INTRODUCTION


We can consider as generally accepted that the most primitive family is Nemonychidae which emerged in the Jurassic [Kuschel, 1983; Legalov, 2006; Zherikhin, 1993]. The family Obrieniidae from the Triassic does not belong to the superfamily Curculionoidea [Legalov, 2002, 2006; Kuschel, 2003] as was supposed first by Gratshev and Zherikhin [2003]. Obrieniidae belong to Archostemata because of the structure of the metepisternum, the elongated rostrum being a convergence. For example, species of the families Lycidae (Cantharoidea) and Salpingidae (Tenebrionoidea) from the recent fauna have an enlarged rostrum.

The majority of recent species of the family Nemonychidae are described from the superfamily Curculionoidea. Different species are described from the superfamily Curculionoidea.
[Oberprieler, Marvaldi, Anderson, 2007] had resulted in the origin of the family Anthribidae known from the Cretaceous [Zherichin, 1993]. Development in fruits resulted in the origin of Ithyceridae (=Eccoptarthridae). It may be safely suggested that the families Rhynchitidae and Brentidae, and possibly Curculionidae diverged from this group. Family Belidae was formed because of transition to development in vegetative organs and Oxydrycinidae diverged from this group. Probably Rhynchitidae diverged directly from Nemonychidae in the Cretaceous along with adaptation to development in the buds of angiosperm. The question about possible parallelisms arises. Probably the combination of the gular sutures and a reduced labrum with a distinct suture arose several times in different groups. Presently we may observe this in Belidae, which have 2 sutures joining apically to form a triangle. If we recognise parallelism of the first character then inclusion of the family Alloocorinidae (with unpaired gular suture) into the family Oxydrycinidae (with paired gular suture) is justified [Marvaldi, Oberprieler, Lyal, Bradbury, Anderson, 2006]. Family Attelabidae could be separated directly from Belidae [Legalov, 2002] or from the subfamily Rhinocartinae of the family Rhynchitidae. Divergence of Attelabidae from Ithyceridae is probable. Peculiarity of species of the family Ithyceridae (=Eccoptarthridae, = Caridae) was noted by many authors. Thompson [1992] and Kuschel [1995] have described it as subfamily Carinae of the families Belidae and Brentidae, respectively. Zimmermann [1994] has described Caridae as independent family.

Recent species of Ithyceridae are distributed in North America, southern South America, New Guinea [Oberprieler, Marvaldi, Anderson, 2007; Setliff, 2007] and Australia. The fossil forms are known from North America, South America, Europe and Asia (fig. 1).


RESULTS

Family Ithyceridae Schoenherr, 1823
(Col. pl. I – a – j, II – a – j; III – a–p; IV, a – m)

Description. Body light or dark, with appressed or erect setae. Head constricted behind eyes or not constricted behind them. Rostrum short, shorter than pronotum, wide, widened to apex, flattened, with carina; or very long, or medium, longer than head, straight or slightly curved, sometimes acuminate to apex. Mandible with teeth on inferior and without teeth on exterior margins or with teeth on exterior margin (rhynchitoid type). Maxillary palps sometimes long. Labial palps 2-, 3-, or 4-segmented. Antennae inserted submedially, or subapically, or inserted in the 1st third of the rostrum, or before the base of the rostrum, laterally, or ventrally, or dorsally. Eyes from medium to large, convex. Frons wide or of equal width with the rostrum at its basis, or narrow. Temples short or elongated. Antennae long. Scapus of the antennae more or less elongated. Segments of the funicle

Fig. 1. Distribution of recent and fossil Ithyceridae. Remarks: Circle – places of the finds of recent taxa and continuous grey – area of recent taxa.
trapezoid. Clava noncompact, or almost compact, or compact, shorter and wider than funicule, tear-shaped. Pronotum almost rectangular or almost trapezoid, sometimes transversal, sometimes with lateral carina. Sides almost direct or rounded. Disc convex or flattened, punctate. Scutellum triangular or quadrangular, wide. Elytra with irregular rows of the points, or regular rows, elongated, sometimes almost parallel, sharply narrowed in the apical third. Humeri weakly smoothed. The greatest width on the middle or behind it. Intervals wide, punctate. Scutellar striae usually absent. Striae reduced, or very weak, or distinct. 9th striae merges with 10th striae before metacoxal, or 9th striae not merges with 10th striae. Apex of the elytra rounded or separated. Prothorax short or elongated. Postorbital blades absent or weak. Procoxa located near the first margin of the prothorax, or near its base, or in the middle. Pre- and postcoxal parts of the prothorax elongated or not elongated. Mesepisternum narrow. Metepisternum very narrow. Abdomen slightly convex. All ventrites of almost equal length, or 1st and 2nd ventrites longer, or 1st ventrite long, or 1st and 4th ventrites shorter, 5th ventrite shorter or 4th or of equal length to it, or 2nd - 5th ventrites shorter, of approximately equal length. Pygidium in males usually large and convex. Legs long. Femora widened, sometimes with teeth. Tibiae robust or narrow, almost direct, weak or strongly curved, or slightly biconvex, sometimes with macro and spurs. Tarsi long. 1st segment wide, trapezoidal or not widened; larger in the fore legs than in the middle or hind legs. 2nd segment triangular or bilobed. 3rd segment bilobed. Claval segment elongated. Claws widely spaced, sometimes without teeth, usually with very weak teeth at the basis. Length of body: 1.1-18.0 mm.

Remarks. I accept a large volume of this family. I accept a point of view by Zherichin & Gratshev's [1995] that Jurassic forms together with the Eocene and recent forms are a monophyletic group. This family has emerged in the Late Jurassic and was dominating in the Cretaceous [Gratshev, Zherichin, 1999]. In the end of the Cretaceous the most part of its species became extinct. Usually we deal with badly preserved imprints of the fossil forms and some advanced recent species of this family.

I transfer the tribes Paleocartini and Brentorrhinioidini, being intermediate from Nemonychidae to Ithyceridae and Rhynchitidae, from the family Rhynchitidae to the family Ithyceridae. These groups are characterised by the abdomen structure typical for Ithyceridae but are close to Rhynchitidae by the mandible structure.

I include into this family also the subfamilies Ulyaninae and Slonikinae described from the Cretaceous because they are characteristic with the mandible with teeth at exterior and interior margins (Ulyaniana Zherichin, 1993), subapically or submedially placed antennae, and free almost identical ventrites of the abdomen.

I transfer Ithycerinae from the family Brentidae into the family Ithyceridae, together with Eccoptarthrininae, Ulyaninae and Slonikinae because it is characterised by the abdomen similar to that of Eccoptarthrininae and Ulyaninae. Disposition of this group as subfamily in family Brentidae is incorrect [Marvaldi, Sequeira, O’Brien, Farrell, 2002; Oberprieler, Marvaldi, Anderson, 2007] because all Brentidae have the abdomen with longer 1st and 2nd ventrites and short 3rd and 4th ventrites.

It may be safely suggested that on early stage of development (in Jurassic) this was the same family with Nemonychidae and Belidae. Further differentiation of this group and extinction of many taxa was the basis for division of this group into separate families (Nemonychidae, Belidae, and Ithyceridae). The family Ithyceridae consists of isolated subfamilies (Eccoptarthrininae, Ulyaninae, Slonikinae, and Ithycerinae). The first develops in generative organs. The mode of life of the second and third is unknown. The larvae of Ithycerinae live in soil.

Key to subfamilies of the family Ithyceridae

1. Antennae inserted dorsally .................. Ulyaninae
   – antennae inserted laterally or ventrally .............. 2
2. Rostrum strongly narrowed to apex (lateral view) ................................................................. 3
   – rostrum not narrowed or slightly narrowed to apex (lateral view) ................................................................. Slonikinae
3. Rostrum short and wide. Large beetles (11.6-14.5 mm) ............................................................. Ithycerinae
   – rostrum long and narrow. Small beetles (1.1-6.2 mm) ............................................................. Eccoptarthrininae

Key to genera and subgenera of the family Ithyceridae*

*Genus Paleocartus Legalov, 2003 is not included into the key because the structure of its 1st segment of the tarsi is not known. This genus is characterised by subapically inserted antennae and the mandible with a tooth on the interior margin.

1. Rostrum short and wide, with carina ................ Ithycerus
   – rostrum long and narrow ................................................................. 2
2. Rostrum strongly narrowed to apex (lateral view) ...... 3
   – rostrum not narrowed or slightly narrowed to apex (lateral view) ................................................................. 4
3. Femora without teeth. Precoxal margin of the prothorax elongated ....................................................... Slonik
   – femora with teeth. Precoxal margin of the prothorax short ............................................................. Ulyanisca
4. Antennae inserted dorsally .................. Ulyaniana
   – antennae inserted laterally or ventrally .............. 5
5. 1st segment of tarsi not widened ................................................................. 6
   – 1st segment of tarsi widened ................................................................. 11
6. Antennae inserted subapically ... Nebrenthorrhinus
   – antennae inserted submedially or subbasally ............. 7
   7. Pronotum without carina on side ......................................................... 8
   – pronotum with weak carina on side ........................................ 9
8. Antennae inserted on the rostrum middle .... Abrocar
   – antennae inserted on the rostrum basis ................................................................. Auletomacer
   9. 1st segment strongly elongated .............. Baiocar
   – 2nd segment weakly elongated ........................................ 10
   10. 2nd and 3rd segments of the tarsi bilobed ............................................................. Baiassorhynchus
   – 2nd segment triangular ........................................ 11
   11. Procoxa located closer to apical or basal margin of prothorax ................................................................. 12
– procoxa located at the middle of prothorax .......... 18
12. Postcoxal part of prothorax widened .............. 13
– precoxal part of prothorax widened ................. 14
13. Tibiae wide. Femora stronger widened
.............................................................................. **Eccoptarthrus**
– tibiae narrow. Femora weaker widened
.............................................................................. **Hispanocar**
14. Pronotum without carina on side .................... 15
– pronotum with weak carina on side ................. 16
15. Frons strongly convex .................................. **Gratshievibelaus**
– frons weakly convex .................................... 20
16. Claws with tooth. Tarsi elongated ............... **Martinsnetola**
– claws without tooth. Tarsi short ................... **Cretocar**
17. Tarsi with dense setae. 1st ventrite longer than 2nd
ventrite ...................................................... **Jarzembowskia**
– tarsi without dense setae. 1st ventrite shorter than 2nd
ventrite ..................................................... **Gobicar**
18. Antennae inserted submedially. Mandible of a
rhyynchitoid type ....................................... **Brenthorrhinoideas**
– antennae inserted subsasally ....................... 19
19. Tibiae curved, narrower ............................. **Emanryhynchus**
– tibiae straight, wider ................................. 20
20. Rostrum longer than head and pronotum taken
together (**Montsecanomalus**) ....................... 21
– rostrum of equal length, or little longer, or shorter
than head and pronotum taken together .......... 22
21. Procoxa shorter ....................................... **Montsecanomalus**
– procoxa longer ........................................ **Leptocar**
22. Antennae inserted ventrally ........................... **Car**
– antennae inserted laterally ......................... 23
23. Elytra almost rectangular, with heterogeneous setae
............................................................................. **Carodes**
– elytra oval, with uniform setae ....................... 24
24. Head distinctly constricted behind eyes. Middle tibiae
of males without micro .............................. **Caenominurus**
– head not constricted behind eyes. Middle tibiae of
males with micro ....................................... **Chilecar**

**Subfamily Eccoptarthrinacae L. Arnoldi, 1977**

(Col. pl. I – a – j, II – a–j)
Eccoptarthrin L. Arnoldi, 1977: 169

**Type genus: Eccoptarthrus L. Arnoldi, 1977**

**Description.** Body light or dark, with appressed or
erect setae. Head constricted behind eyes or not
constricted behind them. Rostrum very long, or long
and weakly curved, or medium. Mandible with teeth on
interior and without teeth on exterior margin, or with teeth on
exterior margin. Maxillary palps sometimes long. Labial
palps 2-, or 3-segmented. Antennae inserted submedially,
or subapically, or in the 1st third of the rostrum, or before
the rostrum basis, laterally or ventrally. Eyes from me-
dium to large, convex. Frons wide or of equal length to
the width of the rostrum at its basis, or narrow. Temples
short or elongated. Antenna long. Scapus of the antennae
more or less elongated. Segments of the funicle trapezoid.
Clava noncompact or almost compact. Pronotum almost
rectangular or almost trapezoid, sometimes transversal,
sometimes with lateral carina. Sides almost direct or
rounded. Disc convex, punctate. Scutellum triangular or
quadrangular, wide. Elytra elongated, with irregular or
regular rows of the points. Humeri weakly smoothened. The
greatest width at the middle or behind it. Striae reduced,
or very weak or distinct. 9th striae merge with 10th striae
before metacoxa. Apex of elytra rounded. Prothorax short
or elongated. Procoxa located near the apical margin of
prothorax or near its basal margin, or at the middle. Pre-
and postcoxal parts of pronotum elongated or not elong-
gated. Mesepisternum narrow. Metepisternum very nar-
row. Abdomen slightly convex. Ventrites of almost equal
length, or 1st and 2nd ventrites long, or 1st ventrite short,
or 1st ventrite short. 3rd and 4th ventrites shorter. 5th
ventrite shorter than 4th ventrite, or equal length to it, or
2nd - 5th ventrites short, of approximately equal length.
Legs long. Procoxa conic. Femora widened. Tibiae rob-
ust or narrow, almost direct, weak or strongly curved,
or weakly biconcave. Tarsi long. 1st segment wide, trape-
zoid or not widened, in fore legs larger than in middle
legs. 2nd segment triangular or bilobed. 3rd segment
bilobed. Cuspal segment elongated. Claws widely
spaced, sometimes without teeth, usually with very weak
teeth at the basis. Length of body: 1.1-6.2 mm.

**Remarks.** Eccoptarthrinacae are divisible into 3 super-
tribes basing on the place of the antennal attachment and
the mandible structure: superfamilies Eccoptarthritae with
submedially or subapically inserted antennae and mandi-
ble without teeth or as in Rhydhichitidae (a rhyntchitoid
type); superfamilies Baisborhynchitae with antennae inserted
in the 1st third of the rostrum and possibly simple mandi-
bles; superfamilies Coarctae with antennae inserted near
the rostrum basis and the mandible as in Rhydchitidae or
simple.

**Supertribe Eccoptarthritae L. Arnoldi, 1977**

(Col. pl. I – a – j, II – a–j)
Eccoptarthrin L. Arnoldi, 1977: 169

**Type genus: Eccoptarthrus L. Arnoldi, 1977**

**Description.** Body brown. Head constricted behind
eyes, or not constricted behind them. Rostrum long,
slightly curved, or medium, little longer than head. Man-
dible with teeth on interior and without teeth on exterior
margin, or with teeth on exterior margin. Maxillary palps
sometimes long. Antennae inserted submedially, laterally
or subapically. Eyes from medium to large. Frons wide,
or equal in length to the width of the rostrum at its base.
Temples short or elongated. Antennae long. Scapus of the
antennae elongated. Segments of the funicle trapezoid.
Clava noncompact, large. Pronotum almost rectangular,
sometimes transversal. Sides almost direct or rounded.
Disc convex, punctate. Scutellum triangular or quadrang-
ular, wide. Elytra elongated, with striae. Humeri weakly
smoothened. The greatest width in the middle or behind it.
Striae reduced or probably weakly expressed. Prothorax
long. Procoxa elongated, located near the apical margin of
the prothorax, or near basal margin, or in the middle. Pre-
and postcoxal parts of the prothorax elongated or not
elongated. 1st ventrite long. 2nd - 5th ventrites short, of
approximately equal length. Legs long. Procoxa conic.
Femora widened. Tibiae robust or narrow. Tarsi long. 1st
segment wide, trapezoid or not widened, that in protarsi
larger than in mesotarsi. 2nd segment triangular. 3rd seg-
ment bilobed. Cuspal segment elongated. Claws widely
spaced. Length of body: 2.5-6.0 mm.

**Remarks.** 4 tribes are considered within the superfami-
ly Eccoptarthritae: Eccoptarthrin (with submedially inserted
antennae and a widened 1st segment of the tarsi), Paleocartini (with a not widened 1st segment of the tarsi, simple mandible, and subapically inserted antennae), Brenthorrhinoidini (with the mandible of a rhynchitoid type, submedially inserted antennae and widened 1st segment of the tarsi), and Nebrenthorrhinini Legalov, 2007, stat.n. (with the mandible of a rhynchitoid type, subapically inserted antennae and not widened 1st segment of the tarsi).

**Key to genera of the supertribe Eccoptarthritae**
1. Antennae inserted submedially ...................................... 2
   – Antennae inserted subapically .................................. 3
2. 1st segment of the tarsi widened ....... *Brenthorrhinoidea*
   – 1st segment of the tarsi not widened ............... *Abrocar*
3. Mandible of a rhynchitoid type ...... *Nebrenthorrhinus*
   – Mandible without teeth on exterior margin.......................... 

................................. *Paleocartus*

**Tribe Eccoptarthrini L. Arnoldi, 1977**
Eccoptarthrini L. Arnoldi, 1977: 169
Type genus: *Eccoptathrus* L. Arnoldi, 1977

**Description.** Head constricted behind eyes, or not constricted behind them. Rostrum long, slightly curved. Antennae inserted submedially laterally. Frons wide, equal in length to the width of the rostrum at its base. Eyes large. Temples short or elongated. Antennae long. Scapus of the antennae elongated. Segments of the funicle more or less elongated. Clava noncompact. Pronotum transversal, with rounded sides, densely punctate. Elytra almost rectangular. The greatest width in the middle or behind it. Humeri somewhat smoothened. Striae reduced or probably weakly expressed. Legs long. Femora widened. Length of body: 2.8-3.7 mm.

**Genus Eccoptarthrus L. Arnoldi, 1977**
*Eccoptarthrus* L. Arnoldi, 1977: 169
Type species: *Eccoptarthrus crassipes* L. Arnoldi, 1977

**Eccoptarthrus crassipes L. Arnoldi, 1977**
*Eccoptarthrus crassipes* L. Arnoldi, 1977: 169

**Distribution.** Late Jurassic (Kazakhstan: Karatau).

**Genus Abrocar Liu & Ren, 2006**
*Abrocar* Liu & Ren, 2006: 62
Type species: *Abrocar* Liu & Ren, 2006

**Abrocar brachyorhinos Liu & Ren, 2006**
*Abrocar brachyorhinos* Liu & Ren, 2006: 64
**Distribution.** Late Jurassic (China: Liaoning Prov.).

**Abrocar macilentus Liu & Ren, 2007**
*Abrocar macilentus* Liu & Ren, 2007: 644
**Distribution.** Late Jurassic or Early Cretaceous (China: Liaoning Prov.).

**Tribe Paleocartini Legalov, 2003, placem.n.**
Paleocartini Legalov, 2003: 78
Type genus: *Paleocartus* Legalov, 2003

**Description.** Body dark. Rostrum medium, little longer than head. Antennae inserted subapically. Mandible with teeth on interior margin and without teeth on exterior margin. Eyes from medium to large. Frons wide. Antennae long, reaching apical margin of the pronotum. Scapus oval, thicker than funicle segments. Segments of the funicle more or less elongated. Clava noncompact, large. Pronotum transversal, with rounded sides, densely punctate. Elytra almost rectangular, sometimes elongated. The greatest width in the middle or behind it. Humeri somewhat smoothened. Striae reduced or probably weakly expressed. Legs long. Femora widened. Length of body: 2.8-3.7 mm.

**Genus Paleocartus Legalov, 2003**
*Paleocartus* Legalov, 2003: 78
Type species: *Brenthorrhinoidea pubescens* Gratshev & Zherikhin, 1996

**Distribution.** Late Jurassic (Kazakhstan: Karatau).

**Distribution.** Late Jurassic (Kazakhstan: Karatau).

**Tribe Brenthorrhinoidini Legalov, 2003, placem.n.**
Brenthorrhinoidini Legalov, 2003: 88
Type genus: *Brenthorrhinoidea* Gratshev & Zherikhin, 1996


**Genus Brenthorrhinoidea Gratshev & Zherikhin, 1996**
*Brenthorrhinoidea* Gratshev & Zherikhin, 1996: 119
Type species: *Brenthorrhinoidea mandibulatus* Gratshev & Zherikhin, 1996

**Brenthorrhinoidea mandibulatus** Gratshev & Zherikhin, 1996
**Distribution.** Late Jurassic (Kazakhstan: Karatau).

**Tribe Nebrenthorrhinini Legalov, 2007, stat.n.**
Nebrenthorrhinina Legalov, 2007: 34

Type genus: *Nebrenthorrhinus* Legalov, 2003


**Remarks.** 2 tribes (Baissohynchini and Mesophyleti) have been assigned to this supertribe.

**Key to subtribes of the supertribe Baissohynchitae**

1. Body wider. Scapus not elongated or weakly elongated. Elytra usually with rows of points..................
   – Baissohynchini
   – Body elongated. Scapus strongly elongated. Elytra without rows of points ........................ Mesophyleti

**Tribe Baissohynchini Zherikhin, 1993**

Baissohynchini Zherikhin, 1993: 30

Type genus: *Baissohynchus* Zherikhin, 1977

**Description.** Body dark. Head constricted behind eyes, or not constricted behind them. Rostrum long or very long, slightly curved. Mandible without teeth on exterior margin. Antennae inserted in the first third of the rostrum. Frons narrow. Eyes large, slightly convex. Temples short. Antennae long. Scapus of the antennae more or less elongated. Clava noncompact, or almost compact. Pronotum almost trapezoid, sometimes with lateral carina. Disc convex, punctate. Elytra elongated, with irregular or regular rows of points. Humeri weakly smoothed. Striae very weak or distinct. 9th stria merges with 10th stria before metacoxa. Prothorax short or elongated. Procoxa located in its middle, or near basal margin. Pre- or postcoxal parts of the prothorax elongated. Metepisternum very narrow. Abdomen slightly convex. Ventrites of almost equal length, or 1st and 2nd ventrites long, or 1st ventrite short, or 3rd and 4th ventrites shorter, or 5th ventrite shorter than 4th ventrite, or they are of equal length. Legs long. Procoxa conic. Mesocoxa connected. Femora widened. Tibiae robust or narrow, almost direct, weak or strongly curved. Tibiae and tarsi sometimes with dense setae. Tarsi long. 1st segment wide, trapezoid or not widened. 2nd segment triangular or bilobed. 3rd segment bilobed. Claws widely spaced, sometimes without teeth. Length of body: 1.1-3.4 mm.


**Key to genera and subgenera of the tribe Baissohynchini**

1. 1st segment of the tarsi not widened .......................... 2
   – 1st segment of the tarsi widened .......................... 3
2. 2nd and 3rd segments of the tarsi bilobed .......................... 4
   – Baissohynchus
   – 2nd segment triangular ................................ Cretonanophyes
3. Procoxa located closer to apical or basal margin of the prothorax ............................................. 4
   – procoxa located on the prothorax middle ............... 8
4. Postcoxal part of the prothorax widened .......................... 5
   – precoxal part of the prothorax widened ............... 5

**Genus Nebrenthorrhinus** Legalov, 2003

*Nebrenthorrhinus* Legalov, 2003: 30

Type species: *Nebrenthorrhinus lacasai* Gratshev & Zherikhin, 2000

*Nebrenthorrhinus lacasai* (Gratshev & Zherikhin, 2000)

*Brenthorrhinoides* lacasai Gratshev & Zherikhin, 2003

**Distribution.** Early Cretaceous (Spain: Montsec Range).

**Supertribe Baissohynchitae Zherikhin, 1993, stat. n.**

Baissohynchini Zherikhin, 1993: 30

Type genus: *Baissohynchus* Zherikhin, 1977

**Description.** Body dark, sometimes legs light. Head constricted behind eyes, or not constricted behind them. Rostrum long or very long, slightly curved. Mandible without teeth on exterior margin. Antennae inserted in the first third of the rostrum. Frons narrow. Eyes large, weakly or strongly convex. Temples short. Antennae long. Scapus of the antennae more or less elongated. Clava noncompact, or almost compact. Pronotum almost trapezoid, sometimes with lateral carina, sometimes elongated. Disc convex or flattened, punctate. Elytra elongated, with irregular or regular rows of the points, or without rows. Humeri weakly smoothed. Striae very weak, or distinct, or absent. 9th stria merges with 10th stria before metacoxa. Prothorax short or elongated. Procoxa located in the middle, or near basal margin. Pre- or postcoxal parts of prothorax elongated. Metepisternum very narrow. Abdomen slightly convex. Ventrites of almost equal length, or 1st and 2nd ventrites long, or 1st ventrite short, or 3rd and 4th ventrites shorter, or 5th ventrite shorter than 4th ventrite, or they are of equal length. Legs long. Procoxa conic. Mesocoxa connected. Femora widened. Tibiae robust or narrow, almost direct, weak or strongly curved. Tibiae and tarsi sometimes with dense setae. Tarsi long. 1st segment wide, trapezoid or not widened. 2nd segment triangular or bilobed. 3rd segment bilobed. Claws widely spaced, sometimes without teeth. Length of body: 1.1-3.4 mm.

**Remarks.**
5. Pronotum without lateral carina .......................... 6
   – pronotum with weak lateral carina ..................... 8
6. Claws with tooth. Tarsi elongated .......... Gratshevibelus
7. Tarsi with dense setae. 1st ventrite longer than 2nd
   ventrite ............................................. 7
   – tibiae curved, narrower ...................... Gobicar
   – tibiae straight, wider (Montsecanomalus) ........... 10
8. Procoxa shorter ...................................... 1
   – procoxa longer .................................. Leptocar
   – procoxa longer .................................. Montsecanomalus

Genus Cretonanophyes Zherikhin, 1977
Cretonanophyes Zherikhin, 1977: 178
Type species: Cretonanophyes longirostris Zherikhin, 1977

Cretonanophyes longirostris Zherikhin, 1977
Cretonanophyes longirostris Zherikhin, 1977: 178

Distribution. Early Cretaceous (Burjatia: Basia).

Genus Cretocar Gratshev & Zherikhin, 2000
Cretocar Gratshev & Zherikhin, 2000a: 246
Type species: Cretocar luzii Gratshev & Zherikhin, 2000

Cretocar luzii Gratshev & Zherikhin, 2000
Cretocar luzii Gratshev & Zherikhin, 2000a: 248


Genus Emanrhynchus Zherikhin, 1993
Emanrhynchus Zherikhin, 1993: 31
Type species: Emanrhynchus lebedevi Zherikhin, 1993

Emanrhynchus lebedevi Zherikhin, 1993
Emanrhynchus lebedevi Zherikhin, 1993: 31

Distribution. Early Cretaceous (Burjatia: Basia).

Genus Gobicar Gratshev & Zherikhin, 1999
Gobicar Gratshev & Zherikhin, 1999: 40
Type species: Gobicar ponomarenkoi Gratshev & Zherikhin, 1999

Gobicar ponomarenkoi Gratshev & Zherikhin, 1999
Gobicar ponomarenkoi Gratshev & Zherikhin, 1999: 41

Distribution. Late Jurassic (Mongolia: Gobi-Altai aimak).

Gobicar hispanicus Gratshev & Zherikhin, 2000
Gobicar hispanicus Gratshev & Zherikhin, 2000b: 42


Genus Gratshevibelus Soriano, 2009, placem. n.
Gratshevibelus Soriano, 2009: 100
Type species: Gratshevibelus erici Soriano, 2009

Remark. This genus is close to genus Cretocar and I
transfer it from family Belidae to family Ithyceridae.

Gratshevibelus erici Soriano, 2009
Gratshevibelus erici Soriano, 2009: 101


Genus Montsecanomalus Soriano, Gratshev, Delclos, 2006
Montsecanomalus Soriano, Gratshev, Delclos, 2006: 558
Type species: Montsecanomalus zherichini Soriano, Gratshev, Delclos, 2006

Remarks. Species Cretonanophyes rugosithorax, C.
Zherikhin, 1993: 31
zherichini, and C. punctatus have been described in the

Genus Cretonanophyes. The type species of this genus is
characterised by the narrow 1st segment of the tarsi.
Therefore named three species (Cretonanophyes
rugosithorax, C. zherichini, and C. punctatus) are
unrelated to the genus Cretonanophyes. These species are
transferred to the genus Montsecanomalus because they
are close to Montsecanomalus zherichini. Species of
genera Montsecanomalus and Leptocar have only small
differences in the form of coxae, so they are combined in
one genus. However I give the status of subgenus to
Leptocar.

Subgenus Montsecanomalus s. str.

Montsecanomalus (s. str.) rugosithorax (Gratshev &
Zherikhin, 2000), comb.n., placem.n.
Cretonanophyes rugosithorax Gratshev & Zherikhin,
2000b: 43

Montsecanomalus (s. str.) zherichini (Liu & Ren,
2006), comb.n., placem.n.
Montsecanomalus zherichini Liu & Ren, 2006: 61
Distribution. Late Jurassic or Early Cretaceous
(China: Liaoning Prov.).

Montsecanomalus (s. str.) punctatus (Liu & Ren,
2007), comb.n., placem.n.
Montsecanomalus punctatus Liu & Ren, 2007: 645
Distribution. Late Jurassic or Early Cretaceous
(China: Liaoning Prov.).

Montsecanomalus (s. str.) zherichini Soriano,
Gratshev, Delclos, 2006
Montsecanomalus zherichini Soriano, Gratshev,
Delclos, 2006: 559


Subgenus Leptocar Liu & Ren, 2007, stat.n.
Leptocar Liu & Ren, 2007: 642
Type species: Leptocar polychaetus Liu & Ren, 2007

Montsecanomalus (Leptocar) polychaetus (Liu &
Ren, 2007), comb.n.
Leptocar polychaetus Liu & Ren, 2007: 642
Distribution. Late Jurassic or Early Cretaceous
(China: Liaoning Prov.).

Genus Baissorhynchus Zherikhin, 1977
Baissorhynchus Zherikhin, 1977: 176
Type species: Baissorhynchus tarsalis Zherikhin, 1977
**Baiisorhynchus tarsalis** Zherikhin, 1977
*Baiisorhynchus tarsalis* Zherikhin, 1977: 177

**Distribution.** Early Cretaceous (Bjurjatia: Basia).

**Genus Martinsnetoa** Zherichin & Gratshev, 2004
*Martinsnetoa* Zherichin & Gratshev, 2004: 65
Type species: *Martinsnetoa dubia* Zherichin & Gratshev, 2004

**Martinsnetoa dubia** Zherichin & Gratshev, 2004
*Martinsnetoa dubia* Zherichin & Gratshev, 2004: 66
**Distribution.** Early Cretaceous (Brazil: Santana).

**Genus Jarzembowskia** Zherichin & Gratshev, 1997
*Jarzembowskia* Zherichin & Gratshev, 1997: 628
Type species: *Jarzembowskia edmundi* Zherichin & Gratshev, 1997

*Jarzembowskia edmundi* Zherichin & Gratshev, 1997: 629
**Distribution.** Early Cretaceous (Spain: Montsec Range).

**Genus Hispanocar** Soriano, Gratshev, Delclòs, 2006
*Hispanocar* Soriano, Gratshev, Delclòs, 2006: 561
Type species: *Hispanocar kseniae* Soriano, Gratshev, Delclòs, 2006

*Hispanocar kseniae* Soriano, Gratshev, Delclòs, 2006: 561
**Distribution.** Early Cretaceous (Spain: Montsec Range).

**Tribe Mesophyletini** Poinar, 2006, stat.n.
Mesophyletinae Poinar, 2006: 879
Type genus: *Mesophyletis* Poinar, 2006


**Remarks.** 2 tribes (Carini and Chilecarini) have been assigned to the supertribe Caritae.

**Key to tribes of the supertribe Caritae**
1. Mandible with 2 teeth on exterior margin. Antennae inserted ventrally ............................................. **Carini**
   – Mandible without teeth on exterior margin. Antennae inserted laterally ............................................. **Chilecarini**

**Tribe Carini Thompson, 1992**
(Col. pl. I – a – j, II – a – d)
Carinae Thompson, 1992: 882
Type genus: *Car* Blackburn, 1897
Carinae Zimmermann, 1994a: 449 [non Thompson, 1992]
Type genus: *Car* Blackburn, 1897
Carinae Kuschel, 1995: 18 [non Thompson, 1992, nec Zimmermann, 1994]

**Type species:** *Mesophyletis calhouni* Poinar, 2006

*Mesophyletis calhouni* Poinar, 2006: 880
**Distribution.** Early Cretaceous (Myanmar, Amber).

**Supertribe Caritae Thompson, 1992, stat. n.**
(Col. pl. I – a – j, II – a – m)
Carinae Thompson, 1992: 882
Type genus: *Car* Blackburn, 1897
Carinae Zimmermann, 1994a: 449 [non Thompson, 1992]
Type genus: *Car* Blackburn, 1897
Carinae Kuschel, 1995: 18 [non Thompson, 1992, nec Zimmermann, 1994]

**Type species:** *Car* Blackburn, 1897
Type genus: Car Blackburn, 1897

Description. Body red-brown or yellowish brown, with appressed and erect light setae. Rostrum long, hardly longer than head and pronotum taken together, very weakly or weakly curved, slightly widened at the apex and near the antennal insertions, finely punctate or smooth, with weak carina from antennal insertions to the mid-dorsal dimple or without carina. Mandible with 2 teeth on exterior and 2 teeth on interior margins. Labial palps 3-segmented. Frons narrow, narrower than rostrum basis, flat. Eyes large, slightly convex. Vertex convex, finely punctate. Temples weakly elongated, finely transversely wrinkled. Gular suture single, rough. Antennae inserted ventrally near the base of rostrum. Antennae long, reaching humeri. Scapus of the antennae elongated, equal in length to the 1st and 2nd segments of the funicle taken together. Segments of the funicle trapezoid. 1st segment elongated. 2nd segment narrower, longer than 1st. 3rd segment equal to 2nd segment. 4th segment thicker and hardly longer than 3rd segment. 5th segment shorter than 4th segment. 6th segment shorter than 6th segment. 7th segment shorter and thicker than 6th segment. Clava noncompact, hardly wider than 7th segment. 1st and 2nd segments wide, trapezoid, 3rd segment tear-shaped, pointed, longer than 2nd segment. Pronotum almost rectangular, without grooves, with the greatest width in the first third. Sides almost direct. Disc convex, densely or sparsely punctate. Scutellum rectangular, finely and densely punctate, sometimes with dense light setae. Elytra almost rectangular. Humeri weakly smoothed. Scutellar suture single, rough. Temples weakly elongated, finely transversely wrinkled. Antennae inserted laterally before the base of rostrum. Frons narrow, considerably narrower than rostrum at its basis, flat, densely punctate. Eyes large, almost protruding from the contour of the head, or weakly convex. Vertex convex, finely punctate. Temples weakly elongated, finely transversely wrinkled. Antennae long, reaching humeri. Scapus and 1st segment elongated, tear-shaped. Scapus longer than 1st segment. 2nd - 7th segments of the funicle elongated, trapezoid, narrow. 2nd segment narrower and shorter than 1st segment. 2nd - 4th segments approximately equal in length. 5th segment shorter than 4th segment. 6th segment shorter and wider than 5th segment. 7th segment hardly shorter than 6th segment. Clava noncompact, hardly wider than 7th segment. 1st and 2nd segments wide, trapezoid. 3rd segment tear-shaped, pointed, longer than 2nd segment. Pronotum almost rectangular or trapezoid, without grooves, narrowed to apex, sometimes with weak lateral carina, little longer than wide. The greatest width in the middle or near the basis. Sides almost direct. Disc convex, finely punctate. Scutellum rectangular, punctate. Elytra elongated, 1.42-1.67 times longer than wide. Humeri weakly smoothed. Scutellar suture absent. Intervals flat, punctate, wide. Striae very weak or distinct. Points in them large. Apex of the elytra rounded. 9th stria merges with 10th stria before metacoxa. Bottom finely punctate. Mesepisternum narrow, finely and densely punctate. Metepisternum very narrow. Metathorax coarsely punctate. Meso- and metacoxal cavities separated. Abdomen slightly convex. 1st ventrite long, little longer than 2nd ventrite. 2nd - 4th ventrites of the equal length.
5th ventrite long, equal in length to 1st ventrite. Legs long. Procoxa conic. Femora clavate, without teeth. Tibiae robust or slender, weakly biconeave. Meso- and metatibiae hardly shorter than protibiae. Mesotibiae in male with micro or without it. Tarsi long, 1st segment wide, trapezoid or not widened. 2nd segment triangular. 3rd segment bilobed. Clausal segment elongated. Claws widely spaced with very weak teeth on the basis. 7th tergite in male sclerotised. 8th sternite in female mediially membranous or sclerotised on apex. Stylus in female short or elongated, hardly any longer than wide. Basal sclerite of the endophallus flagelliform. Length of body: 1.8-5.2 mm.

Remarks. 5 genera: Baltocar Kuschel, 1992, Chilecar Kuschel, 1992, Caenominurus Voss, 1965, Carodes Zimmermann, 1994 and Auletomacer Zherichin, 1993 from Cretaceous and Eocene, and from recent fauna of the South America and Australia have been assigned to this tribe.

Key to genera of the tribe Chilecarini

1. Pronotum without lateral carina .......................... 2
   – pronotum with weak lateral carina .................. Auletomacer
2. 1st segment of the tarsi not widened ................. Baltocar
   – 1st segment of the tarsi widened .................. 3
3. Elytra almost rectangular, with irregular setae. Labial palps 3-segmented ........................................ Carodes
   – elytra oval, with uniform setae. Labial palps 2-segmented ......................................................... Caenominurus
4. Head distinctly constricted behind eyes. Middle tibiae of males without micro ....................... Chilecar
   – Head not constricted behind eyes. Middle tibiae of males with micro ................................. Carodes

Key to subtribes of the tribe Chilecarini

1. Labial palps 3-segmented. Elytra almost rectangular, wider, with irregular setae .................. Carodesina
   – labial palps 2-segmented. Elytra oval, narrower, with uniform setae ................................. Chilecarina

Subtribe Chilecarina Legalov, subtrib. n.
(Col. pl. II – b, c, e – j; IV, a – m)
Type genus: Chilecar Kuschel, 1992


Genus Baltocar Kuschel, 1992
Baltocar Kuschel, 1992: 197
Type species: Car succinicus Voss, 1953

Remarks. The labial palps of this genus are not known. This genus is close to the genera of this subtribe by the shape of body.

Baltocar succinicus (Voss, 1953)
Car succinicus Voss, 1953: 125

Distribution. Late Eocene (Baltic Amber).

Genus Chilecar Kuschel, 1992
(Col. pl. II – b, c, e – j)
Chilecar Kuschel, 1992: 203
Type species: Chilecar pilgerodendri Kuschel, 1992

Chilecar pilgerodendri Kuschel, 1992
Chilecar pilgerodendri Kuschel, 1992: 206

Distribution. Chile.

Host plants. Fitzroya cupressoides, Pilgerodendron uniflorus [Kuschel, 1992].

Genus Caenominurus Voss, 1965 (Col. pl. IV, a – m)
Caenominurus Voss, 1965b: 330
Type species: Caenominurus topali Voss, 1965

Caenominurus topali Voss, 1965
Caenominurus topali Voss, 1965b: 331

Distribution. Argentina, Chile.

Host plants. Austrocedrus chilensis [Kuschel, 1992].


Subtribe Carodesina Legalov, subtrib. n.
Type genus: Carodes Zimmermann, 1994

Description. Body black-brown. Antennae, legs and elytra partially yellowish brown, or elytra with spots formed by setation. Head constricted behind eyes.

Genus Carodes Zimmermann, 1994
Carodes Zimmermann, 1994a: 511
Type species: Carodes revelatus Zimmermann, 1994
Carodes revelatus Zimmermann, 1994
Carodes revelatus Zimmermann, 1994a: 513
Distribution. Australia.
Host plants. Callitris preissii, C. rhomboidea, C. glaucophylla [Zimmermann, 1994a].

Subtribe incertae sedis

Genus Auletomacer Zherichin, 1993
Auletomacer Zherichin, 1993: 24
Type species: Auletomacer disruptus Zherichin, 1993
Remarks. The number of the segments of the labial palps is not known. Therefore the author cannot place this genus in one of subtribes.

Auletomacer disruptus Zherichin, 1993
Auletomacer disruptus Zherichin, 1993: 25
Distribution. Early Cretaceous (Khabarovskii krai: Khetana).

Subfamily Ulyaninae Zherichin, 1993, stat. n.
Ulyanidae Zherichin, 1993: 26
Type genus: Ulyaniana Zherichin, 1993

Key to tribes of the subfamily Slonikinae

1. Femora without tooth. Precoxal part of prothorax elongated
   – Femora with tooth. Precoxal part of prothorax short

Genus Ulyaniana Zherichin, 1993
Ulyaniana Zherichin, 1993: 27
Type species: Ulyaniana nobilis Zherichin, 1993
Ulyaniana nobilis Zherichin, 1993: 27
Distribution. Early Cretaceous (Khabarovskii krai: Khetana).

Genus Ulyaniana excellens Gratshev, 1998
Ulyaniana excellens Gratshev, 1998: 44

Subfamily Slonikinae Zherichin, 1977, placem. n.
Slonikinae Zherichin, 1977: 179
Type genus: Slonik Zherichin, 1977

Genus Slonik Zherichin, 1977
Slonik Zherichin, 1977: 179
Type species: Slonik nobilis Zherichin, 1977
Tribe Slonikini Zherichin, 1977
Slonikinae Schoenherr, 1823: 179
Type genus: Slonik Zherichin, 1977


Genus Slonik Zherichin, 1977
Slonik Zherichin, 1977: 180
Type species: Slonik sibiricus Zherichin, 1977

Slonik sibiricus Zherichin, 1977
Slonik sibiricus Zherichin, 1977: 180

Distribution. Early Cretaceous (Burjatia: Basia).

Tribe Ulyaniscini Legalov, trib.n.
Type genus: Ulyanisca Gratshev, 1998


Ulyanisca Gratshev, 1998: 45
Type species: Ulyanisca dentipes Gratshev, 1998

Remarks. This genus is close to the genus Slonik with the form of rostrum and the location of antennae of.

Ulyanisca dentipes Gratshev, 1998
Ulyanisca dentipes Gratshev, 1998: 45

Subfamily Ithycerinae Schoenherr, 1823
(Col. pl. III – a–p)
Ithycerides Schoenherr, 1823: 1136
Type genus: Ithycerus Schoenherr, 1823
Pachyrhinchidae Kirby, 1837: 203
Type genus: Pachyrhynchus Kirby, 1837

Ithycerus Schoenherr, 1823
(Col. pl. III – a–p)

Ithycerus Schoenherr, 1823: 1136
Type species: Rhynchites curculionoides Herbst, 1797
= Curculio noveboracensis Foerster, 1771
Pachyrhynchus Kirby, 1837: 203
Type species: Pachyrhynchus schoenherri Kirby, 1837 = Curculio noveboracensis Foerster, 1771

Ithycerus Schoenherr, 1823
(Col. pl. III – a–p)
Curculio noveboracensis Foerster, 1771: 35
Curculio punctatus Fabricius, 1781: 187
Rhynchites curculionoides Herbst, 1797: 136
Pachyrhynchus schoenherri Kirby, 1837: 203

Distribution. Canada, USA.

ACKNOWLEDGEMENTS

I am very grateful to my colleagues for their kind help with the work.
REFERENCES


Kirby W. Part the fourth and last. The Insects. In: Richardson J. Fauna Boreali-Americana; or the zoology of the northern parts of British America: containing descriptions of the objects of natural history collected on the late Northerm Land Expeditions, under command of Captain Sir John Franklin, R. N. 1837. XXXIX + 325 pp.


Legalov A.A. Leaf-rolling weevils (Coleoptera:
Zherichin V.V., Gratshev V.G. Fossil Curculionid beetles (Coleoptera, Curculionoidea) from the Lower Cretaceous of Northeastern Brazil // Paleontological journal. 2004. No. 5. P. 58-68. [in Russian]


Car condensatus (female): a - habitus (dorsal view), b - habitus (ventral view), c - genitalia (ventral view), d - habitus (lateral view), e - abdomen (dorsal view), f - genitalia (lateral view), g - 7th tergite (dorsal view), h - genitalia (dorsal view), i - apex of the elytra (dorsal view), j - head and rostrum (dorsal view).
Caritae gen. spp.: 
a - habitus of Car pini, female (dorsal view),
b - habitus of Chilecar pilgerodendri, male (dorsal view),
c - rostum and head of Ch. pilgerodendri, male (dorsal view),
d - habitus of Car pini, female (lateral view),
e - abdomen of Chilecar pilgerodendri, male (dorsal view),
f - aedeagus of Ch. pilgerodendri (dorsal view),
g - aedeagus of Ch. pilgerodendri (lateral view),
h - habitus of Ch. pilgerodendri, male (lateral view),
i - tegmen of Ch. pilgerodendri (dorsal view),
j - 8th sternite of Ch. pilgerodendri, male (dorsal view).
*Ithycerus noveboracensis*: a - habitus, male (dorsal view), b - habitus, female (dorsal view), c - abdomen, male (dorsal view), d - abdomen, female (dorsal view), e - 7th tergite of female (dorsal view), f - habitus, male (ventral view), g - habitus, female (ventral view), h - aedeagus (dorsal view), i - aedeagus (lateral view), j - tegmen (dorsal view), k - female genitalia (dorsal view), l - 7th tergite of male (dorsal view), m - 7th tergite of male (ventral view), n - female genitalia (ventral view), o - habitus, male (lateral view), p - habitus, female (lateral view).
Fig. 4. *Caenominurus topali*: a - habitus, holotype, male (dorsal view), b - habitus, allotype, female (dorsal view), c - habitus, paratype, female (dorsal view), d - habitus, male (lateral view), e - habitus, female (lateral view), f - apex of rostrum and mandible, female (lateral view), g - abdomen, male (dorsal view), h - abdomen, female (dorsal view), i - aedeagus (dorsal view), j - tegmen (dorsal view), k - 8th sternite, male (dorsal view), l - 7th tergite, female (dorsal view), m - female genitalia (ventral view).