

Genus *Corbicula* in the Amur River (Bivalvia, Corbiculidae)

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Three new species (*Corbicula nevelskoyi* sp.nov., *C. amurensis* sp.nov. and *C. sirofskii* sp.nov.) from the Amur River are described. A key for identification of Russian Far East *Corbicula* is presented.

Корбикулы (*Corbicula*, Corbiculidae) реки Амур

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Описаны три новых вида из р. Амур: *Corbicula nevelskoyi* sp.nov., *C. amurensis* sp.nov. и *C. sirofskii* sp.nov. Приведена определительная таблица дальневосточных корбикул.

Presently 5 species of *Corbicula* are known from the south of Russian Far East: *Corbicula japonica* Prime, 1864; *C. finitima* Lindholm, 1927; *C. elatior* Martens, 1905; *C. producta* Martens, 1905; and *C. lindholmi* Kursalova et Starobogatov, 1971. Only one of them (*C. japonica*) has been recorded from the Russian part of the Amur River basin (Kursalova, Starobogatov, 1971; Zatravkin, Bogatov, 1987; Clement, 1989). This species has the widest distribution among all Far-Eastern corbiculas and is known from the continental coast of the Japan Sea southward from the Amur River, from southern Sakhalin Island and Kurile Islands as well as from Japan.

It was believed that *C. japonica* lives in the Amur River from the delta to Khabarovsk, in both brackish and fresh water (Zatravkin, Bogatov, 1987). However, the revision of shells of all Far-Eastern species deposited in the Zoological Institute of Russian Academy of Sciences (St.-Petersburg) as well as of new collections showed the presence of 3 additional

species in the Amur River; their localities are restricted by those parts of the river which are not affected by the sea water. At the same time the distribution of *C. japonica* in the Amur River is restricted only by the brackish-water zone of the Amur delta.

Our revision was based on use of comparative method (Logvinenko, Starobogatov, 1971). This method takes into consideration the peculiarities of curvature of the valve frontal section. The method is based on the fact that contours of specimens belonging to the same species and having been drawn in a standard way coincide when superimposed, whereas contours of shells belonging to different species do not coincide.

Holotype and paratype specimens of all new species are deposited in the Zoological Institute of Russian Academy of Sciences (St.-Petersburg); all the holotypes have No. 1 in the Systematic catalog. The work was supported by the Russian Foundation for Fundamental Research.

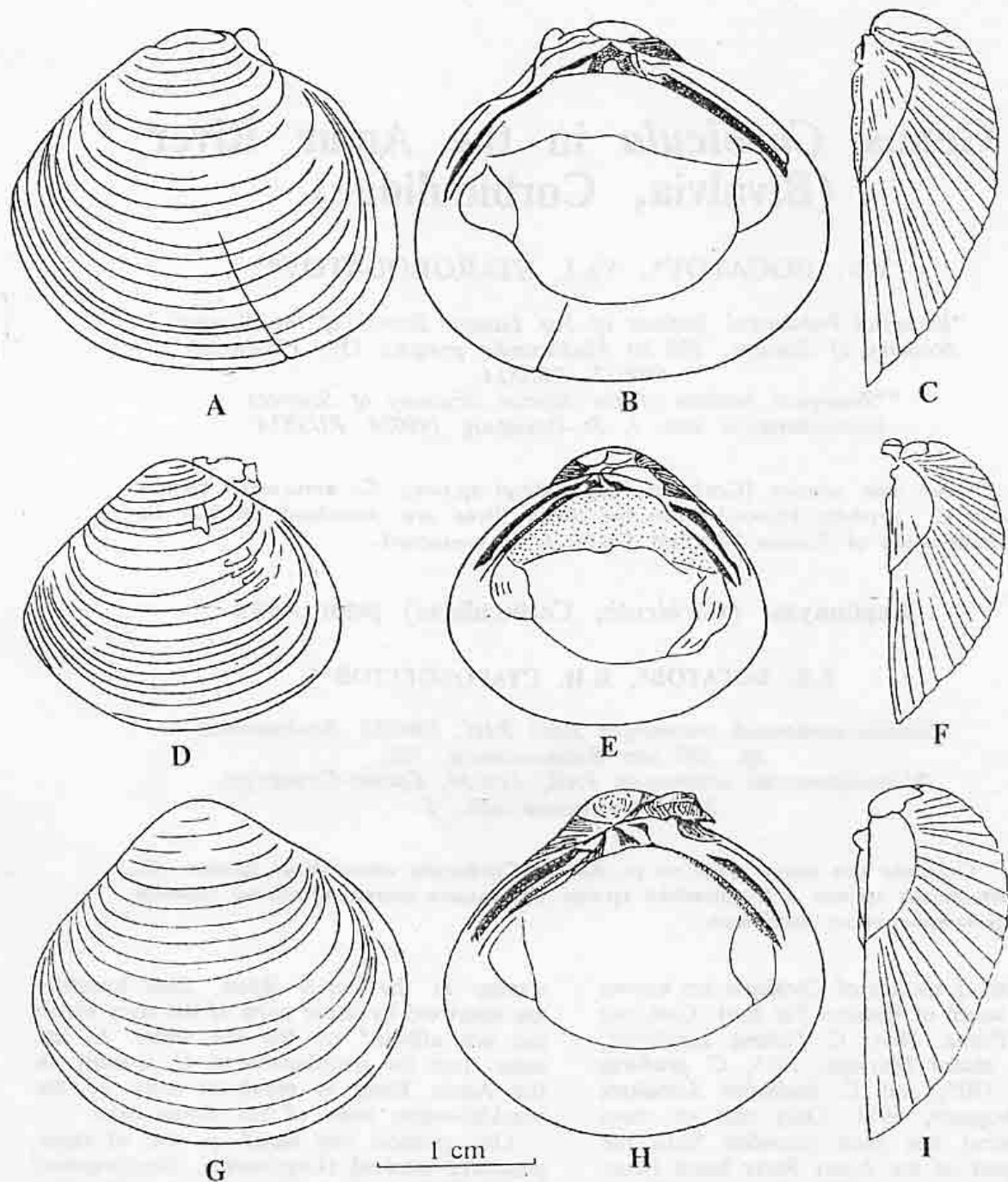


FIG. 1. Holotypes of *Corbicula nevelskoyi* sp. nov. (A, B, C), *C. amurensis* sp. nov. (D, E, F), and *C. sirotskii* sp. nov. (G, H, I).

РИС. 1. Голотины *Corbicula nevelskoyi* sp. nov. (A, B, C), *C. amurensis* sp. nov. (D, E, F), и *C. sirotskii* sp. nov. (G, H, I).

Corbicula nevelskoyi
Bogatov et Starobogatov, sp. nov.

Fig. 1 A, B, C

MATERIAL. Holotype (left valve) has dimensions as follows (in mm): length 26.2; height 24.1; convexity of the valve 8.5; length of posterior lateral tooth measured from the

base of nymph — 9.2; minimal distance between lateral teeth — 8.3.

TYPE LOCALITY: Lower Amur near Balbinski cliff 22 km upstream of Kalinovka settlement and 337 km from the mouth (coll. S.E. Sirotski, June 30, 1986). Paratypes: separate right valve from the same sample and separate left valve from the Amur River 7 km upstream

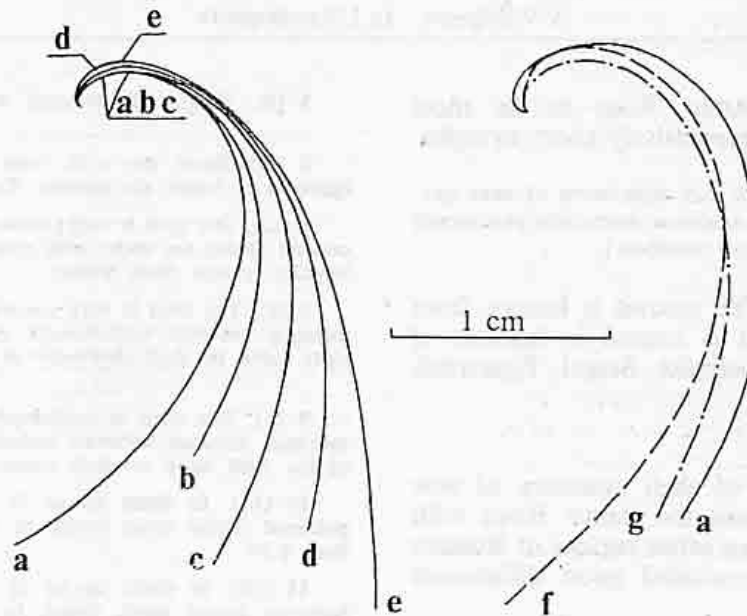


FIG. 2. Contours of frontal sections of valves in *Corbicula sirotskii* sp. nov. (a), *C. amurensis* sp. nov. (b), *C. nevelskoyi* sp. nov. (c), *C. japonica* (d), *C. finitima* (e), *C. lindholmi* (f), and *C. elatior* (g).

РИС. 2. Контуры фронтального сечения створок *Corbicula sirotskii* sp. nov. (a), *C. amurensis* sp. nov. (b), *C. nevelskoyi* sp. nov. (c), *C. japonica* (d), *C. finitima* (e), *C. lindholmi* (f), и *C. elatior* (g).

Maxim Gorky settlement (coll. B.D. Yudin, July 1993); their dimensions (in mm) are: shell length 15.3 and 32.5; shell height 13.6 and 31.7; convexity (of a single valve) 5.1 and 10.4, respectively.

REMARKS. This species is distinguished from *C. japonica* by much more convex shell and wider beaks.

[ЗАМЕЧАНИЯ: Новый вид отличается от *C. japonica* заметно более выпуклой раковиной и более широкими макушками.]

DISTRIBUTION. It is known from lower part of the Amur River only. The species is named in honour of eminent Russian explorer of Far East, Admiral Gennady Ivanovich Nevelskoy.

Corbicula amurensis

Bogatov et Starobogatov, sp. nov.

Fig. 1 D, E, F

MATERIAL. Holotype has dimensions (in mm) as follows: shell length 20.7; height 18.6; convexity 13.8; length of posterior lateral tooth of right valve 7.9; minimal distance between lateral teeth of right valve 6.8.

TYPE LOCALITY: Lower Amur near Balbinski cliff (coll. S.E. Sirotski, June 30, 1986). Paratypes: 2 intact specimens and separate left and right valves from the same locality, and 1 specimen from the Amur River across Khabarovsk (coll. V.V. Bogatov, October 18, 1986)

have dimensions (in mm): shell length 46.0, 13.7, 24.0, 13.8, 25.0; shell height 39.5, 12.2, 22.9, 12.4, 22.4; convexity 26.2, 9.1, 8.7 (single valve), 4.7 (single valve), 16.1, respectively.

REMARKS. The species differs from *C. japonica* by its more convex shell.

[ЗАМЕЧАНИЯ: Новый вид отличается от *C. japonica* и *C. nevelskoyi* более выпуклой раковиной.]

Distribution. The species is known from lower part of the Amur River. It also probably occurs in lower section of the middle Amur. The name is given after the locality of the species.

Corbicula sirotskii

Bogatov et Starobogatov, sp. nov.

Fig. 1 G, H, I

MATERIAL. Holotype has dimensions (in mm) as follows: shell length 21.8, shell height 20.8; convexity 15.4; length of posterior lateral tooth of the right valve 7.9; minimal distance between lateral teeth of right valve 7.1.

TYPE LOCALITY: Lower Amur 7 km upstream Maxim Gorky settlement and 397 km from the mouth (coll. B.D. Yudin, July 1993). Paratype: 1 specimen from the Amur River near Balbinski cliff 22 km upstream Kalinovka settlement (coll. S.E. Sirotski, June 30, 1986); dimensions (in mm): shell length 15.2, shell height 12.9, convexity 9.9.

REMARKS. This species differs from all other

corbiculas of the Amur River in its most convex shell and comparatively short nympha.

[ЗАМЕЧАНИЯ. Новый вид отличается от всех других амурских корбикул наиболее выпуклой раковиной и сравнительно короткой нимфой.]

DISTRIBUTION. The species is known from the Lower Amur. It is named in honour of Far-Eastern hydrobiologist Sergei Egorovich Sirotski.

The comparison of shell contours of new *Corbicula* species from the Amur River with contours of those from other regions of Russian Far East also demonstrated good differences (Fig. 2).

To determine the species occurring in Russian Far East one can use the following identification key:

1 (2). Ends of lateral teeth lie much lower than the middle of muscle scars. The shell is convex

C. producta

2 (1). Ends of lateral teeth are opposite to the border of middle of muscle scars or somewhat higher. Shell of various degree of convexity.

3 (6). Beaks are wide and without rounded angle at the ligament. The shell is very convex.

4 (5). Height of the shell usually exceeds its length

C. lindholmi

5 (4). Height of the shell is less than its length

C. elatior

6 (3). Beaks are wide, with rounded angle at the ligament or beaks are narrow. The convexity is variable.

7 (12). The shell is very convex, convex, or moderately convex. Beaks are wide, with rounded angle at ligament. Species inhabit fresh waters.

8 (9). The shell is very convex. The ratio of minimal distance between indentations of lateral teeth of the right valve to shell convexity is less than 0.46

C. sirotskii sp. nov.

9 (8). The shell is moderately convex. The ratio of minimal distance between indentations of lateral teeth of the right valve to shell convexity is more than 0.49.

10 (11). In shells up to 25 mm long, the ratio of posterior lateral tooth length to shell convexity is more than 0.57

C. amurensis sp. nov.

11 (10). In shells up to 25 mm long, the ratio of posterior lateral tooth length to shell convexity is less than 0.54

C. nevelskoyi sp. nov.

12 (7). The shell is moderately convex or flat. Beaks are narrow. Species inhabit places influenced by sea water.

13 (14). The shell is flat. The ratio of minimal distance between indentations of lateral teeth of right valve to length of posterior lateral tooth is less than 0.86

C. finitima

14 (13). The shell is moderately convex. The ratio of minimal distance between indentations of lateral teeth of right valve to length of posterior lateral tooth is more than 0.91

C. japonica

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