O.) gorbunovi*: 8 – female, PARATYPE, Mongolia, East-Gobi Aimak, 23km SE Khatan-Bulak; 9 – female, paratype, Mongolia, East-Gobi Aimak, 11km SE Khatan-Bulak; 10 – female, PARATYPE, Mongolia, East-Gobi Aimak, 7km SW Khatan-Bulak.Fig. 22. *E. (O.) argaloides*: 1 – female, HOLOTYPE, "Mongol. merid."; 2 – female, "S. Mongoliet" (wrongly designated by S.Breuning as PARATYPE of *E. argaloides*; 3-4 – males, Mongolia, East-Gobi aimak, 30km SSE Tenger-Nur lake; 5 - male, Mongolia, East-Gobi aimak, 30km SSE Shokhoi-Nur lake; 6-7 – females, same locality. Fig. 23. *E. (O.) oryx*: 1 – male, HOLOTYPE, Mongolia; 2 – male, "Nordl. Mongolei, Changai, Leder".

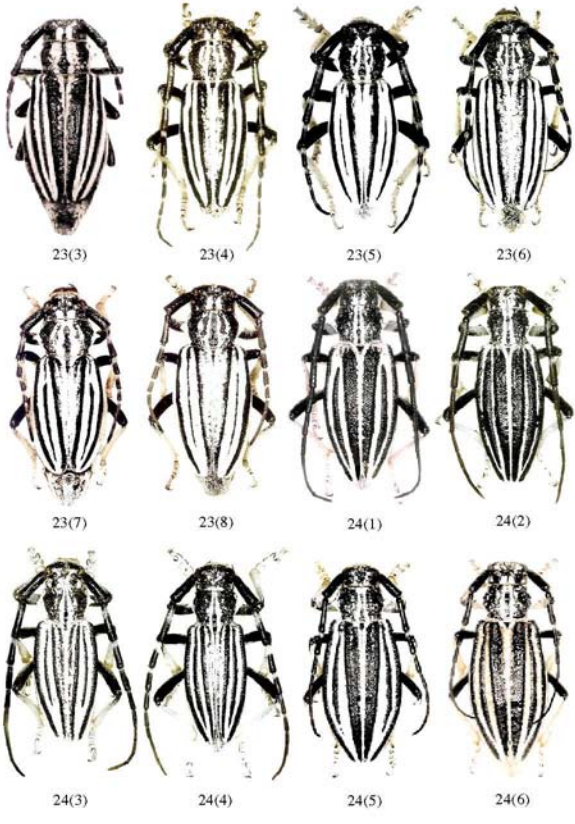


Fig. 23. *E. (O.) oryx* : 3 – female "Nordl. Mongolei, Changai, Leder".; 4-5 – males, Mongolia, Uver-Hangai Aimak, 50km NW Aiverkhei; 6-8 - females, same locality;. Fig. 24. *E. (O.) zichyi*: 1-3 – males, Mongolia, East-Gobi aimak, 18km SSW Khuvsgel; 4 – male, Mongolia, East-Gobi aimak, 2km SE Khuvsgel; 5 – female, Mongolia, East-Gobi aimak, 18km SSW Khuvsgel; 6- Mongolia, East-Gobi aimak, 2km SE Khuvsgel.

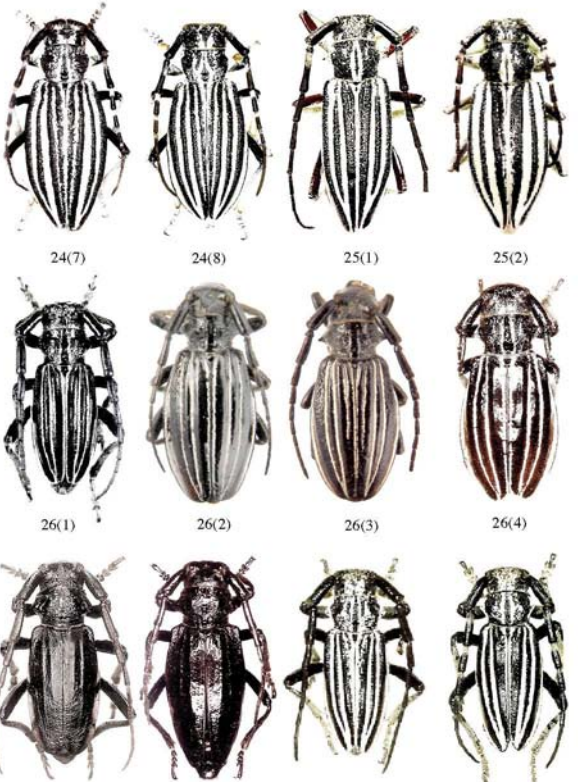


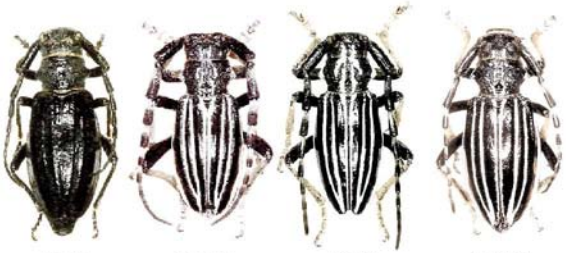
Fig. 24. *E. (O.) zichyi* : 7-8 - Mongolia, East-Gobi aimak, 2km SE Khuvsgel. .Fig. 25. *E. (O.) heros* : 1 – male, "China"; 2 – female, HOLOTYPE, China, "S Alashan". Fig. 26. *E. (O.) novitzkyi* : 1 – male, Mongolia, East aimak, Tamzagbulag; 2 - – female, SYNTYPE of *Neodorcadion novitzkyi* Suv., Mongolia, from Kerulen to Khingan; 3 - female, Mongolia, East aimak, Bujr-Nur lake; 4 – female, Mongolia, Hentei aimak, Bor-Khudzhirijn-Daba pass; 5-6 – male and female, SYNTYPES of *Neodorcadion novitzkyi* var. *inalbatum* Suv., Mongolia, from Kerulen to Khingan. Fig. 27. *E. (O.) exaratum;* 27a (1-2) - *E. (O.) exaratum exaratum* : 1 – male, Mongolia, Suhe-Bator aimak, 16 km WSW Dariganga; 2 - male, Mongolia, Suhe-Bator aimak, 9 km NNW Naran;

27a(3) 27a(4) 27a(5) 27a(6)

27a(7) 27a(8) 27a(9) 27a(10)

27a(11) 27a(12) 27a(13) 27a(14)

Fig. 27a (3-14) - *E. (O.) exaratum exaratum* : 3-4 – males, Mongolia, East-Gobi aimak, 9 km NE of Baian-Munkh; 5-7 – females from same locality; 8 – female, Mongolia, Suhe-Bator aimak, 9 km NNW Naran; 9 – female, Mongolia, Suhe-Bator aimak, 38 km ENE Baian-Delger; 10 - female, LECTOTYPE of *Dorcadion exaratum* Ménetriés, China – (present designation, ZIN); 11 – female (designated as "male" by Ménetriés), PARALECTOTYPE of *Dorcadion exaratum* Ménetriés, China – (present designation, ZIN); 12 - female, PARALECTOTYPE of *Dorcadion exaratum* Ménetriés, China – (present designation, ZIN); 13 – female, China - (MHNL); 14 – female, Mongolia, East-Gobi aimak, 9 km NE of Baian-Munkh;



27a(15) 27b(16) 27b(17) 27b(18)

27b(19) 27b(20) 27b(21) 27b(22)

27b(23) 27b(24) 27b(25) 27b(26)

Fig. 27a (15) - *E. (O.) exaratum exaratum* : 15 – female, Mongolia, Suhe-Bator aimak, 9 km NNW Naran;27b(16-26) - *E. (O.) exaratum argali* : 16-17 – males, Mongolia, Central-Gobi aimak, 8 km WNW Ada-Tzag; 18-21 – females from same locality; 22 – male, Mongolia, Central-Gobi aimak, 12 km N Mandal-Gobi; 23 – female from same locality; 24 – female, Mongolia, "valley of Kherulium, 7.1899"; 25 – male, PARATYPE of *Eodorcadion quadricarinatum* Heyr., Mongolia, Central Aimak, 12km S from Bajanburaat; 26 – female, HOLOTYPE of *Eodorcadion quadricarinatum* Heyr., Mongolia, Central Aimak, 12km S from Bajanburaat;

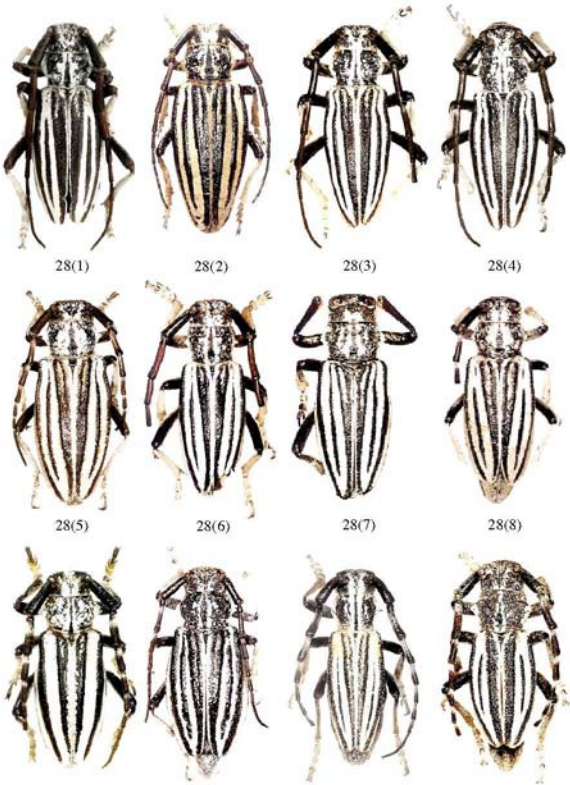


Fig. 28. *E. (O.) ornatum* : 1 – male, (NE China (JV), "Mongol."; 2 - female, SYNTYPE, NE China; 3-4 – males, NE China, "Mongolia" (MHNL); 5 – female, HOLOTYPE of *E. ornatum* m. *rufimembre*, "Mongolia"; 6-8 - males and a female, NE China (SMTD); 9 – male, HOLOTYPE of Neodorcadion princeps; 10 – female, China, Inner Mongolia, NW border of Xilin Gol Reserve, near Xilin Hot; 11 - male, NE China, "Mongolia" (NMV); Fig. 29. *E. (O.) licenti* : 1 – male, "China bor.".

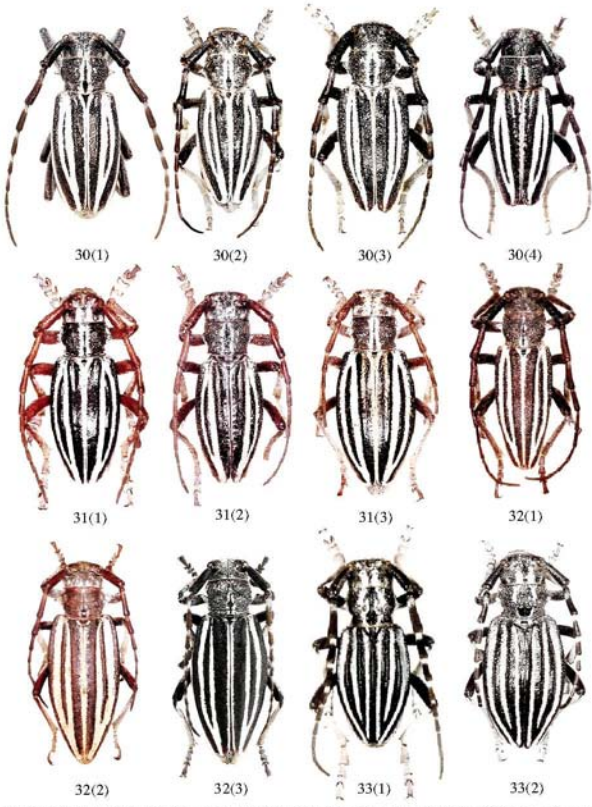
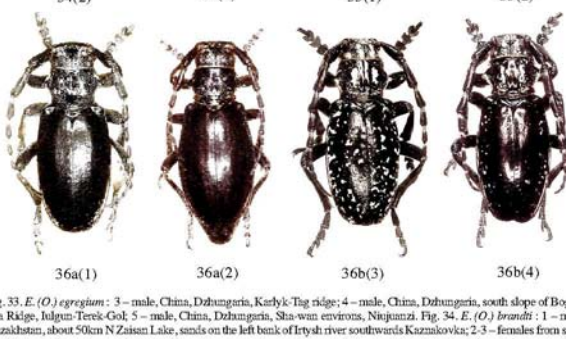


Fig. 30. *E. (O.) kaznakovi* : 1-2, males, SYNTYPES, China, Helan Shan, Buian Hot – (ZIN and MHNL); 3 – male, SYNTYPE, S Alashan, Dolone-gol – (ZMM); 4 – male, China, Alashan – (ZIN) .Fig. 31. *E. (O.) jakovlevi* : 1-2 – males, syntypes, China, Helan Shan, Khoten-Gol defile; 3 – female, SYNTYPE from same locality. Fig. 32. *E. (O.) potanini* : 1 – male, syntype, China, Ordos (ZIN); 2 – female, China, Ordos (ZIN); 3 – female, China, Ordos (JV). Fig. 33. *E. (O.) egregium* : 1 – male, Mongolia, Kobd aimak, 3km N Uench, Uench-gol river; 2 – female, Mongolia, Kobd aimak, 45 km SW Bulgan.

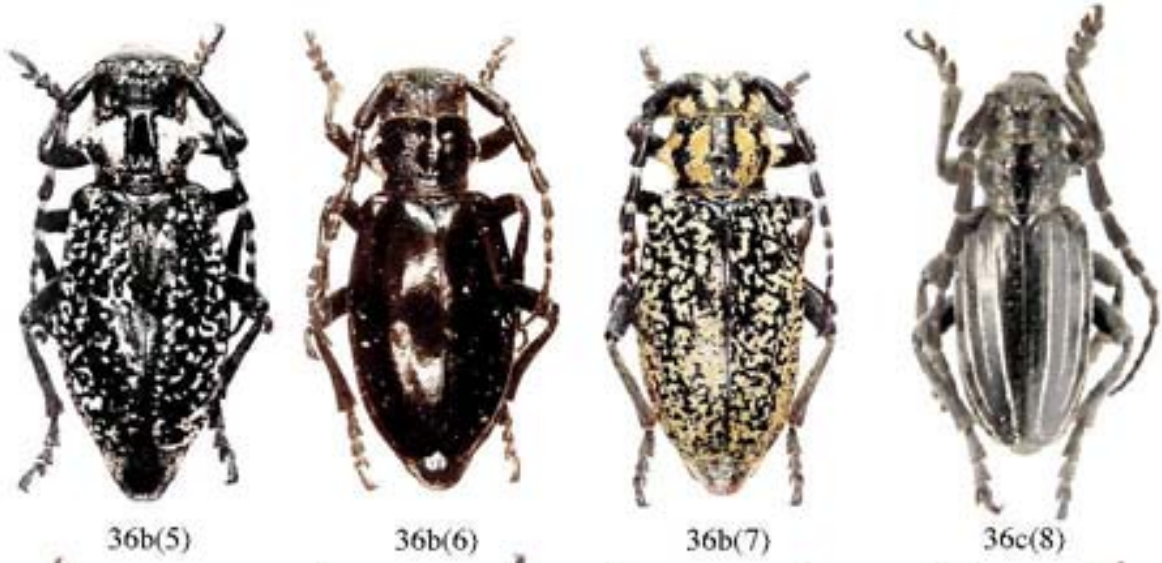
33(3) 33(4) 33(5) 34(1)

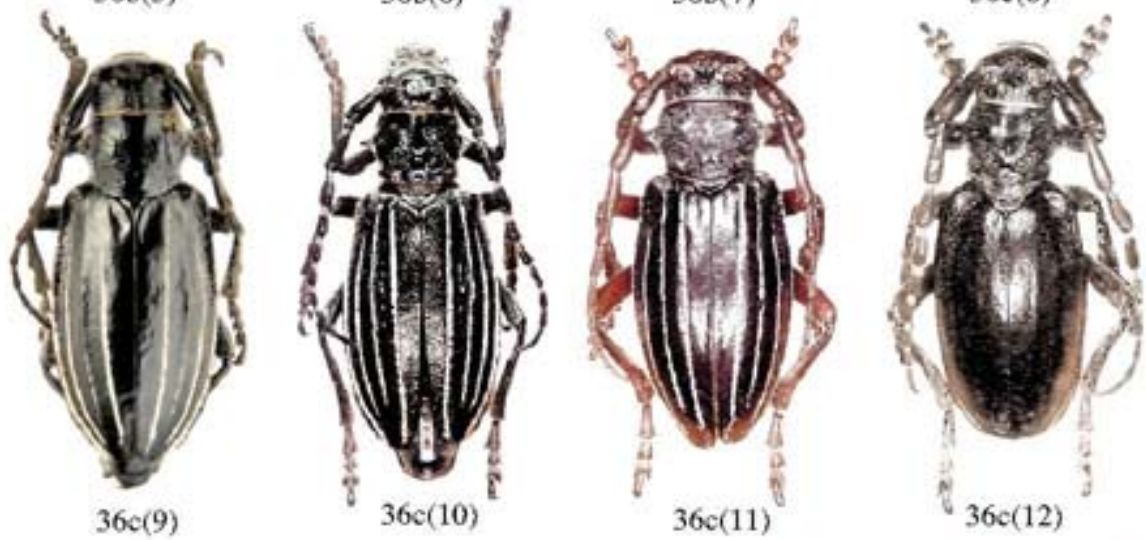
34(2) 34(3) 35(1) 35(2)



36a(1) 36a(2) 36b(3) 36b(4)

Fig. 33. *E. (O.) egregium* : 3 – male, China, Dzhungaria, Karlyk-Tag ridge; 4 – male, China, Dzhungaria, south slope of Bogdo-Ula Ridge, Iulgun-Terek-Gol; 5 – male, China, Dzhungaria, Sha-wan environs, Niujunzi. Fig. 34. *E. (O.) brandti* : 1 – male, Kazakhstan, about 50km N Zaisan Lake, sands on the left bank of Irtysh river southwards Kaznakovka; 2-3 – females from same locality. Fig. 35. *E. (O.) oreadis*: 1 – male, China, Dzhungaria, Karlyk-Tag ridge, 10km E Koumenzi; 2 – female from same locality. Fig. 36. *E. (H.) humerale*; 36a(1-2) – *E. humerale humerale* : 1 – male, Russia, Chita reg., Vershino-Darasunskij env., Bogatuj Mt.; 2 – female, same locality; 36b(3-7) - *E. humerale impluviatum* : 3-4 – males, Mongolia, Central aimak, 27km N Gatzurt.





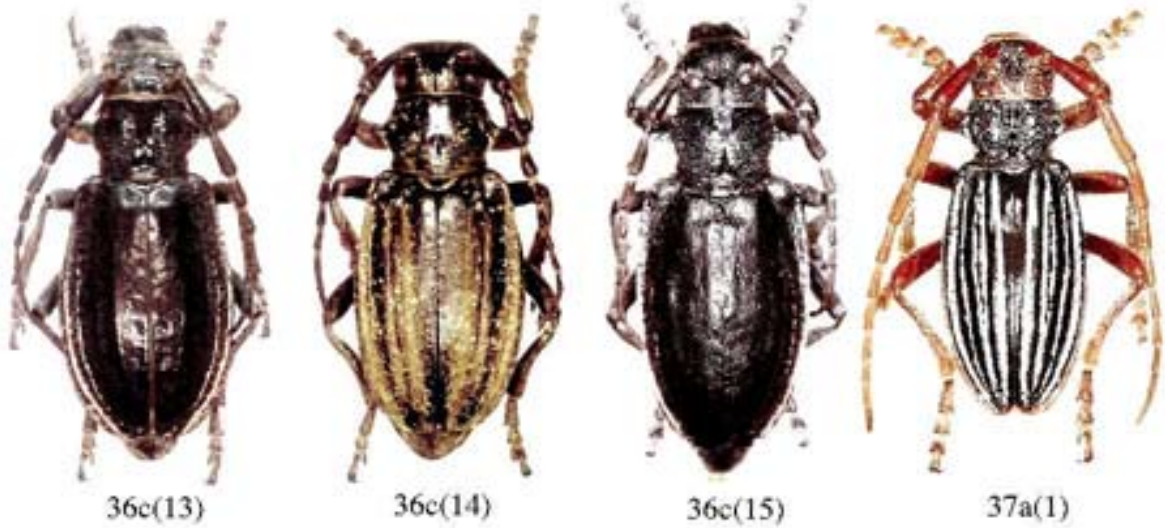


Fig. 36b (5-7) - *E. humerale impluviatum*: 5-6 – females, Mongolia, Central aimak, 27km N Gatzurt; 7 – female, Mongolia, Uver-Hangai aimak, 15km W Baian-Teg, Tatzyn-Gol; 36c (8-15) - *E. humerale trabeatum*: 8 – male, Harbin env.; 9-10 – females – same locality; 11 – male, identified by S.Breuning as *E. quadrilineatum*, China, Inner Mongolia, Jining; 12 – male, China, Mandzhuria, Anbga env.; 13 – female, same locality; 14 – female, Russia, "Radde, Amur"; 15 – female, Russia, Primorje Region, national reserve "Kedrovaia Pad".Fig. 37. *E. (H.) lutshniki*; 37a (1) – *E. lutshniki lutsniki*: 1 – male, Russia, Tuva Republic, Kyzyl env.

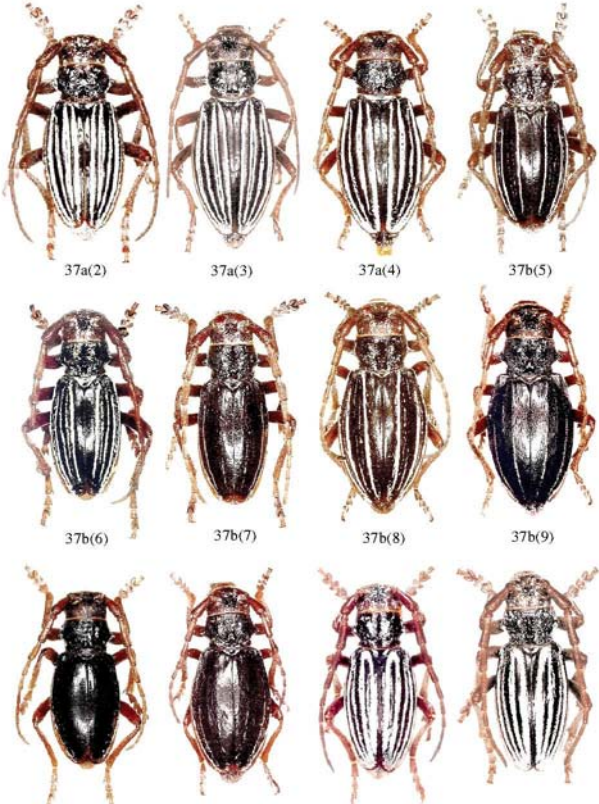


Fig. 37a (2-4) – *E. lutshniki lutsniki* : 2 – male, Russia, Hadyn lake env., 40 km S Kyzyl; 3-4 – females, same locality; 37b (5-9) - *E. lutshniki burenum* : 5 – male, HOLOTYPE, Russia, Tuva Republic, Buren river, Buren-Baj-Haak; 6-7 – males, PARATYPES from same locality; 8-9 – females, PARATYPES from same locality. Fig. 37c (10-11) - *E. lutshniki bicoloratum* : 10 – male, PARATYPE, Russia, Tuva Republic, Tannu-Ola Ridge, Shuurmak; 11 – female, PARATYPE, same locality. 37d (12-16) - *E. lutshniki altanelsense* : 12 – male, holotype, Mongolia, Ubsu-Nur aimak, Altan els, 35 km WNW from Tes; 13 – male, Mongolia, Dzabkhan aimak, 20 km WNW from Tes.

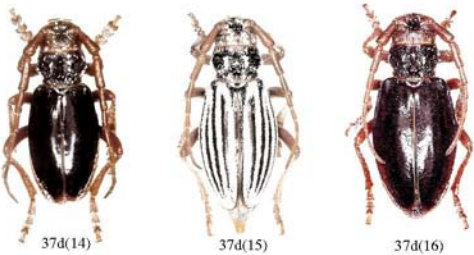
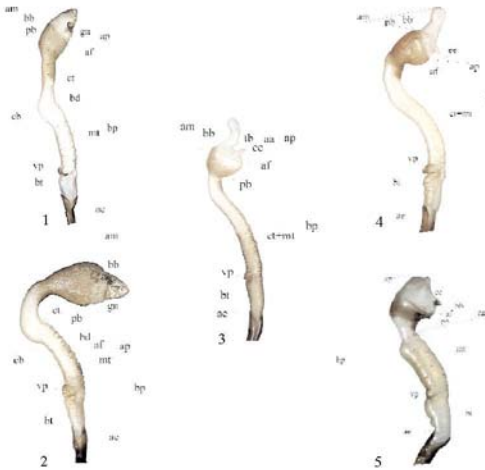


Fig. 37d(14-16) - *E. lutshniki altanelsense* : 14 – female, same locality; 15 – male, Dzabkhan aimak, 30km WNW from Tes; 16 – female(glab.f.), same locality.

Morphological details: aa – appendix of apical bubble, ae – aedeagus, af – apical furrow, am – apical mace, ap – apical phallomer, bb – apical bubble, bd – central bend, bp – basal phallomer, bt – basal tube, cb – central bladder, ct – central trunk, ee - everted distal portion of ejaculatory duct, gn – gonopores, mt – medial tube, pb – preapical bulb, tb – dorsal tubercle of bubble appendix, vp – ventral plates.



Plans 1-5. Morphology of *Eodorcadion* endophallus. 1 – *E.* (s. str.) *carinatum carinatum*; 2 – *E. (s. str.) maurum sajanicum*; 3 – *E. (O.) exaratum argali*; 4 – *E. (O.) brandti*; 5 – *E. (H.) humerale impluviatum*.

Photo. 1. Russia, Altaj Mts., Malyj Jaloman river valley; locality of *E. carinatum blessigi* (photo by Yu. Mikhailov).

Photo. 2. Mongolia, Central aimak, 40 km ESE Ulan-Bator, Tola river valley, 1400 m; locality of *E. carinatum involvens* (photo M. D.).

Photo. 3. Russia, Tuva Republic, Tes-Hem river valley, Erzin env.; locality of *E. maurum katharinae* (photograph by Yu.Mikhailov).

Photo. 4. Tuva, Tere-Hol lake; locality of *E. maurum katharinae* (photograph by A.Saldaitis).

Photo. 5. Russia, Tuva Republic, Shagonar env.; locality of *E. tuvense* (photograph by Yu.Mikhailov).

Photo. 6. Russia, North-West Tuva Republic, Ak-Sug river, 60 km NW Ak-Dovurak; locality of *E. pyaloplanum* (Yu.Mikhailov).

Photo. 7. Mongolia, Gobi Altaj Aimak, Dzhargalan env., Dzabkhan river; locality of *E. d. dorcas*; (photograph by A.Saldaitis).

Photo. 8. Mongolia, East-Gobi aimak, 2 km SE Mandakh, 1300 m; locality of *E. intermedium koslovi* (photo M. D.).

Photo 9. Mongolia, Central Gobi aimak, 8 km WNW Ada-Tzag, 1400 m; locality of *E. exaratum argali* (author's photo).

Ph. 10. Mongolia, Sühe-Bator aimak, Dashgenga and its environs, area of *E. darijangense*, *E. exaratum exaratum*, *E. chinganicum lavalatum* (M. D.).

Photo. 11. Mongolia, Sühe-Bator aimak, 2 km W Dashgenga, 1230 m; locality of *E. exaratum exaratum* (author's photograph).

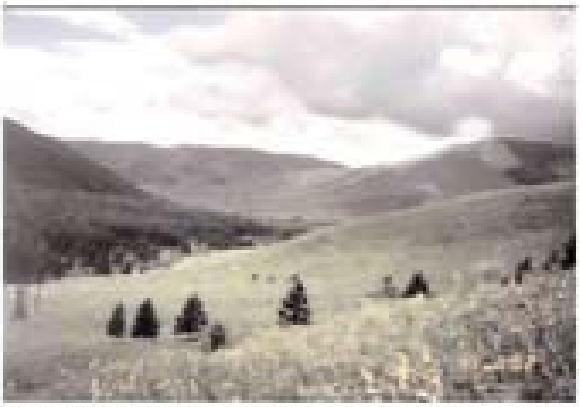


Photo. 12. Mongolia, Central aimak, 27 km N Gatzuri, 1900 m; locality of *E. humerale implaviatum* (author's photo).

Photo. 13. Russia, Tuva Republic, Erzin env.; locality of *E. lutshniki bicoloratum*, ssp. n. (photograph by Yu.Mikhailov).

Mikhail Danilevsky. Mongolia, Central-Gobi aimak, Ada-Tzag, 2.VIII.2002.

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