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## СО Д Е Р Ж А Н И Е

	<i>Стр.</i>
От редакции . . . . .	6
Библиография . . . . .	7
Summary . . . . .	82
Указатель географических названий . . . . .	179
Указатель геологических названий . . . . .	183
Указатель родовых и видовых названий . . . . .	185
Таблицы I—CVI и объяснения к ним . . . . .	195

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# О Т Р Е Д А К Ц И И

По техническим причинам монография В. С. Слодкевича издана в двух томах, причем в первую часть вошли стратиграфический очерк и описание видов, а во вторую часть библиография, summary, указатели, таблицы и объяснение к ним.

При пользовании книгой следует иметь в виду, что все ссылки на страницы описания видов, приведенные в настоящей, второй части монографии, относятся к первой части книги «Палеонтология СССР», том X, часть 3, вып. 18.

**П**РИСТУПАЯ к работе по изучению третичной фауны северной части Тихоокеанского бассейна, пришлось столкнуться с отсутствием полной библиографии по этому вопросу. И, если для Северной Америки такую библиографию еще можно с трудом разыскать частично среди разных отделов издающегося ежегодно библиографического справочника, то для других стран отсутствуют даже и такие сводки. Кроме того, в этом справочнике не приводятся работы о современных моллюсках, знакомство с которыми совершенно необходимо при изучении третичной фауны.

В палеонтологических монографиях как американских, так и японских, даже самых крупных, как правило, библиография не приводится вовсе, а все ссылки ограничиваются в подавляющем большинстве случаев указанием на сокращенное и зачастую непонятное название того или иного периодического издания.

Учитывая это обстоятельство, я приступил в 1933 г. к составлению списка работ как целиком посвященных описанию третичной фауны и стратиграфии северной части Тихоокеанского бассейна, так и таких, которые приходится использовать в той или иной мере при изучении тихоокеанской третичной палеонтологии. Составление этой библиографии было чрезвычайно затруднено тем обстоятельством, что некоторой части периодических изданий не оказалось в книгохранилищах Ленинграда и Москвы, или они не могли быть разысканы. Поэтому часть приведенных в списке работ не была просмотрена и указание на страницы и таблицы или не дано вовсе, или не могло быть проверено.

При составлении списка литературы были использованы все доступные библиографические издания и сводки, а некоторые периодические издания просматривались целиком, начиная с первого года их издания до 1936 года.

Автор будет очень благодарен всем, кто обнаружит в библиографии неизбежные при создавшихся условиях пропуски или неточности и просит сообщать ему все замечания по адресу: Москва, Большая Калужская ул. 75, Палеонтологический институт Академии Наук СССР.

Для облегчения пользования библиографией привожу список использованных периодических изданий в их полном наименовании и по возможности с указанием места издания в тех случаях, где это удалось установить.

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1843. *Pectunculus* — IX pls.

1843. *Cardita* — IX pls.

1843. *Cypricardia* — II pls.

1843. *Conus*, Suppl. — IX pls.

1843. *Pleurotonia* — XL pls.

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1843. *Crassatella* — III pls.  
1843. *Conus* — XLVII pls.

1843. *Delphinula* — V pls.  
1843. *Harpa* — IV pls.

Reeve L. 1843—1845. *Ibid.*, Vol. II, Containing Monographs of the Genera:

1834. *Arca* — XVII pls.  
1844. *Corbula* — V pls.  
1844. *Glauconome* — I pl.  
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1845. *Cardim* — XXII pls.  
1844. *Triton* — XX pls.  
1844. *Ranella* — VIII pls.  
1845. *Mitra* — XXXIX pls.

— 1846. *Ibid.*, Vol. III, Containing Monographs of the Genera:

1846. *Murex* — XXXV pls.  
1846. *Murex* Suppl. — I pl.  
1846. *Cyprea* — XXVII pls.  
1846. *Haliotis* — XVII pls.  
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1846. *Purpura* — XIII pls.  
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1846. *Monoceros* — IV pls.  
1846. *Bullia* — IV pls.  
1846. *Buccinum* — XIV pls.

— 1847—1848. *Ibid.* Vol. IV, Containing Monographs of the Genera:

1847. *Chama* — IX pls.  
1848. *Chilon* — XXVII pls.  
1847. *Chilonellus* — I pl.  
1847. *Ticula* — I pl.  
1847. *Pyrula* — IX pls.

1847. *Turbinella* — XIII pls.  
1847. *Fasciolaria* — VII pls.  
1847. *Fusus* — XXI pls.  
1847. *Paludomus* — III pls.  
1848. *Turbo* — XIII pls.

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1850. *Bulimus* — LXXXIX pls.  
1849. *Achatina* — XXIII pls.  
1849. *Turritella* — XI pls.  
1849. *Mesalia* — I pl.  
1849. *Eglisia* — I pl.

1849. *Cassidaria* — I pl.  
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1849. *Eburna* — I pl.  
1848. *Dolium* — VIII pls.  
1848. *Cassis* — XII pls.

— 1849—1856. *Ibid.*, Vol. VI, Containing Monographs of the Genera:

1850. *Artemis* — X pls.  
1850. *Lucina* — XI pls.  
1849. *Hemipecten* — I pl.  
1849. *Voluta* — XXII pls.  
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1850. *Partula* — IV pls.

1850. *Achatinella* — VI pls.  
1850. *Oliva* — XXX pls.  
1850. *Strombus* — XIX pls.  
1851. *Pterocera* — VI pls.  
1851. *Rostellaria* — III pls.

— 1851—1854. *Ibid.*, Vol. VII, Containing Monographs of the Genera:

1851—1854. *Helix* — CCX pls.

— 1852—1854. *Ibid.*, Vol. VIII, Containing Monographs of the Genera:

1852. *Pecten* — XXXV pls.  
1853. *Amphidesma* — VII pls.  
1854. *Mactra* — XXI pls.  
1854. *Lutraria* — V pls.

1854. *Mesodesma* — IV pls.  
1854. *Donax* — IX pls.  
1853. *Nassa* — XXIX pls.  
1854. *Patella* — XLII pls.

— 1855—1856. *Ibid.*, Vol. IX, Containing Monographs of the Genera:

1856. *Spondylus* — XVIII pls.  
1855. *Neritina* — XXXVII pls.  
1855. *Natica* — XXX pls.

1855. *Nerita* — XIX pls.  
1856. *Navicella* — VIII pls.  
1856. *Siphonaria* — VII pls.

— 1856—1858. *Ibid.*, Vol. X, Containing Monographs of the Genera:

1856. *Capsa* — I pl.  
1857. *Soletellina* — IV pls.  
1857. *Capsella* — II pls.  
1857. *Sanguinolaria* — I pl.

1857. *Avicula* — XVIII pls.  
1858. *Mytilus* — XI pls.  
1858. *Lithodomus* — V pls.  
1856. *Ampullaria* — XXVIII pls.

1857. *Psammobia* — VIII pls.  
 1857. *Psammotella* — I pl.  
 1857. *Modiola* — XI pls.

1856. *Cancellaria* — XVIII pls.  
 1857. *Littorina* — XVIII pls.

Reeve L. 1858—1859. *Ibid.*, Vol. XI, Containing Monographs of the Genera:

1858. *Perna* — VI pls.  
 1858. *Malleus* — III pls.  
 1858. *Vulsella* — II pls.  
 1858. *Crenatula* — II pls.  
 1858. *Pedum* — I pl.  
 1859. *Pinna* — XXXIV pls.  
 1859. *Anomia* — VIII pls.  
 1859. *Placunanomia* — III pls.

1858. *Umbella* — I pl.  
 1858. *Lanthina* — V pls.  
 1858. *Calyptrea* — VIII pls.  
 1859. *Columbella* — XXXVII pls.  
 1859. *Meta* — I pl.  
 1859. *Crepidula* — V pls.  
 1859. *Crucibulum* — VII pls.  
 1859. *Trochita* — III pls.

-- 1859—1861. *Ibid.*, Vol. XII, Containing Monographs of the Genera:

1859. *Thracia* — III pls.  
 1860. *Trigonia* — I pl.  
 1860. *Myochama* — I pl.  
 1860. *Aspergillum* — IV pls.  
 1861. *Argonauta* — IV pls.  
 1861. *Nautilus* — VI pls.  
 1860. *Terebra* — XXVIII pls.

1861. *Melania* — LIX pls.  
 1860. *Hemisinus* — VI pls.  
 1861. *Anculota* — VI pls.  
 1860. *Melatoma* — III pls.  
 1860. *Io* — III pls.  
 1859. *Pirena* — II pls.  
 1860. *Melanopsis* — III pls.  
 1860. *Scorabus* — III pls.

-- 1859—1862. *Ibid.*, Vol. XIII, Containing Monographs of the Genera:

1859. *Lingula* — II pls.  
 1861. *Terebratula* — XI pls.  
 1862. *Crania* — I pl.  
 1861. *Cyclophorus* — XX pls.  
 1862. *Leptopoma* — VIII pls.  
 1862. *Virtina* — X pls.

1862. *Orbicula* — I pl.  
 1860. *Cymbium* — XXVI pls.  
 1861. *Cyclostoma* — XXXIII pls.  
 1862. *Simpulosis* — II pls.  
 1862. *Phasianella* — VI pls.  
 1862. *Trochus* — XVI pls.

-- 1862—1864. *Ibid.*, Vol. XIV, Containing Monographs of the Genera:

1862. *Tridacna* — VIII pls.  
 1862. *Hippopus* — I pl.  
 1862. *Anatina* — IV pls.  
 1863. *Tugonia* — I pl.  
 1863. *Chamostrea* — I pl.  
 1864. *Venus* — XXVI pls.  
 1864. *Dione* — XII pls.  
 1864. *Circe* — X pls.  
 1864. *Cytherea* — X pls.  
 1864. *Tapes* — XIII pls.  
 1864. *Meroe* — III pls.

1863. *Halia* — I pl.  
 1863. *Concholopas* — II pls.  
 1863. *Zizyphinus* — VIII pls.  
 1863. *Terebellum* — I pl.  
 1863. *Paludina* — XI pls.  
 1863. *Cyclotus* — IX pls.  
 1863. *Pterocyclus* — I pl.  
 1863. *Chondropoma* — XI pls.  
 1863. *Adamsiella* — II pls.  
 1863. *Anastoma* — I pl.

-- 1860—1868. *Ibid.*, Vol. XVI, Containing Monographs of the Genera:

1860. *Mycetopus* — IV pls.  
 1868. *Unio* — XCVI pls.  
 1866. *Pleiodon* — I pl.  
 1868. *Iridina* — II pls.  
 1868. *Galatea* — VI pls.  
 1868. *Bulla* — VI pls.

1868. *Dolabella* — II pls.  
 1868. *Dolabrifera* — I pl.  
 1868. *Haminea* — V pls.  
 1868. *Hydatina* — II pls.  
 1868. *Aplustrum* — I pl.  
 1868. *Akera* — I pl.

Reeve L. 1869—1870. Ibid., Vol. XVII, Containing Monographs of the Genera:

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|-------------------------------------|-----------------------------------|
| 1869. <i>Tellina</i> — LVIII pls.   | 1870. <i>Anodon</i> — XXXVII pls. |
| 1869. <i>Hyria</i> — V pls.         | 1869. <i>Aplysia</i> — II pls.    |
| 1869. <i>Castalia</i> — III pls.    | 1869. <i>Atys</i> — V pls.        |
| 1869. <i>Pleurobranchus</i> — I pl. | 1870. <i>Tugalia</i> — I pl.      |
| 1859. <i>Cucullea</i> — I pl.       | 1870. <i>Scutus</i> — II pls.     |

— 1870—1872. Ibid., Vol. XVIII, Containing Monographs of the Genera:

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| 1870—1871. <i>Nucula</i> — V pls.      | 1870. <i>Solenella</i> } — I pl. |
| 1870—1871. <i>Ostrea</i> — XXXIII pls. | 1870. <i>Neilo</i> } — I pl.     |
| 1872. <i>Pholas</i> — XII pls.         | 1870. <i>Philine</i> — II pls.   |
| 1872. <i>Yoldia</i> — V pls.           | 1870. <i>Bullina</i> — I pl.     |
| 1871. <i>Laeda</i> — IX pls.           | 1870. <i>Urticulus</i> — I pl.   |
| 1871. <i>Placuna</i> — V pls.          | 1870. <i>Zinteria</i> — I pl.    |
| 1872. <i>Etheria</i> — II pls.         | 1870. <i>Scaphander</i> — I pl.  |
| 1872. <i>Barlelettia</i> } — I pl.     | 1872. <i>Succinea</i> — XII pls. |
| 1872. <i>Mulleria</i> } — I pl.        | 1872. <i>Magilus</i> — IV pls.   |

— 1873—1874. Ibid., Vol. XIX, Containing Monographs of the Genera:

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|-------------------------------------|-------------------------------------|
| 1873. <i>Cumingia</i> — II pls.     | 1873. <i>Petricola</i> — III pls.   |
| 1873. <i>Glycimeris</i> — I pl.     | 1873. <i>Astarte</i> — III pls.     |
| 1873. <i>Cyprina</i> — I pl.        | 1873. <i>Venerupis</i> — IV pls.    |
| 1873. <i>Anatinella</i> — I pl.     | 1873. <i>Pandora</i> — III pls.     |
| 1873. <i>Plicatula</i> — IV pls.    | 1873. <i>Galeomma</i> — I pl.       |
| 1873. <i>Cardilia</i> — I pl.       | 1874. <i>Helicina</i> — XXXIV pls.  |
| 1873. <i>Gnathodon</i> — I pl.      | 1874. <i>Stonacella</i> — V pls.    |
| 1874. <i>Scalaria</i> — XVI pls.    | 1874. <i>Stomatia</i> — II pls.     |
| 1874. <i>Emarginula</i> — IX pls.   | 1874. <i>Gena</i> — II pls.         |
| 1874. <i>Cemoria</i> — I pl.        | 1874. <i>Adeorbis</i> — II pls.     |
| 1874. <i>Rimula</i> — I pl.         | 1874. <i>Teinostoma</i> — I pl.     |
| 1873. <i>Granopsis</i> } pl.        | 1874. <i>Broderiphia</i> — I pl.    |
| 1873. <i>Zeidora</i> } pl.          | 1874. <i>Cyclostoma</i> — III pls.  |
| 1874. <i>Typhis</i> — III pls.      | 1874. <i>Megaspira</i> — I pl.      |
| 1873. <i>Sointilla</i> — VI pls.    | 1874. <i>Chilina</i> — III pls.     |
| 1873. <i>Solen</i> — VII pls.       | 1874. <i>Physa</i> — XII pls.       |
| 1873. <i>Cultellus</i> — VII pls.   | 1874. <i>Trichotropis</i> — II pls. |
| 1873. <i>Pharus</i> — I pl.         | 1874. <i>Pleurotomaria</i> — I pl.  |
| 1873. <i>Solecurtus</i> — VIII pls. | 1873. <i>Panopea</i> — VI pls.      |

— 1875. Ibid., Vol. XX, Containing Monographs of the Genera:

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|-------------------------------------|-----------------------------------|
| 1875. <i>Solemya</i> — I pl.        | 1875. <i>Ruphus</i> — I pl.       |
| 1875. <i>Mya</i> — III pls.         | 1875. <i>Teredo</i> — IV pls.     |
| 1875. <i>Mytilimeria</i> — I pl.    | 1875. <i>Pedicularia</i> — I pl.  |
| 1875. <i>Saxicava</i> — II pls.     | 1875. <i>Pupinidae</i> — X pls.   |
| 1875. <i>Gastrochaena</i> — IV pls. | 1875. <i>Pteropoda</i> — VI pls.  |
| 1875. <i>Xylophaga</i> — ½ pl.      | 1875. <i>Rissoa</i> — XIII pls.   |
| 1875. <i>Nanea</i> — ½ pl.          | 1875. <i>Siliquaria</i> — IV pls. |
| 1875. <i>Cyrena</i> — XIX pls.      | 1875. <i>Planorbis</i> — XIV pls. |
| 1875. <i>Sphaerium</i> — V pls.     | 1875. <i>Planaxis</i> — V pls.    |
| 1875. <i>Velorita</i> — I pl.       | 1875. <i>Ancylus</i> — III pls.   |
| 1875. <i>Fistulana</i> — I pl.      | 1875. <i>Alycaeus</i> — VI pls.   |
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| 1875. <i>Pura</i> — XX pls.         | 1875. <i>Stylifer</i> — II pls.   |
| 1875. <i>Vanikoro</i> — III pls.    | 1875. <i>Auricula</i> — VII pls.  |
| 1875. <i>Neritopsis</i> — ½ pl.     |                                   |

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**A**UTHOR describes tertiary beds from Sakhalin and Kamchatka and their pelecypod-fauna.

Following series are described:

Western coast of Kamchatka (faunal check-list see page 17<sup>1</sup>):

Tighil series — Paleogene (Eocene — middle (?) Oligocene).

Kovachin series — upper Oligocene.

Vayempolka series — middle and upper Miocene.

Kavran series: lower horizon — lower (?) and middle Pliocene, upper horizon — upper Pliocene.

Eastern coast of Kamchatka:

Clayey sandstone series }  
Coal-bearing series } — middle and upper Miocene.

Northern Sakhalin (faunal check-list see page 39):

Upper-Pil series }  
Kaskadnaya series } lower Miocene.

Vengheri series }  
Mayamraf series } middle and upper Miocene.

Matituk series — middle Pliocene.

Pomyr series — upper Pliocene.

Western Sakhalin:

Rykhlaya series — upper Miocene.

Eastern Sakhalin (faunal check-list see page 50):

Ekhabi series — Pliocene (?).

Nutovo series }  
Surpa-Nutovo series } upper Pliocene.

#### DESCRIPTION OF SPECIES

*Solemya dalli* Clark

Pl. IX, figs 12, 13, 14, 15

Occurrence. Cape Mayam-Raf, Cape Pilvo, near the mouth of Vengheri river, farther south of Pil river (Schmidt Peninsula).

<sup>1</sup> Here and everywhere further references on the pages of Russian text (see: Paleontology of USSR, vol. X, part 3, fasc. 18).

In the Upper-Pil, Vengheri and Mayam-Raf series of the Schmidt Peninsula.

Upper Oligocene — upper Miocene.

*Nuculana (Nuculana) pernula* (M ü l l e r)

Pl. VII, figs 9, a; 10; 11

Shell medium in size, elongate-oval in outline, inequilateral, with up-curved, truncated rostrum. Sculpture of external surface consists only of fine concentric lines and striae of increment assuming a lamellar structure at the keel and at the ventral margin of valve.

O c c u r r e n c e. Not uncommon in the Kavran series of Kamchatka. Pliocene — Recent.

*Nuculana (Nuculana) pennula* (Y o k o y a m a)

Pl. VII, figs 3; 4; 5; 6; 7, a; 8

Shell ranging from small to moderate size, inequilateral, elongate-oval in outline with a long, narrow and straight rostrum. Beaks obtused, feebly prominent, displaced forward. Outer surface covered with concentric incremental lines only.

D i m e n s i o n s see page 64.<sup>1</sup>

O c c u r r e n c e. Not infrequent in the Vengheri, Mayamraf series and in lower series of Machigar section on the Schmidt Peninsula. In the Rykhlaya series of western Sakhalin.

*Nuculana (Nuculana) majamraphensis* (K h o m e n k o)

Pl. VII, figs 12, 13; 14, 15, 16, 17

Shell of medium size, elongate-oval in outline, inequilateral, with feebly upcurved, broad, truncate rostrum. Ventral margin very feebly convex. Outer surface covered with concentric lines of growth.

The described species has a strong resemblance to *N. pernula* (M ü l l.), and can be even considered as a variety of the latter. *N. pernula* differs in lesser relative height, in more central position of the beaks, in upcurved rostrum and in strongly convex ventral margin.

O c c u r r e n c e. Not rare in Vengheri and Mayamraf series and in the Tum section of northern Sakhalin. In the Vayempolka series on the western coast of Kamchatka.

*Nuculana (Nuculana?) kavranensis* sp. nova

Pl. VII, figs 19, 20

General outline of the valve trigonal-oval, inequilateral. Anterior and ventral margins evenly and regularly convex outward, quite imperceptibly join one another without any bend. Ventral margin sharply ascending posteriorly, having a slight, even depression, with its concavity turned inward, joins narrow and attenuated rostrum truncated by short, nearly straight

<sup>1</sup> Here and everywhere further references on the pages of Russian text (see: Paleontology of USSR, vol. X, part 3, fasc. 18).



line of the posterior margin. Anterodorsal margin feebly convex outward, evenly passes into anterior margin being somewhat shorter than the straight postero-dorsal margin. Beaks prominent, broad, quite straight, displaced in front of the median line of the shell. The highest point of convexity is situated in the upper half of the valve a little anteriorly to the beaks, from where it falls somewhat abruptly to the anterior margin and more evenly to the posterior margin of the valve.

Sculpture of the outer surface is not preserved, but, apparently, there is no concentric ribs.

Teeth being in form and position typical for the genus *Nuculana*; in number about 15 in every half of the hinge.

**D i m e n s i o n s.** Single cast of right valve: length 10.2 mm; height 7.0 mm, convexity about 1.6 mm. Coefficient of height 68.6, coefficient of convexity about 15.7.

**O c c u r r e n c e.** Rare in the Kavran series of Kamchatka.

*Nuculana (Nuculana) slodkewitschi* K o g a n (in litt.)

Pl. VII, figs 21, 22

Shell medium in size, trigonal-oval in outline, inequilateral, moderately convex. Rostrum straight, broad. Beaks somewhat displaced forward. Outer surface covered with concentric lines of growth.

**D i m e n s i o n s.** Length 20.8 mm; height 12.8 mm; coefficient of height about 61.5.

**O c c u r r e n c e.** Not very uncommon in the Vengheri and in the Mayamraf series of the Schmidt Peninsula; Ryhlaya series of western Sakhalin; Vayempolka series of Kamchatka.

*Nuculana (Nuculana) tigiliana* S l o d k e w i t s c h

Pl. VII, fig. 18

Shell small, sharply inequilateral, irregularly-oval in outline with attenuated, rounded posterior and with broad, somewhat truncated anterior margins. Teeth about 14 in the anterior as well as in the posterior halves of the hinge. Outer surface smooth.

**O c c u r r e n c e.** Rare in the upper horizons of the Tighil series. This species is found in association with *Yoldia tigilensis* S l o d.

*Nuculana (Sacella) taphria* (D a l l)

Pl. VIII, figs 1, 2, 3, 4, 5, 6

Shell small, moderately convex, somewhat inequilateral, elongate-trigonal in outline. Beaks nearly central. Rostrum pointed. Outer sculpture consists of numerous, thin, concentric riblets.

**D i m e n s i o n s.** The best preserved cast of the right valve: length 16.2 mm; height 9.7 mm; convexity about 3.3 mm. Coefficient of altitude 59.9; coefficient of convexity about 20.4.

**O c c u r r e n c e.** Not infrequent in the upper horizons of the Vayempolka series of Kamchatka; in the Upper-Pil (?) series and in the Vengheri series of Sakhalin.

*Nuculana (Sacella) kantschatica* sp. nova.

Pl. VII, figs 23, a

Outline of the valves extended longitudinally, oval-quadrate. Anterior and posterior margins being nearly equal in length as well as in convexity, the posterior margin joins the dorsal in angle, while the anterior passes into dorsal gently curving, consequently the posterior margin is somewhat longer. Ventral margin long, convex. Antero-dorsal margin slightly convex, obliquely inclined from the beaks downward where it evenly joins the anterior margin. Postero-dorsal margin straight, longer than antero-dorsal one. Beaks small, moderately prominent, displaced forward. Convexity of valves being considerable, the point of greatest convexity situated behind the beaks, nearly on the middle line of valve. Anterior half of the valve is somewhat more inflated than posterior.

Outer surface ornamented with numerous, rough, concentric irregular ribs separated by narrow interspaces.

**D i m e n s i o n s.** The best preserved double-valve specimen: length 28.5 mm; height 16.1 mm; convexity of both valves 12.2 mm. Coefficient of height 56.6; coefficient of convexity 21.4.

**O c c u r r e n c e.** In the vicinity of Ust-Kamchatsk (eastern coast of Kamchatka). Miocene (?).

*Nuculana (Sacella) chehalisensis* (W e a v e r)

Pl. VIII, figs 9, 10, 11, 12, 13, 14

**O c c u r r e n c e.** Not uncommon in the Vengheri series of Sakhalin

*Nuculana (Sacella) wajampolkensis* S l o d k e w i t s c h

Pl. VIII, figs 7, a; 8

Shell small, elongate-oval in outline, somewhat inequilateral. Rostrum short and straight. Outer surface sculptured with fine, concentric riblets.

**D i m e n s i o n s** of the medium sized and the largest specimens: length (left valve) 10.9 mm and (right valve) 14.5 mm; height 6.2 mm, and 7.8 mm; convexity about 2.0 mm, and 2.4 mm. Coefficient of height 56.8, and 53.8; coefficient of convexity about 18.3, and about 16.5.

**O c c u r r e n c e.** Rare in the upper horizons of the Vayempolka series.

*Nuculana (Sacella) tatarica* K o g a n (in litt.)

Pl. VIII, fig. 16

Shell small, inequilateral, elongate-oval in outline, moderately convex. Beaks displaced forward. Rostrum long, narrow and straight. Outer surface covered with numerous concentric riblets.

**D i m e n s i o n s.** Length 12.6 mm, height 6.9 mm; coefficient of height 54.8.

**O c c u r r e n c e.** Very rare in the Rykhlaya series of Sakhalin.

*Nuculana (Sacella?) penderoides* (K h o m e n k o)

Pl. VIII, fig. 15

Shell small, high, oval-trigonal in outline, anterior end very broad, posterior end narrow, rostrate and curved. Beaks broad, displaced forward. Sculpture of external surface consists of close-set, concentric ribs (?).

**D i m e n s i o n s.** Length 15.7 mm; height 11.0 mm; coefficient of height 70.1.

**O c c u r r e n c e.** Very rare in the Upper-Pil series of Sakhalin.

*Nuculana (Sacella) snatolensis* S l o d k e w i t s c h

Pl. VIII, figs 17, 18

Shell small, elongate-oval in outline with long, attenuated and pointed rostrum. Postero-dorsal margin trough-shaped. External sculpture consists of broad, rough ribs, separated by narrow interspaces.

**D i m e n s i o n s.** Left valve: — length about 17.0 mm; height 7.6 mm; coefficient of height about 44.7. Cast of left valve: length about 19.2 mm; height 9.7 mm; coefficient of height about 50.5.

**O c c u r r e n c e.** Very infrequent in the lower horizons of the Vayem-polka series of Kamchatka.

*Nuculana (Sacella) furlongi* (T r a s k)

Pl. VIII, figs 19; 20; 21, a

**O c c u r r e n c e.** Not uncommon in the lower series of Machigar section of Sakhalin. In the Briones formation of California.

Section *Borissia*, sectio nova

Shell similar in outline to *Nuculana* s. str., but less inequilateral; it differs also in the presence of the concentric, broad and not elevated ribs, which cover the whole median portion of the valve.

**T y p e** — *Borissia alferovi* S l o d. n. sp. from the Miocene (?) deposits of eastern coast of Kamchatka (fig. 3, pg. 79).

*Nuculana (Borissia) alferovi* sp. nova

Pl. VIII, figs 22, a; 23, a

In the collection there are two somewhat injured casts of this species with part of the shell adhering.

General outline of the valve irregularly-oval, extended in length. Short anterior margin being slightly convex, evenly joins long, moderately convex ventral margin. The latter sloping behind evenly upwards passes into short, feebly convex posterior margin of the same length and convexity as the anterior margin. Short antero-dorsal margin, somewhat concave, slopes steeply downward from the beaks and joins the anterior margin in angle. Long postero-dorsal margin likewise sloping steeply away from the beaks, bends sharply further, straightens and takes the horizontal direction; angle of its junction with posterior margin is strongly pronounced, rounded.

Variability in general outline of the valve in the described species is apparently rather great. One of the specimens in the collection at hand have low elongate-oval outline; another, on the contrary, a relatively shorter and considerably higher one. However, until more material is assembled for study it seems best to reserve judgement.

Beaks high, pointed, curved and inclined forward, displaced to the anterior margin. Convexity of valves rather great. The point of greatest convexity

is situated on the beak-line in the upper half of the valve so that the anterior portion of valve is more inflated than posterior.

Prodissoconch small lustrous-smooth, of extended in length rectangular outline. A distance of about three-fourth the length of the shell from the beaks, broad, but not high, concentric ribs appear on the surface of the shell, separated by narrow and shallow interspaces. On the anterior margin the ribs start at some distance from the margin of the valve, the space between the ends of the ribs and the margin of the valve rapidly increasing with the growth of the valve. On their most posterior end the ribs curve sharply but inconsiderably, then drop and disappear rapidly, not reaching the line, which joins the beaks and the posterior end of the ventral margin. Total number of concentric ribs about 20—22 and they are concentrated only on the median portion of valve in umbonal region on a distance of about 2.5—3.0 mm from the beaks (by 8.0 mm total altitude of the valve). All the remaining surface of the shell is quite smooth except for the finest concentric lines of growth. Unfortunately both specimens in the collection at hand are broken in their median part therefore it is impossible to tell definitely, — either the concentric ribs continue further to the ventral margin or not. The presence of the traces of concentric riblets on the broken portion suggests that such a sculpture persists still more further down if not to the lowest margin so, at all events, nearly to the latter.

However, owing to the imperfect state of preservation of the shells, it is better to leave the question unsolved until more material is found.

Lunule and escutcheon are not modelled distinctly. Muscle scars are impressed exceedingly feebly, so that they do not reproduce impressions on the casts.

**D i m e n s i o n s.** The best preserved double-valve specimen: length 12.5 mm; height 7.7 mm; convexity 5.6 mm. Coefficient of height 61.6; coefficient of convexity 22.4.

**O c c u r r e n c e.** Chazhma-Storozh (eastern coast of Kamchatka). Miocene (?)

*Yoldia cooperi* G a b b var. *kovatschensis* S l o d k e w i t s c h

Pl. I, figs 1, 2, 3, 4;

There are in the collection many impressions of the right and left valves of described species which allow to obtain a nearly definite idea of its peculiar characters.

If the shell is oriented so, as to bring the posterior end upward, its outline will have quite regular pyriform shape, in some cases absolutely symmetric but more frequently with a slight asymmetry, which is due to a lesser curvature of the postero-dorsal margin compared to that of the posterior. Anterior margin long, broadly and evenly rounded joins smoothly the ventral likewise rounded margin, which sharply ascends posteriorly and quite imperceptibly passes into the short posterior margin. Postero-dorsal margin long, nearly straight or only slightly concave slopes from the beaks obliquely down and joins the posterior margin in a rounded curve. Antero-dorsal margin, on the contrary, being convex and projecting upward beyond the horizontal line which runs across the beaks, and joins evenly and imperceptibly the ventral margin.

Beaks small, almost not projecting beyond hinge line, inclined backward and displaced in the same direction. Convexity of the valves very small. The state of preservation does not allow to give precise data concerning convexity, but apparently it does not exceed 4 mm (one valve) by 48—50 mm in length.

A scarcely modelled groove extends from the beaks to the posterior margin, setting off a broad but flat rostrum with an obtusely rounded posterior end.

Sculpture of the outer surface consists only of fine concentric incremental lines; no traces of concentric ridges, characteristic for *Y. cooperi* has been detected on the material under examination. On some specimens the concentric lines in the groove anteriorly to rostrum become rougher thus defining the rostrum as well as the groove.

The number of teeth could not be counted accurately, there are about 15 teeth on the posterior half of the hinge margin and none is preserved on the anterior half.

**D i m e n s i o n s** see page 90.

The group of shells *Y. cooperi* G a b b and closely related to them species have a very extensive distribution in the Tertiary deposits of the Pacific basin. The typical species is inhabiting along the coast of California up to the present time, being known there from the Miocene. In the critical review of this group R. S t e w a r t draws the conclusion that fossil *Y. cooperi* G a b b, *Y. oregona* D a l l and *Y. cooperi tenuissima* C l a r k are synonyms of the same species *Y. cooperi* var. *supramontereyensis* A r n o l d, but unfortunately he does not prove the correctness of this assumption. Apparently, the point of view of G r a n t & G a l e is more precise. They separate the typical *Y. cooperi* G a b b from all other representatives of this group, which are characterized by different outlines and a different number of teeth. When principal species of this group are considered further as compared with Kamchatkan forms their distinctions will be clearly seen.

*Y. cooperi* G a b b differs from the described species in being more elongate and therefore having lesser coefficient of altitude (about 50.0), in the elongated narrowed and attenuated rostrum and in the presence of concentric ridges on the exterior surface of the shell. Number of teeth, according to indication of several authors, varies from 36 to 50 in the anterior half and from 11 to 14 in the posterior half of the hinge.

*Y. cooperi supramontereyensis* A r n. being differentiated from *Y. cooperi* by its more inequilateral outline, concave postero-dorsal margin and broad posterior end, is readily distinguished from Kamchatkan *Yoldia* by its elongated outline with a distinct posterior rostrum.

*Y. tenuissima* C l a r k is characterized by a long, pointed rostrum and by more centrally situated beaks. The presence of a rostrum and a lesser coefficient of altitude distinguish it from var. *kovatschensis*.

Lastly, *Y. oregona* S h u m. has more displaced forward beaks and a broader posterior end, than *Y. cooperi*, and in comparison with var. *kovatschensis* it has a narrow outline with a well-marked rostrum.

As regards *Y. ochotensis* K h o m., it has been said enough in one of the author's previous papers; neither by the outline nor by the character of the surface can not be compared with the Kamchatkan species.

As it may be seen from the foregoing statement, the systematic rank of the latter species is establishing sufficiently well, but its relationship to the other species of this group is still quite uncertain.

O c c u r r e n c e. Kovachina Bay; Snatol, Kovachina rivers.

Very frequent in the horizon of gray siliceous shales with conchoidal fracture, associated with *Palliolum (Delectopecten) pedroanus* Tr.; in the lower horizon of the Vayempolka series and in the upper horizon of Tighil series.

Oligocene (?); middle Miocene.

*Yoldia tigilensis* S l o d k e w i t s c h

Pl. I, figs 5, 6, 7, 8

Outline of shell irregular-oval, strongly extended in length. Posterior end narrower than the anterior; dorsal margin nearly straight. Anterior margin rounded and attenuated forward, joins evenly the gently rounded, long ventral margin. The latter, somewhat ascending posteriorly, passes into the short convex posterior margin. Postero-dorsal margin long, nearly straight, only slightly concave inward joins at a sharply pronounced, nearly right angle the posterior margin. Antero-dorsal margin somewhat shorter, very feebly concave outward rounds gently into the anterior margin.

Beaks small, not prominent, slightly displaced forward. Convexity of the valves relatively insignificant, thus, when the cast is about 55 mm long its convexity does not exceed 3.5 mm; and the another, broken but fully mature shell the convexity of valve does not exceed 4.5 mm.

A distinctly modelled groove, not deep and rather narrow extends along the postero-dorsal margin, from the beaks to the upper end of the posterior margin.

Sculpture of the exterior surface consists only of fine concentric lines and furrows of growth and at places of not elevated, feeble, also concentric, wrinkled folds.

Hinge apparatus preserved in several casts and therefore could be examined. Number of teeth about 12—14 in the anterior half and about 28—30 in the posterior half of the hinge. These two sets of teeth are separated by a deep, wide ligamental pit situated under the beak.

D i m e n s i o n s see page 92.

The described form bears the strongest resemblance to *Y. sagittaria* from northern Sakhalin figured by M. Y o k o y a m a. All the characters of this shell, visible in the figure, fully agree with that of the Kamchatkan forms.

Holotype of this species, established by M. Y o k o y a m a (1925) has a different outline (with a convex dorsal margin and a longer posterior one), and a different number of teeth (25 anteriorly and a little less posteriorly) and therefore cannot be close to the described shells.

Majority of the latter illustrations of *Y. sagittaria* of the same author agree with the holotype's diagnosis and therefore are out of our consideration; only one mentioned above illustration of Sakhalinian *Yoldia* does not correspond to the earlier photographs, differing, as it is evident from our description in the essential specific characters and consequently should be separated as a new species.

*Y. cooperi* G a b b var. *kovatschensis* S l o d. is distinguished by its lesser length, by a pyriform outline due to the swell of the antero-ventral end of the shell and by a greater coefficient of altitude.

**O c c u r r e n c e.** Sea coast, Tighil region (western coast of Kamchatka). This species is occurring under the name of *Y. sagittaria* in the Miocene (?) gray shales (beds Nampi) on western Sakhalin associated with *Turritella nipponica* Y o k. and *Pecten watanabei* Y o k. Not uncommon in the upper horizon of the Tighil series of Kamchatka.

Oligocene; Miocene (?).

*Yoldia alta* S l o d k e w i t s c h

Pl. I, figs 9; 10, a

Shell of medium size, feebly convex, elongate-oval in outline with a produced pointed rostrum. Exterior surface covered with concentric, incremental lines only. There are about 15 teeth on the anterior half and about 17 on the posterior half of the hinge.

**O c c u r r e n c e.** Sea coast, west of the mouth of Polovinka river (western coast of Kamchatka).

*Y. alta* occurs in a great number of specimens in the upper horizon of the Vayempolka series at places overcrowding the matrix.

Upper Miocene.

*Yoldia caudata* K h o m e n k o

Pl. II, figs 1, 2, 3

Shell large, moderately convex, elongate-oval in outline, extended in length, with a broad anterior and a narrowed, curved posterior ends. Exterior surface with only concentric sculpture of growth. A broad distinct groove is extending from the beaks to the anterior end of the ventral margin.

There are 25 teeth on the anterior half and 16 on the posterior half of the hinge.

**D i m e n s i o n s** see page 95.

**O c c u r r e n c e.** East of Cape Maria on the Schmidt Peninsula (northern Sakhalin).

Frequently occurring species in the lower series of the Machigar section of the Schmidt Peninsula.

Middle Miocene.

*Yoldia longissima* S l o d k e w i t s c h

Pl. II, figs 4; 5, a; 6

Shell large, convex, regularly elongate-oval in outline, extended in length; anterior end broad; posterior end narrow. Exterior surface only with concentric lines of growth. Number of teeth 32—34 on the anterior half, and 22—24 on the posterior half of the hinge.

**O c c u r r e n c e.** Kovachina Bay; sea coast near Cape Utkholok; Kinkil, Gackh, Snatol rivers; north-east of the mouth of Gackh river (western coast of Kamchatka). East of Cape Maria on the Schmidt Peninsula (northern Sakhalin).

This species is common at different localities in the Vayempolka series and in the lower horizons of the Kavran series along the western coast of Kamchatka; in the lower series of Machigar section of the Schmidt Peninsula.

Middle Miocene — middle Pliocene.

*Yoldia sagittaria* Y o k o y a m a

Pl. II, figs 7, 8, 9

Shell large, elongate; quadrate-oval in outline. Anterior end rounded; posterior end trigonal. A feeble oblique groove runs from the beaks to the anterior end of the ventral margin. Exterior surface covered only with concentric lines of growth. There are about 25 teeth on the anterior half and about 22 on the posterior half of the hinge.

D i m e n s i o n s see page 99.

O c c u r r e n c e. Sea coast, near Etalonnaya river (western coast of Kamchatka); between Care Maria and Gulf of Machigar; between Mount Schmidt and village Tumi near Gulf Nadejda, Schmidt Peninsula.

Comparatively rare in the upper horizon of the Kavran series of Kamchatka and in the Vengheri series of Sakhalin. In the beds Mizunoya, Jô-Ban coal-fields and in the beds C of Embets, Japan.

Miocene — Pliocene.

*Yoldia* cf. *temblorensis* A n d e r s o n & M a r t i n

Pl. III, figs 1, 2;

Shell small, moderately convex, elongate-oval in outline with a regularly rounded anterior end and a narrow rostrum. Beaks central. Exterior surface sculptured only with concentric lines of growth.

The Kamchatkan species is quite identical in all its characters with the original figure as well as with the description of this species, but the identification is attended with some doubt because of the broken anterior portion of the valve. Coefficient of height of *Y. temblorensis* — 41.7. The later E t h e r i n g t o n's illustration differs in the somewhat widened anterior end and in the rather broader rostrum, but apparently it does not exceed the limits of possible individual deviations.

O c c u r r e n c e. Sopochnaya river (western coast of Kamchatka). *Y. temblorensis* is found in the Miocene of Astoria, Washington. It is a very rare species in the lower horizons of the Vayempolka series.

Middle Miocene.

*Yoldia* (?) *kochtanensis* S l o d k e w i t s c h

Pl. III, fig. 8

Shell medium in size, broadly oval in outline; anterior end broad; posterior end narrow, but not attenuated.

Beaks small, displaced backward. Sculpture of the exterior surface consists of fine, but distinct concentric lines of growth.

*Y. kochtanensis* owing to its outline stands somewhat apart among the other known to the author *Yoldia*.

Similar in its coefficient of altitude *Y. packardi* C l a r k is readily distinguished by its narrower anterior and broad posterior ends. *Y. cooperi* G a b b var. *supramontereyensis* A r n., having also a broad anterior end, differs strongly in the narrow posterior end, as well as in the longer anterior end.

The absence of the hinge apparatus, poor state of preservation of the shell in the collection at hand, and the character of the exterior surface do not warrant generic determination.



**O c c u r r e n c e.** Kokhtana river (western coast of Kamchatka).  
Very rare in the Vayempolka series.

Middle and upper Miocene.

*Yoldia kamtschatica* S l o d k e w i t s c h

Pl. III, fig. 7

There is only one complete impression of the exterior surface of the left valve of this species. The smoothly rounded anterior margin joins gradually and evenly the likewise convex antero-dorsal margin above, and the less convex ventral margin below. The latter ascends posteriorly and together with the short posterior margin forms a small rostrum. Antero-dorsal margin long, slightly concave at the beaks, nearly straight for the remainder extent joins in a sharp angle the posterior margin.

Beaks small, feebly prominent, displaced forward. Convexity of valves moderate.

Sculpture of the exterior surface consists of fine concentric incremental lines.

**D i m e n s i o n s:** length 22.2 mm, height 13.2 mm. Coefficient of height 59.5.

The described species is most similar to *Y. packardi* Cl. from which it is distinguished by a narrow posterior end, while that of the North American species is broad and obtuse. Besides, beaks of the latter form are more centrally situated.

*Y. olympiana* Cl. differs in its broad posterior end as well as in long straight postero-dorsal margin being parallel to the ventral.

**O c c u r r e n c e.** Kovachina river (western coast of Kamchatka).

A very rare species found in association with *Y. djakovi* Slod. in the lower horizon of the Vayempolka series.

Middle Miocene.

*Yoldia pennulata* S l o d k e w i t s c h

Pl. III, figs 3, 4

Shell medium in size, feebly convex, elongate-oval in outline; anterior end broad; posterior end narrowed, rostrate. Right valve longer but lower than the left. Exterior surface covered only with concentric incremental lines. There are about 14 teeth anterior and about 16 posterior to the beaks.

**D i m e n s i o n s** see page 104.

**O c c u r r e n c e.** Sea coast (western coast of Kamchatka).

Rare in the upper horizon of the Vayempolka series.

Upper Miocene.

*Yoldia amygdalaeformis* S l o d k e w i t s c h

Pl. III, figs 5, 6

Outline of the valve nearly regular, elongate-oval. Anterior margin short, convex and produced forward, passes very evenly into the long, less convex ventral margin. Posterior margin, somewhat shorter and less convex than the anterior, joins gently the ventral and somewhat angularly the postero-

dorsal margins. The latter being shorter than the antero-dorsal margin and slightly concave. Antero-dorsal margin long and convex for its total extent passes evenly into the anterior margin.

Beaks small, not prominent, inclined and perceptibly displaced backward. Convexity of valves insignificant.

Sculpture of the exterior surface consists of numerous, comparatively rude irregular concentric wrinkles and grooves.

**D i m e n s i o n s .** Length 21.0 mm, height 10.1 mm, coefficient of height 48.1.

Among shells of *Yoldia* described by I. K h o m e n k o from the Tertiary deposits of Korf Gulf there are two specimens out of three determined by him as *Y. impressa* C o n r. which bear such a great resemblance to our species, that they are included in the synonymy of the latter, but with a query because of the imperfect state of preservation of the figured by I. K h o m e n k o forms.

The third illustration (fig. 3) may be determined only as *Yoldia* sp. indet.

The true *Y. impressa* C o n r. has a broader anterior margin of a different outline and centrally situated beaks; its exterior surface consists, according to R. A r n o l d, of fine concentric riblets while on the Kamchatkan shells the beaks are displaced backward, the outline of the valves is more regular-oval, and the concentric wrinkles are irregular.

The shell redescribed by I. K h o m e n k o under the same name from the middle Miocene of the Schmidt Peninsula is quite unlike this species and may be rather considered as a very deformed *Y. tokunagai* Y o k., but due to its state of preservation is not specifically determinable.

Somewhat later the same author returns again to this question and refers the determined by him shells to the species *Y. astoriana* H e n d., but it is impossible to agree with this statement because of the foregoing considerations.

A very great similarity to the Kamchatkan species shows the recent *Y. amygdala* V a l. The latter is distinguished by less displaced backward beaks, by an angular posterior end, by a more fine sculpture and by a somewhat less regular outline.

**O c c u r r e n c e .** Moroshechnaya river (western coast of Kamchatka); vicinity of Korf Gulf (eastern coast of Kamchatka).

The described species is found (according to I. K h o m e n k o) in the middle Miocene deposits in the vicinity of the Korf Gulf.

Very rare in the lower horizon of the Vayempolka series, on the western coast of Kamchatka and in the upper horizon of the clayey sandstone series on the eastern coast.

Middle and upper (?) Miocene.

### *Yoldia convexa* S l o d k e w i t s c h

Pl. III, figs 9,a; 10

Shell of medium and large size, elongate, quadrate-oval in outline with a narrower and rostrate posterior end. Hinge margin nearly straight. Exterior surface covered only with concentric lines of growth. There are about 30 anterior and about 22—24 posterior teeth.

**O c c u r r e n c e.** Mouth of Piatibratskaya river, Materaya Vayempolka river (western coast of Kamchatka).

Upper (?) horizon of the Vayempolka series and the Kavran (?) series.

Middle (?) Miocene — Pliocene (?)

*Yoldia anastasia* K h o m e n k o

Pl. IV, figs 1, 2

Shell of medium size, elongate-oval in outline; anterior end regularly rounded; posterior end narrow. Beaks not prominent, displaced backward. Exterior surface covered with concentric lines of growth. There are 25 anterior and 17 posterior teeth.

**D i m e n s i o n s** see page 107.

**O c c u r r e n c e.** Askasai, Imchin, Uinii rivers (eastern Sakhalin), Kongui river (south-eastern part of Soviet Sakhalin); Val, Gr. Goromai, Tomai, and West-Nutovo rivers (eastern Sakhalin, according to literary data).

Not a very uncommon species in the upper part of the Nutovo series.

Lower — upper Pliocene.

*Yoldia djakovi* S l o d k e w i t s c h

Pl. IV, figs 4; 5; 6; 7, a

Anterior margin short, convex and produced forward joins gently the slightly convex ventral margin. The latter running evenly upward passes into the very short, likewise evenly rounded posterior margin. Antero-dorsal margin short and convex, curving sharply but gradually at its anterior end passes into the anterior margin. Antero-dorsal margin very long, nearly straight joins in a steep but rounded angle the posterior margin. Inequilaterality of the valves distinct. Posterior end, although not rostrate is narrowed and attenuated.

Beaks small, very feebly prominent, inclined backward and situated approximately five-eighths of the length from the posterior margin. Convexity of valves moderate, but not uniform. The highest point of convexity situated in front of the line of beaks, so that the anterior and upper parts of the shell are more convex than the remainder surface; posterior end flattened. A distinct keel curved extends from the beaks to the posterior margin, separating the small, concave, postero-dorsal area.

Exterior surface smooth, except for numerous concentric lines of growth. There are about 24 anterior and about 20 posterior teeth. Ligamental pit deep, trigonal in outline.

**D i m e n s i o n s.** A most perfectly preserved impression of a valve: length 34.7 mm; height 14.5 mm; convexity about 3.5 mm. Coefficient of height 41.8, coefficient of convexity about 10.1.

The valves of this species, somewhat broken at the posterior end, being identical with the shells likewise broken posteriorly and determined by I. K h o m e n k o as *Y. olympiana*. The complete Kamchatkan specimens display the presence of a longer posterior end on this species. But even artificially reduced specimen of I. K h o m e n k o does not approach the true *Y. olympiana* C l. because it differs from this species, as it has been already

mentioned above, in the long antero-dorsal margin, straightened ventral one and different outline of the valve.

Some similarity may be observed between the described species and *Y. impressa* Conr., but the latter is characterized by a still longer shell, shorter in height and by a produced, constricted posterior end.

**O c c u r r e n c e.** Kovachina river; Kovachina Bay (western coast of Kamchatka). North of Cape Pilvo on the Schmidt Peninsula (northern Sakhalin).

In the Upper-Pil series of the Schmidt Peninsula. In the lower and upper horizons of the Vayempolka series of western Kamchatka.

Upper Oligocene (?) — upper Miocene.

*Yoldia multidentata* K h o m e n k o

Pl. III, figs 11, 12

Shell of medium size, trapezoidal in outline with a narrow, broad posterior end. Beaks displaced forward. Sculpture of exterior surface only concentric. Number of teeth 12 in the anterior half and 40 in the posterior half of the hinge margin.

**O c c u r r e n c e.** Between Pil and Vengheri rivers on the Schmidt Peninsula.

Very rare in the Kaskadnay series. Upper part of lower Miocene.

*Yoldia* cf. *olympiana* C l a r k

Pl. IV, figs 8, 9, 10, 11

Anterior margin short, rounded and specifically somewhat drawn out; it may be obtuse on some Kamchatkan shells, but this should be considered as an abnormality because of the majority of forms this feature has not been observed. Ventral margin long, very feebly convex outward, sometimes even quite straight in its middle, joins evenly, but rather steeply the lateral margins. Posterior margin nearly straight, inclined with its upper end backward, joins in a sharp angle, the long postero-dorsal margin very slightly concave near the beaks, and almost parallel to the ventral margin for the remainder of its extent. Antero-dorsal margin short, convex, rapidly sloping from the beaks passes gently into the anterior margin.

Beaks small, pointed, displaced forward, turned and inclined backward.

Convexity of valves, apparently, insignificant.

Sculpture of the outer surface consists only of fine concentric lines and furrows of growth.

**D i m e n s i o n s.** Due a poor state of preservation of material, it has been only possible to measure a single impression of the right valve. Length about 29.0 mm; height 14.5 mm. Coefficient of height about 50.0.

The described Kamchatkan shells bear the greatest resemblance to *Y. olympiana* Cl. Only their poor state of preservation does not permit a conclusive identification.

*Y. cf. olympiana* described by T e g l a n d differs from the holotype in having greater absolute dimensions; besides, the shell is badly broken and deformed, and does not allow to obtain an opinion of its systematic position, what, however, has been also noted down by the author of the description.

One shell from the Upper-Pil series of the Schmidt Peninsula has been described and figured, to which I. K h o m e n k o assigned the name *Y. olympiana*. It is impossible to judge about adequacy of determination on the basis of one brief diagnosis given, because it represents nearly literal translation of C l a r k's description. But the beautiful illustration of the right valve of this species with the posterior end broken, allows to draw the conclusion as follows: outline of the valve differs strongly from that of the holotype in the presence of a long antero-dorsal margin, in a constricted posterior end, in a different outline of the posterior margin, and in a short postero-dorsal margin not parallel to the ventral. A very essential feature differentiating *Y. olympiana* from the approximate to it *Y. packardi* represents the beaks displaced forward; this condition is particularly stressed in C l a r k's description. I. K h o m e n k o translated this indication, but apparently overlooked it when took photograph of the shell, as the specimen illustrated by him shows the beaks very slightly displaced forward, situated nearly on the median line of the valve. All the more it is strange, that according to I. K h o m e n k o's measurements the length of the posterior side is 14.5 mm, while in the enlarged photograph this dimensions does not exceed 11.5 mm, the total length of the valve being more than 24.2 mm. Then, the ratio of the length of the postero-dorsal margin to the length of the valve equals: 58.7 after B. C l a r k, 63.0 — after I. K h o m e n k o, and not more than 48.0 according to the measurements on the plate. From the foregoing it is evident, that the Sakhalin species in no case can be identified with *Y. olympiana*, but is referable to another species described under the name of *Y. djakovi*.

O c c u r r e n c e. Pukhl river (western Kamchatka).

The typical *Y. olympiana* is described by B. C l a r k from the upper Oligocene of North-West America.

The described species occurs very frequently in association with numerous *Pallium* (*Delectopecten*) *pedroanus* (T r a s k) var. *peckhami* (G a b b) in the shales of the Kovachina series of Kamchatka.

Upper Oligocene.

*Yoldia* aff. *packardi* C l a r k

Pl. IV, figs 12, 13

Anterior margin broad and rounded joins evenly the less rounded, long and a little ascendant posteriorly ventral margin. Posterior end shorter than the anterior, straight and obliquely inclined backward. Antero-dorsal margin slightly convex; postero-dorsal margin concave at the beaks and straight posteriorly, joins in almost right angle the posterior margin.

Beaks small, feebly prominent, situated a little in advance of the medium line of the valve. Convexity of valves moderate. Postero-dorsal area flattened.

Sculpture of the outer surface consists only of fine concentric lines and furrows of growth.

D i m e n s i o n s. A single cast of the left valve: length 29.2 mm; height 18.4 mm; convexity about 3.00 mm. Coefficient of height 63.0; coefficient of convexity about 10.3.

This single cast, unfortunately, does not allow a more definite determination because of its imperfect state of preservation. It displays the

strongest proximity to the upper Oligocene *Y. packardi* Clark, namely to the plesiotype of this species, but not to the casts originally described by Clark.

The difference between them consists in somewhat lesser coefficient of altitude on the American species (60.7) and in somewhat greater width of the anterior margin of the valve. Lacking sufficient comparative material the author is not able to draw more definite conclusions.

*Y. olympiana* Clark occurring in association with *Y. packardi* in the same deposits is characterized, according to Clark's statement, only by a more displaced forward beaks, and a sharper posterior end. It may be added that *Y. olympiana* has a lesser coefficient of altitude (51.9), and a more straight ventral margin. But these characters do not permit to consider this shell as being close to *Y. aff. packardi*.

**O c c u r r e n c e.** Pukhl river (western coast of Kamchatka).

Very rare in the Kovachina series.

Upper Oligocene.

*Yoldia pilvoensis* sp. nova

Pl. IV, figs 14, 15

Shell of exclusively characteristic and original, trapezoidal or rounded-quadrate outline. Anterior margin of the valve convex, somewhat attenuated below, joins evenly the long, very slightly convex ventral margin. Posterior margin being in its upper half nearly straight and in the inferior feebly convex, joins likewise evenly the ventral margin. Antero-dorsal margin very short and slightly convex, slopes steeply from the beaks down and quite imperceptibly passes into the anterior margin. Postero-dorsal margin long, straight, parallel to the ventral margin, joins in angle the posterior margin. Beaks broad, prominent, somewhat inclined backward, and strongly displaced forward.

Convexity of the valves great. A very feebly modelled but very distinct keel extends from the beaks to the point of junction of the ventral and posterior margins.

Sculpture of the outer surface consists only of numerous fine, concentric lines and furrows of growth.

Other characters of the shell not preserved.

**D i m e n s i o n s.** Length 37.4 mm; height 27.5 mm.; coefficient of height 73.5.

This species described by I. Khomenko under the name of *Y. breviscapa* Yok. undoubtedly recalls mostly the latter. I. Khomenko points out, that M. Yokoyama had at his disposal only casts while an impression of the outer surface was found on the Schmidt Peninsula. Apparently on the basis of his material I. Khomenko was inclined to explain the observed difference in outline. As a matter of fact, the Japanese shells of *Y. breviscapa* Yok., though being close to Sakhalin species differ strongly from the latter in lesser absolute dimensions and lesser relative length of the valve with the consequent quite different outline of the posterior end of the valve. These differentiating features in no case can be explained by the differences in the state of preservation, what is also clearly ascertained by the finding in the Tertiary deposits of the Schmidt

Peninsula of shells very close to the true *Y. breviscapa* and determined as *Y. cf. breviscapa* Y o k.

The Sakhalinian species somewhat recalls *Y. olympiana* C l. in the outline of the posterior end. The latter shell is readily distinguishable by its considerably lesser absolute dimensions, a longer posterior end of the valve, beaks displaced forward, and by a posterior margin obliquely inclined down.

**O c c u r r e n c e.** Cape Pilvo on the Schmidt Peninsula (northern Sakhalin); Zhilowaya Vayempolka river; mouth of Gackh river (western coast of Kamchatka). Cape at the Strait of Nur and at the mouth of the Pil river on the Schmidt Peninsula (according to literary data).

Not uncommon species in the Upper-Pil and Kaskadnaya series on the Schmidt Peninsula. Rare in the Vayempolka series of Kamchatka.

Upper Oligocene (?) — upper Miocene.

### *Yoldia nitida* S l o d k e w i t s c h

Pl. IV, figs 46, a; 47

Shell small, or of moderate size, convex, inequilateral, elongate, rounded-quadrate in outline. Beaks small, pointed, displaced forward. Outer surface lustrous-smooth, covered only by fine concentric lines of growth.

**O c c u r r e n c e.** Snatol river, sea coast (western coast of Kamchatka).

Not rare in the lower horizon of the Vayempolka series.

Middle Miocene.

### *Yoldia cerussata* S l o d k e w i t s c h

Pl. V, figs 1, 2

Anterior margin of the valve convex, short, somewhat pointed, joins evenly the long very feebly convex ventral margin.

Posterior margin longer than the anterior, nearly straight, passes also evenly into the ventral margin, with its upper end inclined backward, and steeply rounding joins the long, insignificantly concave postero-dorsal margin. Antero-dorsal margin short, slightly convex, sloping obliquely down, joins evenly the anterior margin. Thus all the outline of the valve being somewhat widened at its posterior end.

Beaks solid, convex, strongly displaced forward.

Convexity of valves in comparison with their height very great, the point of the greatest convexity situated a little behind the line of beaks, so that the anterior half of the valve becomes very inflated, and the posterior, on the contrary, flattened. A fine groove extends from the beaks toward the middle of the posterior margin, setting off the flattened postero-dorsal portion of the valve.

Sculpture of the outer surface consists, apparently, of fine concentric, incremental lines only.

Number of teeth about 22 on the anterior half and about 26 on the posterior half of the hinge.

Structure of the inner surface of the valve not sufficiently well preserved.

**D i m e n s i o n s.** The best preserved cast of the right valve: length 33.6 mm, height 18.2 mm, convexity about 5.6 mm. Coefficient of height 54.2; coefficient of convexity 16.7.

The described species bears rather strong resemblance to many of the known Tertiary *Yoldia*, having a rounded-rectangular outline and an obliquely truncated posterior end, but all they differ in some or other details of structure, which do not permit identification with our species.

*Y. olympiana* C l. is shorter in the length, with beaks still more displaced forward and with a consequent long, straight postero-dorsal margin.

*Y. nitida* S l o d. approaching most closely the described form has relatively a lesser length of valves, a short antero-dorsal margin and a different outline of the posterior margin.

The distinctive characters of the other approximate species has been stated at the description of *Y. scapha* Y o k.

O c c u r r e n c e. Snatol river (western coast of Kamchatka).

Not uncommon in the lower horizon of the Vayempolka series.

· Middle Miocene.

#### *Yoldia subscapha* K h o m e n k o

Pl. IV, fig. 3

Shell medium in size, obliquely elongate in outline. Beaks prominent, displaced forward. Sculpture concentric only. There are 17 teeth on the anterior half and 15 on the posterior half of the hinge margin.

O c c u r r e n c e. Between Pil and Vengheri rivers on the Schmidt Peninsula (northern Sakhalin); Cape at the Strait Nur (according to literary data).

Very rare in the Kaskadnaya series; perhaps also in the Upper-Pil series on the Schmidt Peninsula.

Upper Oligocene (?) — lower Miocene.

#### *Yoldia scapha* Y o k o y a m a

Pl. V, figs 3, 4, 5, 6

Shell of medium size, elongate in outline; anterior end narrowed; posterior end broader, obliquely rounded. Beaks prominent, displaced forward. Sculpture concentric only. Number of teeth 24—26 anterior and 16—19 posterior to the beaks.

D i m e n s i o n s. Medium-sized specimen: length 27.4 mm, height 17.3 mm, convexity of both valves 12.6 mm. Coefficient of height 63.8; coefficient of convexity 23.2. The largest specimen: length 34.0 mm.

As it had been previously pointed out by I. K h o m e n k o and by the present author the specimens of *Yoldia*, previously described by Y o k o y a m a under the name of *Y. scapha* should have been identified with *Y. thraciaeformis* ( S t o r.) because they agree with this latter species in all details of the outer structure. Therefore for the holotype should be taken another specimen figured by M. Y o k o y a m a somewhat later, though in the same year, in his paper «Fossils Shells from Sado». Next in order illustrations of *Y. scapha* from Sakhalin are not adequate: a cast (fig. 5, pl. LXXV) may be determined without hesitation as *Y. scapha*; whereas a second cast (fig. 6, the same plate) is chiefly characterized by a long produced posterior end, and therefore cannot be compared with no other known to the author species. Having no possibility to study directly the original,



and to ascertain the constancy of this character the author is unable to define more accurately the systematic position of this shell. Numerous forms described by I. K h o m e n k o from different localities of Sakhalin not always correspond to this denomination. A badly preserved cast from eastern Sakhalin cannot warrant a specific determination. Its appurtenance to *Y. scapha* is possible but cannot be proved. Shells described by the same author from the Tertiary deposits of Cape Mayam-Raf may be undoubtedly referred to *Y. scapha*; the same may be said of the two other forms, also from the Schmidt Peninsula described somewhat later (pl. V, figs 3, 4); but the shells in the figures 1, 2 (the same plate) are referred to the species *Y. matschigarica* Sim., which is characterized by considerably larger dimensions, elongate-quadrate outline and relatively far less prominent beaks.

From the approximate species is to be noted *Y. nitida* Slod. distinguishable by the postero-dorsal margin being parallel to the ventral, by the broader anterior margin, and by the less prominent beaks. *Y. cerussata* Slod. is considerably more elongate with less prominent beaks, a broad anterior end, and a more convex ventral margin. The Paleogene *Y. scaphoides* Nag. has lesser absolute dimensions, a less prominent beaks and a shorter in length outline. The figured representatives of this species are so poorly preserved, that it is difficult to obtain a satisfactory idea about their systematic position. Finally, *Y. breviscapa* Yok. has a particularly short anterior end of the valve, and beaks strongly displaced forward; therefore it is readily distinguishable from *Y. scapha* at first glance.

**O c c u r r e n c e.** Chazhma, Tyushevka rivers (eastern coast of Kamchatka); Cape Mayam-Raf, north of the mouth of Vengheri river and east of Cape Maria on the Schmidt Peninsula (northern Sakhalin); eastern (?) Sakhalin.

Vengheri and Mayamraf series on northern Sakhalin. Lower horizon Sawané of the Sado Island, Japan; Beds A of southern Sakhalin. Unknown on the western coast of Kamchatka; on the eastern coast in the middle and upper Miocene (after I. P. K h o m e n k o).

Middle Miocene — Pliocene (?).

#### *Yoldia thraciaeformis* ( S t o r e r )

Pl. V, figs 8, a; 9; 10; 11

Shell of medium and large size, elongate, rounded-quadrate in outline. Posterior end broad with the upper extremity uplifted. Sculpture of the external sculpture concentric only. There are 22 teeth on the anterior half, and 16 on the posterior half of the hinge margin.

**O c c u r r e n c e.** Amanina, Kulka, Moroshechnaya and Snatol rivers (western coast of Kamchatka); Kongui river, (south-eastern part of Soviet Sakhalin); between Mount Schmidt and Cape Horner, Schmidt Peninsula (northern Sakhalin).

Not very rare in the upper horizon of the Vayempolka series of Kamchatka and in the Mayamraf series of the Schmidt Peninsula. In the Pliocene Beds B and C of Embets, in the Beds C of Etaibets, Island Hokkaido, Japan. In the Beds A of southern Sakhalin.

Upper Miocene — Recent.

*Yoldia vasiljevskii* S l o d k e w i t s c h

Pl. V, figs 7, a

Anterior margin short, rounded, joins evenly the long, feebly convex ventral margin. The latter upcurving posteriorly passes into the short, likewise convex posterior margin. Antero-dorsal margin bent outward, slopes very gradually from the beaks downward and somewhat angularly joins the anterior margin, in contrast with the ventral, which joins the latter in a broad regular rounding.

Postero-dorsal margin being shorter, concave at the beaks, nearly straight for the remainder extent, joins the posterior margin at a sharply pronounced almost right angle.

Beaks small, feebly prominent, curved backward and displaced in the same direction. Convexity of valves inconsiderable; the point of the greatest convexity is situated in the upper half of the valve, on the line of beaks, wherefrom it falls very gently and gradually toward the lateral margins.

Sculpture of the outer surface consists of numerous fine, concentric lines of growth, well-marked throughout the whole surface of the valve. Besides, there are broadly spaced concentric ridges with a short and vertical upper side, and a long and even lower one, thus the shell looks as if it were made up of concentric imbricated layers, with the upper layers underlying the lower ones.

This concentric sculpture is quite parallel to the lines of growth over the whole surface of the valve, except for the narrow postero-dorsal area, where the ridges intersect the incremental lines, and then quite disappear, not reaching the postero-dorsal margin for 1 mm near the beaks and for 2—3 mm near its posterior end.

Hinge apparatus not preserved.

D i m e n s i o n s. Left valve: length 27.6 mm, height 12 mm, convexity about 2.5 mm. Coefficient of height 43.5; coefficient of convexity about 9.1.

The described species is very close to *Y. strigata* D a l l from the Miocene of Oregon. The latter differs in greater relative height and in more displaced backward beaks. The Recent and Pleistocene *Y. scissurata* D a l l have a broader anterior end of the valve and narrowed, pointed posterior one with the consequent broad-oval outline in contrast with the narrow-oval one of *Y. vasiljevskii*. Lastly, *Y. oregona* S h u m. is also more inequilateral than the described shell owing to the presence of the broadly-rounded anterior and narrow posterior ends of the shell.

From the previously described Kamchatkan shells only *Y. kuluntu-nensis* S l o d. should be mentioned, which is easily distinguished by its rhomboidal outline.

O c c u r r e n c e. Sea-coast, Tighil region (western coast of Kamchatka).

Not uncommonly occurring species in the lower horizon of the Vayem-polka series.

Middle Miocene.

*Yoldia scissurata* D a l l

Pl. III, figs 13, 14, 15

O c c u r r e n c e. Chazhma river (eastern coast of Kamchatka). This species is not rarely encountered in this exposure. Miocene (?) — Recent.

*Yoldia supraoregona* K h o m e n k o

Pl. V, figs 12, 13, 14

Shell medium in size, regular elongate-oval in outline, with a curved rostrum. Beaks slightly prominent, displaced backward. Sculpture of the outer surface consists of concentric lines of growth and of concentric ridges intersecting posteriorly with incremental lines. There are 25 anterior teeth and 17 posterior to the ligamental pit.

D i m e n s i o n s see page 126.

O c c u r r e n c e. Kokhtana river (western coast of Kamchatka). Paromai and Kydylanii rivers (eastern Sakhalin); Uinii, Askasai, Val, Gr. Goromai and Ossoi rivers of eastern Sakhalin (according to literary data).

Not a rare species in the upper (?) horizon of the Kavran series of Kamchatka, in the middle and upper part of the Nutovo series of Sakhalin.

Upper Pliocene.

*Yoldia ochotensis* K h o m e n k o

Pl. VI, figs 5, 6, 7

Shell large, feebly convex, elongate rhomboidal in outline with a broad anterior and narrowed posterior ends. Sculpture of the outer surface consist of concentric lines of growth and elevated, oblique ridges. There are 30 anterior and 15 posterior teeth.

D i m e n s i o n s see page 128.

O c c u r r e n c e. Gr. Goromai river (eastern Sakhalin); Urga, Kuluntun and Kulki rivers (western coast of Kamchatka); Val, L. Goromai, Nutovo, Piltun and Tomai rivers of eastern Sakhalin (according to literary data).

A frequently occurring species in the upper horizon of the Kavran series of Kamchatka; in the upper part of the Nutovo and Supra-Nutovo series of Sakhalin.

Upper Pliocene.

*Yoldia kuluntunensis* S l o d k e w i t s c h

Pl. VI, figs 1, 2, 3, 4

Shell medium in size, elongate, rounded-rhomboidal in outline. Beaks not prominent, displaced backward. Sculpture of the outer surface consists of concentric ridges parallel to the lines of growth on the upper end of the valve, and intersecting these lines on the posterior end. Number of teeth 24 on the anterior half and about 14 on the posterior half of the hinge.

D i m e n s i o n s see page 130.

**O c c u r r e n c e.** Kuluntun and Tighil rivers (western coast of Kamchatka).

Not rare in the upper horizon of the Kavran series.

Upper Pliocene.

*Yoldia kuluntunensis* S l o d k e w i t s c h var. *sakhalinensis* S l o d k e w i t s c h

Pl. VII, figs 1, 2

Shell similar in outline to *Y. kuluntunensis*, but relatively smaller in height; beaks displaced backward but less than on *Y. kuluntunensis* S l o d .

**O c c u r r e n c e.** Ekhabi, Nutovo rivers (eastern Sakhalin).

Rare in the middle part of the Nutovo series of Sakhalin.

Upper Pliocene.

*Yoldia tokunagai* Y o k o y a m a

Pl. VI, figs 9, 10, 11, 12, 13, 14, 15

Shell of large and medium size, irregular, elongate-quadrate in outline, with beaks strongly prominent and sharply displaced forward. Outer surface covered with fine concentric lines and furrows of growth intersecting by fine divaricate sculpture, like that of the genus *Acila*.

There are about 28 teeth on the anterior and about 20 (?) on the posterior halves of the hinge margin.

**D i m e n s i o n s** see page 133.

This peculiar species, the only one in all the *Yoldia* known to the author that has a divaricate sculpture on the external surface and for this reason is readily distinguishable from all the other species. *Yoldia subtokunagai* established by I. K h o m e n k o differs in his opinion from *Y. tokunagai* Y o k . «in great number of teeth and in the absence of a zig-zag-like sculpture on the outer surface». Really, among the numerous specimens of *Yoldia* there are some individuals bearing no divaricate sculpture and having a greater number of teeth. However, on close examination it has been possible to ascertain that the casts with a great number of teeth have the same divaricate sculpture as *Y. tokunagai*; I. K h o m e n k o has figured only the casts or impressions of the casts of *Y. subtokunagai* on which, naturally, no traces of the outer sculpture could be preserved. Hence, this distinction may be discarded, and only the question about the different number of teeth on either species remains to be explained. A careful study, based on a perfectly preserved material from the Tertiary deposits of the Schmidt Peninsula, far better than that M. Y o k o y a m a had at his disposal, may solve this question too. In fact, on some, although not numerous specimens of *Y. tokunagai* there are only 22—24 teeth on the anterior half of the hinge, while on the others 28 teeth are distinctly observable. This may be explained by that the specimens having 22—24 teeth have been encountered in fewer number and are considerably more poorly preserved, and the number of teeth cannot be exactly counted, as all the small teeth nearest to the ligamental pit are imperceptible. On the well preserved specimens with all teeth visible, the number of the latter is 28. Thus, one may suppose that M. Y o k o y a m a has counted the teeth on imperfectly

preserved specimens what is also confirmed by the absence of an exact indication as regards the number of teeth behind the ligamental pit; for this reason *Y. subtokunagai* K h o m. may be considered as quite identical in all its characters with *Y. tokunagai* Y o k.

**O c c u r r e n c e.** Near the mouth of Vengheri river and north of it; south of Pil river; between Cape Horner and Pil river; in the vicinity of Pil river on the Schmidt Peninsula (northern Sakhalin). *Y. cf. tokunagai* is found also on the upper course of Rassoshina river, western coast of Kamchatka.

Not rare in the Upper-Pil, Kaskadnaya and Vengheri series on the Schmidt Peninsula. In the Korovai-bearing series of Kamchatka.

Upper Oligocene (?) — Miocene.

*Glycymeris crescentensis* W e a v e r & P a l m e r

Pl. IX, figs 1, 2, 3

**O c c u r r e n c e.** Lisya river (Anadyr region).

Very rare in the Eocene of Anadyr.

*Glycymeris coalingensis* A r n o l d

Pl. IX, figs 4; 5, a

**O c c u r r e n c e.** Sea coast, west of Polovinka river; Podkaghernaya Bay (western coast of Kamchatka).

A rather uncommon species in the lower horizon of the Kavran series of Kamchatka.

Miocene — Pliocene.

*Glycymeris yessoensis* (S o w e r b y)

Pl. X, figs 1, a; 2; 3; 4; 5; 6, a; 7; 8; 9

**D i m e n s i o n s** see pages 142—143.

**O c c u r r e n c e.** Sea coast between sea cliffs and Etalonnaya river; right bank of the mouth of Zhilovaya Vayempolka river; sea coast between Amanina and Etalonnaya rivers (western coast of Kamchatka).

A very frequent species in the upper horizon of the Kavran series of Kamchatka.

Upper Pliocene — Recent.

*Glycymeris snatolensis* S l o d k e w i t s c h

Pl. IX, figs 6, a; 7; 8; 9; 10, a; 11

Shell small, inequilateral, rounded-trigonal in outline, usually extended in height. Outer surface covered with about 30 radial ribs, broad, flat, not prominent, separated by fine, shallow interspaces. Number of teeth small and the hinge apparatus curved at a sharply pronounced obtuse angle.

**D i m e n s i o n s** see page 144.

Some of the described shells resemble *G. derelictus* Y o k. in outline. But this similarity is to be at once rejected after examining the hinge appa-

atus of the latter. Teeth of *G. derelictus* are far more numerous and set more vertically, hinge row is longer and area somewhat higher. Besides these two species differ considerably in the general outline of their valves, which in the Kamchatkan forms are absolutely and relatively lower and of a more regular outline.

Some resemblance is yet observed to *G. tenuimbricata* Cl.; the latter shell is characterized by broad beaks, lesser apical angle, fewer number of ribs and by a massive valve. Hinge apparatus is so imperfectly figured here, that it does not allow to make some comparison.

Shell under the name of «*Glycymeris* cf. *tenuimbricata* Cl.» described somewhat later from the Miocene of Astoria is distinguished by the rotundity of outline; besides, the figured specimen is, apparently, very young, its median teeth are not worn and the hinge apparatus is not fully developed, but the number of its teeth is greater than that of *G. snatolensis*.

*G. septentrionalis* (Midd.) widely distributed in California from the Miocene to the present time differs strongly in the narrow hinge area and in the short, stout teeth, although some valves may closely agree in general outline.

The recent *G. subobsoleta* Crp. has a hinge analogous to that of *G. septentrionalis*.

O c c u r r e n c e. Keyvechevem river; Snatol river (western coast of Kamchatka).

Frequent in the upper horizon of the Kavran series.

Upper Pliocene.

#### *Glycymeris kamschaticus* sp. nova

Pl. XI, figs 1, a, b; 2

Shell of medium size, rounded in outline; beaks broad, inflated; area very small. Outer surface covered with numerous, broad, flat, not prominent radial ribs, separated by linear, intercostal spaces.

D i m e n s i o n s see page 146.

There is no species from the Tertiary and recent *Glycymeris* known to the author to which the described species may be compared.

O c c u r r e n c e. Ugolnaya river, vicinity of Ust-Kamchatsk.

Miocene (?).

#### *Arca (Anadara) trilineata* Conrad

Pl. XI, figs 5; 6; 7, a; pl. XII, figs 1; 2; 3, a, b

D i m e n s i o n s see page 150.

O c c u r r e n c e. Sea coast between sea cliffs and Etalonnaya river and between Amanina and Etalonnaya rivers (western coast of Kamchatka).

This species has a very wide distribution in the Miocene and the Pliocene of California. It occurs under the name of *A. amacula* in the Pliocene of Shinano and Echigo provinces as well as in the Chichita basin, Japan. (lot of a rare occurrence in the upper horizon of the Kavran series of Kamchatka).

Miocene — Pliocene.

*Arca (Anadara) cf. obispoana* Conrad

Pl. XI, figs 3, 4

Occurrence. Sea coast, south of Kotlakh-kanch river (western coast of Kamchatka).

Very rare in the upper horizon of the Kavran series of Kamchatka.  
Middle and upper Miocene. Upper Pliocene (?).

*Ostrea idriaensis* Gabb

Pl. XIII, figs 4, 5; pl. XIV, figs 3, a

Occurrence. Cap Belyi, Penzhino (Anadyr region).  
Very frequent in the Eocene of Anadyr.

*Ostrea lisjiensis* Slodkewitsch & Iljina

Pl. XIII, fig. 3

The only species known to the author, to which the described form bears some resemblance is the Miocene *O. titan* Conr.

The general outline of their valves is rather similar, but on *O. titan* the keel is absent, whereas it lends to the surface of the described species a strongly pronounced asymmetric aspect, besides, there is a distinct radial sculpture on *O. titan*.

Occurrence. Left bank of Lissya river (Anadyr region).  
Very rare.  
Miocene.

*Ostrea atwoodi* Gabb

Pl. XII, figs 4, 5; pl. XIII, figs 1, 2

Occurrence. Krutaya river, left tributary of Tighil river (western coast of Kamchatka).

Comparatively rare in the Tighil series of Kamchatka.  
Eocene — Oligocene (?); upper Miocene — middle Pliocene.

*Ostrea atwoodi* Gabb var. *kirikovi* Slodkewitsch

Pl. XIV, figs 1,a,b; 2,a; pl. XV, figs 2,a

Shell similar to that of *Ostrea atwoodi*, differing only in the extended in height elongate-oval outline.

Occurring in association with *O. atwoodi* in the number considerably exceeding that of the shells which may be referred to this species, they are distinguished by a strongly extended in height elongate-oval outline. Simultaneously the forms of the transition stage are found, which link together the shells with an elongate-oval outline.

Occurrence. Krutaya river, left tributary of Tighil river (western coast of Kamchatka).

Not very rare in the deposits of the Tighil series.  
Eocene — Oligocene (?).

*Ostrea kovatschensis* Slodkewitsch

Pl. XIX, figs 1, a

Shell large, oblique-pyriform in outline. Lower valve very convex, covered with numerous, fine, feebly modelled radial ribs and laminar concentric traces of growth. Upper valve flat-concave with the same sculpture, as that of the lower valve.

The described species is easily distinguishable from *O. atwoodi* by its large size and by the presence of radial sculpture on the upper valve. The latter feature distinguishes it strongly from the other known to the writer related forms and justifies the separation of this species under an independent systematic unit.

**O c c u r r e n c e.** Sea coast, between Moroshechnaya and Kovachina rivers (western coast of Kamchatka).

Very rare in the lower horizon of the Tighil series.  
Eocene.

*Ostrea tigiliana* Slodkewitsch

Pl. XV, fig. 1; pl. XVI, figs 1, 2; pl. XVII, figs 1,a; pl. XVIII, figs 1,a; 2

Shell large, broadly oval in outline. Lower valve very massive, moderately convex, outer surface feebly radial-ribbed. Upper valve flat-concave, covered with concentric sculpture of growth only.

**D i m e n s i o n s** see page 161.

This large, well-preserved species cannot be compared to any of the known to the writer forms from the Tertiary of California or Japan.

The Miocene *O. titan* Conrad differs in its more extended in length outline, in the presence of large folds on the lower valve and in the convex upper valve.

*O. vaquerosensis* from the lower Miocene being likewise large, has a broader outline and a convex upper valve, therefore it is readily distinguishable from the described species.

Among the collections of late A. Eichwald preserved in the Geological Museum of the Academy of Science the writer has discovered two shells of *Ostrea* labelled by E. Eichwald as follows: «*Ostrea bellovacina* var. Tertiär von Unga (zur Aleutisch. Ins. Gruppe gehörig). Kuprianoff ded.» These shells being also figured in the present paper are quite similar to the described forms from the western coast of Kamchatka. This is a very interesting fact deserving a special study, the more so that the exact locality of this specimen on the Unga-island is unknown.

**O c c u r r e n c e.** Sea coast near Tochilo spring; Podkaghernaya Bay (western coast of Kamchatka).

A not rarely occurring species in the Tighil series of Kamchatka and in the Miocene (?) of Unga Island (Aleutian islands).

Eocene — Oligocene (?).

*Ostrea rekinikensis* Slodkewitsch & Iljina

Pl. XX, figs 1; 2, a

Shell medium or of large size, irregular trigonal in outline. Lower valve feebly convex; upper valve flat. Outer surface covered with concentric lines and lamellae of growth.



The described shell differing strongly from the majority of the known to the author Tertiary and recent *Ostrea* from the Pacific basin cannot be compared to any of the previously described species.

**O c c u r r e n c e.** Podkaghernaya Bay (western coast of Kamchatka).

Rare in the Tighil series.

Eocene — Oligocene (?).

*Pecten (Chlamys) turpiculus* Y o k o y a m a

Pl. XX, figs 3, 4

Shell small, feebly convex, rounded trigonal in outline. Outer surface ornamented with 10—11 tri- or bifurcated radial ribs. Intercostal spaces are the same width as the ribs and bear three longitudinal ribs.

Anterior ear of left valve large.

**O c c u r r e n c e.** Zhilovaya Vayempolka river; vicinity of Podkaghernaya Bay (western coast of Kamchatka).

A very rare shell as in the lower horizon of the Kavran series of Kamchatka, so in Japan, where it is, apparently, encountered in Shigarami beds.

Lower and middle Pliocene.

*Pecten (Chlamys) tanassevitschi* K h o m e n k o

Pl. XX, fig. 5; pl. XXI, figs 1, 2, 3; pl. XXII, fig. 1

Shell large, moderately convex, extended in height, rounded in outline. Anterior ear long with a byssal notch, posterior ear short. Outer surface covered with about 22—24 rounded radial ribs, in the interspaces of which numerous but irregular ribs of the 2-nd and 3-d series are situated. All the ribs are covered with coarse scales.

**D i m e n s i o n s** see page 168.

**O c c u r r e n c e.** South of Piltuk river (northern Sakhalin).

Very frequent in the Pomyr series of the Schmidt Peninsula.

Upper Pliocene.

*Pecten (Pallium) swiftii* B e r n a r d i

Pl. XXII, fig. 2; pl. XXIII, figs 1,a; 2; 3

**O c c u r r e n c e.** South of Piltuk river (northern Sakhalin).

A very frequent species in the Pomyr series of Sakhalin.

Pliocene — Recent.

*Pecten (Pallium) swiftii* B e r n a r d i var. *nutteri* A r n o l d

Pl. XXIII, fig. 4; pl. XXIV, figs 1; 2, a; pl. XXV, figs 1,a; pl. XXVI, fig. 1

**D i m e n s i o n s** see pages 174—175.

**O c c u r r e n c e.** Sea coast between sea cliffs and mouth of Etalon-naya river, Zhilovaya Vayempolka river (western coast of Kamchatka).

Very frequent in the upper horizon of the Kavran series of Kamchatka.

Pliocene.

*Pecten (Pallium) swiftii* Bernardi var. *heteroglyptus* Yokoyama

Pl. XXVI, figs 2, 3; pl. XXVII, figs 1, a; 2

Dimensions see page 179.

Occurrence. Sea coast between sea cliffs and mouth of Etalon-naya river (western coast of Kamchatka).

Rare in the upper horizon of the Kavran series of Kamchatka.

Upper Pliocene.

*Pecten (Pallium) swiftii* Bernardi var. *etchechini* Anderson

Pl. XXVIII, figs 1; 2,a; 3,a; 4; 5,a; pl. XXIX, fig. 5

Dimensions see page 182.

Occurrence. Sea coast between sea cliffs and mouth of Etalon-naya river, near mouth of Kavran river, Kheysliveem river (western coast of Kamchatka). South of Piltuk river (northern Sakhalin).

Frequent in the upper horizon of the Kavran series of Kamchatka; rather rare in the Pomyr series on the Schmidt Peninsula.

Miocene (?) — Pliocene.

*Pecten (Pallium) swiftii* Bernardi var. *piltukensis* Khomenko

Pl. XXIX, figs 1, 2, 3

Dimensions see page 185.

Occurrence. Sea coast between sea cliffs and mouth of Etalon-naya river (western coast of Kamchatka); south of Piltuk river (northern Sakhalin).

Very rare in the upper horizon of the Kavran series of Kamchatka and in the Pomyr series of the Schmidt Peninsula.

Upper Pliocene.

*Pecten (Lyropecten?) mironovi* Khomenko

Pl. XXIX, fig. 4; pl. XXX, figs 1, 2

Shell very large, equilateral, inequivalve, rounded in outline. Left valve feebly convex with large, rectangular auricles. Sculpture of outer surface consists of 5 primary thick radial ribs, and 5 secondary costae in interspaces.

Dimensions see page 187.

Occurrence. North of mouth of Vengheri river on Schmidt Peninsula (northern Sakhalin).

Rare in the Vengheri series on Schmidt Peninsula.

Middle Miocene — lower part of upper Miocene.

*Pecten* sp. indet.

Pl. XXXI, fig. 1; pl. XXXII, fig. 1

Shell very large, convex, of an extended in length, rounded outline. Sculpture of outer surface consists of 13—15 broad, radial ribs. Auricles large and long.

Dimensions see page 188.

Occurrence. Sea coast, south of mouth of Kotlakh-kanch river. (western coast of Kamchatka).

Pleistocene (?).

*Pecten (Patinopecten) yessoensis* J a y

Pl. XXXI, fig. 2; pl. XXXII, fig. 2; pl. XXXIII, figs 1, 2; pl. XXXIV, figs 1,2;  
pl. XXXV, fig. 2

Dimensions see page 192.

Occurrence. Sea coast, between Tnonkhino and Galyn rivers, south of Vosi river, between Utkholok and Kavran rivers; Kheysliveem river, Utkholok river, Kulka river, Ineryaveem river (western coast of Kamchatka). South of Piltuk river, Schmidt Peninsula (northern Sakhalin).

A very frequent species in the upper horizon of the Kavran series of Kamchatka and in the Pomyr series of Sakhalin, where it is distinguished by larger and more massive valves, than those of the Kamchatkan species.

Pliocene — Recent.

*Pecten (Patinopecten) caurinus* G o u l d var. *oregonensis* H o w e

Pl. XXXV, fig. 1; pl. XXXVI, figs 1, 2; pl. XXXVII, figs 1, 2; pl. XXXVIII, figs 1,2

Dimensions see pages 194—195.

Occurrence. Sea coast between sea cliffs and mouth of Etalon-naya river (western coast of Kamchatka).

Very frequent in the upper horizon of Kavran series of Kamchatka.

Upper Miocene — upper Pliocene.

*Pecten (Patinopecten) caurinus* G o u l d var. *piltunensis* K h o m e n k o

Pl. XXXIX, figs 1, 2, 3; pl. XL, figs 2, 3

Shell large, broadly-rounded in outline, somewhat extended in height. Right valve convex, ornamented with 14—16 broad, rounded ribs. Left valve flat with 13 finer ribs; interspaces and ribs are covered with a fine secondary radial ribbing.

Dimensions see page 197.

Occurrence. Between Piltuk and Paromai rivers (eastern Sakhalin).

Not uncommon in the Supra-Nutovo series of Sakhalin.

Upper Pliocene.

*Pecten (Patinopecten) subrefugioensis* S l o d k e w i t s c h

Pl. XL, fig. 1; pl. XLI, figs 1, 2

Shell medium in size, rounded in outline. Convexity of valves insignificant. Sculpture of outer surface consists of 21<sup>1</sup>—24 feebly prominent rounded radial ribs, being broader on the right valve and narrower on the left. Ears small, almost equal in size; byssal notch shallow, nearly obsolete.

Dimensions see page 199.

The described species is close to *P. yessoensis*, found on Kamchatka also in rather great number of specimens. The principal differentiating features of *P. subrefugioensis* come to the absence of fine reticulate sculpture in the intercostal spaces, to broader, lower ribs on the left valve and broad, gentle ribs separa by linear interspaces on the right valve. Apparently, the

right valve of *P. yessoensis* is more convex than that of this species. Number of ribs on both valves on the former species is constantly 2—3 less, than on *P. subrefugioensis*.

A very great outer similarity exhibits *P. refugioensis* H r t l. from the upper Miocene or lower Pliocene of Lower California. Judging from the description, this species is referable to the subgenus *Janira* and owing to the presence of radial ribs on the inner surface of the valve it represents the species of a transitional stage to the subgenus *Amussium*. In the description it is also pointed out that the surface of both valves is nearly smooth, only near the beaks on the right valve one may observe fine, radial ribs; rapidly flattening out. When comparing photographs the broad, gentle radial ribs are very well marked on the left valve, these ribs agree with those of *P. subrefugioensis*. Only a somewhat lesser apical angle differentiate externally these valves. Sculpture of the outer surface of right valve is nearly analogical to that of the Kamchatkan species, but is still more flattened out than on the latter. The principal outer difference comes only to a considerably greater convexity of this valve on the Californian species. Absence of inner ribs on the Kamchatkan shells separates them strongly under the distinct species.

**O c c u r r e n c e.** Sea coast, north of mouth of Kavran river, and north of mouth of Tnonkhno river (western coast of Kamchatka).

Not an uncommon species in the upper horizon of the Kavran series, in the *Pecten yessoensis* horizon.

Upper Pliocene.

*Pecten (Patinopecten?) singularis* S l o d k e w i t s c h

Pl. XLII, fig. 1

Left valve slender, nearly flat, of an oval, extended in height outline. Sculpture consists of 27 low, feebly modelled radial ribs of a different width, separated by narrow interspaces. Ears small.

The described species bears the greatest resemblances to *P. yessoensis* abundantly occurring in the same exposure. The most important differences between the two species are as follows: *P. yessoensis* is larger, its outline is more rounded, number of ribs is fewer, intercostal spaces are smooth, the reticulate sculpture present; the ears are also of somewhat different shape.

**O c c u r r e n c e.** Sea coast, north of mouth of Kavran river (western coast of Kamchatka).

Very rare in the upper horizon of the Kavran series.

Upper Pliocene.

*Pecten (Patinopecten) kulkenis* S l o d k e w i t s c h

Pl. XLI, figs 3, 4

Shell medium in size, rounded in outline. Right valve feebly convex with 15 rounded radial ribs, left valve flattened with 11—12 roof-like, thin ribs, separated by broad interspaces covered with fine reticulate sculpture.

The described species most closely resembles *P. yessoensis* occurring in the same deposits. The latter species differs in the greater absolute dimensions, greater number of ribs (17 to 20) and in gradual decreasing of ribs to nearly

full disappearing of them at the ventral margins of valve. Although the marginal ribs of *P. kulakensis* are also somewhat lower they never atrophy to such an extent as on *P. yessoensis*. *P. caurinus* and *P. caurinus* var. *oregonensis* are distinguished by the large size, by the convexity of valves, by greater number of ribs and by the character of ribs on the right valve.

**O c c u r r e n c e.** Kulka river (western coast of Kamchatka).

Rare in the upper horizon of the Kavran series.

Upper Pliocene.

*Variamussium* cf. *pillarense* S l o d k e w i t s c h

Pl. XLII, figs 9, 10

Shell small, feebly convex, rounded in outline. Outer surface sculptured only with concentric, incremental lines. Inner surface of the valve covered with 9 elevated, thin radial ribs, nearly reaching the pallial margin.

*Propeamussium. clallamensis* described and well figured by A r n o l d includes two species, referred to different subgenera; one of the species may apparently be identified with the described Kamchatkan form. A r n o l d takes for the type the left valve (U. S. N. M., 164922, fig. 3 and 3a) characterized by the somewhat extended in height outline and the strikingly peculiar sculpture of the outer surface consisting of the thickened, curved, scale-like tubercles situated along radial lines diverging from the beaks. Apical angle about 85°. The right valve (fig. 1) by reason of its outline, sharp apical angle, and sculpture of outer surface is also referred to this species named by the author *Cyclopecten clallamensis* (A r n o l d). This right valve has been found at the locality considerably distant from that of the first species.

A cast illustrated in fig. 2 refers to a quite different species and genus. Though it has been found in association with the impression (fig. 3) and is considered by A r n o l d also as a type of *P. clallamensis*, it can in no case be identified with the latter because it represents a distinctly pronounced right valve (large anterior ear and the direction of the curvature of ribs), referable to the genus *Variamussium*, as *Cyclopecten* does not possess inner ribs, and *Variamussium* does not bear radial tubercle-imbricated sculpture on the left valve. A great apical angle (112°) and shorter antero- and postero-dorsal margins induced the writer to separate this shell as a new species, which he has named *Variamussium pillarense* and has taken for holotype the right valve of *C. clallamensis* A r n o l d (Pl. III, fig. 2).

The state of preservation of the single Kamchatkan species is so poor that it may be determined only as *Variamussium* cf. *pillarense*. Close to the described species the middle Miocene *P. stanfordinsis* A r n. is readily distinguished by the presence of 10 inner ribs on the right valve, and by a more levelled outline.

**O c c u r r e n c e.** Utkholok river (western coast of Kamchatka).

Very rare in the Kovachina series of Kamchatka. This species is described by A r n o l d from the lower part of the Oligocene — Miocene series Clallam County, Washington.

Upper Oligocene.

*Palliolium (Delectopecten) pedroanus* T r a s k

Pl. XVIII, figs 3, 4, 5

O c c u r r e n c e. Utkholok, Sopochnaya and Rassoshina rivers, north of mouth of Amanina river (western coast of Kamchatka).

Comparatively rare in the Vayempolka series of Kamchatka.

Miocene — lower Pliocene.

*Palliolium (Delectopecten) pedroanus* T r a s k var. *peckhami* (G a b b)

Pl. XLII, figs 2, 3, 4, 5, 6, 7

D i m e n s i o n s see page 210.

O c c u r r e n c e. Tighil, Amanina, Kovachina rivers, well No. 2 at Korn river (western coast of Kamchatka); Cape Pilvo; south of Pil river to Vodopadnaya river on the Schmidt Peninsula (northern Sakhalin).

Very frequent in the Kovachina and Vayempolka series of Kamchatka. Upper-Pil series of Sakhalin.

Upper Oligocene — Miocene — Pliocene (?).

*Lima sakhalinensis* nom. nova

Pl. XLII, fig. 8

The general outline of the valve obliquely oval, inequilateral, extended vertically, with a broadened lower end. The short antero-dorsal margin passes nearly imperceptibly into the very long anterior margin directed with its lower end obliquely forward. The upper, greater half of this margin quite straight, but it somewhat curves below and joins evenly the short, convex ventral margin. The latter together with the long posterior margin forms one regular and evenly convex line.

Beaks small, convex, pointed, displaced and inclined forward not projecting beyond the hinge margin.

Hinge margin short, straight. Anterior ear small, posterior ear, being considerably greater, passes very evenly into the remainder surface of the shell.

Convexity of the shell very small; the point of the greatest convexity is situated in the upper half of the valve.

Sculpture of outer surface consists of the finest concentric lines of growth, which passing also on the ears and not elevated, gentle, irregular concentric folds bearing the same character as on *Palliolium (Delectopecten) pedroanus* (T r a s k).

D i m e n s i o n s. Length 73.4 mm; height 91.0 mm; coefficient of height 124.0 (after I. K h o m e n k o).

The described species exhibits the greatest resemblance to the Japanese and Kamchatkan *L. goliath* S m. The latter differs mainly in the presence of the radial sculpture and in the absence of concentric folds. In addition the shells of the Kamchatkan species are usually somewhat broader, although some individuals may be encountered among them, which are indistinguishable in this respect from *L. sakhalinensis*.

Others more approximate species are unknown to the writer.

The specific name *L. concentrica* given by I. K h o m e n k o was preoccupied by S o w e r b y. Therefore it is replaced by the writer by a new name.

O c c u r r e n c e. North of Cape Pilvo (northern Sakhalin).

Very rare in the Upper-Pil series. This species may be considered as a deep-water inhabitant by reason of its structure and similarity to the recent forms.

Lower Miocene.

*Lima goliath* S m i t h

Pl. XLIII, figs 1, a; 2

D i m e n s i o n s see page 214.

O c c u r r e n c e. Amanina river (western coast of Kamchatka).

This species is very abundant only in one outcrop of the upper horizon of the Vayempolka series of Kamchatka in association with *Palliolum* (*Dectoepecten*) *pedroanus* (T r a s k) var. *peckhami* (G a b b).

Upper Miocene — Recent.

*Pododesmus macroschisma* (D e s h a y e s)

Pl. XLIV, figs 1, a, b; 2; 3

D i m e n s i o n s see pages 218—219.

O c c u r r e n c e. Snatol, Materaya Vayempolka, Zhilovaya Vayempolka rivers; sea coast between sea cliffs and mouth of Etalonnaya river, south of mouth of Venyaveem river; Podkaghernaya Bay (western coast of Kamchatka). South of Piltuk river (northern Sakhalin).

A very frequent species in the upper and lower horizon of the Kavran series of Kamchatka as well as in the Pomyr series of Sakhalin.

Pliocene — Recent.

*Mytilus edulis* L i n n é

Pl. XLVI, figs 1, a; 2; 3

O c c u r r e n c e. Gr. Chazhma river, Krutaya river (eastern coast of Kamchatka); Gakh river (western coast of Kamchatka); south of Piltuk river on the Schmidt Peninsula.

Rare in Vayempolka series on the western coast of Kamchatka. Not rare in the upper (?) Miocene on the eastern coast of Kamchatka. Pomyr series of the Schmidt Peninsula (northern Sakhalin).

Upper Miocene — Recent.

*Mytilus kamtschaticus* S l o d k e w i t s c h

Pl. XLVI, figs 4, a; pl. XLVII, fig. 4

Adult shells large, curved, elongate-oval in outline. Long, feebly convex anterior margin has in lower part of its upper half a broad and very gentle cavity, consequently its upper and lower parts are situated at an obtuse angle in relation to each other. The short, convex, attenuated and pointed ventral margin joins evenly lateral margins. Posterior margin feebly convex with its upper end slightly inclined backward, has one or two notches cor-

responding to the grooves of outer surface. Moderately convex postero-dorsal margin, slightly shorter than the posterior, joins evenly the latter at the point situated above the centre of valve and forms at this place a small flattened postero-dorsal alation. Beaks moderately convex, pointed, curved and inclined forward project slightly beyond the hinge line and when the valves are closed diverge laterally their tips being at a distance of 5—7 mm from one another. Convexity of valves considerable. A broad prominent sigmoidal ridge extends from the beaks to the ventral margin, descending abruptly to the beaks and to the ventral margin in the upper half of which the highest point of convexity is situated. Long anterior slope falls evenly at first and then drops steeply down to the margin. There is an oblique, broad but very gentle depression in its upper half. Short posterior slope quite perpendicular occasionally even overlaps postero-dorsal margin; along the base of this slope a broad, deep convex groove is running, above the latter is another groove but narrow and shallow, both grooves are separated by a prominent ridge. In several very rare cases, the second or upper groove may be only feebly modelled, but its presence is always marked at this place by slight curve of growth lines.

Sculpture of outer surface consists only of numerous concentric incremental lines; also are seen distinct but little elevated concentric constrictions observable from the lateral side of shell. Hinge typical for the genus. Hinge plate slightly elevated.

*D i m e n s i o n s* see page 233.

In the Tertiary deposits of North America and Alaska there are a few known species with which the described species might be compared. *Mytilus californianus* C o n r. nearest to the latter species differs in the straighter anterior margin and in that the point of junction of posterior and postero-dorsal margin is placed below the centre of valve; it differs also in presence of radial ribs. One of the illustration of *M. mathewsonii* somewhat recalls the described species, the former is distinguished by less height and relatively greater length and less convexity.

*O c c u r r e n c e.* Zhilovaya Vayempolka river (western coast of Kamchatka); vicinity of Polupianya Bay (eastern coast of Kamchatka).

Not rare, particularly on the eastern coast of Kamchatka; in the lower horizon of the Kavrán series on the western coast of Kamchatka.

Lower (?) Pliocene.

*Mytilus mathewsonii* G a b b

Pl. XLVII, fig. 2; pl. XLVIII, fig. 1

*O c c u r r e n c e.* Schmidt Peninsula, north of the Vengheri river (northern Sakhalin).

Rare in the Vengheri series.

Upper Oligocene — middle Pliocene.

*Mytilus mathewsonii* G a b b var. *expansus* A r n o l d

Pl. XLVIII, figs 2, 3; pl. XLIX, fig. 1

*D i m e n s i o n s* see page 226.

*O c c u r r e n c e.* East of Cape Maria on the Schmidt Peninsula (northern Sakhalin).



Not very uncommon in the Tum series and in the lower series of Machigar section of Schmidt Peninsula.

Lower Miocene — lower part of the upper Miocene.

*Mytilus littoralis* S l o d k e w i t s c h

Pl. XLIX, figs 2, a; 3

Shell large, broad, elongate-oval in outline, moderately convex. Postero-dorsal angle is situated above the middle of the valve. Outer surface concentric only.

*M. littoralis* although is to some degree close to several other forms, but has a series of constant differences, which do not allow to place it with any of those species.

*M. mathewsonii* G a b b var. *expansus* A r n o l d is distinguished by narrowed upper end of shell, by its relatively less length and by the presence of fine radial striation absent on *M. littoralis*. *M. coatingensis* A r n. belongs to the subgenus *Mytiloconcha* C o n r. and even by that alone distinguishes rather sharply from the described species, besides other constant distinctions in outline. Finally, *M. arnoldi* C l. is characterized by relatively narrowed anterior and particularly posterior ends of valve and by regularly and broadly rounded posterior margin merging with no perceptible angle into the postero-dorsal one and by less relative convexity also.

O c c u r r e n c e. Tighil river; sea coast, near the Tochilo spring (western coast of Kamchatka).

Very common in Tighil series of western Kamchatka.

Eocene — Oligocene (?).

*Mytilus arnoldi* C l a r k

Pl. XLV, figs, 6 a; 7; 8

D i m e n s i o n s see page 229.

O c c u r r e n c e. Tighil river (western coast of Kamchatka), Schmidt Peninsula, north of the Vengheri river, south of the Pil river (northern Sakhalin).

Rare in the Tighil series of western Kamchatka and in the Kaskadnaya and Vengheri series of northern Sakhalin.

Eocene — lower part of upper Miocene.

*Mytilus podkagernensis* S l o d k e w i t s c h & I l j i n a

Pl. XLIV, figs 4, a

General outline of the valve obliquely-trigonal-oval. Anterior margin long, nearly straight, slightly concave above and convex below, where it evenly joins the convex ventral margin. Posterior margin short, nearly straight, inclined with its upper end backward and joining angularly very long, quite straight, strongly inclined forward postero-dorsal margin. Angle of junction of posterior and postero-dorsal margins obtuse, rounded, but quite distinct and situated considerably lower the middle of valve. Beaks narrow, blunted, terminal.

Convexity of valve small. From the beaks to the anterior end of ventral margin runs very feebly modelled sigmoidal keel, separating more abrupt and narrow anterior part of the surface of valve.

Sculpture of outer surface consists only of concentric lines and furrows of growth.

**D i m e n s i o n s.** Length 36.6 mm, height 56.9 mm. Convexity of both valves 20.4 mm. Coefficient of height 155.5, coefficient of convexity 27.9.

*M. kawi* nearest to the described species differs from the latter in its greater size, in considerably more elongate outline and in short postero-dorsal margin.

**O c c u r r e n c e.** Podkaghernaya Bay (western coast of Kamchatka). Rare in the Tighil series.

Eocene — Oligocene. (?)

*Mytilus perrini* Clark var. *folioformis* Slodkewitsch

Pl. XLVIII, figs 4, a

Shell medium in size, slightly inequilateral, feebly convex, regular elongate-oval in outline. Outer sculpture concentric only.

**O c c u r r e n c e.** Sea coast, near the mouth of Gackh river (western coast of Kamchatka).

*M. perrini* var. *folioformis* is established from the Miocene beds in the vicinity of the Korf Gulf on eastern Kamchatka. In the lower horizon of the Vayempolka series on the western coast of Kamchatka.

Middle and upper Miocene.

*Mytilus ochotensis* (Slodkewitsch)

Pl. XLIX, fig. 4; pl. L, figs 1, a

Shell of medium size, irregular obliquely-oval in outline, with a long straight anterior margin and broad, convex posterior one. Posterior alation narrow. Outer surface covered only with concentric lines of growth.

**O c c u r r e n c e.** Reelne-veyem river, west of mouth of Polovinka river (western coast of Kamchatka). Kamenushka river (eastern coast of Kamchatka).

Not uncommon in the coal-bearing series in the vicinity of the Korf Gulf; in the lower horizon of the Vayempolka and in the Kavran series of the western coast of Kamchatka.

Middle and upper Pliocene.

*Mytilus chejsleveemensis* Slodkewitsch

Pl. XLV, figs 1, a; 2, a; 3; 4, a; 5

Exclusively great individual variability of species is exhibited as in the general outline of valves so in their convexity. Most frequently adult specimens are of obliquely-oval shape with prominent posterior alation in the place of junction of postero-dorsal and posterior margins, consequently the outline becomes somewhat trigonal. At the large development of convexity, when posterior side of shell overlaps the alation, the valve assumes

the shape of a broad triangle with rounded apices, convex lateral sides and concave base.

Long, and normally only inconsiderably concave in its middle, anterior margin evenly joins very short and convex the ventral one, which in its turn, also evenly passes into straight or inconsiderably concave and inclined backward posterior margin. Long, feebly convex posterior margin with its lower end inclined backward, approximately in the middle of height of the valve (usually somewhat lower) joins posterior margin, forming at that place more or less prominent wing-like process.

Beaks convex, not prominent, inclined and displaced forward.

Convexity of valves considerable and very unequally distributed; the point of maximum convexity is situated on the middle of a prominent ridge, obliquely curved from the beaks parallel to posterior and postero-dorsal margins. Anterior slope of ridge steep, posterior nearly perpendicular to the plane of valve; along its base a deep and broad groove extends, gradually flattening out in the direction to the ventral margin. If the convexity is very strongly developed, posterior side of valve projects beyond corresponding margin.

Examining on the incremental lines the character of growth and variations associated with the growth of valve, it may be observed, that very young shells to 22—24 mm in height have quite normal for the genus *Mytilus* outline and convexity. Owing to inequity of further growth consisting in that the antero-ventral and posterior sides of valve, especially antero-ventral angle, grow considerably more rapidly, than postero-dorsal side, a sharp distortion of its relief takes place leading to abnormal forms, several of which are figured on the accompanying plates.

Sculpture of outer surface consists only of concentric lines and furrows of growth, in most cases very unequally distributed on the shell, so that not high concentric constrictions are formed.

D i m e n s i o n s see pages 234—235.

Described shells are very close to the species *Mytilus ochotensis* established formerly by the author; the latter is distinguished by considerably larger (nearly two times) absolute dimensions, by comparatively significant convexity (coefficient of convexity 34.9) and by less height.

O c c u r r e n c e. Kheysliveem river (western coast of Kamchatka).

Very frequent species in the lower horizon of the Kavran series.

Upper part of lower Pliocene (?) — middle Pliocene.

*Mytilus watersi* Etherington var. *tigilensis* Slodkewitsch

Pl. XLVII, figs 3,a; 4,a; 5,a

Shell small, moderately convex, variable in outline, from attenuated-oval to pointed, pyriform and curved. Beaks terminal, acute, curved forward. Sculpture of outer surface concentric only. Concentric step-like constrictions appear frequently.

O c c u r r e n c e. Sea coast between Mainach river and Cape Babushkin (western coast of Kamchatka).

Frequent in the lower horizon of the Vayempolka series.

Middle Miocene.

*Mytilus cf. middendorffi* Grewingk

Pl. L, figs 2,a; 3,a

O c c u r r e n c e. Reelne-veyem river (western coast of Kamchatka).  
Rare in the Kavran series.  
Miocene — Pliocene.

*Mytilus (?) yokoyamai* Slodkewitsch

Pl. LI, figs 1,a

Shell large, convex, inequilateral, irregular, elongate-oval, curved in outline. Angle of junction of posterior and postero-dorsal margins considerably higher than the middle of valve. Outer surface covered with numerous, elevated, radial ribs and concentric sculpture of growth.

O c c u r r e n c e. Tighil river (western coast of Kamchatka). Not rare in the upper horizon of the Tighil series. Oligocene (?).

*Modiolaria nigra* (Gray)

Pl. LIV, figs 9, 10, 11, 12

D i m e n s i o n s see page 259.

O c c u r r e n c e. Gr. Chazhma river (eastern coast of Kamchatka); lower course of Piltuk and Gr. Goromai rivers (eastern Sakhalin).

Very rare in the Supra-Nutovo series of Sakhalin, and in the Miocene (?) beds of eastern Kamchatka.

Miocene (?) — Pliocene — Recent.

*Modiolus restorationensis* Van Winkle

Pl. LI, figs 2; 3; 4; 5,a

Shell small, convex, very inequilateral, irregularly rhomboidal in outline. Anterior margin short; posterior margin long; beaks slightly prominent, displaced to the anterior margin of the valve. Sculpture of concentric growth lines only.

D i m e n s i o n s see page 243.

Having had at his disposal only two shells from Kamchatka and the imperfect reproductions of Van Winkle's holotype and Clark's pleiotype, the author separated in one of his previous papers the Kamchatkan shells into distinct varieties, principally, because of the considerably greater coefficient of altitude of the shells from Kamchatka.

The illustrations in N. Tegland's paper received by the author now, have shown that *M. restorationensis* is apt to considerable variations in its coefficient of altitude, and that among the forms illustrated by Tegland there are shells quite indistinguishable from those of Kamchatka. Besides, the latter have, in newly received collections, somewhat lesser coefficient of altitude and they are found in a greater number. For that reason the separated variety «var. *palmuloidea*» should be discarded and the shell described under this name must be included under the name of Van Winkle's species.

O c c u r r e n c e. Napana river, Zhilovaya Vayempolka river (western coast of Kamchatka). Not infrequent in the lower horizons of Vayempolka series.

*Modiolus dilatatum* S l o d k e w i t s c h

Pl. LII, figs 1,a

Shell inequilateral, elongate-trigonal in outline, posterior end broadened. Very short, convex, anterior margin evenly curving down joins long, ventral margin; the latter quite straight anteriorly runs obliquely down at an angle of about 35°, gently curves further with its convexity inward, and stretching still more down, forms broad posterior end of the valve. Long posterior margin joins ventral margin in angle, being convex in its lower half and quite straight and vertical above. The angle of junction of posterior and postero-dorsal margins is nearly straight. Beaks broad, obtuse, displaced to the anterior end of the valve slightly overtopping the upper margin, contiguous when the valves are closed. Possibly, the upper half of the posterior end is slightly gaping.

Convexity of valves relatively small. The point of maximum convexity is located near the anterior quarter of the shell in its upper half, so that the whole anterior half of the valve appears to be most inflated, the posterior half is flattened, on the contrary.

The valve is not fully preserved; only at some parts of the cast the na-reous layer is adhering as well as the small patches of calcareous layer of grayish white color. Sculpture of outer surface consists of thin concentric lines of growth which become rougher along the anterior half of the ventral margin, where they assume the character of lamellae. In some of the best preserved specimens, and on their molds the presence of a thin radial striation is to be distinguished, which is concentrated only along the median part of the shell. This radial striation is absent on the inferior portion of the surface of the valve, between the ventral margin and slightly convex line running from the beaks to the posterior end of the ventral margin, as well as on the upper portion of the surface of the valve, between postero-dorsal margin and the line running also from the beaks to the upper quarter of the posterior margin.

**D i m e n s i o n s.** The best preserved double-valve specimen: length (after being restored), about 59.0 mm; altitude 43.5 mm, convexity of both valves 17.3 mm. Coefficient of height about 73.7; coefficient of convexity about 14.7.

The described form is distinguished from *Modiolus restorationensis* V a n W i n k l e by its curved ventral margin, a broad posterior end and a relatively small coefficient of convexity.

**O c c u r r e n c e.** Left side of the mouth of Moroshechnaya river (western coast of Kamchatka). Not very infrequent in the deposits of the Tighil series.

*Modiolus flabellatus* G o u l d var. *utcholokensis* S l o d k e w i t s c h

Pl. LII, figs 4; 5; 6,a

Valve elongate, obliquely-trapezoidal, strongly inequilateral in general outline. Short, convex, anterior margin with its end inclined backward, wherefrom it joins roundly the long oblique-ventral margin. The latter has usually in its anterior half a more less deep and gentle notch, which may be displaced to its posterior end, or the ventral margin may be nearly

straight as well. Short, slightly convex posterior margin, somewhat inclined forward above, evenly meets the ventral margin below. The upper end of the posterior margin, obliquely and gently truncated gradually passes into nearly straight postero-dorsal margin. Antero-dorsal margin is considerably shorter than the latter and likewise straight. Thus, the whole outline of the shell is strongly irregular, attenuated and broadened obliquely downward and backward. Beaks broad, flat, obtuse, sharply displaced forward and curved in the same direction, slightly projecting over the hinge margin.

Convexity of valves moderate. From the beaks to the posterior end of the ventral margin, a broad, rounded feebly modelled keel is running, slightly sigmoidal in longitudinal direction or a quite straight one, rather inconspicuous in its inferior part in adult specimens. The point of maximum convexity is located near the hinge margin, at the upper end of the keel. From the beaks to the posterior half of the ventral margin, a broad, but not deep, very gentle depression is passing. However, this depression may be absent in some specimens or it may be only scarcely marked with a faint concavity at the place of concentric incremental lines.

The exterior surface of the shell is smooth, covered only with thin, concentric lines and furrows of increment, drawn together at the anterior end and more widely spaced on the posterior end of the shell; at some parts they assume a rather corrugated character.

D i m e n s i o n s see page 246.

*M. flabellatus* is readily distinguishable from the described form by being considerably larger (length from 72 to 105 mm and more); by having a more produced anterior margin, a broadened posterior end of the shell and relatively less projecting beaks. The affinity of both these forms is, doubtlessly, a very great one, for this reason the Kamchatkan specimens are considered by the author as a variety of North-American species; but this affinity is not to such an extent that they could be identified.

O c c u r r e n c e. Utkholok river (western coast of Kamchatka). Rather common in the Tighil series.

*Modiolus tetragonalis* S l o d k e w i t s c h

Pl. LIII, fig. 3.

Shell small, slightly convex, rounded-trapezoidal in outline. Is not alate postero-dorsally. The outer surface sculptured by concentric lines of increment only.

D i m e n s i o n s: length 39.0 mm; height 22.8 mm, convexity of both valves 8.8 mm. Coefficient of height 58.4, coefficient of convexity 11.8.

O c c u r r e n c e. Sea coast, Tighil region (western coast of Kamchatka). Very rare in the lower horizons of Vayempolka series.

*Modiolus solea* S l o d k e w i t s c h

Pl. LII, fig. 2

Shell medium in size, elongate-arcuate-oval in outline, lateral margins nearly parallel. Inferior end attenuated and curved forward. Alation narrow, located below the middle of the valve. External surface consists of concentric lines of growth only.

**D i m e n s i o n s.** Length 43.5 mm; height 29.0 mm; convexity about 6.0 mm. Coefficient of height 68.7; coefficient of convexity about 13.8.

**O c c u r r e n c e.** Sea coast (western coast of Kamchatka). Very rare in the lower horizons of Vayempolka series.

*Modiolus tigilensis* nom. nova

Pl. LIII, figs 4, a; 5

Shell large, strongly inflated, contracted, elongate-trigonal in outline. Postero-dorsal alation slightly below the middle of the valve. Outer surface covered only with concentric lines of increment.

**D i m e n s i o n s.** Length 69.2 mm; height 53.5 mm, convexity of both valves (on a cast) 33.4 mm. Coefficient of height 77.3; coefficient of convexity 24.2.

The name *M. tigilensis* is proposed by the author as a substitute for the prior name «*M. inflatus*» S l o d k e w i t s c h. The original name being a homonym.

**O c c u r r e n c e.** Tighil river. Platonich river (western coast of Kamchatka); coast of the Gulf of Korf (eastern coast of Kamchatka). The upper horizons of the clayey-sandstone series on the eastern coast of Kamchatka; Korovay-bearing series and Kavran series (?) on the western coast of Kamchatka. A relatively infrequently occurring species.

*Modiolus trigonalis* S l o d k e w i t s c h

Plate LII, fig. 3

Shell large, solid, trigonal in outline, strongly convex, inequilateral. Broad, postero-dorsal alation with angle located below the median line of the valve.

**D i m e n s i o n s.** The largest entire cast of the left valve: length 78.7 mm; height 66.6 mm, convexity 23.8 mm. Coefficient of height 84.6; coefficient of convexity 30.2.

**O c c u r r e n c e.** Kulka river (western coast of Kamchatka). Very infrequent in the Vayempolka series.

*Modiolus wajampolkensis* S l o d k e w i t s c h

Pl. LIII, figs 4, a

Shell large, solid, elongate-trapezoidal in outline. Posterior margin parallel to the anterior one. Is not alate postero-dorsally.

**D i m e n s i o n s.** Length 38.7 mm; height 81.3 mm; convexity of both valves 52.5 mm. Coefficient of height 210.0; coefficient of convexity 67.7.

**O c c u r r e n c e.** Materaya Vayempolka river, Zhilovaya Vayempolka river (western coast of Kamchatka). Rather common in the deposits of the Kavran series of Kamchatka.

*Modiolus wajampolkensis* S l o d k e w i t s c h var. *markini* nom. nova

Pl. LIV, fig. 4

Differs from *M. wajampolkensis* in the arcuate outline of the valve, in the presence of the feeble postero-dorsal alation; the valves being more convex.

O c c u r r e n c e. Belogolovaya river (western coast of Kamchatka). Rare in the Vayempolka (?) series.

*Modiolus tenuistriatus* S l o d k e w i t s c h

Pl. LIV, figs 2, a

Shell medium in size, inequilateral, elongate-oval in outline; with a broad posterior end and a prominent postero-dorsal alation. Convexity being moderate. Surface of the shell covered by concentric lines of increment and a very fine radial striation.

D i m e n s i o n s. The best preserved right valve: length 49.5 mm; height 47.8 mm; convexity 15.3 mm. Coefficient of height 96.8; coefficient of convexity 30.9.

O c c u r r e n c e. Sea coast, Tighil region between Amanina and Etalonnaya rivers; Podkagernaya Bay (western coast of Kamchatka). Frequent in the upper horizons of Kavran series.

*Modiolus angulatus* S l o d k e w i t s c h

Pl. LIV, figs 3, 4

Shell small, tumid, strongly inequilateral, irregularly arcuata-angulated in outline. Sculpture of outer surface consists of concentric lines of growth and fine radial ribs noticeable only near ventral margin.

D i m e n s i o n s. Single, double-valve specimen: length 37.1 mm; height 29.0 mm; convexity of both valves 14.9 mm. Coefficient of height 78.2; coefficient of convexity 20.0.

O c c u r r e n c e. Zhilovaya Vayempolka river (western coast of Kamchatka). A rather rare species on Kamchatka. The deposits of Kavran (?) series. Vaqueros formation, California.

*Modiolus gradulatus* S l o d k e w i t s c h

Pl. LIII, fig. 2

Shell strongly inequilateral, oblique; long, anterior margin with its end inclined backward, in general being nearly straight, with slight convexity on its anterior end near the point of junction with antero-dorsal margin, and with a still more fainter, gentle concavity on its median part. Ventral margin short, convex, evenly joins anterior margin as well as posterior one. The latter is shorter and considerably less inclined than the anterior margin, on account of which the general outline of the valves becomes widened towards the middle, tending to contract sharply again towards the upper end. Posterior margin nearly as straight as the anterior one, and curving in a strong obtuse angle meets the long somewhat convex postero-dorsal margin, forming at this point a broad posterior alation. The beaks are broken off; judging from its position on the valve, they are sharply displaced forward. Convexity of valve on the specimen at hand is quite insignificant, but that is apparently due to the deformation of specimen; posterior alation being flat, divided from the remaining portion of the shell by a broad fold.



The whole surface of the shell is covered by rather numerous, sharp, little elevated concentric constrictions, inequally spaced. Besides, there is a very feeble but rather rough radial striation on the posterior half of the valve, except for alation, on which this striation is not observed.

**D i m e n s i o n s.** The single specimen of the right valve: length 30 mm; height 25.3 mm; convexity of height 84.8.

The described species is most similar to *M. rectus* C o n r., but differs from the latter in relatively lesser height of the shell, in the curvature of the dorsal margin and in the presence of the concentric constrictions. Possibly, the convexity of the valve of *M. rectus* is greater than of the Kamchatkan specimen.

**O c c u r r e n c e.** Utkholok river (western coast of Kamchatka); between the Cape Maria and the Gulf of Machigar of the Schmidt Peninsula (northern Sakhalin). Very rare in the Vayempolka series of Kamchatka and in the lower and upper series of Machigar section of northern Sakhalin.

*Laternula (Aelga) besshoensis* (Y o k o y a m a)

Pl. LIV, figs 5, 6, 7, 8; pl. LV, figs 1,a; 2,a; 3,a; pl. LVI, fig. 1

Shell considerably inequilateral, anterior end broad, rounded, posteriorly narrowed and attenuated. One plate reinforcing spoon. Other characters correspond to subgeneric diagnosis.

**O c c u r r e n c e.** Kakertok, Etalonnaya, Kulka, Kinkil, Kovrana, Materaya Vayempolka rivers. Kovachina Bay; sea coast north of mouth Tnonkhlno river (western coast of Kamchatka). Vicinity of Korf Gulf (eastern coast of Kamchatka). Schmidt Peninsula. Daghi river (Sakhalin).

A very frequent species in the Vayempolka and Coal-bearing series of Kamchatka as well as in the Daghi series of eastern and Tum series of northern Sakhalin.

Middle and upper Miocene.

*Laternula (Aelga) sakhalinensis* S l o d k e w i t s c h

Pl. LVI, fig. 5; pl. LVII, figs 1, a; 2; 3; a

Shell large, broad oval in outline, feebly inequilateral. Antero- and postero-dorsal margins nearly straight, slightly inclined from the beaks, which are situated near the median line of valve. There is usually a second plate reinforcing the spoon.

**O c c u r r e n c e.** Etalonnaya, Kulka rivers; Koyachina Bay (western coast of Kamchatka). In the sandstones of Daghi river on northern Sakhalin.

A rather frequent species in the upper horizon of the Vayempolka series on the western coast of Kamchatka. It is described by Y o k o y a m a from the sandstones of Daghi river on northern Sakhalin.

Upper Miocene.

*Laternula (Aelga) pilensis* S l o d k e w i t s c h

Pl. LVI, figs 2, 3, 4

Shell of medium or small size, elongate-oval, nearly equilateral outline with a great coefficient of altitude.

**O c c u r r e n c e.** South of Pil river and between Mount Schmidt and Cape Horner on the Schmidt Peninsula (northern Sakhalin).

Not uncommon in the Kaskadnaya and Tum series of the Schmidt Peninsula.

Miocene.

*Thracia (Thracia) condoni* D a l l

Pl. LVIII, figs 1, 2, 3

D i m e n s i o n s see page 268.

O c c u r r e n c e. Tnonkhlno and Golyn rivers (western coast of Kamchatka); vicinity of Korf Gulf (eastern coast of Kamchatka).

Not rare in the Vayempolka series of western Kamchatka and in the upper horizon of the clayey sandstone series of eastern Kamchatka.

Oligocene — Pliocene.

*Pandora gretschischkini* S l o d k e w i t s c h

Pl. LIX, figs 2,a,b

The short feebly convex anterior margin joins evenly the longer, attenuated ventral margin upcurved posteriorly, which passes evenly into the short posterior margin. Antero-dorsal margin slightly convex, postero-dorsal longer, faintly convex at the umbone and then straight, both join angularly lateral margins. Apical angle about 130°. Beaks small, flattened, not prominent, considerably displaced forward and inclined in the same direction, as the vertical axis of the valve.

Left valve feebly convex, the point of maximum convexity located near the center of valve, wherefrom it falls rather gently to the margins. From the beaks to the ventral margin a feeble, vertical, small fold is running bounding a somewhat flattened anterior alation. At the place of junction of this small fold with the outer margin the latter is occasionally somewhat incurved. The right valve flat or even concave has a hardly discernible at the place corresponding to the position of small fold on the left valve. Along the postero-dorsal margin of the latter a faint groove is running bounding postero-dorsal margin which bears the character of a flat low ridge.

Sculpture of outer surface of both valves is also different. On the left valve it consists only of concentric lines and furrows of growth while on the right valve one may still detect feeble concentric riblets and a finest radial undulation visible only on some parts of the valve.

Hinge apparatus of right valve consists of a big, prominent pyramidal anterior cardinal tooth along upper margin of posterior side of which a narrow but deep furrow passes as well as a low, narrow posterior ridge. On the left valve in front of the beaks a trigonal quite unimpressed area is located bounded anteriorly by a thickened margin of valve and posteriorly by a narrow ridge. Posterior to the latter an impressed ligamental area is situated, bounded posteriorly by a thickened margin of valve.

Anterior muscle scar rounded quadrate in outline located near the lower half the of antero-dorsal margin; posterior scar irregularly oval, longer than the anterior and located considerably lower than the latter near the inferior end the of postero-dorsal margin.

Along antero- and postero-dorsal margins of the internal right valve a deep groove is extending for the reception of the thickened margins of left valve.

Pallial line entire, considerably remote from the margin of valve. Inner margins of valves smooth.

**D i m e n s i o n s.** Left valve: length 55.8 mm, height 45.7 mm, convexity 11.7 mm. Coefficient of height 81.9; coefficient of convexity 21.0.

*P. grandis* Dall widely distributed in Alaska and California from the Miocene to the recent exhibits the greatest resemblance to the described species.

The former is easily distinguished by its apical angle (more than  $140^\circ$ ), by ventricose more rounded outline and by the presence of a sharp anterior fold.

*P. pulchella* Yok. described by I. K h o m e n k o from the Supra-Nutovo series of eastern Sakhalin has a quite different narrow, longitudinally extended outline and a concave postero-dorsal margin, on account of these characters it differs strongly from the described form.

More closely allied to *P. gretschischkini* is the small *P. wajampolkensis* Slod. The main differences between the two consist in the presence of a broad anterior alateness, ventricose outline of valve and greater apical angle in the latter species.

**O c c u r r e n c e.** Sea coast between sea cliffs and mouth of Etalonnaya river (western coast of Kamchatka).

Very rare in the upper horizon of the Kavran series.

Upper Pliocene.

#### *Pandora wajampolkensis* Slodkewitsch

Pl. LIX, figs 1,a,b

The description will be made by means of a direct comparison of this species with *P. gretschischkini*, which is very close to the former in its outline and other external characters.

The general outline of valves though repeats that of the preceding species but differs in a broader and attenuated anterior end and in a prominent ventral margin lending the valve some ventricose appearance. In connection with the first character its apical angle increases to  $140^\circ$ , antero-dorsal margin becomes shorter and together with the anterior and a part of the ventral margin forms a distinct alation. Convexity of valves is the same as in the preceding species. Vertical fold being situated on the left valve and extending from the beaks to the anterior part of the ventral margin is marked only as a small furrow.

Sculpture of the external surface consists of numerous irregular concentric small folds and growth-lines, conspicuous near the anterior margin only. This sculpture is intersected on the right valve by broad radial striation; on the left valve the fine radial striation is discernible only in the umbonal region.

This difference in sculpture on *P. gretschischkini* may be explained only by the state of preservation on the surface of this species of a calcareous layer, which on the described form is rubbed off, only the nacreous layer being present.

Other characters of shell's structure not preserved.

**D i m e n s i o n s.** Length 34.6 mm, height 26.7 mm, convexity (left valve) 7.6 mm. Coefficient of height 76.7, coefficient of convexity 21.8.

*P. gretschischkini* differs from the described species in greater absolute dimensions and different outline depending on the valves being vertically shorter, in the absence of prominent anterior alation and in lesser ventricosity. Difference in sculpture of outer surface cannot be relied upon until an entire specimen of *P. wajampolkensis* is found.

*P. grandis* D a l l is more close to this species in its dimensions but is distinguished by a ventricose, produced in vertical direction outline. The form from Kamchatka could be probably compared with the Miocene *P. grandis* of the St. Paul Peninsula of Alaska but unfortunately the description of this species is not accompanied with the figure.

O c c u r r e n c e. Belogolovaya river (western coast of Kamchatka).

A very rare species in the upper horizon of the Vayempolka series of western Kamchatka.

Upper Miocene.

*Pandora pulchella* Y o k o y a m a

Pl. LVIII, figs 4, 5, 6

Shell of medium size, feebly convex, irregularly-semilunar in outline, strongly inequilateral. Left valve convex, right valve flat. Both valves covered by small concentric folds and finest radial striae.

D i m e n s i o n s see page 274.

Sakhalinian species is readily distinguishable from other representatives of this genus known on Kamchatka. *P. gretschischkini* is characterized by a greater size and a broad high valve with a great coefficient of altitude. *P. wajampolkensis*, on the contrary, is considerably smaller and relatively much shorter.

O c c u r r e n c e. Between the Piltuk and Poromai rivers and on Gr. Goromai river (eastern Sakhalin).

Not uncommon in the Supra-Nutovo series of Sakhalin.

Upper Pliocene.

*Cuspidaria (Cardiomya) tigilensis* S l o d k e w i t s c h

Pl. LIX, fig. 4

Shell inequilateral, left valve somewhat higher than the right, outline regularly rounded and recalls by its shape the shells of *Pecten*, certainly excepting the posterior rostrum. Evenly rounded anterior and ventral margins imperceptibly join one another, making one continuous line. Posterior margin in its lower part also joins gently ventral margin but then approximately for a distance one half the height of shell curves steeply but gradually backward at an obtuse angle, forming a short and straight lower margin of rostrum. The latter has a broadly rounded posterior margin and a quite straight, long upper one, which imperceptibly joins postero-dorsal margin of valve.

Antero-dorsal margin being short, steeply slopes forward from the beaks and making the same regular convex line, as the anterior margin and passes gently into the latter. Convexity of right valve very inconsiderable; left valve, apparently, more convex, projects along ventral margin of right valve and rostrum for a distance of 1—1.25 mm. Beaks high, prominent

and apparently straight or very feebly inclined backward, are situated nearly just on the median line, if the length of rostrum is not taken into account, or for a distance of about one third the length of the shell from the anterior margin, in the reverse case.

Sculpture of outer surface consists of thin, rounded, prominent radial ribs, numbering about 20, covering the whole surface of valve rostrum excepting. Intercostal spaces flat, 2—4 times broader than the ribs, being considerably narrower on the anterior portion of valve, than on the posterior. Ribs on the left valve are rather more numerous than on the right one (23); on the impression at hand it is distinctly visible that neither of them coincides in the same direction.

Numerous, fine, somewhat wrinkled concentric lines of growth are distinctly marked on rostrum and scarcely visible on the remainder surface, whereas on the ribs they are clearly seen in the form of rugose ridges.

**D i m e n s i o n s.** Right valve — length 14.0 mm, height 10.2 mm, coefficient of height 72.9.

As regards the number of ribs the described species may be only compared with *C. beringensis* L e c h e; the latter distinguishes strongly by its beaks inclined backward, by short pointed rostrum and by number of close-set ribs. *C. kavranensis* differs in elongated and oblique outline and in fewer number of ribs.

**O c c u r r e n c e.** Sea coast, west of Mainach river (western coast of Kamchatka).

Very rare in the upper horizon of the Tighil series.

Oligocene (?)

*Cuspidaria (Cardiomya) kavranensis* S l o d k e w i t s c h

Pl. LIX, fig. 3

Outline of shell elongate-oval, broadened anteriorly and narrowed posteriorly. Broad, evenly convex anterior margin somewhat attenuated in the direction obliquely forward and downward, where it gently passes into long, feebly convex ventral margin. Posterior margin extended into broad, but apparently, short rostrum. Its upper margin representing direct continuation of postero-dorsal one is slightly concave beneath the beaks, and nearly straight for the remaining distance. Antero-dorsal margin very short, straight, angularly joins anterior margin. Beaks convex, pointed, nearly not projecting beyond hinge margin, inclined backward. Convexity of valve considerable; the highest point of convexity is situated in the upper half of valve, in front of beaks, wherefrom the convexity steeply falls to antero-dorsal margin and gradually to the beaks, but it remains considerable in the direction to other margins of valve. Convexity of rostrum small, it is separated from the remainder of the valve by a steep, step-like curve, directed from the beaks obliquely backward and to posterior part of ventral margin.

External surface of shell (rostrum excepting) is ornamented by 11—12 radial ribs, slightly curved longitudinally with convexity forward. Anterior ribs are the finest; farther in backward direction the width and height of ribs gradually increases to penultimate rib; the last rib situated on the border of rostral curve becomes again finer and lower. Section of ribs broad,

rounded. Intercostal spaces equal to ribs in width or even somewhat broader than the latter. Besides radial sculpture there are fine concentric incremental lines.

**D i m e n s i o n s.** Left valve: length (after being restored) about 15.1 mm, height 10.2 mm, convexity 3.8 mm. Coefficient of height about 67.6, coefficient of convexity about 25.2.

Among recent and fossil species of this genus there are a few shells which may be compared with the described species. Undoubtedly the closest resemblance exhibit the Pleistocene and recent *C. pectinata* Cr p., but even it differs in longer rostrum and in less gentle outline of anterior half of valve. Possibly it would be better to consider the described species only as a variety of *C. pectinata*, but the lack of comparative recent material and incompleteness of fossil one do not allow to settle this question.

More approximate as regards the region of its habitat the Japanese *C. gouldiana* H i n d s strongly differs in prominent curved beaks, in narrow rostrum, in different outline and in greater number of ribs.

Known to the author *Cuspidaria*, frequently occurring in the Eocene of California, do not afford any species which could be compared with the described form.

**O c c u r r e n c e.** Kavrán river (western coast of Kamchatka).

Very rare in the upper horizon of the Vayempolka series.

Upper Miocene.

*Astarte borealis* (S c h u m a c h e r)

Pl. LIX, figs 5, a; 6

Shell medium in size, rounded trigonal in outline, feebly convex, inequilateral. External sculpture consists of 22 concentric ribs covering upper third of valve, the remainder of the surface is covered by concentric incremental lines inly.

**D i m e n s i o n s** see page 280.

Strikingly similar *A. arctica* G r a y placed by some authors with *A. borealis*, differs from the latter only in its large dimensions and rounded outline. Shell, described by I. K h o m e n k o under the name *A. borealis* from the Schmidt Peninsula, is distinguished by the lack of concentric ribbing and by rounded outline, therefore it should be assigned to the species *A. rollandi* B e r n.

**O c c u r r e n c e.** North-eastern coast of the Gulf of Laurence (Chukotsky Peninsula).

Miocene — Recent.

*Astarte rollandi* B e r n a r d i

Pl. LX, figs 3; 4, a

Shell medium in size, inequilateral, elongate, trigonal-oval in outline with pointed, feebly prominent, inclined and displaced forward beaks. Outer surface covered only by concentric lines and furrows of growth.

**O c c u r r e n c e.** South of the Piltuk river on the Schmidt Peninsula (northern Sakhalin).

Very rare in the Pomyr series of Sakhalin. The recent species inhabit the Bering sea.

Upper Pliocene — Recent.

*Astarte cf. actis* D a l l

Pl. LX, figs 1, 2

O c c u r r e n c e. Utkholok river (western coast of Kamchatka). Kavrán series.

Pliocene.

*Cardita kovatschensis* S l o d k e w i t s c h

Pl. LX, figs 5, 6, 7, 8, 9, 10

Shell small, moderately convex, rounded quadrate or irregularly rounded in outline, equivalve and inequilateral. Outline of the valve is apt to great individual variability. Strongly quadrate shells occur side by side with the specimens being rounded or somewhat extended longitudinally or in height. The rounded quadrate outline is most frequently predominant. In the latter form, the anterior margin is convex, produced more or less forward; ventral margin also convex or nearly straight; posterior margin always longer than the anterior one, convexity of the former being inconsiderable but also apt to variability; postero-dorsal margin long and convex; antero-dorsal margin short and concave. All the margins join evenly one another in gentle curve. The shell is somewhat produced obliquely backward and downward, so that the point of junction of the ventral margin with the posterior one is the most prominent, and their angle is usually sharper than the angles joining the other margins. The attenuation of the shell may also very rather greatly.

Beaks small, prominent, prosogyrous and bent forward; in most typical cases it is displaced directly to the anterior margin, but sometimes it is displaced a little less.

Convexity of valves considerable; the highest point of convexity is on the upper half of the valve, thence it slopes steeply to the beaks and more evenly to the other margins. A slightly modelled line of maximum convexity, extending obliquely from the beaks to the place of junction of ventral and posterior margins may be marked on the best preserved shells.

External sculpture consists of 20—24 flat, not elevated, rounded, radial ribs separated by shallow, rounded, narrower intercostal spaces. The ribs being the broadest and the most elevated upon the median portion of the shell. The most anterior 3—4 ribs are narrower and still more flattened, scarcely projecting on the surface of the valve; the most posterior ribs are also narrowed, but more strongly modelled and slightly more elevated than the median. The width of intercostal spaces changes correspondingly, but in the reverse direction. The whole surface of the valve is crossed with numerous, fine, concentric lines and furrows of growth; at their intersection with the ribs, especially, near the ventral margin the surface of the costae becomes very faintly tuberculate.

In most cases the shells are preserved exclusively in form of casts and impressions; then, the sculpture consists of roof-shaped narrow, radial ribs, separated by broad, gently concave intercostal spaces.

Neither the hinge apparatus nor the lunula could be examined, owing to an imperfect state of preservation of shells. However, in one of the Kamchatkan shells, the remains of the hinge apparatus have been preserved under the broken beaks, not sufficient for the detailed description but exhibiting the presence of cardinal teeth, typical for the genus *Cardita*.

The inner margins of the valves are finely serrate corresponding to the ribs on the outer surface.

*D i m e n s i o n s* see page 289.

*O c c u r r e n c e*. Kovachina, Pukhl, Utkholok, Napana, Snatol, Kheysliveem rivers; well core from the well Nr. 2 at the mouth of Korn river (western coast of Kamchatka). In the vicinity of the Cape Pilvo and north of it (northern Sakhalin).

Exceedingly abundant in the Kovachina series and in the lower horizons of Vayempolka and Upper-Pil series, therefore this species deserves to be called a leading form. It is described under the name *C. laxata* Y o k. from the lower Miocene (?) Kamenoo-beds, Jô-Ban coal-fields.

*Cardita ventricosa* G o u l d

Pl. LX, figs 11; 12, a; 13

Shell of moderate size, rounded-trigonal in outline, inequilateral, strongly convex. External surface sculptured with about 18 strong, rounded, radial ribs with narrow intercostal spaces.

*D i m e n s i o n s*. Double-valve specimen: length of about 21.4 mm; height of about 22.0 mm; convexity 16.9 mm. Coefficient of height about 102.8; coefficient of convexity about 39.9.

*O c c u r r e n c e*. Tighil river (western coast of Kamchatka). Rather rare in the Tighil and Vayempolka series of Kamchatka.

*Cardita ferruginea* C l e s s i n

Pl. LX, figs 14; 15; 16,a; 17; 18; 19,a; 20

Shell of small to moderate size, elongate, rounded-trigonal in outline, beaks displaced forward. Sculpture of external surface consists of 19—20 elevated, radial ribs, covered with beaded tubercles, rapidly widening with the growth of the valve and disappearing near the ventral margin in the adult specimens.

Among the great number of this species in the collections at hand, some shells, chiefly of small size, are quite indistinguishable by their outline from *C. rotunda*, for that reason the author includes them also in the synonymy of the described species. Var. *orbicularis* separated by M. Y o k o y a m a differs only in its rounded outline, therefore, considering the great individual variability of this species, it does not seem practicable to place them under the distinct name.

*O c c u r r e n c e*. Sea coast between Moroshechnaya and Kovachina rivers; Podkaghernaya river (western coast of Kamchatka). South of the Piltuk river (northern Sakhalin).

Not infrequent in the Tighil and Vayempolka series of Kamchatka as well as in the Piltuk series of Sakhalin.

*Cardita monilicosta* G a b b var. *ochotica* S l o d k e w i t s c h

Pl. LXI, figs 1,a; 2,a,b; 3

Shell very small, thick, moderately convex, inequilateral, rounded in outline. External surface sculptured with 21—23 elevated, rounded, radial ribs, ornamented with broad, prominent tubercles. Intercostal spaces narrow and deep.



*D i m e n s i o n s* see page 296.

The described shells are closely related to two widely distributed north-american species—*C. ventricosa* G o u l d and *C. monilicosta* G a b b.

According to the opinion of U. G r a n t & H. G a l e, expressed in the synonymy of the species *C. ventricosa*, both these forms together with *C. stearnsii*, *C. californica* and *C. castor* belong to the same strongly variable species *C. ventricosa*. In one of his previous papers, the author tried to prove, that the difference between *C. ventricosa* and *C. monilicosta* is apparently greater than an usual individual variability, therefore both species should be placed under distinct systematic units. So far the author has not received any data contradicting this statement.

*C. monilicosta* differs from *C. ventricosa* in oval outline of the valves; beaks are small; radial ribs less in number (14—17) and covered with beaded tubercles while the ribs of *C. ventricosa* are covered with nodulose concentric ridges.

The typical *C. monilicosta* was found neither on Kamchatka nor on Sakhalin. The described variety is most closely allied to *C. monilicosta*, but differs in rounded outline, it has more ribs and the tubercles surmounting the latter are larger and more prominent. *C. ventricosa* is considerably more convex, sharply trigonal in outline, also the sculpture of the ribs is different.

*O c c u r r e n c e.* Sea coast, between Amanina and Etalonnaya rivers (western coast of Kamchatka).

Not uncommon in the upper horizons of Kavran series.

### *Cardita beringiana* S l o d k e w i t s c h

Pl. LXI, figs 4,a; 5; 6,a

Shell large, feebly convex, inequilateral, rounded in outline. Sculpture of external surface consists of 28—30 slender, not elevated, smooth, radial ribs, gradually flattening towards the ventral margin.

*D i m e n s i o n s* see page 299.

*C. alaskana* D a l l, somewhat recalls the described shell, but the former has less prominent beaks, a reduced in height outline and a different structure of hinge apparatus. *C. barbarensis* S t e a r n s also differs in outline, in the character of hinge and its valves are considerably smaller; *C. crebricostata* K r a u s e is still more regularly rounded in outline and with less prominent beaks, on account of which it is readily distinguished from the described species.

*O c c u r r e n c e.* Sea coast, between sea cliffs and Etalonnaya river (western coast of Kamchatka). Frequent in the upper horizons of Kavran series.

### *Cardita piltunensis* sp. nova

Pl. LXI, figs 7; 8,a; 9

Valves regularly rounded, somewhat elongate in outline. All the margins of the shell being convex outward, join evenly one another without any perceptible curve. Anterior margin slightly shorter than posterior and faintly produced forward. Antero-dorsal margin short, concave under the beaks;

postero-dorsal margin long, convex as the posterior one. Beaks small, flattened, displaced forward, only slightly projecting beyond the hinge margin. Convexity of valves inconsiderable, it slopes from the point of highest convexity gradually down to the lateral margins.

Sculpture of external surface consists of 25—30 radial ribs, flattened-convex in cross section, separated by narrow, linear, intercostal spaces. Breadth of the ribs and interspaces unequal on the whole surface of the valves; the most posterior 4—6 ribs narrow and elevated are separated by broad interspaces. As the ribs so the interspaces are crossed by numerous, concentric lines and furrows of growth, more strongly pronounced near the ventral margin and forming here and there on the ribs thin, transverse, ridge-like nodules.

Hinge apparatus of right valve consists of two cardinals—posterior and median. Posterior cardinal (*3b*) long, narrow, lamelliform; median cardinal (*A1*) large, stout, obliquely trigonal. *3b* and *A1* are separated by a narrow pit for *2b*; in front of *A1* a small, but deep trigonal pit for *2a*. Hinge of left valve consists of two correspondingly placed, long, nearly parallel lamelliform cardinals (*4b* and *2b*), separated by a shallow, narrow pit for *2b*; in front of *2b* a deep trigonal pit for *A1*; lastly, anterior cardinal (*2a*) relatively small, solid, regularly trigonal.

Lunula small, narrow, slightly modelled. Escutcheon long, lanceolate, sharply impressed.

Anterior muscle scar elongate-oval, posterior one rounded-quadrate, both of them deeply impressed in their upper half respecting the inner surface of the valve. A small, deeply impressed scar of pedal muscle is set a little up and behind the anterior scar. Pallial line distinct, entire. Inner margins of the valve roughly serrate, corresponding to the external ribs.

**D i m e n s i o n s.** Length 27.0 mm; height 25.4 mm; convexity 6.6 mm; coefficient of height 94.1; coefficient of convexity 24.3.

The shell described by I. K h o m e n k o under the name *C. alaskana* strongly differs from the latter species. *C. alaskana* D a l l is characterized by trigonal-oval outline (coefficient of height 86.6) by pointed postero-dorsal edge and prominent beaks. It is considerably more inequilateral and the radial ribs are somewhat tapering.

Allied to the latter species *C. kamtschatica* S l o d. has no similar features with the Sakhalinian species, as in outline and size, so in external sculpture.

Among north-american *Cardita* the most similar to that of Sakhalin is *C. crebricostata* (K r a u s e), distinguishable by its smaller absolute size and more prominent beaks; anterior edge of the valve being broad and the ribs widening more rapidly to the ventral margin.

Another Californian fossil and recent form — *C. barborensis* (S t e a r n s) differs in rounded-quadrate outline produced upward; in ribs being broader and less in number; also in the structure of cardinal teeth.

Finally, the recent *C. gouldii* D a l l is distinguished by its smaller outline and by fewer number of broad ribs.

**O c c u r r e n c e.** Watershed between Piltuk and Poromai rivers, 6 km from the mouth (eastern Sakhalin); between the mouths of Polovinka and Arkovo rivers (western Sakhalin).

Rare in the deposits of Supra-Nutovo and Rykhlaya series.

*Cardita kamtschatica* Slodkewitsch

Pl. LXII, figs 1,a; 2,a

The greater number of shells has an inequilateral, rounded-trigonal shape, but sometimes single valves are found, the outline of which is nearly equilateral, rounded, without being perceptibly trigonal. The small number of such abnormal forms and the presence of intergrading characters among them do not claim for separation under any distinct systematic unit.

Rounded, somewhat produced upward anterior margin evenly joins less convex ventral margin. Feebly arched posterior and postero-dorsal margins represent direct continuation of one another and only some specimens have a slightly concave postero-dorsal margin and the place of its junction with posterior margin is marked with gentle angulation. Antero-dorsal margin short and concave, roundly passes into anterior margin. All the lateral margins of the abnormal specimens with rounded outline are more regularly convex and the angle of junction of ventral and posterior margins is broadly rounded. Beaks inclined and displaced forward, moderately projects beyond the margin of the valve. Beaks being very near one to another in the closed valves, do not come in contact. In one left valve an abnormally high and prominent beaks has been observed; on close examination it proved to be an occasional pathological irregularity of the growth of the valve, confirmed by the presence of a strong concentric constriction in the umbonal region.

Convexity of valves may vary from small to moderate dimension. The highest point of convexity is nearly in the median line of the shell, thence it slopes evenly to the lateral margins. Ventral margin of many individual is thickened and consequently drawn in.

External surface is ornamented with 24—25 (very rare 23) high radial ribs, rounded-trigonal in transverse section. The most posterior, very narrow 5—6 ribs bear the character of sharp ridges. In the umbonal region the ribs are dotted with crowded but not elevated, transversely extended tubercles. At the distance of 9—11 mm from the beaks these tubercles gradually disappear and are replaced by irregularly undulated rugosities, roughened, as usually, towards the ventral margin, where they are modified into prominent, sharp, irregular, imbricated and undulated plates.

Intercostal spaces narrow, shallow, covered with fine transverse lines and wrinkles of growth and with 2—4 thin, longitudinal furrows emphasizing the indistinct limits of ribs.

Hinge apparatus consists of a median cardinal (*A1*) massive, obliquely trigonal, with posterior edge sinking considerably lower than the anterior edge, thus involving the corresponding curve of the hinge-plate edge. Upper and anterior walls of the tooth erect and covered with rough transverse corrugations. Inferior wall oblique and concave. Posterior to *A1* are placed: a deep, but narrow, broadening down pit for *2b* and a lamelliform narrower posterior cardinal (*3b*) long, curved and also widening down. Anterior to *A1* there is a deep trigonal pit for *2a*, anterior to this pit just on the edge of lunula a still smaller, slender, vertical ridge — an incipient anterior cardinal tooth may be noticed.

Lunula very small, narrow but deeply impressed, cordate in outline extending nearly straight down from the beaks. In some individuals it is reduced to a narrow, short fissure. Escutcheon long, but narrow.

Large deeply impressed muscle scar elongate-oval in outline, measures in length 14.5 mm, in breadth 6.8 mm. A small but deeply impressed pedal scar is set above it. Posterior muscle scar shorter than anterior, but also deeply impressed, it measures in length 12.0 mm, in breadth 6.0 mm. Pallial line entire. Inner, ventral margin of the valve faintly serrate corresponding to the outer ribs. On the lateral margins this serration is absent or it is very feeble.

*D i m e n s i o n s* see page 303.

From all the Pacific coast Carditidae, known to the author, the most similar to the described species is *C. alaskana* D a l l. The latter differs in its slightly smaller absolute size, greater number of ribs (from 25 to 30), less prominent beaks and broader ribs, so that the intercostal spaces are practically reduced to the narrow and shallow furrows. Apparently, the hinge also differs from that of *C. kamtschatica*. The recent *C. barbarentis* S t e a r n s is distinguished by a fewer number of ribs (19—20), structure of which is closer to that of *C. alaskana*, by a rounded outline and by feebly prominent beaks. Lastly, *C. crebricostata* K r a u s e exhibits closer affinity to *C. barbarentis* and therefore is easily distinguished from the described species.

Of all previously known Kamchatkan forms, only *C. beringiana* S l o d. should be mentioned here, it was found in association with the described species. That form is readily recognized by its greater relative height of the valves, and by a greater number of ribs (28) which are less elevated and differently sculptured.

*O c c u r r e n c e.* Sea coast between Amanina and Etalonnaya rivers; Belogolovaya river (western coast of Kamchatka).

Rare in the Vayempolka series and very frequent in the upper horizons of Kavran series.

*Cardita kamtschatica* S l o d k e w i t s c h var. *dvalii* nom. nov.

Pl. LXII, figs 3; 4, a

Shell convex, solid, of moderate size, rounded-trigonal in outline, inequilateral. External surface is ornamented with 20—23 radial ribs, rounded-trigonal in section, separated by narrow, nearly linear interspaces.

*D i m e n s i o n s* see page 304.

The described variety is distinguished from *C. kamtschatica* s.s. by a little smaller size, greater relative convexity and fewer number of ribs. The latter state cannot be explained by the smaller dimensions of the shell, as the number of ribs in these species decreases often with the growth on account of the reduction of the most anterior 1—2 ribs. The ribs are more tapering and covered with finest, longitudinal, undulating lines, besides transverse corrugations. The tubercles are absent on the ribs in the umbonal region. Intercostal spaces are narrower, nearly linear. Hinge, in general, like that of *C. kamtschatica* S l o d., but more solid.

*O c c u r r e n c e.* Sea coast, between sea cliffs and Etalonnaya river (western coast of Kachatka).

This variety is found associated with *C. kamtschatica* in the upper horizons of Kavran series, but considerably, rarer than the type species.

*Cardita praeruptensis* S l o d k e w i t s c h

Pl. LXII, figs 5,a,b; 6

The outline of the valves regularly rounded, produced upward, or more frequently the outline is rounded-trigonal, because of some angulation at the place of junction of posterior margin with ventral. Short and smoothly rounded anterior and ventral margins evenly join one another without any perceptible curve. Sometimes, the anterior margin may be attenuated forward, but even in such cases the general smooth line of antero-ventral margin is not in the least disturbed. Posterior and postero-dorsal margins, forming together one line convex outward, join likewise evenly and imperceptibly the ventral margin, or this place may become a little angulated, as mentioned above. Short antero-dorsal margin, being concave below the beaks evenly passes into anterior margin.

Beaks prominent, curved, slightly displaced and inclined forward, coming in contact when the valves are closed. Convexity of valves rather great. The point of maximum convexity is placed in the median line of the valve or slightly behind it, in the latter case the posterior portion of the valve is more inflated and steep than the anterior.

Outer surface is usually covered with 25 (in one case 23) broad, moderately high radial ribs semi-circular in section. Not elevated, transverse ridges may be detected on the ribs in the umbonal region of unworn shells; on all their remaining extent, the ribs are smooth, crossed only by numerous, fine undulating lines of growth and by rough furrows of interruption in growth, particularly numerous near the ventral margin of the valve. The most posterior 5—6 ribs are the narrowest, assuming here the ridge-like character and being somewhat reduced in height.

Intercostal spaces narrow but deep on the upper half of the valve and narrow but gentle on the inferior half. The breadth of the interspaces, as that of the ribs, is not the same on the whole surface of the valve.

Hinge apparatus of left valve consists (from front to back) of a short, irregularly trigonal anterior cardinal (2a), a deep, broad obliquely trigonal socket for A1, a lamellar, narrow, widening downward median cardinal (2b), a narrow socket for 3b, parallel to the latter tooth, and also parallelly set a posterior cardinal (4b) narrow, lamelliform and considerably less elevated. Hinge of right valve not preserved.

Lunula small, deeply impressed, cordate in outline; escutcheon narrow, long and lanceolate.

Anterior muscle scar, long, deeply impressed, oval in outline, measures in length 11.7 mm, in breadth 5.5 mm. Small and not very deep, scar of pedal muscle is situated above it. Posterior muscle scar, rounded in outline, truncated above, measures in length 8.0 mm, in breadth 6.5 mm.

Pallial line entire. Interior margins of the shell serrated, corresponding to the ribs of the outer surface.

D i m e n s i o n s see page 306.

The described species differs from *C. kamtschatica* s. s. and from var. *dvalii* in having extended in height outline and in greater coefficient of convexity. Though the number of ribs coincides with that of the former species, they are not triangular, but rounded and separated by considerably narrower interspaces. Hinge plate more solid and high than in *C. kamtschatica*. *C. prae-*

*ruptensis* is easily distinguished from *C. alaskana* Dall and other allied to the latter forms by its high outline, prominent beaks as well as by different number and character of ribs.

**O c c u r r e n c e.** Sea coast, between sea cliffs and Etalonnaya river (western coast of Kamchatka). In comparison with the other species of *Cardita* the described form is of infrequent occurrence in the upper horizons of Kavran series.

*Cardita matitukensis* sp. nova

Pl. LXI, figs 10; 41,a

General square-rounded outline of the shell is suggested by the presence of the distinct angles at the place of junction of posterior margin with postero-dorsal and ventral margins. Anterior and ventral margins convex outward evenly join one another; posterior margin being longer than the anterior and less convex. Antero-dorsal margin short and convex joins in angle the anterior margin; postero-dorsal margin long, feebly concave. Beaks broad, prominent, strongly displaced and prosogyrate. Convexity of valves moderate.

Sculpture of outer surface consists of 12—13 radial ribs, narrow and elevated in the umbonal region, but very broad and relatively less convex near the ventral margin. Cross section of the ribs semi-circular. Intercostal spaces narrow and deep, slightly widening with the growth of the valve. Numerous concentric lines and furrows of growth intersect the ribs as well as the interspaces sometimes developing on the latter, principally at the ventral margin, fine, irregular, transverse folds.

Hinge apparatus of right valve consists of a cardinal (3b) very narrow, long, curved parallel with the margin of the valve; a pit for reception of 2b, likewise narrow and long, somewhat widening downward; a median cardinal (A1) solid, obliquely trigonal with a concave anterior wall and convex upper wall; a pit for 2a trigonal, small, but deep.

Muscle scars of typical outline for the genus, distinctly modeled.

**D i m e n s i o n s.** Length 21.0 mm; height 20.5 mm; convexity 5.5 mm; coefficient of height 97.6, coefficient of convexity 26.2.

The recent *C. paucicostata* (Krause) exhibits the closest similarity to the described species. However, the former cannot be identified with Sakhalinian species on account of elongate-oval outline (coefficient of altitude 83.9), a very broad anterior end of the valve, always eroded beaks, and a greater number of ribs.

The small *C. incisa* (Dall), also a recent form, has a rounded trigonal outline and a greater number of flat ribs.

*C. barbarentis* distinguishes still more sharply by characters mentioned above.

Finally, *C. piltunensis* sp. nova is elongate-oval in outline with more ribs.

**O c c u r r e n c e.** South of the Piltuk river (Schmidt Peninsula, northern Sakhalin).

Rare in the Pomyr series.

*Cardita etalonnensis* S l o d k e w i t s c h

Pl. LXIII, figs 3,a; 4; pl. LXIV, figs 1, 2

Shell thick, of moderate size, regularly rounded or rounded-trigonal in outline; beaks displaced forward. External surface ornamented with 11—12 smooth broad ribs, semi-circular in section, becoming more flattened toward the ventral margin of the valve.

D i m e n s i o n s see pages 310—311.

The Kamchatkan species appears to be most closely allied to *C. crassidens* (B r o d. & S o w.). In the earlier papers, the author has identified the shells of Kamchatka with this latter species, on the basis of a single illustration of inner side of right valve existing in literature. However, taking into consideration the absence of the figure of outer surface of *C. crassidens* it would be more reasonable to separate Kamchatkan forms under distinct systematic unit. Upon examination of a series of shells from Kamchatka one may notice that they differ from the valve *C. crassidens* figured by D a l l in the following characters: 1) less quadrate outline; 2) beaks being displaced forward less sharply; 3) convexity of valves being greater (according to measurements made by D a l l, coefficient of convexity *C. crassidens* is equal to 26.6). For this reason, the author having no possibility to compare complete series of both forms thinks it best to place the Kamchatkan specimens under the separate name.

O c c u r r e n c e. Sea coast, between sea cliffs and Etalonnaya river (western coast of Kamchatka).

Very common in the upper horizons of Kavran series.

*Cardita kavranensis* S l o d k e w i t s c h

Pl. LXIII, figs 1,a,b; 2,a,b

Individual variation of this species in outline of valves does not appear to be great, as the shells at hand do not show any sharp deviation from the average type. Inconsiderably more or less prominent beaks, is all that could be observed in the collected specimens respecting variability.

Long, broadly rounded anterior margin slightly produced upward gently and quite imperceptibly passes into the ventral margin likewise rounded. Analogically, the posterior and postero-dorsal margins represent also one uninterrupted curve, but with a much greater radius of curvature; the place of junction of posterior margin with the ventral is broad, obtuse and roundly angulated. Antero-dorsal margin short and concave joins the anterior margin in bend.

Beaks not high, pointed, curved, inclined and displaced forward; in the double-valve specimens the beaks coming into contact, when the valves are closed.

Convexity of valves moderate; the highest point of convexity is placed somewhat posteriorly to the median line of the valve, so that the posterior portion of the valve is a little steeper, than the anterior. Postero-dorsal side of the valve steep.

Outer surface is ornamented with 7—9, more frequently only with 8 broad, flatly-convex, distinctly modelled, but unequally radial ribs. All the ribs are curved with their convexity turned backward. Both most posterior and one anterior ribs thinner than the median; one posterior rib and one or two

anterior ribs being very feeble and obsolete or sometimes even they may disappear; thus it may be on one valve of double-valve specimens 7 ribs while on the other 8 ribs. In the umbonal region the ribs are comparatively narrow and elevated, but further they rapidly increase, principally, in breadth and relatively very little in height. On the adult specimens the ribs become lower at the distance of about  $\frac{2}{3}$  the height of the shell from the beaks and they grow broad, evenly undulated and not high at the ventral margin.

Intercostal spaces shallow, gentle, and feebly concave. In the umbonal region their width is equal to that of the ribs, but further with the growth, the ribs widen relatively more rapidly, so that the width of the interspaces at the ventral margin does not exceed  $\frac{1}{2}$  width of the ribs.

The ribs as well as the interspaces have no other sculpture, except rough corrugated lines and furrows of growth. Approaching the ventral margin the concentric wrinkles draw together and become rougher.

Hinge apparatus in the right valve consists of a median cardinal (*A1*) normally stout, obliquely trigonal inclined forward and of a posterior cardinal (*3b*), long, narrow, lamelliform. The lateral wall of the latter is flat, broader than the base and bears a shallow, longitudinal furrow, a narrow, deep groove runs between *3b* and the margin. A deep, obliquely trigonal socket for *2b* is set between *3b* and *A1*, and a small but deep, also obliquely trigonal socket for *2a* is placed in front of *A1*. Anterior to the latter socket, just at the edge of the hinge a small tapering tubercle is placed — the incipient anterior cardinal (*3a*).

Portion of the valve in front of the beaks from antero-dorsal margin to the first rib is convex, smooth, except for concentric incremental lines. Narrow, small lunula cordate in outline is set in both valves directly beneath the beaks and extends vertically, covering in every valve a narrow area defined anteriorly by almost vertical line running from the point of the beaks to the hinge margin and posteriorly by oblique wall of the anterior tooth. Escutcheon long, lanceolate in outline extends in a line with the posterior margin of the hinge plate.

Anterior muscle scar elongate-oval in outline reaches the length of 15.5 mm at the maximum breadth of 7.0 mm; it is deeply impressed about its inner margin and sharply defined on its outer side. Small irregular pedal scar is set a little above it at the margin of the valve. Posterior muscle scar of irregular, rounded-quadrate outline is impressed considerably less deeply and reaches only 10.0 mm in height and 8.5 mm in breadth. Pallial line entire. At the distance not exceeding 1.5 mm from the margin, inner margin of the valves are feebly serrate corresponding to the external ribs and interspaces.

D i m e n s i o n s see page 313.

*C. etalonnensis* is the only one species with which *C. kavranensis* may be compared and which comes from the same deposits. It is readily distinguished by considerably smaller absolute dimensions, greater number of ribs and more massive (as relatively, so absolutely) cardinal tooth of the right valve. *C. snatolana* S l o d., described from the same deposits, has a rounded, produced upward outline and 18 ribs on the outer surface, because of which it also cannot be confounded with *C. kavranensis*.

Both large recent Pacific coast forms *C. crassicosta* S o w. and *C. cuvieri* B r o d. have no common features with the described species.



**O c c u r r e n c e.** Sea coast, between sea cliffs and Etalonnaya river and between Amanina and Etalonnaya rivers (western coast of Kamchatka).

Not infrequent in the upper horizons of Kavran series.

*Cardita puella* S l o d k e w i t s c h

Pl. LXII, figs 7, 8

Outline of the valve either quadrate or somewhat elongate or nearly regularly rounded, but in general it is always of elongate-trigonal shape. Anterior and posterior margins short; ventral margin long and convex evenly joins the posterior margin and angularly the anterior one. Postero-dorsal margin short and concave. Beaks small, acute, prosogyrous and slightly displaced forward. Convexity of valves moderate; the highest point of convexity is situated on the median line of the upper half of the valve.

Outer surface is ornamented with 10—13 elevated, smooth sharply modelled ribs, which being narrow at the beaks are rapidly widening with the growth of the valve, second or third rib from behind has on asymmetric fold-like form. Ends of the ribs on the valve somewhat projecting beyond the latter. Intercostal spaces narrow and deep, the most posterior 3—4 interspaces being narrower than the rest.

As the ribs so the intercostal spaces are smooth, only intersected by numerous, finest incremental lines.

Hinge apparatus in the right valve consists of a median cardinal (*A1*), massive and obliquely trigonal; and a posterior cardinal (*4b*), narrow, slender, long and lamelliform. In the left valve a well discernible, narrow, long and obtuse posterior cardinal (*2b*) separated by a deep groove from a high, slender, widening downward median cardinal, a short, not elevated tubercle-like anterior cardinal (*2a*); between the latter and *2b* a deep socket for *A1*.

Lunula inconspicuous; escutcheon long and narrow. Inner margins of the valve serrated corresponding to the outer ribs.

**D i m e n s i o n s** see page 315.

This peculiar and rare species bears a close resemblance to *C. paucicostata* in the character of ribbing and to some degree in outline, but sharply differs from it in being considerably smaller in size, in beaks less displaced forward with the consequent greater inequilaterality of valve; and also in sharper ribs.

These shells cannot be the young forms of *C. kavranensis*, as they have a greater number of ribs separated by narrow intercostal spaces and less prominent beaks in comparison with the shells of *C. kavranensis* of the corresponding size.

**O c c u r r e n c e.** Sea coast, between Amanina and Etalonnaya rivers (western coast of Kamchatka).

Uncommon in the upper horizons of Kavran series; however, occurs in many exposures.

*Cardita pacifera* (Y o k o y a m a)

Pl. LXIV, figs 3, 4, 5, 6

Shell medium in size, regular, broad-oval in outline, with beaks displaced forward. Sculpture of outer surface consists of about 20 radial ribs.

**O c c u r r e n c e.** Kinkil river, sea coast; Valevopotka-vayam river at the mouth of Pyatibratskaya river; between Cape Maria and Gulf of Horner

of Schmidt Peninsula (east of Cape Maria and in the vicinity of Cape Horner).

Not infrequent species in the lower horizons of Vayempolka series and in the Korovay-bearing deposits of Kamchatka; in the upper series of Machigar sections of the Schmidt Peninsula. In the Asagai-beds in the region of Jô-Ban coal-fields, Japan.

*Cardita tokunagai* (Y o k o y a m a)

Pl. LXIV, figs 7, 8, 9, 10

Shell of medium or large size, rounded-trigonal in outline with beaks prominent, prosogyrous and strongly displaced forward. Anterior edge of the valve broad and rounded, posterior narrow, pointed. Sculpture of the outer surface consists of about 25 radial ribs, separated by narrow intercostal spaces.

D i m e n s i o n s see page 318.

O c c u r r e n c e. Kinkil and Snatol rivers (western coast of Kamchatka) south of the mouth of Pil river (Schmidt Peninsula).

Rare in the lower horizons of the Vayempolka series of Kamchatka and in the Kaskadnaya series of Sakhalin. In the Asagai-beds of Jô-Ban coal-fields, Japan.

*Cardita yokoyamai* S l o d k e w i t s c h

Pl. LXIV, figs 11, 12

General outline of the valve rounded-trigonal, slightly produced in length. Short, feebly convex and attenuated forward anterior margin evenly joins the long, convex ventral margin, passing gradually into convex posterior margin. The latter together with postero-dorsal margin form one entire line with equal radius of curvature. Long, antero-dorsal margin slightly convex, nearly straight joins in angle the anterior margin. Beaks broad, obtuse, almost not prominent, inclined and displaced forward. Convexity of valves moderate.

Sculpture of external surface consists of 26—28 broad, not elevated, curved and with their convexity turned backward, radial ribs, separated by linear intercostal spaces. The whole surface covered with numerous fine lines and furrows of growth, besides, the ribs show fine irregular, transverse wrinkles.

When the outer surface is worn, only smooth, sharp, square ribs will remain separated by interspaces of the same breadth. The other characters of the structure of the shell are not preserved.

D i m e n s i o n s. Length 30.7 mm; height 29.3 mm; coefficient of height 95.4 (according to M. Y o k o y a m a's illustration).

The described species is allied to *C. tokunagai* (Y o k.) but is distinguished from the latter by more regular rounded outline and by beaks being obtuse and less displaced forward.

*C. pacifera* Y o k. has a more extended in length outline and fewer number of ribs separated by broader intercostal spaces.

O c c u r r e n c e. Khakertok river (western coast of Kamchatka); north of the mouth of Vengheri river (Schmidt Peninsula).

Uncommon in the Vengheri series on the Schmidt Peninsula; in the Vayempolka series of Kamchatka. In the Beds II of north Sakhalin, in the Beds C and Beds D of south Sakhalin according to M. Y o k o y a m a. In the Tsukiyoshi series, province Mino, Japan.

*Cardita denudata* S l o d k e w i t s c h

Pl. LXV, figs 1, a

Shell medium in size, rounded in outline. Convexity of valves inconsiderable. Outer surface covered with 16 not elevated, radial ribs, of smoothly rounded section.

D-i-m-e-n-s-i-o-n-s. This is the only one double-valve specimen in the collection, it measures in length 30.6 mm, in height 27.7 mm, convexity of both valves about 15.9 mm. Coefficient of height 90.5; coefficient of convexity about 26.0.

O-c-c-u-r-r-e-n-c-e. Kinkil river (western coast of Kamchatka). Very rare in the lower horizons of Vayempolka series.

*Cardita kinkilana* S l o d k e w i t s c h

Pl. LXV, figs 2, 3, 4, 5

Shell medium in size, of a rounded-trigonal, produced obliquely backward outline. Beaks small, displaced forward. Outer surface covered with 19—22 smooth radial ribs of flatly-trigonal section. Transverse sculpture consists of concentric lines and furrows of growth only.

D-i-m-e-n-s-i-o-n-s see page 323.

The Kamchatkan shells exhibit some resemblance to *C. pacifera* figured by M. Y o k o y a m a in 1925 (pl. I, fig. 13) and taken by him questionably for young individual of this species. Typical *C. pacifera* (M. Y o k o y a m a, 1924, pg. 18, pl. IV, figs 1, 2) is characterized by larger absolute demensions (in length 40 mm and more) and rather different outline (coefficient of height 61.4). Outer surface of *C. pacifera* is unknown and that which M. Y o k o y a m a has taken erroneously for such represents nothing else, than the ribs of the inner layer of the shell, appearing after the exfoliation of the outer surface as it is often observed in *Cardita*. Thus, the real sculpture of the species remains unknown till now, and the ribs of the inner layer visible on *C. pacifera* are broader and rougher than that on the Kamchatkan species. The hinge apparatus of *C. pacifera* is unknown.

O-c-c-u-r-r-e-n-c-e. Sea coast, at the mouth of Pyatibratskaya river; Kinkil river (western coast of Kamchatka).

Comparatively rather common in the upper horizons of Vayempolka series of Kamchatka. The Japanese shell placed in synonymy is described by M. Y o k o y a m a from the Miocene (?) Kamenoo-Bads of J6-Ban.

*Cardita matschigarica* (K h o m e n k o)

Pl. LXV, figs 6, 7

Shell medium in size, oval-trigonal in outline, strongly inequilateral. Beaks pointed, displaced forward. Sculpture of outer surface consists of 24 broad, not elevated, rounded ribs, intersected by numerous concentric incremental lines. Intercostal spaces narrow.

**D i m e n s i o n s.** Length about 24.3 mm, height 21.4 mm; coefficient of height about 88.0.

The described species most closely approximates *C. kinkilana* S l o d. from Kamchatka, differing chiefly in the rather greater coefficient of height in Sakhalinian species and in the deeper intercostal spaces.

**O c c u r r e n c e.** East of Cape Maria on the Schmidt Peninsula (northern Sakhalin), north of the town Alexandrovsk (western Sakhalin).

Rare in the lower series of Machigar section and in the Rykhlaya series of Sakhalin.

*Cardita antiqua* S l o d k e w i t s c h

Pl. LXV, figs 8, 9

Shell feebly-convex, medium in size, of elongate-oval outline with pointed posterior and rounded anterior margins. Outer surface covered with 19—20 broad, low, rectangular, radial ribs, separated by flat, shallow interspaces of the same breadth as the ribs.

**D i m e n s i o n s** see page 326.

Casts of the described species somewhat recall that of *C. tokunagai* Y o k.; the latter is readily distinguishable by its strong inequilaterality and by the ribs of the inner layer being preserved right to the beaks.

*C. pacifera* Y o k. similar in character of ribs differs strongly in outline of valves, which are high and rounded, considerably more equilateral than that of *C. antiqua*; and also in the beaks displaced forward.

**O c c u r r e n c e.** Materaya Vayempolka, Kinkil and Valevopotkavayam rivers; Kovachina Bay (western coast of Kamchatka); between Cape Maria and Machigar Gulf on the Schmidt Peninsula; between the mouth of Noyami and L. Seltunai rivers (western Sakhalin).

Not uncommon in the upper horizons of Vayempolka series of Kamchatka; in the upper series of Machigar section and in the Rykhlaya series of Sakhalin.

*Cardita tumiensis* (K h o m e n k o)

Pl. LXV, figs 12, 13, 14

Shell of medium or large size, elongate-oval in outline, with prominent beaks displaced forward. Outer surface covered with about 22 broad, radial, curved in length ribs of semi-circular section, crossed by numerous lines of growth.

**D i m e n s i o n s** see page 328.

The described species displays the greatest resemblance to *C. kinkilana* S l o d. occurring in the Miocene of Kamchatka as well as in that of Sakhalin. The principal difference between them consists in more regular, elongate-oval and more equilateral outline of the shell in Sakhalinian species, whereas the valves of *C. kinkilana* are strongly inequilateral.

*C. pacifera* Y o k., being very similar in outline, differs in considerably lesser coefficient of height and in fewer number of ribs.

**O c c u r r e n c e.** Between Cape Maria and Gulf of Machigar; between Mount Schmidt and Cape Horner (Schmidt Peninsula).

Not rare in the Tum section and in the upper series of Machigar section of the Schmidt Peninsula.

*Cardita rafensis* sp. nova

Pl. LXV, figs 15, 16

General outline of the valve elongate-oval or ovale. Short, convex, produced forward anterior margin evenly joins long, smoothly convex ventral margin. Posterior margin being longer than the anterior, likewise gently passes into ventral margin. Short antero- and postero-dorsal margins evenly join lateral margins. Beaks small, slightly projecting beyond the margin of the valve, situated nearly at the median line of the valve and inclined forward.

Convexity of valves not great.

External surface covered with 21—24 high, sharp, close-set, radial ribs surmounted by feeble, irregular, transverse ridges and tubercles and intersected by concentric lines of growth. Intercostal spaces deep and narrow.

*Venericardia* (*Cyclocardia*) *hannibali* Clark cannot be identified with the described species. Though coefficient of altitude in both species are rather equal, *V. hannibali* is more rounded with less produced anterior margin and more prominent beaks. Radial ribs on Californian species are narrower and higher, separated by broader intercostal spaces. Transverse ridges, surmounting the ribs, are large and more close-set.

Japanese *C. laxata* Yok. is more oval in outline, considerably more inequilateral and has a different structure of ribs, therefore it cannot be identified with the described species.

O c c u r r e n c e. In the vicinity of Korf Gulf (eastern coast of Kamchatka); Cape Mayam-Raf (northern Sakhalin).

Coal-bearing series of Kamchatka and Maymraf series of Sakhalin.

*Cardita utcholakensis* Slodkewitsch

Pl. LXV, figs 40,a; 41

Short, rounded, produced forward and somewhat attenuated upward anterior margin broadly and evenly arching passes into long, feebly convex ventral margin. Short posterior margin flattened and inclined with its upper end forward; the angle of its junction with ventral margin being rather sharp; the same angle at the postero-dorsal margin sharp, but obtuse. Long postero-dorsal margin oblique and nearly straight. Short and convex antero-dorsal margin smoothly joins anterior margin.

Beaks sharp, prominent, inclined forward and displaced in the same direction. Convexity of valves moderate; the highest point of convexity located behind the beaks, but anterior to the median line of the valve, the anterior half of the shell being more tumid and rounded, than the flattened posterior.

Outer surface ornamented with about 15—17 radial ribs, tapering in the umbonal region and flatly-rounded on the remaining surface of the shell. Intercostal spaces narrower than the ribs and likewise rounded. As the ribs so the interspaces are crossed by numerous concentric wrinkles and furrows of increment, particularly rough in the lower half of the valve.

When the outer surface of shell is removed by wear, only flat, broad radial ribs are visible, separated by equally broad, but narrower intercostal spaces; such is the case with many other species of *Cardita*.

Hinge apparatus not preserved. The inner margins of shell serrated corresponding to ribs and interspaces of the outer surface.

*D i m e n s i o n s* see page 330.

The described species recalls by its outline *C. tokunagai* Y o k., but the latter differs in less pointed beaks, in relatively short posterior and long, truncated anterior margins and also in greater number of ribs. *C. cipangoana* Y o k., having somewhat quadrate outline, is characterized by less prominent beaks, flattened anterior margin and different sculpture of ribs, on account of which it differs still more from *C. utcholokensis*, than the preceding species.

*O c c u r r e n c e*. Kovachina Bay (western coast of Kamchatka).

The described species is found in great number of specimens, but, heretofore, in only one exposure of the upper horizon of the Tighil series.

### *Cardita snatolana* S l o d k e w i t s c h

Pl. LXVI, figs 1,a; 2,a

Shell solid, inequilateral, medium in size, of extended in height, rounded outline. Outer surface covered with 17—18 not high, square ribs, separated by flat and shallow interspaces, equalling the ribs in breadth.

Owing to its outline, the described shell stands quite apart and cannot be identified with any other of the known to the author species. Unfortunately the outer surface is in such a state of preservation that is not available for comparison.

*O c c u r r e n c e*. Snatol river; sea coast, near Kavran river; Podkaghernaya Bay (western coast of Kamchatka).

Rare in the Vayempolka series and in the upper horizons of Kavran series; but as yet this species is not found in the lower horizons of Kavran series.

### *Cardita kevetscheveemensis* (S l o d k e w i t s c h)

Pl. LXVI, figs 4,a

Shell large, massive, moderately convex, of extended oval-trigonal outline. Beaks displaced forward. Outer surface covered with 17—18 smooth radial ribs, flatly rounded in section. Intercostal spaces narrow.

The described species bears, somewhat unexpectedly, very great resemblance to *V. hornii* G a b b, so that in the case of the better state of preservation it could probably be determined as a variety of this species. The main differences of *V. hornii* consist in the greater absolute dimensions and in the greater number of ribs; all the remaining characters are very approximate to *C. kevetscheveemensis*. However, the impossibility to compare the hinge apparatus does not allow to solve this question more definitely.

*Cardita* sp. indet. described by the author from the Kovachina series has more rounded outline and somewhat fewer number of ribs, in addition the latter are tapering.

*O c c u r r e n c e*. Keyvecheveem river (western coast of Kamchatka).

Very rare in the lower horizons of Kavran series.

*Cardita* sp. indet.

Pl. LXVI, figs 3, a

Short, slightly prominent, rounded anterior margin evenly joins sharply inclined obliquely down ventral margin. Long postero-dorsal margin feebly convex; short antero-dorsal, concave beneath the beaks, further rapidly straightening smoothly passes into anterior margin.

Beaks small, pointed, almost not projecting above the hinge margin, inclined forward and sharply displaced in the same direction.

Convexity of valve judging from the cast very inconsiderable, but possibly it is due to the deformation of specimen.

Sculpture of the outer surface being preserved only near the ventral margin of the valve. To count accurately the number of ribs is impossible owing to the state of preservation of specimen, but approximately the ribs number about 16 or a little more. Ribs broad, smoothly rounded in section, somewhat tapering on the middle. Intercostal spaces narrow and shallow. As the ribs so the interspaces smooth, only intersected by rough, corrugated lines and furrows of growth.

Hinge apparatus in left valve consists of a posterior cardinal (4*b*) long, high, lamelliform, thickening downward and curved parallel to the margin; further, a deep obliquely trigonal socket for *A*1, delimited anteriorly by narrow and short, almost rectangular median cardinal (2*b*); in front of it a small very shallow trigonal socket for 3*a*, and a short, very feebly modelled, ridge-like anterior cardinal (2*a*). Finally, along the margin of lunula, a shallow but distinct, elongated pit, directed at a sharp angle toward 2*a*.

O c c u r r e n c e. Lataikha river (western coast of Kamchatka).

Very rare in the Kovachina series.

*Cardita (Miodontiscus) prolongata* C a r p e n t e r

Pl. LXVI, figs 5, 6, 7, 8, 9

Shell very small, moderately convex, inequilateral, produced in height, rounded-trigonal in outline. External sculpture consists of 18—21 broad, rounded, radial ribs, separated by narrow, sharp, intercostal spaces. Numerous concentric lines and rough furrows of increment.

D i m e n s i o n s see page 338.

In the A r n o l d's paper, the shell of *C. yatesi* is figured with 8 radial ribs and with coefficient of altitude 109. Among the Kamchatkan specimens the shells occur with the same numeric characters, but only in single specimens; the majority of them has a greater number of ribs and a greater coefficient of height. Thus, having one uninterrupted series of variations there is no reason to separate here any small systematic units, but it should be considered as a whole. Hence, the specific identity of Kamchatkan shell with *C. yatesi* A r n o l d may be inferred, as it has been pointed out in one of the previous papers.

Among the recent Pacific coast shells, there is one species *C. prolongata* C r p. which exhibits the closest resemblance to Kamchatkan species; the same number of precisely similar ribs (10—12) and the same oblique, extended in height outline leave no doubt as regards their identity.

In comparison with holotype *C. yatesi*, the recent species has a little greater number of ribs (10—12, instead of 8—9) and inconsiderably more extended outline. Taking into consideration the variability of Kamchatkan shells mentioned above, apparently, there is no valid reason to separate these species. As the name given by Carpenter has the right of priority, the author thinks it best to discard the specific name given by Arnold.

The established by Yokoyama *C. nakamurai* is very close to the described species and just to those specimens of Kamchatkan species, which were provisionally separated by the author, as «*C. yatesi* Arn. var. (?)», but very unsatisfactory illustrations of this shell do not insure accurate identification. The beaks in *C. nakamurai* are somewhat more obtused and the number of ribs ranges from 10 to 12. According to this latter feature, outline of the valve and the character of ribbing, it may be surmised that the Japanese species is the synonym of the described. However, having no possibility to make comparison directly with the Japanese original specimen, this interesting and important question is to be left so far unsolved.

**O c c u r r e n c e.** Sea coast, near Etalonnaya river (western coast of Kamchatka). *C. prolongata* Crp. is one of the most frequently occurring species of *Cardita* in the upper horizons of the Kavran series.

*Thyasira bisecta* (C o n r a d)

Pl. LXVI, fig. 10; pl. LXVII, figs 1, a

Shell of moderate and large size, rounded-trapezoidal in outline. Beaks moderately prominent, sharply displaced and curved forward. Antero-dorsal margin concave; antero-dorsal area bounded by a distinct groove. Posterior fold strong.

**O c c u r r e n c e.** Sea coast of the Tighil region (western coast of Kamchatka).

Rare in the lower horizon of the Vayempolka series of Kamchatka. Middle Miocene.

*Thyasira bisecta* (C o n r a d) var. *humila* L. K r i s h t o f o v i c h

Pl. LXVII, figs 2, a

Shell of medium size rounded quadrate in outline, extended in length. Beaks pointed, moderately prominent, displaced forward; antero-dorsal margin feebly convex; antero-dorsal area bounded by a keel and a depression. Anterior fold very strong.

**O c c u r r e n c e.** From town Alexandrovsk to Machi river (western Sakhalin); north of mouth of Khoi river (eastern Sakhalin).

Very frequent in the Rykhlaya series. Upper Miocene.

*Thyasira bisecta* (C o n r a d) var. *alta* L. K r i s h t o f o v i c h

Pl. LXVII, figs 3, 4

Shell of medium size with an extended in height irregularly rhomboidal outline. Beaks slightly prominent, pointed, displaced forward. Antero-dorsal margin straight; antero-dorsal area bounded by a keel and a depression. Posterior fold strong.



**O c c u r r e n c e.** From town Alexandrovsk to the Machi river (western Sakhalin).

Not uncommon in the Rykhlaya series of Sakhalin. In the Sawané series of Sado Island, Japan.

Upper Miocene. Pliocene (?).

*Thyasira bisecta* (C o n r a d) var. *nipponica* Y a b e & N o m u r a

Pl. LXVIII figs 1; 2,a

Shell of medium and large size, rounded-quadrate or square in outline. Beaks broad, moderately prominent, displaced forward. Antero-dorsal margin convex; antero-dorsal area not modelled. Posterior fold not strong.

**O c c u r r e n c e.** Sea coast between sea cliffs and Etalonnaya river (western coast of Kamchatka). Base of Mount Schmidt and the Gulf of Hope on the Schmidt Peninsula (northern Sakhalin).

Rare in the upper horizon of the Kavran series of Kamchatka and in the Tum series of the Schmidt Peninsula. In the Kawabata series, Hokkaido Island and in the Sawané series, Sado Island, Japan.

Middle Miocene — Pliocene.

*Thyasira disjuncta* S t e w a r t var. *ochotica* L. K r i s h t o f o v i c h

Pl. LXIX, figs 1, 2; pl. LXX, figs 1, 2, 3

Shell of medium and large size, rounded-rectangular in outline with nearly parallel anterior and antero-dorsal margins. Beaks broad, not prominent, displaced forward. Antero-dorsal margin very faintly convex; antero-dorsal area bounded by a narrow groove. Posterior fold strong.

**O c c u r r e n c e.** Sea coast, Tighil region (western coast of Kamchatka); between Mount Schmidt and village Tumi of the Gulf of Hope on the Schmidt Peninsula (northern Sakhalin); mouth of the Vengheri river (western Sakhalin).

Not rare in the Kavran series of Kamchatka; in the Vengheri and Tum series of Sakhalin. Living along the north-western coast of America.

Middle Miocene — Recent.

*Thyasira clarki* L. K r i s h t o f o v i c h

Pl. LXVIII, figs 3, 4, 5

Shell of medium size, rounded-quadrate in outline. Beaks small, not prominent, displaced and curved forward. Antero-dorsal margin long, straight. Posterior fold distinct.

**O c c u r r e n c e.** Tighil river (western coast of Kamchatka).

Not uncommon in the lower horizon of the Vayempolka series of Kamchatka. In the Poul and Yakataga series of Alaska.

Upper Oligocene — middle Miocene.

*Thyasira tigiliana* L. K r i s c h t o f o v i c h

Pl. LXX, figs 4,a

Shell small, slightly inequilateral, obliquely-rounded in outline. Beaks convex and prominent. Antero-dorsal margin straight at the umbones. Posterior fold feeble.

**O c c u r r e n c e.** Tighil river (western coast of Kamchatka). Rare in the Vayempolka series.

Middle and upper Miocene.

*Thyasira wajampolkana* L. K r i s h t o f o v i c h

Pl. LXX, figs 5,a; 6,a

Shell small, inequilateral, of an extended in height, rhomboidal outline. Beaks convex, prominent, curved forward. Antero-dorsal margin straight. Posterior fold strong.

**O c c u r r e n c e.** Zhilovaya Vayempolka river (western coast of Kamchatka).

Rare in the lower horizon of the Kavran series of Kamchatka.

Lower Pliocene (?) — middle Pliocene.

*Thyasira pervulgata* L. K r i s h t o f o v i c h

Pl. LXXI, figs 4, 2

Shell small or medium in size, angularly-rounded in outline. Beaks convex, moderately prominent, somewhat displaced and curved forward. Antero-dorsal margin long, convex in the middle. Posterior fold feeble.

**O c c u r r e n c e.** Mouth of the Moroshechnaya river; right branch of the Kovachina river (western coast of Kamchatka).

Rare in the Tighil series as well as in the Kovachina series of Kamchatka.

Eocene — Oligocene (?).

*Thyasira nana* K h o m e n k o

Pl. LXXI, figs 3; 4; 5,a,b; 6; 7

Shell small, rounded, trigonal in outline. Beaks inflated, prominent, curved forward. Antero-dorsal margin long, straight. Posterior fold distinct. This species differs strongly from the above described small *Thyasira* from the Far East by its strongly trigonal outline and inflated massive beaks. Neither *T. tigiliana* nor *T. wajampolkana* approach *T. nana* because they have a quite different outline of valves. Besides, one may observe in *T. wajampolkana* a distinct angle at the place of junction of anterior and ventral margins while in *T. nana* these margins form one continuous arch. *T. inflata* Y a b e & N o m. similar in outline is characterized by still lesser absolute dimensions and greater convexity of valves. Other closely approaching forms are not known to the writer.

**O c c u r r e n c e.** Between the mouths of Arkovo and Noyami rivers (western Sakhalin).

Not very uncommon in the Rykhlaya series of western Sakhalin.

Upper Miocene.

*Phacoides (Lucinoma) acutilineata* C o n r a d

Pl. LXXI, figs 8,a; 9; 10; 11

**D i m e n s i o n s** see page 355.

**O c c u r r e n c e.** South of Kavran river; east of mouth of Kovachina river; cores of Tochilo and Kornovo wells; sea coast south of Kavran river; Khairyuzovka river (western coast of Kamchatka). Vicinity of Korf Gulf

(eastern coast of Kamchatka). Cape Mayam-Raf and east of Cape Maria (Schmidt Peninsula, northern Sakhalin); between mouths of Noyami and L. Sertunai rivers, Arkovo and Noyami rivers, Varnak and Shirokaya rivers, Khoi river (western Sakhalin).

Rather frequent in the lower horizons of the Tighil and Vayempolka series, in the upper horizons of the Kavran series and in the upper horizons of the clayey-sandstone series of Kamchatka. In the Mayma-Raf, in the Rykhlaya and Khoy series of Sakhalin.

Oligocene — Recent.

*Taras (Taras) orbellus* (G o u l d)

Pl. LXXII, figs 1,a; 2,a; 3,a; 4,a

O c c u r r e n c e. Kinkil river (western coast of Kamchatka). Frequent in the upper horizon of the Vayempolka series.

Miocene — Recent.

*Taras (Taras) semiasperum* (P h i l i p p i)

Pl. LXXI, figs 12,a; 13,a

D i m e n s i o n s see page 362.

O c c u r r e n c e. Sea coast, Amanina river, south of Etalonnaya river, Podkaghernaya Bay (western coast of Kamchatka). Vicinity of Korf Gulf (?) (eastern coast of Kamchatka).

Not uncommon in the upper horizon of the Kavran series of Kamchatka. Pliocene — Recent.

*Taras (Taras) harfordi* (F. M. A n d e r s o n)

Pl. LXXII, figs 5; 6; 7; 8,a; 9

O c c u r r e n c e. Valevopotka-veyem river (western coast of Kamchatka). Not rare in the Vayempolka series of Kamchatka.

Lower Miocene — Lower Pliocene.

*Taras (Taras) gravis* K o g a n (in litt.)

Pl. LXXIII, figs 1,a; 2; 3; 4,a

General outline of the valve irregular, extended in length, rounded-quadrangular. Anterior margin of valve evenly and moderately convex outside, the ventral feebly convex; posterior margin longer than the anterior and slightly obtused. All the margins join evenly each other. Postero-dorsal margin long, feebly convex; antero-dorsal nearly twice shorter, scarcely convex and less inclined downward. Beaks solid, strongly prominent over the hinge margin sharply displaced and inclined forward.

Convexity of valves considerable. The point of the greatest convexity is situated in the upper half of the valve behind the beaks, wherefrom it falls steeply to the margins.

Sculpture of the outer surface consists of numerous, irregular concentric lines and furrows of growth.

Escutcheon narrow, lanceolate. Lunule not modelled. Hinge of the right valve consists of two short cardinals, the posterior is bifid.

D i m e n s i o n s see page 364.

The described species bears a great resemblance to *T. harfordi* (A n d.) and namely to the Kamchatkan representatives of this species from the Vay-empolka series. The latter are distinguished by lesser absolute dimensions, lesser elongation (coefficient of altitude 88.2), by a convex ventral margin and a lesser inequilaterality. The Californian *T. harfordi* are still more equilateral and therefore are less similar to the Sakhalinian species.

The described species has a strong resemblance to the Japanese *T. kobayashii* (Y o k.), the latter is mainly distinguished by the presence of a fine radial striation on the shell and by more prominent beaks.

Close in general outline *T. ferruginata* (M a k.) found also in the Tighil series on the western coast of Kamchatka, is characterized by lesser absolute dimensions, lesser convexity of valves and less prominent beaks.

O c c u r r e n c e. Between the mouths of Noyami and L. Sertunai rivers (western Sakhalin).

Frequent in the Rykhlaya series of Sakhalin.

Upper Miocene.

*Taras (Felaniella) usta* (G o u l d)

Pl. LXXIII, figs 5, 6, 7.

D i m e n s i o n s see page 366.

O c c u r r e n c e. Tighil river (western coast of Kamchatka); vicinity of Korf Gulf (eastern coast of Kamchatka); north of Okha river (eastern Sakhalin).

Rare in the upper horizon of the Kavran and clayey-sandstone series of Kamchatka. Frequent in the Ekhabi series of Sakhalin.

Middle (?) Miocene — Recent.

*Taras (Felaniella) parilis* (C o n r a d)

Pl. LXXIII, figs 8; 9,a; 10

O c c u r r e n c e. Sea coast, south of Etalonnaya river (western coast of Kamchatka); east of Cape Maria on the Schmidt Peninsula (northern Sakhalin).

Not uncommon in the upper horizon of the Kavran series of Kamchatka, and considerably rarer in the lower series of Machigar section on the Schmidt Peninsula.

Middle Miocene — upper Pliocene.

*Taras (Felaniella) gouldi* (Y o k o y a m a) var. *sertunayensis* K o g a n  
(in litt.)

Pl. LXXII, figs 10; 11, a; 12; 13

General outline of the valve regular, somewhat obliquely-oval, feebly inequilateral or irregularly oval, strongly leveled and more inequilateral. Anterior margin regularly convex outside, joins evenly below the likewise convex ventral margin, the point of the maximum convexity of which is situated in the posterior third of the valve. Posterior margin somewhat

shorter than the anterior, produced backward joins evenly the ventral margin. Long postero-dorsal margin straight or scarcely convex, joins the posterior margin at an obtuse angle. Antero-dorsal margin considerably shorter, very feebly convex, joins somewhat angularly the anterior margin.

Beaks small, blunted, very slightly projecting beyond the hinge margin, displaced and somewhat inclined forward.

Convexity of valves moderate. The point of the greatest convexity situated behind the median line of the valve, consequently the whole posterior half of the valve is steeper than the anterior.

Outer surface covered with numerous concentric lines and furrows of growth.

The other details of the shell not preserved.

*D i m e n s i o n s* see page 370.

The described shells are most close to *T. gouldi*, established by M. Y o k o y a m a and differ from the latter in somewhat greater coefficient of altitude (*T. gouldi* — 86.6), greater displacement of beaks forward and in the anterior margin being less convex and prominent. But the straight antero-dorsal margin and general obliqueness in outline of valve are quite identical in both forms.

A very great resemblance to the described variety display the shells from the vicinity of the Korf Gulf described by I. K h o m e n k o under the name of «*T. parilis*»; they are quite indistinguishable because of the presence of the straight postero-dorsal margin and the same outline of the valve, only some deformation of the Kamchatkan specimens and the impossibility to make a direct comparison with the original induce to reserve judgement on a conclusive identification.

Typical *T. parilis* (C o n r a d) is distinguished by more prominent beaks, by a lesser displacement of valves and by a convexity of the postero-dorsal margin.

*O c c u r r e n c e*. Between the mouths of Noyami and L. Sertunai rivers; between the mouths of Pad II and Pad III rivers (western Sakhalin). Vicinity of Korf Gulf (?) (eastern coast of Kamchatka).

Not uncommon in the Rykhlaya series of Sakhalin. In the upper horizons of the clayey-sandstone series of Kamchatka.

Upper Miocene.

*Corbicula gabbiana* H e n d e r s o n

Pl. LXXIII, figs 11, 12, 13, 14, 15

*D i m e n s i o n s* see page 373.

*O c c u r r e n c e*. Pukhl river (western coast of Kamchatka); vicinity of Korf Gulf (?) (eastern coast of Kamchatka).

A very frequent species in the coal-bearing series and in the lower horizons of the Vayempolka series of Kamchatka.

Middle Miocene — Lower Pliocene.

*Corbicula fonsata* (S l o d k e w i t s c h)

Pl. LXXIV, figs 2; 3,a; 4; 5,a; 6; 7; 8; 9.

Shell large, feebly convex, inequilateral, rounded-quadrate in outline. Beaks displaced and inclined forward, always worn. Outer surface of the valve smooth.

*D i m e n s i o n s* see pages 376—377.

This species was previously described by the author under the genus *Astarte*, as the hinge apparatus had not been preserved, in full on the specimens at hand at that time, and character of the outline of the valve had allowed to compare it with some Tertiary *Astarte*, for instance with *Astarte perrini* D a l l and others.

In the course of studies of the fauna of the Tighil series L. V. K r i s h t o f o v i c h has had the opportunity to detect among new collections of this species some forms, in which the hinge could be exposed; the latter has already revealed the appurtenance of the described shells to the genus *Corbicula*.

*C. fonsata* differs from *C. gabbiana*, which is also occurring on Kamchatka, in the outline relatively more produced in length, in the less prominent beaks, and in the greater equilaterality.

*O c c u r r e n c e*. Perevalni spring; Podkaghernaya Bay (western coast of Kamchatka).

Not uncommon in the Tighil series.

Eocene — Oligocene (?)

*Corbicula* (?) *kovatschensis* S l o d k e w i t s c h

Pl. LXXIV, fig. 1

Shell of medium size, nearly equilateral, extended in height, rounded-triangular in outline. Beaks high, straight. Outer surface covered with concentric lines and furrows of growth.

*O c c u r r e n c e*. Kovachina Bay (western coast of Kamchatka).

This species is rarely found in the Tighil series of Kamchatka. It occurs in association with some casts, apparently, likewise referable to the genus *Corbicula*, but due to their poor state of preservation they do not insure accurate determination.

Eocene — Oligocene.

*Laevicardium* (?) *tigilense* S l o d k e w i t s c h

Pl. LXXIV, figs 10, a

Shell small, feebly convex, nearly equilateral, of an extended in height outline. Outer surface covered with 26 radial angular ribs separated by narrower intercostal spaces.

There are only a few species in the Tertiary deposits of the Pacific basin to which the described shell may be compared. The Oligocene *Cardium eugense* C l. is distinguished by the symmetrical arrangement of the antero- and postero-dorsal margins, by the relatively lesser height and by the flattened, broadly rounded ribs.

The other species *C. lincolnensis* W e a v. from the lower Oligocene having an obliquely oval outline and ribs covered with spines is considerably less similar.

*C. nanum* K h o m., described from the Ekhabi series of Sakhalin, differs in an extended in length outline, in less prominent beaks and in fewer number of ribs (21 according to K h o m e n k o).

**O c c u r r e n c e.** Sea coast, west of Polovinnaya river (western coast of Kamchatka).

Very rare in the lower horizons of the Kavran series.

Lower (?) and middle Pliocene.

*Laevicardium (Trachycardium?) kinsimarae* (M a k i y a m a)

Pl. LXXV, figs 1, 2, 3

Shell of medium and large size extended in height irregular-trigonal-oval in outline, moderately convex. Beaks prominent, pointed, straight. Sculpture of the outer surface consists of 27—30 elevated and broad rounded-quadrate ribs, separated by narrower, but deep intercostal spaces and intersected by coarse traces of growth.

**D i m e n s i o n s** see page 382.

**O c c u r r e n s e.** East of Cape Maria on the Schmidt Peninsula (northern Sakhalin).

Very frequent in the lower series of the Machigar section of Sakhalin.

*Laevicardium (Cerastoderma) corbis* (M a r t y n)

Pl. LXXVI, figs 1, 2, 3; pl. LXXVII, figs 1, 2; pl. LXXVIII, fig. 1

**D i m e n s i o n s** see page 385.

**O c c u r r e n c e.** Sivuchii Island. Belogolovaya, Baranchik rivers (western coast of Kamchatka). South of Noyami river (western Sakhalin).

Rare in the upper (?) horizons of the Vayempolka series and in the Korovay-bearing series of Kamchatka, frequent in the Pleistocene (?) of the Sivuchii Island. In the Rykhlaya series of the western Sakhalin (?).

Miocene — Recent.

*Laevicardium (Cerastoderma) shijiense* (Y o k o y a m a)

Pl. LXXVIII, figs 2,a; 3; 4,a; 5; 6,a; 7

Shell small to medium size, rounded in outline; inequilateral. Anterior margin produced forward, posterior somewhat truncated. Beaks feebly prominent; outer surface ornamented with radial ribs about 36 in number.

**O c c u r r e n c e.** Povorotnaya, Amanina, Zhilovaya Vayempolka, Pukhl, Piatibratskaya, Kovachina, Kiumshechek, Konstantinovskaya (western coast of Kamchatka). Piltun, Askasai, Daghi (eastern Sakhalin). Khoi river, between the mouths of Noyami and Gr. Sertunai rivers, Arkovo and Noyami rivers (western Sakhalin).

Very frequent in the upper horizons of the Vayempolka series, upper horizons of the Kiumshechek series and in the lower horizons of the Kavran-series of Kamchatka. In the Ekhabi, Nutovo, Rykhlaya and Khoy series of Sakhalin as well as in the lower series of the Machigar section of the Schmidt Peninsula.

Miocene — Pleistocene.

*Laevicardium (Cerastoderma) etheringtoni* K o g a n (in litt.)

Pl. LXXIV, figs 11,a; 12

General outline of the valve regularly rounded, scarcely oblique posteriorly. Anterior, ventral and posterior margins regularly and moderately convex outside, join evenly each other forming an arc of one radius of cur-

vature. Postero-dorsal margin nearly straight, passes roundly into the posterior margin; antero-dorsal margin being concave, joins anterior margin steeply but evenly rounding. Beaks prominent, broad, pointed, incurved, and situated on the median line of the valve or slightly behind the latter. Convexity of valves moderate; the point of the greatest convexity situated a little behind the median line of the valve, in its upper half, wherefrom the convexity slopes steeply to the posterior margin, and more evenly to the rest margins of the valve.

Sculpture of the outer surface consists of prominent radial ribs, more than 40 in number. In the umbonal region the ribs are very low, almost linear, twice narrower than the interspaces, but with the growth of the valve the ribs rapidly increase in height and in breadth, so that they become equal to interspaces; the latter are very deep and flatly concave. As the ribs so the interspaces are intersected with numerous, fine concentric lines of growth and two to three likewise concentric furrows.

D i m e n s i o n s see page 389.

The Sakhalinian species in spite of its imperfect state of preservation displays a so great resemblance to the *L. cf. corbis* E t h. from the Miocene of Astoria, that they may be fully identified specifically.

Typical *L. corbis* (M a r t.) is readily distinguishable by its considerably greater absolute dimensions, relatively greater size, fewer number of ribs, which are broader and by the narrowness of the intercostal spaces.

O c c u r r e n c e. North of mouth of Viventek river (western coast of Kamchatka); between the mouths of Noyami and Sertunai rivers (western Sakhalin).

Very rare in the upper horizons of the Vayempolka series of Kamchatka and in the Rykhlaya series of Sakhalin.

Middle and upper Miocene.

*Laevicardium (Cerastoderma) californiense* (D e s h a y e s)

Pl. LXXIX, figs 1; 2; 3,a; 4; 5

D i m e n s i o n s see page 391.

O c c u r r e n c e. Western coast of Korf Gulf (eastern coast of Kamchatka); Askasai; Gr. Goromay rivers, north of Okha (eastern Sakhalin); between the mouths of Noyami and L. Sertunai rivers (western Sakhalin).

Very frequent in the Nutovo, Supra-Nutovo and Ekhabi series of Sakhalin. Rarer on the eastern coast of Kamchatka.

This species has not as yet been found on the western coast of Kamchatka. Miocene — Recent.

*Laevicardium (Cerastoderma) fastosum* (Y o k o y a m a)

Pl. LXXX, figs 1, 2

O c c u r r e n c e. North of mouth of Vengheri river on the Schmidt Peninsula (northern Sakhalin). Very rare in the Vengheri series on the Schmidt Peninsula.

Middle Miocene; upper Pliocene.



*Laevicardium (Cerastoderma) rhomboideum* (K h o m e n k o)

Pl. LXXV, figs 7, a

Shell medium in size, elongate, rounded-rhomboidal in outline. Beaks prominent, inclined and displaced forward. Sculpture of the outer surface consists of about 50 low radial ribs, separated by narrow intercostal spaces and crossed by numerous concentric lines of growth.

O c c u r r e n c e. South of Pil river on the Schmidt Peninsula (northern Sakhalin).

Rare in the Kaskadnaya series on northern Sakhalin.

Lower Miocene.

*Laevicardium (Cerastoderma) meekianum* (G a b b)

Pl. LXXXI, figs 1; 2; 3; 4, a

D i m e n s i o n s see page 396.

O c c u r r e n c e. Mouth of Piatibratskaya river (western coast of Kamchatka). Between the mouths of Noyami and L. Sertunai rivers (western Sakhalin) (?).

Apparently, not an uncommon species in the upper horizons of the Vayempolka series of Kamchatka.

Miocene — Pliocene.

*Laevicardium (Cerastoderma) tokunagai* (Y o k o y a m a)

Pl. LXXV, figs 4, 5, 6

D i m e n s i o n s see page 397.

O c c u r r e n c e. Gr. Goromai river (eastern Sakhalin). Rare in the Supra-Nutovo series of Sakhalin.

Upper Pliocene.

*Acanthocardia reedi* (L o e l & C o r e y)

Pl. LXXX, figs 3; 4; 5; 6, a; 7; 8; 9; 10; 11; 12

D i m e n s i o n s see pages 400—401.

O c c u r r e n c e. Snatol river, Valevopotka-veyem river (western coast of Kamchatka).

The casts of *C. reedi* are very abundant, overfilling the matrix in the Tighil series and in the lower horizons of the Vayempolka series at the above mentioned localities.

Eocene — middle Miocene (?).

*Papyridea harrimani* D a l l

Pl. LXXXI, figs 5, 6, 7

O c c u r r e n c e. Cape Utkholok, Valevopotka-veyem river (western coast of Kamchatka).

A rather frequently occurring species in the lower horizons of the Vayempolka series.

Middle Miocene.

*Papyridea utcholokensis* S l o d k e w i t s c h

Pl. LXXXII, figs 4, 5, 6

The broad evenly rounded anterior margin evenly joins the long, more convex ventral margin; the short obtused posterior margin slightly inclined with its upper end forward, joins angularly the ventral margin. Antero-dorsal margin shorter than the postero-dorsal, both being concave under the beaks and nearly straight for the remainder of their extent.

Beaks broad, convex, prominent, somewhat displaced forward. Convexity of the valves inconsiderable; the point of maximum convexity is situated in the upper and anterior half of the valve, which is more inflated in comparison with the inferior half of the valve.

Outer surface is covered with numerous radial ribs numbering from 40 to 45, separated by narrower, flattened intercostal spaces. On the anterior half of the cast the ribs are lower and rounded, on the posterior somewhat higher, acute angled and broad. On the antero- and postero-dorsal areas the ribs are feebler, scarcely perceptible. Muscle scars feebly modelled. The other characters not preserved.

D i m e n s i o n s see page 404.

The described species most closely resembles *P. harrimani* encountered in the same deposits, but the former may be distinguished by a broader anterior and by a narrow posterior ends of the valve, as well as by a more prominent beaks. In addition the ribs of the posterior half of valve on the described species are not so sharply curved as those on *P. harrimani*.

*P. nipponica* (Y o k.) has a more elongated regular oval outline and less prominent beaks.

O c c u r r e n c e. Kovachina Bay, Cape Utkholok (western coast of Kamchatka).

Rare in the lower horizons of the Vayempolka series.

Middle Miocene.

*Papyridea angulata* K o g a n (in litt.)

Pl. LXXXI, figs. 8,a

General outline of the valve inequilateral. The anterior, slightly convex margin inclined with its upper end forward, joins evenly the ventral margin below; the latter long, nearly straight or very feebly convex. Posterior margin nearly parallel to the anterior, but still more inclined forward, joins round the ventral margin and angularly the postero-dorsal margin. Postero- and antero-dorsal margins nearly equal in length, but the former is almost straight, and the latter slightly concave; both descend evenly from the beaks down and join angularly the ventral margins. Postero-ventral end of the valve obliquely produced downward and backward, lending to the whole outline of valve a considerable inequilaterality.

Beaks solid, nearly central, moderately projecting beyond the hinge margin, curved inside and slightly backward, touching each other when the valves are closed. Convexity of valves moderate; the point of greatest convexity situated in the median line of valve in its upper half wherefrom the convexity slopes steeply to the posterior margin and more evenly to the other margins of valve. A broad, rounded, but not elevated keel extends

from the beaks to the posterior end of the ventral margin, setting off the narrow postero-dorsal area.

Sculpture of the outer surface consists of 36—37 narrow and not raised, rounded radial ribs. They are separated by broader flattened intercostal spaces. As the ribs so the interspaces are crossed by not numerous concentric lines and furrows of growth.

The other height of the shells structure not preserved.

**D i m e n s i o n s.** Length 42.5 mm, height 34.6 mm, convexity 11.1 mm; coefficient of height 81.4, coefficient of convexity 26.1.

The described species shows a very great similarity to *P. harrimani* Dall, the latter is distinguished by rounded outline of the valve, by absence of the obliqueness in anterior and posterior margins, by less prominent beaks and by curved posterior ribs.

**O c c u r r e n c e.** Between the mouths of Noyami and L. Sertunai rivers (western Sakhalin).

Very rare in the Rykhlaya series of Sakhalin.

Upper Miocene.

*Papyridae sertunayana* K o g a n (in litt.)

Pl. LXXXII, figs 3,a

The short anterior margin and the long ventral forms a concave arc of one radius of curvature, with the center situated above and behind the posterior margin of valve; posterior margin long, feebly convex and inclined with its upper end forward joins angularly the ventral margin. In consequence of a great length of the posterior margin and its oblique position the whole valve has a sharply inequilateral and oblique outline. Antero- and postero-dorsal margins feebly convex, join in angle the lateral margins; postero-dorsal margin nearly twice as long as the antero-dorsal.

Beaks prominent, pointed, strongly incurved, inclined forward and shaply displaced in the same direction. Convexity of valves moderate; the point of greatest convexity situated in the median line of the valve, in its upper half, wherefrom the convexity falls steeply to the upper margin and more evenly to the other margins.

Sculpture of the outer surface consists of 40—42 low radial ribs rounded in cross section, broader and more closely set on the posterior half of the valve and narrower, elevated, gradually diverging as they approach the anterior margin. Intercostal spaces concave and on the posterior end of the shell nearly twice as narrow as the ribs, on the anterior end considerably broader than the latter. Numerous concentric lines and furrows of growth intersect as the ribs so the intercostal spaces.

The other details of the structure of shell not preserved.

**D i m e n s i o n s.** Length 46.4 mm, height 40.8 mm, coefficient of height 87.9.

The described species is very similar to «*P. harrimani*», figured by I. K h o m e n k o from the coast of Korf Gulf; the latter has almost the same coefficient of height, distinguishes only by the narrower ribs. Lack of a large series of specimens on which it would have been possible to examine the variabilities of the species in this respect, and impossibility of a direct comparison with the original from the Korf Gulf prevented to settle

with certainty the question on the appurtenance of these specimens to the described species.

The typical *P. harrimani* Dall differs in less prominent beaks, considerably lesser inequilaterality, in an absence of the obliqueness of valve and in a different character of radial ribbing.

**O c c u r r e n c e.** Vicinity of Korf Gulf (?) (eastern coast of Kamchatka); between the mouths of Noyami and L. Sertunai rivers (western Sakhalin).

Very rare in the Rykhlaya series of Sakhalin (?) and in the upper horizons of the clayey-sandstone series on Kamchatka.

Upper Miocene.

*Papyridea matschigarica* (K h o m e n k o)

Pl. LXXXIII, fig. 4; pl. LXXXIV, figs 1, 2; pl. LXXXV, fig. 2

Shell of medium and large size, oval, or obliquely oval in outline, feebly inequilateral, or nearly equilateral.

Sculpture of outer surface consists of 50—60 radial ribs, semi-circular in section, separated by narrow, intercostal spaces.

**D i m e n s i o n s** see pages 408—409.

**O c c u r r e n c e.** Between Cape Maria and Machigar Lake on the Schmidt Peninsula (northern Sakhalin).

Very frequent in the lower series of Machigar section of northern Sakhalin.

Middle Miocene.

*Papyridea kipenensis* S l o d k e w i t s c h

Pl. LXXXII, figs 1, 2; pl. LXXXIII, figs 1, 2, 3

General outline of the valve obliquely oval, extended in length, broadened posteriorly. Very short, convex anterior margin joins evenly the long, less convex, directed obliquely backward, ventral margin. Posterior margin inclined with its upper end forward is longer than the anterior; postero-dorsal margin long, convex at the beaks and slightly convex the remainder of its extent; antero-dorsal margin relatively short, passes evenly into the anterior margin.

Beaks small, flattened, slightly projecting beyond the hinge margin, curved backward, inclined and displaced forward, adjacent when the valves are closed.

Convexity of valves moderate; an even keel extends from the beaks to the inferior end of the posterior margin. The point of greatest convexity is situated somewhat in advance of the keel, nearly in the middle of the height of valve. From this point the convexity gradually slopes forward the anterior margin for the greater part of the length of valve, and steeply falls toward the posterior margin on the short postero-dorsal area.

Sculpture of outer surface consists of strong radial ribs about 35 in number gradually increasing in breadth and height from the anterior margin to the keel and reaching the largest dimensions on the area in front of the carina; the ribs become again thin and low and sometimes possibly they are modified into faint radial striation. Section of the ribs semi-circular. Intercostal spaces have the same section, being equal to the ribs in width. As the ribs

so the interspaces are smooth, crossed by concentric lines, wrinkles and furrows of growth.

Hinge margin not preserved.

Muscle scars feebly impressed under the surface of valve and have an elongate-oval shape. Pallial line not preserved. Casts available in the collection are covered with acute and elevated radial ribs corresponding to those of the outer surface, likewise strengthening towards the keel and from above downward and separated by broad concave interspaces. The ribs disappear altogether not reaching about  $1/4$  height to the beaks, all the umbonal region being smooth. Inner margins of the valve serrate.

The described shells, apparently, refer to the genus *Papyridea* so far as one may judge from their outline and sculpture, but the imperfect state of preservation prevents to solve this question with full certainty.

D i m e n s i o n s see page 410.

The shells described and figured by I. K h o m e n k o from the vicinity of the Korf Gulf under two different names «*C. laqueatum*» and «*C. quadrigenarium fernandoense*» wholly agree in their size, outline and character of ribbing with each other, as well as with the shells described from the Tertiary deposits of the western coast of Kamchatka. Only a somewhat different state of preservation and appurtenance of the casts to the opposite valves distinguishes the figures of I. K h o m e n k o from one another.

*C. laqueatum* C o n r a d represents a form characteristic for the Miocene of Maryland and not encountered in California. On the other hand *C. laqueatum* belongs to the subgenus *Cerastoderma* whereas the Kamchatkan forms rather refer due to their outline and character of ribbing to *Papyridea* and in that alone differ strongly from *C. laqueatum*.

By reason of the analogous considerations it is not possible to make comparison with *C. quadrigenarium* var. *fernandoense* A r n., the typical representative of the genus *Trachycardium*.

«*Papyridea harrimanii*» (= *P. sertunayana* K o g.) from the middle Miocene of the Korf Gulf bears some resemblance in its outline to the described species, but it distinguishes by its considerably lesser size, character of ribbing and by its outline.

O c c u r r e n c e. Tighil, Tretichnaya rivers, north of mouth of Tnonkhlno river (western coast of Kamchatka); vicinity of Korf Gulf (eastern coast of Kamchatka).

Not uncommon species in the upper horizons of the Kavran series and in the upper horizons of the clayey-sandstone series.

Upper Miocene; upper Pliocene.

*Papyridea securiformis* S l o d k e w i t s c h

Pl. LXXXV, fig. 1

The short, feebly convex anterior margin joins angularly the very long ventral; the latter broadly convex outward, and posteriorly joins in angle the short and feebly convex posterior margin. The long antero-dorsal margin, concave inward, nearly parallel to the ventral; the very short antero-dorsal margin passes evenly into the anterior margin.

Beaks broad, but, apparently, not very prominent; displaced directly to the anterior end of valve.

Convexity of valve does not exceed the normal; the most convex is the median part of valve, and then the anterior; postero-dorsal end somewhat flattened.

Sculpture of outer surface, unfortunately, not preserved, but the cast is characteristically sculptured for the subgenus *Papyridea*. The elevated tapering ribs numbering about 40 are situated along the whole ventral and part of the posterior margins. Intercostal spaces broad and flat. The feeblest and shortest are the anterior ribs; on cast, in the direction backward they increase rapidly in the length and width, reaching the maximum at the posterior part of the ventral and the lower part of the posterior margins. The narrow postero-dorsal area is smooth on the cast. Such a sculpture is very characteristic for the all known shells of *Papyridea* and allows to distinguish them readily from each other.

Hinge apparatus not preserved.

The large posterior muscle scar situated at the postero-dorsal margin of valve and feebly modelled on the surface of cast. Anterior muscle scar still fainter and set near the anterior margin of valve.

**D i m e n s i o n s.** Single cast of left valve, length 104.6 mm, height 81.5 mm, convexity about 30.0 mm. Coefficient of height 77.9; coefficient of convexity about 28.7.

The described species differs from *Papyridea kipenensis* S l o d. in its extended in length rectangular outline and in more displaced forward beaks. The other, very sparse species of *Papyridea*, all have a considerably lesser size and a regular elongate-oval outline, or occasionally a rounded-quadrate outline, therefore they are readily distinguishable from the Kamchatkan species.

**O c c u r r e n c e.** Kovachina Bay (western coast of Kamchatka).

A very rare species in the lower horizons of the Kavran series.

Lower (?) and middle Pliocene.

*Papyridea sakhalinensis* K o g a n (in litt.)

Pl. LXXXVI, figs 1, a

General outline of the valve somewhat extended in length without sharply pronounced angles at places of junction of different margins. The long, convex anterior margin passes evenly into the very long, feebly convex ventral margin, directed nearly horizontally. Posterior margin shorter than the anterior, produced posteriorly and convex. Postero-dorsal margin slightly concave and considerably longer than the faintly convex antero-dorsal margin.

Beaks broad, insignificantly projecting beyond the hinge margin, incurved and strongly displaced forward. Convexity of valves moderate. The point of the greatest convexity situated somewhat behind the median line of valve, in its upper half; wherefrom the convexity falls steeply to the postero-dorsal margin and more evenly to the other margins of valve.

Sculpture of outer surface poorly preserved; on may count on the casts about 30 narrow radial ribs or a little more, separated by broad intercostal spaces.

The other details of the shells structure not preserved.

**D i m e n s i o n s** see page 413.

The described species is a close approach to *P. securiformis* S l o d. from the upper Kavran series of Kamchatka, the latter differs considerably in greater absolute dimensions, greater length of the antero-dorsal margin with the consequent greater inequilaterality, and also in that the posterior ribs on *P. securiformis* are much curved and directed nearly parallel to the ventral margin.

O c c u r r e n c e. Between the mouths of Noyami and L. Sertunai rivers (western Sakhalin).

Rare in the Rykhlaya series of Sakhalin.

Upper Miocene.

*Papyridea noyamiana* K o g a n (in litt.)

Pl. LXXXVI, figs 2; 3, a

General outline of the valve extended in length, oval. Anterior margin short and feebly convex, joins evenly the long and convex ventral margin; the latter ascends steeply and rapidly forward and evenly, gradually backward, where it joins in angle the posterior margin. Thus, the convexity of the ventral margin is strongly asymmetrical, what still more increases the inequilaterality of valve. Posterior end short, obliquely truncate or obtuse, joins angularly the ventral and postero-dorsal margins. The latter long, straight, and slightly concave. Antero-dorsal margin considerably shorter, nearly straight, passes evenly into the anterior margin.

Beaks broad, prominent, strongly incurved and sharply displaced forward. Convexity of valves considerable. The point of maximum convexity situated near the median line of valve in its upper half; wherefrom the convexity falls steeply to the anterior and upper margins and more evenly to the ventral and posterior.

Sculpture of the outer surface consists of 32—33 thin radial ribs, separated by broader intercostal spaces. The species is exclusively represented by the casts and there is no possibility to draw definite conclusion on the character of sculpture and on the structure of the other details of the valve.

D i m e n s i o n s. Length 60.8 mm; height 45.3 mm; convexity about 17 mm; coefficient of height 74.5, coefficient of convexity about 28.0.

The described species is close to *P. nipponica*, figured by I. K h o m e n k o from the Schmidt Peninsula and only the poor state of preservation and the deformation of the cast do not warrant identification.

The typical *P. nipponica* Y o k. differs strongly in the regular, rounded outline of valve, in the absence of the truncation of lateral margins, in the small, feebly prominent beaks and in the close-set ribs about 50 in number.

O c c u r r e n c e. Between the mouths of Noyami and L. Sertunai rivers (western Sakhalin).

Very rare in the Rykhlaya series of western Sakhalin and (?) in the Mayamraf series of the Schmidt Peninsula.

Upper Miocene.

*Venus (Chione) securis* (S h u m a r d)

Pl. LXXXVII, figs 3; 4, a, b

O c c u r r e n c e. Sea coast between Amanina and Etalònnaya rivers (western coast of Kamchatka).

A very rare species in the upper horizons of the Kavran series of Kamchatka.

Miocene — Pliocene.

*Liocyra fluctuosa* (G o u l d)

Pl. LXXXVI, figs 4; 5; 6,a; 7; 8

O c c u r r e n c e. Gr. Chazhma river (eastern coast of Kamchatka); Gr. Goromay river (eastern Sakhalin). Not uncommon on Kamchatka and in the Supra-Nutovo series of eastern Sakhalin. In the Neogene of southern Sakhalin.

Upper Pliocene — Recent.

*Liocyra fluctuosa* (G o u l d) var. *subfluctuosa* K h o m e n k o

Pl. LXXXVII, figs 1,a; 2

Anterior and ventral margins of valve regularly convex, form a line of one radius of curvature. Posterior margin being shorter than the anterior and also convex joins evenly the ventral margin. Postero-dorsal margin long, nearly straight, obliquely inclined downward, joins posterior margin in a rounded but distinct angle. Antero-dorsal margin is shorter and apparently slightly convex.

Beaks small, nearly inconspicuous, slightly displaced forward and a little inclined in the same direction. Convexity of valves moderate.

Sculpture of the outer surface consists of numerous, irregular concentric ribs, flat convex in cross-section, separated by narrow interspaces.

Hinge apparatus of right valve consists of three cardinals, typical for the genus. Teeth of the left valve not preserved.

D i m e n s i o n s see page 424.

The described shell is exceedingly close to *L. fluctuosa* and differs from it mainly in a higher outline, and in less prominent and less displaced forward beaks. I. K h o m e n k o has placed in synonymy of this species *L. fluctuosa* and *L. astartoides*; in the description he points out that *L. beckii* D a l l is separated without reasonable ground and is referable to the species *L. fluctuosa*. Describing *L. fluctuosa* the writer has analyzed in detail the differences of these species.

Fragments, figured by I. K h o m e n k o somewhat later under the name of *L. subfluctuosa* are so poorly preserved, that are not determinable specifically, by this reason they are excluded by the present writer from the synonymy.

O c c u r r e n c e. Watershed between Piltuk and Paromai rivers (eastern Sakhalin).

Not uncommon in the Nutovo and Supra-Nutovo series of eastern Sakhalin.

Upper Pliocene.

*Tivela inezana* (C o n r a d)

Pl. LXXXVIII, figs 1,a,b; 2

O c c u r r e n c e. Snatol river (western coast of Kamchatka). Rare in the upper horizons of the Tighil series of Kamchatka. Oligocene (?) — lower Miocene.



*Tivela snatolana* S l o d k e w i t s c h

Pl. LXXXVII, figs 5,a,b; 6

The relatively short antero-dorsal margin being concave beneath the beaks and straight for the remainder of its extent, joins evenly the very short, convex anterior margin, which passes further into the long, also convex ventral margin. Posterior margin short somewhat truncated; postero-dorsal margin long, evenly convex, joins in angle the posterior margin. Apical angle about  $150^\circ$ . Beaks small, acute, nearly not projecting beyond the hinge margin, somewhat displaced and inclined forward.

Convexity of valves insignificant, the shell being flat; postero- and antero-dorsal sides steep but not high. Posterior keel absent.

Sculpture of the outer surface consists only of concentric lines and furrows of growth drawing together towards the ventral margin.

Hinge apparatus of left valve consists of a small elongated anterior lateral tooth (*L II*); of an anterior and median cardinals united into a stout triangular tooth, consisting of two halves, the anterior half being short and low, the posterior more elevated and broad, these ones are separated by a thin, shallow vertical groove; and of a solid, fused with the nymph, triangular posterior cardinal tooth (*4b*) separated from *2b* by a deep triangular pit.

Lunule broad and long, oval in outline, feebly impressed, bordered by a distinct, fine groove. Escutcheon being shorter, but deep, lanceolate in outline.

*D i m e n s i o n s*. Two left valves: length 30.3 and 42.0 mm, height 27.1 and 37.0 mm, convexity 9.4 and about 13.0 mm. Coefficient of height 89.4 and 88.1; coefficient of convexity 31.0 and about 30.9.

The described species is readily distinguishable from *T. inezana* by its triangular-oval outline, displaced beaks and by the structure of the two anterior cardinals.

*T. gabbi* Cl. has considerably greater absolute dimensions, a more extended in length triangular outline, as well as a different structure of the hinge apparatus.

*O c c u r r e n c e*. Snatol river (western coast of Kamchatka).

Rare in the upper horizons of the Tighil series.

Oligocene (?).

*Pitaria kavranensis* S l o d k e w i t s c h

Pl. XC, figs 3,a; 4,a

Shell large, solid, inequivalve, broad elongate-oval in outline with a narrowed, rounded anterior and a broad, flattened posterior margins. Outer surface covered with concentric lines and furrows of growth. Hinge of the right valve consists of three cardinals, that of the left of three cardinals and one anterior lateral tooth.

*D i m e n s i o n s* see page 431.

*O c c u r r e n c e*. Sea coast between sea cliffs and Etalonnaya rivers; sea coast between Amanina and Etalonnaya rivers (western coast of Kamchatka).

Not uncommon in the upper horizons of the Kavran series.

Upper Pliocene.

*Pitaria gretschischkini* S l o d k e w i t s c h

Pl. LXXXVIII, figs 6,a,b; pl. LXXXIX, figs 1; 2,a; 3,a,b; 4; pl. XC, figs 1, 2

Shell of medium size, massive, inequilateral, more frequent of a rounded or somewhat oval outline, with a narrowed and rounded anterior and long, less convex posterior margins. Outer surface covered with concentric lines and furrows of growth. Hinge of the right valve consists of three cardinals and one rudiment anterior lateral tooth, hinge of the left valve bear three cardinals and one anterior lateral tooth.

D i m e n s i o n s see pages 436—437.

O c c u r r e n c e. Sea coast between sea cliffs and mouth of Etalonnaya river; sea coast between Amanina and Etalonnaya rivers (western coast of Kamchatka).

Very frequent in the upper horizons of the Kavran series.

Upper Pliocene.

*Dosinia margaritana* W i e d e y

Pl. LXXXVIII, figs 3, 4, 5

O c c u r r e n c e. Vicinity of Korf Gulf on the eastern coast of Kamchatka.

Not rare in the upper horizons of clayey-sandstone series and at the base of the coal-bearing series in the vicinity of Korf Gulf.

Miocene.

*Clementia (Egesta) sakhalinensis* sp. nova

Pl. XCI, figs 1,a

Shell thin, inequilateral, very variable in outline, rounded quadrate. Anterior, ventral and posterior margins form together a regular convex line, or there is a slight angulation at the places of their junctions. The anterior margin is shorter than the posterior one, the latter, occasionally, being somewhat flattened. The long antero-dorsal margin straight or slightly convex, joins in angle the anterior margin. Beaks small, slightly prominent, inclined and displaced forward. Convexity of valves being great.

Sculpture of outer surface consist of numerous, fine, little elevated concentric thread-like rather irregular wrinkles and of broad gentle also concentric folds. Near the lower margin the latter are more closely spaced than in the umbonal region, but their height decreases gradually downward and in the fully adult specimens they may disappear. Hinge of right valve consisting of an anterior thin cardinal, a heavier middle cardinal and deeply bifid posterior cardinal; hinge of left valve consisting of a long, slender posterior cardinal.

Pallial sinus deep and very narrow. This species resembles *C. pertenuis* (G a b b) in sculpturing of the outer surface, but the general outline of the latter is elongate-oval while in *C. sakhalinensis* it is angulate. The broad, produced, anterior end, the narrower posterior one, and the beaks more inclined forward do not allow to identify *C. pertenuis* with Sakhalinian species.

D i m e n s i o n s see page 419.

O c c u r r e n c e. East of Cape Maria, Schmidt Peninsula (northern Sakhalin). Rather common in the coal-bearing beds of the Machigar section.

*Tellina bodegensis* H i n d s n. var.

Pl. XCI, figs 2, 3

The distinctive characters of this species are: a regular elongate-oval outline and nearly parallel antero-dorsal and ventral margins. Anterior margin convex, the angles of its junction with antero-dorsal and ventral margins are rounded, the upper angle more approaches to rectangular in form, than the obtuse inferior. Posterior margin very short, straight, almost vertical. Postero-dorsal margin descends abruptly from the beaks obliquely downward, being slightly concave under the beaks and feebly convex on the remainder extent.

Beaks small, not prominent, displaced backward and slightly inclined in the same direction, being modelled posteriorly by a faint excavation of the postero-dorsal margin. Antero-dorsal margin quite straight for its whole extent from the tip of the beaks to the place of its junction with anterior margin.

Convexity of valve inconsiderable. A distinct, but not strong keel runs from the beaks to the posterior end of the ventral margin, separating a narrow postero-dorsal region.

Outer surface smooth, except for fine concentric lines of growth. The rest characters of shell not preserved.

**D i m e n s i o n s.** The single cast of right valve measures about 19.0 mm in length, 8.6 mm in height. Coefficient of height about 45.3.

Owing to poorly preserved and incomplete material at hand the author does not believe it possible to separate with certainty the Kamchatkan shell as a distinct variety; its difference from holotype consists in somewhat lesser absolute dimensions and in greater obtusity of antero-ventral angle, although the latter character may depend only upon the state of preservation of the specimen. When better and more specimens are obtained they may help to settle this point.

**O c c u r r e n c e.** Kovachina Bay (western coast of Kamchatka).

Rare in the Tighil series of Kamchatka.

Eocene — Oligocene (?).

*Tellina puchlensis* S l o d k e w i t s c h

Pl. XCI, fig. 8

Short, rounded anterior margin, somewhat produced upward, joins gently the long, more evenly convex ventral margin, which passes also smoothly into a very short, nearly vertical and feebly convex posterior margin. Long postero-dorsal margin faintly bent outward joins a little angularly the posterior margin. Antero-dorsal margin also long, straight, evenly concave at the beaks, merges gently into anterior margin.

Beaks small, not prominent, displaced backward. Convexity of valve moderate; the point of greatest convexity is situated in the upper part of valve; posterior end of right valve inconsiderably flexed laterally, forms in front of this place a slight depression.

Outer surface smooth, except for concentric irregular lines and wrinkles of growth.

**D i m e n s i o n s.** Length 31.2 mm, height 21.8 mm, convexity about 4.0 mm. Coefficient of height 69.6, coefficient of convexity about 12.8.

The described species exhibits an exceptional affinity to upper Miocene *T. hannibaldi* Cl., principal differences between them being in narrowed attenuated downward anterior end of the latter, in lesser height of valve (coefficient of height *T. hannibaldi* 65.7 after Clark), and in somewhat dissimilar outline. According to Clark this species «resembles *T. merriami* Weaver from the Miocene of Washington. The writer has only one specimen of a right valve, and more material may possibly show that it grades into that species».

Unfortunately that species remained unknown to the author.

As regards the generic determination of the shell the author has retained the name *Tellina*, although the hinge apparatus could not be exposed. Assignment of this shell to the genus *Macoma* is less probable.

Pliocene as well as recent *T. pallidula* Lischke is very variable in outline, but differs from the Kamchatkan shell in convex antero-dorsal margin and in straight posterior half of the ventral margin.

Occurrence. Pukhl river (western coast of Kamchatka).

Rare in the lower horizons of the Vayempolka series.

Middle Miocene.

#### *Tellina aragonia* Dall

Pl. XCI, fig. 4

Occurrence. Reelne-vayem river (western coast of Kamchatka).

Rare in the Kavran series.

Miocene — Pliocene.

#### *Tellina eugenia* Dall

Pl. XCI, figs 5, 6

Occurrence. Vicinity of the Korf Gulf.

Not uncommon in the coal-bearing series of the above mentioned region.

Middle Miocene.

#### *Tellina djakovi* Slodkewitsch

Pl. XCI, fig. 7

Highly characteristic feature of this species is the parallelism of the considerable portion of the antero-dorsal and ventral margins. The anterior end of the latter upcurves evenly and joins the short anterior end. Analogically to *Tellina bodegensis* n. var. from Kamchatka described above, the angle of junction of the anterior and antero-dorsal margins represents nearly a right angle while that of the ventral and anterior margins is obtuse, consequently the anterior end of the valve is produced and somewhat pointed. Posterior margin short and feebly convex, passes evenly into short, slightly inclined downward postero-dorsal margin, which is concave for the greater part of its length. Posterior end of the valve is shorter, narrower and more obtuse than the anterior.

Beaks small, not prominent, displaced backward and modelled only by concavity of the postero-dorsal margin. Antero-dorsal margin being straight, extends without any interruption just to the tip of the beaks.

Convexity of valve insignificant. Keel slightly perceptible on the cast runs from the beaks to the posterior end of the ventral margin and separates the narrow, flattened postero-dorsal area. Upper half of the valve more convex than the inferior.

Sculpture of the outer surface not preserved. On may only distinguish about seven broad, flat, not elevated, concentric widely spaced ridges, but whether these ridges represent ribs it is still an unsettled point.

Other characters of structure not preserved.

*D i m e n s i o n s*. Single cast of left valve: length 58.8 mm; height 31.6 mm; convexity of valve 4.5 mm (?). Coefficient of height 54.3, coefficient of convexity 7.7 (?).

The described species bears resemblance to the Pleistocene and recent *T. buttoni* D a l l, differing, besides its large absolute dimensions, in greater acuteness of the anterior end, and greater length of the posterior end of the valve, which is of a different outline too.

*T. bodegensis* H i n d s is of a considerably smaller size with a broader anterior end than the posterior one, therefore it is also readily distinguishable from the described species.

Finally the Miocene *T. aragonia* D a l l being more equilateral in its outline and having broadly rounded margins cannot be considered as an approach to *T. djakovi*.

*O c c u r r e n c e*. Left bank of Materaya Vayempolka river (western coast of Kamchatka).

Rare in the lower horizons of the Kavran series.

Upper part of lower Pliocene (?) — middle Pliocene.

### *Tellina lutea* G r a y

Pl. XCIII, figs 5, 6

*D i m e n s i o n s* see page 451.

*O c c u r r e n c e*. Kuluntun river (?) (western coast of Kamchatka) Val, Khoyamusibi, Ossoi, Nutova, Daghi, Okha, Piltun (?) rivers (eastern Sakhalin).

Very frequent in the Nutovo and Supra-Nutovo series of Sakhalin; not so frequent in the upper horizons of the Kavran series of Kamchatka.

Miocene — Recent.

### *Tellina pulchra* S l o d k e w i t s c h

Pl. XCII, figs 1, 2, 3, 4

Shell medium to large size, inequilateral, feebly convex, elongate-oval in outline. Outer sculpture consists of concentric lines and furrows of growth and several flat, concentric ribs.

*D i m e n s i o n s* see page 453.

In the Cainozoic deposits of the Pacific basin there are many Tellinas bearing some resemblance to the described species. *T. aragonia* D a l l most closely approaching the Kamchatkan shell differs only in its greater height (coefficient of height 50 to 53 according to measurements taken by the writer from the figures illustrated on the plates), and chiefly in the more

displaced backward beaks as well as in the rounded posterior margin. Approximate to the former *T. oregonensis* C o n r., though having a straight posterior margin displays a greater coefficient of height (53.7), and displaced backward beaks. *T. eugenia* D a l l being very elongate and not high (coefficient of height 43.8) has an exceptionally narrowed posterior margin and more displaced backward beaks. Finally, the Japanese *T. alternata* S a y var. *chibana* Y o k. is higher, short (coefficient of height 53.6) and small, with a narrowed posterior margin. The figured but not described by I. K h o m e n k o *T. lutea* from the Korf Gulf is altogether identical with the described species. It distinguishes considerably from the true *T. lutea* G r a y in a strong elongation of shell, in its prominent, broad anterior end, lesser convexity of the lower margin, a narrowed posterior end, and a different position of the beaks.

Young shells of *T. pulchra* recall very much those of the recent *T. santarosae* D a l l; the latter differs in the absence of concentric ribs and in the still more elongate outline.

O c c u r r e n c e. Sea coast, north of Kavran river; Tretichnaya river (western coast of Kamchatka); vicinity of Korf Gulf (eastern coast of Kamchatka).

Apparently not an uncommon form in the upper part of the clayey-sandstone series, as well as in the upper horizons of the Kavran series of Kamchatka.

Middle and upper Miocene. Upper Pliocene.

*Tellina* cf. *chibana* Y o k o y a m a

Pl. XCI, figs 9, 10

O c c u r r e n c e. Tighil river (western coast of Kamchatka).

Rare in the Kavran series.

Lower Miocene — Recent.

*Apolymetis excavata* (S o w e r b y)

Pl. XCII, figs 5, 6

O c c u r r e n c e. Materaya Vayempolka river (western coast of Kamchatka).

Not uncommon in the deposits of the Kavran series of Kamchatka.

Pliocene — Recent.

*Macoma* cf. *lorenzoensis* (A r n o l d)

Pl. XCIII, figs 1, 2, 3, 4

The described species bear a closest resemblance in outline to *M. lorenzoensis*, but they cannot be fully identified with this species, stratigraphically very narrow distributed, because of their imperfect state of preservation. *M. lorenzoensis* subsp. *arnoldi* T e g l., occurring in association with the typical species, differs from the latter, according to T e g l a n d, in its greater rotundity and lesser length, in more rounded ventral margin and more centrally situated beaks.

Several fragments from our collection are fairly similar in outline to this variety, but until better preserved material is found for study, it is difficult to separate this variety or judge of its systematic value.

O c c u r r e n c e. Snatol river (western coast of Kamchatka).  
Not rare in the Kovachina series of Kamchatka.  
Upper Oligocene.

*Macoma nasuta* (C o n r a d)

Pl. XCV, figs 7; 8,a; 9

D i m e n s i o n s see pages 462—463.

O c c u r r e n c e. Materaya Vayempolka, Kakertok, Khairyusova, Kuntun, Utkholok rivers (western coast of Kamchatka). Vicinity of Korf Gulf (?) (eastern coast of Kamchatka). Gr. Goromai river (eastern Sakhalin). Cape Mayam-Raf (northern Sakhalin).

A very frequent species in the upper horizons of the Vayempolka and Kavan series of Kamchatka, in the Nutovo, Supra-Nutovo, Mayamraf and Vengheri series of Sakhalin.

Oligocene (?). Lower Miocene — Recent.

*Macoma inquinata* (D e s h a y e s)

Pl. XCVI, figs 1, 2, 3

This species very widely distributed, both vertically and horizontally, unfortunately has not been carefully studied on a larger comparative recent and fossil material, though since long the necessity of this has become urgent. On account of the above mentioned it is highly probable to meet here different hardly coinciding interpretations as regards the size of the species and its distinct characters.

One of the prior in time illustration and description of this species by R e e v e shows a small shell rounded-oval in outline (coefficient of height 80.9) with a distinct fold and a depression on the left valve. Later the same figure has been reproduced by G r a n t & G a l e without being accompanied by any discussion regarding the variability of the species. A very near in outline figure was given by R. A r n o l d (1903), but only of the right valve and of considerably longer absolute dimensions (coefficient of height 77.4). The left valve fully agreeing with the R e e v e 's illustration has been given by the writer somewhat later (1909, 1910) and it is also characterized by large absolute dimensions (coefficient of height 80.4). The description of species by R. A r n o l d (1903) is very brief and he states contrary to R e e v e that the ligament in *M. inquinata* is not prominent. Later E. P a c k a r d (1918) reiterated the R. A r n o l d 's description and reproduced numerous illustrations of species, which deserve to be considered more closely on account of their being contradictory. The figures 1 a, b on the plate 2 are very close to *M. inquinata* in character of their outlines (coefficient of height 82.3) as well as in dimensions, giving way to the fossil representatives of this species. As to the shells figured on the plate 23 (figs 2,a,b, 3,a,b) and determined by the author provisionally with a query, they reach large absolute dimensions and have a more trigonal extended in length outline (coefficient of height 74.7) which features distinguish them strongly from *M. inquinata* D e s h. and they should be assigned to the other variety under the name of *M. inquinata* D e s h. var. *trigonalis*, proposed by the present writer.

I. O l d r o y d (1924) reiterated the R e e v e 's description but reproduced the P a c k a r d 's illustrations, corresponding to *M. inquinata* var. *trigonalis*, therefore all that has been pointed out in due place above should be referred to the latter. M. Y o k o y a m a illustrates a small shell (coefficient of height 80.6) fairly well agreeing with the typical form. Finally, I. K h o m e n k o (1933), describing *M. inquinata* from the Tertiary deposits of the Korf Gulf, gives diagnosis of this species and figures a broken large specimen, the outline and the state of preservation of which do not warrant specific determination. Somewhat later (1934) the same writer refigures *M. inquinata*, however, one of the illustrations (pl. XIII, fig. 17) cannot be identified with this species due to the character of its outline, rather it may be referred to *M. calcarea* but it is not sufficiently well preserved for accurate determination.

Thus, the writer believes that among the fossil and recent *Macoma inquinata* D e s h. it is possible to distinguish several different groups. The typical recent *M. inquinata* D e s h. [R e e v e, G r a n t & G a l e, P a c k a r d (pl. 24)] having small absolute dimensions and a more or less strongly modelled fold on the left valve, is also encountered in fossil state in Japan. Specimens very close in their outline to the above mentioned fossils (R. A r n o l d, 1903, 1909, 1910; I. K h o m e n k o, 1933) are characterized by large absolute dimensions and by lack of fold on the left valve, sometimes even by absence of the posterior depression. But until more sufficient comparative material is assembled the writer reserves judgement on their separation under distinct variety. Examined Kamchatkan shells belong indubitably to the group *M. inquinata* D e s h. s. s. The recent large *M. inquinata* var. *trigonalis* is readily distinguishable by its large dimensions, by sharply trigonal outline and by small coefficient of height. It is yet to be mentioned *M. inquinata* var. *affinis* N o m l a n d (1917, pg. 233, pl. 9, figs 1, a, b), differing from the type in «its larger size, the flange immediately anterior to the beaks, depressed area extending from umbones to posterior ventral margin, rather long ligamental groove and increased convexity near middle of base». Because of not quite satisfactory illustration the writer withholds his opinion concerning the validity of this variety. Finally, the rounded, short and convex *Macoma inquinata* var. *arnheimi* D a l l represents extreme variant of this species and therefore differs rather strongly from the type.

O c c u r r e n c e. Khairyusova, Materaya Vayempolka, Kol, Podkaghernaya rivers (western coast of Kamchatka). North of mouth of Vengheri river, south of Pil river, east of Cape Maria on the Schmidt Peninsula (northern Sakhalin).

A very frequently occurring species in the Tighil, Vayempolka and Kavran series of Kamchatka and in the Kaskadnaya and Vengheri series of Sakhalin.

Lower Miocene — Recent.

*Macoma calcarea* (G m e l i n)

Pl. XCIV, figs 1, 2, 3

O c c u r r e n c e. Coast of the Gulf of Laurence (Chukotsky Peninsula); Gastropoda ravine (eastern coast of Kamchatka); Cape Mayam-Raf (northern Sakhalin).



Not uncommon species of Chukotka and in the Mayamraf series of Sakhalin. Reported by I. K h o m e n k o from the vicinity of Korf Gulf. Oligocene — Recent.

*Macoma truncatoides* K h o m e n k o

Pl. XCIII, figs 10,a; 11; 12

Shell small, inequilateral, inequivalve, of oval outline, truncated posteriorly. Antero-dorsal margin nearly parallel to ventral. Beaks small, strongly displaced backward. Outer surface covered with concentric, incremental sculpture.

Some resemblance to the described species exhibit the recent and Pliocene representatives of *M. calcarea* G m e l i n; the latter differ in longer posterior margin and less pointed ends of ventral margin. Miocene shells of *M. calcarea* are longer and shorter in height, have a rather quadrate-oval outline.

According to I. K h o m e n k o «the described species is very close to *T. truncata* J o n a s (Philippines, Japan) and differs from it principally in less size in lack of posterior fold». Practically *T. truncata* J o n a s has quite different, very extended in length outline (coefficient of altitude 32.7) and a longer posterior margin so as to state anything decidedly about relationship of these two forms is premature.

O c c u r r e n c e. Materaya Vayempolka, Konstantinovskaya rivers (western coast of Kamchatka); Ekhabi river (eastern Sakhalin).

Rare in the upper horizon of the Vayempolka and Kavran series of Kamchatka; in the Ekhabi series of eastern Sakhalin.

Upper Miocene; middle and upper Pliocene.

*Macoma astori* D a l l

Pl. XCIII, figs 7, 8, 9

O c c u r r e n c e. Dvuklyuchni ravine (eastern coast of Kamchatka). Very rare on Kamchatka.

Miocene.

*Macoma optiva* (Y o k o y a m a)

Pl. XCIV, figs 4; 5; 6; 7; 8,a; 9

D i m e n s i o n s see page 473.

O c c u r r e n c e. Between the mouths of Polovinka and Arkovo rivers; between Arkovo and Noyami rivers; between Noyami and L. Sertunai rivers; north of the village Machi (western Sakhalin); Kovachina river (western coast of Kamchatka); vicinity of Korf Gulf (?) (eastern coast of Kamchatka).

Frequent in the Vayempolka series and in the upper horizons of clayey-sandstone series of Korf Gulf of Kamchatka. In the Rhykhlaya series of Sakhalin.

Upper Miocene — lower Pliocene.

*Macoma echabiensis* sp. nova

Pl. XCV, figs 1, 2, 3, 4, 5, 6

General outline of the valve from rounded-trigonal to somewhat rectangular. Anterior margin short, attenuated forward, joins gently below long convex ventral margin, the point of maximum convexity of which is situated in its anterior quarter. Posterior margin short, pointed, attenuated, somewhat angularly joins ventral margin. Long, postero-dorsal margin straight or feebly convex, abruptly inclined from beaks downward; antero-dorsal margin somewhat shorter and convex. Variability in the general outline of valve being rather great and consists in that the anterior margin may be considerably longer and consequently the antero-dorsal margin becomes shorter, the shell assuming somewhat quadrate outline. The posterior end may also be widened and then general outline becomes irregular and indefinite.

Beaks small, pointed, inclined backwards and displaced in the same direction. Convexity of valves moderate. A distinct wrinkled fold, typical for the genus, runs from the beaks to the posterior ventral margin.

Sculpture of outer surface consists of finest concentric lines of growth, more distinct along postero-dorsal margin on the small fold.

Hinge apparatus in either valve consists of two cardinals. Sinus large, trigonal, blending anteriorly with anterior muscle scar.

D i m e n s i o n s see page 475.

The described shells are distinguished from *T. corbuloides* H a n l., to which I. K h o m e n k o referred them, by quite different shape of valves and principally by appurtenance to the genus *Macoma*.

Some resemblance is observed to *M. optiva* (Y o k.); the latter species is readily distinguishable by considerably greater absolute dimensions, by less convex ventral margin, by greater width of posterior end and by concavity of postero-dorsal margin.

O c c u r r e n c e. Ekhabi river, Naito (eastern Sakhalin); Psyakauf river on the Schmidt Peninsula (northern Sakhalin).

Rare in the Ekhabi and Matituk series of Sakhalin.

Middle Pliocene.

*Sanguinolaria (Nuttallia) nuttallii* C o n r a d;

Pl. XCVIII, figs 1, 2, 3

O c c u r r e n c e. Sea coast between sea cliffs and mouth of Etalonnaya river (western coast of Kamchatka).

Very rare in the upper horizon of the Kavran series.

Upper Miocene — Recent.

*Sanguinolaria (Nuttallia) ochotica* S l o d k e w i t s c h

Pl. XCVI, figs 4,a; pl. XCVII, figs 1,a,b

Shell large, thin, nearly equilateral, regular elongate-oval in outline. Beaks small, displaced forward. External surface covered with broad, low, irregular concentric ribs and with fine lines of growth.

O c c u r r e n c e. Sea coast between sea cliffs and mouth of Etalon-naya river (western coast of Kamchatka).

Very rare in the upper horizons of the Kavran series.

Upper Pliocene.

*Solen tigilensis* S l o d k e w i t s c h

Pl. XCIX, figs 3, 4

Shell small. Dorsal and ventral margins parallel with each other. Posterior and anterior margins rounded. A groove widened downward and inclined backward runs from beaks to the anterior end of ventral margin.

This species belongs to the genus *Solenia*, which occurs only in the Paleogene; the known very few representatives of this species are not always sufficiently well figured, and their occurrence on the western coast of Kamchatka is of a great interest.

*S. columbianus* is considerably larger than the Kamchatkan species and a more slanting anterior groove. *S. clarki* W e a v. & P a l m. from the Eocene is also somewhat larger and its anterior groove is running almost vertically. Lastly, *S. stantoni* W e a v. from the lower Eocene, which according to Clark's opinion is very similar to the Kamchatkan species, differs in the uplifted anterior end.

O c c u r r e n c e. Kovachina Bay (western coast of Kamchatka).

Not uncommon in Tighil series.

Eocene — Oligocene (?).

*Solen snatolensis* S l o d k e w i t s c h

Pl. XCVIII, figs 4, 5

Shell large, elongate-rectangular in outline with nearly parallel dorsal and ventral margins. Anterior margin regularly rounded, posterior roundly narrowed. A deep groove, nearly vertical extends from beaks to anterior end of ventral margin.

A great complexity of specific determination of *Solen*, arising from a very small number of specific characters and lack of informations concerning possible individual variations, has led to that some writers seeing no possibility to find exact criteria for the specific demarcation of this group, unite under one specific name indubitably different species, whereas the others, on the contrary, are inclined to see nearly in every specimen an independent species and label it under a new specific name. Therefore it is particularly difficult not to exceed limits when dealing with this group, the more so that unfortunately the shells of *Solen* are more rarely and more poorly figured in the American literature, than any other species. There even is no possibility to make comparison with some illustrations although the latter are accompanied with descriptions. Besides, exactly this group includes the relative majority of new species from Kamchatka.

The described shells are readily distinguished from *S. tigilensis* S l o d., which is characterized by lesser absolute dimensions, by the outline of lateral margins and by the oblique position of the anterior groove.

*S. clarki* W e a v. & P a l m. from the Eocene is distinguished by an asymmetric outline of the anterior margin, point of greatest convexity of which is situated considerably lower the middle of the margin.

*S. sicarius* G l d of a very frequent occurrence from the Miocene to the recent time has an arched outline, a quite different character of lateral margins and an anterior groove.

Other more approximate forms are unknown to the author.

O c c u r r e n c e. Snatol river (sea coast); near the mouth of Tochilosing (western coast of Kamchatka).

Not uncommon in the upper horizons of the Tighil series.

Oligocene (?).

*Solen kamchaticus* sp. nova

Pl. XCIX, figs 1; 2, a

Shell straight, medium in size, four and a half times as long as it is high. A sinus deep, broad, obliquely directed forward is extending on the anterior end.

The described species has been preliminary determined by I. K h o m e n k o as *Solen krusensterni* S c h r. However, this species differs rather strongly from the described form in its greater size, in the straight anterior margin, and in the absence of the anterior groove.

Among the forms possessing an anterior groove the closest resemblance displays *S. tigilensis* S l o d. from western Kamchatka, it differs mainly in the anterior groove being narrower.

O c c u r r e n c e. Ust-Kamchatsk region (eastern coast of Kamchatka).

Very rare.

Miocene.

*Macra (Spisula) polynyma* S t i m p s o n

Pl. C, figs 4, 5; pl. Cl, fig. 1

D i m e n s i o n s see page 487.

O c c u r r e n c e. Snatol, Galyn, Utkholok, Kulka, Amanina, Tre-tichnaya, Kol rivers; sea coast between Tnonkhino and Galyn rivers and at mouth of Kavran river, west of mouth Polovinka river; south-west of mouth of Moroshechnaya river (western coast of Kamchatka). Vicinity of Korf Gulf (eastern coast of Kamchatka). Gr. Goromai river, south of Nyiski Gulf and Kidylianii river (eastern Sakhalin).

A very frequent species in the upper horizons of the Vayempolka and the Kavran series of Kamchatka as well as in the Nutovo, Supra-Nutovo and Ekhabi series of Sakhalin. In the lower horizons of the clayey-sandstone series in the vicinity of Korf Gulf.

Miocene — Recent.

*Macra (Spisula) polynyma* S t i m p s o n var. *voyi* (G a b b)

Pl. Cl, fig. 2

O c c u r r e n c e. Tighil region (western coast of Kamchatka).

Rare in the lower horizons of the Kavran series of Kamchatka.

Pliocene — Recent.

*Maetra (Spisula) hemphilli* D a l l

Pl. XCIX, figs 5, 6

O c c u r r e n c e. Sea coast, north-east of Utkholok river (western coast of Kamchatka).

Rare in the Vayempolka series of Kamchatka.

Middle Miocene — Recent.

*Maetra (Pseudocardium) cf. densata* (C o n r a d)

Pl. C, figs 1, 2, 3

O c c u r r e n c e. Vicinity of Korf Gulf (eastern coast of Kamchatka).

Rather rare in the coal-bearing series of Kamchatka.

Miocene — Pliocene.

*Mya (Mya) arenaria* L i n n é

Pl. CI, fig. 3; pl. CII, fig. 4

Shell of medium and large size, varying in outline from regular elongate-oval to elongate, with broad rounded anterior and narrowed pointed posterior ends. Height and convexity of valves moderate.

O c c u r r e n c e. Povorotnaya, Mainach, Kuluntun, Piatibratskaya rivers, Konstantinovskaya river, Podkaghernaya Bay (western coast of Kamchatka); Tyushevski hot spring and vicinity of Korf Gulf (eastern coast of Kamchatka).

Common in the Vayempolka and Kavran series on the western coast of Kamchatka; in the upper horizons of the clayey-sandstone series of Korf Gulf.

The valid representatives of this species are not known on northern Sakhalin, but there is a certainty in their occurrence in this region.

Miocene — Recent.

*Mya (Mya) arenaria* L i n n é var. *japonica* Y a y

Pl. CII, figs 2, 3; pl. CIII, figs 1, 2

Shell of medium and large size, elongate oval in outline, with broad rounded anterior and narrowed, likewise rounded posterior ends. The shell somewhat shorter, but higher and more convex than that of *M. arenaria* s. s.

O c c u r r e n c e. Kuluntun river, right branch of Povorotnaya river; Povorotnaya river; Tretichnaya river; watershed between Kinkil and Palana rivers; Tighil, Amanina, Materaya Vayempolka, Piatibratskaya, Kinkil, Reelne veyem, Valevopotka-veyem, Konstantinovskaya rivers, vicinity of Podkaghernaya Bay (western coast of Kamchatka). East of Cape Maria on the Schmidt Peninsula. Watershed between Piltun and Paromai rivers; Gr. Paromay river (eastern Sakhalin).

Very common species in the Vayempolka and Kavran series and a rare occurrence in the Tighil series of Kamchatka. The Vengheri series on the Schmidt Peninsula. Supra-Nutovo series of eastern Sakhalin. Not uncommon in the Pliocene of Japan.

Miocene — Recent.

*Mya (Mya) arenaria* Linné var. *profundior*

Grant &amp; Gale

Pl. CV, figs 1, 2

Shell of medium and large size, trigonal-oval, elongate in outline. Anterior end broad and rounded; posterior end narrowed and also rounded. Height of shell considerable.

D i m e n s i o n s see page 500.

O c c u r r e n c e. North of Cape Maria and south of Pil river on the Schmidt Peninsula.

Not rare on the Schmidt Peninsula in Vengheri series and in the lower series of Machigar section. «Beds III, IV, V» of southern Sakhalin (according to M. Y o k o y a m a). The Miocene of Alaska and the Aleutian Islands.

Miocene.

*Mya (Mya) arenaria* Linné var. *paternalis* M a t s u m o t o

Pl. CIV, figs 1,a; 2

Shell of medium and large size, short, very high, rounded trigonal in outline, with a narrower posterior end. Altitude and convexity of valves considerable.

O c c u r r e n c e. East of Cape Maria on the Schmidt Peninsula.

Very rare in the lower series of the Machigar section on the Schmidt Peninsula.

Middle and upper Miocene.

*Mya (Mya) arenaria* Linné var. *truncata* Linné

Pl. CIII, figs 3; 4; 5,a

Shell medium sized, elongate-oval in outline with a rounded anterior end, and sharply truncated almost straight posterior end.

O c c u r r e n c e. Amanina, Kokhtana, Materaya Vayempolka, Piati-bratskaya, Konstantinovskaya rivers (western coast of Kamchatka). East of Cape Maria at the mouth of Piltuk river on the Schmidt Peninsula.

In the upper horizons of the Vayempolka and Kavran series of Kamchatka. In the lower series of the Machigar section and in the Pomyr series of the Schmidt Peninsula.

Miocene — Recent.

*Panope (Panomya) intermedia* (K h o m e n k o)

Pl. CVI, fig. 2

Shell very large, convex, inequilateral, elongate-quadrangular in outline, gaping at each end. Beaks broad, moderately prominent, displaced forward. Two rounded keels are running from the beaks to the both ends of the ventral margin between which the surface of shell is impressed.

O c c u r r e n c e. South of Pil river; north of mouth of Vengheri river (?) on the Schmidt Peninsula (northern Sakhalin).

Very rare in the Vengheri series of the Schmidt Peninsula.

Middle and upper Miocene.

*Pholadidea penita* (C o n r a d)

Pl. CV, figs 3,a; 4; 5; 6; pl. CVI, figs 1,a

O c c u r r e n c e. Sea coast between sea cliffs and mouth of Etalon-naya river; sea coast east of Kovachina river; Tighil river (western coast of Kamchatka). Vicinity of Korf Gulf (eastern coast of Kamchatka). Schmidt Peninsula south of Piltuk river (?) (northern Sakhalin).

Not of a rare occurrence in the lower horizons of the Kavran series of Kamchatka. In the upper horizons of the clayey-sandstone series in the vicinity of the Korf Gulf.

Considerably rarer in the Pomyr series of Sakhalin.

Eocene (?) — Recent.

## УКАЗАТЕЛЬ ГЕОГРАФИЧЕСКИХ НАЗВАНИЙ<sup>1</sup>

### А

Акита преф., 211.  
 Александровка М. р., 343.  
 Александровск г., 324, 344, 345.  
 Алеутские о-ва, 162, 237, 281, 282, 452, 501.  
 Аляска, 115, 171, 223, 238, 271, 273, 281, 282, 283, 290, 292, 339, 346, 348, 357, 388, 402, 403, 452, 464, 489, 490, 497, 501, 503, 508.  
 Аманина р., 122, 142, 152, 208, 209, 210, 214, 255, 294, 297, 301, 304, 311, 314, 315, 362, 387, 417, 434, 489, 499, 503.  
 Америка Сев., 30, 42, 51, 52, 53, 54, 55, 63, 204, 217, 223, 262, 292, 347, 369, 386, 389, 464, 469.  
 Анадырский край, 30, 137, 156, 157.  
 Англия, 63, 278, 340, 415, 423, 497, 503.  
 Антильские о-ва, 476.  
 Арково р., 301, 351, 352, 357, 387, 474.  
 Аскасай р., 108, 387, 391.  
 Астория, 101, 343.  
 Атлантический океан, 57, 63, 122, 146, 148, 154, 163, 240, 400, 421, 423, 440, 493, 503.  
 Африка, 415, 428, 436.

### Б

Бабушкин мыс, 235, 237.  
 Баден, 274.  
 Баранчик р., 386.  
 Белоголовая р., 253, 254, 272, 273, 304, 386.  
 Белый мыс, 156.  
 Берингов прол., 467.  
 Берингово море, 217, 281, 282, 361, 452, 469, 489, 490.  
 Бланко мыс, 432.  
 Болотный ключ, 71.  
 Бразилия, 425.

### В

Вал р., 108, 127, 128, 452.  
 Валевопотка-ваям р., 317, 327, 363, 400, 403, 499.  
 Ванкувар о-в, 225, 253, 376, 442.  
 Варнак р., 357.  
 Ваямполка Жиловая р., 63, 74, 114, 142, 167, 178, 217, 223, 243, 252, 253, 256, 350, 387.  
 Ваямполка Матерая р., 105, 106, 217, 253, 264, 325, 327, 446, 447, 457, 464, 467, 471, 499, 503.  
 Вашингтон шт., 101, 110, 137, 156, 208, 244, 389, 460.

<sup>1</sup> Здесь и везде далее цифры указывают на страницы первой части настоящей монографии (см. «Палеонтология СССР», т. X, ч. 3, вып. 18)

Венгери р., 58, 64, 65, 68, 71, 73, 109, 110, 114, 117, 119, 120, 134, 186, 187, 225, 229, 265, 266, 319, 320, 347, 392, 464, 467, 504, 505.  
 Веньявеем р., 217.  
 Вест-Индия, 352, 362, 381, 415, 425, 439, 456.  
 Вивентек р., 65, 68, 389.  
 Вильямса прол., 281.  
 Водопадная р., 210.  
 Воэн р., 192.

### Г

Гах р., 68, 97, 114, 222, 231.  
 Галапагосские о-ва, 457.  
 Гальнь р., 192, 269, 489.  
 Гаромай Бол. р., 108, 127, 128, 259, 274, 391, 398, 423, 464, 489, 499.  
 Гаромай Мал. р., 128.  
 Гастроподовый овраг, 469.  
 Георга о-в, 283.  
 Горнера мыс, 65, 122, 134, 226, 317, 327, 328.

### Д

Даги р., 264, 265, 387, 452.  
 Двуключный овраг, 472.

### Е

Европа, 415, 502.

### И

Ильинушка р., 97.  
 Имчин р., 108.  
 Индийский океан, 211.  
 Инерьявеем р., 192.

### К

Каврана р., 183, 192, 198, 200, 201, 264, 276, 277, 332, 357, 454, 464, 489.  
 Какерток р., 65, 71, 264, 320, 464.  
 Калифорнийский зал., 361, 442, 457.  
 Калифорния, 24, 41, 44, 69, 71, 73, 78, 101, 125, 152, 153, 156, 158, 161, 171, 178, 185, 196, 205, 208, 210, 211, 217, 222, 225, 226, 229, 256, 269, 271, 277, 292, 336, 339, 357, 361, 364, 374, 377, 386, 390, 391, 396, 400, 411, 418, 427, 439, 442, 445, 446, 457, 458, 464, 467, 469, 476, 478, 479, 483, 489, 490, 491, 493, 497, 499, 503, 508.  
 Каменушка р., 233, 328.  
 Камчатка вост., 33, 34, 51, 52, 53, 54, 55, 71, 72, 79, 81, 105, 120, 125, 145, 146, 192, 222, 223, 224, 231, 233, 250, 259, 264, 269, 329, 357, 362, 367, 370, 374, 391, 407, 411, 423, 438, 446, 454, 464, 469, 474, 484, 489, 493, 508.



Камчатка зап., 17—33, 41, 44, 51, 52, 53, 54, 55, 63, 65, 66, 68, 69, 71, 74, 77, 78, 88, 91, 93, 94, 96, 97, 100, 101, 102, 103, 104, 105, 106, 108, 109, 111, 112, 114, 115, 116, 117, 120, 122, 123, 127, 128, 131, 134, 142, 152, 153, 154, 158, 159, 160, 162, 167, 178, 179, 183, 185, 187, 189, 192, 195, 196, 198, 200, 201, 202, 204, 208, 210, 211, 214, 217, 222, 223, 224, 227, 228, 229, 230, 231, 233, 235, 237, 238, 240, 243, 244, 245, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 261, 264, 265, 269, 270, 271, 272, 273, 275, 276, 277, 283, 287, 290, 292, 294, 297, 299, 301, 304, 305, 307, 308, 311, 314, 315, 317, 318, 319, 320, 321, 325, 327, 330, 331, 332, 333, 334, 336, 338, 343, 346, 347, 349, 350, 351, 357, 360, 362, 363, 367, 368, 374, 375, 277, 380, 381, 386, 387, 389, 391, 396, 400, 403, 404, 409, 411, 412, 417, 418, 427, 428, 429, 434, 436, 442, 443, 445, 446, 447, 451, 452, 454, 455, 457, 460, 464, 467, 471, 474, 477, 478, 480, 482, 483, 489, 490, 491, 496, 497, 499, 503, 508.

Канада, 63.

Кевечевеем р., 442, 333, 334.

Кинкиль р., 71, 74, 97, 264, 317, 319, 320, 321, 323, 327, 360, 499.

Киумшечек р., 387.

Ковачина р., 91, 102, 103, 108, 109, 158, 159, 160, 210, 287, 290, 294, 351, 357, 387, 474, 508.

Ковачинская бухта, 88, 91, 97, 109, 264, 265, 327, 330, 331, 375, 377, 404, 411, 412, 442, 480, 482.

Кол р., 33, 387, 467, 489.

Конги р., 108, 122.

Константиновская р., 387, 471, 496, 499, 503.

Кбрея, 251.

Кори р., 210, 290.

Коронадо о-в, 357.

Корфа зал., 33, 105, 231, 233, 250, 253, 264, 269, 289, 292, 328, 329, 357, 362, 367, 368, 370, 374, 391, 403, 406, 407, 408, 410, 411, 438, 439, 446, 452, 454, 464, 465, 469, 473, 474, 488, 489, 493, 496, 497, 508.

Котлахынч р., 153, 187, 189, 217, 400.

Кохтана р., 101, 102, 127, 503.

Крутая р., 158, 159, 222, 229.

Куба о-в, 214.

Кулунгун р., 128, 131, 452, 464, 499.

Кульки р., 122, 128, 192, 201, 202, 250, 251, 261, 264, 265, 489.

Кыдыланьы р., 127, 489.

## Л

Лаврентия зал., 281, 469.

Ла Панза, 436.

Латаиха р., 334, 336.

Лисья р., 137, 156, 157.

## М

Майнач р., 91, 235, 237, 257, 275, 276, 496.

Марии мыс, 48, 64, 65, 78, 94, 96, 97, 100, 120, 226, 257, 317, 324, 327, 328, 357, 368, 381, 383, 387, 407, 409, 419, 420, 467, 499, 501, 502, 503.

Марковская впадина, 154.

Массачузеттс, 485.

Мачи дер., 474.

Мачи р., 344, 345.

Мачигарский зал., 48, 100, 257, 317, 327, 328.

Маям-Раф мыс, 58, 64, 65, 119, 120, 122, 329, 357, 464, 469.

Мексика, 71, 217, 357, 442, 457, 476, 491.

Монтерей зал., 467, 469.

Морошечная р., 88, 104, 105, 122, 160, 244, 245, 294, 350, 351, 375, 489.

Мэриленд, 418.

## Н

Надежды зал., 100, 346, 347.

Найто р., 475.

Напана р., 114, 243, 290.

Натори бухта, 502

Ном гор., 283.

Ноями р., 74, 76, 327, 343, 357, 360, 364, 365, 369, 370, 386, 387, 388, 389, 391, 396, 404, 405, 406, 407, 412, 413, 414, 474.

Нур прол., 114, 117.

Нутово вост., 128, 132, 452.

Нутово зап., 108.

Нухарек лев. р., 317.

Ныйский зал., 450.

## О

Орегон, 45, 68, 193, 196, 238, 269, 342, 343, 388, 432, 445, 464.

Оссой р., 127, 452.

Охотское море, 171, 192, 391, 452, 469, 489, 490.

Оха р., 49, 367, 391, 452.

## П

Павла о-в, 273, 282, 421.

Падь II р., 357, 370.

Падь III р., 357, 370.

Палана р., 499.

Паромай р., 126, 127, 128, 196, 198, 274, 299, 301, 424, 425, 499.

Патагония, 214, 362.

Пенжино, 156.

Перевальный кл., 374, 375.

Перу, 457.

Петропавловск н/К., 34, 281.

Пиль р., 58, 109, 110, 114, 117, 120, 134, 210, 229, 266, 319, 393, 394, 467, 501.

Пильво мыс, 58, 71, 76, 109, 113, 114, 210, 211, 212, 290.

Пильтук р., 167, 169, 171, 183, 185, 192, 217, 222, 259, 274, 282, 294, 307, 308, 424, 425, 503, 508.

Пильтун р., 128, 196, 198, 299, 301, 387, 452, 499.

Платонич р., 250.

Поворотная р., 387, 496, 499.

Подкагерная бухта, 33, 162, 167, 217, 229, 230, 255, 294, 332, 362, 375, 467, 496, 499.

Половинка р., 93, 94, 233, 257, 301, 351, 352, 380, 381, 474, 489.

Полупьяная бухта, 222, 223.

Попова о-в, 402, 403.

Псякауф р., 58, 65, 469, 475.

Пухль р., 111, 112, 290, 374, 387, 442, 443.

Пятибратская р., 106, 317, 323, 387, 396, 496, 499, 503.

## Р

Рассошина р., 134, 208.  
Реельне-ваям р., 233, 238, 445, 499.  
Ривьера, 358.

## С

Садо о-в, 179, 345, 346.  
Сан-Диего, 171, 391, 490, 508.  
Сан-Педро, 205, 491.  
Сан-Франциско, 217, 508.  
Сахалин вост., 49—51, 52, 53, 54, 55, 94, 99, 106, 107, 108, 110, 120, 126, 127, 128, 129, 132, 196, 198, 259, 264, 265, 271, 274, 290, 301, 344, 362, 367, 387, 391, 398, 423, 424, 425, 440, 450, 452, 464, 469, 471, 474, 475, 489, 499.  
Сахалин зап., 51, 52, 53, 54, 55, 64, 67, 68, 74, 76, 301, 324, 327, 343, 344, 345, 347, 351, 352, 357, 360, 364, 365, 369, 370, 386, 387, 388, 389, 391, 396, 404, 405, 406, 407, 412, 413, 414, 474.  
Сахалин сев. 30, 35, 64, 65, 66, 68, 71, 73, 76, 78, 96, 97, 100, 109, 110, 114, 117, 120, 122, 134, 171, 183, 185, 187, 192, 210, 211, 212, 217, 222, 225, 226, 229, 257, 264, 266, 282, 290, 294, 308, 319, 320, 324, 329, 346, 347, 357, 368, 383, 387, 392, 409, 420, 464, 467, 469, 475, 505, 508.  
Сахалин южн., 120, 122, 320, 423, 501.  
Северное море, 62, 278.  
Северный Ледовитый океан, 125, 281, 391, 458, 469.  
Сертунай Бол. р., 387.  
Сертунай Мал. р., 64, 67, 68, 74, 76, 327, 344, 357, 360, 364, 365, 369, 370, 388, 389, 391, 396, 404, 405, 406, 407, 412, 413, 414, 474.  
Сибирь вост., 63.  
Сивучий о-в, 386.  
Симанэ преф., 211.  
Скандинавия, 495.  
Снатол р., 77, 78, 91, 97, 115, 116, 117, 122, 217, 275, 276, 290, 319, 331, 332, 400, 409, 411, 427, 428, 460, 482, 483, 489.  
Сопочная р., 101, 208.  
Средиземное море, 57, 69, 146, 154, 266, 274, 283, 415, 503.

## Т

Тигиль р., 33, 158, 159, 209, 210, 227, 228, 229, 238, 240, 249, 250, 292, 348, 349, 367, 411, 427, 455, 499, 508.  
Тигильский р-н, 17—32, 68, 69, 93, 103, 114, 122, 123, 231, 237, 247, 248, 249, 254, 255, 290, 317, 323, 343, 346, 347, 368, 452, 490.  
Тихий океан, 30, 122, 211, 240, 357, 388, 421, 448, 458, 464, 493, 497, 499, 503.  
Тнонхлыно р., 192, 200, 264, 269, 411, 489.  
Томай р., 108, 128.  
Точило кл., 160, 162, 228, 483.  
Третичная р., 411, 452, 454, 489, 499.  
Туми дер., 100, 347.  
Тюшевка р., 120, 125, 192.  
Тюшевские ключи, 496.  
Тыкменч р., 158, 159.

## У

Угольная р., 145, 146.  
Уинли р., 107, 108, 137.

Унга о-в, 161, 162, 259.  
Урга р., 128.  
Усть-Камчатск, гор., 71, 72, 145, 146, 483, 484.  
Ухтолок р., 192, 204, 208, 245, 247, 256, 257, 283, 290, 464, 489, 491.  
Ухтолокский мыс, 96, 97, 330, 403, 404.

## Ф

Филиппинские о-ва, 418, 470.  
Фукусима преф., 211.

## Х

Хайрюзова р., 357, 464, 467.  
Хаколате, 386.  
Хейслевеер р., 183, 192, 233, 235, 290.  
Хой р., 344, 357, 387.  
Хонкайло о-в, 122, 189, 345, 346, 502.  
Хоямусиби р., 452.

## Ц

Циба преф., 211.

## Ч

Чажма Бол. р., 120, 125, 210, 222, 259, 423.  
Чажма-Сторож мыс, 79, 81, 222.  
Чукотский пол-в, 281, 469.

## Ш

Шарлотты о-в, 442.  
Широкая р., 357.  
Шмидта гора, 65, 100, 266, 327, 328, 346, 347.  
Шмидта пол-в, 29, 30, 31, 32, 35—49, 51, 52, 53, 54, 55, 58, 59, 64, 65, 67, 68, 71, 73, 76, 78, 94, 96, 97, 100, 105, 109, 110, 111, 113, 114, 117, 118, 119, 120, 122, 134, 167, 169, 177, 183, 185, 186, 187, 192, 210, 211, 222, 225, 226, 229, 257, 264, 265, 266, 282, 290, 307, 308, 317, 318, 319, 320, 324, 326, 327, 328, 340, 346, 347, 353, 357, 362, 368, 381, 383, 386, 387, 392, 393, 394, 407, 409, 414, 418, 419, 420, 467, 475, 499, 501, 502, 503, 504, 505, 508.

## Э

Эталонная р., 63, 100, 142, 152, 178, 179, 183, 185, 195, 217, 255, 264, 265, 270, 271, 294, 297, 299, 301, 304, 305, 307, 308, 311, 314, 315, 338, 346, 362, 368, 417, 429, 434, 436, 477, 478, 480, 508.  
Эхаби р., 132, 469, 471, 474, 475.

## Я

Япония, 24, 30, 32, 41, 43, 51, 52, 53, 54, 55, 100, 122, 134, 141, 142, 152, 161, 165, 167, 170, 171, 189, 192, 210, 211, 214, 217, 240, 260, 264, 269, 274, 281, 290, 293, 294, 316, 317, 318, 319, 320, 336, 345, 346, 357, 362, 365, 367, 386, 387, 391, 392, 396, 398, 452, 455, 458, 464, 467, 469, 470, 474, 476, 489, 490, 499, 501, 502.  
Японское море, 169, 259, 274, 463, 479, 489, 508.  
Яцука уезд, 9, 11.

## А

Alaska, 124, 501.  
Anden, 273, 274.  
Astoria, 73, 354, 367, 369.  
Azukijima, 501.

- B**  
 Bear River, 489.
- C**  
 California, 149, 426, 461, 492.  
 Center Creek, 282.  
 Chehalis River, 72.  
 Chichibu, 152, 356, 357, 474.  
 Clallam County, 130, 203, 204.  
 Coalinga, 137, 180, 363.  
 Cod Cape, 120.  
 Columbia River, 367.  
 Coos Bay, 193, 416, 443, 471.  
 Crescent Port, 136.
- D**  
 Daikatsu, 63.  
 Deadman Island, 195.  
 Destruction Island, 208.
- E**  
 Eagle Prairie, 394.  
 Eagle Rock, 459.  
 Echigo, 152.  
 Embets, 100, 122.  
 Etaibets, 122.  
 Eugene, 267, 445, 446.
- F**  
 Fishing Bank, 422.  
 Fossil Point, 416.  
 Fugler Point, 70.  
 Fujina, 386, 472.
- G**  
 Gary, 70.  
 Greenland, 422.
- H**  
 Halifax Bank, 422.  
 Hannukisawa, 316.  
 Humboldt Bay, 489.  
 Humboldt County, 394.
- I**  
 Izumo, 386, 474.
- J**  
 Japan, 139.  
 Jō-Ban, 41, 100, 134, 264, 269, 290, 317,  
 319, 324, 433.  
 Joice Station, 136.  
 Juan de Fuca Strait, 58.
- K**  
 Kaga, 392, 393.  
 Kamenari, 454.  
 Karaffo South, 319.  
 Kirker Creek, 228.  
 Kirker Pass, 372.  
 Kitsap County, 242.  
 Kodiak Island 124.  
 Kubota, 98.
- L**  
 La Panza Mount., 398.
- M**  
 Martinez, 224.  
 Maryland, 411.  
 Middleton, Island., 339.  
 Migato, 192.  
 Mino, 320.  
 Monterey County, 157.
- N**  
 Nagako, 98.  
 Nahlasik, 422.  
 New Idria, 155.  
 Nishi, 501.  
 Nome, 282.  
 Notoro, 319.
- O**  
 Obisa, 317.  
 Odomari, 319.  
 Ogai Ranch, 209.  
 Oji, 398, 450.  
 Oregon, 267, 291, 354, 416, 443, 445, 446, 471.  
 Otake, 396.
- P**  
 Paul St., 124.  
 Pillar Point, 203.  
 Provincetown, 120.  
 Pudget Sound, 125, 291, 292.
- R**  
 Restoration Point, 242.
- S**  
 Sado Island, 118, 120.  
 Saishu, 269.  
 Saku, 132.  
 San Lorenzo Creek, 157.  
 San Luis Obispo County, 152, 398.  
 San Pablo Bay, 231, 492.  
 San Pedro, 206.  
 Santa Barbara, 149, 209, 255, 338, 359, 426,  
 492, 506.  
 Santa Clara, 150, 151.  
 Santa Rosa Hills, 255.  
 Santa Ynez Mount., 255, 426.  
 Shigarami, 165, 167, 269.  
 Shimosa, 396.  
 Shinano, 152.  
 Sitka, 384.
- T**  
 Tsukiyoschi, 320.  
 Twin River, 58.
- V**  
 Vancouver Island, 465.  
 Volcano Bay, 497.
- W**  
 Waddell Creek, 459.  
 Western Hizen, 240.  
 West Twin River, 110, 111.
- Y**  
 Yakataga Reef, 348.  
 Yedo, 497.  
 Yesso, 139.  
 Yokonesawa, 63.

## УКАЗАТЕЛЬ ГЕОЛОГИЧЕСКИХ НАЗВАНИЙ<sup>1</sup>

- Б**  
Белесоватая свита, 17.
- В**  
Вахимото слои, 210.  
Ваямпольская свита, 19, 20, 21, 22, 24—26, 31, 33, 34, 41, 42, 44, 65, 68, 93, 96, 97, 101, 102, 114, 154, 208, 210, 219, 222, 241, 250, 251, 253, 254, 256, 257, 264, 292, 294, 304, 320, 325, 327, 331, 332, 349, 357, 364, 467, 491, 497, 499.  
Ваямпольская свита, верхний отдел, 46, 71, 74, 94, 103, 104, 106, 109, 122, 214, 261, 264, 265, 270, 271, 272, 273, 276, 277, 321, 323, 361, 386, 387, 396, 464, 471, 503.  
Ваямпольская свита, нижний отдел, 77, 78, 91, 101, 102, 103, 104, 105, 108, 109, 114, 115, 116, 117, 122, 123, 231, 233, 235, 237, 244, 247, 248, 249, 290, 317, 319, 320, 321, 343, 348, 374, 400, 403, 404, 442, 443.  
Венгерийская свита, 31, 37, 38, 39, 40, 45—46, 47, 48, 59, 64, 65, 68, 71, 73, 120, 134, 186, 187, 225, 229, 320, 328, 347, 392, 464, 467, 499, 501, 504, 505.  
Верхне-пильская свита, 24, 30, 31, 37, 38—43, 44, 48, 59, 71, 76, 109, 111, 113, 114, 118, 134, 210, 211, 212, 290.
- Г**  
Глинисто-песчаниковая свита, 33, 34, 250, 292, 357, 367, 370, 407, 411, 438, 454, 497, 508.  
Глинистых песчаников и сланцеватых глин свита, 36.  
Глинистых сланцев и сланцеватых глин свита, 36, 37, 38, 44.
- Д**  
Диатомовая свита, 47.
- К**  
Кавранская свита, 17, 18, 19, 20, 21, 22, 26—29, 32, 63, 66, 105, 106, 154, 233, 249, 250, 252, 253, 256, 283, 347, 350, 455, 457, 464, 467, 471, 497, 499, 503.
- Кавранская свита, верхний отдел, 26, 27, 28, 29, 32, 48, 51, 100, 127, 128, 131, 142, 152, 153, 178, 179, 181, 183, 185, 192, 196, 198, 200, 201, 202, 217, 254, 255, 294, 297, 299, 301, 304, 305, 307, 308, 311, 314, 315, 332, 338, 346, 357, 362, 367, 369, 389, 409, 411, 418, 429, 434, 436, 452, 454, 478, 480, 508.  
Кавранская свита, нижний отдел, 26, 27, 28, 29, 31, 32, 97, 167, 219, 224, 233, 235, 332, 333, 334, 350, 380, 381, 387, 411, 412, 446, 448, 490.  
Караваосодержащая толща, 134, 250, 386.  
Каскадная свита, 31, 37, 39, 40, 41, 44—45, 48, 109, 110, 114, 117, 118, 134, 229, 265, 266, 319, 393, 394, 467.  
Киумшечекская свита, 387.  
Ковачинская свита, 17, 18, 19, 20, 21, 22, 24, 30, 31, 33, 43, 111, 112, 204, 210, 219, 287, 290, 334, 336, 351, 460.  
Кремнистых песчаников и глинистых с шаровидными конкрециями свита, 36, 45.
- М**  
Матитукская свита, 36, 37, 38, 39, 40, 47.  
Мачигарский разрез, 31, 39, 40, 45, 48, 64, 78, 94, 96, 97, 100, 226, 257, 317, 324, 325, 327, 328, 357, 369, 381, 383, 387, 407, 409, 419, 420, 502, 503.  
Маямрафская свита, 36, 37, 38, 39, 40, 41, 42, 46, 47, 48, 59, 64, 65, 68, 120, 122, 329, 357, 464, 469, 475.  
Мусашино верхний, 142, 192, 214, 217, 274, 281, 294, 362, 367, 387, 393, 464.  
Мусашино нижний, 142, 192, 214, 294, 362, 367, 467.
- Н**  
Наднутовская свита, 49, 50, 51, 127, 128, 196, 198, 259, 271, 274, 299, 301, 391, 398, 423, 424, 425, 450, 452, 464, 499.  
Нампи слои, 93.  
Нижняя свита мачигарского разреза, 39, 40, 45, 48, 78, 94, 96, 97, 100, 226, 257, 324, 325, 357, 369, 381, 383, 387, 407, 409, 502, 503.  
Нурский разрез, 48, 118.  
Нутовская свита, 49, 50, 106, 387, 391, 425, 450, 452, 464.  
Нутовская свита, верхний отдел, 94, 107, 108, 126, 127, 128.  
Нутовская свита, нижний отдел, 361.  
Нутовская свита, средний отдел, 126, 129, 132.

<sup>1</sup> Здесь и везде далее цифры указывают на страницы первой части настоящей монографии (см. «Палеонтология СССР», т. X, ч. 3, вып. 18).

**О**

Окобыкайская свита, 49

**П**

Пильская свита, 36, 37, 38.

Пильский разрез, 38—49.

Пильгукская свита, 36.

Помырская свита, 29, 32, 36, 37, 38, 39, 40, 47—48, 51, 167, 169, 171, 183, 185, 192, 217, 222, 282, 294, 307, 308, 503, 508.

Псякауфская свита, 36.

**Р**

Рыхлая свита, 39, 40, 49, 64, 67, 74, 76, 147, 327, 343, 344, 345, 351, 352, 357, 361, 364, 365, 369, 370, 386, 387, 388, 389, 391, 396, 404, 405, 406, 407, 412, 413, 414.

**С**

Сасаока слои, 211.

Слоистых глин с прослоями песчаника свита, 36, 38, 45.

Снатолский отдел, 18.

**Т**

Тигильская свита, 17, 18—24, 29, 30, 33, 68, 69, 88, 91, 93, 158, 159, 160, 162, 219, 227, 228.

**A**

Asagai beds, 264, 316, 317, 319, 455.

**B**

Briones form., 71, 73, 78.

Blakeley form., 244, 262, 460.

**C**

Coalinga beds, 363.

Coos conglomerate, 193, 416.

**E**

Empire form., 45, 72, 193, 196, 369, 445.

Etchegoin form., 137, 180, 364, 369.

**I**

Iwaki beds, 231, 294.

**J**

Jacalitos form., 364, 445.

**K**

Kaidaté beds, 179.

Kamenoo beds, 41, 43, 63, 64, 134, 211, 290, 324.

Kawabate series, 345, 346.

Kirker form., 228, 229.

Тигильская свита, 229, 230, 238, 240, 244, 245, 247, 275, 276, 292, 294, 330, 331, 350, 351, 357, 365, 374, 375, 377, 400, 425, 427, 428, 442, 467, 480, 482, 483, 508.

Тонко-слоистых песчаных глин свита, 36, 37, 44.

Тумская свита, 122, 226, 264, 266, 327, 328, 346, 347.

**У**

Угленосная свита, 34, 233, 264, 329, 374, 438, 493.

**X**

Хабутто слои, 211.

Хойская свита, 357, 387.

Хребтово-утхолокская свита, 17, 18.

Хузи свита, 49.

Хулгунский отдел, 18.

**Э**

Энемтенская свита, 27, 32.

Эрмановская свита, 27, 32.

Эхаби свита, 49, 50, 362, 367, 381, 387, 391, 469, 471, 474, 475.

**M**

Mankodô beds, 151.

Mizunoya beds, 98, 100.

Musashino upper, 32, 51, 273, 392, 396, 398, 454.

Musashino lower, 178.

**P**

Poul series, 348.

**S**

San Diego, 339, 359.

San Lorenzo ser., 228.

San Pablo, 369.

San Pedro, 339.

San Ramon form., 229.

Santa Margarita form., 363, 364.

Sawané ser., 118, 120, 179, 345, 346.

**T**

Temblor form., 73, 101, 226, 364, 438.

**V**

Vaqueros form., 48, 225, 226, 255, 256, 398, 400, 438.

**W**

Wildcat form., 196.

**Y**

Yakataga form., 348.

## УКАЗАТЕЛЬ РОДОВЫХ И ВИДОВЫХ НАЗВАНИЙ

В указателе помещены все приведенные в работе латинские названия. Цифры после названия соответствуют страницам текста первой части настоящей монографии, где это название приводится (см. «Палеонтология СССР», т. X, ч. 3, вып. 18). Прямым шрифтом (*Tellina*, 31, 33) набраны страницы, где название только упоминается, жирным шрифтом набраны страницы, где данный вид или род подробно описывается (*Arca*, 94, **298—311**).

### A

- abscissa*, *Schizodesma*, 492.  
*Spisula*, 492.  
*Spisula (Stereomactra)*, 492.  
*Acanthocardia*, 18, 19, 23, 24, 51, 379, **398—400**.  
*Acesta*, 211.  
*Acharax*, 57.  
*Acila*, 23, 38, 42, 59, 83, 85, 111, 132, 133, 244.  
*Acilana*, 81.  
*acolasta*, *Macoma moesta*, 469.  
*acis*, *Astarte*, 27, 51, 278, **282—283**.  
*acuta*, *Nuculana*, 76.  
*acutilineata*, *Lucina*, 353, 354.  
*Lucina (Myrtea)*, 353.  
*Phacoides (Lucinoma)*, 21, 23, 25, 28, 34, 40, 46, 54, **353—357**.  
*adscensionis*, *Pecten*, 163.  
*Aelga*, 19, 25, 34, 39, 44, 45, 52, **260—266**.  
*affinis*, *Macoma inquinata*, 467.  
*africana*, *Dosinia*, 436.  
*alaskana*, *Cardita*, 298, 299, 300, 303, 307.  
*Venericardia (Cyclocardia)*, 299.  
*alaskensis*, *Chione securis*, 417.  
*Scaphander*, 31, 41, 42, 43, 44.  
*aldrovandi*, *Panope*, 503.  
*aleutica*, *Diplodonta orbella*, 360.  
*alferovi*, *Nuculana (Borissia)*, 53, 60, **79—81**.  
*alope*, *Placunanomia*, 215.  
*alta*, *Metis*, 457.  
*Thyasira bisecta*, 40, 55, 340, 341, **344—345**.  
*Yoldia*, 22, 26, 55, 83, 86, **93—94**.  
*alternata*, *Tellina*, 454, 455.  
*alternilineatus*, *Pecten*, 208, 210.  
*alticosta*, *Venericardia*, 335.  
*amicula*, *Arca*, 148, 151, 152, 502.  
*Amussum*, 200.  
*amygdala*, *Yoldia*, 105.  
*amygdalaeformis*, *Yoldia*, 22, 26, 34, 55, 87, **104—105**.  
*Anadara*, 28, 51, 146, **148—153**.  
*anastasia*, *Yoldia*, 50, 55, 84, 87, 94, 97, **106—108, 131**.  
*aniwana*, *Liocyma*, 422.  
*angulata*, *Papyridea*, 40, 54, 400, **404—405**.  
*angulatus*, *Modiolus*, 20, 28, 52, 242, **255—256**.  
*Modiolus wajampolkensis*, 253.  
*Angulus*, 442.  
*annulata*, *Lucina*, 353.  
*annulatus*, *Phacoides*, 353, 355, 356.  
*Anomia*, 215.  
*Anomiacea*, **214—218**.  
*Anomiidae*, **214—218**.  
*antiqua*, *Cardita*, 19, 24, 39, 45, 51, 286, 287, **325—327**.  
*antiquata*, *Arca*, 146, 148.  
*antiquatus*, *Taras*, 358, 359.  
*Apolymetis*, 19, 27, 28, 51, **456—457**.  
*aragonia*, *Tellina*, 21, 27, 29, 54, 440, **443—445, 446, 447, 453**.  
*Arca*, 17, 28, 51, **146—153**, 502.  
*Arcacea*, **134—153**.  
*Arcidae*, **134—153**.  
*arctica*, *Astarte*, 280.  
*Yoldia*, 81.  
*arenaria*, *Mya*, 493, 494, 495, 497, 498, 499, 501, 502, 503.  
*Mya arenaria*, 495.  
*Mya (Mya)*, 20, 25, 27, 28, 34, 39, 45, 47, 50, 51, 53, **493—497**.  
*arnheimi*, *Macoma inquinata*, 467.  
*arnoldi*, *Macoma lorenzoensis*, 460.  
*Mytilus*, 20, 23, 39, 45, 53, 220, **228—229, 236, 237**.  
*Astartacea*, **277—283**.  
*Astarte*, 27, 39, 47, 51, **277—283**, 374, 375.  
*Astartidae*, **277—283**.  
*astartoides*, *Chione*, 421, 422.  
*Liocyma*, 424.  
*Venus*, 421.  
*astori*, *Macoma*, 52, 459, **471—472**, 473.  
*astoriana*, *Yoldia*, 104, 105.  
*atwoodi*, *Ostrea*, 20, 23, 53, 154, **157—158, 159, 160**.  
*Axinea*, 134, 135.  
*Axinus*, 339.

### B

- bainbridgensis*, *Cochlodesma*, 38, 42, 262, 263.  
*Laternula (Aelga)*, 263, 265, 266.  
*barbarensis*, *Cardita*, 298, 301, 303, 308.  
*beckii*, *Liocyma*, 421, 423, 424.  
*bellocacina*, *Ostrea*, 161.  
*beringensis*, *Cuspidaria*, 276.  
*beringiana*, *Cardita*, 19, 28, 51, 286, 287, **297—299, 303**.  
*besshoensis*, *Laternula (Aelga)*, 19, 25, 34, 45, 52, **260—264, 265**.  
*Tellina*, 260, 263, 264.  
*biangulata* *Apolymetis*, 457.

*bisecta*, *Thyasira*, 22, 25, 29, 38, 40, 55, 340, 341, **342—343**, 344, 345, 346, 347, 348, 349.  
*Venus*, 342.  
*bisectus*, *Cryptodon*, 346.  
*blakeleyensis*, *Turritella*, 24.  
*blandum*, *Cardium*, 389.  
*bodegensis*, *Tellina*, 21, 23, 54, 440, **441—442**, 444, 445, 447.  
*Tellina (Angulus)*, 442.  
*borealis*, *Astarte*, **278—281**, 282.  
*Phacoides*, 356, 357.  
*Tridonta*, 278.  
*Borissia*, 53, 59, **79—81**.  
*Botula*, 248.  
*Brachidontes*, 241.  
*braunsi*, *Cardium*, 396, 397, 398.  
*brevilineata*, *Dione*, 432, 433.  
*breviscapa*, *Yoldia*, 38, 112, 113, 120.  
*brota*, *Macoma*, 471.  
*buttoni*, *Tellina*, 444, 447.  
*buwaldanus*, *Taras*, 360, 368.

**C**

*caelata*, *Leda*, 69.  
*calcareo*, *Arca trilineata*, 151.  
*Macoma*, 39, 44, 46, 52, 458, 459, **467—469**, 470.  
*Tellina*, 467.  
*californianus*, *Mytilus*, 223.  
*californica*, *Cardita*, 291, 296.  
*Corbicula*, 232, 374, 376.  
*Cyrena*, 372.  
*Cyrena (Corbicula)*, 372.  
*Venericardia*, 291.  
*californiense*, *Cardium*, 389, 390, 392, 396.  
*Cardium (Cerastoderma)*, 389, 390.  
*Laevicardium (Cerastoderma)*, 34, 49, 50, 51, 52, 379, **389—391**, 394.  
*Callista*, 489.  
*canalis*, *Arca*, 148.  
*cancellatum*, *Variamussium*, 203.  
*Capsa*, 456.  
*Cardiacea*, **377—414**.  
*Cardiidae*, **377—414**.  
*Cardiomya*, 18, 19, 25, 52, **274—277**.  
*Cardita*, 18, 19, 23, 24, 25, 27, 28, 30, 31, 32, 33, 34, 39, 41, 43, 44, 45, 46, 47, 50, 51, 52, **283—339**.  
*Carditacea*, **283—339**.  
*Cardites*, 293.  
*Carditidae*, **283—339**.  
*Cardium*, 38, 42, 381, 383, 386, 388, 389, 390, 392, 393, 394, 395, 396, 397, 398, 399, 408, 409, 410, 411.  
*carolinensis*, *Ostrea*, 159.  
*casinaeformis*, *Chione*, 415.  
*castor*, *Cardita*, 289, 291, 292, 296.  
*Venericardia*, 289.  
*catilliformis*, *Spisula*, 491.  
*caudata*, *Yoldia*, 40, 45, 55, 84, 85, **94—96**, 97.  
*caurinus*, *Pecten*, 189, 194, 195.  
*Pecten (Patinopecten)*, 21, 28, 32, 50, 51, 54, 164, 165, 191, **192—198**, 202.  
*cepio*, *Placunanomia*, 215.  
*Cerastoderma*, 19, 25, 27, 34, 39, 44, 45, 50, 51, 52, 378, 379, 380, **383—398**, 411.  
*cerussata*, *Yoldia*, 22, 26, 41, 55, 83, 86, 87, **116—117**, 119.  
*chehalisensis*, *Leda*, 72.

*Nuculana (Nuculana)*, 72.  
*Nuculana (Sacella)*, 39, 45, 46, 53, 61, **72—73**.  
*chejseveemensis*, *Mytilus*, 20, 27, 53, 220, **233—235**.  
*chibana*, *Tellina*, 21, 27, 29, 54, 441, **454—455**.  
*Tellina alternata*, 454.  
*Chione*, 22, 29, 55, **415—418**, 421, 422.  
*Chlamys*, 21, 27, 40, 47, 54, 163, 164, **165—169**.  
*cipangoana*, *Cardita*, 331.  
*clarki*, *Solen*, 481, 488.  
*Thyasira*, 22, 26, 55, 341, 348, 351.  
*clallamensis*, *Cyclopecten*, 204.  
*Pecten (Propeamussium)*, 203, 204.  
*Clementia*, 52, **418—120**, 442, 433.  
*Cnestrinum*, 81.  
*coalingensis*, *Glycymeris*, 19, 27, 52, 136, **137—139**.  
*Mytilus*, 228.  
*Cochlea*, 383.  
*Cochlodesma*, 38, 42, 261, 262, 263, 265, 266.  
*Codakiacea*, **339—370**.  
*Codakiidae*, **352—357**.  
*columbiana*, *Ostrea*, 155, 156.  
*Solen*, 481.  
*columbianum*, *Phacoides*, 353, 355, 356.  
*commoda*, *Psammobia*, 479.  
*Compsomya*, 432.  
*concentrica*, *Lima*, 38, 212.  
*Lima (Acesta)*, 211.  
*Conchocele*, 339.  
*condoni*, *Mytilus*, 238.  
*Thracia*, 266, 267, 268, 269.  
*Thracia (Thracia)*, 22, 25, 34, 55.  
*confusa*, *Leda*, 65, 67, 68.  
*Nuculana*, 66.  
*conradi*, *Glycymeris*, 138, 139.  
*conradiana*, *Clementia (Egesta) pertenuis*, 419, 420.  
*convexa*, *Yoldia*, 22, 26, 29, 55, 83, 84, 87, **105—106**, 107.  
*cooperi*, *Yoldia*, 22, 23, 26, 55, 81, 85, 88—**91**, 93, 102, 127, 128.  
*coosense*, *Cardium*, 393, 394.  
*Corbicula*, 18, 19, 25, 30, 34, 52, 232, **370—377**.  
*corbicula*, *Tivela*, 425.  
*corbis*, *Cardium*, 383, 386, 387, 388.  
*Cochlea*, 383.  
*Laevicardium (Cerastoderma)*, 19, 25, 52, 378, 380, **383—386**, 388, 393, 396.  
*corbuloides*, *Thracia*, 266.  
*corbuloides*, *Tellina*, 474, 475.  
*corrugata*, *Astarte*, 282.  
*Modiolaria*, 259.  
*cosibensis*, *Pecten*, 176, 179, 181, 183.  
*Pecten swiftii*, 179.  
*crassa*, *Mya*, 499.  
*Crassatellites*, 23, 24, 30.  
*crassicardo*, *Pecten*, 188.  
*crassicostata*, *Cardita*, 314.  
*crassicostatus*, *Pecten*, 168.  
*crassidens*, *Cardita*, 308, 310, 311.  
*crebricostata*, *Cardita*, 298, 300, 303.  
*crenata*, *Cardita*, 290.  
*Glycymeris*, **136—137**.  
*crispata*, *Zirfaea*, 508.  
*Cryptodon*, 339, 346.  
*Cuspidaria*, 18, 19, 25, 52, **274—277**.  
*Cuspidariidae*, **274—277**.

*cuspidata*, *Cuspidaria*, 274.  
*cuvieri*, *Cardita*, 314.  
*Cyathodonta*, 262.  
*Cyclocardia*, 299, 328, 329.  
*Cyclopecten*, 204.  
*Cyrena*, 370, 372.

## D

*dalli*, *Acila*, 38.  
*Pitaria*, 432, 433, 435.  
*Solemya*, 21, 24, 31, 38, 40, 41, 42, 45, 46,  
 54, 58—59, 111.  
*Solemya (Acharax)*, 58.  
*decoratum*, *Cardium*, 386, 387, 390, 391.  
*Laevicardium (Cerastoderma)*, 386.  
*Delectopecten*, 21, 24, 25, 40, 41, 43, 44, 53,  
 91, 111, 165, 204—211, 212, 214.  
*densata*, *Mactra (Pseudocardium)*, 34, 52,  
 492—493.  
*Mulinia*, 491, 492.  
*denudata*, *Cardita*, 19, 24, 51, 286, 320—321.  
*derehctus*, *Glycymeris*, 144.  
*Pectunculus*, 144.  
*diavincta*, *Arca*, 151.  
*diablonensis*, *Corbicula*, 373, 374.  
*dickersoni*, *Mya*, 232, 497, 498.  
*diegensis*, *Botula*, 248.  
*Modiolus*, 248, 249.  
*dilatatum*, *Modiolus*, 18, 20, 52, 242, 244—245.  
*Dione*, 432, 433.  
*Diplodonta*, 358, 359, 360, 361, 363, 365, 367,  
 368, 369.  
*directus*, *Modiolus*, 247, 254, 257.  
*discors*, *Modiolaria*, 258.  
*disiuncta*, *Thyasira*, 22, 29, 40, 45, 55, 341,  
 343, 345, 346, 347.  
*dissimilis*, *Macoma*, 461, 463, 464.  
*Macoma nasula*, 461, 463.  
*diversilineata*, *Turritella*, 244.  
*djakovi*, *Tellina*, 21, 27, 54, 440, 446—448.  
*Yoldia*, 22, 26, 40, 41, 43, 55, 84, 87, 103,  
 108—109.  
*Dosinia*, 33, 34, 52, 436—439.  
*Dosinidia*, 436.  
*ovalii*, *Cardita kamtschatica*, 19, 28, 51, 285,  
 304—305, 306.  
*dysera*, *Venus*, 415.

## E

*echabiensis*, *Macoma*, 39, 46, 49, 50, 52, 458,  
 474—475.  
*Yoldia*, 99, 131.  
*edentula*, *Gari*, 479.  
*edule*, *Cerastoderma*, 383.  
*edulis*, *Mytilus*, 20, 25, 39, 44, 47, 53, 218,  
 220, 221—222.  
*Ostrea*, 154.  
*Egesta*, 52, 418—420.  
*elmana*, *Nuculana ochsneri*, 73.  
*elongata*, *Ostrea*, 158.  
*elongorostrata*, *Leda*, 38.  
*elsmerensis*, *Chione*, 415.  
*emersonii*, *Yoldia*, 115.  
*ensifera*, *Chione*, 417.  
*Yoldia*, 103, 123, 124, 125.  
*Eosolen*, 24, 481.  
*estrellanum*, *Lyropecten*, 185.  
*etalonnensis*, *Cardita*, 19, 28, 51, 285, 286,  
 308—311, 313.  
*etchegoini*, *Pecten*, 171, 174, 179.

*Pecten (Pallium) swiftii*, 21, 28, 40, 47,  
 54, 172, 176, 179—183.  
*etheringtoni*, *Laevicardium (Cerastoderma)*,  
 19, 25, 39, 52, 379, 388—389.  
*eugenense*, *Cardium*, 381.  
*eugenia*, *Tellina*, 34, 54, 440, 445—446, 453.  
*europaeum*, *Laevicardium*, 380.  
*excavata*, *Apolymetis*, 19, 27, 28, 51, 356—457.  
*Metis*, 456.  
*Tellina*, 456.  
*Yoldia*, 125.  
*expansus*, *Mytilus*, 225, 226.  
*Mytilus matthewsonii*, 45, 53, 221, 225—226,  
 227.

## F

*falcaia*, *Mactra*, 488.  
*Spisula*, 490.  
*fastosum*, *Cardium*, 392.  
*Laevicardium (Cerastoderma)*, 39, 45, 52,  
 380, 392—393.  
*Felania*, 365.  
*Felaniella*, 21, 27, 29, 34, 40, 50, 54, 358,  
 361, 362, 365—370.  
*fernandoense*, *Cardium quadrigenarium*, 409,  
 410, 411.  
*fernandoensis*, *Chione*, 417.  
*ferruginata*, *Taras*, 365.  
*ferruginea*, *Cardita*, 18, 19, 23, 24, 39, 47,  
 51, 286, 289, 292, 293—294.  
*Venericardia*, 293.  
*ferruginosa*, *Venericardia (Cardites)*, 293.  
*ficus*, *Mytilus*, 221, 238.  
*filosa*, *Lucinoma*, 353.  
*flabellatus*, *Modiolus*, 18, 20, 53, 241, 245—  
 247.  
*flammea*, *Cardita*, 311.  
*flexuosa*, *Thyasira*, 340.  
*flexuosus*, *Pecten*, 185.  
*fluctuosa*, *Liocyma*, 50, 51, 52, 421—423, 424, 425.  
*Tapes*, 321.  
*Venus*, 421.  
*fluminalis*, *Corbicula*, 370.  
*folgeri*, *Thyasira*, 349.  
*foliacea*, *Chione*, 415.  
*folioformis*, *Mytilus perrini*, 20, 25, 34, 53,  
 220, 230—232.  
*fonsata*, *Astrate*, 374.  
*Corbicula*, 18, 19, 52, 371, 374—375.  
*fragilis*, *Sacella*, 69.  
*furlongi*, *Leda*, 78.  
*Leda (Nuculana)*, 78.  
*Nuculana (Sacella)*, 39, 54, 53, 61, 78—79.

## G

*gabbi*, *Glycymeris*, 138.  
*Tivela*, 427, 428.  
*gabbii*, *Pseudocardium*, 491, 492.  
*gabbiana*, *Corbicula*, 19, 25, 34, 52, 371, 372—  
 374, 375, 376, 377.  
*Gari*, 479.  
*generosa*, *Panopaea*, 504.  
*Panope*, 505.  
*gettysburgensis*, *Acila*, 38, 42, 50, 111, 244.  
*giganteus*, *Saxidomus nuttallii*, 434.  
*Glans*, 284.  
*Glycymeris*, 503.  
*glycimeris*, *Panope*, 503.  
*Glycymeris*, 19, 27, 28, 52, 134—146.  
*glycymeris*, *Glycymeris*, 134.



*goliath*, *Lima*, 19, 25, 31, 52, 211, **212—214**.  
*gouldiana*, *Cardiomya*, 274, 277.  
*gouldii*, *Cardita*, 301.  
*Taras* (*Felaniella*), 34, 40, 54, 358, 368, **369—370**.  
*Thyasira*, **350**.  
*gradulatus*, *Modiolus*, 20, 25, 45, 53, 242, **256—257**.  
*grandis*, *Pandora*, 271, 272, 273.  
*gravidus*, *Solen*, 483.  
*gravis*, *Taras* (*Taras*), 40, 54, 359, **364—365**.  
*grayana*, *Maetra* (*Spisula*), 485, 487.  
*Spisula*, 485.  
*gretschischkini*, *Pandora*, 21, 28, 53, **270—271**, 272, 274.  
*Pitaria*, 21, 28, 54, 429, 433, **434—436**.  
*grewingki*, *Glycymeris*, 138, 139.

## H

*hannibali*, *Phacoides* (*Lucinoma*), 353, 356.  
*Spisula*, 485, 488.  
*Tellina*, 443.  
*Venericardia* (*Cyclocardia*), 328, 329.  
*harfordi*, *Diplodonta*, 363.  
*Taras* (*Taras*), 21, 25, 54, 358, 360, **363—364**, 365.  
*harrimani*, *Papyridea*, 21, 23, 25, 54, 401, **402—403**, 404, 405, 406, 408, 411.  
*hemphilli*, *Maetra*, 490.  
*Maetra* (*Spisula*), 20, 25, 52, 484, 485, 490—491.  
*heteroglyptus*, *Pecten*, 176, 178, 181.  
*Pecten* (*Palliumwiftlii*), 21, 28, 54, 176, **178—179**.  
*Hinnites*, 164.  
*hirsutus*, *Mytilus*, 238, 239, 240.  
*hornii*, *Venericardia*, 333, 334, 335.  
*humila*, *Thyasira bisecta*, 40, 53, 340, 341, **343—344**, 345.

## I

*idriaensis*, *Ostrea*, **154—156**.  
*iizukai*, *Meretrix*, 433.  
*imbricata*, *Venericardia*, 283.  
*impressa*, *Yoldia*, 45, 104, 105, 109.  
*inaequivalvis*, *Pandora*, 269.  
*incisa*, *Cardita*, 308.  
*incurvus*, *Mytilus*, 45.  
*inezana*, *Pachydesma*, 426.  
*Tivela*, 22, 23, 55, **426—427**, 428.  
*Tivela* (*Pachydesma*), 426.  
*inflata*, *Thyasira*, 352.  
*inflatus*, *Modiolus*, 249, 250.  
*ingens*, *Placunanomia*, 215.  
*inocoriformis*, *Clementia* (*Egesta*), 418.  
*inquinata*, *Macoma*, 18, 19, 25, 27, 28, 33, 39, 44, 45, 52, 459, **465—467**.  
*Tellina*, 465.  
*intermedia*, *Mya*, 497.  
*Panomya*, 504, 505.  
*Panope* (*Panomya*), 40, 45, 54, **504—505**.  
*isabellina*, *Chione*, 415.  
*isocardia*, *Trachycardium*, 381.  
*itsoi*, *Pitaria*, 433, 435.

## J

*jacalitosana*, *Macoma nasuta*, 464.  
*jacobaeus*, *Pecten*, 163.  
*jamaicensis*, *Phacoides*, 352.  
*Janira*, 163, 200.

*japonica*, *Mya*, 497.

*Mya* (*Mya*) *arenaria*, 20, 25, 27, 28, 39, 45, 50, 51, 53, 494, 496, **497—499**, 501.  
*japonica*, *Yoldia*, 115, 122.  
*jessoensis*, *Pecten*, 189.  
*johanni*, *Yoldia*, 125.

## K

*Kalayoldia*, 81.  
*kamakurana*, *Laternula*, 259.  
*kamschatica*, *Cardita*, 19, 24, 28, 51, 285, 286, 287, 300, **301—304**, 305, 306, 307.  
*Nuculana* (*Sacella*), 53, 61, **71—72**.  
*Yoldia*, 22, 26, 86, **102—103**.  
*kamschaticus*, *Glycymeris*, 52, 135, **145—146**.  
*Mytilus*, 20, 27, 53, 220, **222—224**, 225.  
*Solen*, 54, 480, **483—484**.  
*kaneharai*, *Dosinia*, 438.  
*Pecten*, 168.  
*kavranensis*, *Cardita*, 19, 28, 51, 287, **311—314**, 315.  
*Cuspidaria* (*Cardiomya*), 19, 25, 52, 275, **276—277**.  
*Nuculana* (*Nuculana*?), 20, 28, 53, 60, **65—66**.  
*Pitaria*, 21, 28, 54, 428, **429—434**, 435.  
*kelseyi*, *Macoma nasuta*, 464.  
*kevetschevemensis*, *Cardita*, 19, 27, 51, 287, 321, **333—334**, 335.  
*Venericardia*, 333.  
*kewi*, *Mytilus*, 230.  
*kindlei*, *Pecten* (*Pallium*) *swiftii*, 174, 176, 177.  
*kinkerensis*, *Cardium*, 399.  
*kinkilana*, *Cardita*, 19, 25, 51, 286, 316, 317, **321—324**, 326, 327, 328, 331.  
*kinsimarae*, *Laevicardium* (*Trachycardium*), 45, 52, 379, 380, **381—383**.  
*kipenensis*, *Papyridea*, 21, 28, 34, 54, 401, 403, 408, **409—411**, 412.  
*kirikowi*, *Ostrea atwoodi*, 20, 23, 53, 154, **158—159**.  
*kobayashii*, *Taras*, 365.  
*kochlanensis*, *Yoldia* (?), 22, 26, 27, 55, 86, **101—102**.  
*kovalschensis*, *Cardita*, 18, 19, 24, 30, 39, 43, 51, 285, **287—290**.  
*Corbicula* (?), 19, 52, 371, 374, **375—377**.  
*Limatula*, 41, 43, 44.  
*Ostrea*, 20, 23, 53, 154, **159—160**.  
*Yoldia cooperi*, 22, 23, 26, 55, 85, **88—91**, 93.  
*krusensterni*, *Solen*, 484.  
*kulkensis*, *Pecten* (*Patinopecten*), 21, 28, 54, 164, **201—202**.  
*kuluntunensis*, *Yoldia*, 22, 29, 50, 55, 84, 88, 99, 123, 125, **128—131**, 132.

## L

*laetus*, *Pecten*, 168, 189.  
*Laevicardium*, 19, 25, 27, 34, 39, 44, 45, 49, 50, 51, 52, 377, 378, 379, **380—398**.  
*laqueatum*, *Cardium*, 408, 409, 410, 411.  
*Laternula*, 19, 25, 31, 32, 34, 39, 44, 45, 52, **259—266**, 267.  
*Laternulitidae*, **259—266**.  
*laxata*, *Cardita*, 290, 317, 321, 323, 329.  
*Venericardia*, 287, 328.  
*Leda*, 38, 59, 61, 62, 63, 64, 65, 67, 68, 69, 71, 72, 75, 76, 78.

*Ledina*, 69.  
*Lima*, 19, 25, 31, 38, 39, 41, 52, 211—214.  
*lima*, *Lima*, 211.  
*Limatula*, 41, 43, 44.  
*Limidae*, 211—214.  
*lincolnenesis*, *Cardium*, 381.  
*Liocyma*, 50, 51, 52, 421—425.  
*lipara*, *Macoma brota*, 471.  
*lisjensis*, *Ostrea*, 154, 156—157.  
*littoralis*, *Mytilus* 20, 23, 30, 53, 220, 226, 227—228.  
*longissima*, *Yoldia*, 22, 26, 27, 45, 55, 84, 85, 95, 96—97.  
*lorenzoensis*, *Macoma*, 19, 24, 33, 52, 459—460.  
*Tellina*, 459.  
*Loripes*, 367.  
*loscombiana*, *Pholadidea*, 506.  
*luciferus*, *Mytilus*, 231.  
*Lucina*, 290, 353, 359.  
*Lucinoma*, 21, 23, 25, 28, 34, 40, 46, 54, 352—357.  
*lurida*, *Astarte*, 278.  
*utea*, *Tellina*, 21, 29, 50, 51, 54, 441, 448—452, 454, 455.  
*Tellina (Peronidia)*, 448.  
*Lyropecten*, 40, 45, 54, 164, 185—189.

## M

*Macoma*, 18, 19, 20, 24, 25, 28, 33, 34, 39, 44, 45, 46, 49, 50, 51, 52, 443, 457—475.  
*Macrocallista*, 23, 30.  
*macrochisma*, *Anomia*, 215.  
*Monia*, 215.  
*Placunanomia*, 215.  
*Pododesmus*, 21, 27, 28, 40, 47, 54, 215—218.  
*Mactra*, 20, 25, 27, 28, 34, 49, 50, 51, 52, 484—493.  
*Mactracea*, 484—493.  
*Mactridae*, 484—493.  
*majmraphensis*, *Leda*, 64.  
*Leda (Nuculana)*, 64.  
*Nuculana (Nuculana)*, 20, 25, 39, 45, 46, 53, 60, 64—65.  
*Manupecten*, 169.  
*Marcia*, 432.  
*margaritana*, *Dosinia*, 33, 34, 52, 436—439.  
*Dosinia (Dosinidia)*, 436.  
*markini*, *Modiolus wajampolkensis*, 20, 25, 53, 242, 253—254.  
*martini*, *Astarte*, 283.  
*mathewsonii*, *Dosinia*, 436, 438.  
*Mytilus*, 39, 45, 53, 220, 221, 223, 224—225, 226, 227.  
*matlukensis*, *Cardita*, 39, 47, 51, 285, 307—308.  
*matschigarica*, *Cardita*, 39, 45, 51, 286, 324—325.  
*Papyridea*, 45, 54, 401, 407—409.  
*Venericardia*, 324.  
*Yoldia*, 119.  
*mediterranea*, *Solemya*, 57.  
*meekianum*, *Cardium*, 394.  
*Cerastoderma*, 394.  
*Laevicardium (Cerastoderma)*, 19, 25, 39, 52, 379, 394, 396.  
*Megayoldia*, 81.  
*Mercimonia*, 432.  
*Meretrix*, 433.  
*merriami*, *Mytilus* 235.  
*Tellina*, 443.

*Metis*, 456, 457.  
*meyeri*, *Apolymetis*, 456.  
*middendorffi*, *Macoma*, 471, 472.  
*Mytilus*, 20, 27, 28, 53, 220, 237—238.  
*Miltha*, 353.  
*minor*, *Mulinia densata*, 492, 493.  
*Miodon*, 336.  
*Miodontiscus*, 19, 28, 52, 284, 285, 336—339.  
*mironovi*, *Pecten*, 54, 188.  
*Pecten (Lyropecten?)*, 40, 45, 164, 185, 186—187.  
*Modiola*, 240, 258.  
*Modiolaria*, 50, 51, 52, 258—259.  
*Modiolus*, 18, 20, 25, 28, 31, 32, 34, 45, 52, 53, 232, 233, 240—257.  
*modiolus*, *Modiolus*, 240, 255.  
*moesta*, *Macoma*, 468, 469.  
*Monia*, 215.  
*monilicosta*, *Cardita*, 19, 28, 51, 285, 292, 294—297.  
*Mulinia*, 491, 492.  
*multidentata*, *Yoldia*, 40, 44, 55, 83, 84, 87, 109—110.  
*multiradiata*, *Lima*, 214.  
*multiradiatus*, *Mytilus*, 239.  
*muta*, *Acila*, 38.  
*Mya*, 20, 25, 27, 33, 34, 39, 45, 47, 50, 51, 53, 232, 493—503.  
*Myacea*, 493—505.  
*Myacidae*, 493—503.  
*Myrtea*, 353.  
*Mysia*, 358, 361, 365.  
*Mytilaceae*, 218—259.  
*Mytilicardita*, 284.  
*Mytilidae*, 218—259.  
*Mytiloconcha*, 228.  
*Mytilus*, 20, 23, 25, 27, 28, 30, 31, 34, 39, 44, 45, 47, 53, 218—240.

## N

*naganumana*, *Pecten*, 197.  
*nakamurai*, *Cardita*, 338.  
*nana*, *Thyasira*, 40, 55, 341, 351—352.  
*nanum*, *Cardium*, 381.  
*nasuta*, *Macoma*, 19, 25, 27, 28, 34, 39, 45, 46, 50, 51, 52, 459, 460—464.  
*Tellina*, 460.  
*Navicula*, 146.  
*navicula*, *Solen*, 481.  
*Neaera*, 274.  
*Neptunea*, 32.  
*newcombei*, *Pododesmus*, 217.  
*nigra*, *Modiola*, 258.  
*Modiolaria*, 50, 51, 52, 258—259.  
*nipponica*, *Papyridea*, 402, 404, 408, 413, 414.  
*Thyasira bisecta*, 22, 29, 55, 341, 345—346.  
*Turritella*, 93.  
*Venericardia*, 335.  
*nitida*, *Yoldia*, 22, 26, 55, 87, 114—115, 116, 119.  
*noae*, *Arca*, 146.  
*norvegica*, *Panomya*, 504.  
*notabilis*, *Yoldia*, 94, 97.  
*noyamiana*, *Papyridea*, 40, 54, 401, 413—414.  
*Nucula*, 82.  
*Nuculaceae*, 59—134.  
*Nuculana*, 20, 23, 25, 27, 28, 33, 39, 40, 41, 43, 45, 46, 53, 59—81, 82.  
*Nuculanidae*, 59—134.

- Nuttallia*, 21, 28, 54, **476—480**.  
*nuttallii*, *Cardium*, 383, 386.  
*Sanguinolaria*, 476.  
*Sanguinolaria (Nuttallia)*, 21, 28, 54, **476—478**, 479.  
*Saxidomus*, 434.  
*nutteri*, *Pecten*, 171.  
*Pecten (Chlamys)*, 171.  
*Pecten elchegoini*, 171.  
*Pecten (Pallium) swiftii*, 21, 28, 54, 164, 171, **171—178**, 179.
- 0**
- obispoana*, *Arca*, 152.  
*Arca (Anadara)*, 19, 28, 51, 448, 451, **152—153**.  
*ochotensis*, *Cochlodesma*, 261, 265, 266.  
*Modiolus (?)*, 232.  
*Mytilus*, 20, 25, 28, 34, 53, **232—233**, 235.  
*Yoldia*, 22, 29, 50, 51, 55, 84, 88, 91, **127—128**.  
*Yoldia cooperi*, 127.  
*ochotica*, *Cardita monilicosta*, 19, 28, 51, 285, 292, **294—297**.  
*Sanguinolaria (Nuttallia)*, 21, 28, 54, 476, 477, **478—480**.  
*Thyasira disjuncta*, 22, 29, 40, 45, 55, 341, 345, **346—347**.  
*ochsneri*, *Nuculana*, 70, 73.  
*ocoyana*, *Turritella*, 45, 400.  
*ogawai*, *Arca (Anadara)*, 448, 451.  
*olivacea*, *Felaniella*, 362.  
*olympiana*, *Yoldia*, 22, 38, 55, 102, 108, 109, **110—111**, 112, 114, 116.  
*optiva*, *Macoma*, 19, 25, 34, 39, 52, 459, **472—474**, 475.  
*Tellina*, 472.  
*orbella*, *Diplodonta*, 359, 360, 367, 368.  
*Lucina*, 359.  
*orbellus*, *Taras*, 359.  
*Taras (Taras)*, 21, 25, 54, 358, **359—361**, 362, 363, 367, 368.  
*orbica*, *Cardita*, 290.  
*orbicularis*, *Lucina*, 290.  
*Venericardia ferruginea*, 293, 294.  
*orcutti*, *Sanguinolaria (Nuttallia)*, 476.  
*oregona*, *Yoldia*, 89, 91, 97, 123, 126.  
*oregonensis*, *Mulinia*, 492.  
*Pecten*, 192.  
*Pecten (Patinopecten) caurinus*, 21, 28, 32, 54, 165, **192—196**, 197, 202.  
*Tellina*, 445, 453.  
*Ostrea*, 20, 21, 23, 30, 153—162.  
*Ostreacea*, **153—162**.  
*Ostreidae*, **153—162**.  
*ovalis*, *Mactra*, 485.  
*ovoidea*, *Pholadidea*, 506, 508.
- P**
- Pachydesma*, 426.  
*pacifera*, *Cardita*, 19, 25, 51, 286, **316—317**, 320, 321, 323, 326, 328.  
*Venericardia*, 316.  
*packardii*, *Yoldia*, 22, 24, 41, 43, 55, 102, 111, **112**.  
*pallidula*, *Tellina*, 443.  
*Palliolium*, 21, 24, 25, 30, 31, 40, 41, 44, 53, 54, 91, 111, 165, **204—211**, 212, 214.  
*Pallium*, 21, 28, 40, 43, 47, 48, 164, **169—185**.  
*palmuloidea*, *Modiolus restorationensis*, 242, **243**.  
*Pandora*, 21, 25, 28, 50, 51, 53, 54, **269—274**.  
*Pandoracea*, **269—274**.  
*Pandoridae*, **269—274**.  
*Panomya*, 40, 45, 54, **504—505**.  
*Panope*, 40, 45, 54, **503—505**.  
*Panopea*, 134, 503, 504.  
*Panzana*, *Macoma secta*, 474.  
*papyracea*, *Clementia*, 448.  
*Pholadidea*, 506.  
*papyridea*, 21, 23, 25, 27, 28, 34, 40, 45, 54, 377, 378, **400—414**.  
*parapodema*, *Venus*, 436, 438.  
*parilis*, *Diplodonta*, 367, 368, 370.  
*Diplodonta (Felaniella)*, 367, 369.  
*Loripes*, 367.  
*Taras (Felaniella)*, 21, 29, 54, 358, 360, **367—369**, 370.  
*parmeleei*, *Pecten (Chlamys)*, 169, 170, 171, 176.  
*paternalis*, *Mya*, 501.  
*Mya arenaria*, 501.  
*Mya (Mya) arenaria*, 39, 45, 53, 494, 496, **501—502**.  
*Patinopecten*, 21, 28, 32, 40, 47, 48, 50, 51, 54, 164, 165, **189—202**.  
*patulus*, *Pectunculus*, 353.  
*paucicostata*, *Cardita*, 307, 308, 315.  
*Cardita kamschatica*, 304, 305.  
*Venericardia*, 307.  
*peckhami*, *Palliolium (Delectopecten)*, 206, 207.  
*Palliolium (Delectopecten) pedroanus*, 21, 24, 25, 30, 31, 40, 41, 43, 44, 53, 111, 165, **208—211**, 214.  
*Pecten*, 38, 208.  
*Pecten (Pseudamussium)*, 208.  
*Pecten*, 21, 27, 28, 32, 38, 40, 45, 47, 48, 50, 51, 54, 93, **162—202**, 203, 204, 205, 206, 207, 208.  
*Pectinacea*, **162—211**.  
*pectinata*, *Cuspidaria*, 277.  
*Pectinidae*, **162—211**.  
*Pectunculus*, 134, 139, 144, 353.  
*pedroana*, *Plagiostoma*, 205.  
*pedroanus*, *Palliolium (Delectopecten)*, 21, 24, 25, 30, 31, 40, 41, 43, 44, 53, 91, 111, 165, **205—208**, 210, 212, 214.  
*Pecten (Pseudamussium)*, 205.  
*penderi*, *Nuculana*, 76.  
*penderoides*, *Leda*, 76.  
*Nuculana (Sacella?)*, 40, 41, 53, 61, **76**.  
*penita*, *Pholadidea*, 21, 23, 28, 34, 40, 47, 54, **506—508**.  
*Pholas*, 506.  
*pennula*, *Leda*, 63.  
*Leda (Nuculana)*, 63.  
*Nuculana (Nuculana)*, 39, 45, 46, 53, 60, 63—64.  
*pennulata*, *Yoldia*, 22, 26, 55, 83, 84, 86, 87, **103—104**.  
*Peplum*, 169, 185.  
*pernula*, *Leda*, 61.  
*Nuculana (Nuculana)*, 20, 27, 28, 53, 60, **61—63**, 64, 65, 74.  
*Peronidia*, 448:  
*perrini*, *Astarte*, 375.  
*Mytilus*, 20, 25, 34, 53, 220, **230—232**.  
*per tenuis*, *Clementia (Egesta)*, 419, 420.  
*Venus*, 416.  
*pervulgata*, *Thyasira*, 22, 24, 55, 341, **350—351**.

*Petrasma*, 57.  
*petri, Soletellina*, 477, 479.  
*Phacoides*, 21, 23, 25, 28, 34, 40, 46, 54, 263, 352—357.  
*Pholadacea*, 505—508.  
*Pholadidae*, 505—508.  
*Pholadidea*, 21, 23, 28, 34, 40, 47, 54, 505—508.  
*Pholas*, 506.  
*pilis, Laternula (Aelga)*, 39, 44, 52, 260, 263, 265—266.  
*pillarense, Variamussium*, 22, 24, 30, 55, 165, 203—204.  
*dillukensis, Pecten (Pallium) swiftii*, 21, 28, 40, 47, 54, 177, 183—185.  
*Pecten swiftii*, 183.  
*piltunensis, Cardita*, 21, 39, 50, 287, 299—301, 308.  
*Pecten*, 192, 195, 196.  
*Pecten (Patinopecten) caurinus*, 50, 51, 54, 164, 195, 196—198.  
*piloensis, Cardita*, 41, 43, 287.  
*Venericardia*, 290.  
*Yoldia*, 22, 26, 40, 41, 43, 44, 56, 86, 112—114.  
*Pitar*, 431.  
*Pitaria*, 21, 23, 28, 54, 428—436.  
*Placunanomia*, 215.  
*Plagiostoma*, 205.  
*planicosta, Venericardia*, 283, 335.  
*planiuscula, Macoma*, 468.  
*poculum, Pecten*, 197.  
*podkagernensis, Mytilus*, 20, 53, 220, 229—230.  
*Pododesmus*, 21, 27, 28, 40, 47, 54, 214—218.  
*Polymetis*, 456.  
*polynyma, Mactra (Spisula)*, 20, 25, 27, 28, 34, 49, 50, 51, 52, 485—489, 490.  
*ponderosa, Mactra*, 485.  
*Poromyacea*, 274—277.  
*praeruptensis, Cardita*, 19, 28, 51, 285, 304, 305—307.  
*prionodesmacea*, 57—277.  
*Profundior, Mya (Mya) arenaria*, 39, 45, 53, 494, 496, 499—501, 502.  
*prolongata, Cardita (Miodontiscus)*, 19, 28, 52, 285, 336—339.  
*Miodontiscus*, 336.  
*Venericardia*, 336.  
*prolongatus Miodon*, 336.  
*Propeamussium*, 203.  
*Psammbia*, 479.  
*Pseudamussium*, 205, 207, 208.  
*Pseudocardium*, 34, 52, 491—493.  
*pseudo-fossile, Cardium*, 389.  
*pubescens, Thracia*, 267, 268, 269.  
*puchlensis, Tellina*, 22, 25, 55, 440, 442—443.  
*puella, Cardita*, 19, 28, 52, 285, 314—315.  
*pulchella, Pandora*, 50, 51, 53, 270, 271, 273—274.  
*pulchra, Tellina*, 22, 29, 34, 55, 440, 441, 452—454.

**Q**

*quadrigenarium, Cardium*, 409, 410, 411.

**R**

*radiata, Tellina*, 439.  
*rafensis, Cardita*, 34, 39, 46, 52, 286, 328—329.  
*ramasyi, Leda*, 75.  
*randolphi, Pecten*, 205, 206.  
*Pecten (Pseudamussium)*, 205.

*rectus, Modiolus*, 223, 233, 236, 251, 255, 257.  
*reedi, Acanthocardia*, 18, 19, 23, 24, 51, 379, 398—400.  
*Cardium (Acanthocardia)*, 398.  
*refugioensis, Pecten*, 200.  
*aekinikensis, Ostrea*, 20, 53, 154, 162.  
*'restorationensis, Modiolus*, 20, 25, 53, 241, 242—244, 245, 248.  
*rhomboideum, Cardium coosense*, 393.  
*Laevicardium (Cerastoderma)*, 39, 44, 52, 379, 393—394.  
*rollandi, Astarte*, 39, 47, 51, 278, 280, 281—282.  
*rostrata, Nuculana*, 59.  
*rotunda, Cardita*, 293, 294.  
*rotundus, Glycymeris*, 141.  
*rudis, Pododesmus*, 214.

**S**

*Sacella*, 20, 25, 27, 33, 39, 40, 41, 43, 45, 46, 53, 59, 69—79.  
*sadoensis, Nuculana*, 63.  
*sagittaria, Yoldia*, 22, 29, 40, 45, 55, 83, 85, 91, 92, 93, 94, 98—100, 107, 129, 130, 131, 132.  
*sakhalinensis, Clementia (Egesta)*, 52, 419—420.  
*Laternula (Aelga)*, 19, 25, 52, 260, 263, 264—265, 266.  
*Lima*, 39, 41, 53, 211—212, 214.  
*Papyridea*, 40, 54, 401, 412—413.  
*Yoldia kuluntunensis*, 50, 55, 88, 99, 131—132.  
*Sanguinolaria*, 21, 28, 54, 475—480.  
*Sanguinolariidae*, 475—480.  
*sanguinolenta, Sanguinolaria*, 476.  
*santaecrucis, Phacoides (Miltha)*, 353.  
*santarosae, Tellina*, 445, 454.  
*Saxicavidae*, 503—505.  
*Saxidomus*, 434.  
*Scaphander*, 31, 41, 42, 43, 44.  
*scapha, Yoldia*, 40, 46, 55, 83, 86, 115, 117, 118—120, 121.  
*Scapharca*, 148.  
*scaphoides, Yoldia*, 120.  
*scapoosense, Cardium*, 38, 42.  
*schencki, Cardium*, 381, 383.  
*Schizodesma*, 492.  
*schizotoma, Arca*, 148.  
*scissurata, Yoldia*, 55, 81, 84, 88, 122, 123—125.  
*secta, Macoma*, 474.  
*securiformis, Papyridea*, 21, 27, 54, 401, 413.  
*securis, Chione*, 415, 416.  
*Venus*, 416.  
*Venus (Chione)*, 22, 29, 55, 416—418.  
*semiaspera, Diplodonta*, 361.  
*Mysia*, 361.  
*semiasperum, Taras (Felanilla)*, 27, 361.  
*Taras (Taras)*, 21, 29, 54, 359, 361—362.  
*septentrionalis, Glycymeris*, 145.  
*sericatus, Taras*, 368.  
*sertunayana, Papyridea*, 34, 40, 54, 358, 368, 369—370.  
*settunajensis, Taras (Felanilla) gouldi*, 34, 40, 54, 358, 368, 369—370.  
*shinjiense, Cardium*, 386, 387.  
*Laevicardium (Cerastoderma)*, 19, 25, 27, 39, 45, 49, 50, 52, 379, 386—388.  
*sicarius, Solen*, 483.  
*similis, Mactra*, 485.

*singularis*, *Pecten* (*Patinopecten?*), 21, 28, 54, 165, **200—201**.  
*slodkewitschi*, *Nuculana* (*Nuculana*), 20, 25, 39, 45, 46, 53, 60, **67—68**.  
*snatolana*, *Cardita*, 19, 25, 27, 28, 52, 285, 314, **331—332**.  
*Tivela*, 22, 23, 55, 426, **427—428**.  
*snatolensis*, *Glycymeris*, 19, 28, 52, 136, **142—145**.  
*Nuculana*, 77.  
*Nuculana* (*Sacella*), 20, 25, 53, 61, **77—78**.  
*Solen*, 21, 23, 54, 480, **482—483**.  
*solea*, *Modiolus*, 20, 25, 53, 241, **248—249**.  
*Solemya*, 21, 24, 31, 38, 40, 41, 42, 45, 46, 54, **57—59**, 111.  
*Solemyacidae*, **57—59**.  
*Solen*, 21, 23, 30, 54, **480—484**.  
*Solenacea*, **480—484**.  
*Solenia*, 481.  
*Solenidae*, **480—484**.  
*Soletellina*, 477, 479.  
*solida*, *Spisula*, 484.  
*sookensis*, *Corbicula*, 374, 376.  
*Modiolus*, 249, 250, 252, 253.  
*Sphaeriacea*, **370—377**.  
*Sphaeriidae*, **370—377**.  
*sp.*, *indet.*, *Cardita*, 19, 24, 52, **334—336**.  
*Pecten*, 54, **187—189**.  
*Venericardia*, 334.  
*spinosa*, *Papyridea*, 400.  
*Spisula*, 20, 25, 27, 28, 34, 49, 50, 51, 52, **484—491**, 492.  
*sp. nova*, *Nuculana*, 65, 66.  
*sp.*, *Placunanomia*, 215.  
*stanfordensis*, *Pecten*, 204.  
*stantoni*, *Solen*, 481.  
*stearnsii*, *Cardita*, 296.  
*stephensoni*, *Taras*, 368.  
*Stereomactra*, 492.  
*stimpsoni*, *Venus*, 416.  
*striatum*, *Pallium*, 169.  
*strigata*, *Yoldia*, 106, 123, 124, 125, 131.  
*Yoldia scissurata*, 124, 125.  
*stultorum*, *Mactra*, 484.  
*subaniwana*, *Liocyma*, 421, 423.  
*subdiaphana*, *Clementia*, 432, 433, 435.  
*Clementia* (*Compsomyax*), 432.  
*subfluctuosa*, *Liocyma*, 422, 423, 424, 425.  
*Liocyma fluctuosa*, 50, 51, 52, 421, **424—425**.  
*subimpressa*, *Leda*, 72.  
*subnipponica*, *Venericardia*, 335.  
*subobsoleta*, *Glycymeris*, 145.  
*subrefugiensis*, *Pecten* (*Patinopecten*), 21, 28, 54, 165, 191, **198—200**.  
*subscapha*, *Yoldia*, 40, 41, 44, 55, 83, 87, **117—118**.  
*subtenta*, *Cardita*, 289.  
*subtokunagai*, *Yoldia*, 38, 132, 133, 134.  
*subyessoensis*, *Pecten*, 202.  
*sulcata*, *Cardita*, 283.  
*sulcicosta*, *Arca*, 148.  
*supramontereyensis*, *Yoldia cooperi*, 90, 102, 127.  
*supraoregona*, *Yoldia*, 22, 29, 50, 51, 55, 84, 88, 94, **125—127**.  
*sviftii*, *Pecten*, 169.  
*Pecten* (*Pallium*), 21, 28, 40, 47, 48, 54, 164, **169—171**, 172, 174, 175, 176, 177, 178, 179, 180, 181, 183, 185.

## T

*taeniopleura*, *Cardium*, 399.  
*tanassevitschi*, *Pecten*, 167.  
*tanassevitschi Pecten* (*Chlamys*), 40, 47, 54, 165, **167—169**.  
*Tapes*, 421.  
*taphria*, *Leda*, 69, 71.  
*Nuculana* (*Sacella*), 20, 25, 27, 40, 41, 43, 45, 53, 61, **69—71**, 72, 73, 74, 75, 81.  
*Taras*, 21, 25, 27, 29, 31, 34, 40, 50, 54, **358—370**.  
*tatarica*, *Nuculana* (*Sacella*), 40, 53, 61, **74—76**.  
*Teleodesmacea*, **277—508**.  
*Tellina*, 21, 22, 23, 25, 27, 29, 50, 51, 54, 55, 260, 263, 264, **439—455**, 456, 458, 459, 460, 465, 467, 470, 472, 473, 474, 475.  
*Tellinacea*, **439—480**.  
*Tellinidae*, 263, **439—475**.  
*temblorensis*, *Yoldia*, 22, 26, 55, **100—101**.  
*tenera*, *Macoma*, 458.  
*tenuilineata*, *Tellina*, 460.  
*tenuimbricata*, *Glycymeris*, 145.  
*tenuissima*, *Yoldia*, 90.  
*Yoldia cooperi*, 89.  
*tenuistriatus*, *Modiolus*, 20, 28, 53, 442, **254—255**, 256, 257.  
*tetragonalis*, *Modiosus*, 20, 25, 53, 241, **247—248**.  
*Thracia*, 22, 25, 34, 55, 260, 263, 265, **266—269**.  
*thraciaeformis*, *Megayoldia*, 120.  
*Nucula*, 120.  
*Yoldia*, 22, 26, 40, 46, 55, 81, 83, 85, 86, 115, 119, **120—122**.  
*Thraciidae*, **266—269**.  
*Thyasira*, 22, 23, 24, 25, 26, 29, 38, 40, 45, 55, **339—352**.  
*Thyasiridae*, **339—352**.  
*tigerrinus*, *Pecten* 176, 179, 181.  
*tigilense*, *Laevicardium*, 19, 27, 52, 378, **380—381**.  
*tigilensis*, *Cuspidaria* (*Cardiomya*), 18, 19, 52, **275—276**.  
*Modiolus*, 20, 25, 28, 34, 53, 241, **249—250**, 251, 253.  
*Mytilus watersi*, 20, 25, 53, 220, **235—237**.  
*Solen*, 21, 23, 54, **480—482**, 483, 484.  
*Yoldia*, 22, 23, 55, 69, 83, 85, **91—93**.  
*tigiliana*, *Nuculana* (*Nuculana*), 20, 23, 53, 60, **68—69**.  
*Ostrea*, 21, 23, 30, 53, 154, **160—162**.  
*Thyasira*, 22, 26, 27, 55, 341, **349**, 351, 352.  
*tigrinus*, *Pecten*, 176, 179.  
*hillamookensis*, *Pecten* (*Pseudamusium*) *randolphi*, 205, 206.  
*titan*, *Ostrea*, 156, 157, 161.  
*Tivela*, 22, 23, 55, **425—428**.  
*tokunagai*, *Cardita*, 19, 25, 39, 44, 52, 287, **317—319**, 320, 321, 323, 325, 326, 331, 334.  
*Cardium*, 396.  
*Laevicardium* (*Cerastoderma*), 50, 51, 52, 379, **396—398**.  
*Venericardia*, 45, 317, 319, 325.  
*Yoldia*, 26, 40, 41, 43, 44, 45, 46, 55, 81, 84, 87, 97, 105, **132—134**.  
*townsendensis*, *Tellina*, 442.  
*Trachycardium*, 45, 52, 379, 380, **381—383**, 411.

*trapezoidea*, *Thracia*, 269.  
*trapezoides*, *Thracia*, 260, 263, 265, 267.  
*Tridonta*, 278.  
*trigonalis*, *Macoma inquinata*, 466, 467.  
*Modiolus*, 20, 25, 53, 241, 250—251.  
*trigonula*, *Diplodonta*, 365.  
*trilineata*, *Arca (Anadara)*, 19, 28, 51, 148—152, 153.  
*Arca (Arca)*, 148.  
*Arca (Scapharca)*, 148.  
*truncata*, *Mya*, 493, 499, 502.  
*Mya (Mya) arenaria*, 20, 25, 27, 28, 39, 45, 47, 53, 494, 496, 502—503.  
*Tellina*, 470.  
*truncatoides*, *Macoma*, 20, 25, 28, 49, 50, 52, 459, 469—471.  
*tumens*, *Pitaria*, 428, 432.  
*tumiensis*, *Cardita*, 39, 44, 45, 52, 286, 287, 327—328.  
*Venericardia*, 327.  
*turpiculus*, *Pecten*, 165.  
*Pecten (Chlamys)*, 21, 27, 54, 165—167.  
*Turritella*, 24, 32, 45, 93, 244, 400.

## U

*Ungulinidae*, 358—370.  
*usta*, *Diplodonta*, 365.  
*Felaniella*, 365.  
*Mysia (Felania)*, 365.  
*Taras (Felaniella)*, 21, 29, 34, 50, 54, 353, 365—267.  
*utcholokensis*, *Cardita*, 17, 19, 52, 286, 329—331.  
*Modiolus flabellatus*, 18, 20, 53, 241, 245—247.  
*Papyridea*, 21, 25, 54, 400, 403—404.

## V

*vagina*, *Solen*, 480.  
*vancouverensis*, *Palliolium pedroanus*, 208.  
*Pecten*, 204, 207.  
*van winkleae*, *Pecten*, 208, 210.  
*vaguerosensis*, *Laevicardium*, 383.  
*Ostrea*, 461.  
*Variamussium*, 22, 24, 30, 55, 165, 203—204.  
*vasilievskii*, *Yoldia*, 22, 26, 55, 88, 122—123, 125.  
*Veneracea*, 414—439.  
*Venerella*, 432.  
*Venericardia*, 45, 283, 287, 290, 291, 293, 299, 307, 316, 317, 319, 321, 324, 325, 327, 328, 329, 333, 334, 335, 336.  
*Veneridae*, 414—439.  
*ventricosa*, *Cardita*, 18, 19, 25, 52, 285, 291—292, 296, 297.

*Solemya*, 58.  
*Venericardia*, 291.  
*venulosa*, *Tellina*, 448, 449, 450, 451.  
*Tellina lutea*, 448, 450.  
*Venus*, 22, 29, 55, 342, 414—418, 421, 436, 438.  
*verrucosa*, *Venus*, 415.  
*vestitus*, *Glycymeris*, 141, 142.  
*viridis*, *Liocyma*, 421, 422, 423.  
*outrum*, *Palliolium*, 204.  
*Volsella*, 240.  
*voyi*, *Callista*, 489.  
*Maetra*, 488.  
*Maetra (Spisula) polynyma*, 20, 27, 52, 485, 488, 489—490.  
*Spisula*, 485, 488, 489.

## W

*wajampolkana*, *Thyasira*, 22, 27, 55, 340, 341, 349—350, 351, 352.  
*wajampolkensis*, *Modiolus*, 20, 25, 242, 251—253.  
*Nuculana (Sacella)*, 20, 25, 27, 53, 61, 73—74.  
*Pandora*, 21, 25, 54, 270, 271, 272—273, 274.  
*washingtonensis*, *Nuculana*, 77.  
*watanabei*, *Pecten*, 93.  
*watersi*, *Mytilus*, 20, 25, 53, 220, 235—237, 253.  
*watsi*, *Pecten*, 174, 176, 180, 183.  
*whitmani*, *Leda*, 68.

## Y

*yakatagensis*, *Cardita*, 290.  
*yatesi*, *Cardita*, 336, 337, 338.  
*Venericardia*, 336.  
*yessoensis*, *Glycymeris*, 19, 28, 52, 136, 139—142.  
*Pecten*, 189, 200.  
*Pecten (Patinopecten)*, 21, 28, 32, 40, 47, 48, 54, 164, 189—192, 195, 197, 200, 201, 202.  
*Pectunculus*, 139.  
*ynexianus*, *Modiolus*, 255, 256.  
*yokoyamai*, *Cardita*, 19, 25, 39, 45, 52, 286, 287, 318, 319—320, 321.  
*Macoma optiva*, 473.  
*Mytilus (?)*, 20, 23, 30, 53, 219, 221.  
*Yoldia*, 22, 23, 24, 26, 27, 29, 31, 32, 34, 38, 40, 41, 43, 44, 45, 46, 50, 51, 56, 59, 81—134.

## Z

*zealandica*, *Monia*, 214.  
*Zirfaea*, 508.

ТАБЛИЦЫ I—CVI И ОБЪЯСНЕНИЯ К НИМ  
PLATES I—CVI AND THEIR EXPLANATION

Таблица I

Фиг. 1. *Yoldia cooperi* Gabb var. *kovatschensis* Slodkewitsch. Голо-тип № 119/C 105. Бухта Ковачина, в 1.7 км к SW от р. Морошечной (западное побережье Камчатки). Верхний горизонт тигильской свиты. Ядро правой створки. Натур. велич. Стр. . . . . 881.

Фиг. 2. *Yoldia cooperi* Gabb var. *kovatschensis* Slodkewitsch. Паратип № 119/C 106. То же местонахождение, что и фиг. 1. Отпечаток левой створки. Натур. велич.

Фиг. 3. *Yoldia cooperi* Gabb var. *kovatschensis* Slodkewitsch. Паратип № 119/C 108. То же местонахождение, что и фиг. 1. Отпечаток левой створки с обломанным нижне-задним концом. Натур. велич.

Фиг. 4. *Yoldia cooperi* Gabb var. *kovatschensis* Slodkewitsch. Аллотип № 119/C 107. То же местонахождение, что и фиг. 1. Ядро левой створки со слегка обломанным передним концом. Натур. велич.

Фиг. 5. *Yoldia tigilensis* Slodkewitsch. Голотип № 120/C 110. Берег моря, в 0.85 км к W от р. Майнач (западное побережье Камчатки). Верхний горизонт тигильской свиты. Отпечаток правой створки с несколько обломанным передним концом. Натур. велич. Стр. . . . . 91.

Фиг. 6. *Yoldia tigilensis* Slodkewitsch. Паратип № 120/C 354. То же местонахождение, что и фиг. 5. Ядро правой створки с обломанным задним концом. Натур. велич.

Фиг. 7. *Yoldia tigilensis* Slodkewitsch. Аллотип № 120/C 349. То же местонахождение, что и фиг. 5. Обломанное ядро правой створки с сохранившимися зубами. Натур. велич.

Фиг. 8. *Yoldia tigilensis* Slodkewitsch. Репродукция изображения «*Yoldia sagittaria*» из монографии М. Yokoyama «Moll. Foss. from Karafto», pl. LXXV, fig. 7. «Beds III: in a gray shale (Nampi Beds) of the Tcharnikka». Отпечаток наружной поверхности правой створки. Уменьш.  $\times 4/5$ .

Plate I

Fig. 1. *Yoldia cooperi* Gabb var. *kovatschensis* Slodkewitsch. Holotype № 119/C 105. Kovachina Bay, 1.7 km SW of Moroshechnaya river (western coast of Kamchatka.) Upper horizon of Tighil series. Cast of right valve. Natural size. Page. . . . . 87.

Fig. 2. *Yoldia cooperi* Gabb var. *kovatschensis* Slodkewitsch. Paratype № 119/C 106. Same locality, as fig. 1. Impression of left valve. Natural size.

Fig. 3. *Yoldia cooperi* Gabb var. *kovatschensis* Slodkewitsch. Paratype № 119/C 108. Same locality, as fig. 1. Impression of left valve; posterior end broken off. Natural size.

Fig. 4. *Yoldia cooperi* Gabb var. *kovatschensis* Slodkewitsch. Allotype № 119/C 107. Same locality, as fig. 1. Cast of left valve; anterior end slightly broken off. Natural size.

Fig. 5. *Yoldia tigilensis* Slodkewitsch. Holotype № 120/C 110. Western coast of Kamchatka, 0.85 km W of Mainach river. Impression of right valve; anterior end slightly broken off. Natural size. Page. . . . . 89.

Fig. 6. *Yoldia tigilensis* Slodkewitsch. Paratype № 120/C 354. Same locality, as fig. 5. Cast of right valve; posterior end slightly broken off. Natural size.

Fig. 7. *Yoldia tigilensis* Slodkewitsch. Allotype № 120/C 349. Same locality, as fig. 5. Cast of right valve, slightly broken off; well preserved teeth are visible. Natural size.

Fig. 8. *Yoldia tigilensis* Slodkewitsch. Reproduction of M. Yokoyama's illustration of «*Yoldia sagittaria*» in «Moll. Foss. from Karafto», pl. LXXV, fig. 7. «Beds III: in a gray shale (Nampi Beds) of the Tcharnikka». External impression of right valve.  $4/5$  natural size.

<sup>1</sup> Здесь и везде далее цифры указывают на страницы первой части настоящей монографии (см. «Палеонтология СССР», т. X, ч. 3, вып. 18).



Фиг. 9. *Yoldia alta* Slodkewitsch. Метатип № 149/С 371. Берег моря, в 0.45 км к W от устья р. Половинки (западное побережье Камчатки). Ваямпольская свита. Ядро правой створки. Увелич.  $\times 7/5$ . Стр. 93.

Фиг. 10. *Yoldia alta* Slodkewitsch. Голотип № S/44. Западное побережье Камчатки, Тигильский район. Ваямпольская свита. Ядро с остатками раковины; передний конец нижнего края немного обломан. Вид слева. Натур. велич.

Фиг. 10a. *Yoldia alta* Slodkewitsch. Тот же экземпляр, что и на фиг. 10. Вид сверху. Натур. велич.

### Таблица II

Фиг. 1. *Yoldia caudata* Khomenko. Лектотип № 24/5044. К Е от мыса Марии на полуострове Шмидта (северный Сахалин). Нижняя свита машигарского разреза. Репродукция из монографии И. Хоменко «Стратиграфия трет. отл. пол. Шмидта», табл. IV, фиг. 2. Ядро правой створки с сохранившейся местами раковинной. Натур. велич. Стр. . . . 94.

Фиг. 2. *Yoldia caudata* Khomenko. Котип № 23/5044. То же местонахождение, что и фиг. 1. Репродукция из той же монографии, табл. IV, фиг. 1. Ядро правой створки с сохранившейся раковинной. Натур. велич.

Фиг. 3. *Yoldia caudata* Khomenko. Котип № 27/5044. То же местонахождение, что и фиг. 1. Репродукция из той же монографии, табл. IV, фиг. 5. Правая створка; вид снаружи. Натур. велич.

Фиг. 4. *Yoldia longissima* Slodkewitsch. Метатип № 146/С 368. Правый берег р. Снатол, в 13 км от устья (западное побережье Камчатки). Нижний отдел ваямпольской свиты. Отпечаток правой створки с обломанным задним концом. Натур. велич. Стр. . . . . 96.

Фиг. 5. *Yoldia longissima* Slodkewitsch. Голотип № S/46. Река Кинкиль (западное побережье Камчатки). Ваямпольская свита. Ядро с несколько обломанными передним и задним концами; отчетливо видны заднее мускульное впечатление и мантийный синус. Вид слева. Натур. велич.

Фиг. 5a. *Yoldia longissima* Slodkewitsch. Тот же экземпляр, что и на фиг. 5. Вид сверху. Натур. велич.

Фиг. 6. *Yoldia longissima* Slodkewitsch. Метатип № 145/С 367. Бухта Ковачина, между устьями рр. Морошечной и Ковачины (западное побережье Камчатки). Нижний отдел кавранской свиты. Ядро с поломанными передним и задним концами; вид слева. Натур. велич.

Фиг. 7. *Yoldia sagittaria* Yokoyma. Плезитотип № 30/5044. Между мысом Марии и Машигарским заливом на полуострове Шмидта (северный Сахалин). Вен-

Фиг. 9. *Yoldia alta* Slodkewitsch. Метатип № 149/С 371. Western coast of Kamchatka, 0.45 km W of the mouth of Polovinka river. Vayempolka series. Cast of right valve. Enlarged  $\times 7/5$ . Page. 90.

Фиг. 10. *Yoldia alta* Slodkewitsch. Holotype № S/44. Western coast of Kamchatka, Tighil region. Vayempolka series. Cast with preserved portions of shell; anterior end of the ventral margin slightly broken off. View of left side. Natural size.

Фиг. 10a. *Yoldia alta* Slodkewitsch. Dorsal view of same specimen, as figure 10. Natural size.

### Plate II

Фиг. 1. *Yoldia caudata* Khomenko. Lectotype № 24/5044. East of Cape Maria, Schmidt Peninsula (Northern Sakhalin). Lower series of Machigar Section. Reproduction of I. Khomenko's illustration in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1935, pl. IV, fig. 2. Cast of right valve with preserved portions of shell. Natural size. Page. .90.

Фиг. 2. *Yoldia caudata* Khomenko. Cotype № 23/5044. Same locality, as fig. 1. Reproduction from the same monograph, pl. IV, fig. 1, Cast of right valve with partly preserved shell. Natural size.

Фиг. 3. *Yoldia caudata* Khomenko. Cotype № 27/5044. Same locality, as fig. 1. Reproduction from the same monograph, pl. IV, fig. 5. External view of right valve. Natural size.

Фиг. 4. *Yoldia longissima* Slodkewitsch. Metatype № 146/С 368. Right bank of Snatol river, 13 km upward the mouth (western coast of Kamchatka). Lower horizon of Vayempolka series. Impression of right valve; posterior end broken off. Natural size. Page. . . . . 90.

Фиг. 5. *Yoldia longissima* Slodkewitsch. Holotype № S/46. Kinkil river (western coast of Kamchatka). Vayempolka series. Cast; anterior and posterior ends broken off. View of left side. Natural size.

Фиг. 5a. *Yoldia longissima* Slodkewitsch. Dorsal view of same specimen, as fig. 5. Natural size.

Фиг. 6. *Yoldia longissima* Slodkewitsch. Metatype № 145/С 367. Kovachina Bay; between the mouths of Moroshechnaya and Kovachina rivers (western coast of Kamchatka). Lower horizon of Kavrana series. Cast; anterior and posterior ends broken off. View of left side. Natural size.

Фиг. 7. *Yoldia sagittaria* Yokoyma. Plesiotype № 30/5044. Between Cape Maria and Machigar Bay, Schmidt Peninsula (northern Sakhalin). Vengheri series.

герийская свита. Репродукция из монографии И. Хоменко «Стратиграфия трет. отл. пол. Шмидта», табл. IV, фиг. 11. Ядро правой створки с несколько поломанной раковиной. Натур. велич. Стр. . . 98.

Фиг. 8. *Yoldia sagittaria* Yokoyama. Плезิโอтип № 29/5044. То же местонахождение, что и фиг. 7. Репродукция из той же монографии, табл. IV, фиг. 10. Ядро правой створки. Натур. велич.

Фиг. 9. *Yoldia sagittaria* Yokoyama. Голотип. Репродукция из монографии М. Yokoyama «Moll. Rem. from Middle Jō-Ban», табл. II, фиг. 10. Местонахождение: «Nagako, Kubota. Слои Mizuno». Ядро с несколько обломанным нижне-задним концом; вид справа. Натур. велич.

### Таблица III

Фиг. 1. *Yoldia temblorensis* Anderson & Martin. Голотип № 106. Река Керн, Калифорния. Нижний миоцен. Репродукция из монографии Ф. Anderson & Martin «Neocene Records», табл. 3, фиг. 3. Наружный вид левой створки. Натур. велич. Стр. . . 100.

Фиг. 2. *Yoldia cf. temblorensis* Anderson & Martin. Образец № S/21. Р. Сопочная (западное побережье Камчатки). Нижний отдел ваямпольской свиты. Ядро левой створки с обломанным передним концом. Увелич.  $\times 13/5$ .

Фиг. 3. *Yoldia pennulata* Slodkewitsch. Голотип № S/2. Берег моря; Тигильский район (западное побережье Камчатки). Верхний отдел ваямпольской свиты. Ядра обеих створок с сохранившимися зубами. Увелич.  $\times 8/5$ . Стр. . . 103.

Фиг. 4. *Yoldia pennulata* Slodkewitsch. Отпечаток наружной поверхности того же экземпляра, что и на фиг. 3. Увелич.  $\times 8/5$ .

Фиг. 5. *Yoldia cf. amygdalaeformis* Slodkewitsch. Образец № 199. Окрестности залива Корфа (восточное побережье Камчатки). Верхний отдел глинисто-песчаниковой свиты. Репродукция изображения «*Yoldia impressa*» из монографии И. Хоменко «О возрасте третичных отложений зал. Корфа», таблица V, фиг. 1. Ядро правой створки с несколько обломанным задним концом. Натур. велич. Стр. . . 104.

Фиг. 6. *Yoldia amygdalaeformis* Slodkewitsch. Голотип № 152/C 118. Правый берег р. Морошечной, в 20 км выше сел. Моросhechnого (западное побережье Камчатки). Нижний отдел ваямпольской свиты. Обломанный сзади отпечаток наружной поверхности левой створки. Увелич.  $\times 3/2$ .

Фиг. 7. *Yoldia kamschatica* Slodkewitsch. Голотип № 154/C 116. Левый берег р. Ковачиной, в 0.75 км ниже слияния трех ее истоков (западное побережье

Reproduction of I. Khomenko's illustration in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1935, pl. IV, fig. 11. Cast of right valve, with partly preserved shell. Natural size. Page. . . 93.

Фиг. 8. *Yoldia sagittaria* Yokoyama. Plesiotype № 29/5044. Same locality, as fig. 7. Reproduction of I. Khomenko's illustration in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1935, pl. IV, fig. 10. Cast of right valve. Natural size.

Фиг. 9. *Yoldia sagittaria* Yokoyama. Holotype. Reproduction of M. Yokoyama's illustration in «Moll. Rem. from Middle Jō-Ban», pl. II, fig. 10. «Fossil occurrence — Nagako, Kubota. Mizunoya-Beds». Cast; posterior ventral end slightly broken off; view of right side. Natural size.

### Plate III

Фиг. 1. *Yoldia temblorensis* Anderson & Martin. Holotype № 106. «On north bank of Kern River, Kern County, California». Lower Miocene. Reproduction of Anderson & Martin's illustration in «Neocene Records», pl. 3, fig. 3. External view of left valve. Natural size. Page. . . 91.

Фиг. 2. *Yoldia cf. temblorensis* Anderson & Martin. Specimen № S/21. Sopochnaya river (western coast of Kamchatka). Lower horizon of Vayempolka series. Cast of left valve; anterior dorsal end broken off. Enlarged  $\times 13/5$ .

Фиг. 3. *Yoldia pennulata* Slodkewitsch. Holotype № S/2. Western coast of Kamchatka; Tigil' region. Upper horizon of Vayempolka series. Cast of both valves showing well preserved teeth. Enlarged  $\times 8/5$ . Page. . . 92.

Фиг. 4. *Yoldia pennulata* Slodkewitsch. External impression of same specimen, as fig. 3. Enlarged  $\times 8/5$ .

Фиг. 5. *Yoldia cf. amygdalaeformis* Slodkewitsch. Specimen № 199. Coast of the Korf Gulf (eastern Kamchatka). Upper part of the sandstone and clay series. Reproduction of I. Khomenko's illustration of «*Yoldia impressa*» in «On the Age of the Tert. Form. along the Coast of Korf Gulf», pl. V, fig. 1. Cast of right valve; posterior end slightly broken off. Natural size. Page. . . . . 92.

Фиг. 6. *Yoldia amygdalaeformis* Slodkewitsch. Holotype № 152/C 118. Right bank of Moroshechnaya river, 20 km upward Moroshechnaya village (western coast of Kamchatka). Lower horizon of Vayempolka series. External impression of left valve, posterior end slightly broken off. Enlarged  $\times 3/2$ .

Фиг. 7. *Yoldia kamschatica* Slodkewitsch. Holotype № 154/C 116. Left bank, 0.75 km downward from the confluence of three forks of Kovachina river

Камчатки). Нижний отдел ваямпольской свиты. Отпечаток наружной поверхности левой створки. Увелич.  $\times 3/2$ . Стр. . 102.

Фиг. 8. *Yoldia* (?) *kochtanensis* Slodkewitsch. Голотип № S/20. Р. Коктана (западное побережье Камчатки). Ваямпольская свита. Отпечаток наружной поверхности левой створки. Увелич.  $\times 17/10$ . Стр. . 101.

Фиг. 9. *Yoldia convexa* Slodkewitsch. Паратип № S/40. Р. Матерая Ваямполька (западное побережье Камчатки). Кавранская свита. Ядро; макушка обломана; вид слева. Натур. велич. Стр. . 105.

Фиг. 9а. *Yoldia convexa* Slodkewitsch. Тот же экземпляр, что и на фиг. 9; вид сверху. Натур. велич.

Фиг. 10. *Yoldia convexa* Slodkewitsch. Голотип № S/39. То же местонахождение, что и фиг. 9. Ядро с остатками раковины; вид справа. Натур. велич.

Фиг. 11. *Yoldia multidentata* Khomenko. Лектотип № 45/5044. Между рр. Пиль и Венгери на полуострове Шмидта (северный Сахалин). Каскадная свита. Репродукция из монографии И. Хоменко «Стратиграфия трет. отл. пол. Шмидта», табл. V, фиг. 13. Ядро створки с обломанной макушкой. Натур. велич. Стр. . 109.

Фиг. 12. *Yoldia multidentata* Khomenko. Котип № 46/5044. То же местонахождение, что и фиг. 11. Репродукция из той же монографии, табл. V, фиг. 14. Ядро правой створки. Натур. велич.

Фиг. 13. *Yoldia scissurata* Dall. Плезиотип № 1/5305. Река В. Чахма (восточное побережье Камчатки). Миоцен (?). Левая створка; вид снаружи. Увелич.  $\times 3/2$ . Стр. . 123.

Фиг. 14. *Yoldia scissurata* Dall. Плезиотип № 2/5305. То же местонахождение, что и фиг. 13. Наружный вид левой створки; задний конец обломан. Увелич.  $\times 3/2$ .

Фиг. 15. *Yoldia scissurata* Dall. Репродукция из монографии U. Grant & H. Gale «Pliocene and Pleistocene Mollusca», табл. I, фиг. 1. Правая створка современной формы из Puget Sound. Уменьш.  $\times 8/10$ .

#### Таблица IV

Фиг. 1. *Yoldia anastasia* Khomenko. Лектотип № 48/3104а. Р. Уиньи, канава № 1—а (восточный Сахалин). Верхний отдел нутовской свиты. Репродукция из монографии И. Хоменко «Стратиграфия трет. пл. в. Сахал», табл. III, фиг. 6. Ядро левой створки. Натур. велич. Стр. . 106.

Фиг. 2. *Yoldia anastasia* Khomenko. Паратип № 47/3104а. Р. Аскасай (восточный Сахалин). Верхний отдел нутовской

(western coast of Kamchatka). Lower horizon of Vayempolka series. External impression of left valve. Enlarged  $\times 3/2$ . Page. 92.

Фиг. 8. *Yoldia* (?) *kochtanensis* Slodkewitsch. Holotype № S/20. Kokhtana river (western coast of Kamchatka). Vayempolka series. External impression of left valve. Enlarged  $\times 17/10$ . Page. . 96.

Фиг. 9. *Yoldia convexa* Slodkewitsch. Paratype № S/40. Materaya Vayempolka river (western coast of Kamchatka). Kavrana series. Cast; view of left side. Beaks broken off. Natural size. Page. 93.

Фиг. 9а. *Yoldia convexa* Slodkewitsch. Dorsal view of same specimen, as fig. 9. Natural size.

Фиг. 10. *Yoldia convexa* Slodkewitsch. Holotype № S/39. Same locality, as fig. 9. Cast with preserved portions of the shell; view of right side. Natural size.

Фиг. 11. *Yoldia multidentata* Khomenko. Lectotype № 45/5044. Between Pil and Vengheri rivers, Schmidt Peninsula (northern Sakhalin) Kaskadnaya series. Reproduction of I. Khomenko's illustration in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1935, pl. V, fig. 13. Cast of left valve; beaks broken off. Natural size. Page. 95.

Фиг. 12. *Yoldia multidentata* Khomenko. Cotype № 46/5044. Same locality, as fig. 11. Reproduction of I. Khomenko's illustration in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1935, pl. V, fig. 14. Cast of right valve. Natural size.

Фиг. 13. *Yoldia scissurata* Dall. Pleisiotype № 1/5305. G. Chazhma river (eastern coast of Kamchatka). Miocene (?). External view of left valve. Enlarged  $\times 3/2$ . Page. . 102.

Фиг. 14. *Yoldia scissurata* Dall. Pleisiotype № 2/5305. Same locality, as fig. 13. External view of left valve; posterior end broken off. Enlarged  $\times 3/2$ .

Фиг. 15. *Yoldia scissurata* Dall. Reproduction of U. Grant & H. Gale's illustration in «Pliocene and Pleistocene Mollusca», pl. I, fig. 1. Right valve of a recent specimen from Puget Sound.  $8/10$  of natural size.

#### Plate IV

Фиг. 1. *Yoldia anastasia* Khomenko. Lectotype № 48/3104а. Uyni river, tr. № 1—а (eastern Sakhalin). Upper horizon of Nutovo series. Reproduction of I. Khomenko's illustration in «Stratigraphy of Tert. Beds of East. Sakhalin», pl. III, fig. 6. Cast of left valve. Natural size. Page. . 106.

Фиг. 2. *Yoldia anastasia* Khomenko. Paratype № 47/3104а. Askasai river (eastern Sakhalin). Upper horizon of Nutovo

свиты. Репродукция из монографии И. Хоменко «Стратиграфия трет. пл. в Сахал.», табл. III, фиг. 5. Ядро левой створки. Natur. велич.

Фиг. 3. *Yoldia subscapha* K h o m e n k o. Голотип № 37/5044. Между рр. Пиль и Венгери на полуострове Шмидта (северный Сахалин). Каскадная свита. Репродукция из монографии И. Хоменко «Стратиграфия трет. отл. пол. Шмидта», табл. V, фиг. 5. Ядро правой створки. Natur. велич. Стр. . . . 117.

Фиг. 4. *Yoldia djakovi* S l o d k e w i t s c h. Голотип № 154/C 117. Левый берег р. Ковачиной, в 0,75 км ниже слияния трех ее истоков (западное побережье Камчатки). Нижний отдел ваямпольской свиты. Отпечаток наружной поверхности левой створки. Увелич.  $\times 3/2$ . Стр. 108.

Фиг. 5. *Yoldia djakovi* S l o d k e w i t s c h. Плезеотип № 71/5043. К северу от мыса Пильво, полуостров Шмидта (северный Сахалин). Верхне-пильская свита. Репродукция изображения «*Yoldia olympiana*» из монографии И. Хоменко «Стратиграфия трет. сл. пол. Шмидта», табл. VII, фиг. 8. Ядро правой створки с обломанной раковиной. Natur. велич.

Фиг. 6. *Yoldia djakovi* S l o d k e w i t s c h. Аллотип № 154/C 391. Левый берег р. Ковачиной, в 0,75 км ниже слияния трех ее истоков (западное побережье Камчатки). Нижний отдел ваямпольской свиты. Обломанное ядро правой створки с сохранившимися зубами. Увелич.  $\times 3/2$ .

Фиг. 7. *Yoldia djakovi* S l o d k e w i t s c h. Паратип № 154/C 392. То же местонахождение, что и фиг. 6. Двусторчатый экземпляр; вид слева. Задний конец обломан. Увелич.  $\times 7/5$ .

Фиг. 7а. *Yoldia djakovi* S l o d k e w i t s c h. Тот же экземпляр, что и на фиг. 7; вид сверху. Увелич.  $\times 7/5$ .

Фиг. 8. *Yoldia* cf. *olympiana* C l a r k. Образец № 2/C 379. Правый берег в верховьях р. Пухль (западное побережье Камчатки). Ковачинская свита. Отпечаток левой створки с обломанным задне-брюшным концом. Увелич.  $\times 3/2$ . Стр. . . . 110.

Фиг. 9. *Yoldia olympiana* C l a r k. Голотип № 10. В 3/4 мили к западу от устья реки West Twin. Олигоцен. Репродукция из монографии В. С l a r k «*Pelecypoda from Mar. Oligocene*», табл. 9, фиг. 9. Наружный вид левой створки. Уменьш.  $\times 3/4$ .

Фиг. 10. *Yoldia* cf. *olympiana* C l a r k. Образец № 151/C 384. Левый берег р. Пухль, в 3 км ниже первого правобережного притока (западное побережье Камчатки). Ковачинская свита. Ядро левой створки с обломанным передним концом. Увелич.  $\times 13/10$ .

Фиг. 11. *Yoldia* cf. *olympiana* C l a r k. Образец № 2/C 374. Правый берег в верховьях р. Пухль (западное побережье Кам-

series. Reproduction of I. K h o m e n k o ' s illustration in «Stratigraphy of Tert. Beds of East. Sakhalin», pl. III, fig. 5. Cast of left valve. Natural size.

Фиг. 3. *Yoldia subscapha* K h o m e n k o. Holotype № 37/5044. Between Pil and Vengheri rivers, Schmidt Peninsula (northern Sakhalin). Kaskadnaya series. Reproduction of I. K h o m e n k o ' s illustration in «Stratigraphy of Tert. Beds of Schmidt Penins.», 1935, pl. V, fig. 5. Cast of right valve. Natural size. Page. . . . 99.

Фиг. 4. *Yoldia djakovi* S l o d k e w i t s c h. Holotype № 154/C 117. Left bank of Kovachina river, 0.75 km downward from the confluence of three sources (western coast of Kamchatka). Lower horizon of Vayempolka series. External impression of left valve. Enlarged  $3/2$ . Page. . . . 94.

Фиг. 5. *Yoldia djakovi* S l o d k e w i t s c h. Plesiotype № 71/5043. North of Cape Pilvo, Schmidt Peninsula (northern Sakhalin). Upper-Pil series. Reproduction of I. K h o m e n k o ' s illustration of «*Yoldia olympiana*» in «Stratigraphy of Tert. Beds of Schmidt Penins.», 1934, pl. VII, fig. 8. Cast of right valve with partly preserved shell. Natural size.

Фиг. 6. *Yoldia djakovi* S l o d k e w i t s c h. Allotype № 154/C 391. Left bank, 0.75 km downward from the confluence of three forks of Kovachina river (western coast of Kamchatka). Lower horizon of Vayempolka series. Cast of right valve partly broken off; well preserved teeth are visible. Enlarged  $\times 3/2$ .

Фиг. 7 *Yoldia djakovi* S l o d k e w i t s c h. Paratype № 154/C 392. Same locality, as fig. 5. External view of left valve; posterior end broken off. Enlarged  $\times 7/5$ .

Фиг. 7а. *Yoldia djakovi* S l o d k e w i t s c h. Dorsal view of same specimen, as fig. 7. Enlarged  $\times 7/5$ .

Фиг. 8. *Yoldia* cf. *olympiana* C l a r k. Specimen № 2/C 379. Right bank of the upper course of Pukhl river (western coast of Kamchatka). Kovachina series. External impression of left valve; anterior ventral end broken off. Enlarged  $\times 3/2$ . Page. . . . 95.

Фиг. 9. *Yoldia olympiana* C l a r k. Holotype № 10. «Outcrops in sea cliffs west of West Twin River for a distance of 3/4 mile». Reproduction of B. C l a r k ' s illustration in «*Pelecypoda from Mar. Oligocene*», pl. 9, fig. 9. External view of left valve. 3/4 natural size.

Фиг. 10. *Yoldia* cf. *olympiana* C l a r k. Specimen № 151/C 384. Left bank of Pukhl river, 3 km downward from the first right fork (western coast of Kamchatka). Kovachina series. Cast of left valve; anterior end broken off. Enlarged  $\times 13/10$ .

Фиг. 11. *Yoldia* cf. *olympiana* C l a r k. Specimen № 2/C 374. Right bank of the upper course of Pukhl river (western coast

чатки). Ковачинская свита. Отпечаток правой створки с обломанными передним и нижним концами. Увелич.  $\times 3/2$ .

Фиг. 12. *Yoldia packardi* Clark. Плезиотип № 9. К востоку от реки Twin, Вашингтон. Олигоцен. Репродукция из монографии В. Clark «Pelecypoda from Mar. Oligocene», табл. 9, фиг. 7. Наружный вид правой створки. Уменьш.  $\times 3/4$ . Стр. . . . 412.

Фиг. 13. *Yoldia* aff. *packardi* Clark. Образец № 2/С114. Правый берег в верховьях р. Пухль (западное побережье Камчатки). Ковачинская свита. Обломанное спереди ядро левой створки. Натур. велич.

Фиг. 14. *Yoldia pilvoensis* sp. nova. Идеотип № 39/5044. Между рр. Пиль и Венгери, полуостров Шмидта (северный Сахалин). Каскадная свита. Репродукция изображения «*Yoldia breviscapa*» из монографии И. Хоменко «Стратиграфия трет. отл. пол. Шмидта», табл. V, фиг. 7. Ядро левой створки. Натур. велич. Стр. 412.

Фиг. 15. *Yoldia pilvoensis* sp. nova. Голотип № 61/5043. Мыс Пильво, полуостров Шмидта (северный Сахалин). Верхне-пильская свита. Репродукция изображения «*Yoldia breviscapa*» из монографии И. Хоменко «Стратиграфия трет. сл. пол. Шмидта», табл. VIII, фиг. 15. Отпечаток наружной поверхности правой створки. Натур. велич.

Фиг. 16. *Yoldia nitida* Slodkewitsch. Голотип № S/43. Берег моря, Тигильский район (западное побережье Камчатки). Нижний отдел ваямпольской свиты. Двустворчатый экземпляр; вид слева. Натур. велич. Стр. . . . 114.

Фиг. 16а. *Yoldia nitida* Slodkewitsch. Тот же экземпляр, что и на фиг. 16, вид сверху. Натур. велич.

Фиг. 17. *Yoldia nitida* Slodkewitsch. Метатип № 148/С370. Левый берег р. Снатол, в 0,6 км выше устья ключа (западное побережье Камчатки). Нижний отдел ваямпольской свиты. Отпечаток правой створки с обломанным нижним краем. Натур. велич.

### Таблица V

Фиг. 1. *Yoldia cerussata* Slodkewitsch. Голотип № 126/С226. Левый берег р. Снатол, в 6 км выше корячских юрт (западное побережье Камчатки). Нижний отдел ваямпольской свиты. Ядро левой створки. Увелич.  $\times 5/4$ . Стр. . . 116.

Фиг. 2. *Yoldia cerussata* Slodkewitsch. Паратип № 126/С227. То же местонахождение, что и фиг. 1. Внутренняя поверхность правой створки; нижний край частично обломан. Увелич.  $\times 4/3$ .

Фиг. 3. *Yoldia scapha* Yokoyama. Лектотип. «Beds A. Odomari, South Karafuto, Pliocene». Репродукция из монографии М. Yokoyama «Moll. Foss. fr. Karafuto».

of Kamchatka). Kovachina series. External impression of right valve; anterior and ventral ends broken off. Enlarged  $\times 3/2$ .

Fig. 12. *Yoldia packardi* Clark. Pleisotype № 9. «In sea cliffs one-half to three miles east of Twin, Washington». Reproduction of B. Clark's illustration in «Pelecypoda fr. Mar. Oligocene», pl. 9, fig. 7. External view of right valve.  $3/4$  natural size. Page. . . . 96.

Fig. 13. *Yoldia* aff. *packardi* Clark. Specimen № 2/С114. Right bank of the upper course of Pukhl river (western coast of Kamchatka). Kovachina series. Cast of left valve; anterior end broken off. Natural size.

Fig. 14. *Yoldia pilvoensis* sp. nova. Ideotype № 39/5044. Between Pil and Vengheri rivers, Schmidt Peninsula (northern Sakhalin). Kaskadnaya series. Reproduction of I. Khomenko's illustration of «*Yoldia breviscapa*» in «Stratigraphy of Tert. Beds of Schmidt Penins.», 1935, pl. V, fig. 7. Cast of left valve. Natural size. Page. . . . 97.

Fig. 15. *Yoldia pilvoensis* sp. nova. Holotype № 61/5043. Cape Pilvo, Schmidt Peninsula (northern Sakhalin). Upper-pil series. Reproduction of I. Khomenko's illustration of «*Yoldia breviscapa*» in «Stratigraphy of Tert. Beds of Schmidt Penins.», 1934, pl. VIII, fig. 15. External impression of right valve. Natural size.

Fig. 16. *Yoldia nitida* Slodkewitsch. Holotype № S/43. Western coast of Kamchatka, Tighil region. Lower horizon of Vayempolka series. View of left side. Natural size. Page. . . . 98.

Fig. 16a. *Yoldia nitida* Slodkewitsch. Dorsal view of same specimen, as fig. 16. Natural size.

Fig. 17. *Yoldia nitida* Slodkewitsch. Metatype № 148/С370. Left bank of Snatol river, 0.6 km upward from the mouth of the fork (western coast of Kamchatka). Lower horizon of Vayempolka series. Impression of right valve; ventral margin broken off. Natural size.

### Plate V

Fig. 1. *Yoldia cerussata* Slodkewitsch. Holotype № 126/С226. Left bank of Snatol river, 6 km upward from koryakian huts (western coast of Kamchatka). Lower horizon of Vayempolka series. Cast of left valve. Enlarged  $\times 5/4$ . Page. . 98.

Fig. 2. *Yoldia cerussata* Slodkewitsch. Paratype № 126/С227. Same locality, as fig. 1. Interior view of right valve; ventral margin partly broken off. Enlarged  $\times 4/3$ .

Fig. 3. *Yoldia scapha* Yokoyama. Lectotype. «Beds A. Odomari, South Karafuto, Pliocene». Reproduction of M. Yokoyama's illustration in «Moll. Foss. fr.

табл. LXXV, фиг. 5. Ядро правой створки. Натур. велич. Стр. . . . . 118.

Фиг. 4. *Yoldia scapha* Y o k o y a m a. Плезотиоп № 35/5044. В 5.5 км к югу от устья р. Пиль, полуостров Шмидта (северный Сахалин). Венгерийская свита. Репродукция из монографии И. Хоменко «Стратиграфия третичн. отл. пол. Шмидта», табл. V, фиг. 3. Ядро левой створки с частично сохранившейся раковиной. Натур. велич.

Фиг. 5. *Yoldia scapha* Y o k o y a m a. Плезотиоп № 58/5043. К северу от устья р. Венгери, полуостров Шмидта (северный Сахалин). Венгерийская свита. Репродукция из монографии И. Хоменко «Стратиграфия третичн. сл. пол. Шмидта», табл. VII, фиг. 7. Наружный вид левой створки. Натур. велич.

Фиг. 6. *Yoldia scapha* Y o k o y a m a. Плезотиоп № 36/5044. К югу от р. Пиль, полуостров Шмидта (северный Сахалин). Венгерийская свита. Репродукция из монографии И. Хоменко «Стратиграфия третичн. отл. пол. Шмидта», табл. V, фиг. 4. Ядро левой створки. Натур. велич.

Фиг. 7. *Yoldia vasiljevskii* S l o d k e w i t s c h. Голотип № 153/C 119. Берег моря, в 4.35 км к W от устья р. Половинки (западное побережье Камчатки). Нижний отдел ваямпольской свиты. Наружный вид левой створки. Увелич.  $\times 4/3$ . Стр. 122.

Фиг. 7a. *Yoldia vasiljevskii* S l o d k e w i t s c h. Отпечаток наружной поверхности того же экземпляра, что и на фиг. 7. Увелич.  $\times 4/3$ .

Фиг. 8. *Yoldia thraciaeformis* (S t o r e r). Современная форма из Puget Sound. Репродукция из монографии U. Grant & H. Gale «Pliocene and Pleistoc. Moll.», табл. I, фиг. 12. Наружный вид левой створки. Уменьш.  $\times 4/5$ . Стр. . . . . 120.

Фиг. 8a. *Yoldia thraciaeformis* (S t o r e r). То же, что и фиг. 8. Внутренний вид правой створки. Уменьш.  $\times 4/5$ .

Фиг. 9. *Yoldia thraciaeformis* (S t o r e r). Плезотиоп № 56/5043. Между горой Шмидта и мысом Горнера, полуостров Шмидта (северный Сахалин). Маямрафская свита. Репродукция из монографии И. Хоменко «Стратиграфия трет. сл. пол. Шмидта», табл. VII, фиг. 5. Ядро правой створки. Натур. велич.

Фиг. 10. *Yoldia thraciaeformis* (S t o r e r). Плезотиоп № S/42. Р. Аманина (западное побережье Камчатки). Верхний отдел ваямпольской свиты. Ядро левой створки с обломанным передним концом. Натур. велич.

Фиг. 11. *Yoldia thraciaeformis* (S t o r e r). Плезотиоп № 55/5043. Между горой Шмидта и мысом Горнера, полуостров Шмидта (северный Сахалин). Маямрафская свита. Репродукция из монографии И. Хоменко «Стратиграфия третичн. сл. пол. Шмидта», табл. VII, фиг. 4. Ядро правой створки. Натур. велич.

Фиг. 12. *Yoldia supraoregona* K h o

Karafon», pl. LXXV, fig. 5. Cast of right valve. Natural size. Page. . . . . 99.

Фиг. 4. *Yoldia scapha* Y o k o y a m a. Плезотиоп № 35/5044. 5.5 км south of the mouth of Pil river, Schmidt Peninsula (northern Sakhalin). Vengheri series. Reproduction of I. Khomenko's illustration in «Stratigraphy of Tert. Beds of Schmidt Penins.», 1935, pl. V, fig. 3. Cast of left valve with partly preserved shell. Natural size.

Фиг. 5. *Yoldia scapha* Y o k o y a m a. Плезотиоп № 58/5043. North of the mouth of Vengheri river, Schmidt Peninsula (northern Sakhalin). Vengheri series. Reproduction of I. Khomenko's illustration in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1934, pl. VII, fig. 7. External view of left valve. Natural size.

Фиг. 6. *Yoldia scapha* Y o k o y a m a. Плезотиоп № 36/5044. South of Pil river, Schmidt Peninsula (northern Sakhalin). Vengheri series. Reproduction of I. Khomenko's illustration in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1935, pl. V, fig. 4. Cast of left valve. Natural size.

Фиг. 7. *Yoldia vasiljevskii* S l o d k e w i t s c h. Holotype № 153/C 119. Western coast of Kamchatka, 4.35 km north of mouth of Polovinka river. Lower horizon of Vayempolka series. External view of left valve. Enlarged  $\times 4/3$ . Page. . 101.

Фиг. 7a. *Yoldia vasiljevskii* S l o d k e w i t s c h. External impression of same specimen, as fig. 7. Enlarged  $\times 4/3$ .

Фиг. 8. *Yoldia thraciaeformis* (S t o r e r). Recent specimen from Puget Sound. Reproduction of U. Grant & H. Gale's illustration in «Plioc. and Pleistoc. Moll.», pl. I, fig. 12. External view of left valve.  $4/5$  natural size. Page. . . . . 100.

Фиг. 8a. *Yoldia thraciaeformis* (S t o r e r). Same specimen, as fig. 8. Interior view of right valve.  $4/5$  natural size.

Фиг. 9. *Yoldia thraciaeformis* (S t o r e r). Плезотиоп № 56/5043. Between Mount Schmidt and Cape Horner, Schmidt Peninsula (northern Sakhalin). Mayamraf series. Reproduction of I. Khomenko's illustration in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1934, pl. VII, fig. 5. Cast of right valve. Natural size.

Фиг. 10. *Yoldia thraciaeformis* (S t o r e r). Плезотиоп № S/42. Amanina river (western coast of Kamchatka). Upper horizon of Vayempolka series. Cast of left valve; anterior end broken off. Natural size.

Фиг. 11. *Yoldia thraciaeformis* (S t o r e r). Плезотиоп № 55/5043. Between Mount Schmidt and Cape Horner, Schmidt Peninsula (northern Sakhalin). Mayamraf series. Reproduction of I. Khomenko's illustration in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1934, pl. VII, fig. 4. Cast of right valve. Natural size.

Фиг. 12. *Yoldia supraoregona* K h o

менко. Лектотип № 58/3104а. Р. Паромай, шурф № 4 (восточный Сахалин). Верхний отдел нутовской свиты. Репродукция из монографии И. Хоменко «Стратиграфия трет. пл. в. Сахалина», табл. III, фиг. 8. Ядро левой створки. Natur. велич. Стр. . . . . 125.

Фиг. 13. *Yoldia supraoregona* Хоменко. Котип № 59/3104а. Р. Кыдыланы, шурф № 10 (восточный Сахалин). Верхний отдел нутовской свиты. Репродукция из монографии И. Хоменко «Стратиграфия трет. пл. в. Сахалина», табл. III, фиг. 9. Ядро правой створки. Natur. велич.

Фиг. 14. *Yoldia supraoregona* Хоменко. Плезотиоп № S/49. Р. Кохтана (западное побережье Камчатки). Верхний (?) отдел кавранской свиты. Ядро левой створки. Natur. велич.

#### Таблица VI

Фиг. 1. *Yoldia kuluntunensis* Słodkewitsch. Паратип № S/113. Р. Тигиль (западное побережье Камчатки). Верхний отдел кавранской свиты. Отпечаток наружной поверхности левой створки. Увелич.  $\times 17/10$ . Стр. . . . . 128.

Фиг. 2. *Yoldia kuluntunensis* Słodkewitsch. Голотип № S/98. Р. Кулунтун (западное побережье Камчатки). Верхний отдел кавранской свиты. Наружный вид левой створки. Увелич.  $\times 11/10$ .

Фиг. 3. *Yoldia kuluntunensis* Słodkewitsch. Паратип № S/112. То же местонахождение, что и фиг. 2. Наружный вид правой створки с погтертой поверхностью. Увелич.  $\times 3/2$ .

Фиг. 4. *Yoldia kuluntunensis* Słodkewitsch. Паратип № S/48. То же местонахождение, что и фиг. 2. Ядро правой створки с обломанным задним концом и местами сохранившейся скульптурой наружной поверхности. Natur. велич.

Фиг. 5. *Yoldia ochotensis* Хоменко. Идеотип № 39/3104а. Правый берег реки Б. Гаромай (восточный Сахалин). Наднутовская свита. Репродукция изображения «*Yoldia cooperi ochotensis*» из монографии И. Хоменко «Стратиграфия трет. пл. в. Сахалина», табл. III, фиг. 4. Обломок заднего конца правой створки. Natur. велич. Стр. . . . . 127.

Фиг. 6. *Yoldia ochotensis* Хоменко. Гомеотип № S/41. Р. Кулунтун (западное побережье Камчатки). Верхний отдел кавранской свиты. Ядро левой створки со следами скульптуры наружной поверхности; передний конец слегка обломан. Увелич.  $\times 6/5$ .

Фиг. 7. *Yoldia ochotensis* Хоменко. Лектотип № 38/3104а. Правый берег реки Б. Гаромай (восточный Сахалин). Наднутовская свита. Репродукция изображения «*Yoldia cooperi ochotensis*» из монографии И. Хоменко «Стратиграфия трет. пл. в. Сахалина», табл. III, фиг. 3.

менко. Лектотип № 58/3104а. Паромай river, excav. № 4 (eastern Sakhalin). Upper horizon of Nutovo series. Reproduction of I. Khomenko's illustration in «Stratigraphy of Tert. Beds of E. Sakhalin», pl. III, fig. 8. Cast of left valve. Natural size. Page. . . . . 102.

Фиг. 13. *Yoldia supraoregona* Хоменко. Cotype № 59/3104а. Kydylanyi river, excav. № 10 (eastern Sakhalin). Upper horizon of Nutovo series. Reproduction of I. Khomenko's illustration in «Stratigraphy of Tert. Beds of E. Sakhalin», pl. III, fig. 9. Cast of right valve. Natural size.

Фиг. 14. *Yoldia supraoregona* Хоменко. Plesiotype № S/49. Kokhtana river (eastern coast of Kamchatka). Upper (?) horizon of Kavrana series. Cast of left valve. Natural size.

#### Plate VI

Fig. 1. *Yoldia kuluntunensis* Słodkewitsch. Paratype № S/113. Tigil river (western coast of Kamchatka). Upper horizon of Kavrana series. External impression of left valve. Enlarged  $\times 17/10$ . Page. . . . . 102.

Fig. 2. *Yoldia kuluntunensis* Słodkewitsch. Holotype № S/98. Kuluntun river (western coast of Kamchatka). Upper horizon of Kavrana series. External view of left valve. Enlarged  $\times 11/10$ .

Fig. 3. *Yoldia kuluntunensis* Słodkewitsch. Paratype № S/112. Same locality as fig. 2. External view of right valve with slightly eroded surface. Enlarged  $\times 3/2$ .

Fig. 4. *Yoldia kuluntunensis* Słodkewitsch. Paratype № S/48. Same locality as fig. 2. Cast of right valve with preserved portion of external sculpture; posterior end broken off. Natural size.

Fig. 5. *Yoldia ochotensis* Khomenko. Ideotype № 39/3104а. Right bank of Great Haromai river (eastern Sakhalin). Supra-nutovo series. Reproduction of I. Khomenko's illustration of «*Yoldia cooperi ochotensis*» in «Stratigraphy of the Tert. Beds of East. Sakhalin», pl. III, fig. 4. Posterior end of right valve. Natural size. Page. . . . . 102.

Fig. 6. *Yoldia ochotensis* Khomenko. Homeotype № S/41. Kuluntun river (western coast of Kamchatka). Upper horizon of Kavrana series. Cast of left valve with remains of external sculpture; anterior end slightly broken off. Enlarged  $\times 6/5$ .

Fig. 7. *Yoldia ochotensis* Słodkewitsch. Lectotype № 38/3104а. Right bank of Great Haromai river (eastern Sakhalin). Supra-nutovo series. Reproduction of I. Khomenko's illustration of «*Yoldia cooperi ochotensis*» in «Stratigraphy of the Tert. Beds of East. Sakhalin», pl.

Поврежденное ядро левой створки с сохранившимися следами наружной скульптуры. Натур. велич.

Фиг. 8. *Yoldia cooperi* Gabb. Современная форма из залива Halfmoon в Калифорнии. Для сравнения. Репродукция из монографии U. Grant & H. Gale «Plioc. and Pleistoc. Mollusca», табл. 14, фиг. 3. Внутренний вид левой створки. Уменьш.  $\times 4/5$ .

Фиг. 9. *Yoldia tokunagai* Yokoyama. Лектотип. «Saku. Kamenoo-Beds». Репродукция из монографии M. Yokoyama «Moll. Rem. fr. Middle Jō-Ban», табл. II, фиг. 15. Ядро правой створки. Натур. велич. Стр. 132.

Фиг. 10. *Yoldia tokunagai* Yokoyama. Синтип. «Miyanosaku. Kamenoo-Beds». Репродукция из монографии M. Yokoyama «Moll. Rem. fr. Middle Jō-Ban», табл. II, фиг. 16. Отпечаток наружной поверхности правой створки; макушка обломана. Натур. велич.

Фиг. 11. *Yoldia tokunagai* Yokoyama. Плезитотип № 48/5044. К югу от р. Пиль, полуостров Шмидта (северный Сахалин). Венгерийская свита. Репродукция из монографии И. Хоменко «Стратиграфия трет. отл. пол. Шмидта», табл. V, фиг. 16. Отпечаток наружной поверхности правой створки; макушка обломана. Натур. велич.

Фиг. 12. *Yoldia tokunagai* Yokoyama. Плезитотип № 69/5043. К северу от устья р. Венгери, полуостров Шмидта (северный Сахалин). Венгерийская свита. Репродукция из монографии И. Хоменко «Стратиграфия трет. сл. пол. Шмидта», табл. VIII, фиг. 10. Обломок передней части левой створки. Натур. велич.

Фиг. 13. *Yoldia tokunagai* Yokoyama. Плезитотип № 67/5043. К северу от устья р. Венгери, полуостров Шмидта (северный Сахалин). Каскадная свита. Репродукция из монографии И. Хоменко «Стратиграфия трет. сл. пол. Шмидта», табл. VIII, фиг. 8. Ядро левой створки с отпечатком наружной скульптуры. Натур. велич.

Фиг. 14. *Yoldia tokunagai* Yokoyama. Плезитотип № 63/5043. К северу от устья р. Венгери, полуостров Шмидта (северный Сахалин). Венгерийская свита. Репродукция из монографии И. Хоменко «Стратиграфия трет. отл. пол. Шмидта», табл. VIII, фиг. 4. Ядро левой створки. Натур. велич.

Фиг. 15. *Yoldia tokunagai* Yokoyama. Плезитотип № 50/5044. К югу от мыса Горнера, полуостров Шмидта (северный Сахалин). Верхне-пильская свита. Репродукция из монографии И. Хоменко «Стратиграфия трет. отл. пол. Шмидта», табл. VI, фиг. 1. Ядро правой створки. Натур. велич.

III, fig. 3. Cast of left valve with remains of external sculpture. Natural size.

Fig. 8. *Yoldia cooperi* Gabb. Recent specimen from Halfmoon bay, California. For comparison. Reproduction of U. Grant & H. Gale's illustration in «Pliocene and Pleistoc. Moll. of Calif.», pl. 14, fig. 3. External surface of left valve.  $4/5$  natural size.

Fig. 9. *Yoldia tokunagai* Yokoyama. Lectotype. «Saku. Kamenoo-Beds». Reproduction of M. Yokoyama's illustration in «Moll. Rem. fr. Middle Jō-Ban», pl. II, fig. 15. Cast of right valve. Natural size. Page. 103.

Fig. 10. *Yoldia tokunagai* Yokoyama. Syntype. «Miyanosaku. Kamenoo-Beds». Reproduction of M. Yokoyama's illustration in «Moll. Rem. fr. Middle Jō-Ban», pl. II, fig. 16. External impression of right valve; beaks broken off. Natural size.

Fig. 11. *Yoldia tokunagai* Yokoyama. Plesiotype № 48/5044. South of mouth of Pil river, Schmidt Peninsula (northern Sakhalin). Vengheri series. Reproduction of I. Khomenko's illustration in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1935, pl. V, fig. 16. External impression of right valve; beaks broken off. Natural size.

Fig. 12. *Yoldia tokunagai* Yokoyama. Plesiotype № 69/5043. North of the mouth of Vengheri river, Schmidt Peninsula (northern Sakhalin). Vengheri series. Reproduction of I. Khomenko's illustration in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1934, pl. VIII, fig. 10. External surface of left valve; posterior end broken off. Natural size.

Fig. 13. *Yoldia tokunagai* Yokoyama. Plesiotype № 67/5043. North of the mouth of Vengheri river, Schmidt Peninsula (northern Sakhalin). Kaskadnaya series. Reproduction of I. Khomenko's illustration in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1934, pl. VIII, fig. 8. Cast of left valve, with impression of external sculpture. Natural size.

Fig. 14. *Yoldia tokunagai* Yokoyama. Plesiotype № 63/5043. North of the mouth of Vengheri river, Schmidt Peninsula (northern Sakhalin). Vengheri series. Reproduction of I. Khomenko's illustration in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1934, pl. VIII, fig. 4. Cast of left valve. Natural size.

Fig. 15. *Yoldia tokunagai* Yokoyama. Plesiotype № 50/5044. South of Cape Horner, Schmidt Peninsula (northern Sakhalin). Upper-Pil series. Reproduction of I. Khomenko's illustration in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1935, pl. VI, fig. 1. Cast of right valve. Natural size.



## Таблица VII

Фиг. 1. *Yoldia kuluntunensis* Slodkewitsch var. *sakhalinensis* Slodkewitsch. Голотип № 72/3104а. Восточное Нутово, шурф № 8 (восточный Сахалин). Средний отдел нутовской свиты. Репродукция изображения «*Yoldia sagittaria*» из монографии И. Хоменко «Стратиграфия трет. пл. в. Сахалина», табл. III, фиг. 12. Обломанное ядро правой створки с сохранившейся местами раковиной. Natur. велич. Стр. . . . 431.

Фиг. 2. *Yoldia kuluntunensis* Slodkewitsch var. *sakhalinensis* Slodkewitsch. Паратип № 71/3104а. Р. Эхаби, шурф № 10 (восточный Сахалин). Средний отдел нутовской свиты. Репродукция изображения «*Yoldia sagittaria*» из монографии И. Хоменко «Стратиграфия трет. пл. в. Сахал.», табл. III, фиг. 11. Несколько обломанное ядро правой створки. Natur. велич.

Фиг. 3. *Nuculana (Nuculana) pennula* (Yokoyama). Синтип. «Saku, Iino. Kamenoo-Beds». Репродукция изображения «*Leda pennula*» из монографии М. Yokoyama «Moll. Rem. fr. Middle Jô-Ban», табл. II, фиг. 7. Ядро правой створки. По М. Yokoyama принадлежит этому ядру к виду «*Leda pennula*» сомнительна (op. cit., pg. 9). Увелич.  $\times 7/5$ . Стр. . . . 63.

Фиг. 4. *Nuculana (Nuculana) pennula* (Yokoyama). Лектотип. «Takinosaku (Kami-Arakawa, Iino-miura). Kamenoo-Beds». Репродукция изображения «*Leda pennula*» из монографии М. Yokoyama «Moll. Rem. fr. Middle Jô-Ban», табл. II, фиг. 8. Ядро левой створки. Увелич.  $\times 7/5$ .

Фиг. 5. *Nuculana (Nuculana) pennula* (Yokoyama). Синтип. «Daikatsu bore-hole, Yokonesawa. Kamenoo-Beds». Репродукция изображения «*Leda pennula*» из монографии М. Yokoyama «Moll. Rem. fr. Middle Jô-Ban», табл. II, фиг. 9. Отпечаток задней половины наружной поверхности правой створки. Увелич.  $\times 7/5$ .

Фиг. 6. *Nuculana (Nuculana) pennula* (Yokoyama). Плезіотип № 56/5044. К востоку от мыса Марин, полуостров Шмидта (северный Сахалин). Венгерийская свита. Репродукция изображения «*Leda pennula*» из монографии И. Хоменко «Стратиграфия трет. отл. пол. Шмидта» табл. VI, фиг. 11. Ядро правой створки с частично сохранившейся раковиной. Natur. велич.

Фиг. 7. *Nuculana (Nuculana) pennula* (Yokoyama). Плезіотип № 1/5294. К северу от устья р. Мал. Сертунай (западный Сахалин). Рыхлая свита. Репродукция из монографии Н. Когана «Pelecypoda из рыхлой свиты», табл. I, фиг. 1. Ядро двустворчатого экземпляра; вид слева. Увелич.  $\times 3/2$ .

Фиг. 7а. *Nuculana (Nuculana) pennula* (Yokoyama). Тот же экземпляр, что и на фиг. 7; вид сверху. Увелич.  $\times 3/2$ .

## Plate VII

Fig. 1. *Yoldia kuluntunensis* Slodkewitsch var. *sakhalinensis* Slodkewitsch. Holotype № 72/3104а. East Nutovo, excavation № 8 (eastern Sakhalin). Middle horizon of Nutovo series. Reproduction of I. Khomenko's illustration of «*Yoldia sagittaria*» in «Stratigraphy of the Tert. Beds of East. Sakhalin», pl. III, fig. 12. Cast of right valve with preserved portion of shell. Natural size. Page. 103.

Fig. 2. *Yoldia kuluntunensis* Slodkewitsch var. *sakhalinensis* Slodkewitsch. Paratype № 71/3104а. Ekhabi river, excavation № 10 (eastern Sakhalin). Middle horizon of Nutovo series. Reproduction of I. Khomenko's illustration of «*Yoldia sagittaria*» in «Stratigraphy of the Tert. Beds of East. Sakhalin», pl. III, fig. 11. Cast of right valve; slightly broken off. Natural size.

Fig. 3. *Nuculana (Nuculana) pennula* (Yokoyama). Syntype. «Saku. Iino. Kamenoo-Beds». Reproduction of M. Yokoyama's illustration of «*Leda pennula*» in «Moll. Rem. fr. Middle Jô-Ban», pl. II, fig. 7. Cast of right valve. «A doubtful specimen» after M. Yokoyama (op. cit., pg. 9). Enlarged  $\times 7/5$ . Page. . 83.

Fig. 4. *Nuculana (Nuculana) pennula* (Yokoyama). Lectotype. «Takinosaku (Kami-Arakawa, Iino-miura). Kamenoo-Beds». Reproduction of M. Yokoyama's illustration of «*Leda pennula*» in «Moll. Rem. fr. Middle Jô-Ban», pl. II, fig. 8. Cast of left valve. Enlarged  $\times 7/5$ .

Fig. 5. *Nuculana (Nuculana) pennula* (Yokoyama). Syntype. «Daikatsu bore-hole, Yokonesawa, Kamenoo-Beds». Reproduction of M. Yokoyama's illustration of «*Leda pennula*» in «Moll. Rem. fr. Middle Jô-Ban», pl. II, fig. 9. External impression of posterior end of right valve. Enlarged  $\times 7/5$ .

Fig. 6. *Nuculana (Nuculana) pennula* (Yokoyama). Pleistotype № 56/5044. East of Cape Maria, Schmidt Peninsula (northern Sakhalin). Vengheri series. Reproduction of I. Khomenko's illustration of «*Leda pennula*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1935, pl. VI, fig. 11. Cast of right valve with partly preserved shell. Natural size.

Fig. 7. *Nuculana (Nuculana) pennula* (Yokoyama). Pleistotype № 1/5294. North of the mouth of L. Sertunai river (western Sakhalin). Rykhlaya series. Reproduction of N. Kogan's illustration in «Pelecypoda of Rykhlaya series», pl. I, fig. 1. Cast view of left side. Enlarged  $\times 3/2$ .

Fig. 7a. *Nuculana (Nuculana) pennula* (Yokoyama). Dorsal view of same specimen, as fig. 7. Enlarged  $\times 3/2$ .

Фиг. 8. *Nuculana (Nuculana) pennula* (Yokoyama). Плезютип № 57/5044. К северу от устья р. Венгери, полуостров Шмидта (северный Сахалин). Венгерийская свита. Репродукция изображения «*Leda pennula*» из монографии И. Хоменко «Стратиграфия трет. отл. пол. Шмидта», табл. VI, фиг. 12. Ядро правой створки. Натур. велич.

Фиг. 9. *Nuculana (Nuculana) pennula* (Müller). Рисунок современной формы из монографии I. Oldroyd «Marine Shells of N. Amer.», табл. 19, фиг. 7. Наружный вид левой створки. Уменьш.  $\times 4/5$ . Стр. 61.

Фиг. 9а. *Nuculana (Nuculana) pennula* (Müller). Тот же экземпляр, что и на фиг. 9. Уменьш.  $\times 4/5$ .

Фиг. 10. *Nuculana (Nuculana) pennula* (Müller). Плезютип № S/18. Р. Жиловая Ваямполка (западное побережье Камчатки). Кавранская (?) свита. Ядро правой створки. Увелич.  $\times 11/5$ .

Фиг. 11. *Nuculana (Nuculana) pennula* (Müller). Плезютип № S/19. То же местонахождение, что и фиг. 10. Ядро правой створки. Увелич.  $\times 11/5$ .

Фиг. 12. *Nuculana (Nuculana) majamraphensis* (Khomenko). Лектотип № 75/5043. К северу от устья р. Псыкауф, полуостров Шмидта (северный Сахалин). Маямрафская свита. Репродукция изображения «*Leda majamraphensis*» из монографии И. Хоменко «Стратиграфия трет. сл. пол. Шмидта», табл. III, фиг. 9. Несколько обломанное ядро левой створки. Натур. велич. Стр. 64.

Фиг. 13. *Nuculana (Nuculana) majamraphensis* (Khomenko). Синтип № 73/5043. К северу от устья р. Венгери, полуостров Шмидта (северный Сахалин). Венгерийская свита. Репродукция изображения «*Leda majamraphensis*» из монографии И. Хоменко «Стратиграфия трет. сл. пол. Шмидта», табл. III, фиг. 7. Ядро правой створки. Натур. велич.

Фиг. 14. *Nuculana (Nuculana) majamraphensis* (Khomenko). Синтип № 74/5043. К северу от устья р. Псыкауф, полуостров Шмидта (северный Сахалин). Маямрафская свита. Репродукция изображения «*Leda majamraphensis*» из монографии И. Хоменко «Стратиграфия трет. сл. пол. Шмидта», табл. III, фиг. 8. Ядро левой створки. Натур. велич.

Фиг. 15. *Nuculana (Nuculana) majamraphensis* (Khomenko). Синтип № 61/5044. К востоку от мыса Марии, полуостров Шмидта (северный Сахалин). Венгерийская свита. Репродукция изображения «*Leda majamraphensis*» из монографии И. Хоменко «Стратиграфия трет. отл. пол. Шмидта», табл. VI, фиг. 16. Ядро левой створки. Натур. велич.

Фиг. 16. *Nuculana (Nuculana) majamraphensis* (Khomenko). Синтип № 60/5044. Между горой Шмидта и мысом Горнера, полуостров Шмидта (северный Сахалин). Маямрафская свита. Репродукция

Fig. 8. *Nuculana (Nuculana) pennula* (Yokoyama). Plesiotype № 57/5044. North of the mouth of Vengheri river, Schmidt Peninsula (northern Sakhalin). Vengheri series. Reproduction of I. Khomenko's illustration of «*Leda pennula*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1935, pl. VI, fig. 12. Cast of right valve. Natural size.

Fig. 9. *Nuculana (Nuculana) pennula* (Müller). Recent specimen. Reproduction of I. Oldroyd's illustration in «Marine Shells of N. Amer.», pl. 19, fig. 7. External view of left valve.  $4/5$  natural size. Page. 83.

Fig. 9a. *Nuculana (Nuculana) pennula* (Müller). Dorsal view of same specimen, as fig. 9.  $4/5$  natural size.

Fig. 10. *Nuculana (Nuculana) pennula* (Müller). Plesiotype № S/18. Zhilovaya Vayempolka river (western coast of Kamchatka). Kavrana (?) series. Cast of right valve. Enlarged  $\times 11/5$ .

Fig. 11. *Nuculana (Nuculana) pennula* (Müller). Plesiotype № S/19. Same locality, as fig. 10. Cast of right valve. Enlarged  $\times 11/5$ .

Fig. 12. *Nuculana (Nuculana) majamraphensis* (Khomenko). Lectotype № 75/5043. North of the mouth of Psykauf river, Schmidt Peninsula (northern Sakhalin). Mayamraf series. Reproduction of I. Khomenko's illustration of «*Leda majamraphensis*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.» 1934, pl. III, fig. 9. Cast of left valve. Natural size. Page. 83.

Fig. 13. *Nuculana (Nuculana) majamraphensis* (Khomenko). Syntype № 73/5043. North of the mouth of Vengheri river, Schmidt Peninsula (northern Sakhalin). Vengheri series. Reproduction of I. Khomenko's illustration of «*Leda majamraphensis*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1934, pl. III, fig. 7. Cast of right valve. Natural size.

Fig. 14. *Nuculana (Nuculana) majamraphensis* (Khomenko). Syntype № 74/5043. North of the mouth of Psykauf river, Schmidt Peninsula (northern Sakhalin). Mayamraf series. Reproduction of I. Khomenko's illustration of «*Leda majamraphensis*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1934, pl. III, fig. 8. Cast of left valve. Natural size.

Fig. 15. *Nuculana (Nuculana) majamraphensis* (Khomenko). Syntype № 61/5044. East of Cape Maria, Schmidt Peninsula (northern Sakhalin). Vengheri series. Reproduction of I. Khomenko's illustration of «*Leda majamraphensis*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1935, pl. VI, fig. 16. Cast of left valve. Natural size.

Fig. 16. *Nuculana (Nuculana) majamraphensis* (Khomenko). Syntype № 60/5044. Between Mount Schmidt and Cape Horner, Schmidt Peninsula (northern Sakhalin). Mayamraf series. Repro-

изображения «*Leda majamraphensis*» из монографии И. Хоменко «Стратиграфия трет. отл. пол. Шмидта», табл. VI, фиг. 15. Ядро левой створки. Натур. велич.

Фиг. 17. *Nuculana (Nuculana) majamraphensis* (K h o m e n k o). Синтип № 59/5044. То же местонахождение, что и фиг. 16. Репродукция изображения «*Leda majamraphensis*» из монографии И. Хоменко «Стратиграфия трет. отл. пол. Шмидта», табл. VI, фиг. 14. Ядро правой створки. Натур. велич.

Фиг. 18. *Nuculana (Nuculana) tigliana* S l o d k e w i t s c h. Голотип № 120/C113. Западное побережье Камчатки, 0,85 км. к W от р. Майнач. Верхний горизонт тигильской свиты. Ядро правой створки. Увелич.  $\times 7/5$ . Стр. . . . . 68.

Фиг. 19. *Nuculana (Nuculana?) cf. kavranensis* sp. nova. «Beds II: in the «Lower Sandstone» (Lower Kongi Beds) of the river Nampi, just above its trifurcation. Lower or Middle Pliocene». Репродукция изображения «*Leda confusa*» из монографии М. Юкоуама «Moll. Foss. fr. Karafto», табл. LXXXVI, фиг. 6. Ядра на поверхности пласта. Натур. велич. Стр. . 65

Фиг. 20. *Nuculana (Nuculana?) kavranensis* sp. nova. Голотип № S/8. Р. Какерток (западное побережье Камчатки). Кавранская свита. Ядро правой створки. Увелич.  $\times 11/5$ .

Фиг. 21. *Nuculana (Nuculana) slodkewitschi* K o g a n (in litt.). Голотип № 5/5294. К северу от устья р. Мал. Сертунай (западный Сахалин). Рыхлая свита. Репродукция из монографии Н. Когана «Фауна рыхлой свиты», табл. I, фиг. 3. Ядро правой створки с частично сохранившейся раковиной. Натур. велич. Стр. 67.

Фиг. 22. *Nuculana (Nuculana) slodkewitschi* K o g a n (in litt.). Плезютип № 76/5043. К северу от устья р. Венгери, полуостров Шмидта (северный Сахалин). Венгерийская свита. Репродукция изображения «*Leda confusa*» из монографии И. Хоменко «Стратиграфия трет. сл. пол. Шмидта», табл. III, фиг. 10. Наружный вид правой створки. Натур. велич.

Фиг. 23. *Nuculana (Sacella) kamtschatica* sp. nova. Голотип № 1/5305. Окрестности Усть-Камчатка (восточное побережье Камчатки). Миоцен (?). Двустворчатое ядро с частично сохранившейся раковиной; вид слева. Натур. велич. Стр. . . . . 71.

Фиг. 23а. *Nuculana (Sacella) kamtschatica* sp. nova. Тот же экземпляр, что и на фиг. 23; вид сверху. Натур. велич.

#### Таблица VIII

Фиг. 1. *Nuculana (Sacella) taphria* (D a l l). «Pleistocene, near Goleta, Santa Barbara County». Калифорния. Репродукция изображения «*Nuculana taphria*» из монографии U. Grant & H. Gale

duction of I. K h o m e n k o's illustration of «*Leda majamraphensis*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1935, pl. VI, fig. 15. Cast of left valve. Natural size.

Фиг. 17. *Nuculana (Nuculana) majamraphensis* (K h o m e n k o). Syntype № 59/5044. Same locality, as fig. 16. Reproduction of I. K h o m e n k o's illustration of «*Leda majamraphensis*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», pl. VI, fig. 14. Cast of right valve. Natural size.

Фиг. 18. *Nuculana (Nuculana) tigliana* S l o d k e w i t s c h. Holotype № 120/C113. Western coast of Kamchatka, 0.85 km west of the mouth of Mainach river. Upper horizon of Tighil series. Cast of right valve. Enlarged  $\times 7/5$ . Page. . . . . 84.

Фиг. 19. *Nuculana (Nuculana?) cf. kavranensis* sp. nova. «Beds II: in the «Lower Sandstone» (Lower Kongi-Beds) of the river Nampi, just above its trifurcation. Lower or Middle Pliocene». Reproduction of M. Y o k o u a m a's illustration of «*Leda confusa*» in «Moll. Foss. fr. Karafto», pl. LXXXVI, fig. 6. Casts. Natural size. Page. . . 83.

Фиг. 20. *Nuculana (Nuculana?) kavranensis* sp. nova. Holotype № S/8. Kakeratok river (western coast of Kamchatka). Kavrana series. Cast of right valve. Enlarged  $\times 11/5$ .

Фиг. 21. *Nuculana (Nuculana) slodkewitschi* K o g a n (in litt.). Holotype № 5/5294. North of the mouth of L. Ser-tunai river (western Sakhalin). Rykhlaya series. Reproduction of N. K o g a n's illustration in «Fauna of Rykhlaya series», pl. I, fig. 3. Cast of right valve with partly preserved shell. Natural size. Page. . 84.

Фиг. 22. *Nuculana (Nuculana) slodkewitschi* K o g a n (in litt.). Plesiotype № 76/5043. North of the mouth of Vengheri river, Schmidt Peninsula (northern Sakhalin). Vengheri series. Reproduction of I. K h o m e n k o's illustration of «*Leda confusa*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1934, pl. III, fig. 10. External view of right valve. Natural size.

Фиг. 23. *Nuculana (Sacella) kamtschatica* sp. nova. Holotype № 1/5305. Vicinity of Ust-Kamchatsk (eastern coast of Kamchatka). Miocene (?). Cast with partly preserved shell; view of left side. Natural size. Page. . . . . 85.

Фиг. 23а. *Nuculana (Sacella) kamtschatica* sp. nova. Dorsal view of same specimen, as fig. 23. Natural size.

#### Plate VIII

Фиг. 1. *Nuculana (Sacella) taphria* (D a l l) «Pleistocene, near Goleta, Santa Barbara Co». Reproduction of U. Grant & H. Gale's illustration of «*Nuculana taphria*» in «Plioc. and Pleistoc. Moll.» pl.

«Plioc. and Pleistoc. Moll.», табл. 1, фиг. 9. Наружный вид правой створки. Уменьш.  $\times 4/5$ . Стр. . . . . 84.

Фиг. 2. *Nuculana (Sacella) cf. taphria* (Dall). Образец № 77/5043. Мыс Пильво, полуостров Шмидта (северный Сахалин). Верхне-пильская свита. Репродукция изображения «*Leda taphria*» из монографии И. Хоменко «Стратиграфия трет. сл. пол. Шмидта», табл. III, фиг. 12. Ядро левой створки. Natur. велич.

Фиг. 3. *Nuculana (Sacella) taphria* (Dall). Плезотиоп № 78/5043. К северу от устья р. Венгери, полуостров Шмидта (северный Сахалин). Венгерийская свита. Репродукция изображения «*Leda taphria*» из монографии И. Хоменко «Стратиграфия трет. сл. пол. Шмидта», табл. III, фиг. 13. Наружный вид правой створки. Natur. велич.

Фиг. 4. *Nuculana (Sacella) taphria* (Dall). Плезотиоп № 79/5043. То же местонахождение, что и фиг. 3. Репродукция изображения «*Leda taphria*» из монографии И. Хоменко «Стратиграфия трет. сл. пол. Шмидта», табл. III, фиг. 14. Наружный вид левой створки; передний конец обломан. Natur. велич.

Фиг. 5. *Nuculana (Sacella) taphria* (Dall). Плезотиоп № S/20. Р. Кинкиль (западное побережье Камчатки). Верхний отдел ваямпольской свиты. Отпечаток правой створки с поврежденным задним концом. Увелич.  $\times 2/1$ .

Фиг. 6. *Nuculana (Sacella) taphria* (Dall). Плезотиоп № S/21. То же местонахождение, что и фиг. 5. Обломок ядра левой створки. Увелич.  $\times 11/5$ .

Фиг. 7. *Nuculana (Sacella) wajampolkensis* Slodkewitsch. Паратип № S/17. Р. Кинкиль (западное побережье Камчатки). Верхний отдел ваямпольской свиты. Ядро; вид справа. Увелич.  $\times 3/1$ . Стр. . . . . 73.

Фиг. 7а. *Nuculana (Sacella) wajampolkensis* Slodkewitsch. Тот же экземпляр, что и на фиг. 7; вид сверху. Увелич.  $\times 3/1$ .

Фиг. 8. *Nuculana (Sacella) wajampolkensis* Slodkewitsch. Голотип № S/16. То же местонахождение, что и фиг. 7. Ядро левой створки. Увелич.  $\times 3/1$ .

Фиг. 9. *Nuculana (Sacella) chehalisensis* (Weaver). Плезотиоп № 31905. Юго-западный Вашингтон. Средний миоцен. Репродукция изображения «*Nuculana (Nuculana) chehalisensis*» из монографии Т. Etherington «Astoria Miocene», табл. 1, фиг. 2. Наружный вид правой створки. Уменьш.  $\times 3/4$ . Стр. . . . . 72.

Фиг. 10. *Nuculana (Sacella) chehalisensis* (Weaver). Плезотиоп № 31904. То же местонахождение, что и фиг. 9. Репродукция изображения «*Nuculana (Nuculana) chehalisensis*» из монографии Т. Etherington «Astoria Miocene», табл. I, фиг. 9. Наружный вид левой створки. Уменьш.  $\times 3/4$ .

Фиг. 11. *Nuculana (Sacella) chehalisensis* (Weaver). Плезотиоп № 35/5044. К северу

pl. 1, fig. 9. External view of right valve  $4/5$  natural size. Page. . . . . 84.

Фиг. 2. *Nuculana (Sacella) cf. taphria* (Dall). Specimen № 77/5043. Cape Pilvo, Schmidt Peninsula (northern Sakhalin). Upper-Pil series. Reproduction of I. Khomenko's illustration of «*Leda taphria*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1934, pl. III, fig. 12. Cast of left valve. Natural size.

Фиг. 3. *Nuculana (Sacella) taphria* (Dall). Plesiotype № 78/5043. Northward from the mouth of Vengheri river, Schmidt Peninsula (northern Sakhalin). Vengheri series. Reproduction of I. Khomenko's illustration of «*Leda taphria*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1934, pl. III, fig. 13. External view of right valve. Natural size.

Фиг. 4. *Nuculana (Sacella) taphria* (Dall). Plesiotype № 79/5043. Same locality, as fig. 3. Reproduction of I. Khomenko's illustration of «*Leda taphria*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1934, pl. III, fig. 14. External view of left valve; anterior end broken off. Natural size.

Фиг. 5. *Nuculana (Sacella) taphria* (Dall). Plesiotype № S/20. Kinkil river (western coast of Kamchatka). Upper horizon of Vayempolka series. External impression of right valve; posterior end broken off. Enlarged  $\times 2/1$ .

Фиг. 6. *Nuculana (Sacella) taphria* (Dall). Plesiotype № S/21. Same locality, as fig. 5. Portion of cast of left valve. Enlarged  $\times 11/5$ .

Фиг. 7. *Nuculana (Sacella) wajampolkensis* Slodkewitsch. Paratype № S/17. Kinkil river (western coast of Kamchatka). Upper horizon of Vayempolka series. Cast; view of right side. Enlarged  $\times 3/1$ . Page. . . . . 85.

Фиг. 7а. *Nuculana (Sacella) wajampolkensis* Slodkewitsch. Dorsal view of same specimen, as fig. 7. Enlarged  $\times 3/1$ .

Фиг. 8. *Nuculana (Sacella) wajampolkensis* Slodkewitsch. Holotype № S/16. Same locality, as fig. 7. Cast of left valve. Enlarged  $\times 3/1$ .

Фиг. 9. *Nuculana (Sacella) chehalisensis* (Weaver). Plesiotype № 31905. South-west Washington. Middle Miocene. Reproduction of T. Etherington's illustration of «*Nuculana (Nuculana) chehalisensis*» in «Astoria Miocene», pl. 1, fig. 2. External view of right valve.  $3/4$  natural size. Page. . . . . 85.

Фиг. 10. *Nuculana (Sacella) chehalisensis* (Weaver). Plesiotype № 31904. Same locality, as fig. 9. Reproduction of T. Etherington's illustration of «*Nuculana (Nuculana) chehalisensis*» in «Astoria Miocene», pl. I, fig. 9. External view of left valve.  $3/4$  natural size.

Фиг. 11. *Nuculana (Sacella) chehalisensis* (Weaver). Plesiotype № 35/5044.

от устья р. Венгери, полуостров Шмидта (северный Сахалин). Венгерийская свита. Репродукция изображения «*Leda (Nuculana) chehalisensis*» из монографии И. Хоменко «Стратиграфия трет. отл. пол. Шмидта», табл. VI, фиг. 8. Наружный вид левой створки; задний конец обломан. Натур. велич.

Фиг. 12. *Nuculana (Sacella) chehalisensis* (Weaver). Плезитотип № 55/5044. К N от устья р. Венгери, полуостров Шмидта (северный Сахалин). Венгерийская свита. Репродукция изображения «*Leda (Nuculana) chehalisensis*» из монографии И. Хоменко «Стратиграфия трет. отл. пол. Шмидта», табл. VI, фиг. 7. Ядро левой створки с частично сохранившейся раковинной. Увелич.  $\times 2/1$ .

Фиг. 13. *Nuculana (Sacella) chehalisensis* (Weaver). Плезитотип № 35a/5044. То же местонахождение, что и фиг. 12. Репродукция изображения «*Leda (Nuculana) chehalisensis*» из монографии И. Хоменко «Стратиграфия трет. отл. пол. Шмидта», табл. VI, фиг. 10. Ядро левой створки с частично сохранившейся раковинной. Натур. велич.

Фиг. 14. *Nuculana (Sacella) chehalisensis* (Weaver). Плезитотип № 35b/5044. К N от устья р. Венгери, полуостров Шмидта (северный Сахалин). Венгерийская свита. Репродукция изображения «*Leda (Nuculana) chehalisensis*» из монографии И. Хоменко «Стратиграфия трет. отл. пол. Шмидта», табл. VI, фиг. 9. Ядро левой створки с частично сохранившейся раковинной. Натур. велич.

Фиг. 15. *Nuculana (Sacella?) penderoides* (Khomenk). Голотип № 81/5043. Мыс Пильво, полуостров Шмидта (северный Сахалин). Верхне-пильская свита. Репродукция изображения «*Leda penderoides*» из монографии И. Хоменко «Стратиграфия трет. сл. пол. Шмидта», табл. III, фиг. 17. Ядро правой створки. Натур. велич. Стр. . . . . 76.

Фиг. 16. *Nuculana (Sacella) tatarica* Kogan (in litt.). Голотип № 6/5294. Между устьями рек Ноями и Мал. Сертунай (западный Сахалин). Рыхляя свита. Репродукция из монографии Н. Когана «Ресурора из рыхлой свиты», табл. I, фиг. 5. Ядро правой створки с частично сохранившейся раковинной. Увелич.  $\times 2/1$ . Стр. . . . . 74.

Фиг. 17. *Nuculana (Sacella) snatolensis* Siodkewitsch. Голотип № 157/C 396. Правый берег р. Снатол, в 13 км от устья (западное побережье Камчатки). Нижний отдел ваямпольской свиты. Наружный вид левой створки с обломанным передним концом. Увелич.  $\times 9/5$ . Стр. . . . . 77.

Фиг. 18. *Nuculana (Sacella) snatolensis* Siodkewitsch. Паратип № 157/C 398. То же местонахождение, что и фиг. 17. Обломанное ядро левой створки с частично сохранившейся раковинной. Увелич.  $\times 2/1$ .

Фиг. 19. *Nuculana (Sacella) furlongi* (Trask). Плезитотип № 53/5044. Между

Northward of the mouth of Vengheri river, Schmidt Peninsula (northern Sakhalin). Vengheri Series. Reproduction of I. Khomenko's illustration of «*Leda (Nuculana) chehalisensis*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1935, pl. VI, fig. 8. External view of left valve; posterior end broken off. Natural size.

Fig. 12. *Nuculana (Sacella) chehalisensis* (Weaver). Plesiotype № 55/5044. Northward of the mouth of Vengheri river, Schmidt Peninsula (northern Sakhalin). Vengheri series. Reproduction of I. Khomenko's illustration of «*Leda (Nuculana) chehalisensis*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1935, pl. VI, fig. 7. Cast of left valve with partly preserved shell. Enlarged  $\times 2/1$ .

Fig. 13. *Nuculana (Sacella) chehalisensis* (Weaver). Plesiotype № 35a/5044. Same locality, as fig. 12. Reproduction of I. Khomenko's illustration of «*Leda (Nuculana) chehalisensis*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1935, pl. VI, fig. 10. Cast of left valve with partly preserved shell. Natural size.

Fig. 14. *Nuculana (Sacella) chehalisensis* (Weaver). Plesiotype № 35b/5044. Northward of the mouth of Vengheri river, Schmidt Peninsula (northern Sakhalin). Vengheri series. Reproduction of I. Khomenko's illustration of «*Leda (Nuculana) chehalisensis*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1935, pl. VI, fig. 9. Cast of left valve with partly preserved shell. Natural size.

Fig. 15. *Nuculana (Sacella?) penderoides* (Khomenk). Holotype № 81/5043. Cape Pilvo, Schmidt Peninsula (northern Sakhalin). Upper-Pil series. Reproduction of I. Khomenko's illustration of «*Leda penderoides*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1934, pl. III, fig. 17. Cast of right valve. Natural size. Page . . . . . 85.

Fig. 16. *Nuculana (Sacella) tatarica* Kogan (in litt.). Holotype № 6/5294. Between the Noyami and L. Sertunai rivers (western Sakhalin). Rykhlaya series. Reproduction of N. Kogan's illustration in «Pelecypoda of Rykhlaya series», pl. I, fig. 5. Cast of right valve with partly preserved shell. Enlarged  $\times 2/1$ . Page. . . . . 85.

Fig. 17. *Nuculana (Sacella) snatolensis* Siodkewitsch. Holotype № 157/C 396. Right bank of Snatol river, 13 km upward from the mouth (western coast of Kamchatka). External view of left valve; anterior end broken off. Enlarged  $\times 9/5$ . Page. . . . . 86.

Fig. 18. *Nuculana (Sacella) snatolensis* Siodkewitsch. Paratype № 157/C 398. Same locality, as fig. 17. Cast of left valve with partly preserved shell; anterior and posterior ends broken off. Enlarged  $\times 2/1$ .

Fig. 19. *Nuculana (Sacella) furlongi* (Trask). Plesiotype № 53/5044. Bet-

мысом Марии и Мачигарским заливом, полуостров Шмидта (северный Сахалин). Нижняя свита мачигарского разреза. Репродукция изображения «*Leda (Nuculana) furlongi*» из монографии И. Хоменко «Стратиграфия трет. отл. пол. Шмидта», табл. VI, фиг. 4. Ядро правой створки с частично сохранившейся раковиной. Натур. велич. Стр. . . . . 78.

Фиг. 20. *Nuculana (Sacella) furlongi* (Trask). То же местонахождение, что и фиг. 19. Репродукция изображения «*Leda (Nuculana) furlongi*» из монографии И. Хоменко «Стратиграфия трет. отл. пол. Шмидта», табл. VI, фиг. 5. Ядро левой створки. Натур. велич.

Фиг. 21. *Nuculana (Sacella) furlongi* (Trask). Голотип № 12362. «Concord Quadrangle, Middle California». Свита Briones. Репродукция изображения «*Leda furlongi*» из монографии Р. Траск «Briones Formation», табл. 1, фиг. 1b. Двусторчатый экземпляр. Вид справа. Увелич.  $\times 2/1$ .

Фиг. 21a. *Nuculana (Sacella) furlongi* (Trask). Тот же экземпляр, что и на фиг. 21; вид сверху. Увелич.  $\times 2/1$ .

Фиг. 22. *Nuculana (Borissia) alferovi* sp. nova. Голотип № 2/5305. Мыс Чажма-Сторож (восточное побережье Камчатки). Миоцен (?). Ядро с частично сохранившейся раковиной; вид слева. Увелич.  $\times 2/1$ . Стр. . . . . 79.

Фиг. 22a. *Nuculana (Borissia) alferovi* sp. nova. Тот же экземпляр, что и на фиг. 22; вид сверху. Увелич.  $\times 2/1$ .

Фиг. 23. *Nuculana (Borissia) alferovi* sp. nova. Топотип № 3/5305. То же местонахождение, что и фиг. 22. Ядро с частично сохранившейся раковиной; вид слева. Увелич.  $\times 2/1$ .

Фиг. 23a. *Nuculana (Borissia) alferovi* sp. nova. Тот же экземпляр, что и на фиг. 23; вид сверху. Увелич.  $\times 2/1$ .

#### Таблица IX

Фиг. 1. *Glycymeris crescentensis* Weaver & Palmer. Р. Лисья. Анадырский край. Эоцен (?). Отпечаток наружной поверхности обломанной левой створки. Увелич.  $\times 2/1$ . Стр. . . . . 136.

Фиг. 2. *Glycymeris crescentensis* Weaver & Palmer. Синтип. «Joice Station, Port Crescent, Clallam County». Эоцен. Репродукция из монографии Ch. Weaver & K. Palmer «Fauna fr. Eoc. of Wash.», табл. 8, фиг. 10. Отпечаток (?) наружной поверхности правой створки. Увелич.  $\times 2/1$ .

Фиг. 3. *Glycymeris crescentensis* Weaver & Palmer. Лектотип. То же местонахождение, что и фиг. 2. Репродукция из монографии Ch. Weaver & K. Palmer «Fauna fr. Eoc. of Wash.», табл. 8, фиг. 12. Отпечаток (?) наружной поверхности левой створки. Увелич.  $\times 2/1$ .

ween Cape Maria and Machigar Bay, Schmidt Peninsula (northern Sakhalin). Lower series of Machigar section. Reproduction of I. Khomenko's illustration of «*Leda (Nuculana) furlongi*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1935, pl. VI, fig. 4. Cast of right valve with partly preserved shell. Natural size. Page. . . . . 86.

Fig. 20 *Nuculana (Sacella) furlongi* (Trask). Same locality, as fig. 19. Reproduction of I. Khomenko's illustration of «*Leda (Nuculana) furlongi*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1935, pl. VI, fig. 5. Cast of left valve. Natural size.

Fig. 21. *Nuculana (Sacella) furlongi* (Trask). Holotype № 12362. «Concord Quadrangle, Middle California. Briones Formation». Reproduction of P. Trask's illustration of «*Leda furlongi*» in «Briones Formations», pl. 1, fig. 1b. View of right side. Enlarged  $\times 2/1$ .

Fig. 21a. *Nuculana (Sacella) furlongi* (Trask). Dorsal view of same specimen, as fig. 21. Enlarged  $\times 2/1$ .

Fig. 22. *Nuculana (Borissia) alferovi* sp. nova. Holotype № 2/5305. Cape Chazhma-Storozh (eastern coast of Kamchatka). Miocene (?). Cast with partly preserved shell; view of left side. Enlarged  $\times 2/1$ . Page . . . . . 86.

Fig. 22a. *Nuculana (Borissia) alferovi* sp. nova. Dorsal view of same specimen, as fig. 22. Enlarged  $\times 2/1$ .

Fig. 23. *Nuculana (Borissia) alferovi* sp. nova. Topotype № 3/5305. Same locality, as fig. 22. Cast with partly preserved shell; view of left side. Enlarged  $\times 2/1$ .

Fig. 23a. *Nuculana (Borissia) alferovi* sp. nova. Dorsal view of same specimen, as fig. 23. Enlarged  $\times 2/1$ .

#### Plate IX

Fig. 1. *Glycymeris crescentensis* Weaver & Palmer. Lisy river. Anadyr region. Eocene (?). External impression of left valve. Enlarged  $\times 2/1$ . Page. . . 104.

Fig. 2. *Glycymeris crescentensis* Weaver & Palmer. Syntype. «Joice Station, Port Crescent, Clallam County. Eocene». Reproduction of Ch. Weaver & K. Palmer's illustration in «Fauna fr. Eoc. of Wash.», pl. 8, fig. 10. External impression (?) of right valve. Enlarged  $\times 2/1$ .

Fig. 3. *Glycymeris crescentensis* Weaver & Palmer. Lectotype. Same locality, as fig. 2. Reproduction of Ch. Weaver & K. Palmer's illustration in «Fauna fr. Eoc. of Wash.», pl. 8, fig. 12. External impression (?) of left valve. Enlarged  $\times 2/1$ .

Фиг. 4. *Glycymeris coalingensis* Arnold. Голотип № 4806. «Locality № 4806. Coalinga District, California». Нижний отдел свиты Etchegoin. Репродукция из монографии R. Arnold & R. Anderson «Geol. of Coalinga Distr.», табл. XXI, фиг. 3. Наружный вид потертой правой створки. Натур. велич. Стр. . . . . 137.

Фиг. 5. *Glycymeris coalingensis* Arnold. Плезнотип № 238/С1080. Западное побережье Камчатки, в 4,25 км к W от устья р. Половинки. Нижний отдел кавранской свиты. Наружный вид правой створки. Натур. велич.

Фиг. 5а. *Glycymeris coalingensis* Arnold. Тот же экземпляр, что и на фиг. 5; вид сверху. Натур. велич.

Фиг. 6. *Glycymeris snatolensis* Słodkewitsch. Голотип № 239/С1084. Правый берег р. Кейвечевем, в 0,6 км выше устья (западное побережье Камчатки). Верхний отдел кавранской свиты. Наружный вид правой створки; нижний край частью обломан. Натур. велич. Стр. 142.

Фиг. 6а. *Glycymeris snatolensis* Słodkewitsch. Тот же экземпляр, что и на фиг. 6; внутренний вид. Натур. велич.

Фиг. 7. *Glycymeris snatolensis* Słodkewitsch. Паратип № 239/С1085. То же местонахождение, что и фиг. 6. Наружный вид левой створки. Натур. велич.

Фиг. 8. *Glycymeris snatolensis* Słodkewitsch. Паратип № 239/С1087. То же местонахождение, что и фиг. 6. Наружный вид левой створки; поверхность раковины частично потерта. Натур. велич.

Фиг. 9. *Glycymeris snatolensis* Słodkewitsch. Паратип № 239/С1082. То же местонахождение, что и фиг. 6. Наружный вид левой створки. Натур. велич.

Фиг. 10. *Glycymeris snatolensis* Słodkewitsch. Паратип № 239/С1081. То же местонахождение, что и фиг. 6. Наружный вид правой створки. Натур. велич.

Фиг. 10а. *Glycymeris snatolensis* Słodkewitsch. Тот же экземпляр, что и на фиг. 10; вид сверху. Натур. велич.

Фиг. 11. *Glycymeris snatolensis* Słodkewitsch. Паратип № 239/С1083. То же местонахождение, что и фиг. 6. Наружный вид левой створки. Увелич.  $\times 2/1$ .

Фиг. 12. *Solemya dalli* Clark. Голотип № 1. Берег моря к западу от реки West Twin, Вашингтон. Олигоцен. Репродукция из монографии В. Clark «Pelecypoda fr. Mar. Oligoc.», табл. 22, фиг. 3. Наружный вид левой створки. Уменьш.  $\times 4/5$ . Стр. . . . . 58

Фиг. 13. *Solemya dalli* Clark. Плезнотип № 138/5043. К северу от устья р. Венгери, полуостров Шмидта (северный Сахалин). Венгерийская свита. Репродукция из монографии И. Хоменко «Стратиграфия трет. сл. пол. Шмидта», табл. XIII, фиг. 20. Ядро правой створки. Натур. велич.

Фиг. 14. *Solemya dalli* Clark. Плезно-

Фиг. 4. *Glycymeris coalingensis* Arnold. Holotype № 4806. «Locality № 4806. Coalinga District, California. Lower Etchegoin series». Reproduction of R. Arnold & R. Anderson's illustration in «Geol. of Coalinga Distr.», pl. XXI, fig. 3. «Exterior of decorticated right valve». Natural size. Page . . . . . 104.

Фиг. 5. *Glycymeris coalingensis* Arnold. Plesiotype № 238/С1080. Western coast of Kamchatka, 4,25 km west of the mouth of Polovinka river. Lower horizon of Kavrana series. External view of right valve. Natural size.

Фиг. 5а. *Glycymeris coalingensis* Arnold. Dorsal view of same specimen, as fig. 5. Natural size.

Фиг. 6. *Glycymeris snatolensis* Słodkewitsch. Holotype № 239/С1084. Right bank of Keyvechevem river, 0,6 km upward from the mouth (western coast of Kamchatka). Upper horizon of Kavrana series. External view of right valve; lower margin partly broken off. Natural size. Page . . . . . 104.

Фиг. 6а. *Glycymeris snatolensis* Słodkewitsch. Internal view of same specimen, as fig. 6. Natural size.

Фиг. 7. *Glycymeris snatolensis* Słodkewitsch. Paratype № 239/С1085. Same locality, as fig. 6. External view of left valve. Natural size.

Фиг. 8. *Glycymeris snatolensis* Słodkewitsch. Paratype № 239/С1087. Same locality, as fig. 6. External view of left valve; surface of the shell slightly eroded. Natural size.

Фиг. 9. *Glycymeris snatolensis* Słodkewitsch. Paratype № 239/С1082. Same locality, as fig. 6. External view of left valve. Natural size.

Фиг. 10. *Glycymeris snatolensis* Słodkewitsch. Paratype № 239/С1081. Same locality, as fig. 6. External view of right valve. Natural size.

Фиг. 10а. *Glycymeris snatolensis* Słodkewitsch. Dorsal view of same specimen, as fig. 10. Natural size.

Фиг. 11. *Glycymeris snatolensis* Słodkewitsch. Paratype № 239/С1083. Same locality, as fig. 6. External view of left valve. Enlarged  $\times 2/1$ .

Фиг. 12. *Solemya dalli* Clark. Holotype № 1. «Shales outcropping in sea cliffs west of West Twin River, Washington». Oligocene. Reproduction of B. Clark's illustration in «Pelecypoda fr. Mar. Oligoc.», pl. 22, fig. 3. External view of left valve.  $4/5$  natural size. Page . . . . . 82.

Фиг. 13. *Solemya dalli* Clark. Plesiotype № 138/5043. North of the mouth of Vengheri river, Schmidt Peninsula (northern Sakhalin). Vengheri series. Reproduction of I. Khomenko's illustration in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1934, pl. XIII, fig. 20. Cast of right valve. Natural size.

Фиг. 14. *Solemya dalli* Clark. Плезно-

тип № 139/5043. К северу от устья р. Псякауф, полуостров Шмидта (северный Сахалин). Маямрафская свита. Репродукция из монографии И. Хоменко «Стратиграфия трет. сл. пол. Шмидта», табл. XIV, фиг. 5. Ядро левой створки с частично сохранившейся раковиной. Натур. велич.

Фиг. 15. *Solemya dalli* Clark. Плезнотип № 137/5043. К северу от устья р. Венгери, полуостров Шмидта (северный Сахалин). Венгерийская свита. Репродукция из монографии И. Хоменко «Стратиграфия трет. сл. пол. Шмидта», табл. XIII, фиг. 19. Ядро левой створки. Натур. велич.

### Таблица X

Фиг. 1. *Glycymeris yessoensis* (Sowerby). Плезнотип № 109/C 1039. Западное побережье Камчатки между реками Аманной и Эталонной. Верхний отдел кавранской свиты. Наружный вид левой створки. Натур. велич. Стр. . . . . 139.

Фиг. 1а. *Glycymeris yessoensis* (Sowerby). Внутренний вид того же экземпляра, что и на фиг. 1. Натур. велич.

Фиг. 2. *Glycymeris yessoensis* (Sowerby). Плезнотип № 109/C 1078. То же местонахождение, что и фиг. 1. Наружный вид левой створки. Натур. велич.

Фиг. 3. *Glycymeris yessoensis* (Sowerby). Плезнотип № 109/C 1037. То же местонахождение, что и фиг. 1. Наружный вид левой створки. Натур. велич.

Фиг. 4. *Glycymeris yessoensis* (Sowerby). Плезнотип № 101/C 1058. Западное побережье Камчатки, между Непропуском и р. Эталонной. Верхний отдел кавранской свиты. Наружный вид левой створки. Натур. велич.

Фиг. 5. *Glycymeris yessoensis* (Sowerby). Плезнотип № 101/C 1062. То же местонахождение, что и фиг. 4. Наружный вид правой створки. Натур. велич.

Фиг. 6. *Glycymeris yessoensis* (Sowerby). Плезнотип № 109/C 1032. Западное побережье Камчатки между реками Аманной и Эталонной. Верхний отдел кавранской свиты. Наружный вид левой створки. Натур. велич.

Фиг. 6а. *Glycymeris yessoensis* (Sowerby). Тот же экземпляр, что и на фиг. 6; вид сверху. Натур. велич.

Фиг. 7. *Glycymeris yessoensis* (Sowerby). Голотип. Современная форма. Местонахождение «Yesso, Japan». Репродукция изображения «*Pectunculus yessoensis*» из монографии G. B. Sowerby «Descr. of 14 new Spec.», табл. XXVIII, фиг. 19. Наружный вид правой створки. Уменьш.  $\times 2/3$ .

Фиг. 8. *Glycymeris yessoensis* (Sowerby). Плезнотип № 109/C 1036. То же местонахождение, что и фиг. 6. Наружный вид правой створки. Натур. велич.

Фиг. 9. *Glycymeris yessoensis* (Sowerby). Плезнотип № 109/C 1037. То же место-

type № 139/5043. North of the mouth of Psyakauf river, Schmidt Peninsula (northern Sakhalin). Mayamraf series. Reproduction of I. Khomenko's illustration in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1934, pl. XIV, fig. 5. Cast of left valve with partly preserved shell. Natural size.

Fig. 15. *Solemya dalli* Clark. Plesiotype № 137/5043. North of the mouth of Vengheri river, Schmidt Peninsula (northern Sakhalin). Vengheri series. Reproduction of I. Khomenko's illustration in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1934, pl. XIII, fig. 19. Cast of left valve. Natural size.

### Plate X

Fig. 1. *Glycymeris yessoensis* (Sowerby). Plesiotype № 109/C 1039. Western coast of Kamchatka, between Amanina and Etalonnaya rivers. Upper horizon of Kavrana series. External view of left valve. Natural size. Page . . . . . 104.

Fig. 1a. *Glycymeris yessoensis* (Sowerby). Internal view of same specimen, as fig. 1. Natural size.

Fig. 2. *Glycymeris yessoensis* (Sowerby). Plesiotype № 109/C 1078. Same locality, as fig. 1. External view of left valve. Natural size.

Fig. 3. *Glycymeris yessoensis* (Sowerby). Plesiotype № 109/C 1037. Same locality, as fig. 1. External view of left valve. Natural size.

Fig. 4. *Glycymeris yessoensis* (Sowerby). Plesiotype № 101/C 1058. Western coast of Kamchatka between the steep sea cliffs and Etalonnaya river. Upper horizon of Kavrana series. External view of left valve. Natural size.

Fig. 5. *Glycymeris yessoensis* (Sowerby). Plesiotype № 101/C 1062. Same locality, as fig. 4. External view of right valve. Natural size.

Fig. 6. *Glycymeris yessoensis* (Sowerby). Plesiotype № 109/C 1032. Western coast of Kamchatka, between the mouths of Amanina and Etalonnaya rivers. Upper horizon of Kavrana series. External view of left valve. Natural size.

Fig. 6a. *Glycymeris yessoensis* (Sowerby). Dorsal view of same specimen, as fig. 6. Natural size.

Fig. 7. *Glycymeris yessoensis* (Sowerby). Holotype. Recent specimen from Yesso, Japan. Reproduction of G. B. Sowerby's illustration of «*Pectunculus yessoensis*» in «Descr. of 14 new Spec.», pl. XXVIII, fig. 19. External view of right valve.  $2/3$  natural size.

Fig. 8. *Glycymeris yessoensis* (Sowerby). Plesiotype № 109/C 1036. Same locality, as fig. 6. External view of right valve. Natural size.

Fig. 9. *Glycymeris yessoensis* (Sowerby). Plesiotype № 109/C 1037. Same loca-



нахождение, что и фиг. 6. Внутренний вид того же экземпляра левой створки, что и на фиг. 3. Натур. велич.

## Таблица XI

Фиг. 1. *Glycymeris kamtschaticus* sp. nova. Голотип № 4/5305. Р. Угольная, окрестности Усть-Камчатка (восточное побережье Камчатки). Миоцен (?). Двустворчатый экземпляр; вид слева. Натур. велич. Стр. . . . . 145.

Фиг. 1а. *Glycymeris kamtschaticus* sp. nova. Тот же экземпляр, что и на фиг. 1; вид сбоку. Натур. велич.

Фиг. 1б. *Glycymeris kamtschaticus* sp. nova. Тот же экземпляр, что и на фиг. 1; вид сверху. Натур. велич.

Фиг. 2. *Glycymeris kamtschaticus* sp. nova. Топотип № 5/5305. То же местонахождение, что и фиг. 1. Двустворчатый экземпляр, вид справа. Верхняя половина правой створки удалена, чтобы показать зубы левой створки. Натур. велич.

Фиг. 3. *Arca obispoana* Conrad. Лектотип № 13330. «San Luis Obispo Valley» (Калифорния). Миоцен. Репродукция из монографии U. Grant & H. Gale «Plioc. and Pleistoc. Moll.», табл. 32, фиг. 49. Наружный вид правой створки. Уменьш.  $\times 4/5$ . Стр. . . . . 152.

Фиг. 4. *Arca* cf. *obispoana* Conrad. Образец № 160/C 490. К югу от устья р. Котлахквич (западное побережье Камчатки). Верхний отдел кавранской (?) свиты. Ядро левой створки. Увелич.  $\times 2/1$ .

Фиг. 5. *Arca trilineata* Conrad. Голотип. «Santa Barbara, California», Верхний плиоцен. Репродукция из монографии T. Conrad «Descr. of Tert. Foss.», табл. II, фиг. 9. Наружный вид правой створки. Натур. велич. Стр. . . . . 148.

Фиг. 6. *Arca trilineata* Conrad. Пластотип № 435. «Elsmere Canyon, Los Angeles Co, California», Плиоцен. Репродукция изображения «*Arca (Arca) trilineata*» из монографии U. Grant & H. Gale «Pliocene and Pleistoc. Moll.», табл. 2, фиг. 4. Наружный вид левой створки. Уменьш.  $\times 4/5$ .

Фиг. 7. *Arca trilineata* Conrad. Плезиотип № 101/C 343. Западное побережье Камчатки, между Непропуском и устьем р. Эталонной. Верхний отдел кавранской свиты. Наружный вид правой створки. Натур. велич.

Фиг. 7а. *Arca trilineata* Conrad. Внутренний вид того же экземпляра, что и на фиг. 7. Натур. велич.

## Таблица XII

Фиг. 1. *Arca trilineata* Conrad. Плезиотип № 101/C 342. Западное побережье Камчатки, между Непропуском и устьем р. Эталонной. Верхний отдел кавранской свиты. Наружный вид правой створки. Натур. велич. Стр. . . . . 148.

lity, as fig. 6. Internal view of same specimen, as fig. 5. Natural size.

## Plate XI

Fig. 1. *Glycymeris kamtschaticus* sp. nova. Holotype № 4/5305. Ugolnaya river. Ust-Kamchatsk (eastern coast of Kamchatka). Miocene (?). External view of left valve. Natural size. Page. . . . 105.

Fig. 1a. *Glycymeris kamtschaticus* sp. nova. Anterior view of same specimen, as fig. 1. Natural size.

Fig. 1b. *Glycymeris kamtschaticus* sp. nova. Dorsal view of same specimen, as fig. 1. Natural size.

Fig. 2. *Glycymeris kamtschaticus* sp. nova. Topotype № 5/5305. Same locality, as fig. 1. A double-valved specimen, viewed from the right. Upper part of right valve broken off; the teeth of left valve are visible. Natural size.

Fig. 3. *Arca obispoana* Conrad. Lectotype № 13330. «San Luis Obispo Valley, Miocene». Reproduction of U. Grant & H. Gale's illustration in «Plioc. and Pleistoc. Moll.», pl. 32, fig. 49. External view of right valve.  $4/5$  natural size. Page . . . . . 106.

Fig. 4. *Arca* cf. *obispoana* Conrad. Specimen № 160/C 490. South of the mouth of Kotlakhkanch river (western coast of Kamchatka). Upper horizon of Kavrana series. Cast of left valve. Enlarged  $\times 2/1$ .

Fig. 5. *Arca trilineata* Conrad. Holotype. Santa Barbara, California. Upper Pliocene. Reproduction of T. Conrad's illustration in «Descr. of Tert. Foss.», pl. II, fig. 9. External view of right valve. Natural size. Page . . . . . 105.

Fig. 6. *Arca trilineata* Conrad. Plastotype № 435. «Elsmere Canyon, Los Angeles Co. Basal Pliocene». Reproduction of U. Grant & H. Gale's illustration of «*Arca (Arca) trilineata*» in «Plioc. and Pleistoc. Moll.», pl. 2, fig. 4. External view of left valve.  $4/5$  natural size.

Fig. 7. *Arca trilineata* Conrad. Pleziotype № 101/C 343. Western coast of Kamchatka, between the steep sea cliffs and Etalonnya river. Upper horizon of Kavrana series. External view of right valve. Natural size.

Fig. 7a. *Arca trilineata* Conrad. Internal view of same specimen, as fig. 7. Natural size.

## Plate XII

Fig. 1. *Arca trilineata* Conrad. Pleziotype 101/C 342. Western coast of Kamchatka, between the steep sea cliffs and the mouth of Etalonnya river. Upper horizon of Kavrana series. External view of right valve. Natural size. Page. . . . 105.

Фиг. 2. *Arca trilineata* Conrad. Плезиотип № 121/С 346. То же местонахождение, что и фиг. 1. Наружный вид левой створки. Натур. велич.

Фиг. 3. *Arca trilineata* Conrad. Плезиотип № 121/С 345. То же местонахождение, что и фиг. 1. Наружный вид правой створки. Натур. велич.

Фиг. 3а. *Arca trilineata* Conrad. Тот же экземпляр, что и на фиг. 3; вид сверху. Натур. велич.

Фиг. 3б. *Arca trilineata* Conrad. Внутренний вид того же экземпляра, что и на фиг. 3. Натур. велич.

Фиг. 4. *Ostrea atwoodi* Gabb. Плезиотип № 162/С 528. Правый берег р. Крутой, в 3,5 км от устья (западное побережье Камчатки). Тигильская свита. Наружный вид верхней створки. Натур. велич. Стр. . . . . 157.

Фиг. 5. *Ostrea atwoodi* Gabb. Плезиотип № 162/С 527. То же местонахождение, что и фиг. 4. Наружный вид нижней створки. Натур. велич.

### Таблица XIII

Фиг. 1. *Ostrea atwoodi* Gabb. Голотип. «Either Miocene or Pliocene. On San Lorenzo Creek, Monterey County». Репродукция из монографии W. Gabb «Paleont. of California», табл. 10, фиг. 58а. Наружный вид нижней створки. Натур. велич. Стр. . . . . 157.

Фиг. 2. *Ostrea atwoodi* Gabb. Плезиотип № 162/С 527. Правый берег р. Крутой, в 3,5 км от устья (западное побережье Камчатки). Тигильская свита. Внутренний вид нижней створки. Натур. велич.

Фиг. 3. *Ostrea lisjiensis* Słodkewitsch & Iljina. Голотип. Левый берег р. Лисей (Анадырский край). Миоцен (?). Наружный вид нижней створки. Натур. велич. Стр. . . . . 156.

Фиг. 4. *Ostrea idriaensis* Gabb. Лектотип. «Eocene; probably Domengine; locality about two miles East of the Hacienda at New Idria». Репродукция из монографии R. Stewart «Gabb's Type Lamell.», табл. 18, фиг. 3. Наружный вид нижней створки. Увелич.  $\times 3/2$ . Стр. . . . . 154.

Фиг. 5. *Ostrea idriaensis* Gabb. Белый мыс, Пенжино (Анадырский край). Эоцен (?). Наружный вид нижней створки. Натур. велич.

### Таблица XIV

Фиг. 1. *Ostrea atwoodi* Gabb var. *kirikovi* Słodkewitsch. Голотип № 165/С 560. Левый берег р. Ковачины, в 2,5 км выше устья р. Тьямеч (западное побережье Камчатки). Тигильская свита. Двустворчатый экземпляр; наружный вид верхней створки. Натур. велич. Стр. . . . . 158.

Фиг. 1а. *Ostrea atwoodi* Gabb var. *kirikovi* Słodkewitsch. Тот же эк-

Фиг. 2. *Arca trilineata* Conrad. Плезиотип № 121/С 346. Same locality, as fig. 1. External view of left valve. Natural size.

Фиг. 3. *Arca trilineata* Conrad. Specimen № 121/С 345. Same locality, as fig. 1. External view of right valve. Natural size.

Фиг. 3а. *Arca trilineata* Conrad. Dorsal view of same specimen, as fig. 3. Natural size.

Фиг. 3б. *Arca trilineata* Conrad. Internal view of same specimen, as fig. 3. Natural size.

Фиг. 4. *Ostrea atwoodi* Gabb. Плезиотип № 162/С 528. Right bank of Krutaya river, 3,5 km upward from the mouth (western coast of Kamchatka). Tighil series. External view of upper valve. Natural size. Page. . . . . 106.

Фиг. 5. *Ostrea atwoodi* Gabb. Плезиотип № 162/С 527. Same locality, as fig. 4. External view of lower valve. Natural size.

### Plate XIII

Фиг. 1. *Ostrea atwoodi* Gabb. Holotype. «Either Miocene or Pliocene. On San Lorenzo Creek, Monterey County». Reproduction of W. Gabb's illustration in «Paleont. of California», pl. 10, fig. 58а. External view of lower valve. Natural size. Page.106.

Фиг. 2. *Ostrea atwoodi* Gabb. Pleisiotype № 162/С 527. Right bank of Krutaya river, 3,5 km upward from the mouth (western coast of Kamchatka). Tighil series. Internal view of lower valve. Natural size.

Фиг. 3. *Ostrea lisjiensis* Słodkewitsch & Iljina. Holotype. Left bank of Lisy river (Anadyr region). Miocene (?). External view of lower valve. Natural size. Page. . . . . 106.

Фиг. 4. *Ostrea idriaensis* Gabb. Lectotype. «Eocene; probably Domengine; locality about two miles East of the Hacienda at New Idria». Reproduction of R. Stewart's illustration in «Gabb's Type Lamell.», pl. 18, fig. 3. External view of lower valve. Enlarged  $\times 3/2$ . Page. . . . . 106.

Фиг. 5. *Ostrea idriaensis* Gabb. Cape Belyi, Penzhino (Anadyr region). Eocene (?). External view of lower valve. Natural size.

### Plate XIV

Фиг. 1. *Ostrea atwoodi* Gabb var. *kirikovi* Słodkewitsch. Holotype № 165/С 560. Left bank of Kovachina river, 2,5 km upward from the mouth of Tiyamench river (western coast of Kamchatka). Tighil series. External view of upper valve. Natural size. Page. . . . . 106.

Фиг. 1а. *Ostrea atwoodi* Gabb var. *kirikovi* Słodkewitsch. Same spe-

земляр, что и на фиг. 1; наружный вид нижней створки. Natur. велич.

Фиг. 1b. *Ostrea atwoodi* Gabb var. *kirikovi* Slodkewitsch. Тот же экземпляр, что и на фиг. 1; вид сбоку. Natur. велич.

Фиг. 2. *Ostrea atwoodi* Gabb var. *kirikovi* Slodkewitsch. Паратип № 166/C 561. Правый берег р. Ковачины, в 1 км ниже устья р. Тыгменч (западное побережье Камчатки). Тигильская свита. Наружный вид верхней створки. Natur. велич.

Фиг. 2a. *Ostrea atwoodi* Gabb var. *kirikovi* Slodkewitsch. Тот же экземпляр, что и на фиг. 2; внутренний вид. Natur. велич.

Фиг. 3. *Ostrea idriaensis* Gabb. Белый мыс, Пенжино (Анадырский край). Эоцен (?). Двустворчатый экземпляр; наружный вид верхней створки. Natur. велич. Стр. . . . . 154.

Фиг. 3a. *Ostrea idriaensis* Gabb. Тот же экземпляр, что и на фиг. 3; вид сбоку. Natur. велич.

#### Таблица XV

Фиг. 1. *Ostrea tigiliana* Slodkewitsch. Голотип № 163/C 541. Западное побережье Камчатки, в 0,5 км к N от устья ключа Точило. Тигильская свита. Наружный вид нижней створки того же экземпляра, что и на табл. XVI, фиг. 1. Natur. велич. Стр. . . . . 160.

Фиг. 2. *Ostrea atwoodi* Gabb var. *kirikovi* Slodkewitsch. Паратип № 162/C 540. Правый берег р. Крутой, в 3,5 км от устья (западное побережье Камчатки). Тигильская свита. Наружный вид нижней створки. Natur. велич. Стр. 158

Фиг. 2a. *Ostrea atwoodi* Gabb var. *kirikovi* Slodkewitsch. Тот же экземпляр, что и на фиг. 2; наружный вид верхней створки. Natur. велич.

#### Таблица XVI

Фиг. 1. *Ostrea tigiliana* Slodkewitsch. Голотип № 163/C 541. Западное побережье Камчатки, в 0,5 км к N от устья ключа Точило. Тигильская свита. Наружный вид верхней створки того же экземпляра, что и на табл. XV, фиг. 1. Natur. велич. Стр. . . . . 160.

Фиг. 2. *Ostrea tigiliana* Slodkewitsch. Идеотип № 176/5060. Образец из коллекции А. Эйхвальда с этикеткой: «*Ostrea bellovacina* var. Tertiär von Unga (zur Aleutisch. Ins. Gruppe gehörig). Kiprianoff ded.». Наружный вид нижней створки. Natur. велич.

#### Таблица XVII

Фиг. 1. *Ostrea tigiliana* Slodkewitsch. Идеотип № 177/5060. Образец из коллекции А. Эйхвальда с эти-

cimen, as fig. 1; external view of lower valve. Natural size.

Фиг. 1b. *Ostrea atwoodi* Gabb var. *kirikovi* Slodkewitsch. Anterior view of the same specimen, as fig. 1. Natural size.

Фиг. 2. *Ostrea atwoodi* Gabb var. *kirikovi* Slodkewitsch. Paratype № 166/C 561. Right bank of Kovachina river, 1 km downward from the mouth of Tigmench river (western coast of Kamchatka). Tighil series. External view of upper valve. Natural size.

Фиг. 2a. *Ostrea atwoodi* Gabb var. *kirikovi* Slodkewitsch. Internal view of same specimen, as fig. 2. Natural size.

Фиг. 3. *Ostrea idriaensis* Gabb. Cape Belyi, Penzhino (Anadyr region). Eocene (?). External view of upper valve. Natural size. Page . . . . . 106.

Фиг. 3a. *Ostrea idriaensis* Gabb. Anterior view of same specimen, as fig. 3. Natural size.

#### Plate XV

Fig. 1. *Ostrea tigiliana* Slodkewitsch. Holotype № 163/C 541. Western coast of Kamchatka, 0,5 km north of the mouth of the Tochilo spring. Tighil series. External view of lower valve of same specimen, as pl. XVI, fig. 1. Natural size. Page. 107.

Fig. 2. *Ostrea atwoodi* Gabb var. *kirikovi* Slodkewitsch. Paratype № 162/C 540. Right bank of Krutaya river, 3,5 km upward from the mouth (western coast of Kamchatka). Tighil series. External view of lower valve. Natural size. Page. . . . . 106.

Fig. 2a. *Ostrea atwoodi* Gabb var. *kirikovi* Slodkewitsch. Same specimen, as fig. 2; external view of upper valve. Natural size.

#### Plate XVI

Fig. 1. *Ostrea tigiliana* Slodkewitsch. Holotype № 163/C 541. Western coast of Kamchatka, 0,5 km north of the mouth of Tochilo spring. Tighil series. External view of upper valve of same specimen, as pl. XV, fig. 1. Natural size. Page. . . . . 107.

Fig. 2. *Ostrea tigiliana* Slodkewitsch. Ideotype № 176/5060. Specimen from A. Eichwald's collection with following remarks: «*Ostrea bellovacina* var. Tertiär von Unga (zur Aleutisch. Ins. Gruppe gehörig). Kiprianoff ded.» External view of lower valve. Natural size.

#### Plate XVII

Fig. 1. *Ostrea tigiliana* Slodkewitsch. Ideotype № 177/5060. Specimen from A. Eichwald's collection with follow-

кеткой: «*Ostrea bellovacina* var. Tertiär von Unga (zur Aleutisch. Ins. Gruppe gehörig) Kiprianoff ded.». Наружный вид нижней створки. См. также табл. XVIII, фиг. 2. Натур. велич. Стр. . . . 160.

Фиг. 1а. *Ostrea tigiliana* Slodkewitsch. Тот же экземпляр, что и на фиг. 1; наружный вид верхней створки. Натур. велич.

#### Таблица XVIII

Фиг. 1. *Ostrea tigiliana* Slodkewitsch. Паратип № 163/C 543. Западное побережье Камчатки, в 0,5 км к N от устья ключа Точило. Тигильская свита. Наружный вид верхней створки. Натур. велич. Стр. . . . 160.

Фиг. 1а. *Ostrea tigiliana* Slodkewitsch. Тот же экземпляр, что и на фиг. 1; внутренний вид верхней створки. Натур. велич.

Фиг. 2. *Ostrea tigiliana* Slodkewitsch. Идеотип № 177/5060. Образец из коллекции А. Эйхвальда с этикеткой: «*Ostrea bellovacina* var. Tertiär von Unga (zur Aleutisch. Ins. Gruppe gehörig) Kiprianoff ded.». Тот же экземпляр, что и на табл. XVII, вид сбоку. Натур. велич.

#### Таблица XIX

Фиг. 1. *Ostrea kovatschensis* Slodkewitsch. Голотип № 246/C 591. Западное побережье Камчатки, в 12,5 км к N от устья р. Ковачины. Нижний горизонт тигильской свиты. Наружный вид нижней створки; примакущечная часть обломана, видно ядро. Натур. велич. Стр. 159.

Фиг. 1а. *Ostrea kovatschensis* Slodkewitsch. Обломанная верхняя створка того же экземпляра, что и на фиг. 1. Натур. велич.

#### Таблица XX

Фиг. 1. *Ostrea rekinikensis* Slodkewitsch & Iljina. Голотип. Бухта Подкагерная (западное побережье Камчатки). Тигильская свита. Наружный вид нижней створки. Натур. велич. Стр. . . . 162.

Фиг. 2. *Ostrea rekinikensis* Slodkewitsch & Iljina. Паратип. То же местонахождение, что и фиг. 1. Наружный вид нижней створки. Натур. велич.

Фиг. 2а. *Ostrea rekinikensis* Slodkewitsch & Iljina. Наружный вид верхней створки того же экземпляра, что и на фиг. 2. Натур. велич.

Фиг. 3. *Pecten (Chlamys) turpiculus* Yokoyama. Голотип. «Shigarami. Lower (?) Pliocene». Репродукция изображения «*Pecten turpiculus*» из монографии М. Yokoyama «Tert. Moll. fr. Shinano and Echigo», табл. II, фиг. 4. Наружный вид обломанной правой створки. Натур. велич. Стр. . . . 165.

ing remarks: «*Ostrea bellovacina* var. Tertiär von Unga (zur Aleutisch. Ins. Gruppe gehörig) Kiprianoff ded.» External view of lower valve. See also pl. XVIII, fig. 2. Natural size. Page. . . . 107.

Фиг. 1а. *Ostrea tigiliana* Slodkewitsch. Same specimen, as fig. 1; external view of upper valve. Natural size.

#### Plate XVIII

Fig. 1. *Ostrea tigiliana* Slodkewitsch. Paratype № 163/C 543. Western coast of Kamchatka, 0,5 km north of the mouth of Tochilo spring. Tighil series. External view of upper valve. Natural size. Page. . . . 107.

Fig. 1a. *Ostrea tigiliana* Slodkewitsch. Same specimen, as fig. 1; internal view of upper valve. Natural size.

Fig. 2. *Ostrea tigiliana* Slodkewitsch. Ideotype № 177/5060. Specimen from A. Eichwald's collection with following remarks: «*Ostrea bellovacina* var. Tertiär von Unga (zur Aleutisch. Ins. Gruppe gehörig) Kiprianoff ded.» Anterior view of same specimen, as on pl. XVII. Natural size.

#### Plate XIX

Fig. 1. *Ostrea kovatschensis* Slodkewitsch. Holotype № 246/C 591. Western coast of Kamchatka, 12,5 km north of the mouth of Kovachina river. Lower horizon of Tighil series. External view of lower valve; umbonal part broken off, cast is visible. Natural size. Page. . . 107.

Fig. 1a. *Ostrea kovatschensis* Slodkewitsch. Upper valve of same specimen, as fig. 1; anterior end broken off. Natural size.

#### Plate XX

Fig. 1. *Ostrea rekinikensis* Slodkewitsch & Iljina. Holotype. Podkaghernaya Bay (western coast of Kamchatka). Tighil series. External view of lower valve. Natural size. Page. . . 107.

Fig. 2. *Ostrea rekinikensis* Slodkewitsch & Iljina. Paratype. Same locality, as fig. 1. External view of lower valve. Natural size.

Fig. 2a. *Ostrea rekinikensis* Slodkewitsch & Iljina. External view of upper valve of same specimen, as fig. 2. Natural size.

Fig. 3. *Pecten (Chlamys) turpiculus* Yokoyama. Holotype. «Shigarami. Lower (?) Pliocene». Reproduction of M. Yokoyama's illustration of «*Pecten turpiculus*» in «Tert. Moll. fr. Shinano and Echigo», pl. II, fig. 4. External view of right valve. Natural size. Page. . . 108.

Фиг. 4. *Pecten (Chlamys) turpiculus* У о к о у а м а. Плезотиоп № 117/С 95. Правый берег р. Жиловой Ваямполки, в 3.5 км ниже устья р. Старая Деревня (западное побережье Камчатки). Нижний отдел кавранской свиты. Наружный вид обломанной левой створки. Натур. велич.

Фиг. 5. *Pecten (Chlamys) tanassevitschi* К х о м е н к о. Синтип № 24/5043. К югу от р. Пильтук, полуостров Шмидта (северный Сахалин). Помырская свита. Репродукция изображения «*Pecten tanassevitschi*» из монографии И. Х о м е н к о «Стратиграфия трет. сл. пол. Шмидта», табл. IV, фиг. 2. Наружный вид левой створки. Натур. велич. Стр. . . . . 167.

#### Таблица XXI

Фиг. 1. *Pecten (Chlamys) tanassevitschi* К х о м е н к о. Лектотип № 30/5043. К югу от р. Пильтук, полуостров Шмидта (северный Сахалин). Помырская свита. Репродукция изображения «*Pecten tanassevitschi*» из монографии И. Х о м е н к о «Стратиграфия трет. сл. пол. Шмидта», табл. VI, фиг. 1. Наружный вид правой створки. Натур. велич. Стр. . . . . 167.

Фиг. 2. *Pecten (Chlamys) tanassevitschi* К х о м е н к о. Синтип № 25/5043. То же местонахождение, что и фиг. 1. Репродукция изображения «*Pecten tanassevitschi*» из монографии И. Х о м е н к о «Стратиграфия трет. сл. пол. Шмидта», табл. IV, фиг. 3. Деталь скульптуры наружной поверхности. Натур. велич.

Фиг. 3. *Pecten (Chlamys) tanassevitschi* К х о м е н к о. Синтип. То же местонахождение, что и фиг. 1. Репродукция изображения «*Pecten tanassevitschi*» из монографии И. Х о м е н к о «Стратиграфия трет. сл. пол. Шмидта», табл. IV, фиг. 4. Деталь скульптуры наружной поверхности. Натур. велич.

#### Таблица XXII

Фиг. 1. *Pecten (Chlamys) tanassevitschi* К х о м е н к о. Синтип № 32/5043. К югу от р. Пильтук, полуостров Шмидта (северный Сахалин). Помырская свита. Репродукция изображения «*Pecten tanassevitschi*» из монографии И. Х о м е н к о «Стратиграфия трет. сл. пол. Шмидта», табл. VII, фиг. 1. Наружный вид правой створки. Натур. велич. Стр. . . . . 167.

Фиг. 2. *Pecten (Pallium) swiftii* В е р н а р д и. Плезотиоп № 13/5043. То же местонахождение, что и фиг. 1. Репродукция изображения «*Pecten swiftii*» из монографии И. Х о м е н к о «Стратиграфия третич. сл. пол. Шмидта», табл. III, фиг. 3. Нижняя часть правой створки. Натур. велич. Стр. . . . . 169.

#### Таблица XXIII

Фиг. 1. *Pecten (Pallium) swiftii* В е р н а р д и. Современная форма из залива

Фиг. 4. *Pecten (Chlamys) turpiculus* У о к о у а м а. Плезотиоп № 117/С 95. Right bank of Zhilovaya Vayempolka river, 3.5 km downward from mouth of Staraya Derevnya river (western coast of Kamchatka). Lower horizon of Kavrana series. External view of left valve; posterior end broken off. Natural size.

Фиг. 5. *Pecten (Chlamys) tanassevitschi* К х о м е н к о. Syntype № 24/5043. South of the mouth of Piltuk river, Schmidt Peninsula (northern Sakhalin). Pomyr series. Reproduction of I. K h o m e n k o's illustration of «*Pecten tanassevitschi*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1934, pl. IV, fig. 2. External view of left valve. Natural size. Page. . . . . 103.

#### Plate XXI

Фиг. 1. *Pecten (Chlamys) tanassevitschi* К х о м е н к о. Lectotype № 30/5043. South of the mouth of Piltuk river, Schmidt Peninsula (northern Sakhalin). Pomyr series. Reproduction of I. K h o m e n k o's illustration of «*Pecten tanassevitschi*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1934, pl. VI, fig. 1. External view of right valve. Natural size. Page. . . 108.

Фиг. 2. *Pecten (Chlamys) tanassevitschi* К х о м е н к о. Syntype № 25/5043. Same locality, as fig. 1. Reproduction of I. K h o m e n k o's illustration of «*Pecten tanassevitschi*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1934, pl. IV, fig. 3. Details of external sculpture. Natural size.

Фиг. 3. *Pecten (Chlamys) tanassevitschi* К х о м е н к о. Syntype. Same locality, as fig. 1. Reproduction of I. K h o m e n k o's illustration of «*Pecten tanassevitschi*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1934, pl. IV, fig. 4. Details of external sculpture. Natural size.

#### Plate XXII

Фиг. 1. *Pecten (Chlamys) tanassevitschi* К х о м е н к о. Syntype № 32/5043. South of the mouth of Piltuk river, Schmidt Peninsula (northern Sakhalin). Pomyr series. Reproduction of I. K h o m e n k o's illustration of «*Pecten tanassevitschi*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1934, pl. VII, fig. 1. External view of right valve. Natural size. Page. . . 108.

Фиг. 2. *Pecten (Pallium) swiftii* В е р н а р д и. Plesiotype № 13/5043. Same locality, as fig. 1. Reproduction of I. K h o m e n k o's illustration of «*Pecten swiftii*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1934, pl. III, fig. 3. Lower part of right valve. Natural size. Page. . . 108.

#### Plate XXIII

Фиг. 1. *Pecten (Pallium) swiftii* В е р н а р д и. «Recent specimen from Notoro

Ноторо, Хоккайдо, Япония. Репродукция из монографии U. Grant & H. Gale «Pliocene and Pleistoc. Moll.», табл. 10, фиг. 4а. Наружный вид правой створки. Уменьш.  $\times 1/2$ . Стр. . . . . 169.

Фиг. 1а. *Pecten (Pallium) swiftii* Bernardi. То же местонахождение, что и фиг. 1. Репродукция из монографии U. Grant & H. Gale «Plioc. and Pleistoc. Moll.», табл. 10, фиг. 4б. Наружный вид левой створки. Уменьш.  $\times 1/2$ .

Фиг. 2. *Pecten (Pallium) swiftii* Bernardi. Плезнотип № 10/5043. К югу от р. Пильтук, полуостров Шмидта (северный Сахалин). Помырская свита. Репродукция изображения «*Pecten swiftii*» из монографии И. Хоменко «Стратиграфия трет. сл. пол. Шмидта», табл. II, фиг. 3. Наружный вид поломанной левой створки. Natur. велич.

Фиг. 3. *Pecten (Pallium) swiftii* Bernardi. Плезнотип № 12/5043. То же местонахождение, что и фиг. 2. Репродукция изображения «*Pecten swiftii*» из монографии И. Хоменко «Стратиграфия трет. сл. пол. Шмидта», табл. III, фиг. 2. Примакушечная часть правой створки. Natur. велич.

Фиг. 4. *Pecten (Pallium) swiftii* Bernardi var. *nutteri* Arnold. Голотип. «South of mouth of San Gregorio Creek, San Mateo County, Cal. Purisima formation (lower Pliocene)». Репродукция изображения «*Pecten (Chlamys) nutteri*» из монографии R. Arnold «Tert. and Quat. Pectens», табл. XI, фиг. 3. Наружный вид несколько поврежденной правой створки. Уменьш.  $\times 4/5$ . Стр. . . . . 171.

#### Таблица XXIV

Фиг. 1. *Pecten (Pallium) swiftii* Bernardi var. *nutteri* Arnold. Котип № 14125. «Kreyenhagen's ranch, Fresno County, Cal.» Нижний плиоцен. Репродукция изображения «*Pecten (Chlamys) nutteri*» из монографии R. Arnold «Tert. and Quat. Pectens», табл. XI, фиг. 4. Наружный вид несколько поврежденной левой створки. Уменьш.  $\times 9/10$ . Стр. . . . . 171.

Фиг. 2. *Pecten (Pallium) swiftii* Bernardi var. *nutteri* Arnold. Плезнотип № 100/С 2. Западное побережье Камчатки, между Непропуском и р. Эталонной. Верхний отдел кавранской свиты. Наружный вид правой створки. Передний конец слегка обломан. Natur. велич.

Фиг. 2а. *Pecten (Pallium) swiftii* Bernardi var. *nutteri* Arnold. Плезнотип № 100/С 2<sup>1</sup>. Наружный вид левой створки того же экземпляра, что и на фиг. 2. Natur. велич.

#### Таблица XXV

Фиг. 1. *Pecten (Pallium) swiftii* Bernardi var. *nutteri* Arnold. Плезнотип № 100/С 1. Западное побережье Камчатки

Bay, Hokkaido, Japan.» Reproduction of U. Grant & H. Gale's illustration in «Plioc. and Pleistoc. Moll.», pl. 10, fig. 4a. External view of right valve.  $1/2$  natural size. Page. . . . . 108.

Фиг. 1а. *Pecten (Pallium) swiftii* Bernardi. Same locality, as fig. 1. Reproduction of U. Grant & H. Gale's illustration in «Plioc. and Pleistoc. Moll.», pl. 10, fig. 4b. External view of left valve.  $1/2$  natural size.

Фиг. 2. *Pecten (Pallium) swiftii* Bernardi. Plesiotype № 10/5043. South of Piltuk river, Schmidt Peninsula (northern Sakhalin). Pomyr series. Reproduction of I. Khomenko's illustration of «*Pecten swiftii*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1934, pl. II, fig. 3. External view of an imperfect left valve. Natural size.

Фиг. 3. *Pecten (Pallium) swiftii* Bernardi. Plesiotype № 12/5043. Same locality, as fig. 2. Reproduction of I. Khomenko's illustration of «*Pecten swiftii*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1934, pl. III, fig. 2. Umbonal part of right valve. Natural size.

Фиг. 4. *Pecten (Pallium) swiftii* Bernardi var. *nutteri* Arnold. Holotype. «South of mouth of San Gregorio Creek, San Mateo County, Cal. Purisima formation (lower Pliocene)». Reproduction of R. Arnold's illustration of «*Pecten (Chlamys) nutteri*» in «Tert. and Quat. Pectens», pl. XI, fig. 3. External view of slightly imperfect right valve; altitude 74 mm». Page . . . . . 108.

#### Plate XXIV

Фиг. 1. *Pecten (Pallium) swiftii* Bernardi var. *nutteri* Arnold. Cotype № 14125. «Kreyenhagen's ranch, Fresno County, Cal. Lower Pliocene». Reproduction of R. Arnold's illustration of «*Pecten (Chlamys) nutteri*» in «Tert. and Quat. Pectens», pl. XI, fig. 4. Exterior of slightly imperfect left valve; altitude 63 mm. Page. . . . . 108.

Фиг. 2. *Pecten (Pallium) swiftii* Bernardi var. *nutteri* Arnold. Plesiotype № 100/С 2. Western coast of Kamchatka, between the steep sea cliffs and the mouth of Etalonnaya river. Upper horizon of Kavrana series. External view of right valve; anterior end slightly broken off. Natural size.

Фиг. 2а. *Pecten (Pallium) swiftii* Bernardi var. *nutteri* Arnold. Plesiotype № 100/С 2<sup>1</sup>. External view of left valve of same specimen, as fig. 2. Natural size.

#### Plate XXV

Фиг. 1. *Pecten (Pallium) swiftii* Bernardi var. *nutteri* Arnold. Plesiotype № 101/С 1. Western coast of Kamchatka

между Непропуском и р. Эталонной. Верхний отдел кавранской свиты. Наружный вид правой створки. Натур. велич. Стр. 171.

Фиг. 1а. *Pecten (Pallium) swiftii* Bernardi var. *nutteri* Arnold. Плезіотип № 101/С 1<sup>1</sup>. Наружный вид левой створки того же экземпляра, что и на фиг. 1. Натур. велич.

#### Таблица XXVI

Фиг. 1. *Pecten (Pallium) swiftii* Bernardi var. *nutteri* Arnold. Плезіотип № 100/С 8. Западное побережье Камчатки, между Непропуском и устьем р. Эталонной. Верхний отдел кавранской свиты. Наружной вид правой створки; переднее ушко несколько обломано. Натур. велич. Стр. . . . . 171.

Фиг. 2. *Pecten (Pallium) swiftii* Bernardi var. *heteroglyptus* Yokoyama. Лектотип. «Kaidate-no-Sawa. Lower (?) Musashino». Репродукция изображения «*Pecten heteroglyptus*» из монографии М. Yokoyama «Foss. Shells from Sado», табл. XXXIII, фиг. 1. Наружный вид правой створки. Натур. велич. Стр. 178.

Фиг. 3. *Pecten (Pallium) swiftii* Bernardi var. *heteroglyptus* Yokoyama. Синтип. То же местонахождение, что и на фиг. 2. Репродукция изображения «*Pecten heteroglyptus*» из монографии М. Yokoyama «Foss. Shells from Sado», табл. XXXIII, фиг. 5. Наружный вид правой створки. Натур. велич.

#### Таблица XXVII

Фиг. 1. *Pecten (Pallium) swiftii* Bernardi var. *heteroglyptus* Yokoyama. Плезіотип № 101/С 3. Западное побережье Камчатки, между Непропуском и устьем р. Эталонной. Верхний отдел кавранской свиты. Наружный вид правой створки. Передне-нижний конец створки был при жизни животного, повидимому, обломан и впоследствии зарос, образовав в этом месте ступенчатую складку и прогиб края во внутрь. Натур. велич. Стр. . . . . 178.

Фиг. 1а. *Pecten (Pallium) swiftii* Bernardi var. *heteroglyptus* Yokoyama. Левая створка того же экземпляра, что и на фиг. 1. Натур. велич.

Фиг. 2. *Pecten (Pallium) swiftii* Bernardi var. *heteroglyptus* Yokoyama. Синтип. «Kaidate-no-Sawa. Lower (?) Musashino». Репродукция изображения «*Pecten heteroglyptus*» из монографии М. Yokoyama «Foss. Shells from Sado», табл. XXXIII, фиг. 8. Наружный вид левой створки. Натур. велич.

#### Таблица XXVIII

Фиг. 1. *Pecten (Pallium) swiftii* Bernardi var. *etchegoini* Anderson. Плезіотип № 101/С 25. Западное побережье

ка, between the steep sea cliffs and mouth of Etalonnaya river. Upper horizon of Kavrana series. External view of right valve. Natural size. Page. . . . . 108.

Фиг. 1а. *Pecten (Pallium) swiftii* Bernardi var. *nutteri* Arnold. Плезіотип № 101/С 1<sup>1</sup>. External view of left valve from same specimen, as fig. 1. Natural size.

#### Plate XXVI

Fig. 1. *Pecten (Pallium) swiftii* Bernardi var. *nutteri* Arnold. Plesiotype № 100/C 8. Western coast of Kamchatka, between the steep sea cliffs and the mouth of Etalonnaya river. Upper horizon of Kavrana series. External view of right valve; anterior ear slightly broken off. Natural size. Page. . . . . 108.

Fig. 2. *Pecten (Pallium) swiftii* Bernardi var. *heteroglyptus* Yokoyama. Lectotype. «Kaidate-no-Sawa. Lower (?) Musashino». Reproduction of M. Yokoyama's illustration of «*Pecten heteroglyptus*» in «Foss. Shells from Sado», pl. XXXIII, fig. 1. External view of right valve. Natural size. Page. . . . . 109.

Fig. 3. *Pecten (Pallium) swiftii* Bernardi var. *heteroglyptus* Yokoyama. Syntype. Same locality, as fig. 2. Reproduction of M. Yokoyama's illustration of «*Pecten heteroglyptus*» in «Foss. Shells from Sado», pl. XXXIII, fig. 5. External view of right valve. Natural size.

#### Plate XXVII

Fig. 1. *Pecten (Pallium) swiftii* Bernardi var. *heteroglyptus* Yokoyama. Plesiotype № 101/C 3. Western coast of Kamchatka, between the steep sea cliffs and the mouth of Etalonnaya river. Upper horizon of Kavrana series. External view of right valve. Natural size. Page. . . . . 109.

Fig. 1а. *Pecten (Pallium) swiftii* Bernardi var. *heteroglyptus* Yokoyama. External view of left valve from same specimen, as fig. 1. Natural size.

Fig. 2. *Pecten (Pallium) swiftii* Bernardi var. *heteroglyptus* Yokoyama. Syntype. «Kaidate-no-Sawa. Lower (?) Musashino». Reproduction of M. Yokoyama's illustration of «*Pecten heteroglyptus*» in «Foss. Shells from Sado», pl. XXXIII, fig. 8. External view of left valve. Natural size.

#### Plate XXVIII

Fig. 1. *Pecten (Pallium) swiftii* Bernardi var. *etchegoini* Anderson. Plesiotype № 101/C 25. Western coast of

Камчатки, между Непропуском и устьем р. Эталонной. Верхний отдел кавранской свиты. Наружный вид левой створки. Natur. велич. Стр. . . . . 179.

Фиг. 2. *Pecten (Pallium) swiftii* Bernardi var. *etchegoini* Anderson. Плезотиоп № 101/C 5. То же местонахождение, что и фиг. 1. Наружный вид правой створки. Natur. велич.

Фиг. 2а. *Pecten (Pallium) swiftii* Bernardi var. *etchegoini* Anderson. Тот же экземпляр, что и на фиг. 2; вид спереди. Natur. велич.

Фиг. 3. *Pecten (Pallium) swiftii* Bernardi var. *etchegoini* Anderson. Плезотиоп № 101/C 22. То же местонахождение, что и фиг. 1. Наружный вид левой створки. Natur. велич.

Фиг. 3а. *Pecten (Pallium) swiftii* Bernardi var. *etchegoini* Anderson. Тот же экземпляр, что и на фиг. 3; вид спереди. Natur. велич.

Фиг. 4. *Pecten (Pallium) swiftii* Bernardi var. *etchegoini* Anderson. Плезотиоп № 103/C 27. Западное побережье Камчатки, в 2 км к Н от устья р. Кавраны. Верхний отдел кавранской свиты. Наружный вид несколько обломанной правой створки. Natur. велич.

Фиг. 5. *Pecten (Pallium) swiftii* Bernardi var. *etchegoini* Anderson. Плезотиоп № 101/C 15. Западное побережье Камчатки, между Непропуском и устьем р. Эталонной. Верхний отдел кавранской свиты. Наружный вид правой створки. Natur. велич.

Фиг. 5а. *Pecten (Pallium) swiftii* Bernardi var. *etchegoini* Anderson. Тот же экземпляр, что и на фиг. 5; вид спереди. Natur. велич.

### Таблица XXIX

Фиг. 1. *Pecten (Pallium) swiftii* Bernardi var. *piltukensis* Khomenko. Гомеотип № 100/C 96. Западное побережье Камчатки, между Непропуском и устьем р. Эталонной. Верхний отдел кавранской свиты. Наружный вид правой створки. Natur. велич. Стр. . . . . 183.

Фиг. 2. *Pecten (Pallium) swiftii* Bernardi var. *piltukensis* Khomenko. Лектотип № 16/5043. В 1 км к северу от устья р. Пильтук, полуостров Шмидта (северный Сахалин). Помырская свита. Репродукция изображения «*Pecten swiftii piltukensis*» из монографии И. Хоменко «Стратиграфия трет. сл. пол. Шмидта», табл. V, фиг. 1. Наружный вид правой створки. Natur. велич.

Фиг. 3. *Pecten (Pallium) swiftii* Bernardi var. *piltukensis* Khomenko. Синтип № 17/5043. То же местонахождение, что и фиг. 2. Репродукция изображения «*Pecten swiftii piltukensis*» из монографии И. Хоменко «Стратиграфия трет. сл. пол. Шмидта», табл. V, фиг. 2. Наружный вид обломанной и потерявшей левой створки. Natur. велич.

Kamchatka, between the steep sea cliffs and the mouth of Etalonnyaya river. Upper horizon of Kavrana series. External view of left valve. Natural size. Page. . . . . 109.

Fig. 2. *Pecten (Pallium) swiftii* Bernardi var. *etchegoini* Anderson. Plesiotype № 101/C 5. Same locality, as fig. 1. External view of right valve. Natural size.

Fig. 2a. *Pecten (Pallium) swiftii* Bernardi var. *etchegoini* Anderson. Anterior view of same specimen, as fig. 2. Natural size.

Fig. 3. *Pecten (Pallium) swiftii* Bernardi var. *etchegoini* Anderson. Plesiotype № 101/C 22. Same locality, as fig. 1. External view of left valve. Natural size.

Fig. 3a. *Pecten (Pallium) swiftii* Bernardi var. *etchegoini* Anderson. Anterior view of same specimen, as fig. 3. Natural size.

Fig. 4. *Pecten (Pallium) swiftii* Bernardi var. *etchegoini* Anderson. Plesiotype № 103/C 27. Western coast of Kamchatka, 2 km north of mouth of Kavrana river. Upper horizon of Kavrana series. External view of right valve. Natural size.

Fig. 5. *Pecten (Pallium) swiftii* Bernardi var. *etchegoini* Anderson. Plesiotype № 101/C 15. Western coast of Kamchatka, between the steep sea cliffs and Etalonnyaya river. Upper horizon of Kavrana series. External view of right valve. Natural size.

Fig. 5a. *Pecten (Pallium) swiftii* Bernardi var. *etchegoini* Anderson. Anterior view of same specimen, as fig. 5. Natural size.

### Plate XXIX

Fig. 1. *Pecten (Pallium) swiftii* Bernardi var. *piltukensis* Khomenko. Homoeotype № 100/C 96. Western coast of Kamchatka, between the steep sea cliffs and the mouth of Etalonnyaya river. Upper horizon of Kavrana series. External view of right valve. Natural size. Page. . . . . 109.

Fig. 2. *Pecten (Pallium) swiftii* Bernardi var. *piltukensis* Khomenko. Lectotype № 16/5043. 1 km north of mouth of Piltuk river, Schmidt Peninsula (northern Sakhalin). Pomyr series. Reproduction of I. Khomenko's illustration of «*Pecten swiftii piltukensis*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1934, pl. V, fig. 1. External view of right valve. Natural size.

Fig. 3. *Pecten (Pallium) swiftii* Bernardi var. *piltukensis* Khomenko. Syntype № 17/5043. Same locality, as fig. 2. Reproduction of I. Khomenko's illustration of «*Pecten swiftii piltukensis*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1934, pl. V, fig. 2. External view of left valve; ears broken off. Natural size.



Фиг. 4. *Pecten (Lyropecten?) mironovi* К х о м е н к о. Лектотип № 34/5043. К северу от устья р. Венгери, полуостров Шмидта (северный Сахалин). Венгерийская свита. Репродукция изображения «*Pecten mironovi*» из монографии И. Хоменко «Стратиграфия трет. сл. пол. Шмидта», табл. VII, фиг. 3. Ядро левой створки. Уменьш.  $\times 2/5$ . Стр. . . . . 186.

Фиг. 5. *Pecten (Pallium) swiftii* B e r n a r d i var. *etchegoini* A n d e r s o n. Плезитотип № 101/С 16. Западное побережье Камчатки, между Непропуском и устьем р. Эталонной. Верхний отдел кавранской свиты. Наружный вид правой створки с обломанным передним ушком. Натур. велич. Стр. . . . . 179.

### Таблица XXX

Фиг. 1. *Pecten (Lyropecten?) mironovi* К х о м е н к о. Синтип № 33/5043. К северу от устья р. Венгери, полуостров Шмидта (северный Сахалин). Венгерийская свита. Репродукция изображения «*Pecten mironovi*» из монографии И. Хоменко «Стратиграфия трет. сл. пол. Шмидта», табл. VII, фиг. 2. Внутренний вид левой створки. Уменьш.  $\times 2/5$ . Стр. 186.

Фиг. 2. *Pecten (Lyropecten?) mironovi* К х о м е н к о. Синтип № 35/5043. То же местонахождение, что и фиг. 1. Репродукция изображения «*Pecten mironovi*» из монографии И. Хоменко «Стратиграфия трет. сл. пол. Шмидта», табл. VII, фиг. 1. Обломанное ядро правой створки. Уменьш.  $\times 2/5$ .

### Таблица XXXI

Фиг. 1. *Pecten* sp. indet. Образец № 116/С 90. Западное побережье Камчатки, к югу от устья р. Котлахкынч. Постплиоцен. Ядро правой створки с обломанным передним ушком. Уменьш.  $\times 2/3$ . Стр. 187.

Фиг. 2. *Pecten (Patinopecten) yessoensis* J a y. Плезитотип № 133/С 68. Правый берег р. Хейслеевем, в 2 км от устья (западное побережье Камчатки). Верхний отдел кавранской свиты. Наружный вид обломанной левой створки. Натур. велич. Стр. 189.

### Таблица XXXII

Фиг. 1. *Pecten* sp. indet. Образец № 115/С 93. Западное побережье Камчатки, в 3,4 км к S от устья р. Котлахкынч. Постплиоцен. Ядро правой створки с обломанными ушками. Уменьш.  $\times 2/3$ . Стр. . . . . 187.

Фиг. 2. *Pecten (Patinopecten) yessoensis* J a y. Плезитотип № 133/С 78. Правый берег р. Хейслеевем, в 2 км от устья (западное побережье Камчатки). Верхний отдел кавранской свиты. Наружный вид правой створки; ушки обломаны. Натур. велич. Стр. . . . . 189.

Фиг. 4. *Pecten (Lyropecten?) mironovi* К х о м е н к о. Лектотип № 34/5043. North of the mouth of Vengheri river, Schmidt Peninsula (northern Sakhalin). Vengheri series. Reproduction of I. Khomenko's illustration of «*Pecten mironovi*» in «Stratigraphy of the Tert. Beds of Schmidt Pensins.», 1934, pl. VII, fig. 3. Cast of left valve.  $2/5$  natural size. Page. 109.

Фиг. 5. *Pecten (Pallium) swiftii* B e r n a r d i var. *etchegoini* A n d e r s o n. Plesiotype № 101/С 16. Western coast of Kamchatka, between the steep sea cliffs and the mouth of Etalonnya river. Upper horizon of Kavrana series. External view of right valve, anterior ear broken off. Natural size. Page. . . . . 109.

### Plate XXX

Фиг. 1. *Pecten (Lyropecten?) mironovi* К х о м е н к о. Syntype № 33/5043. North of the mouth of Vengheri river, Schmidt Peninsula (northern Sakhalin). Vengheri series. Reproduction of I. Khomenko's illustration of «*Pecten mironovi*» in «Stratigraphy of the Tert. Beds of Schmidt Pensins.», 1934, pl. VII, fig. 2. Internal view of left valve.  $2/5$  natural size. Page. 109.

Фиг. 2. *Pecten (Lyropecten?) mironovi* К х о м е н к о. Syntype № 35/5043. Same locality, as fig. 1. Reproduction of I. Khomenko's illustration of «*Pecten mironovi*» in «Stratigraphy of the Tert. Beds of Schmidt Pensins.», 1934, pl. VII, fig. 1. Cast of right valve.  $2/5$  natural size.

### Plate XXXI

Фиг. 1. *Pecten* sp. indet. Specimen № 116/С 90. Western coast of Kamchatka, south of the mouth of Kotlakhkanch river. Postpliocene. Cast of right valve; anterior ear broken off.  $2/3$  natural size. Page. . 109.

Фиг. 2. *Pecten (Patinopecten) yessoensis* J a y. Plesiotype № 133/С 68. Right bank of Kheysleveem river, 2 km upward from the mouth. Upper horizon of Kavrana series. External view of left valve; lower margin broken off. Natural size. Page. 110.

### Plate XXXII

Фиг. 1. *Pecten* sp. indet. Specimen № 115/С 93. Western coast of Kamchatka, 3.4 km south of mouth of Kotlakhkanch river. Postpliocene. Cast of right valve; ears broken off.  $2/3$  natural size. Page. 109.

Фиг. 2. *Pecten (Patinopecten) yessoensis* J a y. Plesiotype № 133/С 78. Right bank of Kheysleveem river, 2 km upward from the mouth (western coast of Kamchatka). Upper horizon of Kavrana series. External view of right valve; ears broken off. Natural size. Page. . . . . 110.

## Таблица XXXIII

Фиг. 1. *Pecten (Patinopecten) yessoensis* J a y. Плезютип № 19a/5043. К северу от устья р. Пильгук, полуостров Шмидта (северный Сахалин). Помырская свита. Репродукция изображения «*Pecten yessoensis*» из монографии И. Хоменко «Стратиграфия трет. сл. пол. Шмидта», табл. II, фиг. 1. Наружный вид обломанной правой створки. Натур. велич. Стр. . . . . 189.

Фиг. 2. *Pecten (Patinopecten) yessoensis* J a y. Лектотип. «Hakodadi. Japan». Репродукция из монографии J. J a y «Report on the Shells», табл. 4, фиг. 1. Наружный вид правой створки. Натур. велич.

## Таблица XXXIV

Фиг. 1. *Pecten (Patinopecten) yessoensis* J a y. Плезютип № 131/C 69. Западное побережье Камчатки, в 1,6 км к NE от устья р. Тнонхлно. Верхний отдел кавранской свиты. Наружный вид левой створки. Натур. велич. Стр. . . . . 189.

Фиг. 2. *Pecten (Patinopecten) yessoensis* J a y. Плезютип № 135/C 76. Левый берег р. Инерявеем, в 3 км от устья (западное побережье Камчатки). Верхний отдел кавранской свиты. Наружный вид левой створки; переднее ушко слегка обломано. Натур. велич.

## Таблица XXXV

Фиг. 1. *Pecten (Patinopecten) caurinus* G o u l d var. *oregonensis* H o w e. Плезютип № S/146. Западное побережье Камчатки, между Непропуском и устьем р. Эталонной. Верхний отдел кавранской свиты. Наружный вид правой створки. Натур. велич. Стр. . . . . 192.

Фиг. 2. *Pecten (Patinopecten) yessoensis* J a y. Плезютип № 134/C 66. Западное побережье Камчатки, на мысу между устьями рек Утхолок и Каврана. Верхний отдел кавранской свиты. Наружный вид левой створки в интеркостальных промежутках местами хорошо видна тонкая сетчатая скульптура. Натур. велич. Стр. . . . . 189.

## Таблица XXXVI

Фиг. 1. *Pecten (Patinopecten) caurinus* G o u l d var. *oregonensis* H o w e. Плезютип № 101/C 6. Западное побережье Камчатки, между Непропуском и устьем р. Эталонной. Верхний отдел кавранской свиты. Наружный вид слегка обломанной правой створки. Натур. велич. Стр. . . . . 192.

Фиг. 2. *Pecten (Patinopecten) caurinus* G o u l d var. *oregonensis* H o w e. Голотип. «Stanford University Collection, loc. N. P. 44». Свита Empire. Репродукция изображения «*Pecten oregonensis*» из монографии Н. Н о w e «Empire Formation», табл. 11, фиг. 1 Наружный вид правой створки. Натур. велич.

## Plate XXXIII

Fig. 1. *Pecten (Patinopecten) yessoensis* J a y. Plesiotype № 19a/5043. North of the mouth of Piltuk river, Schmidt Peninsula (northern Sakhalin). Pomyr series. Reproduction of I. K h o m e n k o 's illustration of «*Pecten yessoensis*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1934, pl. II, fig. 1. External view of right valve. Natural size. Page. . . . . 110.

Fig. 2. *Pecten (Patinopecten) yessoensis* J a y. Lectotype. «Hakodadi. Japan». Reproduction of J. J a y 's illustration in «Report on the Shells», pl. 4, fig. 1. External view of right valve. Natural size.

## Plate XXXIV

Fig. 1. *Pecten (Patinopecten) yessoensis* J a y. Plesiotype № 131/C 69. Western coast of Kamchatka, 1.6 km northeast from the mouth of Tnonkhlno river. Upper horizon of Kavrana series. External view of left valve. Natural size. Page. . . . . 110.

Fig. 2. *Pecten (Patinopecten) yessoensis* J a y. Plesiotype № 135/C 76. Left bank of Ineryaveem river, 3 km upward from the mouth (western coast of Kamchatka). Upper horizon of Kavrana series. External view of left valve; anterior ear slightly broken off. Natural size.

## Plate XXXV

Fig. 1. *Pecten (Patinopecten) caurinus* G o u l d var. *oregonensis* H o w e. Plesiotype № S/146. Western coast of Kamchatka, between the steep sea cliffs and the mouth of Etalonnyaya river. Upper horizon of Kavrana series. External view of right valve. Natural size. Page. . . . . 110.

Fig. 2. *Pecten (Patinopecten) yessoensis* J a y. Plesiotype № 134/C 66. Western coast of Kamchatka, between the mouths of Utkholok and Kavrana rivers. Upper horizon of Kavrana series. External view of left valve. Natural size. Page. . . . . 110.

## Plate XXXVI

Fig. 1. *Pecten (Patinopecten) caurinus* G o u l d var. *oregonensis* H o w e. Plesiotype № 101/C 6. Western coast of Kamchatka, between the steep sea cliffs and the mouth of Etalonnyaya river. Upper horizon of Kavrana river. External view of right valve. Natural size. Page. . . . . 110.

Fig. 2. *Pecten (Patinopecten) caurinus* G o u l d var. *oregonensis* H o w e. Holotype. «Stanford University Collection, loc. N. P. 44. Empire Formation». Reproduction of H. H o w e 's illustration of «*Pecten oregonensis*», pl. 11, fig. 1. External view of right valve. Natural size.

## Таблица XXXVII

Фиг. 1. *Pecten (Patinopecten) caurinus* Gould var. *oregonensis* Howe. Плеззиотип № 101/C270. Западное побережье Камчатки, между Непропуском и р. Эталонной. Верхний отдел кавранской свиты. Наружный вид левой створки. Natur. велич. Стр. 192.

Фиг. 2. *Pecten (Patinopecten) caurinus* Gould var. *oregonensis* Howe. Плеззиотип № 30027. «Univ. Calif. Loc. 3320». Свита Empire. Репродукция изображения «*Pecten oregonensis*» из монографии Н. Howe «Empire Formation», табл. 12, фиг. 1. Наружный вид правой створки. Natur. велич.

## Таблица XXXVIII

Фиг. 1. *Pecten (Patinopecten) caurinus* Gould var. *oregonensis* Howe. Плеззиотип № 101/C88. Западное побережье Камчатки, между Непропуском и устьем р. Эталонной. Верхний отдел кавранской свиты. Наружный вид правой створки; ушки слегка обломаны. Natur. велич. Стр. 192.

Фиг. 2. *Pecten (Patinopecten) caurinus* Gould var. *oregonensis* Howe. Плеззиотип № 101/C87. То же местонахождение, что и фиг. 1. Наружный вид левой створки. Natur. велич.

## Таблица XXXIX

Фиг. 1. *Pecten (Patinopecten) caurinus* Gould var. *piltunensis* Khomeenko. Лектотип № 24/3104a. Канавка на водоразделе между рр. Пилтуном и Паромаем, в 6 км от устья (восточный Сахалин). Наднутаовская свита. Репродукция изображения «*Pecten piltunensis*» из монографии И. Хоменко «Стратиграфия трет. пл. в. Сахал.», табл. I, фиг. 6. Наружный вид несколько обломанной правой створки. Natur. велич. Стр. 196.

Фиг. 2. *Pecten (Patinopecten) caurinus* Gould var. *piltunensis* Khomeenko. Синтип № 20/3104a. То же местонахождение, что и фиг. 1. Репродукция изображения «*Pecten piltunensis*» из монографии И. Хоменко «Стратиграфия трет. пл. в. Сахал.», табл. II, фиг. 4. Наружный вид обломанной левой створки. Уменьш.  $\times 1/2$ .

Фиг. 3. *Pecten (Patinopecten) caurinus* Gould var. *piltunensis* Khomeenko. Синтип № 19/3104a. То же местонахождение, что и фиг. 1. Репродукция изображения «*Pecten piltunensis*», из монографии И. Хоменко «Стратиграфия трет. пл. в. Сахал.», табл. I, фиг. 7. Наружный вид левой створки. Уменьш.  $\times 1/2$ .

## Таблица XL

Фиг. 1. *Pecten (Patinopecten) subrefugioensis* Slodkewitsch. Аллотип

## Plate XXXVII

Fig. 1. *Pecten (Patinopecten) caurinus* Gould var. *oregonensis* Howe. Plesiotype № 101/C270. Western coast of Kamchatka, between the steep sea cliffs and the mouth of Etalonnyaya river. Upper horizon of Kavrana series. External view of left valve. Natural size. Page. . . 110.

Fig. 2. *Pecten (Patinopecten) caurinus* Gould var. *oregonensis* Howe. Plesiotype № 30027. «University California Loc. 3320. Empire Formation». Reproduction of H. Howe's illustration of «*Pecten oregonensis*» in «Empire Formation», pl. 12, fig. 1. External view of right valve. Natural size.

## Plate XXXVIII

Fig. 1. *Pecten (Patinopecten) caurinus* Gould var. *oregonensis* Howe. Plesiotype № 101/C88. Western coast of Kamchatka, between the steep sea cliffs and the mouth of Etalonnyaya river. Upper horizon of Kavrana series. External view of right valve; ears slightly broken off. Natural size. Page. . . 110.

Fig. 2. *Pecten (Patinopecten) caurinus* Gould var. *oregonensis* Howe. Plesiotype № 101/C87. Same locality, as fig. 1. External view of left valve. Natural size.

## Plate XXXIX

Fig. 1. *Pecten (Patinopecten) caurinus* Gould var. *piltunensis* Khomeenko. Lectotype № 24/3104a. A trench on the watershed between Piltun and Paromai rivers, about 6 km upward from the mouth (eastern Sakhalin). Supra-Nutovo series. Reproduction of I. Khomeenko's illustration of «*Pecten piltunensis*» in «Stratigraphy of the Tert. Beds of East. Sakh.», pl. I, fig. 6. External view of right valve. Natural size. Page. . . 410.

Fig. 2. *Pecten (Patinopecten) caurinus* Gould var. *piltunensis* Khomeenko. Syntype № 20/3104a. Same locality, as fig. 1. Reproduction of I. Khomeenko's illustration of «*Pecten piltunensis*» in «Stratigraphy of the Tert. Beds of East. Sakh.», pl. II, fig. 4. External view of left valve.  $1/2$  natural size.

Fig. 3. *Pecten (Patinopecten) caurinus* Gould var. *piltunensis* Khomeenko. Syntype № 19/3104a. Same locality, as fig. 1. Reproduction of I. Khomeenko's illustration of «*Pecten piltunensis*» in «Stratigraphy of the Tert. Beds of East. Sakh.», pl. I, fig. 7. External view of left valve.  $1/2$  natural size.

## Plate XL

Fig. 1. *Pecten (Patinopecten) subrefugioensis* Slodkewitsch. Allotype

№ 103/С 45. Западное побережье Камчатки, в 2 км к северу от устья р. Кавраны. Верхний отдел кавранской свиты. Наружный вид правой створки. Натур. велич. Стр. . . . . 198.

Фиг. 2. *Pecten (Patinopecten) caurinus* Gould var. *piltunensis* K h o m e n k o. Синтип. Канава на водоразделе между рр. Пилтуном и Паромаем, в 6 км от устья (восточный Сахалин). Наднутовская свита. Репродукция изображения «*Pecten piltunensis*» из монографии И. Хоменко «Стратиграфия трет. пл. в Сахал.», табл. II, фиг. 1. Наружный вид правой створки. Уменьш.  $\times 1/2$ . Стр. . . . . 196.

Фиг. 3. *Pecten (Patinopecten) caurinus* Gould var. *piltunensis* K h o m e n k o. Синтип № 21/3104а. То же местонахождение, что и фиг. 2. Репродукция изображения «*Pecten piltunensis*» из монографии И. Хоменко «Стратиграфия трет. пл. в Сахалина», табл. II, фиг. 5. Деталь скульптуры левой створки. Натур. велич.

### Таблица XLI

Фиг. 1. *Pecten (Patinopecten) subrefugioensis* S l o d k e w i t s c h. Голотип № 103/С 56. Западное побережье Камчатки, в 2 км к N от устья р. Кавраны. Верхний отдел кавранской свиты. Наружный вид левой створки. Натур. велич. Стр. 198.

Фиг. 2. *Pecten (Patinopecten) subrefugioensis* S l o d k e w i t s c h. Паратип № 103/С 52. То же местонахождение, что и фиг. 1. Наружный вид левой створки. Натур. велич.

Фиг. 3. *Pecten (Patinopecten) kulkensis* S l o d k e w i t s c h. Голотип № 118/С 101. Правый берег р. Кульки, в устье правого ее притока, впадающего в 1 км ниже по течению от телеграфной линии (западное побережье Камчатки). Верхний отдел кавранской свиты. Отпечаток внутренней поверхности левой створки. Натур. велич. Стр. . . . . 201.

Фиг. 4. *Pecten (Patinopecten) kulkensis* S l o d k e w i t s c h. Паратип № 118/С 104. То же местонахождение, что и фиг. 3. Обломанное ядро правой (?) створки. Натур. велич.

### Таблица XLII

Фиг. 1. *Pecten (Patinopecten?) singularis* S l o d k e w i t s c h. Голотип № 103/С 32. Западное побережье Камчатки, в 2 км к N от устья р. Кавраны. Верхний отдел кавранской свиты. Наружный вид левой створки. Натур. велич. Стр. 200.

Фиг. 2. *Palliolium (Delectopecten) pedroanus* (T r a s k) var. *peckhami* (G a b b). Голотип. «From the bituminous shales of the Upper Miocene, on the Ojai Ranch, S. Barbara County». Репродукция изображения «*Pecten peckhami*» из монографии W. G a b b «Palaeontology of California», т. II, табл. 16, фиг. 19. Наружный вид левой створки. Натур. велич. Стр. 208.

№ 103/С 45. Western coast of Kamchatka, 2 km north of the mouth of Kavrana river. Upper horizon of Kavrana series. External view of right valve. Natural size. Page. . . . . 110.

Fig. 2. *Pecten (Patinopecten) caurinus* Gould var. *piltunensis* K h o m e n k o. Syntype. A trench on the watershed between Piltun and Paromai rivers, about 6 km upward from the mouth. Supra-Nutovo series. Reproduction of I. K h o m e n k o's illustration of «*Pecten piltunensis*» in «Stratigraphy of the Tert. Beds of East. Sakh.», pl. II, fig. 1. External view of right valve.  $1/2$  natural size. Page. . . . . 110.

Fig. 3. *Pecten (Patinopecten) caurinus* Gould var. *piltunensis* K h o m e n k o. Syntype № 21/3104a. Same locality, as fig. 2. Reproduction of I. K h o m e n k o's illustration of «*Pecten caurinus*» in «Stratigraphy of the Tert. Beds of East. Sakh.», pl. II, fig. 5. Details of external sculpture of left valve. Natural size.

### Plate XLI

Fig. 1. *Pecten (Patinopecten) subrefugioensis* S l o d k e w i t s c h. Holotype № 103/С 56. Western coast of Kamchatka, 2 km north of Kavrana river. Upper horizon of Kavrana series. External view of left valve. Natural size. Page. . . . . 110.

Fig. 2. *Pecten (Patinopecten) subrefugioensis* S l o d k e w i t s c h. Paratype № 103/С 52. Same locality, as fig. 1. External view of left valve. Natural size.

Fig. 3. *Pecten (Patinopecten) kulkensis* S l o d k e w i t s c h. Holotype № 118/С 101. Right bank of Kulka river, at the mouth of a right tributary, 1 km below the telegraph line. Western coast of Kamchatka. Upper horizon of Kavrana series. Impression of internal surface of left valve. Natural size. Page. . . . . 111.

— Fig. 4. *Pecten (Patinopecten) kulkensis* S l o d k e w i t s c h. Paratype № 118/С 104. Same locality, as fig. 3. Cast of right (?) valve; dorsal and ventral margins broken off. Natural size.

### Plate XLII

Fig. 1. *Pecten (Patinopecten?) singularis* S l o d k e w i t s c h. Holotype № 103/С 32. Western coast of Kamchatka, 2 km north of the mouth of Kavrana river. Upper horizon of Kavrana series. External view of left valve. Natural size. Page. 111.

Fig. 2. *Palliolium (Delectopecten) pedroanus* (T r a s k) var. *peckhami* (G a b b). Holotype. «From the bituminous shales of the Upper Miocene, on the Ojai Ranch, S. Barbara County». Reproduction of W. G a b b's illustration of «*Pecten peckhami*» in «Palaeontology of California», vol. II, pl. 16, fig. 19. External view of left valve. Natural size. Page. . . . . 113.

Фиг. 3. *Palliolium (Delectopecten) pedroanus* (T r a s k) var. *peckhami* (G a b b). Плезотиоп № 7/5043. Мыс Пильво, полуостров Шмидта (северный Сахалин). Верхне-пильская свита. Репродукция изображения «*Pecten peckhami*» из монографии И. Хоменко «Стратиграфия трет. сл. пол. Шмидта», табл. I, фиг. 10. Наружный вид правой створки и внутренний вид левой створки. Natur. велич.

Фиг. 4. *Palliolium (Delectopecten) pedroanus* (T r a s k) var. *peckhami* (G a b b). Плезотиоп № S/115. Р. Ковачина (западное побережье Камчатки). Ковачинская свита. Отпечаток наружной поверхности правой створки. Увелич.  $\times 27/10$ .

Фиг. 5. *Palliolium (Delectopecten) pedroanus* (T r a s k) var. *peckhami* (G a b b). Плезотиоп № S/114. То же местонахождение, что и фиг. 4. Ядро левой створки. Увелич.  $\times 3/2$ .

Фиг. 6. *Palliolium (Delectopecten) pedroanus* (T r a s k) var. *peckhami* (G a b b). Плезотиоп № S/5. Р. Аманина (западное побережье Камчатки). Ваямпольская свита. Отпечаток наружной поверхности левой створки. Увелич.  $\times 8/5$ .

Фиг. 7. *Palliolium (Delectopecten) pedroanus* (T r a s k) var. *peckhami* (G a b b). Плезотиоп № S/6. То же местонахождение, что и фиг. 6. Ядро правой створки. Увелич.  $\times 17/10$ .

Фиг. 8. *Lima sakhalinensis* nom. nova. Голотип № 4/5043. К северу от мыса Пильво, полуостров Шмидта (северный Сахалин). Верхне-пильская свита. Репродукция изображения «*Lima concentrica*» из монографии И. Хоменко «Стратиграфия трет. сл. пол. Шмидта», табл. I, фиг. 7. Наружный вид правой створки. Natur. велич. Стр. 211.

Фиг. 9. *Variamussium cf. pillarense* S l o d k e w i t s c h. Образец № S/22. Р. Утхолок (западное побережье Камчатки). Ковачинская свита. Обломанное ядро правой створки. Увелич.  $\times 9/5$ . Стр. 203.

Фиг. 10. *Variamussium pillarense* S l o d k e w i t s c h. Голотип № 164922. «Loc. 4100, 1 $\frac{1}{2}$  miles east of Pillar Point, Clallam County, Wash. Oligocene — Miocene». Репродукция изображения «*Pecten (Propeamussium) clallamensis*» из монографии R. Arnold «Tert. and Quat. Pectens», табл. III, фиг. 2. Обломанное ядро левой створки. Увелич.  $\times 3/1$ .

#### Таблица XLIII

Фиг. 1. *Lima goliath* S m i t h. Плезотиоп № 161/C 512. Правый берег в верховьях р. Аманной (западное побережье Камчатки). Верхний отдел ваямпольской свиты. Наружный вид правой створки. Natur. велич. Стр. 212.

Фиг. 1а. *Lima goliath* S m i t h. Плезотиоп № 161/C 512. Тот же экземпляр, что и на фиг. 1; вид спереди. Natur. велич.

Фиг. 2. *Lima goliath* S m i t h. Плезотиоп № 161/C 496. То же местонахождение,

Фиг. 3. *Palliolium (Delectopecten) pedroanus* (T r a s k) var. *peckhami* (G a b b). Плезотиоп № 7/5043. Cap Pilvo, Schmidt Peninsula (northern Sakhalin). Upper-Pil series. Reproduction of I. Khome-nk o's illustration of «*Pecten peckhami*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1934, pl. I, fig. 10. External view of right valve and internal of left valve. Natural size.

Фиг. 4. *Palliolium (Delectopecten) pedroanus* (T r a s k) var. *peckhami* (G a b b). Плезотиоп № S/115. Kovachina river (western coast of Kamchatka). Kovachina series. Impression of external surface of right valve. Enlarged  $\times 27/10$ .

Фиг. 5. *Palliolium (Delectopecten) pedroanus* (T r a s k) var. *peckhami* (G a b b). Плезотиоп № S/114. Same locality, as fig. 4. Cast of left valve. Enlarged  $\times 3/2$ .

Фиг. 6. *Palliolium (Delectopecten) pedroanus* (T r a s k) var. *peckhami* (G a b b). Плезотиоп № S/5. Amanina river (western coast of Kamchatka). Vayempolka series. Impression of external surface of left valve. Enlarged  $\times 8/5$ .

Фиг. 7. *Palliolium (Delectopecten) pedroanus* (T r a s k) var. *peckhami* (G a b b). Плезотиоп № S/6. Same locality, as fig. 6. Cast of right valve. Enlarged  $\times 17/10$ .

Фиг. 8. *Lima sakhalinensis* nom. nova. Holotype № 4/5043. North of Cape Pilvo, Schmidt Peninsula (northern Sakhalin). Upper-Pil series. Reproduction of I. Khome-nk o's illustration of «*Lima concentrica*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1934, pl. I, fig. 7. External view of right valve. Natural size. Page. 113.

Фиг. 9. *Variamussium cf. pillarense* S l o d k e w i t s c h. Specimen № S/22. Utkholok river (western coast of Kamchatka). Kovachina series. Cast of right valve, slightly broken off. Enlarged  $\times 9/5$ . Page. 112.

Фиг. 10. *Variamussium pillarense* S l o d k e w i t s c h. Holotype № 164922. «Loc. 4100, 1 $\frac{1}{2}$  miles east of Pillar Point, Clallam County, Wash. Oligocene — Miocene.» Reproduction of R. Arnold's illustration of «*Pecten (Propeamussium) clallamensis*», in «Tert. and Quat. Pectens», pl. III, fig. 2. «Imperfect mold of interior of left valve; altitude 7 mm.  $\times 3$ ».

#### Plate XLIII

Фиг. 1. *Lima goliath* S m i t h. Плезотиоп № 161/C 512. Right bank of the upper course of Amanina river (western coast of Kamchatka). Upper horizon of Vayempolka series. External view of right valve. Natural size. Page. 104.

Фиг. 1а. *Lima goliath* S m i t h. Плезотиоп № 161/C 512. Anterior view of same specimen, as fig. 1.

Фиг. 2. *Lima goliath* S m i t h. Плезотиоп № 161/C 496. Same locality, as fig. 1.

что и фиг. 1. Наружный вид левой створки. Natur. велич.

Фиг. 3. *Palliolum (Delectopecten) pedroanus* (Trask). Плезютип № S/50. Р. Утхолок (западное побережье Камчатки). Ваямпольская свита. Отпечаток наружной поверхности левой створки; задний край обломан. Natur. велич. Стр. . . . . 205.

Фиг. 4. *Palliolum (Delectopecten) pedroanus* (Trask). Голотип. «San Pedro, Cal.», Плиоцен. Репродукция изображения «*Plagiostoma* (Sow.) *pedroana*» из монографии J. Trask «Description of *Plagiostoma*», табл. III, фиг. 1A. Наружный вид правой створки. Natur. велич.

Фиг. 5. *Palliolum (Delectopecten) pedroanus* (Trask). Плезютип № S/51. Р. Утхолок (западное побережье Камчатки). Ваямпольская свита. Отпечаток левой створки. Natur. велич.

#### Таблица XLIV

Фиг. 1. *Pododesmus macroschisma* (Deshayes). Плезютип № 169/C 565. Западное побережье Камчатки, в 2 км к S от устья р. Котлахкыч. Верхний отдел кавранской свиты. Наружный вид верхней створки. Natur. велич. Стр. . . . . 215.

Фиг. 1a. *Pododesmus macroschisma* (Deshayes). Плезютип № 169/C 566. Наружный вид нижней створки того же экземпляра, что и на фиг. 1. Natur. велич.

Фиг. 1b. *Pododesmus macroschisma* (Deshayes). Внутренний вид того же экземпляра, что и на фиг. 1a. Natur. велич.

Фиг. 2. *Pododesmus macroschisma* (Deshayes). Голотип. Камчатка. Современная форма. Репродукция изображения «*Anomia macroschisma*» из монографии G. Deshayes in M. Guérin «Magazin de Zoologie», табл. 34. Наружный вид верхней створки. Natur. велич.

Фиг. 3. *Pododesmus macroschisma* (Deshayes). Репродукция из той же монографии, табл. 34. Наружный вид нижней створки. Natur. велич.

Фиг. 4. *Mytilus podkagernensis* Słodkewitsch & Iljina. Голотип. Бухта Подкагерная (западное побережье Камчатки). Тигильская свита. Двустворчатый экземпляр; вид справа. Natur. велич. Стр. . . . . 229.

Фиг. 4a. *Mytilus podkagernensis* Słodkewitsch & Iljina. Тот же экземпляр, что и на фиг. 4; вид спереди. Natur. велич.

#### Таблица XLV

Фиг. 1. *Mytilus chejsleveemensis* Słodkewitsch. Паратип № 186/C 650. Правый берег р. Хейслевеем, в 2,5 км от устья (западное побережье Камчатки). Нижний отдел кавранской свиты. Наружный вид правой створки. Natur. велич. Стр. . . . . 233.

Фиг. 1a. *Mytilus chejsleveemensis* Słodkewitsch. Тот же экземпляр, что и на фиг. 1; вид спереди. Natur. велич.

External view of left valve. Natural size.

Fig. 3. *Palliolum (Delectopecten) pedroanus* (Trask). Plesiotype № S/50. Utkholok river (western coast of Kamchatka). Vayempolka series. Impression of external surface of left valve; posterior end broken off. Natural size. Page . . . . . 113.

Fig. 4. *Palliolum (Delectopecten) pedroanus* (Trask). Holotype. «San Pedro, Cal.», Pliocene. Reproduction of J. Trask's illustration of «*Plagiostoma* (Sow.) *pedroana*» in «Description of *Plagiostoma*», pl. III, fig. 1A. External view of right valve. Natural size.

Fig. 5. *Palliolum (Delectopecten) pedroanus* (Trask). Plesiotype № S/51. Utkholok river (western coast of Kamchatka). Vayempolka series. Impression of external surface of left valve. Natural size.

#### Plate XLIV

Fig. 1. *Pododesmus macroschisma* (Deshayes). Plesiotype № 169/C 565. Western coast of Kamchatka, 2 km south of the mouth of Kotlakhkanch river. Upper horizon of Kavrana series. External view of upper valve. Natural size. Page . . . . . 114.

Fig. 1a. *Pododesmus macroschisma* (Deshayes). Plesiotype № 169/C 566. External view of lower valve of same specimen, as fig. 1. Natural size.

Fig. 1b. *Pododesmus macroschisma* (Deshayes). Internal view of same specimen, as fig. 1a. Natural size.

Fig. 2. *Pododesmus macroschisma* (Deshayes). Holotype. Kamchatka. Recent specimen. Reproduction of G. Deshayes illustration of «*Anomia macroschisma*» in M. Guérin «Magazin de Zoologie», pl. 34. External view of upper valve. Natural size.

Fig. 3. *Pododesmus macroschisma* (Deshayes). Reproduction from the same monograph, pl. 34. External view of lower valve. Natural size.

Fig. 4. *Mytilus podkagernensis* Słodkewitsch & Iljina. Holotype. Podkagernaya Bay (western coast of Kamchatka). Tighil series. External view of right valve. Natural size. Page . . . . . 116.

Fig. 4a. *Mytilus podkagernensis* Słodkewitsch & Iljina. Anterior view of same specimen, as fig. 4. Natural size.

#### Plate XLV

Fig. 1. *Mytilus chejsleveemensis* Słodkewitsch. Paratype № 186/C 650. Right bank of Heysleveem river, 2.5 km upward from the mouth (western coast of Kamchatka). Lower horizon of Kavrana series. External view of right valve. Natural size. Page . . . . . 117.

Fig. 1a. *Mytilus chejsleveemensis* Słodkewitsch. Anterior view of same specimen, as fig. 1. Natural size.

Фиг. 2. *Mytilus chejsleveemensis* S l o d k e w i t s c h. Голотип № 186/C 644. То же местонахождение, что и фиг. 1. Наружный вид левой створки. Натур. велич.

Фиг. 2а. *Mytilus chejsleveemensis* S l o d k e w i t s c h. Тот же экземпляр, что и на фиг. 2; вид сзади. Натур. велич.

Фиг. 3. *Mytilus chejsleveemensis* S l o d k e w i t s c h. Паратип № 186/C 651. То же местонахождение, что и фиг. 1. Наружный вид правой створки. Натур. велич.

Фиг. 4. *Mytilus chejsleveemensis* S l o d k e w i t s c h. Паратип № 186/C 649. То же местонахождение, что и фиг. 1. Наружный вид левой створки. Натур. велич.

Фиг. 4а. *Mytilus chejsleveemensis* S l o d k e w i t s c h. Тот же экземпляр, что и на фиг. 4; вид сзади. Натур. велич.

Фиг. 5. *Mytilus chejsleveemensis* S l o d k e w i t s c h. Паратип № 186/C 646. То же местонахождение, что и фиг. 1. Наружный вид правой створки. Натур. велич.

Фиг. 6. *Mytilus arnoldi* C l a r k. Плезियो-тип № S/35. Р. Крутая (западное побережье Камчатки). Тигильская свита. Ядро правой створки. Натур. велич. Стр. . 228.

Фиг. 6а. *Mytilus arnoldi* C l a r k. Тот же экземпляр, что и на фиг. 6; вид спереди. Натур. велич.

Фиг. 7. *Mytilus arnoldi* C l a r k. Плезियो-тип № 39/5043. К С от р. Пиль, полуостров Шмидта (с в. Сахалин). Каскадная свита. Репродукция из монографии И. Х о м е н к о «Стратиграфия трет. сл. пол. Шмидта», табл. IX, фиг. 5. Наружный вид обломанной правой створки. Натур. велич.

Фиг. 8. *Mytilus arnoldi* C l a r k. Голотип № 11153. «Near the base of the Kirker formation near Kirker Creek, University of California locality 78. San Lorenzo Series». Репродукция из монографии В. С l a r k «The San Lorenzo Series», табл. 12, фиг. 1. Наружный вид левой створки. Уменьш.  $\times 4/5$ .

#### Таблица XLVI

Фиг. 1. *Mytilus edulis* L i n n é. Плезियो-тип № 6/5305. Мыс Чажма-Сторож (восточное побережье Камчатки). Верхний (?) миоцен. Двустворчатый экземпляр с несколько поломанной створкой; вид слева. Натур. велич. Стр. . 221.

Фиг. 1а. *Mytilus edulis* L i n n é. Тот же экземпляр, что и на фиг. 1; вид спереди. Натур. велич.

Фиг. 2. *Mytilus edulis* L i n n é. Плезियो-тип № 7/5305. Охотское море у западного берега Камчатки. Левая створка современной формы (для сравнения). Натур. велич.

Фиг. 3. *Mytilus edulis* L i n n é. Плезियो-тип № 38/5043. К северу от устья р. Пилтук, полуостров Шмидта (северный Сахалин). Помырьская свита. Репродукция из монографии И. Х о м е н к о «Стратиграфия трет. сл. пол. Шмидта», табл. IX, фиг. 2.

Фиг. 2. *Mytilus chejsleveemensis* S l o d k e w i t s c h. Голотип № 186/C 644. Same locality, as fig. 1. External view of left valve. Natural size.

Фиг. 2а. *Mytilus chejsleveemensis* S l o d k e w i t s c h. Posterior view of same specimen, as fig. 2. Natural size.

Фиг. 3. *Mytilus chejsleveemensis* S l o d k e w i t s c h. Paratype № 186/C 651. Same locality, as fig. 1. External view of right valve. Natural size.

Фиг. 4. *Mytilus chejsleveemensis* S l o d k e w i t s c h. Paratype № 186/C 649. Same locality, as fig. 1. External view of left valve. Natural size.

Фиг. 4а. *Mytilus chejsleveemensis* S l o d k e w i t s c h. Posterior view of same specimen, as fig. 4. Natural size.

Фиг. 5. *Mytilus chejsleveemensis* S l o d k e w i t s c h. Paratype № 186/C 646. Same locality, as fig. 1. External view of right valve. Natural size.

Фиг. 6. *Mytilus arnoldi* C l a r k. Plesio-type № S/35. Krutaya river (western coast of Kamchatka). Tighil series. Cast of right valve. Natural size. Page . . . 116.

Фиг. 6а. *Mytilus arnoldi* C l a r k. Anterior view of same specimen, as fig. 6. Natural size.

Фиг. 7. *Mytilus arnoldi* C l a r k. Plesio-type № 39/5043. South of the mouth of Pil river, Schmidt Peninsula (northern Sakhalin). Kaskadnaya series. Reproduction of I. K h o m e n k o's illustration in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1934, pl. IX, fig. 5. External view of right valve. Natural size.

Фиг. 8. *Mytilus arnoldi* C l a r k. Holotype № 11153. «Near the base of the Kirker formation near Kirker Creek, University of California locality 78. San Lorenzo Series». Reproduction of B. C l a r k's illustration in «The San Lorenzo Series», pl. 12, fig. 1. External view of left valve.  $4/5$  natural size.

#### Plate XLVI

Фиг. 1. *Mytilus edulis* L i n n é. Plesio-type № 6/5305. Cape Chazhma (eastern coast of Kamchatka). Upper (?) Miocene. External view of left valve. Natural size. Page . . . . . 114

Фиг. 1а. *Mytilus edulis* L i n n é. Anterior view of same specimen, as fig. 1. Natural size.

Фиг. 2. *Mytilus edulis* L i n n é. Plesio-type № 7/5305. Okhotsk sea, western coast of Kamchatka. Left valve of a recent specimen (for comparison). Natural size.

Фиг. 3. *Mytilus edulis* L i n n é. Plesio-type № 38/5043. North of the mouth of Piltuk river, Schmidt Peninsula (northern Sakhalin). Pomyr series. Reproduction of I. K h o m e n k o's illustration in «Stratigraphy of the Tert. Beds of Schmidt Pe-

Примакушечная часть левой створки. Натур. велич.

Фиг. 4. *Mytilus kamtschaticus* Slodkewitsch. Голотип № 200/С 689. Окрестности бухты Полульняной (восточное побережье Камчатки). Плиоцен (?). Наружный вид левой створки. На нижнем конце видны трубочки *Vermes*. Натур. велич. Стр. 222.

Фиг. 4а. *Mytilus kamtschaticus* Slodkewitsch. Тот же экземпляр, что и на фиг. 4; вид сзади. Натур. велич.

#### Таблица XLVII

Фиг. 1. *Mytilus kamtschaticus* Slodkewitsch. Аллотип № 200/С 690. Окрестности бухты Полульняной (восточное побережье Камчатки). Плиоцен (?). Наружный вид правой створки. Натур. велич. Стр. . . . . 222.

Фиг. 2. *Mytilus mathewsonii* Gabb. Плезотиоп № 37/5043. К северу от устья р. Венгери, полуостров Шмидта (северный Сахалин). Венгерийская свита. Репродукция изображения из монографии И. Хоменко «Стратиграфия трет. сл. пол. Шмидта», табл. IX, фиг. 1. Ядро левой створки с сохранившейся местами раковиной. Натур. велич. Стр. . . . . 224.

Фиг. 3. *Mytilus watersi* Etherington var. *tigilensis* Slodkewitsch. Паратип № S/32. Западное побережье Камчатки, Тигильский район. Нижний отдел ваямпольской свиты. Ядро двустворчатого экземпляра; вид слева. Натур. велич. Стр. . . . . 235.

Фиг. 3а. *Mytilus watersi* Etherington var. *tigilensis* Slodkewitsch. Тот же экземпляр, что и на фиг. 3; вид спереди. Натур. велич.

Фиг. 4. *Mytilus watersi* Etherington var. *tigilensis* Slodkewitsch. Голотип № S/34. То же местонахождение, что и фиг. 3. Наружный вид несколько обломанной правой створки. Натур. велич.

Фиг. 4а. *Mytilus watersi* Etherington var. *tigilensis* Slodkewitsch. Тот же экземпляр, что и на фиг. 4; вид спереди. Натур. велич.

Фиг. 5. *Mytilus watersi* Etherington var. *tigilensis* Slodkewitsch. Паратип № S/33. То же местонахождение, что и фиг. 3. Наружный вид левой створки; макушка обломана. Натур. велич.

Фиг. 5а. *Mytilus watersi* Etherington var. *tigilensis* Slodkewitsch. Тот же экземпляр, что и на фиг. 5; вид спереди. Натур. велич.

#### Таблица XLVIII

Фиг. 1. *Mytilus mathewsonii* Gabb. Лектотип № 4500. «South of Martinez. Miocene». Репродукция из монографии R. Stewart «Gabb's Type Lamellibr.», табл. 13, фиг. 2. Наружный вид левой створки. Уменьш.  $\times 7/10$ . Стр. . . . . 224.

Фиг. 2. *Mytilus mathewsonii* Gabb var. *expansus* Arnold. Плезотиоп № 12/5044.

nins.», 1934, pl. IX, fig. 2. Umbonal part of left valve. Natural size.

Фиг. 4. *Mytilus kamtschaticus* Slodkewitsch. Holotype № 200/С 689. Vicinity of Polupianaya Bay (eastern coast of Kamchatka). Pliocene (?). External view of left valve. Natural size. Page 114.

Фиг. 4а. *Mytilus kamtschaticus* Slodkewitsch. Posterior view of same specimen, as fig. 4. Natural size.

#### Plate XLVII

Fig. 1. *Mytilus kamtschaticus* Slodkewitsch. Allotype № 200/С 690. Vicinity of Polupianaya Bay (eastern coast of Kamchatka). Pliocene (?). External view of right valve. Natural size. Page . . . 114.

Fig. 2. *Mytilus mathewsonii* Gabb. Plesiotype № 37/5043. North of the mouth of Vengheri river, Schmidt Peninsula (northern Sakhalin). Vengheri series. Reproduction of I. Khomenko's illustration in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1934, pl. IX, fig. 1. Cast of left valve, with partly preserved shell. Natural size. Page . . . . . 115.

Fig. 3. *Mytilus watersi* Etherington var. *tigilensis* Slodkewitsch. Paratype № S/32. Western coast of Kamchatka, Tighil region. Lower horizon of Vayempolka series. Cast of left valve. Natural size. Page . . . . . 118.

Fig. 3a. *Mytilus watersi* Etherington var. *tigilensis* Slodkewitsch. Anterior view of same specimen, as fig. 3. Natural size.

Fig. 4. *Mytilus watersi* Etherington var. *tigilensis* Slodkewitsch. Holotype № S/34. Same locality, as fig. 3. External view of right valve. Natural size.

Fig. 4a. *Mytilus watersi* Etherington var. *tigilensis* Slodkewitsch. Anterior view of same specimen, as fig. 4. Natural size.

Fig. 5. *Mytilus watersi* Etherington var. *tigilensis* Slodkewitsch. Paratype № S/33. Same locality, as fig. 3. External view of left valve; beaks broken off. Natural size.

Fig. 5a. *Mytilus watersi* Etherington var. *tigilensis* Slodkewitsch. Posterior view of same specimen, as fig. 5. Natural size.

#### Plate XLVIII

Fig. 1. *Mytilus mathewsonii* Gabb. Lectotype № 4500. «South of Martinez. Miocene». Reproduction of R. Stewart's illustration in «Gabb's Type Lamellibr.», pl. 13, fig. 2. External view of left valve.  $7/10$  natural size. Page . . . . . 115.

Fig. 2. *Mytilus mathewsonii* Gabb var. *expansus* Arnold. Plesiotype № 12/5044.



К востоку от мыса Марии, полуостров Шмидта (северный Сахалин), Нижняя свита мачигарского разреза. Репродукция изображения «*Mytilus mathewsonii expansus*» из монографии И. Хоменко «Стратиграфия трет. отл. пол. Шмидта», табл. III, фиг. 3. Наружный вид левой створки. Натур. велич. Стр. . . . 225.

Фиг. 3. *Mytilus mathewsonii* G a b b var. *expansus* A r n o l d. Голотип. «Oak-Ridge. Vaqueros Formation». Репродукция изображения «*Mytilus expansus*» из монографии R. A r n o l d «New and Charact. Spec.», табл. XLIII, фиг. 2. Наружный вид правой створки. Уменьш.  $\times 7/10$ .

Фиг. 4. *Mytilus perrini* C l a r k var. *folioformis* S l o d k e w i t s c h. Гомеотип № S/38. Западное побережье Камчатки; Тигильский район. Нижний отдел ваямпольской свиты. Наружный вид правой створки. Натур. велич. Стр. . . . 230.

Фиг. 4а. *Mytilus perrini* C l a r k var. *folioformis* S l o d k e w i t s c h. Тот же экземпляр, что и на фиг. 4; вид спереди. Натур. велич.

#### Т а б л и ц а X L I X

Фиг. 1. *Mytilus mathewsonii* G a b b var. *expansus* A r n o l d. Плезитип № 11/5044. К востоку от мыса Марии, полуостров Шмидта (северный Сахалин) Нижняя свита мачигарского разреза. Репродукция изображения «*Mytilus mathewsonii expansus*» из монографии И. Хоменко «Стратиграфия трет. отл. пол. Шмидта», табл. III, фиг. 2. Наружный вид левой створки; нижний конец обломан. Натур. велич. Стр. 225.

Фиг. 2. *Mytilus littoralis* S l o d k e w i t s c h. Паратип № S/28. Западное побережье Камчатки, Тигильский район. Тигильская свита. Ядро правой створки с сохранившейся местами раковинной. Натур. велич. Стр. . . . 227.

Фиг. 2а. *Mytilus littoralis* S l o d k e w i t s c h. Тот же экземпляр, что и на фиг. 2; вид спереди. Натур. велич.

Фиг. 3. *Mytilus littoralis* S l o d k e w i t s c h. Голотип № S/149. То же местонахождение, что и фиг. 2. Ядро левой створки с частично сохранившейся раковинной. Натур. велич.

Фиг. 4. *Mytilus ochotensis* (S l o d k e w i t s c h). Паратип. Окрестности зал. Корфа (восточное побережье Камчатки). Угленосная свита. Репродукция изображения «*Modiolus rectus*» из монографии И. Хоменко «О возр. трет. отл. зал. Корфа», табл. I, фиг. 5. Наружный вид левой створки. Натур. велич. Стр. . . . 232.

#### Т а б л и ц а L

Фиг. 1. *Mytilus ochotensis* (S l o d k e w i t s c h). Голотип № S/37. Река Реельне-ваим (западное побережье Камчатки). Кавранская свита. Наружный вид правой створки. Натур. велич. Стр. . . . 232.

East of Cape Marie, Schmidt Peninsula (northern Sakhalin). Lower series of Machigar section. Reproduction of I. K h o m e n k o's illustration of «*Mytilus mathewsonii expansus*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1935, pl. III, fig. 3. External view of left valve. Natural size. Page . . . . . 115.

Фиг. 3. *Mytilus mathewsonii* G a b b var. *expansus* A r n o l d. Holotype. «Oak Ridge. Vaqueros Formation». Reproduction of R. A r n o l d's illustration of «*Mytilus expansus*» in «New and Charact. Spec.», pl. XLIII, fig. 2. External view of right valve.  $7/10$  natural size.

Фиг. 4. *Mytilus perrini* C l a r k var. *folioformis* S l o d k e w i t s c h. Homoeotype № S/38. Western coast of Kamchatka, Tighil region. Lower horizon of Vayempolka series. External view of right valve. Natural size. Page . . . . . 117.

Фиг. 4а. *Mytilus perrini* C l a r k var. *folioformis* S l o d k e w i t s c h. Anterior view of same specimen, as fig. 4. Natural size.

#### Plate XLIX

Фиг. 1. *Mytilus mathewsonii* G a b b var. *expansus* A r n o l d. Plesiotype № 11/5044. East of Cape Marie, Schmidt Peninsula (northern Sakhalin). Lower series of Machigar section. Reproduction of I. K h o m e n k o's illustration of «*Mytilus mathewsonii expansus*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1935, pl. III, fig. 2. External view of left valve; lower margin broken off. Natural size. Page . . . . . 115.

Фиг. 2. *Mytilus littoralis* S l o d k e w i t s c h. Paratype № S/28. Western coast of Kamchatka, Tighil region. Tighil series. Cast of right valve with partly preserved shell. Natural size. Page . . . . . 116.

Фиг. 2а. *Mytilus littoralis* S l o d k e w i t s c h. Anterior view of same specimen, as fig. 2. Natural size.

Фиг. 3. *Mytilus littoralis* S l o d k e w i t s c h. Holotype № S/149. Same locality, as fig. 2. Cast of left valve, with partly preserved shell. Natural size.

Фиг. 4. *Mytilus ochotensis* (S l o d k e w i t s c h). Paratype. Vicinity of Korf Gulf (eastern coast of Kamchatka). Coal-bearing series. Reproduction of I. K h o m e n k o's illustration of «*Modiolus rectus*» in «Tert. Form. of Korf Gulf», pl. 1, fig. 5. External view of left valve. Natural size. Page . . . . . 117.

#### Plate L

Фиг. 1. *Mytilus ochotensis* (S l o d k e w i t s c h). Holotype № S/37. Reelne-veyem river (western coast of Kamchatka). Kavrana series. External view of right valve. Natural size. Page . . . . . 117.

Фиг. 1а. *Mytilus ochotensis* (S l o d k e - w i t s c h). Тот же экземпляр, что и на фиг. 1; вид спереди. Натур. велич.

Фиг. 2. *Mytilus middendorffi* G r e - w i n g k. Голотип. «Kadjak (Igatskoj Bucht und Tonky Cap) und Unga. Tertiärformation». Репродукция из монографии С. G r e - w i n g k «Beitr. zur Kenntn. N.-W. Amerikas», табл. VII, фиг. 3а. Наружный вид правой створки. Уменьш.  $\times 5/6$ . Стр. 237.

Фиг. 2а. *Mytilus middendorffi* G r e - w i n g k. Голотип. Изображение того же экземпляра, что и на фиг. 2; вид спереди. Уменьш.  $\times 5/6$ .

Фиг. 3. *Mytilus* cf. *middendorffi* G r e - w i n g k. Образец № S/147. Река Реельневаям (западное побережье Камчатки). Кавранская свита. Ядро правой створки. Натур. велич.

Фиг. 3а. *Mytilus* cf. *middendorffi* G r e - w i n g k. Тот же экземпляр, что и на фиг. 3; вид спереди. Натур. велич.

#### Таблица LI

Фиг. 1. *Mytilus* (?) *yokoyamai* S l o d k e - w i t s c h. Голотип № S/81. Р. Тигиль (западное побережье Камчатки). Тигильская свита, верхний отдел. Наружный вид правой створки. Увелич.  $\times 6/5$ . Стр. 238.

Фиг. 1а. *Mytilus* (?) *yokoyamai* S l o d k e - w i t s c h. Тот же экземпляр, что и на фиг. 1; вид спереди. Увелич.  $\times 6/5$ .

Фиг. 2. *Modiolus restorationensis* V a n W i n k l e. Голотип. «At locality 13, situated on the north side of Restoration Point, Kitsap County, Washington. Oligocene». Репродукция из монографии К. V a n W i n k l e «Paleontology of Oligocene», табл. VI, фиг. 2. Наружный вид левой створки. Увелич.  $\times 2/1$ . Стр. . . . . 242.

Фиг. 3. *Modiolus restorationensis* V a n W i n k l e. Плезотиоп № 197/С 676. Река Напана, в 1 км выше сел. Напаны (западное побережье Камчатки). Нижний отдел ваямпольской свиты. Наружный вид левой створки. Натур. велич.

Фиг. 4. *Modiolus restorationensis* V a n W i n k l e. Плезотиоп № 197/С 679. То же местонахождение, что и фиг. 3. Наружный вид правой створки. Натур. велич.

Фиг. 5. *Modiolus restorationensis* V a n W i n k l e. Плезотиоп № S/88. Река Жиловая. Ваямполка (западное побережье Камчатки). Нижний отдел ваямпольской свиты. Наружный вид левой створки. Увелич.  $\times 11/10$ .

Фиг. 5а. *Modiolus restorationensis* V a n W i n k l e. Тот же экземпляр, что и на фиг. 5; вид сверху. Увелич.  $\times 11/10$ .

#### Таблица LII

Фиг. 1. *Modiolus dilatatum* S l o d k e - w i t s c h. Голотип № S/124. Р. Морочешная (западное побережье Камчатки). Тигильская свита. Ядро с частично сохранившейся раковинной; вид слева. Увелич.  $\times 6/5$ . Стр. . . . . 224.

Фиг. 1а. *Mytilus ochotensis* (S l o d k e - w i t s c h). Anterior view of same specimen, as fig. 1. Natural size.

Фиг. 2. *Mytilus middendorffi* G r e - w i n g k. Holotype. «Kadjak (Igatskoj Bucht und Tonky Cap) und Unga. Tertiärformation.» Reproduction of C. G r e - w i n g k's illustration in «Beitr. zur Kenntn. N.-W. Amerikas», pl. VII, fig. 3a. External view of right valve.  $5/6$  natural size. Page . . . . . 119.

Фиг. 2а. *Mytilus middendorffi* G r e - w i n g k. Anterior view of same specimen, as fig. 2.  $5/6$  natural size.

Фиг. 3. *Mytilus* cf. *middendorffi* G r e - w i n g k. Specimen № S/147. Reelne-veyem river (western coast of Kamchatka). Kavrana series. Cast of right valve. Natural size.

Фиг. 3а. *Mytilus* cf. *middendorffi* G r e - w i n g k. Anterior view of same specimen, as fig. 3. Natural size.

#### Plate LI

Fig. 1. *Mytilus* (?) *yokoyamai* S l o d k e - w i t s c h. Holotype № S/81. Tighil river (western coast of Kamchatka). Upper horizon of Tighil series. External view of right valve. Enlarged  $\times 6/5$ . Page . . . . . 119.

Fig. 1а. *Mytilus* (?) *yokoyamai* S l o d k e - w i t s c h. Anterior view of same specimen, as fig. 1. Enlarged  $\times 6/5$ .

Fig. 2. *Modiolus restorationensis* V a n W i n k l e. Holotype. «At locality 13, situated on the north side of Restoration Point, Kitsap County, Washington. Oligocene». Reproduction of K. V a n W i n k l e's illustration in «Paleontology of Oligocene», pl. VI, fig. 2. External view of left valve. Enlarged  $\times 2/1$ . Page. . . . . 119.

Fig. 3. *Modiolus restorationensis* V a n W i n k l e. Plesiotype № 197/С 676. Napana river, 2 km upward from the vill. Napana (western coast of Kamchatka). Lower horizon of Vayempolka series. External view of left valve. Natural size.

Fig. 4. *Modiolus restorationensis* V a n W i n k l e. Plesiotype № 197/С 679. Same locality, as fig. 3. External view of right valve. Natural size.

Fig. 5. *Modiolus restorationensis* V a n W i n k l e. Plesiotype № S/88. Zhilovaya Vayempolka river (western coast of Kamchatka). Lower horizon of Vayempolka series. External view of left valve. Enlarged  $\times 11/10$ .

Fig. 5а. *Modiolus restorationensis* V a n W i n k l e. Dorsal view of same specimen as fig. 5. Enlarged  $\times 11/10$ .

#### Plate LII

Fig. 1. *Modiolus dilatatum* S l o d k e - w i t s c h. Holotype № S/123. Moroshechnaya river (western coast of Kamchatka). Tighil series. Cast with partly preserved shell; view of left side. Enlarged  $\times 6/5$ . Page . . . . . 120.

Фиг. 1а. *Modiolus dilatatum* Slodkewitsch. Тот же экземпляр, что и на фиг. 1; вид сверху. Увелич.  $\times 6/5$ .

Фиг. 2. *Modiolus solea* Slodkewitsch. Голотип № S/90. Западное побережье Камчатки; Тигильский район. Нижний отдел ваямпольской свиты. Ядро правой створки с частично сохранившейся раковиной. Увелич.  $\times 13/10$ . Стр. . . . . 248.

Фиг. 3. *Modiolus trigonalis* Slodkewitsch. Голотип № S/148. Река Кулька (западное побережье Камчатки). Ваямпольская свита. Ядро левой створки. Натур. велич. Стр. . . . . 250.

Фиг. 4. *Modiolus flabellatus* Gould var. *utcholokensis* Slodkewitsch. Голотип № S/84. Река Утхолок (западное побережье Камчатки). Тигильская свита. Наружный вид правой створки. Увелич.  $\times 13/10$ . Стр. . . . . 245.

Фиг. 5. *Modiolus flabellatus* Gould var. *utcholokensis* Slodkewitsch. Паратип № S/86. То же местонахождение, что и фиг. 4. Наружный вид левой створки. Увелич.  $\times 13/10$ .

Фиг. 6. *Modiolus flabellatus* Gould var. *utcholokensis* Slodkewitsch. Паратип № S/85. То же местонахождение, что и фиг. 4. Наружный вид правой створки. Увелич.  $\times 6/5$ .

Фиг. 6а. *Modiolus flabellatus* Gould var. *utcholokensis* Slodkewitsch. Тот же экземпляр, что и на фиг. 6; вид сверху. Увелич.  $\times 6/5$ .

### Таблица LIII

Фиг. 1. *Modiolus wajampolkensis* Slodkewitsch. Голотип № S/139. Река Жиловая Ваямполка (западное побережье Камчатки). Кавранская свита. Ядро с остатками раковины, вид слева. Натур. велич. Стр. . . . . 251.

Фиг. 1а. *Modiolus wajampolkensis* Slodkewitsch. Тот же экземпляр, что и на фиг. 1; вид спереди. Натур. велич.

Фиг. 2. *Modiolus gradulatus* Slodkewitsch. Голотип № 217/C 853. Западное побережье Камчатки, между устьями рек Майнач и Половинная. Ваямпольская свита. Отпечаток наружной поверхности правой створки. Натур. велич. Стр. . . . . 256.

Фиг. 3. *Modiolus tetragonalis* Slodkewitsch. Голотип № S/89. Западное побережье Камчатки; Тигильский район. Нижний отдел ваямпольской свиты. Наружный вид левой створки. Увелич.  $\times 11/10$ . Стр. . . . . 247.

Фиг. 4. *Modiolus tigilensis* nom. nova. Голотип № S/150. Река Тигиль (западное побережье Камчатки). Кавранская (?) свита. Ядро; вид слева. Натур. велич. Стр. . . . . 249.

Фиг. 4а. *Modiolus tigilensis* nom. nova. Тот же экземпляр, что и на фиг. 4; вид спереди. Натур. велич.

Фиг. 5. *Modiolus tigilensis* nom. nova. Окрестности залива Корфа (восточное по-

Фиг. 1а. *Modiolus dilatatum* Slodkewitsch. Dorsal view of same specimen, as fig. 1. Enlarged  $\times 6/5$ .

Фиг. 2. *Modiolus solea* Slodkewitsch. Holotype № S/90. Western coast of Kamchatka, Tighil region. Lower horizon of Vayempolka series. Cast of right valve with partly preserved shell. Enlarged  $\times 13/10$ . Page . . . . . 121.

Фиг. 3. *Modiolus trigonalis* Slodkewitsch. Holotype № S/148. Kulka river (western coast of Kamchatka). Vayempolka series. Cast of left valve. Natural size. Page . . . . . 122.

Фиг. 4. *Modiolus flabellatus* Gould var. *utcholokensis* Slodkewitsch. Holotype № S/84. Utkholok river (western coast of Kamchatka). Tighil series. External view of right valve. Enlarged  $\times 13/10$ . Page . . . . . 120.

Фиг. 5. *Modiolus flabellatus* Gould var. *utcholokensis* Slodkewitsch. Paratype № S/86. Same locality, as fig. 4. External view of left valve. Enlarged  $\times 13/10$ .

Фиг. 6. *Modiolus flabellatus* Gould var. *utcholokensis* Slodkewitsch. Paratype № S/85. Same locality, as fig. 4. External view of right valve. Enlarged  $\times 6/5$ .

Фиг. 6а. *Modiolus flabellatus* Gould var. *utcholokensis* Slodkewitsch. Dorsal view of same specimen, as fig. 6. Enlarged  $\times 6/5$ .

### Plate LIII

Фиг. 1. *Modiolus wajampolkensis* Slodkewitsch. Holotype № S/139. Zhilovaya Vayempolka river (western coast of Kamchatka). Kavrana series. Cast with preserved portions of shell; view from left. Natural size. Page . . . . . 122.

Фиг. 1а. *Modiolus wajampolkensis* Slodkewitsch. Anterior view of same specimen, as fig. 1. Natural size.

Фиг. 2. *Modiolus gradulatus* Slodkewitsch. Holotype № 217/C 853. Western coast of Kamchatka, between Mainach and Polovinnaya rivers. Vayempolka series. Impression of external surface of right valve. Natural size. Page . . . . . 123.

Фиг. 3. *Modiolus tetragonalis* Slodkewitsch. Holotype № S/89. Western coast of Kamchatka; Tighil region. Lower horizon of Vayempolka series. External view of left valve. Enlarged  $\times 11/10$ . Page . . . . . 121.

Фиг. 4. *Modiolus tigilensis* nom. nova. Holotype № S/150. Tighil river (western coast of Kamchatka). Kavrana (?) series. Cast; view of left side. Natural size. Page . . . . . 122.

Фиг. 4а. *Modiolus tigilensis* nom. nova. Anterior view of same specimen, as fig. 4. Natural size.

Фиг. 5. *Modiolus tigilensis* nom. nova. Coast of Korf Gulf (eastern coast of Kam-

бережье Камчатки). Верхний отдел глинисто-песчаниковой свиты. Репродукция изображения «*Modiolus sookensis*» из монографии И. Хоменко «О возр. трет. отл. зал. Корфа», табл. I, фиг. 6. Наружный вид левой створки. Натур. велич.

## Таблица LIV

Фиг. 1. *Modiolus wajampolkensis* S l o d k e w i t s c h var. *markini* nom. nova. Голотип № S/141. Река Белоголовая (западное побережье Камчатки). Ваямпольская (?) свита. Ядро с остатками внутреннего слоя раковины. Вид справа. Натур. велич. Стр. . . . . 253.

Фиг. 2. *Modiolus tenuistriatus* S l o d k e w i t s c h. Голотип № S/91. Западное побережье Камчатки, Тигильский район. Верхний отдел кавранской свиты. Наружный вид правой створки. Увелич.  $\times 6/5$ . Стр. . . . . 254.

Фиг. 2а. *Modiolus tenuistriatus* S l o d k e w i t s c h. Тот же экземпляр, что и на фиг. 2; вид спереди. Увелич.  $\times 6/5$ .

Фиг. 3. *Modiolus angulatus* S l o d k e w i t s c h. «Santa Rosa Hills, Santa Ynez Mountains, Santa Barbara County. Vaqueros Formation». Репродукция изображения «*Modiolus ynezianus*» из монографии W. L o e l & W. C o r e y «Vaqueros Formation», табл. 33, фиг. 7. Наружный вид правой створки не вполне взрослого экземпляра. Уменьш.  $\times 7/10$ . Стр. . . . . 255.

Фиг. 4. *Modiolus angulatus* S l o d k e w i t s c h. Плезютип № 2770. Река Жиловая Ваямполка (западное побережье Камчатки). Кавранская (?) свита. Наружный вид правой створки. Уменьш.  $\times 3/4$ .

Фиг. 5—8. *Laternula (Aelga) besshoensis* (Y o k o y a m a). Паратип № 177/C 130. Верховья р. Кульки, в устье большого правого притока (западное побережье Камчатки). Верхний отдел ваямпольской свиты. Различные стадии препарировки замка. Стр. . . . . 260.

Фиг. 5. Отпрепарированная ложечка левой створки; внутренний вид. Увелич.  $\times 4/1$ .

Фиг. 6. Ложечка левой створки в естественном положении; вид снаружи. Увелич.  $\times 2/1$ .

Фиг. 7. Ложечка правой створки в естественном положении. Натур. велич.

Фиг. 8. Отпрепарированная ложечка правой створки с поддерживающей ее пластинкой. Увелич.  $\times 4/1$ .

Фиг. 9. *Modiolaria nigra* (G r a y). Плезютип № 8/5305. Изображение современной правой створки с западного побережья Камчатки (для сравнения). Натур. велич. Стр. . . . . 258.

Фиг. 10. *Modiolaria nigra* (G r a y). Плезютип № 404/3104а. Река Б. Гаромай (восточный Сахалин). Наднутовская свита. Репродукция из монографии И. Хоменко «Страт. трет. пл. в Сахалина», табл. X, фиг. 1. Наружный вид правой створки. Натур. велич.

chatka). Upper horizon of sandstone and clay series. Reproduction of I. K h o m e n k o's illustration of «*Modiolus sookensis*» in «Tert. Form. along Korf Gulf», pl. I, fig. 6. External view of left valve. Natural size.

## Plate LIV

Fig. 1. *Modiolus wajampolkensis* S l o d k e w i t s c h var. *markini* nom. nova. Holotype № S/141. Belogolovaya river (western coast of Kamchatka). Vayempolka(?) series. Cast with partly preserved inner layer of shell; view of right side. Natural size. Page . . . . . 122.

Fig. 2. *Modiolus tenuistriatus* S l o d k e w i t s c h. Holotype № S/91. Western coast of Kamchatka, Tighil region. Upper horizon of Kavrana series. External view of right valve. Enlarged  $\times 6/5$ . Page 123.

Fig. 2a. *Modiolus tenuistriatus* S l o d k e w i t s c h. Anterior view of same specimen, as fig. 2. Enlarged  $\times 6/5$ .

Fig. 3. *Modiolus angulatus* S l o d k e w i t s c h. «Santa Rosa Hills, Santa Ynez Mountains, Santa Barbara County. Vaqueros Formation». Reproduction of W. L o e l & W. C o r e y's illustration of «*Modiolus ynezianus*» in «Vaqueros Formation», pl. 33, fig. 7. External view of right valve of a young specimen.  $7/10$  natural size. Page . . . . . 123.

Fig. 4. *Modiolus angulatus* S l o d k e w i t s c h. Plesiotype № 2770. Zhilovaya Vayempolka river (western coast of Kamchatka). Kavrana (?) series. External view of right valve.  $3/4$  natural size.

Fig. 5—8. *Laternula (Aelga) besshoensis* (Y o k o y a m a). Paratype № 177/C 130. Upper course of Kŭlka river (western coast of Kamchatka). Upper horizon of Vayempolka series. Different views of hinge. Page . . . . . 124.

Fig. 5. Chondrophore of left valve; internal view. Enlarged  $\times 4/1$ .

Fig. 6. Chondrophore of left valve; external view. Enlarged  $\times 2/1$ .

Fig. 7. Chondrophore of right valve; internal view. Natural size.

Fig. 8. Chondrophore of right valve; external view. Enlarged  $\times 4/1$ .

Fig. 9. *Modiolaria nigra* (G r a y). Plesiotype № 8/5305. Recent specimen from western coast of Kamchatka (for comparison). External view of right valve. Natural size. Page . . . . . 119.

Fig. 10. *Modiolaria nigra* (G r a y). Plesiotype № 404/3104a. Great Garomai river (eastern Sakhalin). Supra-Nutovo series. Reproduction of I. K h o m e n k o's illustration in «Stratigraphy of Tert. Beds of East. Sakhalin», pl. X, fig. 1. External view of right valve. Natural size.

Фиг. 11. *Modiolaria nigra* (Г р а у). Плезиотип № 31/3104а. Правый берег реки Б. Гаромай (восточный Сахалин). Наднуттовская свита. Репродукция из монографии И. Хоменко «Страт. трет. пл. в. Сахалина», табл. III, фиг. 1. Нижняя часть правой створки. Натур. велич.

Фиг. 12. *Modiolaria nigra* (Г р а у). Плезиотип № 9/5305. Река. Б. Чажма (восточное побережье Камчатки). Миоцен (?). Обломанное сверху ядро левой створки. Натур. велич.

#### Т а б л и ц а L V

Фиг. 1. *Laternula (Aelga) besshoensis* (Y o k o y a m a). Паратип № 177/С 127. Верховья р. Кульки, в устье большого правого притока (западное побережье Камчатки). Верхний отдел ваямпольской свиты. Двустворчатый экземпляр; вид слева. Передний конец створки слегка обломан. Натур. велич. Стр. . . . . 260.

Фиг. 1а. *Laternula (Aelga) besshoensis* (Y o k o y a m a). Тот же экземпляр, что и на фиг. 1; вид сверху. Натур. велич.

Фиг. 2. *Laternula (Aelga) besshoensis* (Y o k o y a m a). «Bessho; Asagai-Beds». Репродукция изображения «*Tellina besshoensis*» из монографии М. Y o k o y a m a «Molluscan Rem. from Lowest Jō-Ban», табл. II, фиг. 1. Двустворчатый экземпляр; вид слева. Натур. велич.

Фиг. 2а. *Laternula (Aelga) besshoensis* (Y o k o y a m a). Тот же экземпляр, что и на фиг. 2; вид сверху.

Фиг. 3. *Laternula (Aelga) besshoensis* (Y o k o y a m a). Голотип № 177/С 128. Верховья р. Кульки, в устье большого правого притока (западное побережье Камчатки). Верхний отдел ваямпольской свиты. Двустворчатый экземпляр; вид справа. Натур. велич.

Фиг. 3а. *Laternula (Aelga) besshoensis* (Y o k o y a m a). Тот же экземпляр, что и на фиг. 3; вид сверху. Натур. велич.

#### Т а б л и ц а L V I

Фиг. 1. *Laternula (Aelga) besshoensis* (Y o k o y a m a). Плезиотип № 207/С 739. Западное побережье Камчатки, в 1,5 км к W от устья р. Половинки. Ваямпольская свита. Ядро с поврежденным передне-спинным краем; вид слева. Натур. велич. Стр. . . . . 260.

Фиг. 2. *Laternula (Aelga) pilensis* S l o d k e w i t s c h. Голотип № 148/5043. К северу от устья р. Венгери, полуостров Шмидта (северный Сахалин). Тумская свита. Репродукция изображения «*Thracia trapezoides*» из монографии И. Хоменко «Стратиграфия трет. сл. пол. Шмидта», табл. XIV, фиг. 9. Отпечаток наружной поверхности правой створки. натур. велич. Стр. . . . . 265.

Фиг. 3. *Laternula (Aelga) pilensis* S l o d k e w i t s c h. Паратип № 146/5043. То же

Фиг. 11. *Modiolaria nigra* (Г р а у). Pleisotype № 31/3104а. Right bank of Great Garomai river (eastern Sakhalin). Supranutovo series. Reproduction of I. K h o m e n k o's illustration in «Stratigraphy of Tert. Beds of East. Sakhalin», pl. III, fig. 1. Lower part of right valve. Natural size.

Фиг. 12. *Modiolaria nigra* (Г р а у). Pleisotype № 9/5305. Great Chazhma river (eastern coast of Kamchatka). Miocene (?). Cast of left valve; slightly broken off. Natural size.

#### Plate LV

Fig. 1. *Laternula (Aelga) besshoensis* (Y o k o y a m a). Paratype № 177/С 127. Upper course of Kulka river (western coast of Kamchatka). Upper horizon of Vayempolka series. External view of left valve; anterior end broken off. Natural size. Page. 124.

Fig. 1a. *Laternula (Aelga) besshoensis* (Y o k o y a m a). Dorsal view of same specimen, as fig. 1. Natural size.

Fig. 2. *Laternula (Aelga) besshoensis* (Y o k o y a m a). «Bessho. Asagai-Beds». Reproduction of M. Y o k o y a m a's illustration of «*Tellina besshoensis*» in «Molluscan Rem. from Lowest Jō-Ban», pl. II, fig. 1. External view of left valve. Natural size.

Fig. 2a. *Laternula (Aelga) besshoensis* (Y o k o y a m a). Dorsal view of same specimen, as fig. 2.

Fig. 3. *Laternula (Aelga) besshoensis* (Y o k o y a m a). Holotype № 177/С 128. Upper course of Kulka river (western coast of Kamchatka). Upper horizon of Vayempolka series. External view of right valve. Natural size.

Fig. 3a. *Laternula (Aelga) besshoensis* (Y o k o y a m a). Dorsal view of same specimen, as fig. 3. Natural size.

#### Plate LVI

Fig. 1. *Laternula (Aelga) besshoensis* (Y o k o y a m a). Pleisotype № 207/С 739. Western coast of Kamchatka, 1,5 km west of the mouth of Polovinnaya river. Vayempolka series. Cast; view of left side. Antero-dorsal end broken off. Natural size. Page 124.

Fig. 2. *Laternula (Aelga) pilensis* S l o d k e w i t s c h. Holotype № 148/5043. North of the mouth of Vengheri river, Schmidt Peninsula (northern Sakhalin). Tum series. Reproduction of I. K h o m e n k o's illustration of «*Thracia trapezoides*» in «Stratigraphy of the Tert. Beds of Schmidt Peninsula», 1934, pl. XIV, fig. 9. Impression of external surface of right valve. Natural size. Page. 124.

Fig. 3. *Laternula (Aelga) pilensis* S l o d k e w i t s c h. Paratype № 146/5043.

местонахождение, что и фиг. 2. Репродукция изображения «*Thracia trapezoides*» из монографии И. Хоменко «Стратиграфия трет. сл. пол. Шмидта», табл. XIV, фиг. 7. Ядро с обломанным передним концом; вид справа. Натур. велич.

Фиг. 4. *Laternula (Aelga) pilensis* S l o d k e w i t s c h. Паратип № 149/5043. То же местонахождение, что и фиг. 2. Репродукция изображения «*Thracia trapezoides*» из монографии И. Хоменко «Стратиграфия трет. сл. пол. Шмидта», табл. XV, фиг. 5. Наружный вид левой створки. Натур. велич.

Фиг. 5. *Laternula (Aelga) sakhalinensis* S l o d k e w i t s c h. «Beds II; in the «Sandy Shale of the rivers Pohlé, Petroleum and Langeri». Свита Бора. Репродукция изображения «*Tellina besshoensis*» из монографии М. Юкоуама «Molluscan Fossils fr. Karafto» табл. LXXIV, фиг. 1. Наружный вид правой створки. Натур. велич. Стр. . . . . 264.

#### Таблица LVII

Фиг. 1. *Laternula (Aelga) sakhalinensis* S l o d k e w i t s c h. Паратип № 204/C 126. Верховье р. Эталонной: правый берег в 200 м выше большого безыменного притока (западное побережье Камчатки). Верхний отдел ваямпольской свиты. Ядро; вид слева. Предний конец обломан. Натур. велич. Стр. . . . . 264.

Фиг. 1а. *Laternula (Aelga) sakhalinensis* S l o d k e w i t s c h. Тот же экземпляр, что и на фиг. 1; вид сверху. Натур. велич.

Фиг. 2. *Laternula (Aelga) sakhalinensis* S l o d k e w i t s c h. Паратип № 203/C 711. Западное побережье Камчатки, в 9 км к SW от устья р. Моросечной. Верхний отдел ваямпольской свиты. Отпечаток правой створки с обломанным нижним концом. Натур. велич.

Фиг. 3. *Laternula (Aelga) sakhalinensis* S l o d k e w i t s c h. Голотип № 204/C 125. Верховье р. Эталонной, в 200 м выше большого, правого безыменного притока (западное побережье Камчатки). Верхний отдел ваямпольской свиты. Ядро; вид справа. Передне-нижний конец обломан. Натур. велич.

Фиг. 3а. *Laternula (Aelga) sakhalinensis* S l o d k e w i t s c h. Тот же экземпляр, что и на фиг. 3; вид сверху. Натур. велич.

#### Таблица LVIII

Фиг. 1. *Thracia (Thracia) condoni* D a l l. Плезитип № S/132. Река Тнонхлно (западное побережье Камчатки). Ваямпольская свита. Ядро с сохранившейся частично раковинной. Натур. велич. Стр. . . . . 267.

Фиг. 2. *Thracia (Thracia) condoni* D a l l. Голотип № 110460. «Smith's quarry, near Eugene, Oregon, Miocene». Репродукция изображения «*Thracia condoni*» из монографии W. D a l l «The Mioc. of Astoria»,

Same locality, as fig. 2. Reproduction of I. K h o m e n k o's illustration of «*Thracia trapezoides*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1934, pl. XIV, fig. 7. Cast; view of right side. Anterior end broken off. Natural size.

Фиг. 4. *Laternula (Aelga) pilensis* S l o d k e w i t s c h. Paratype № 149/5043. Same locality, as fig. 2. Reproduction of I. K h o m e n k o's illustration of «*Thracia trapezoides*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1934, pl. XV, fig. 5. External view of left valve. Natural size.

Фиг. 5. *Laternula (Aelga) sakhalinensis* S l o d k e w i t s c h. «Beds II; in the «Sandy Shale of the rivers Pohlé, Petroleum and Langeri». Bora series. Reproduction of M. Y o k o y a m a's illustration «*Tellina besshoensis*» in «Molluscan Fossils fr. Karafto», pl. LXXIV, fig. 1. External view of right valve. Natural size. Page . 124.

#### Plate LVII

Fig. 1. *Laternula (Aelga) sakhalinensis* S l o d k e w i t s c h. Paratype № 204/C 126. Upper course of Etalonnyaya river, 200 m upward from the mouth of the unnamed right tributary (western coast of Kamchatka) Upper horizon of Vayempolka series. Cast; view of left side. Anterior end broken off. Natural size. Page . . . . . 124.

Fig. 1a. *Laternula (Aelga) sakhalinensis* S l o d k e w i t s c h. Dorsal view of same specimen, as fig. 1. Natural size.

Fig. 2. *Laternula (Aelga) sakhalinensis* S l o d k e w i t s c h. Paratype № 203/C 711. Western coast of Kamchatka, 9 km SW of the mouth of Moroshechnaya river. Upper horizon of Vayempolka series. Impression of right valve; lower margin broken off. Natural size.

Fig. 3. *Laternula (Aelga) sakhalinensis* S l o d k e w i t s c h. Holotype № 204/C 125. Upper course of Etalonnyaya river, 200 m upward from the mouth of the unnamed right tributary (western coast of Kamchatka). Upper horizon of Vayempolka series. Cast; view of right side. Antero-ventral end broken off. Natural size.

Fig. 3a. *Laternula (Aelga) sakhalinensis* S l o d k e w i t s c h. Dorsal view of same specimen as fig. 3. Natural size.

#### Plate LVIII

Fig. 1. *Thracia (Thracia) condoni* D a l l. Plesiotype № S/132. Tnonkhlnno river (western coast of Kamchatka). Vayempolka series. Cast with portion of shell adhering. Natural size. Page . . . . . 125.

Fig. 2. *Thracia (Thracia) condoni* D a l l. Holotype № 110460. «Smith's quarry, near Eugene, Oregon, Miocene.» Reproduction of W. D a l l's illustration of «*Thracia condoni*» in «The Miocene of Astoria», pl. XIX,

табл. XIX, фиг. 5. Ядро правой створки Уменьш.  $\times 4/5$ .

Фиг. 3. *Thracia (Thracia) condoni* Dall. Пlesiотип № S/131. Река Тнонхлно (западное побережье Камчатки). Ваямпольская свита. Наружный вид левой створки. Натур. велич.

Фиг. 4. *Pandora pulchella* Yokoyama. Пlesiотип № 270/3104a. Правый берег реки Б. Гаромай (восточный Сахалин). Наднуттовская свита. Репродукция из монографии И. Хоменко «Стратиграфия трет. пл. в. Сахал.», табл. VIII, фиг. 7. Наружный вид левой створки. Натур. велич. Стр. . . 273.

Фиг. 5. *Pandora pulchella* Yokoyama. Пlesiотип № 271/3104a. То же местонахождение, что и фиг. 4. Репродукция из монографии И. Хоменко «Стратиграфия трет. пл. в. Сахал.», табл. VIII, фиг. 9. Наружный вид правой створки. Натур. велич.

Фиг. 6. *Pandora pulchella* Yokoyama. Голотип. «Beds A. And'n. Upper Musashino». Репродукция из монографии М. Yokoyama «Foss. Moll. from Akita», табл. XLV, фиг. 4. Наружный вид правой створки. Натур. велич.

#### Таблица LIX

Фиг. 1. *Pandora wajampolkensis* Słodkewitsch. Голотип № 211/C 754. Правый берег р. Белоголовой, около Коряцкого стойбища (западное побережье Камчатки). Верхний отдел ваямпольской свиты. Двустворчатый экземпляр; вид слева. Наружный слой раковины потерт, местами видно ядро. Натур. велич. Стр. . . 272.

Фиг. 1a. *Pandora wajampolkensis* Słodkewitsch. Тот же экземпляр, что и на фиг. 1; вид справа. Наружный слой раковины стерт. Натур. велич.

Фиг. 1b. *Pandora wajampolkensis* Słodkewitsch. Тот же экземпляр, что и на фиг. 1; вид сверху. Натур. велич.

Фиг. 2. *Pandora gretschischkini* Słodkewitsch. Голотип № 101/C 755. Западное побережье Камчатки, между Непропуском и устьем р. Эталонной. Верхний отдел кавранской свиты. Наружный вид левой створки. Натур. велич. Стр. . . 270.

Фиг. 2a. *Pandora gretschischkini* Słodkewitsch. Тот же экземпляр, что и на фиг. 2. Внутренний вид левой створки. Натур. велич.

Фиг. 2b. *Pandora gretschischkini* Słodkewitsch. Тот же экземпляр, что и на фиг. 2. Наружный вид правой створки. Задний край обломан. Натур. велич.

Фиг. 3. *Cuspidaria (Cardiomya) kavranensis* Słodkewitsch. Голотип № 156/C 394. Правый берег р. Кавраны, в 4 км от ее устья (западное побережье Камчатки). Верхний отдел ваямпольской свиты. Ядро левой створки с несколько обломанным ростром. Увелич.  $\times 2/1$  Стр. . . 276.

Фиг. 4. *Cuspidaria (Cardiomya) tigilensis* Słodkewitsch. Голотип № 155/C 393.

fig. 5. Cast of right valve.  $4/5$  of natural size.

Fig. 3. *Thracia (Thracia) condoni* Dall. Plesiotype № S/131. Tnonkhlno river (western coast of Kamchatka). Vayempolka series. External view of left valve. Natural size.

Fig. 4. *Pandora pulchella* Yokoyama, Plesiotype № 270/3104a. Right bank of Gr. Garomai river (eastern Sakhalin). Supranutovo series. Reproduction of I. Khomenko's illustration in «Stratigraphy of the Tert. Beds of East. Sakhalin», pl. VIII, fig. 7. External view of left valve. Natural size. Page . . . 127.

Fig. 5. *Pandora pulchella* Yokoyama. Plesiotype № 271/3104a. Same locality, as fig. 4. Reproduction of I. Khomenko's illustration in «Stratigraphy of the Tert. Beds of East. Sakhalin», pl. VIII, fig. 9. External view of right valve. Natural size.

Fig. 6. *Pandora pulchella* Yokoyama. Holotype. «Beds A. Anden. Upper Musashino». Reproduction in «Foss. Moll. from Akita», pl. XLV, fig. 4. External view of right valve. Natural size.

#### Plate LIX

Fig. 1. *Pandora wajampolkensis* Słodkewitsch. Holotype № 211/C 754. Right bank of Belogolovaya river, near Koryakian camp (western coast of Kamchatka). Upper horizon of Vayempolka series. Double-valve specimen; view of left side. External layer of shell is rubbed off, at some parts cast is visible. Natural size. Page. . . 126.

Fig. 1a. *Pandora wajampolkensis* Słodkewitsch. Same specimen, as fig. 1: view of right side. External layer of shell is rubbed off. Natural size.

Fig. 1b. *Pandora wajampolkensis* Słodkewitsch. Same specimen, as fig. 1. Dorsal view. Natural size.

Fig. 2. *Pandora gretschischkini* Słodkewitsch. Holotype № 101/C 755. Western coast of Kamchatka, between sea cliffs and the mouth of Etalonnyaya river. Upper horizon of Kavran series. External view of left valve. Natural size. Page. . . 125.

Fig. 2a. *Pandora gretschischkini* Słodkewitsch. Same specimen, as fig. 2. Internal view of left valve. Natural size.

Fig. 2b. *Pandora gretschischkini* Słodkewitsch. Same specimen, as fig. 2. External view of right valve. Posterior margin broken off. Natural size.

Fig. 3. *Cuspidaria (Cardiomya) kavranensis* Słodkewitsch. Holotype № 156/C 394. Right bank of Kavran river, 4 km of its mouth (western coast of Kamchatka). Upper horizon of Vayempolka series. Cast of left valve with rostrum slightly broken off. Enlarged  $\times 2/1$ . Page . . . 128.

Fig. 4. *Cuspidaria (Cardiomya) tigilensis* Słodkewitsch. Holotype № 155/C 393.

Левый берег р. Снатол, в 0,6 км выше устья ключа (западное побережье Камчатки). Верхний горизонт тигильской свиты. Отпечаток наружной поверхности правой створки. Увелич  $\times 2/1$ . Стр. 275.

Фиг. 5. *Astarte borealis* (Schumacher). Зал. Лаврентия (Чукотский полуостров). Постплиоцен. Наружный вид левой створки. Натур. велич. Стр. . . 278.

Фиг. 5а. *Astarte borealis* (Schumacher). Тот же экземпляр, что и на фиг. 5; внутренний вид. Натур. велич.

Фиг. 6. *Astarte borealis* (Schumacher). То же местонахождение, что и фиг. 5. Наружный вид левой створки. Натур. велич.

### Таблица LX

Фиг. 1. *Astarte actis* Dall. Голотип. «Pliocene on Center Creek, north of Nome». Репродукция из монографии W. Dall «Plioc. and Pleistoc. Foss. fr. Alaska», табл. VI, фиг. 5. Наружный вид правой створки. Натур. велич. Стр. . . . . 282.

Фиг. 2. *Astarte cf. actis* Dall. Образец № 214/С 796. Р. Утхолок, выше устья р. Инерявеем (западное побережье Камчатки). Кавранская свита. Наружный вид несколько обломанной правой створки. Натур. велич.

Фиг. 3. *Astarte rollandi* Bernardi. Голотип. Современная форма; вблизи гор. Петропавловска-на-Камчатке. Репродукция изображения «*Astarte rollandii*» из монографии М. Bernardi «Description d'espèces nouvelles», табл. XIII, фиг. 2. Наружный вид правой створки. Натур. велич. Стр. . . . . 281.

Фиг. 4. *Astarte rollandi* Bernardi. Плезютип № 99/5043. В 1 км к северу от устья р. Пилтук, полуостров Шмидта (северный Сахалин). Помырская свита. Репродукция изображения «*Astarte borealis*» из монографии И. Хоменко «Стратиграфия трет. сл. пол. Шмидта», табл. VI, фиг. 3. Наружный вид правой створки; задний конец обломан. Натур. велич.

Фиг. 4а. *Astarte rollandi* Bernardi. Тот же экземпляр, что и на фиг. 4; внутренний вид. Натур. велич.

Фиг. 5. *Cardita kovatschensis* Slodkewitsch. Метатип № 141/С 301. Правый берег р. Ковачины, в 12 км выше устья р. Тыжменч (западное побережье Камчатки). Ковачинская свита. Отпечатки правой (вверху) и левой (внизу) створок. Увелич.  $\times 2/1$ . Стр. . . . . 287.

Фиг. 6. *Cardita kovatschensis* Slodkewitsch. Метатип № 11/С 176. Река Матерая Напана, в 3,5 км ниже устья р. Ланьч (западное побережье Камчатки). Ковачинская свита. Ядро правой (вверху) и левой (внизу) створок. Натур. велич.

Фиг. 7. *Cardita kovatschensis* Slodkewitsch. Паратип № S/24. Река Ковачина (западное побережье Камчатки).

Left bank of Snatol river, 0.6 km upward from the mouth of spring (western coast of Kamchatka). Upper horizon of Tighil series. Impression of external surface of right valve. Enlarged  $\times 2/1$ . Page . . . 127.

Fig. 5. *Astarte borealis* (Schumacher). Gulf of Laurence (Chukotsky Peninsula). Postpliocene. External view of left valve. Natural size. Page . . . . . 129.

Fig. 5a. *Astarte borealis* (Schumacher). Same specimen, as fig. 5, internal view. Natural size.

Fig. 6. *Astarte borealis* (Schumacher). Same locality, as fig. 5. External view of left valve. Natural size.

### Plate LX

Fig. 1. *Astarte actis* Dall. Holotype. «Pliocene on Center Creek, north of Nome». Reproduction of W. Dall's illustration in «Plioc. and Pleistoc. Foss. fr. Alaska», pl. VI, fig. 5. External view of right valve. Natural size. Page . . . . . 130.

Fig. 2. *Astarte cf. actis* Dall. Specimen № 214/С 796. Utkholok river upward from the mouth of Ineryaveem river (western coast of Kamchatka). Kavrana series. External view of slightly broken right valve. Natural size.

Fig. 3. *Astarte rollandi* Bernardi. Holotype. Recent specimen; near the town Petropavlovsk-on-Kamchatka. Reproduction of M. Bernardi's illustration of «*Astarte rollandii*» in «Description d'espèces nouvelles», pl. XIII, fig. 2. External view of right valve. Natural size. Page . . 129.

Fig. 4. *Astarte rollandi* Bernardi. Pleisotype № 99/5043. 1 km north of the mouth of Piltuk river, Schmidt Peninsula (northern Sakhalin). Pomyr series. Reproduction of I. Khomenko's illustration of «*Astarte borealis*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1934, pl. VI, fig. 3. External view of right valve; posterior end broken off. Natural size.

Fig. 4a. *Astarte rollandi* Bernardi. Same specimen, as fig. 4; internal view. Natural size.

Fig. 5. *Cardita kovatschensis* Slodkewitsch. Metatype № 141/С 301. Right bank of Kovachina river, 12 km upward from the mouth of Tyzhmench river (western coast of Kamchatka). Kovachina series. Impressions of right (above) and left (below) valves. Enlarged  $\times 2/1$ . Page . . 130.

Fig. 6. *Cardita kovatschensis* Slodkewitsch. Metatype № 11/С 176. Materaya Napana river, 3.5 km downward from the mouth of Lanych river (western coast of Kamchatka). Kovachina series. Casts of right (above) and of left (below) valves. Natural size.

Fig. 7. *Cardita kovatschensis* Slodkewitsch. Paratype № S/24. Kovachina river (western coast of Kamchatka). Ko-



Ковачинская свита. Отпечаток наружной поверхности правой створки. Увелич.  $\times 19/10$ .

Фиг. 8. *Cardita kovatschensis* S l o d k e - w i t s c h. Метатип № 141/С 303. Правый берег р. Ковачины, в 12 км выше устья р. Тызменч (западное побережье Камчатки). Ковачинская свита. Ядро левой створки. Увелич.  $\times 2/1$ .

Фиг. 9. *Cardita kovatschensis* S l o d k e - w i t s c h. Метатип № 141/С 294. То же местонахождение, что и фиг. 8. Отпечаток левой створки. Увелич.  $\times 2/1$ .

Фиг. 10. *Cardita kovatschensis* S l o d k e - w i t s c h. Голотип № S/24. Река Ковачина (западное побережье Камчатки). Отпечаток наружной поверхности левой створки. Увелич.  $\times 12/5$ .

Фиг. 11. *Cardita ventricosa* G o u l d. Голотип. «Puget Sound, Oregon. Recent». Репродукция из монографии А. G o u l d «Mollusca and Shells», Atlas, табл. 36, фиг. 532. Наружный вид несколько обломанной правой створки. Натур. велич. Стр. . . . . 291.

Фиг. 12. *Cardita ventricosa* G o u l d. Плезиотип № S/110. Река Тигиль (западное побережье Камчатки). Тигильская свита. Двустворчатый экземпляр; вид справа. Увелич.  $\times 6/5$ .

Фиг. 12а. *Cardita ventricosa* G o u l d. Тот же экземпляр, что и на фиг. 12; вид спереди. Увелич.  $\times 6/5$ .

Фиг. 13. *Cardita ventricosa* G o u l d. Плезиотип № 140/С 284. Правый берег р. Тигиль у дер. Тигиль (западное побережье Камчатки). Ваямпольская свита. Наружный вид левой створки. Передняя часть раковины обломана; видно ядро. Натур. велич.

Фиг. 14. *Cardita ferruginea* C l e s s i n. Голотип. Современная форма из Японского моря. Репродукция из монографии S. C l e s s i n «Die Familie der Carditaceen», табл. 6, фиг. 11. Наружный вид левой створки. Натур. велич. Стр. . . . . 293.

Фиг. 15. *Cardita ferruginea* C l e s s i n. Плезиотип № 97/5043. В 1 км к северу от устья р. Пильтук, полуостров Шмидта (северный Сахалин). Помырская свита. Репродукция изображения «*Venericardia ferruginea*» из монографии И. X o m e n k o «Стратиграфия трет. сл. пол. Шмидта», табл. XI, фиг. 8 Наружный вид правой створки. Натур. велич.

Фиг. 16. *Cardita ferruginea* C l e s s i n. Плезиотип № 98/5043. То же местонахождение, что и фиг. 15. Репродукция изображения «*Venericardia ferruginea*» из монографии И. X o m e n k o «Стратиграфия трет. сл. пол. Шмидта», табл. XI, фиг. 10. Наружный вид левой створки. Натур. велич.

Фиг. 16а. *Cardita ferruginea* C l e s s i n. Тот же экземпляр, что и на фиг. 16. Внутренний вид левой створки. Натур. велич.

Фиг. 17. *Cardita ferruginea* C l e s s i n. Плезиотип № S/108. Западное побережье Камчатки; Тигильский район. Тигильская

vachina series. Impression of external surface of right valve. Enlarged  $\times 19/10$ .

Фиг. 8. *Cardita kovatschensis* S l o d k e - w i t s c h. Metatype № 141/С 303. Right bank of Kovachina river, 12 km upward from the mouth of Tyzmench river (western coast of Kamchatka). Kovachina series. Cast of left valve. Enlarged 2/1.

Фиг. 9. *Cardita kovatschensis* S l o d k e - w i t s c h. Metatype № 141/С 294. Same locality, as fig. 8. Impression of left valve. Enlarged  $\times 2/1$ .

Фиг. 10. *Cardita kovatschensis* S l o d k e - w i t s c h. Holotype № S/24. Kovachina river (western coast of Kamchatka). Impression of external surface of left valve. Enlarged  $\times 12/5$ .

Фиг. 11. *Cardita ventricosa* G o u l d. Holotype. «Puget Sound, Oregon. Recent». Reproduction of A. G o u l d's illustration in «Mollusca and Shells», Atlas, pl. 36, fig. 532. External view of right valve, somewhat broken off. Natural size. Page . . . . . 131.

Фиг. 12. *Cardita ventricosa* G o u l d. Pleisiotype № S/110. Tighil river (western coast of Kamchatka). Tighil series. Double-valve specimen; view of right side. Enlarged  $\times 6/5$ .

Фиг. 12а. *Cardita ventricosa* G o u l d. Same specimen, as fig. 12; anterior view. Enlarged  $\times 6/5$ .

Фиг. 13. *Cardita ventricosa* G o u l d. Pleisiotype № 140/С 284. Right bank of Tighil river, near vill. Tighil (western coast of Kamchatka). Vayempolka series. External view of left valve. Anterior portion of shell broken off; cast is visible. Natural size.

Фиг. 14. *Cardita ferruginea* C l e s s i n. Holotype. Recent form of the Japanese sea. Reproduction from S. C l e s s i n's illustration in «Die Familie der Carditaceen», табл. 6, fig. 11. External view of left valve. Natural size. Page . . . . . 131.

Фиг. 15. *Cardita ferruginea* C l e s s i n. Pleisiotype № 97/5043. 1 km north of the mouth of Piltuk river, Schmidt Peninsula (northern Sakhalin). Pomyr series. Reproduction of I. K h o m e n k o's illustration of «*Venericardia ferruginea*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1934, pl. XI, fig. 8. External view of right valve. Natural size.

Фиг. 16. *Cardita ferruginea* C l e s s i n. Pleisiotype № 98/5043. Same locality, as fig. 15. Reproduction of I. K h o m e n k o's illustration of «*Venericardia ferruginea*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1934, pl. XI, fig. 10. External view of left valve. Natural size.

Фиг. 16а. *Cardita ferruginea* C l e s s i n. Same specimen, as fig. 16. Internal view of left valve. Natural size.

Фиг. 17. *Cardita ferruginea* C l e s s i n. Pleisiotype № S/108. Western coast of Kamchatka. Tighil region. Tighil series. Cast of

свита. Ядро левой створки с сохранившейся частью раковины. Увелич.  $\times 7/5$ .

Фиг. 18. *Cardita ferruginea* Clessin. Плезотиоп № S/109. То же местонахождение, что и фиг. 17. Наружный вид правой створки; задний конец обломан. Увелич.  $\times 7/5$ .

Фиг. 19. *Cardita ferruginea* Clessin. Плезотиоп № 10/5305. Река Белая (восточное побережье Камчатки). Плиоцен (?). Наружный вид правой створки. Натур. велич.

Фиг. 19а. *Cardita ferruginea* Clessin. Тот же экземпляр, что и на фиг. 19; вид сверху. Увелич.  $\times 3/2$ .

Фиг. 20. *Cardita ferruginea* Clessin. Плезотиоп № 11/5305. То же местонахождение, что и фиг. 19. Наружный вид левой створки. Натур. велич.

### Таблица LXI

Фиг. 1. *Cardita monilicosta* Gabb var. *ochotica* Slodkewitsch. Паратип № S/14. Западное побережье Камчатки, между Непропуском и устьем р. Эталонной. Верхний отдел кавранской свиты. Наружный вид правой створки. Увелич.  $\times 4/1$ . Стр. . . . . 294.

Фиг. 1а. *Cardita monilicosta* Gabb var. *ochotica* Slodkewitsch. Тот же экземпляр, что и на фиг. 1. Внутренний вид правой створки. Увелич.  $\times 4/1$ .

Фиг. 2. *Cardita monilicosta* Gabb var. *ochotica* Slodkewitsch. Голотип № S/13. То же местонахождение, что и фиг. 1. Наружный вид левой створки. Увелич.  $\times 4/1$ .

Фиг. 2а. *Cardita monilicosta* Gabb var. *ochotica* Slodkewitsch. Тот же экземпляр, что и на фиг. 2; вид сверху. Увелич.  $\times 4/1$ .

Фиг. 2б. *Cardita monilicosta* Gabb var. *ochotica* Slodkewitsch. Тот же экземпляр, что и на фиг. 2. Внутренний вид левой створки. Увелич.  $\times 4/1$ .

Фиг. 3. *Cardita monilicosta* Gabb var. *ochotica* Slodkewitsch. Метатип № 121/С 168. Западное побережье Камчатки, между устьями рр. Аманиной и Эталонной. Верхний отдел кавранской свиты. Наружный вид левой створки. Увелич.  $\times 3/1$ .

Фиг. 4. *Cardita beringiana* Slodkewitsch. Голотип № S/63. То же местонахождение, что и фиг. 3. Наружный вид левой створки. Натур. велич. Стр. . . . . 297.

Фиг. 4а. *Cardita beringiana* Slodkewitsch. Тот же экземпляр, что и фиг. 4; внутренний вид левой створки. Натур. велич.

Фиг. 5. *Cardita beringiana* Slodkewitsch. Метатип № 101/С 137. Берег моря между Непропуском и р. Эталонной (западное побережье Камчатки). Верхний отдел кавранской свиты. Наружный вид левой створки. Натур. велич.

Фиг. 6. *Cardita beringiana* Slodkewitsch. Метатип № 100/С 138<sup>1</sup>. Берег моря между Непропуском и устьем р. Эта-

left valve, with portion of shell adhering. Enlarged  $\times 7/5$ .

Фиг. 18. *Cardita ferruginea* Clessin. Плезотиоп № S/109. Same locality, as fig. 17. External view of right valve; posterior end broken off. Enlarged  $\times 7/5$ .

Фиг. 19. *Cardita ferruginea* Clessin. Плезотиоп № 10/5305. Belaya river (eastern coast of Kamchatka). Pliocene (?). External view of right valve. Natural size.

Фиг. 19а. *Cardita ferruginea* Clessin. Same specimen, as fig. 19; dorsal view. Enlarged  $\times 3/2$ .

Фиг. 20. *Cardita ferruginea* Clessin. Плезотиоп № 11/5305. Same locality, as fig. 19. External view of left valve. Natural size.

### Plate LXI

Фиг. 1. *Cardita monilicosta* Gabb var. *ochotica* Slodkewitsch. Паратип № S/14. Western coast of Kamchatka, between sea cliffs and the mouth of Etalonnaya river. Upper horizon of Kavrana series. External view of right valve. Enlarged  $\times 4/1$ . Page . . . . . 131.

Фиг. 1а. *Cardita monilicosta* Gabb var. *ochotica* Slodkewitsch. Same specimen, as fig. 1. Internal view of right valve. Enlarged  $\times 4/1$ .

Фиг. 2. *Cardita monilicosta* Gabb var. *ochotica* Slodkewitsch. Holotype № S/13. Same locality, as fig. 1. External view of left valve. Enlarged  $\times 4/1$ .

Фиг. 2а. *Cardita monilicosta* Gabb var. *ochotica* Slodkewitsch. Same specimen, as fig. 2; dorsal view. Enlarged  $\times 4/1$ .

Фиг. 2б. *Cardita monilicosta* Gabb var. *ochotica* Slodkewitsch. Same specimen, as fig. 2. Internal view of left valve. Enlarged  $\times 4/1$ .

Фиг. 3. *Cardita monilicosta* Gabb var. *ochotica* Slodkewitsch. Metatype № 121/S 168. Western coast of Kamchatka, between the mouths of Amanina and Etalonnaya rivers. Upper horizon of Kavrana series. External view of left valve. Enlarged  $\times 3/1$ .

Фиг. 4. *Cardita beringiana* Slodkewitsch. Holotype № S/63. Same locality, as fig. 3. External view of left valve. Natural size. Page . . . . . 132.

Фиг. 4а. *Cardita beringiana* Slodkewitsch. Same specimen, as fig. 4; internal view of left valve. Natural size.

Фиг. 5. *Cardita beringiana* Slodkewitsch. Metatype № 101/С 137. Sea coast between sea cliffs and Etalonnaya river (western coast of Kamchatka). Upper horizon of Kavrana series. External view of left valve. Natural size.

Фиг. 6. *Cardita beringiana* Slodkewitsch. Metatype № 100/138<sup>1</sup>. Sea coast between sea cliffs and the mouth of Etalon-

лонной (западное побережье Камчатки). Верхний отдел кавранской свиты. Наружный вид правой створки. Натур. велич.

Фиг. 6а. *Cardita beringiana* S l o d k e w i t s c h. Тот же экземпляр, что и на фиг. 6; вид сверху. Натур. велич.

Фиг. 7. *Cardita piltunensis* sp. nova. Пlesiотип № 32/5294. Между устьями рек Половинки и Арково (западный Сахалин). Рыхлая свита. Репродукция из монографии Н. К о г а н а, «Релесурода из рыхлой свиты», табл. II, фиг. 2. Наружный вид несколько деформированной левой створки. Натур. велич. Стр. . . . . 299.

Фиг. 8. *Cardita piltunensis* sp. nova. Голотип № 78а/3104а. Между рр. Пильтуком и Паромаем, в 6 км от устья (восточный Сахалин). Наднуговская свита. Репродукция изображения «*Venericardia alaskana*» из монографии И. Х о м е н к о «Стратиграфия трет. сл. в. Сахалина», табл. III, фиг. 13. Наружный вид правой створки. Натур. велич.

Фиг. 8а. *Cardita piltunensis* sp. nova. Тот же экземпляр, что и на фиг. 8; внутренний вид правой створки. Натур. велич.

Фиг. 9. *Cardita piltunensis* sp. nova. Аллотип № 78b/3104а. То же местонахождение, что и фиг. 8. Репродукция изображения «*Venericardia alaskana*» из монографии И. Х о м е н к о «Стратиграфия трет. сл. в. Сахал.», табл. III, фиг. 15. Внутренний вид левой створки. Натур. велич.

Фиг. 10. *Cardita matitukensis* sp. nova. Аллотип № 94/5043. В 1 км к северу от устья р. Пильтука, полуостров Шмидта (северный Сахалин). Помырьская свита. Репродукция изображения «*Venericardia paucicostata*» из монографии И. Х о м е н к о «Стратиграфия трет. сл. пол. Шмидта», табл. XI, фиг. 12. Наружный вид левой створки. Натур. велич. Стр. . . . . 307.

Фиг. 11. *Cardita matitukensis* sp. nova. Голотип № 95/5043. То же местонахождение, что и фиг. 10. Репродукция изображения «*Venericardia paucicostata*» из монографии И. Х о м е н к о «Стратиграфия трет. сл. пол. Шмидта», табл. XI, фиг. 13. Наружный вид правой створки. Натур. велич.

Фиг. 11а. *Cardita matitukensis* sp. nova. Тот же экземпляр, что и на фиг. 11. Внутренний вид правой створки. Натур. велич.

### Таблица LXII

Фиг. 1. *Cardita kamtschatica* S l o d k e w i t s c h. Голотип № 121/С 141. Берег моря между устьями рек Аманной и Эталонной (западное побережье Камчатки). Верхний отдел кавранской свиты. Наружный вид правой створки. Натур. велич. Стр. . . . . 301.

Фиг. 1а. *Cardita kamtschatica* S l o d k e w i t s c h. Тот же экземпляр, что и на фиг. 1. Внутренний вид правой створки. Натур. велич.

naya river (western coast of Kamchatka). Upper horizon of Kavrana series. External view of right valve. Natural size.

Fig. 6а. *Cardita beringiana* S l o d k e w i t s c h. Same specimen, as fig. 6; dorsal view. Natural size.

Fig. 7. *Cardita piltunensis* sp. nova. Plesiotype № 32/5294. Between the mouths of Polovinka and Arkovo rivers (western Sakhalin). Rykhlaya series. Reproduction of N. K o g a n 's illustration in «Pelecypoda of Rykhlaya series» pl. II, fig. 2. External view of left valve, slightly deformed. Natural size. Page . . . . . 132.

Fig. 8. *Cardita piltunensis* sp. nova. Holotype № 78а/3104а. Between Piltuk and Paromai rivers, 6 km of the mouth (eastern Sakhalin). Supra-Nutovo series. Reproduction of I. K h o m e n k o 's illustration of «*Venericardia alaskana*» in «Stratigraphy of the Tert. Beds of East. Sakhalin», pl. III, fig. 13. External view of right valve. Natural size.

Fig. 8а. *Cardita piltunensis* sp. nova. Same specimen, as fig. 8; internal view of right valve. Natural size.

Fig. 9. *Cardita piltunensis* sp. nova. Allotype № 78b/3104а. Same locality, as fig. 8. Reproduction of I. K h o m e n k o 's illustration of «*Venericardia alaskana*» in «Stratigraphy of the Tert. Beds of East. Sakhalin», pl. III, fig. 15. Internal view of left valve. Natural size.

Fig. 10. *Cardita matitukensis* sp. nova. Allotype № 94/5043. 1 km north of the mouth of Piltuk river, Schmidt Peninsula (northern Sakhalin). Pomyr series. Reproduction of I. K h o m e n k o 's illustration of «*Venericardia paucicostata*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1934, pl. XI, fig. 12. External view of left valve. Natural size. Page 137.

Fig. 11. *Cardita matitukensis* sp. nova. Holotype № 95/5043. Same locality, as fig. 10. Reproduction of I. K h o m e n k o 's illustration of «*Venericardia paucicostata*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1934, pl. XI, fig. 13. External view of right valve. Natural size.

Fig. 11а. *Cardita matitukensis* sp. nova. Same specimen, as fig. 11. Internal view of right valve. Natural size.

### Plate LXII

Fig. 1. *Cardita kamtschatica* S l o d k e w i t s c h. Holotype № 121/С 141. Sea coast between the mouths of Amanina and Etalonaya rivers (western coast of Kamchatka). Upper horizon of Kavrana series. External view of right valve. Natural size. Page . . . . . 133.

Fig. 1а. *Cardita kamtschatica* S l o d k e w i t s c h. Same specimen, as fig. 1. Internal view of right valve. Natural size.

Fig. 2. *Cardita kamtschatica* S l o d k e w i t s c h. Хоротип № 100/С 327. Берег моря между Непропуском и устьем р. Эталонной (западное побережье Камчатки). Верхний отдел кавранской свиты. Наружный вид левой створки. Natur. велич.

Fig. 2a. *Cardita kamtschatica* S l o d k e w i t s c h. Тот же экземпляр, что и на фиг. 2. Внутренний вид левой створки. Natur. велич.

Fig. 3. *Cardita kamtschatica* S l o d k e w i t s c h var. *dvalii* nom. nova. Голотип № 101/С 131<sup>1</sup>. Берег моря между Непропуском и устьем р. Эталонной (западное побережье Камчатки). Верхний отдел кавранской свиты. Наружный вид правой створки. Natur. велич. Стр. . . . . 304.

Fig. 4. *Cardita kamtschatica* S l o d k e w i t s c h var. *dvalii* nom. nova. Аллотип № 101/С 130<sup>1</sup>. То же местонахождение, что и фиг. 3. Внутренний вид правой створки. Natur. велич.

Fig. 4a. *Cardita kamtschatica* S l o d k e w i t s c h var. *dvalii* nom. nova. Тот же экземпляр, что и на фиг. 4; вид сверху. Natur. велич.

Fig. 5. *Cardita praeruptensis* S l o d k e w i t s c h. Голотип № 100/С 126. Берег моря между Непропуском и устьем р. Эталонной (западное побережье Камчатки). Верхний отдел кавранской свиты. Natur. велич. Стр. . . . . 305.

Fig. 5a. *Cardita praeruptensis* S l o d k e w i t s c h. Тот же экземпляр, что и на фиг. 5. Внутренний вид левой створки. Natur. велич.

Fig. 5b. *Cardita praeruptensis* S l o d k e w i t s c h. Тот же экземпляр, что и на фиг. 5; вид сверху. Natur. велич.

Fig. 6. *Cardita praeruptensis* S l o d k e w i t s c h. Аллотип № 100/С 329<sup>1</sup>. То же местонахождение, что и фиг. 5. Наружный вид правой створки с потертой наружной поверхностью. Natur. велич.

Fig. 7. *Cardita puella* S l o d k e w i t s c h. Аллотип № 121/С 154. Берег моря между рр. Аmaniной и Эталонной (западное побережье Камчатки). Верхний отдел кавранской свиты. Наружный вид левой створки. Увелич.  $\times 3/1$ . Стр. . . . . 314.

Fig. 8. *Cardita puella* S l o d k e w i t s c h. Голотип № 101/С 152. Берег моря между Непропуском и р. Эталонной (западное побережье Камчатки). Верхний отдел кавранской свиты. Наружный вид правой створки. Увелич.  $\times 3/1$ .

### Таблица LXIII

Fig. 1. *Cardita kavranensis* S l o d k e w i t s c h. Голотип № 121/С 121. Берег моря между устьями рек Аmaniной и Эталонной (западное побережье Камчатки). Верхний отдел кавранской свиты. Наружный вид левой створки. Natur. велич. Стр. . . . . 311.

Fig. 1a. *Cardita kavranensis* S l o d k e w i t s c h. Тот же экземпляр, что и на фиг. 1. Внутренний вид левой створки. Natur. велич.

Fig. 2. *Cardita kamtschatica* S l o d k e w i t s c h. Holotype № 100/С 327. Sea coast between sea cliffs and the mouth of Etalonnaya river (western coast of Kamchatka). Upper horizon of Kavrana series. External view of left valve. Natural size.

Fig. 2a. *Cardita kamtschatica* S l o d k e w i t s c h. Same specimen, as fig. 2. Internal view of left valve. Natural size.

Fig. 3. *Cardita kamtschatica* S l o d k e w i t s c h var. *dvalii* nom. nova. Holotype № 101/С 131<sup>1</sup>. Sea coast between sea cliffs and the mouth of Etalonnaya river (western coast of Kamchatka). Upper horizon of Kavrana series. External view of right valve. Natural size. Page . . . . . 136.

Fig. 4. *Cardita kamtschatica* S l o d k e w i t s c h var. *dvalii* nom. nova. Allotype № 101/С 130<sup>1</sup>. Same locality, as fig. 3. Internal view of right valve. Natural size.

Fig. 4a. *Cardita kamtschatica* S l o d k e w i t s c h var. *dvalii* nom. nova. Same specimen, as fig. 4; dorsal view. Natural size.

Fig. 5. *Cardita praeruptensis* S l o d k e w i t s c h. Holotype № 100/С 126. Sea coast between sea cliffs and the mouth of Etalonnaya river (western coast of Kamchatka). Upper horizon of Kavrana series. External view of left valve. Natural size. Page 135.

Fig. 5a. *Cardita praeruptensis* S l o d k e w i t s c h. Same specimen, as fig. 5. Internal view of left valve. Natural size.

Fig. 5b. *Cardita praeruptensis* S l o d k e w i t s c h. Same specimen, as fig. 5. Dorsal view. Natural size.

Fig. 6. *Cardita praeruptensis* S l o d k e w i t s c h. Allotype № 100/С 329<sup>1</sup>. Same locality, as fig. 5. External view of right valve; external surface is rubbed off. Natural size.

Fig. 7. *Cardita puella* S l o d k e w i t s c h. Allotype № 121/С 154. Sea coast between Amanina and Etalonnaya rivers (western coast of Kamchatka). Upper horizon of Kavrana series. External view of left valve. Enlarged  $\times 3/1$ . Page . . . . . 140.

Fig. 8. *Cardita puella* S l o d k e w i t s c h. Holotype № 101/С 152. Sea coast between sea cliffs and Etalonnaya river (western coast of Kamchatka). Upper horizon of Kavrana series. External view of right valve. Enlarged  $\times 3/1$ .

### Plate LXIII

Fig. 1. *Cardita kavranensis* S l o d k e w i t s c h. Holotype № 121/С 121. Sea coast between the mouths of Amanina and Etalonnaya rivers (western coast of Kamchatka). Upper horizon of Kavrana series. External view of left valve. Natural size. Page . . . . . 138.

Fig. 1a. *Cardita kavranensis* S l o d k e w i t s c h. Same specimen, as fig. 1. Internal view of left valve. Natural size.

Фиг. 1b. *Cardita kavranensis* S l o d k e w i t s c h. Тот же экземпляр, что и фиг. 1; вид сверху. Натур. велич.

Фиг. 2. *Cardita kavranensis* S l o d k e w i t s c h. Паратип № 100/C 120<sup>1</sup>. Берег моря между Непропуском и устьем р. Эталонной (западное побережье Камчатки). Верхний отдел кавранской свиты. Наружный вид правой створки. Натур. велич.

Фиг. 2a. *Cardita kavranensis* S l o d k e w i t s c h. Тот же экземпляр, что и фиг. 2. Внутренний вид правой створки. Натур. велич.

Фиг. 2b. *Cardita kavranensis* S l o d k e w i t s c h. Тот же экземпляр, что и фиг. 2; вид сверху. Натур. велич.

Фиг. 3. *Cardita etalonnensis* S l o d k e w i t s c h. Голотип № S/54. То же местонахождение, что и фиг. 2. Наружный вид правой створки. Увелич.  $\times 6/5$ . Стр. . . 308.

Фиг. 3a. *Cardita etalonnensis* S l o d k e w i t s c h. Тот же экземпляр, что и фиг. 3. Внутренний вид правой створки. Увелич.  $\times 6/5$ .

Фиг. 4. *Cardita etalonnensis* S l o d k e w i t s c h. Хоротип № 101/C 136. Берег моря между Непропуском и устьем р. Эталонной (западное побережье Камчатки). Верхний отдел кавранской свиты. Наружный вид правой створки. Натур. велич.

#### Таблица LXIV

Фиг. 1. *Cardita etalonnensis* S l o d k e w i t s c h. Хоротип № 101/C 138. Берег моря между Непропуском и устьем р. Эталонной (западное побережье Камчатки). Верхний отдел кавранской свиты. Наружный вид правой створки. Натур. велич. Стр. . . . . 308.

Фиг. 2. *Cardita etalonnensis* S l o d k e w i t s c h. Аллотип № S/153. То же местонахождение, что и фиг. 1. Внутренний вид левой створки. Увелич.  $\times 6/5$ .

Фиг. 3. *Cardita* cf. *pacifera* (Y o k o y a m a). Образец № 66/5044. Между мысом Марии и Мачигарским заливом, полуостров Шмидта (северный Сахалин). Верхняя свита мачигарского разреза. Репродукция изображения «*Venericardia pacifera*» из монографии И. Х о м е н к о «Стратиграфия трет. отл. пол. Шмидта», табл. VII, фиг. 3. Ядро правой створки. Натур. велич. Стр. . . . . 316.

Фиг. 4. *Cardita pacifera* (Y o k o y a m a). Голотип. «Hannukisawa. Asagai-Beds». Репродукция изображения «*Venericardia pacifera*» из монографии М. Y o k o y a m a «Molluscan Rem. Low. Jō-Ban», табл. IV, фиг. 1. Наружный вид потерянной левой створки. Натур. велич.

Фиг. 5. *Cardita pacifera* (Y o k o y a m a). Плезiotип № S/106. Река Кинкиль (западное побережье Камчатки). Вайемпольская свита. Обломанное ядро правой створки с сохранившимся внутренним слоем раковины. Увелич.  $\times 13/10$ .

Фиг. 6. *Cardita pacifera* (Y o k o y a m a). Плезiotип № S/55. Западное побережье

Фиг. 1b. *Cardita kavranensis* S l o d k e w i t s c h. Same specimen, as fig. 1. Dorsal view. Natural size.

Фиг. 2. *Cardita kavranensis* S l o d k e w i t s c h. Paratype № 100/C 120<sup>1</sup>. Sea coast between sea cliffs and the mouth of Etalon-naya river (western coast of Kamchatka). Upper horizon of Kavrana series. External view of right valve. Natural size.

Фиг. 2a. *Cardita kavranensis* S l o d k e w i t s c h. Same specimen, as fig. 2. Internal view of right valve. Natural size.

Фиг. 2b. *Cardita kavranensis* S l o d k e w i t s c h. Same specimen, as fig. 2. Dorsal view. Natural size.

Фиг. 3. *Cardita etalonnensis* S l o d k e w i t s c h. Holotype № S/54. Same locality, as fig. 2. External view of right valve. Enlarged  $\times 6/5$ . Page . . . . . 138.

Фиг. 3a. *Cardita etalonnensis* S l o d k e w i t s c h. Same specimen, as fig. 3. Internal view of right valve. Enlarged  $\times 6/5$ .

Фиг. 4. *Cardita etalonnensis* S l o d k e w i t s c h. Holotype № 101/C 136. Sea coast between sea cliffs and the mouth of Etalon-naya river (western coast of Kamchatka). Upper horizon of Kavrana series. External view of right valve. Natural size.

#### Plate LXIV

Фиг. 1. *Cardita etalonnensis* S l o d k e w i t s c h. Horotype № 101/C 138. Sea coast between sea cliffs and the mouth of Etalon-naya river (western coast of Kamchatka). Upper horizon of Kavrana series. External view of right valve. Natural size. Page. . 138.

Фиг. 2. *Cardita etalonnensis* S l o d k e w i t s c h. Allotype № S/153. Same locality, as fig. 1. Internal view of left valve. Enlarged  $\times 6/5$ .

Фиг. 3. *Cardita* cf. *pacifera* (Y o k o y a m a). Specimen № 66/5044. Between cape Maria and Gulf of Machigar, Schmidt Peninsula (northern Sakhalin). Upper series of Machigar section. Reproduction of I. K h o m e n k o's illustration of «*Venericardia pacifera*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1935, pl. VII, fig. 3. Cast of right valve. Natural size. Page . . 140.

Фиг. 4. *Cardita pacifera* (Y o k o y a m a). Holotype. «Hannukisawa. Asagai-Beds». Reproduction of M. Y o k o y a m a's illustration of «*Venericardia pacifera*» in «Molluscan Rem. Low. Jō-Ban», pl. IV, fig. 1. External view of left valve. Natural size.

Фиг. 5. *Cardita pacifera* (Y o k o y a m a). Plesiotype № S/106. Kinkil river (western coast of Kamchatka). Vayempolka series. Fragment of cast with inner layer of shell preserved. Enlarged  $\times 13/10$ .

Фиг. 6. *Cardita pacifera* (Y o k o y a m a). Plesiotype № S/55. Western coast of Kam-

Камчатки; Тигильский район. Ваямпольская свита. Обломанное ядро левой (?) створки с сохранившимся внутренним слоем раковины. Увелич.  $\times 6/5$ .

Фиг. 7. *Cardita tokunagai* (Yokoyama). Лектотип. «Obisa. Asagai-Beds». Репродукция изображения «*Venericardia tokunagai*» из монографии М. Yokoyama «Moll. Rem. Low. Jô-Ban», табл. III, фиг. 10. Двустворчатое ядро с частично сохранившейся раковиной; наружный вид левой створки. Уменьш.  $\times 24/25$ . Стр. 317.

Фиг. 8. *Cardita tokunagai* (Yokoyama). Тот же экземпляр, что и на фиг. 7. Наружный вид правой створки. Уменьш.  $\times 24/25$ .

Фиг. 9. *Cardita tokunagai* (Yokoyama). Плезитотип № S/65. Река Кинкиль (западное побережье Камчатки). Нижний отдел ваямпольской свиты. Ядро; вид слева. Увелич.  $\times 6/5$ .

Фиг. 10. *Cardita tokunagai* (Yokoyama). Плезитотип № 89/5043. К северу от устья р. Венгери, полуостров Шмидта (северный Сахалин). Каскадная свита. Репродукция изображения «*Venericardia tokunagai*» из монографии И. Хоменко «Стратиграфия трет. сл. пол. Шмидта», табл. XI, фиг. 1. Наружный вид левой створки. Натур. велич.

Фиг. 11. *Cardita yokoyamai* Slodkewitsch. Голотип. «Otomari, Notozo; South Karafto. Neogene». Репродукция изображения «*Venericardia tokunagai*» из монографии М. Yokoyama «Molluscan Foss. fr. Karafto», табл. LXXV, фиг. 2. Наружный вид потертой правой створки. Натур. велич. Стр. 319.

Фиг. 12. *Cardita yokoyamai* Slodkewitsch. Плезитотип № 90/5043. К северу от устья р. Венгери, полуостров Шмидта (северный Сахалин). Венгерийская свита. Репродукция изображения «*Venericardia tokunagai*» из монографии И. Хоменко «Стратиграфия трет. сл. пол. Шмидта», табл. XI, фиг. 2. Обломанная левая створка с потертой раковиной. Натур. велич.

### Таблица LXV

Фиг. 1. *Cardita denudata* Slodkewitsch. Голотип № S/66. Р. Кинкиль (западное побережье Камчатки). Нижний отдел ваямпольской свиты. Ядро с сохранившимся внутренним слоем раковины. Вид справа. Увелич.  $\times 6/5$ . Стр. . . . 320.

Фиг. 1а. *Cardita denudata* Slodkewitsch. Тот же экземпляр, что и на фиг. 1; вид сверху. Увелич.  $\times 6/5$ .

Фиг. 2. *Cardita kinkilana* Slodkewitsch. Паратип № S/56. Западное побережье Камчатки; Тигильский район. Ваямпольская свита. Сильно потертая и обломанная левая створка; наружная скульптура сохранилась только внизу у заднего конца раковины. Увелич.  $\times 6/5$ . Стр. . . . . 321.

chatka; Tighil region. Vayempolka series. Fragment of cast of left (?) valve with inner layer of shell preserved. Enlarged  $\times 6/5$ .

Фиг. 7. *Cardita tokunagai* (Yokoyama). Lectotype. «Obisa. Asagai-Beds.» Reproduction of M. Yokoyama's illustration of «*Venericardia tokunagai*» in «Moll. Rem. Low. Jô-Ban», pl. III, fig. 10. Double-valve specimen with partly preserved shell. External view of left valve.  $24/25$  natural size. Page . . . . . 141.

Фиг. 8. *Cardita tokunagai* (Yokoyama). Same specimen, as fig. 7. External view of right valve.  $24/25$  natural size.

Фиг. 9. *Cardita tokunagai* (Yokoyama). Plesiotype № S/65. Kinkil river (western coast of Kamchatka). Lower horizon of Vayempolka series. Cast; view of left side. Enlarged  $\times 6/5$ .

Фиг. 10. *Cardita tokunagai* (Yokoyama). Plesiotype № 89/5043. North of the mouth of Vengheri river, Schmidt Peninsula (northern Sakhalin). Kaskadnaya series. Reproduction of I. Khomenko's illustration of «*Venericardia tokunagai*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1934, pl. XI, fig. 1. External view of left valve. Natural size.

Фиг. 11. *Cardita yokoyamai* Slodkewitsch. Holotype. «Otomari, Notozo, South Karafto. Neogene». Reproduction of M. Yokoyama's illustration of «*Venericardia tokunagai*» in «Molluscan Foss. fr. Karafto», pl. LXXV, fig. 2. External view of right valve. Natural size. Page 142.

Фиг. 12. *Cardita yokoyamai* Slodkewitsch. Plesiotype № 90/5043. North of the mouth of Vengheri river, Schmidt Peninsula (northern Sakhalin). Vengheri series. Reproduction of I. Khomenko's illustration of «*Venericardia tokunagai*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1934, pl. XI, fig. 2. A broken left valve somewhat decorticated. Natural size.

### Plate LXV

Фиг. 1. *Cardita denudata* Slodkewitsch. Holotype № S/66. Kinkil river (western coast of Kamchatka). Lower horizon of Vayempolka series. Cast with inner layer of shell adhering. View of right side. Enlarged  $\times 6/5$ . Page . . . . . 142.

Фиг. 1а. *Cardita denudata* Slodkewitsch. Same specimen, as fig. 1; dorsal view. Enlarged  $\times 6/5$ .

Фиг. 2. *Cardita kinkilana* Slodkewitsch. Paratype № S/56. Western coast of Kamchatka. Tighil region. Vayempolka series. Left valve badly worn and broken; outer surface preserved only below, at the dorsal end of shell. Enlarged  $\times 6/5$ . Page 142.

Фиг. 3. *Cardita kinkilana* S l o d k e w i t s c h. Голотип № S/61. Р. Кинкиль (западное побережье Камчатки). Верхний отдел ваямпольской свиты. Ядро с сохранившейся частично створкой; вид справа. Наружный слой раковины сохранился только у нижнего края. Увелич.  $\times 6/5$ .

Фиг. 4. *Cardita kinkilana* S l o d k e w i t s c h. Паратип № S/58. Западное побережье Камчатки; Тигильский район. Ваямпольская свита. Замок левой створки. Увелич.  $\times 13/5$ .

Фиг. 5. *Cardita kinkilana* S l o d k e w i t s c h. Паратип № S/62. Р. Кинкиль (западное побережье Камчатки). Верхний отдел ваямпольской свиты. Замок правой створки. Увелич.  $\times 14/5$ .

Фиг. 6. *Cardita matschigarica* (К h o m e n k o). Плезеотип № 31/5294. К северу от гор. Александровска (западный Сахалин). Рыхлая свита. Репродукция из монографии Н. Когана «Релесурода из рыхлой свиты», табл. II, фиг. 5. Наружный вид несколько поломанной левой створки. Натур. велич. Стр. . . . . 324.

Фиг. 7. *Cardita matschigarica* (К h o m e n k o). Голотип № 72/5044. К востоку от мыса Марии, полуостров Шмидта (северный Сахалин). Нижняя свита мацигарского разреза. Репродукция изображения «*Venericardia matschigarica*» из монографии И. Хоменко «Стратиграфия трет. отл. пол. Шмидта», табл. VIII, фиг. 1. Наружный вид несколько обломанной правой створки. Натур. велич.

Фиг. 8. *Cardita antiqua* S l o d k e w i t s c h. Метатип № 122/С 172. Ковачинская бухта, в 3.9 км к SW от устья р. Моршечна (западное побережье Камчатки). Верхний отдел ваямпольской свиты. Правая створка с потертой наружной поверхностью и обломанной примакушечной частью. Натур. велич. Стр. . . . . 325.

Фиг. 9. *Cardita antiqua* S l o d k e w i t s c h. Голотип № S/64. Р. Матерая Ваямполька (западное побережье Камчатки). Ваямпольская свита. Наружный вид правой створки с сохранившейся частично раковины; примакушечная часть обломана. Увелич.  $\times 6/5$ .

Фиг. 10. *Cardita utcholokensis* S l o d k e w i t s c h. Голотип № 16/С 231. СВ берег Ковачинской бухты; Утхолокский мыс (западное побережье Камчатки). Верхний горизонт тигильской свиты. Ядро с сохранившейся на передне-спинном краю створкой; вид справа. Натур. велич. Стр. . . . . 329.

Фиг. 10a. *Cardita utcholokensis* S l o d k e w i t s c h. Тот же экземпляр, что и на фиг. 10; вид сверху. Натур. велич.

Фиг. 11. *Cardita utcholokensis* S l o d k e w i t s c h. Паратип № 16/С 232. То же местонахождение, что и фиг. 10. Ядро; вид слева. Натур. велич.

Фиг. 12. *Cardita tumiensis* (К h o m e n k o). Котип № 69/5044. Между горой Шмидта и мысом Горнера, полуостров Шмидта (северный Сахалин). Верхняя свита мацигарского разреза. Репродукция изобра-

Фиг. 3. *Cardita kinkilana* S l o d k e w i t s c h. Holotype № S/61. Kinkil river (western coast of Kamchatka). Upper horizon of Vayempolka series. Cast with portion of valve preserved; view of right side. Outer layer of shell preserved only at ventral margin. Enlarged  $\times 6/5$ .

Фиг. 4. *Cardita kinkilana* S l o d k e w i t s c h. Paratype № S/58. Western coast of Kamchatka. Tighil region. Vayempolka series. Hinge of left valve. Enlarged  $\times 13/5$ .

Фиг. 5. *Cardita kinkilana* S l o d k e w i t s c h. Paratype № S/62. Kinkil river (western coast of Kamchatka). Upper horizon of Vayempolka series. Hinge of right valve. Enlarged  $\times 14/5$ .

Фиг. 6. *Cardita matschigarica* (К h o m e n k o). Plesiotype № 31/5294. North of the town Alexandrovsk (western Sakhalin). Rykhlaya series. Reproduction of N. Kogan's illustration in «Pelecypoda of Rykhlaya series», pl. II, fig. 5. External view of left valve somewhat broken. Natural size. Page . . . . . 142.

Фиг. 7. *Cardita matschigarica* (К h o m e n k o). Holotype № 72/5044. East of Cape Maria, Schmidt Peninsula (northern Sakhalin). Lower series of Machigar section. Reproduction of I. Khomenko's illustration of «*Venericardia matschigarica*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1935, pl. VIII, fig. 1. External view of right valve somewhat broken. Natural size.

Фиг. 8. *Cardita antiqua* S l o d k e w i t s c h. Metatype № 122/С 172. Kovachina Bay, 3.9 km to SW from the mouth of Moroshechnaya river (western coast of Kamchatka). Upper horizon of Vayempolka series. Right valve with rubbed outer surface; umbonal region broken off. Natural size. Page . . . . . 143.

Фиг. 9. *Cardita antiqua* S l o d k e w i t s c h. Holotype № S/64. Materaya Vayempolka river (western coast of Kamchatka). Vayempolka series. Outer view of right valve with portion of shell preserved; umbonal region broken off. Enlarged  $\times 6/5$ .

Фиг. 10. *Cardita utcholokensis* S l o d k e w i t s c h. Holotype № 16/С 231. NE coast of Kovachina Bay; Cape Utkholok (western coast of Kamchatka). Upper horizon of Tighil series. Cast preserving valve on antero-dorsal side; view of right side. Natural size. Page . . . . . 144.

Фиг. 10a. *Cardita utcholokensis* S l o d k e w i t s c h. Same specimen, as fig. 10; dorsal view. Natural size.

Фиг. 11. *Cardita utcholokensis* S l o d k e w i t s c h. Paratype № 16/С 232. Same locality, as fig. 10. Cast; view of left side. Natural size.

Фиг. 12. *Cardita tumiensis* (К h o m e n k o). Cotype № 69/5044. Between Mount Schmidt and Cape Horner, Schmidt Peninsula (northern Sakhalin). Upper series of Machigar section. Reproduction of I. Khomenko's illustration of «*Venericardia matschigarica*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1935, pl. VIII, fig. 1. External view of right valve somewhat broken. Natural size.

жения «*Venericardia tumiensis*» из монографии И. Хоменко «Стратиграфия трет. отл. пол. Шмидта», табл. VI, фиг. 22. Ядро; вид справа. Натур. велич. Стр. 327.

Фиг. 13. *Cardita tumiensis* (К х о м е н к о). Лектотип № 70/5044. Между горой Шмидта и мысом Горнера, полуостров Шмидта (северный Сахалин). Верхняя свита мачигарского разреза. Репродукция изображения «*Venericardia tumiensis*» из монографии И. Хоменко «Стратиграфия трет. отл. пол. Шмидта», табл. VI, фиг. 23. Отпечаток наружной поверхности обломанной и потертой левой створки. Натур. велич.

Фиг. 14. *Cardita tumiensis* (К х о м е н к о). Котип № 71/5044. То же местонахождение, что и фиг. 13. Репродукция изображения «*Venericardia tumiensis*» из монографии И. Хоменко «Стратиграфия трет. отл. пол. Шмидта», табл. VI, фиг. 24. Отпечаток наружной поверхности несколько обломанной и потертой правой створки. Натур. велич.

Фиг. 15. *Cardita rafensis* sp. nova. Голотип. Р. Каменушка, окр. зал. Корфа (восточное побережье Камчатки). «Средний миоцен». Репродукция изображения «*Venericardia (Cyclocardia) hannibalis*» из монографии И. Хоменко «О возрасте трет. отл. зал. Корфа», табл. IV, фиг. 2. Наружный вид правой створки. Натур. велич. Стр. 328.

Фиг. 16. *Cardita* cf. *rafensis* sp. nova. Паратип № 93/5043. Мыс Маям-Раф, полуостров Шмидта (северный Сахалин). Маямрафская свита. Репродукция изображения «*Venericardia laxata*» из монографии И. Хоменко «Стратиграфия трет. сл. пол. Шмидта», табл. XI, фиг. 5. Слепок с отпечатка правой створки. Натур. велич.

### Таблица LXVI

Фиг. 1. *Cardita snatolana* S l o d k e w i t s c h. Голотип № S/121. Р. Снатол (западное побережье Камчатки). Ваямпольская свита. Двустворчатый экземпляр; наружный вид потертой левой створки. Увелич.  $\times 6/5$ . Стр. 331.

Фиг. 1а. *Cardita snatolana* S l o d k e w i t s c h. Тот же экземпляр, что и на фиг. 1; вид сверху. Увелич.  $\times 6/5$ .

Фиг. 2. *Cardita snatolana* S l o d k e w i t s c h. Метатип № 139/C 281. В 1 км к северу от устья р. Каврана (западное побережье Камчатки). Верхний отдел кавранской свиты. Наружный вид правой створки с потертой поверхностью. Натур. велич.

Фиг. 2а. *Cardita snatolana* S l o d k e w i t s c h. Аллотип № 139/C 282. То же местонахождение, что и фиг. 2. Замок правой створки. Натур. велич.

Фиг. 3. *Cardita* sp. indet. Образец № 138/C 280. Правый берег р. Латаихи, в 7 км от устья (западное побережье Кам-

ч е н к о ' s illustration of «*Venericardia tumiensis*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1935, pl. VI, fig. 22. Cast. View of right side. Natural size. Page . . . 143.

Фиг. 13. *Cardita tumiensis* (К х о м е н к о). Lectotype № 70/5044. Between Mount Schmidt and Cape Horner, Schmidt Peninsula (northern Sakhalin). Upper series of Machigar section. Reproduction of I. K h o m e n k o ' s illustration of «*Venericardia tumiensis*», in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1935, pl. VI, fig. 23. Impression of left valve, rubbed and broken. Natural size.

Фиг. 14. *Cardita tumiensis* (К х о м е н к о). Cotype № 71/5044. Same locality, as fig. 13. Reproduction of I. K h o m e n k o ' s illustration of «*Venericardia tumiensis*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1935, pl. VI, fig. 24. Impression of external surface of left valve, somewhat worn and broken. Natural size.

Фиг. 15. *Cardita rafensis* sp. nova. Holotype. Kamenushka river, in the vicinity of Korf Gulf (eastern coast of Kamchatka). «Middle Miocene». Reproduction of I. K h o m e n k o ' s illustration of «*Venericardia (Cyclocardia) hannibalis*» in «On the Age of the Tert. Deposits of Korf Gulf», pl. IV, fig. 2. External view of right valve. Natural size. Page . . . 144.

Фиг. 16. *Cardita* cf. *rafensis* sp. nova. Paratype № 93/5043. Cape Mayam-Raf, Schmidt Peninsula (northern Sakhalin). Mayamraf series. Reproduction of I. K h o m e n k o ' s illustration of «*Venericardia laxata*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1934, pl. XI, fig. 5. Plaster cast of the impression of right valve.

### Plate LXVI

Фиг. 1. *Cardita snatolana* S l o d k e w i t s c h. Holotype № S/121. Snatol river (western coast of Kamchatka). Vayempolka series. Double-valve specimen. External view of left valve somewhat worn. Enlarged  $\times 6/5$ . Page . . . 145.

Фиг. 1а. *Cardita snatolana* S l o d k e w i t s c h. Same specimen, as fig. 1; dorsal view. Enlarged  $\times 6/5$ .

Фиг. 2. *Cardita snatolana* S l o d k e w i t s c h. Metatype № 139/C 281. 1 km north from the mouth of Kavrana river (western coast of Kamchatka). Upper horizon of Kavrana series. External view of right valve with rubbed surface. Natural size.

Фиг. 2а. *Cardita snatolana* S l o d k e w i t s c h. Allotype № 139/C 282. Same locality, as fig. 2. Hinge of right valve. Natural size.

Фиг. 3. *Cardita* sp. indet. Specimen № 138/C 280. Right bank of Lataikha river, 7 km from the mouth (western coast



чатки). Ковачинская свита. Наружный вид левой створки. Средняя и задняя части створки обломаны; видно ядро. Натур. велич. Стр. . . . . 334.

Фиг. 3а. *Cardita* sp. indet. Замок того же экземпляра, что и на фиг. 3. Натур. велич.

Фиг. 4. *Cardita kevetcheveemensis* (S l o d k e w i t s c h). Голотип № S/122. Река Кейвечеем (западное побережье Камчатки). Нижний отдел кавранской свиты. Двустворчатый экземпляр; наружный вид несколько потертой левой створки. Увелич.  $\times 11/10$ . Стр. . . . . 333.

Фиг. 4а. *Cardita kevetcheveemensis* (S l o d k e w i t s c h). Тот же экземпляр, что и фиг. 4; вид сверху. Увелич.  $\times 11/10$ .

Фиг. 5. *Cardita (Miodontiscus) prolongata* (C a r p e n t e r). Лектотип. «Near Neah Bay, Washington», Репродукция изображения «*Venericardia prolongata*» из монографии I. O l d r o y d «Marine Shells of N. Amer.», табл. 2, фиг. 6. Наружный вид левой створки. Уменьш.  $\times 8/10$ . Стр. . . . . 336.

Фиг. 6. *Cardita (Miodontiscus) prolongata* (C a r p e n t e r). Плезитип № 100/C 158. Берег моря между Непропуском и устьем р. Этальной (западное побережье Камчатки). Верхний отдел кавранской свиты. Наружный вид левой створки. Увелич.  $\times 3/1$ .

Фиг. 7. *Cardita (Miodontiscus) prolongata* (C a r p e n t e r). Плезитип № 100/C 156. То же местонахождение, что и фиг. 6. Наружный вид левой створки. Увелич.  $\times 3/1$ .

Фиг. 8. *Cardita (Miodontiscus) prolongata* (C a r p e n t e r). Плезитип № 100/C 157. То же местонахождение, что и фиг. 6. Наружный вид правой створки. Увелич.  $\times 3/1$ .

Фиг. 9. *Cardita (Miodontiscus) prolongata* (C a r p e n t e r). Плезитип № 100/C 155. То же местонахождение, что и фиг. 6. Наружный вид левой створки. Увелич.  $\times 3/1$ .

Фиг. 10. *Thyasira bisecta* (C o n r a d). Голотип № 3518. Национальный Музей США. Астория, Орегон. Миоцен. Наружный вид правой створки. Натур. велич. Стр. . . . . 342.

#### Таблица LXVII

Фиг. 1. *Thyasira bisecta* (C o n r a d). Плезитип № К/1. Западное побережье Камчатки; Тигильский район. Нижний отдел ваямпольской свиты. Репродукция из монографии Л. К р и ш т о ф о в и ч «Раковины из гр. *Thyasira bisecta*», табл. I, фиг. 1. Двустворчатый экземпляр; наружный вид левой створки. Натур. велич. Стр. . . . . 342.

Фиг. 1а. *Thyasira bisecta* (C o n r a d). Тот же экземпляр, что и на фиг. 1; вид спереди. Натур. велич.

Фиг. 2. *Thyasira bisecta* (C o n r a d) var. *humila* L. K r i s t o f o v i c h. Голотип № 1/2220. К северу от устья р. М.

of Kamchatka). Kovachina series. External view of left valve. Middle and posterior portions of valve broken; cast is visible. Natural size. Page . . . . . 146.

Fig. 3a. *Cardita* sp. indet. Hinge of the same specimen, as fig. 3. Natural size.

Fig. 4. *Cardita kevetcheveemensis* (S l o d k e w i t s c h). Holotype № S/122. Keyvecheveem river (western coast of Kamchatka). Lower horizon of Kavrana series. Double-valve specimen. External view of left valve somewhat worn. Enlarged  $\times 11/10$ . Page . . . . . 145.

Fig. 4a. *Cardita kevetcheveemensis* (S l o d k e w i t s c h). Same specimen, as fig. 4. Dorsal view. Enlarged  $\times 11/10$ .

Fig. 5. *Cardita (Miodontiscus) prolongata* (C a r p e n t e r). Lectotype. «Near Neah Bay, Washington». Reproduction of I. O l d r o y d's illustration of «*Venericardia prolongata*» in «Marine Shells of N. Amer.», pl. 2, fig. 6. External view of left valve. Enlarged  $\times 8/10$ . Page . . . . . 146.

Fig. 6. *Cardita (Miodontiscus) prolongata* (C a r p e n t e r). Plesiotype № 100/C 158. Sea coast, between sea cliffs and the mouth of Etalonnaya river (western coast of Kamchatka). Upper horizon of Kavrana series. External view of left valve. Enlarged  $\times 3/1$ .

Fig. 7. *Cardita (Miodontiscus) prolongata* (C a r p e n t e r). Plesiotype № 100/C 156. Same locality, as fig. 6. External view of left valve. Enlarged  $\times 3/1$ .

Fig. 8. *Cardita (Miodontiscus) prolongata* (C a r p e n t e r). Plesiotype № 100/C 157. Same locality, as fig. 6. External view of right valve. Enlarged  $\times 3/1$ .

Fig. 9. *Cardita (Miodontiscus) prolongata* (C a r p e n t e r). Plesiotype № 100/C 155. Same locality, as fig. 6. External view of left valve. Enlarged  $\times 3/1$ .

Fig. 10. *Thyasira bisecta* (C o n r a d). Holotype № 3518. U. S. National Museum. Astoria, Oregon. Miocene. External view of right valve. Natural size. Page . . . . . 147.

#### Plate LXVII

Fig. 1. *Thyasira bisecta* (C o n r a d). Plesiotype № К/1. Western coast of Kamchatka; Tighil region. Lower horizon of Vayempolka series. Reproduction of L. K r i s t o f o v i c h's illustration in «Shells of the Group *Thyasira bisecta*», pl. I, fig. 1. Double-valve specimen; external view of left valve. Natural size. Page . . . . . 147.

Fig. 1a. *Thyasira bisecta* (C o n r a d). Same specimen, as fig. 1; anterior view. Natural size.

Fig. 2. *Thyasira bisecta* (C o n r a d) var. *humila* L. K r i s t o f o v i c h. Holotype № 1/2220. North of the mouth L. Ale-

Александровки (западный Сахалин). Рыхлая свита. Репродукция из монографии Л. Криштофович «Раковины из гр. *Thyasira bisecta*», табл. II, фиг. 1. Двустворчатый экземпляр; наружный вид правой створки. Натур. велич. Стр. 343.

Фиг. 2а. *Thyasira bisecta* (Conrad) var. *humila* L. Krishtofovich. Тот же экземпляр, что и на фиг. 2. Вид спереди. Натур. велич.

Фиг. 3. *Thyasira bisecta* (Conrad) var. *alta* L. Krishtofovich. Голотип № 133/2220. Между устьями рр. Ноями и М. Сергунай (западный Сахалин). Рыхлая свита. Репродукция из монографии Л. Криштофович «Раковины из гр. *Thyasira bisecta*», табл. I, фиг. 3. Наружный вид правой створки. Натур. велич. Стр. . . . . 344.

Фиг. 4. *Thyasira bisecta* (Conrad) var. *alta* L. Krishtofovich. Котип. Остров Садо. Япония. Свита Sawané. Репродукция из монографии Л. Криштофович «Раковины из гр. *Thyasira bisecta*», табл. I, фиг. 4. Наружный вид левой створки. Натур. велич.

#### Таблица LXVIII

Фиг. 1. *Thyasira bisecta* (Conrad) var. *nipponica* Yabe & Nomura. Плезтиотип № K/13. Западное побережье Камчатки; Тигильский район. Верхний отдел кавранской свиты. Репродукция из монографии Л. Криштофович «Раковины из гр. *Thyasira bisecta*», табл. VI, фиг. 1. Двустворчатое ядро с частично сохранившейся раковиной; вид справа. Натур. велич. Стр. . . . . 345.

Фиг. 2. *Thyasira bisecta* (Conrad) var. *nipponica* Yabe & Nomura. Голотип № 7485. О-в Хоккайдо. Провинция Ишикари, Морай. Свита Kawabata. Репродукция из монографии Н. Yabe & Sh. Nomura «Rec. Spec. of *Thyasira*», табл. XXIII, фиг. 3а. Двустворчатый экземпляр; наружный вид левой створки. Уменьш.  $\times 7/8$ .

Фиг. 2а. *Thyasira bisecta* (Conrad) var. *nipponica* Yabe & Nomura. Тот же экземпляр, что и на фиг. 2; вид спереди. Уменьш.  $\times 7/8$ .

Фиг. 3. *Thyasira clarki* L. Krishtofovich. Голотип № 30385. Южная Аляска, Yakataga Reef. Верхний олигоцен. Репродукция изображения «*Thyasira bisecta*» из монографии В. Clark «Fauna of Poul and Yakat. Form.», табл. 14, фиг. 2. Наружный вид правой створки. Натур. велич. Стр. . . . . 348.

Фиг. 4. *Thyasira clarki* L. Krishtofovich. Котип № K/21. Р. Тигиль (западное побережье Камчатки). Ваямпольская свита. Репродукция изображения «*Thyasira bisecta*», табл. II, фиг. 3. Обломанное ядро с остатками раковины; вид слева. Натур. велич.

xandrovka river (western Sakhalin). Rykhlaya series. Reproduction of L. Krishtofovich's illustration in «Shells of the Group *Thyasira bisecta*» pl. II, fig. 1. Double-valve specimen; external view of right valve. Natural size. Page . . . 147.

Fig. 2a. *Thyasira bisecta* (Conrad) var. *humila* L. Krishtofovich. Same specimen, as fig. 2. Anterior view. Natural size.

Fig. 3. *Thyasira bisecta* (Conrad) var. *alta* L. Krishtofovich. Holotype № 133/2220. Between the mouths of Noyami and L. Sertunai rivers (western Sakhalin). Rykhlaya series. Reproduction of L. Krishtofovich's illustration in «Shells of the Group *Thyasira bisecta*», pl. I, fig. 3. External view of right valve. Natural size. Page . . . . . 147.

Fig. 4. *Thyasira bisecta* (Conrad) var. *alta* L. Krishtofovich. Cotype. Island Sado. Japan. Savané series. Reproduction of L. Krishtofovich's illustration in «Shells of the Group *Thyasira bisecta*», pl. I, fig. 4. External view of left valve. Natural size.

#### Plate XLVIII

Fig. 1. *Thyasira bisecta* (Conrad) var. *nipponica* Yabe & Nomura. Plesiotype № K/13. Western coast of Kamchatka. Tighil region. Upper horizon of Kavrana series. Reproduction of L. Krishtofovich's illustration in «Shells of the Group *Thyasira bisecta*», pl. VI, fig. 1. Double-valve cast with well preserved portion of shell; view of right side. Natural size. Page . . . . . 148.

Fig. 2. *Thyasira bisecta* (Conrad) var. *nipponica* Yabe & Nomura. Holotype № 7485. Island Hokkaidó. Province Ishikara, Mōrai. Kavabata series. Reproduction of H. Yabe & Sh. Nomura's illustration in «Rec. Spec. of *Thyasira*», pl. XXIII, fig. 3a. Double-valve specimen; external view of left valve. Reduced  $\times 7/8$ .

Fig. 2a. *Thyasira bisecta* (Conrad) var. *nipponica* Yabe & Nomura. Same specimen, as fig. 2. Anterior view. Reduced  $\times 7/8$ .

Fig. 3. *Thyasira clarki* L. Krishtofovich. Holotype № 30385. Southern Alaska, Yakataga Reef. Upper Oligocene. Reproduction of B. Clark's illustration of «*Thyasira bisecta*» in «Fauna of Poul and Yakat. Form.», pl. 14, fig. 2. External view of right valve. Natural size. Page . . . . . 148.

Fig. 4. *Thyasira clarki* L. Krishtofovich. Cotype № K/21. Tighil river (western coast of Kamchatka). Vayempolka series. Reproduction of L. Krishtofovich's illustration of «*Thyasira cf. clarki*» in «Shells of the Group *Thyasira bisecta*», pl. II, fig. 3. Cast somewhat broken, with portion of shell adhering; view of left side. Natural size.

Фиг. 5. *Thyasira clarki* L. Krishtofovich. Котип № К/20. То же местонахождение, что и фиг. 4. Репродукция изображения «*Thyasira cf. clarki*» из монографии Л. Криштофович «Раковины из гр. *Thyasira bisecta*», табл. II, фиг. 4. Ядро; вид слева. Натур. велич.

#### Таблица LXIX

Фиг. 1. *Thyasira disjuncta* Stewart var. *ochotica* L. Krishtofovich. Котип № К/10. Западное побережье Камчатки; Тигильский район. Кавранская свита. Репродукция из монографии Л. Криштофович «Раковины из гр. *Thyasira bisecta*», табл. III, фиг. 2. Ядро с частично сохранившейся раковиной; вид слева. Натур. велич. Стр. 346.

Фиг. 2. *Thyasira disjuncta* Stewart var. *ochotica* L. Krishtofovich. Котип № 27/5081. К N от устья р. Венгери, полуостров Шмидта (сев. Сахалин). Венгерийская свита. Репродукция из монографии Л. Криштофович «Раковины из гр. *Thyasira bisecta*», табл. V, фиг. 1. Наружный вид левой створки. Натур. велич.

#### Таблица LXX

Фиг. 1. *Thyasira disjuncta* Stewart var. *ochotica* L. Krishtofovich. Котип № К/10. Западное побережье Камчатки; Тигильский район. Кавранская свита. Репродукция из монографии Л. Криштофович «Раковины из гр. *Thyasira bisecta*», табл. III, фиг. 2а. Тот же экземпляр, что и на табл. LXIX, фиг. 1. Ядро; вид спереди. Натур. велич. Стр. . . . . 346.

Фиг. 2. *Thyasira disjuncta* Stewart var. *ochotica* L. Krishtofovich. Котип № 27/5081. К северу от устья р. Венгери, полуостров Шмидта (северный Сахалин). Венгерийская свита. Репродукция из монографии Л. Криштофович «Раковины из гр. *Thyasira bisecta*», табл. V, фиг. 2. Тот же экземпляр, что и на табл. LXIX, фиг. 2. Вид сзади. Натур. велич.

Фиг. 3. *Thyasira disjuncta* Stewart var. *ochotica* L. Krishtofovich. Голотип № 122556. Юго-восточная Аляска. Репродукция изображения «*Thyasira bisecta*» из монографии W. Dall «Synopsis of Lucinacea», табл. XL, фиг. 8. Двустворчатый экземпляр; вид сверху. Уменьш.  $\times 3/5$ .

Фиг. 4. *Thyasira tigiliana* L. Krishtofovich. Голотип № К/40. Р. Тигиль (западное побережье Камчатки). Ваямпольская свита. Репродукция из монографии Л. Криштофович «Раковины из гр. *Thyasira bisecta*», табл. II, фиг. 6. Ядро с остатками раковины; вид слева. Увелич.  $\times 5/2$ . Стр. . . . . 349.

Фиг. 4а. *Thyasira tigiliana* L. Krishtofovich. Тот же экземпляр, что и на фиг. 4; вид сзади. Увелич.  $\times 5/2$ .

Фиг. 5. *Thyasira clarki* L. Krishtofovich. Cotype № К/20. Same locality, as fig. 4. Reproduction of L. Krishtofovich's illustration of «*Thyasira cf. clarki*» in «Shells of the Group *Thyasira bisecta*», pl. II, fig. 4. Cast. view of left side. Natural size.

#### Plate LXIX

Fig. 1. *Thyasira disjuncta* Stewart var. *ochotica* L. Krishtofovich. Cotype № К/10. Western coast of Kamchatka; Tighil region. Kavrana series. Reproduction of L. Krishtofovich's illustration in «Shells of the Group *Thyasira bisecta*», pl. III, fig. 2. Cast with preserved portion of shell; view of left side. Natural size. Page . . . . . 148.

Fig. 2. *Thyasira disjuncta* Stewart var. *ochotica* L. Krishtofovich. Cotype № 27/5081. North from the mouth of Vengheri river, Schmidt Peninsula (northern Sakhalin). Vengheri series. Reproduction of L. Krishtofovich's illustration in «Shells of the Group *Thyasira bisecta*», pl. V, fig. 1. External view of left valve. Natural size.

#### Plate LXX

Fig. 1. *Thyasira disjuncta* Stewart var. *ochotica* L. Krishtofovich. Cotype № К/10. Western coast of Kamchatka; Tighil region. Kavrana series. Reproduction of L. Krishtofovich's illustration in «Shells of the Group *Thyasira bisecta*», pl. III, fig. 2a. Same specimen, as pl. LXIX, fig. 1. Cast; anterior view. Natural size. Page . . . 148.

Fig. 2. *Thyasira disjuncta* Stewart var. *ochotica* L. Krishtofovich. Cotype № 27/5081. North of the mouth of Vengheri river, Schmidt Peninsula (northern Sakhalin). Vengheri series. Reproduction of L. Krishtofovich's illustration in «Shells of the Group *Thyasira bisecta*», pl. V, fig. 2. Same specimen, as pl. LXIX, fig. 2. Posterior view. Natural size.

Fig. 3. *Thyasira disjuncta* Stewart var. *ochotica* L. Krishtofovich. Holotype № 122556. Southeastern Alaska. Reproduction of W. Dall's illustration of «*Thyasira bisecta*» in «Synopsis of Lucinacea», pl. XI, fig. 8. Double-valve specimen; dorsal view. Reduced  $\times 3/5$ .

Fig. 4. *Thyasira tigiliana* L. Krishtofovich. Holotype № К/40. Tighil river (western coast of Kamchatka). Vayempolka series. Reproduction of L. Krishtofovich's illustration in «Shells of the Group *Thyasira bisecta*», pl. II, fig. 6, view of left side. Enlarged  $\times 5/2$ . Page 148.

Fig. 4a. *Thyasira tigiliana* L. Krishtofovich. Same specimen, as fig. 4; posterior view. Enlarged  $\times 5/2$ .

Фиг. 5. *Thyasira wajampolkana* L. K r i s h t o f o v i c h. Голотип № K/50. Р. Жиловая Ваямполка (западное побережье Камчатки). Нижний отдел кавранской свиты. Репродукция из монографии Л. К р и ш т о ф о в и ч «Раковины из гр. *Thyasira bisecta*», табл. VI, фиг. 3. Ядро; вид слева. Увелич.  $\times 5/2$ . Стр. . . . . 349.

Фиг. 5а. *Thyasira wajampolkana* L. K r i s h t o f o v i c h. Тот же экземпляр, что и на фиг. 5; вид сзади. Увелич.  $\times 5/2$ .

Фиг. 6. *Thyasira wajampolkana* L. K r i s h t o f o v i c h. Паратип № K/51. То же местонахождение, что и фиг. 5. Репродукция из монографии Л. К р и ш т о ф о в и ч «Раковины из гр. *Thyasira bisecta*», табл. III, фиг. 3. Несколько полованное ядро; вид слева. Увелич.  $\times 5/2$ .

Фиг. 6а. *Thyasira wajampolkana* L. K r i s h t o f o v i c h. Тот же экземпляр, что и на фиг. 6; вид сзади. Увелич.  $\times 5/2$ .

### Т а б л и ц а LXXI

Фиг. 1. *Thyasira pervulgata* L. K r i s h t o f o v i c h. Паратип № K/63. Левый берег в устье р. Морошечной (западное побережье Камчатки). Тигильская свита. Репродукция из монографии Л. К р и ш т о ф о в и ч «Раковины из гр. *Thyasira bisecta*», табл. VI, фиг. 7. Наружный вид обломанной правой створки. Натур. велич. Стр. . . . . 350.

Фиг. 2. *Thyasira pervulgata* L. K r i s h t o f o v i c h. Голотип № K/60. То же местонахождение, что и фиг. 1. Репродукция из монографии Л. К р и ш т о ф о в и ч «Раковины из гр. *Thyasira bisecta*», табл. VI, фиг. 5. Ядро с остатками раковины. Вид слева. Натур. велич.

Фиг. 3. *Thyasira nana* K h o m e n k o. Паратип № 458/2220. Между устьями рек Половинки и Арково (западный Сахалин). Рыхлая свита. Наружный вид левой створки. Увелич.  $\times 2/1$ . Стр. 351.

Фиг. 4. *Thyasira nana* K h o m e n k o. Паратип № 454/2220. То же местонахождение, что и фиг. 3. Наружный вид левой створки. Увелич.  $\times 2/1$ .

Фиг. 5. *Thyasira nana* K h o m e n k o. Лектотип № 453/2220. То же местонахождение, что и фиг. 3. Оригинал из коллекции И. Х о м е н к о к его монографии «Матер. трет. фауны Сахал.», табл. XXXIII, фиг. 9. Двустворчатый экземпляр; наружный вид правой створки. Увелич.  $\times 2/1$ .

Фиг. 5а. *Thyasira nana* K h o m e n k o. Тот же экземпляр, что и на фиг. 5; вид спереди. Увелич.  $\times 2/1$ .

Фиг. 5б. *Thyasira nana* K h o m e n k o. Тот же экземпляр, что и на фиг. 5; вид сзади. Увелич.  $\times 2/1$ .

Фиг. 6. *Thyasira nana* K h o m e n k o. Хоротип. Окр. сел. Мгачи (западный Сахалин). Рыхлая свита. Наружный вид левой створки. Увелич.  $\times 2/1$ .

Fig. 5. *Thyasira wajampolkana* L. K r i s h t o f o v i c h. Holotype № K/50. Zhilovaya Vayempolka river (western coast of Kamchatka). Lower horizon of Kavrana series. Reproduction of L. K r i s h t o f o v i c h's illustration in «Shells of the Group *Thyasira bisecta*», pl. VI, fig. 3. Cast; view of left side. Enlarged  $\times 5/2$ . Page . . . . . 149.

Fig. 5a. *Thyasira wajampolkana* L. K r i s h t o f o v i c h. Same specimen, as fig. 5; posterior view. Enlarged  $\times 5/2$ .

Fig. 6. *Thyasira wajampolkana* L. K r i s h t o f o v i c h. Paratype № K/51. Same locality, as fig. 5. Reproduction of L. K r i s h t o f o v i c h's illustration in «Shells of the Group *Thyasira bisecta*», pl. III, fig. 3. Cast somewhat broken. View of left side. Enlarged  $\times 5/2$ .

Fig. 6a. *Thyasira wajampolkana* L. K r i s h t o f o v i c h. Same specimen, as fig. 6; posterior view. Enlarged  $\times 5/2$ .

### Plate LXXI

Fig. 1. *Thyasira pervulgata* L. K r i s h t o f o v i c h. Paratype № K/63. Left-bank at the mouth of Moroshechnaya river (western coast of Kamchatka). Tighil series. Reproduction of L. K r i s h t o f o v i c h's illustration in «Shells of the Group *Thyasira bisecta*», pl. VI, fig. 7. External view of broken right valve. Natural size. Page . . . . . 149.

Fig. 2. *Thyasira pervulgata* L. K r i s h t o f o v i c h. Holotype № K/60. Same locality, as fig. 1. Reproduction of L. K r i s h t o f o v i c h's illustration in «Shells of the Group *Thyasira bisecta*», pl. VI, fig. 5. Cast with the shell adhering. View of left side. Natural size.

Fig. 3. *Thyasira nana* K h o m e n k o. Paratype № 458/2220. Between the mouths of Polovinka and Arkovo rivers (western Sakhalin). Rykhlaya series. External view of left valve. Enlarged  $\times 2/1$ . Page . . . 149.

Fig. 4. *Thyasira nana* K h o m e n k o. Paratype № 454/2220. Same locality, as fig. 3. External view of left valve. Enlarged  $\times 2/1$ .

Fig. 5. *Thyasira nana* K h o m e n k o. Lectotype № 453/2220. Same locality, as fig. 3. Photograph taken from I. K h o m e n k o's original specimen to his paper «Materials on the Tertiary Fauna of Sakhalin», pl. XXXIII, fig. 9. Double-valve specimen; external view of right valve. Enlarged  $\times 2/1$ .

Fig. 5a. *Thyasira nana* K h o m e n k o. Same specimen, as fig. 5; anterior view. Enlarged  $\times 2/1$ .

Fig. 5b. *Thyasira nana* K h o m e n k o. Same specimen, as fig. 5. Posterior view. Enlarged  $\times 2/1$ .

Fig. 6. *Thyasira nana* K h o m e n k o. Horotype. In the vicinity of village Mgachi (western Sakhalin). Rykhlaya series. External view of left valve. Enlarged  $\times 2/1$ .

Фиг. 7. *Thyasira nana* К о м е н к о. То же местонахождение, что и фиг. 6. Наружный вид левой створки. Увелич.  $\times 2/1$ .

Фиг. 8. *Phacoides (Lucinoma) acutilineata* (C o n r a d). Плезтиотип № 106/C 223. В 3 км к северу от устья р. Кавраны (западное побережье Камчатки). Верхний отдел кавранской свиты. Двустворчатый экземпляр; наружный вид левой створки. Увелич.  $\times 3/2$ . Стр. . . . . 353.

Фиг. 8а. *Phacoides (Lucinoma) acutilineata* (C o n r a d). Тот же экземпляр, что и на фиг. 8; наружный вид правой створки. Увелич.  $\times 3/2$ .

Фиг. 8б. *Phacoides (Lucinoma) acutilineata* (C o n r a d). Тот же экземпляр, что и на фиг. 8; вид сверху. Увелич.  $\times 3/2$ .

Фиг. 9. *Phacoides (Lucinoma) acutilineata* (C o n r a d). Голотип. «Astoria, Oregon». Миоцен. Репродукция изображения «*Lucina acutilineata*» из монографии Т. С о н р а д «Fossils fr. Northw. America», табл. 18, фиг. 2. Наружный вид левой створки. Natur. велич.

Фиг. 10. *Phacoides (Lucinoma) acutilineata* (C o n r a d). Плезтиотип № 106/C 220. То же местонахождение, что и фиг. 8. Наружный вид правой створки. Увелич.  $\times 2/1$ .

Фиг. 11. *Phacoides (Lucinoma) acutilineata* (C o n r a d). Плезтиотип № 106/C 221. То же местонахождение, что и фиг. 8. Наружный вид левой створки. Увелич.  $\times 2/1$ .

Фиг. 12. *Taras (Taras) semiasperum* (P h i l i p p i). Голотип. «Habitat in India Occidentali ad Havanam». Репродукция изображения «*Diplo donta semiaspera*» из монографии P h i l i p p i «Beschreibung einiger Conchyl.-Arten», табл. VII, фиг. 2а. Наружный вид левой створки. Natur. велич. Стр. . . . . 361.

Фиг. 12а. *Taras (Taras) semiasperum* (P h i l i p p i). Котип. Репродукция из той же монографии, табл. VII, фиг. 2с. Внутренний вид левой створки. Увелич.  $\times 2/1$ .

Фиг. 13. *Taras (Taras) semiasperum* (P h i l i p p i). Плезтиотип № S/74. Западное побережье Камчатки; Тигильский район. Верхний отдел кавранской свиты. Ядро с остатками раковины. Наружный вид правой створки. Увелич.  $\times 13/10$ .

Фиг. 13а. *Taras (Taras) semiasperum* (P h i l i p p i). Тот же экземпляр, что и на фиг. 13; вид сверху. Увелич.  $\times 13/10$ .

#### Таблица LXXII

Фиг. 1. *Taras (Taras) orbellus* (G o u l d). Голотип. «From San Diego. Santa Barbara. Recent». Репродукция изображения «*Lucina orbella*» из монографии А. G o u l d «Descr. of Shells fr. Gulf of California», табл. XV, фиг. 3. Наружный вид левой створки. Natur. (?) велич. Стр. . . . . 359.

Фиг. 1а. *Taras (Taras) orbellus* (G o u l d). Тот же экземпляр, что и на фиг. 1; вид сверху. Natur. (?) велич.

Fig. 7. *Thyasira nana* К о м е н к о. Same locality, as fig. 6. External view of left valve. Enlarged  $\times 2/1$ .

Fig. 8. *Phacoides (Lucinoma) acutilineata* (C o n r a d). Plesiotype № 106/C 223. 3 km north the mouth of Kavrana river (western coast of Kamchatka). Upper horizon of Kavrana series. Double-valve specimen; external view of left valve. Enlarged  $\times 3/2$ . Page . . . . . 149.

Fig. 8a. *Phacoides (Lucinoma) acutilineata* (C o n r a d). Same specimen, as fig. 8; external view of right valve. Enlarged  $\times 3/2$ .

Fig. 8b. *Phacoides (Lucinoma) acutilineata* (C o n r a d). Same specimen, as fig. 8; dorsal view. Enlarged  $\times 3/2$ .

Fig. 9. *Phacoides (Lucinoma) acutilineata* (C o n r a d). Holotype. «Astoria, Oregon». Miocene. Reproduction of T. C o n r a d's illustration of «*Lucina acutilineata*» in «Fossils fr. Northw. America», pl. 18, fig. 2. External view of left valve. Natural size.

Fig. 10. *Phacoides (Lucinoma) acutilineata* (C o n r a d). Plesiotype № 106/C 220. Same locality, as fig. 8. External view of right valve. Enlarged  $\times 2/1$ .

Fig. 11. *Phacoides (Lucinoma) acutilineata* (C o n r a d). Plesiotype № 106/C 221. Same locality, as fig. 8. External view of left valve. Enlarged  $\times 2/1$ .

Fig. 12. *Taras (Taras) semiasperum* (P h i l i p p i). Holotype. «Habitat in India Occidentali ad Havanam». Reproduction of P h i l i p p i's illustration of «*Diplo donta semiaspera*» in «Beschreibung einiger Conchyl.-Arten», pl. VII, fig. 2a. External view of left valve. Natural size. Page 150.

Fig. 12a. *Taras (Taras) semiasperum* (P h i l i p p i). Cotype. Reproduction from same monograph, pl. VII, fig. 2c. Internal view of left valve. Enlarged  $\times 2/1$ .

Fig. 13. *Taras (Taras) semiasperum* (P h i l i p p i). Plesiotype № S/74. Western coast of Kamchatka; Tighil region. Upper horizon of Kavrana series. Cast with shell adhering. External view of right valve. Enlarged  $\times 13/10$ .

Fig. 13a. *Taras (Taras) semiasperum* (P h i l i p p i). Same specimen, as fig. 13; dorsal view. Enlarged  $\times 13/10$ .

#### Plate LXXII

Fig. 1. *Taras (Taras) orbellus* (G o u l d). Holotype. «From San Diego, Santa Barbara. Recent». Reproduction of A. G o u l d's illustration of «*Lucina orbella*» in «Descr. of Shells fr. Gulf of California», pl. XV, fig. 3. External view of left valve. Natural (?) size. Page . . . . . 150.

Fig. 1a. *Taras (Taras) orbellus* (G o u l d). Same specimen, as fig. 1; dorsal view. Natural (?) size.

Фиг. 2. *Taras (Taras) orbellus* (G o u l d). Плезнотип № S/73. Р. Кинкиль (западное побережье Камчатки). Верхний отдел ваямпольской свиты. Двустворчатое ядро с остатками раковины. Наружный вид правой створки. Увелич.  $\times 6/5$ .

Фиг. 2а. *Taras (Taras) orbellus* (G o u l d). Тот же экземпляр, что и на фиг. 2; вид сверху. Увелич.  $\times 6/5$ .

Фиг. 3. *Taras (Taras) orbellus* (G o u l d). Плезнотип № S/72. То же местонахождение, что и фиг. 2. Двустворчатое ядро с остатками раковины. Наружный вид левой створки. Увелич.  $\times 13/10$ .

Фиг. 3а. *Taras (Taras) orbellus* (G o u l d). Тот же экземпляр, что и на фиг. 3; вид сверху. Увелич.  $\times 13/10$ .

Фиг. 4. *Taras (Taras) orbellus* (G o u l d). Плезнотип № 87/5294. Между устьями рек Ноями и М. Сертунай (западный Сахалин). Рыхлая свита. Репродукция из монографии Н. К о г а н «Pelecypoda из рыхлой свиты», табл. III, фиг. 4. Двустворчатый экземпляр; наружный вид левой створки. Натур. велич.

(Фиг. 4а. *Taras (Taras) orbellus* (G o u l d). Тот же экземпляр, что и на фиг. 4; вид сверху. Натур. велич.

Фиг. 5. *Taras (Taras) harfordi* (F. A n d e r s o n). Плезнотип № 165485 U. S. N. M. «Lower Etchegoin Formation, locality 4806, Coalinga District». Репродукция изображения «*Diplodonta harfordi*» из монографии R. A r n o l d & R. A n d e r s o n «Geology of Coalinga Distr.», табл. XXXIX, фиг. 6. Наружный вид левой створки. Натур. велич. Стр. . . . . 363.

Фиг. 6. *Taras (Taras) harfordi* (F. A n d e r s o n). Плезнотип № S/97. Р. Валевопотка-реем (западное побережье Камчатки). Ваямпольская свита. Двустворчатое ядро; наружный вид правой створки. Увелич.  $\times 5/4$ .

Фиг. 7. *Taras (Taras) harfordi* (F. A n d e r s o n). Плезнотип № S/95. То же местонахождение, что и фиг. 6. Двустворчатое ядро; наружный вид левой створки. Макушка обломана. Увелич.  $\times 5/4$ .

Фиг. 8. *Taras (Taras) harfordi* (F. A n d e r s o n). Плезнотип № S/93. То же местонахождение, что и фиг. 6. Двустворчатое ядро; наружный вид правой створки. Увелич.  $\times 5/4$ .

Фиг. 8а. *Taras (Taras) harfordi* (F. A n d e r s o n). Тот же экземпляр, что и фиг. 8; вид сверху. Увелич.  $\times 5/4$ .

Фиг. 9. *Taras (Taras) harfordi* (F. A n d e r s o n). Плезнотип № S/94. То же местонахождение, что и фиг. 6. Двустворчатое ядро; вид справа. Увелич.  $\times 6/5$ .

Фиг. 10. *Taras (Felanella) cf. gouldi* (Y o k o y a m a) var. *sertunayensis* K o g a n (in litt.). Окрестности зал. Корфа (восточное побережье Камчатки). Глинисто-песчаниковая свита. Репродукция изображения «*Diplodonta (Felanella) parilis*» из монографии И. Х о м е н к о «О возр. трет. отл. зал. Корфа», табл. I, фиг. 12.

Fig. 2. *Taras (Taras) orbellus* (G o u l d). Plesiotype № S/73. Kinkil river (western coast of Kamchatka). Upper horizon of Vayempolka series. Double-valve cast with remains of the shell. External view of right valve. Enlarged  $\times 6/5$ .

Fig. 2a. *Taras (Taras) orbellus* (G o u l d). Same specimen, as fig. 2; dorsal view. Enlarged  $\times 6/5$ .

Fig. 3. *Taras (Taras) orbellus* (G o u l d). Plesiotype № S/72. Same locality, as fig. 2. Double-valve cast with remains of the shell. External view of left valve. Enlarged  $\times 13/10$ .

Fig. 3a. *Taras (Taras) orbellus* (G o u l d). Same specimen, as fig. 3; dorsal view. Enlarged  $\times 13/10$ .

Fig. 4. *Taras (Taras) orbellus* (G o u l d). Plesiotype № 87/5294. Between the mouths of Noyami and L. Sertunai rivers (western Sakhalin). Rykhlaya series. Reproduction of N. K o g a n's illustration in «Pelecypoda of the Rykhlaya series», pl. III, fig. 4. Double-valve specimen; anterior view of left valve. Natural size.

Fig. 4a. *Taras (Taras) orbellus* (G o u l d). Same specimen, as fig. 4; dorsal view. Natural size.

Fig. 5. *Taras (Taras) harfordi* (F. A n d e r s o n). Plesiotype № 165485. U. S. N. M. «Lower Etchegoin Formation, locality 4806, Coalinga District». Reproduction of R. A r n o l d & R. A n d e r s o n's illustration of «*Diplodonta harfordi*» in «Geology of Coalinga Distr.», pl. XXXIX, fig. 6. External view of left valve. Natural size Page . . . . . 150.

Fig. 6. *Taras (Taras) harfordi* (F. A n d e r s o n). Plesiotype № S/97. Valevo-potka-vayam river (western coast of Kamchatka). Vayempolka series. Double-valve cast. External view of right valve. Enlarged  $\times 5/4$ .

Fig. 7. *Taras (Taras) harfordi* (F. A n d e r s o n). Plesiotype № S/95. Same locality, as fig. 6. Double-valve cast; external view of left valve. Beaks broken off. Enlarged  $\times 5/4$ .

Fig. 8. *Taras (Taras) harfordi* (F. A n d e r s o n). Plesiotype № S/93. Same locality, as fig. 6. Double-valve cast; external view of right valve. Enlarged  $\times 5/4$ .

Fig. 8a. *Taras (Taras) harfordi* (F. A n d e r s o n). Same specimen, as fig. 8; dorsal view. Enlarged  $\times 5/4$ .

Fig. 9. *Taras (Taras) harfordi* (F. A n d e r s o n). Plesiotype № S/94. Same locality, as fig. 6. Double-valve cast; view of right side. Enlarged  $\times 6/5$ .

Fig. 10. *Taras (Felanella) cf. gouldi* (Y o k o y a m a) var. *sertunayensis* K o g a n (in litt.). In the vicinity of Korf Gulf (eastern coast of Kamchatka). Clayey-sandstone series. Reproduction of I. K h o m e n k o's illustration of «*Diplodonta (Felanella) parilis*» in «On the Tert. Dep.

Наружный вид левой створки. Натур. велич. Стр. 369.

Фиг. 11. *Taras (Felaniella) gouldi* (Yokoyama) var. *sertunayensis* Kogan (in litt.). Плезитотип № 92/5294. Между устьями рек Ноями и М. Сертунай (западный Сахалин). Рыхлая свита. Репродукция из монографии Н. Когана «Pelecypoda из рыхлой свиты», табл. IV, фиг. 1. Двустворчатый экземпляр; наружный вид правой створки. Натур. велич.

Фиг. 11а. *Taras (Felaniella) gouldi* (Yokoyama) var. *sertunayensis* Kogan (in litt.). Тот же экземпляр, что и на фиг. 11; вид сверху. Натур. велич.

Фиг. 12. *Taras (Felaniella) gouldi* (Yokoyama) var. *sertunayensis* Kogan (in litt.). Голотип № 97/5294. То же местонахождение, что и фиг. 11. Наружный вид левой створки. Натур. велич.

Фиг. 13. *Taras (Felaniella) gouldi* (Yokoyama) var. *sertunayensis* Kogan (in litt.). Окрестности зал. Корфа (восточное побережье Камчатки). Глинисто-песчаниковая свита. Репродукция изображения «*Diplodonta (Felaniella) parilis*» из монографии И. Хоменко «О возр. трет. отл. зал. Корфа», табл. I, фиг. 13. Наружный вид левой створки. Натур. велич.

### Таблица LXXIII

Фиг. 1. *Taras (Taras) gravis* Kogan (in litt.). Паратип № 104/5294. Между устьями рек Ноями и М. Сертунай (западный Сахалин). Рыхлая свита. Репродукция из монографии Н. Когана «Pelecypoda из рыхлой свиты», табл. IV, фиг. 3. Двустворчатый экземпляр; наружный вид левой створки. Натур. велич. Стр. 364.

Фиг. 1а. *Taras (Taras) gravis* Kogan (in litt.). Тот же экземпляр, что и на фиг. 1; вид сверху. Натур. велич.

Фиг. 2. *Taras (Taras) gravis* Kogan (in litt.). Паратип № 105/5294. То же местонахождение, что и фиг. 1. Репродукция из монографии Н. Когана «Pelecypoda из рыхлой свиты», табл. IV, фиг. 4. Наружный вид правой створки. Натур. велич.

Фиг. 3. *Taras (Taras) gravis* Kogan (in litt.). Паратип № 107/5294. То же местонахождение, что и фиг. 1. Репродукция из монографии Н. Когана «Pelecypoda из рыхлой свиты», табл. IV, фиг. 7. Наружный вид левой створки. Натур. велич.

Фиг. 4. *Taras (Taras) gravis* Kogan (in litt.). Голотип № 108/5294. То же местонахождение, что и фиг. 1. Репродукция из монографии Н. Когана «Фауна рыхлой свиты», табл. IV, фиг. 6. Двустворчатый экземпляр; наружный вид правой створки. Натур. велич.

Фиг. 4а. *Taras (Taras) gravis* Kogan (in litt.). Тот же экземпляр, что и на фиг. 5; вид сверху. Натур. велич.

Фиг. 5. *Taras (Felaniella) usta* (Gould). «Kami-Miyata. Miura Peninsula. Upper Mu-

of Korf Gulf», pl. I, fig. 12. External view of left valve. Natural size. Page . . . 151.

Фиг. 11. *Taras (Felaniella) gouldi* (Yokoyama) var. *sertunayensis* Kogan (in litt.). Плезитотип № 96/5294. Between the mouths of Noyami and L. Sertunai rivers (western Sakhalin). Rykhlaya series. Reproduction of N. Kogan's illustration in «Pelecypoda of the Rykhlaya series», pl. IV, fig. 1. Double-valve specimen; external view of right valve. Natural size.

Фиг. 11а. *Taras (Felaniella) gouldi* (Yokoyama) var. *sertunayensis* Kogan (in litt.). Same specimen, as fig. 11; dorsal view. Natural size.

Фиг. 12. *Taras (Felaniella) gouldi* (Yokoyama) var. *sertunayensis* Kogan (in litt.). Holotype № 96/5294. Same locality, as fig. 11. External view of left valve. Natural size.

Фиг. 13. *Taras (Felaniella) gouldi* (Yokoyama) var. *sertunayensis* Kogan (in litt.). In the vicinity of Korf Gulf (eastern coast of Kamchatka). Clayey-sandstone series. Reproduction of I. Khomenko's illustration of «*Diplodonta (Felaniella) parilis*» in «On the Tert. Depos. of Korf Gulf», pl. I, fig. 13. External view of left valve. Natural size.

### Plate LXXIII

Фиг. 1. *Taras (Taras) gravis* Kogan (in litt.). Paratype № 104/5294. Between the mouth of Noyami and L. Sertunai rivers (western Sakhalin). Rykhlaya series. Reproduction of N. Kogan's illustration in «Pelecypoda of the Rykhlaya series», pl. IV, fig. 3. Double-valve specimen; external view of left valve. Natural size. Page . . . 150.

Фиг. 1а. *Taras (Taras) gravis* Kogan (in litt.). Same specimen, as fig. 1; dorsal view. Natural size.

Фиг. 2. *Taras (Taras) gravis* Kogan (in litt.). Paratype № 105/5294. Same locality, as fig. 1. Reproduction of N. Kogan's illustration in «Pelecypoda of the Rykhlaya series», pl. IV, fig. 4. External view of right valve. Natural size.

Фиг. 3. *Taras (Taras) gravis* Kogan (in litt.). Paratype № 107/5294. Same locality, as fig. 1. Reproduction of N. Kogan's illustration in «Pelecypoda of the Rykhlaya series», pl. IV, fig. 7. External view of left valve. Natural size.

Фиг. 4. *Taras (Taras) gravis* Kogan (in litt.). Holotype № 108/5294. Same locality, as fig. 1. Reproduction of N. Kogan's illustration in «Pelecypoda of the Rykhlaya series», pl. IV, fig. 6. Double-valve specimen; external view of right valve. Natural size.

Фиг. 4а. *Taras (Taras) gravis* Kogan (in litt.). Same specimen, as fig. 1; dorsal view. Natural size.

Фиг. 5. *Taras (Felaniella) usta* (Gould). «Kami-Miyata. Miura Peninsula. Upper

sashino». Репродукция изображения «*Diplodonta usta*» из монографии М. Уокуама «Fossils fr. Miura Penins.», табл. IX, фиг. 14. Наружный вид правой створки. Натур. велич. Стр. . . . . 365.

Фиг. 6. *Taras (Felaniella) usta* (Gould). Плезитип № 88/3104а. К северу от Охи на правом берегу реки, впадающей в залив Науту (восточный Сахалин). Эхабинская свита. Репродукция изображения «*Diplodonta usta*» из монографии И. Хоменко «Матер. по страт. трет. пластов в. Сахал.», табл. IV, фиг. 1. Ядро с частично сохранившимся внутренним слоем раковины; вид слева. Натур. велич.

Фиг. 7. *Taras (Felaniella) cf. usta* (Gould). Образец № S/75. Р. Тигиль (западное побережье Камчатки). Верхний отдел кавранской свиты. Двустворчатое ядро; вид справа. Передний край слегка обломан. Увелич.  $\times 13/10$ .

Фиг. 8. *Taras (Felaniella) parilis* (Conrad). «Columbia River, near Astoria. Miocene». Репродукция изображения «*Loripes parilis*» из монографии Т. Конрада «Foss. Shells fr. Tert. Dep. of Columbia», фиг. 7. Наружный вид правой створки. Натур. велич. Стр. . . . . 367.

Фиг. 9. *Taras (Felaniella) parilis* (Conrad). Плезитип № S/77. Западное побережье Камчатки; Тигильский район. Верхний отдел кавранской свиты. Двустворчатый экземпляр; наружный вид правой створки. Увелич.  $\times 6/5$ .

Фиг. 9а. *Taras (Felaniella) parilis* (Conrad). Тот же экземпляр, что и на фиг. 9; вид сверху. Увелич.  $\times 6/5$ .

Фиг. 10. *Taras (Felaniella) parilis* (Conrad). Плезитип № S/76. То же местонахождение, что и фиг. 9. Замок левой створки. Увелич.  $\times 3/1$ .

Фиг. 11. *Corbicula gabbiana* Henderson. Плезитип № 215/C 804. Правый берег р. Пухль, в месте выхода ее из хребта (западное побережье Камчатки). Нижний отдел ваямпольской свиты. Наружный вид несколько обломанной сзади левой створки. Натур. велич. Стр. . . . . 372.

Фиг. 12. *Corbicula gabbiana* Henderson. Плезитип № 215/C 810. То же местонахождение, что и фиг. 11. Наружный вид правой створки. Задне-нижний конец обломан; видно ядро. Натур. велич.

Фиг. 13. *Corbicula gabbiana* Henderson. Плезитип № 215/C 821. То же местонахождение, что и фиг. 11. Наружный вид правой створки. Натур. велич.

Фиг. 14. *Corbicula gabbiana* Henderson. Плезитип № 215/C 828. То же местонахождение, что и фиг. 11. Наружный вид несколько обломанной правой створки. Натур. велич.

Фиг. 15. *Corbicula gabbiana* Henderson. Неотип. «Horizon, Miocene, locality, Kirker's Pass». Репродукция изображения «*Corbicula ? gabbiana*» из монографии R. Stewart's «Gabb's Type Lamellibr.», табл. 14, фиг. 2. Наружный вид правой створки. Натур. велич.

Musashino». Reproduction of M. Yokoyama's illustration of «*Diplodonta usta*» in «Fossils fr. Miura Penins.», pl. IX, fig. 14. External view of right valve. Natural size. Page . . . . . 151.

Fig. 6. *Taras (Felaniella) usta* (Gould). Plesiotype № 38/3104a. North of right bank of Okha river falling into Gulf of Nautu (eastern Sakhalin). Ekhabi series. Reproduction of I. Khomenko's illustration of «*Diplodonta usta*» in «Stratigraphy of the Tert. Beds of East. Sakhalin», pl. IV, fig. 1. Cast with well preserved inner layer of shell. View of left side. Natural size.

Fig. 7. *Taras (Felaniella) cf. usta* (Gould). Specimen № S/75. Tighil river (western coast of Kamchatka). Upper horizon of Kavrana series. Double-valve cast; view of right side. Anterior side slightly broken. Enlarged  $\times 13/10$ .

Fig. 8. *Taras (Felaniella) parilis* (Conrad). «Columbia river, near Astoria. Miocene». Reproduction of T. Conrad's illustration of «*Loripes parilis*» in «Foss. Shells fr. Tert. Dep. of Columbia», fig. 7. External view of right valve. Natural size. Page . . . . . 151.

Fig. 9. *Taras (Felaniella) parilis* (Conrad). Plesiotype № S/77. Western coast of Kamchatka, Tighil region. Upper horizon of Kavrana series. Double-valve specimen; external view of right valve. Enlarged  $\times 6/5$ .

Fig. 9a. *Taras (Felaniella) parilis* (Conrad). Same specimen, as fig. 9; dorsal view. Enlarged  $\times 6/5$ .

Fig. 10. *Taras (Felaniella) parilis* (Conrad). Plesiotype № S/76. Same locality, as fig. 9. Hinge of left valve. Enlarged  $\times 3/1$ .

Fig. 11. *Corbicula gabbiana* Henderson. Plesiotype № 215/C 804. Right bank of Pukhl river, at the place of its flowing out from the ridge (western coast of Kamchatka). Lower horizon of Vayempolka series. External view of left valve somewhat broken posteriorly. Natural size. Page 152.

Fig. 12. *Corbicula gabbiana* Henderson. Plesiotype № 215/C 810. Same locality, as fig. 11. External view of right valve. Postero-ventral edge broken off; cast is visible. Natural size.

Fig. 13. *Corbicula gabbiana* Henderson. Plesiotype № 215/C 821. Same locality, as fig. 11. External view of right valve. Natural size.

Fig. 14. *Corbicula gabbiana* Henderson. Plesiotype № 215/C 828. Same locality, as fig. 11. External view of right valve somewhat broken. Natural size.

Fig. 15. *Corbicula gabbiana* Henderson. Neotype. «Horizon Miocene, locality: Kirker's Pass». Reproduction of R. Stewart's illustration of «*Corbicula ? gabbiana*» in «Gabb's Type Lamellibr.», p. 14, fig. 2. External view of right valve. Natural size.



## Таблица LXXIV

Фиг. 1. *Corbicula* (?) *kovatschensis* S l o d k e w i t s c h. Голотип № 213/C 794. Ковачинская бухта, 1.2 км к СВ от устья р. Моросhechnaya (западное побережье Камчатки). Тигильская свита. Наружный вид левой створки. Натур. велич. Стр. 375.

Фиг. 2. *Corbicula fonsata* (S l o d k e w i t s c h). Паратип № 212/C 791. Правый берег ключа Перевального, в 0.9 км от устья (западное побережье Камчатки). Тигильская свита. Наружный вид обломанной левой створки. Натур. велич. Стр. . . . . 374.

Фиг. 3. *Corbicula fonsata* (S l o d k e w i t s c h). Паратип № 212/C 773. То же местонахождение, что и фиг. 2. Двустворчатый экземпляр; наружный вид несколько потертой и обломанной левой створки. Натур. велич.

Фиг. 3а. *Corbicula fonsata* (S l o d k e w i t s c h). Тот же экземпляр, что и на фиг. 3; вид сверху. Натур. велич.

Фиг. 4. *Corbicula fonsata* (S l o d k e w i t s c h). Паратип № 212/C 795. То же местонахождение, что и фиг. 2. Наружный вид несколько обломанной правой створки. Натур. велич.

Фиг. 5. *Corbicula fonsata* (S l o d k e w i t s c h). Голотип № 212/C 785. То же местонахождение, что и фиг. 2. Двустворчатый экземпляр. Наружный вид правой створки; примакущенная часть несколько обломана. Натур. велич.

Фиг. 5а. *Corbicula fonsata* (S l o d k e w i t s c h). Тот же экземпляр, что и на фиг. 5; вид сверху. Натур. велич.

Фиг. 6. *Corbicula fonsata* (S l o d k e w i t s c h). Паратип № 212/C 778. То же местонахождение, что и фиг. 2. Наружный вид несколько потертой левой створки. Натур. велич.

Фиг. 7. *Corbicula fonsata* (S l o d k e w i t s c h). Паратип № 212/C 786. То же местонахождение, что и фиг. 2. Наружный вид несколько обломанной левой створки. Натур. велич.

Фиг. 8. *Corbicula fonsata* (S l o d k e w i t s c h). Паратип № 212/C 787. То же местонахождение, что и фиг. 2. Наружный вид несколько потертой правой створки. Натур. велич.

Фиг. 9. *Corbicula fonsata* (S l o d k e w i t s c h). Паратип № 212/C 788. То же местонахождение, что и фиг. 2. Наружный вид несколько обломанной и потертой левой створки. Натур. велич.

Фиг. 10. *Laevicardium* (?) *tigilense* S l o d k e w i t s c h. Голотип № 149/C 973. Берег моря, в 0.45 км западу от устья р. Половинной (западное побережье Камчатки). Нижний отдел кавранской свиты. Двустворчатое ядро; вид слева. Увелич.  $\times 2/1$ . Стр. . . . . 380.

Фиг. 10а. *Laevicardium* (?) *tigilense* S l o d k e w i t s c h. Тот же экземпляр, что и на фиг. 10; вид сверху. Увелич.  $\times 2/1$ .

## Plate LXXIV

Fig. 1. *Corbicula* (?) *kovatschensis* S l o d k e w i t s c h. Holotype № 213/C 794. Kovachina Bay, 1.2 km NE from the mouth of Moroshechnaya river (western coast of Kamchatka). Tighil series. External view of left valve. Natural size. Page . . . 153.

Fig. 2. *Corbicula fonsata* (S l o d k e w i t s c h). Paratype № 212/C 791. Right bank of Perevalny spring, 0.9 km from the mouth (western coast of Kamchatka). Tighil series. External view of broken left valve. Natural size. Page . . . 152.

Fig. 3. *Corbicula fonsata* (S l o d k e w i t s c h). Paratype № 812/C 773. Same locality, as fig. 2. Double-valve specimen; external view of left valve somewhat worn and broken. Natural size.

Fig. 3a. *Corbicula fonsata* (S l o d k e w i t s c h). Same specimen, as fig. 3; dorsal view. Natural size.

Fig. 4. *Corbicula fonsata* (S l o d k e w i t s c h). Paratype № 212/C 795. Same locality, as fig. 2. External view of right valve somewhat broken. Natural size.

Fig. 5a. *Corbicula fonsata* (S l o d k e w i t s c h). Holotype № 212/C 785. Same locality, as fig. 2. Double-valve specimen. External view of right valve; umbonal region somewhat broken. Natural size.

Fig. 5. *Corbicula fonsata* (S l o d k e w i t s c h). Same specimen, as fig. 5; dorsal view. Natural size.

Fig. 6. *Corbicula fonsata* (S l o d k e w i t s c h). Paratype № 212/C 778. Same locality, as fig. 2. External view of left valve somewhat worn. Natural size.

Fig. 7. *Corbicula fonsata* (S l o d k e w i t s c h). Paratype № 212/C 786. Same locality, as fig. 2. External view of left valve somewhat broken. Natural size.

Fig. 8. *Corbicula fonsata* (S l o d k e w i t s c h). Paratype № 212/C 787. Same locality, as fig. 2. External view of right valve somewhat rubbed. Natural size.

Fig. 9. *Corbicula fonsata* (S l o d k e w i t s c h). Paratype № 212/C 788. Same locality, as fig. 2. External view of left valve somewhat worn and broken. Natural size.

Fig. 10. *Laevicardium* (?) *tigilense* S l o d k e w i t s c h. Holotype № 149/C 973. Sea coast, 0.45 km west from the mouth of Polovinnaya river (western coast of Kamchatka). Lower horizon of Kavrana series. Double-valve cast; view of left side. Enlarged  $\times 2/1$ . Page . . . . . 153.

Fig. 10a. *Laevicardium* (?) *tigilense* S l o d k e w i t s c h. Same specimen, as fig. 10. Dorsal view. Enlarged  $\times 2/1$ .

Фиг. 11. *Laevicardium (Cerastoderma) etheringtoni* Kogan (in litt.). Голотип № 179/5294. Между устьями рек Ноями и М. Сертунай (западный Сахалин). Рыхлая свита. Репродукция из монографии Н. Когана «Pelecypoda из рыхлой свиты», табл. IV, фиг. 8. Ядро; вид слева. Natur. велич. Стр. . . . . 388.

Фиг. 11a. *Laevicardium (Cerastoderma) etheringtoni* Kogan (in litt.). Тот же экземпляр, что и на фиг. 11; вид сверху. Natur. велич.

Фиг. 12. *Laevicardium (Cerastoderma) etheringtoni* Kogan (in litt.). Образец № 31942. «Astoria Miocene. Locality 9023». Репродукция изображения *Cardium (Cerastoderma) cf. corbis* из монографии Т. Этерингтона «Strat. of Astoria Miocene», табл. 5, фиг. 11. Наружный вид потертой левой створки. Уменьш.  $\times 4/5$ .

### Таблица LXXV

Фиг. 1. *Laevicardium (Trachycardium ?) kinsimarae* (Makiyama). Плезитотип № 78/5044. Между мысом Марии и Мачигарским заливом, полуостров Шмидта (северный Сахалин). Нижняя свита мачигарского разреза. Репродукция изображения «*Cardium schencki*» из монографии И. Хоменко «Стратиграфия трет. отл. пол. Шмидта», табл. VIII, фиг. 3. Наружный вид потертой правой створки. Natur. велич. Стр. . . . . 281.

Фиг. 2. *Laevicardium (Trachycardium ?) kinsimarae* (Makiyama). Плезитотип № 12/5305. То же местонахождение, что и фиг. 1. Наружный вид потертой и обломанной зады правой створки. Natur. велич.

Фиг. 3. *Laevicardium (Trachycardium ?) kinsimarae* (Makiyama). Плезитотип № 79/5044. То же местонахождение, что и фиг. 1. Репродукция изображения «*Cardium schencki*» из монографии И. Хоменко «Стратиграфия трет. отл. пол. Шмидта», табл. IX, фиг. 6. Наружный вид потертой левой створки. Natur. велич.

Фиг. 4. *Laevicardium (Cerastoderma) tokunagai* (Yokoyama). Лектотип. «Otake, Shimosa. Upper Musashino». Репродукция изображения «*Cardium tokunagai*» из монографии М. Йокояма «Foss. fr. Kazusa and Shimosa», табл. XII, фиг. 5. Наружный вид потертой левой створки. Natur. велич. Стр. . . . . 396.

Фиг. 5. *Laevicardium (Cerastoderma) tokunagai* (Yokoyama). Плезитотип № 26/3456. Река В. Гаромай (восточный Сахалин). Наднутовская свита. Репродукция изображения «*Cardium braunsi*» из монографии И. Хоменко «Матер. по страт. трет. пл. в Сахал.», табл. X, фиг. 17. Ядро; вид слева. Natur. велич.

Фиг. 6. *Laevicardium (Cerastoderma) tokunagai* (Yokoyama). Плезитотип № 27/3456. Oji, Япония. Репродукция изображения «*Cardium braunsi*» из моно-

Фиг. 11. *Laevicardium (Cerastoderma) etheringtoni* Kogan (in litt.). Holotype № 179/5294. Between the mouths of Noyami and L. Sertunai rivers (western Sakhalin). Rykhlaya series. Reproduction of N. Kogan's illustration in «Pelecypoda of the Rykhlaya series», pl. IV, fig. 8. Cast; view of left side. Natural size. Page 154.

Фиг. 11a. *Laevicardium (Cerastoderma) etheringtoni* Kogan (in litt.). Same specimen, as fig. 11; dorsal view. Natural size.

Фиг. 12. *Laevicardium (Cerastoderma) etheringtoni* Kogan (in litt.). Specimen № 31942. «Astoria Miocene. Locality 9023». Reproduction of T. Etherington's illustration of «*Cardium (Cerastoderma) cf. corbis*» in «Stratigraphy of Astoria Miocene», pl. 5, fig. 11. External view of worn left valve. Reduced  $\times 4/5$ .

### Plate LXXV

Фиг. 1. *Laevicardium (Trachycardium ?) kinsimarae* (Makiyama). Plesiotype № 78/5044. Between Cape Maria and Gulf of Machigar, Schmidt Peninsula (northern Sakhalin). Lower series of Machigar section. Reproduction of I. Khomenko's illustration of «*Cardium schencki*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1935, pl. VIII, fig. 3. External view of rubbed right valve. Natural size. Page . . . . . 154.

Фиг. 2. *Laevicardium (Trachycardium ?) kinsimarae* (Makiyama). Plesiotype № 12/5305. Same locality, as fig. 1. External view of right valve, worn and broken posteriorly. Natural size.

Фиг. 3. *Laevicardium (Trachycardium ?) kinsimarae* (Makiyama). Plesiotype № 79/5044. Same locality, as fig. 1. Reproduction of I. Khomenko's illustration of «*Cardium schencki*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1935, pl. IX, fig. 6. External view of worn left valve. Natural size.

Фиг. 4. *Laevicardium (Cerastoderma) tokunagai* (Yokoyama). Lectotype. «Otake, Shimosa. Upper Musashino». Reproduction of M. Yokoyama's illustration of «*Cardium tokunagai*» in «Foss. fr. Kazusa and Shimosa», pl. XII, fig. 5. External view of rubbed left valve. Natural size. Page . . . . . 156.

Фиг. 5. *Laevicardium (Cerastoderma) tokunagai* (Yokoyama). Plesiotype № 26/3456. Gr. Garomai river (eastern Sakhalin). Supra-Nutovo series. Reproduction of I. Khomenko's illustration of «*Cardium braunsi*» in «Stratigraphy of the Tert. Beds of East. Sakhalin», pl. X, fig. 17. Cast; view of left side. Natural size.

Фиг. 6. *Laevicardium (Cerastoderma) tokunagai* (Yokoyama). Plesiotype № 27/3456. Oji, Japan. Reproduction of I. Khomenko's illustration of «Car-

графин И. Хоменко «Матер. по страт. трет. пл. в. Сахал., табл. X, фиг. 18. Наружный вид потертой в примакушечной части левой створки. Натур. велич.

Фиг. 7. *Laevicardium (Cerastoderma) rhomboideum* (Хоменко). Голотип № 111/5043. К югу от устья р. Пиль, полуостров Шмидта (северный Сахалин). Каскадная свита. Репродукция изображения «*Cardium coosense rhomboideum*» из монографии И. Хоменко «Стратиграфия трет. сл. пол. Шмидта», табл. XII, фиг. 5. Ядро с остатками внутреннего слоя раковины. Вид слева. Натур. велич. Стр. . . . . 393.

Фиг. 7а. *Laevicardium (Cerastoderma) rhomboideum* (Хоменко). Тот же экземпляр, что и на фиг. 7. Отпечаток части наружной поверхности. Натур. велич.

### Таблица LXXVI

Фиг. 1. *Laevicardium (Cerastoderma) corbis* (Мартун). «Hab. Sitka, North-West Coast of America». Репродукция изображения «*Cardium Nuttallii*» из монографии Л. Реев «Conchologia Iconica», vol. XXII, *Cardium*, табл. XIII, фиг. 66. Наружный вид левой створки. Натур. велич. Стр. . . . . 383.

Фиг. 2. *Laevicardium (Cerastoderma) corbis* (Мартун). Плезютип № S/118. О-в Сивучий. Плейстоцен (?). Наружный вид левой створки. Натур. велич.

Фиг. 3. *Laevicardium (Cerastoderma) corbis* (Мартун). Плезютип № S/120. То же местонахождение, что и фиг. 1. Левая створка; вид сверху. Натур. велич.

### Таблица LXXVII

Фиг. 1. *Laevicardium (Cerastoderma) corbis* (Мартун). Плезютип № S/120. О-в Сивучий. Плейстоцен (?). Наружный вид левой створки. Тот же экземпляр, что и на табл. LXXVI, фиг. 3. Натур. велич. Стр. . . . . 383.

Фиг. 2. *Laevicardium (Cerastoderma) corbis* (Мартун). Плезютип № S/121. То же местонахождение, что и фиг. 1. Наружный вид левой створки. Натур. велич.

### Таблица LXXVIII

Фиг. 1. *Laevicardium (Cerastoderma) corbis* (Мартун). Плезютип № S/120. О-в Сивучий. Плейстоцен (?). Внутренний вид левой створки. Тот же экземпляр, что и на табл. LXXVII, фиг. 1. Натур. велич. Стр. . . . . 383.

Фиг. 2. *Laevicardium (Cerastoderma) shinjiense* (Юкоуама). Лектотип. «Fujina, prov. Izumo. Lower Pliocene». Репродукция изображения «*Cardium shinjiense*» из монографии М. Юкоуама «Fossil Moll. of Izumo», табл. II,

*dium braunsi*» in «Stratigraphy of the Tert. Beds of East. Sakhalin», pl. X, fig. 18. External view of left valve, worn at umbonal region. Natural size.

Фиг. 7. *Laevicardium (Cerastoderma) rhomboideum* (Хоменко). Holotype № 111/5043. North from the mouth of Pils river, Schmidt Peninsula (northern Sakhalin). Kaskadnaya series. Reproduction of I. Khomenko's illustration of «*Cardium coosense rhomboideum*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1934, pl. XII, fig. 5. Cast with remains of inner layer of shell. View of left side. Natural size. Page . . . . . 156.

Фиг. 7а. *Laevicardium (Cerastoderma) rhomboideum* (Хоменко). Same specimen, as fig. 7. Impression of a portion of outer surface. Natural size.

### Plate LXXVI

Fig. 1. *Laevicardium (Cerastoderma) corbis* (Martyn). «Hab. Sitka, North-West Coast of America». Reproduction of L. Reeve's illustration of «*Cardium Nuttallii*» in «Conchologia Iconica», vol. XXII, *Cardium*, pl. XIII, fig. 66. External view of left valve. Natural size. Page 154.

Fig. 2. *Laevicardium (Cerastoderma) corbis* (Martyn). Plesiotype № S/118. Sivuchi Island. Pleistocene (?). External view of left valve. Natural size.

Fig. 3. *Laevicardium (Cerastoderma) corbis* (Martyn). Plesiotype № S/120. Same locality, as fig. 1. Left valve; dorsal view. Natural size.

### Plate LXXVII

Fig. 1. *Laevicardium (Cerastoderma) corbis* (Martyn). Plesiotype № S/120. Sivuchi Island. Pleistocene (?). External view of left valve. Same specimen, as pl. LXXVI, fig. 3. Natural size. Page 154.

Fig. 2. *Laevicardium (Cerastoderma) corbis* (Martyn). Plesiotype № S/121. Same locality, as fig. 1. External view of left valve. Natural size.

### Plate LXXVIII

Fig. 1. *Laevicardium (Cerastoderma) corbis* (Martyn). Plesiotype № S/120. Sivuchi Island. Pleistocene (?). Internal view of left valve. Same specimen, as pl. LXXVII, fig. 1. Natural size. Page 154.

Fig. 2. *Laevicardium (Cerastoderma) shinjiense* (Yokoyama). Lectotype. Fujina, prov. Iumo. Lower Pliocene. «Reproduction of M. Yokoyama's illustration of «*Cardium shinjiense*» in «Fossil Moll. of Izumo», pl. II, fig. 6a. External

фиг. 6а. Наружный вид несколько потертой правой створки. Натур. велич. Стр. 386.

Фиг. 2а. *Laevicardium (Cerastoderma) shinjiense* (Yokoyama). Тот же экземпляр, что и на фиг. 2; вид сверху. Натур. велич.

Фиг. 3. *Laevicardium (Cerastoderma) shinjiense* (Yokoyama). Плезнотип № 37/С 965. Правый берег р. Амаиной, в ее верховьях (западное побережье Камчатки). Нижний отдел кавранской свиты. Обломанное ядро левой створки с сохранившейся местами раковиной. Натур. велич.

Фиг. 4. *Laevicardium (Cerastoderma) shinjiense* (Yokoyama). Плезнотип № 223/С 891. Р. Кол (западное побережье Камчатки). Ваямпольская свита. Наружный вид левой створки с потертой поверхностью. Натур. велич.

Фиг. 4а. *Laevicardium (Cerastoderma) shinjiense* (Yokoyama). Плезнотип № 223/С 891. Замочный аппарат того же экземпляра, что и на фиг. 4. Натур. велич.

Фиг. 5. *Laevicardium (Cerastoderma) shinjiense* (Yokoyama). Плезнотип № 223/С 899. То же местонахождение, что и фиг. 4. Наружный вид потертой правой створки. Макушка частично обломана. Увелич.  $\times 2/1$ .

Фиг. 6. *Laevicardium (Cerastoderma) shinjiense* (Yokoyama). Плезнотип № 223/С 890. То же местонахождение, что и фиг. 4. Двустворчатое ядро; вид слева. Натур. велич.

Фиг. 6а. *Laevicardium (Cerastoderma) shinjiense* (Yokoyama). Тот же экземпляр, что и на фиг. 6; вид сверху. Натур. велич.

Фиг. 7. *Laevicardium (Cerastoderma) shinjiense* (Yokoyama). Плезнотип № 80/5044. Между мысом Марии и Мачигарским заливом, полуостров Шмидта (северный Сахалин). Венгерийская свита. Репродукция изображения «*Cardium decoratum*» из монографии И. Хоменко «Стратиграфия трет. отл. пол. Шмидта», табл. VIII, фиг. 5. Ядро левой створки с сохранившейся местами раковиной. Натур. велич.

#### Таблица LXXIX

Фиг. 1. *Laevicardium (Cerastoderma) californiense* (Deshayes). Голотип. «Côtes de la California». Репродукция изображения «*Cardium Californiense*» из монографии G. Deshayes in M. Guérin «Magas. de Zoologie», табл. 47. Наружный вид правой створки. Натур. велич. Стр. . . . 389.

Фиг. 2. *Laevicardium (Cerastoderma) californiense* (Deshayes). Плезнотип № 127/5294. Между устьями рек Ноями и М. Сергунай (западный Сахалин). Рыхлая свита. Репродукция из монографии Н Когана «Pelecypoda из рыхлой свиты», табл. VI, фиг. 3. Ядро левой створки. Натур. велич.

view of right valve somewhat worn. Natural size. Page. . . . 154.

Фиг. 2а. *Laevicardium (Cerastoderma) shinjiense* (Yokoyama). Same specimen, as fig. 2; dorsal view. Natural size.

Фиг. 3. *Laevicardium (Cerastoderma) shinjiense* (Yokoyama). Plesiotype № 37/С 965. Right bank of Amanina river, upper course (western coast of Kamchatka). Lower horizon of Kavrana series. Cast of left valve somewhat broken, but retaining the shell in part. Natural size.

Фиг. 4. *Laevicardium (Cerastoderma) shinjiense* (Yokoyama). Plesiotype № 223/С 891. Kol river (western coast of Kamchatka). Vayempolka series. External view of left valve with rubbed surface. Natural size.

Фиг. 4а. *Laevicardium (Cerastoderma) shinjiense* (Yokoyama). Plesiotype № 223/С 891. Hinge apparatus of the same specimen, as fig. 4. Natural size.

Фиг. 5. *Laevicardium (Cerastoderma) shinjiense* (Yokoyama). Plesiotype № 223/С 899. Same locality, as fig. 4. External view of worn right valve. Beaks partly broken off. Enlarged  $\times 2/1$ .

Фиг. 6. *Laevicardium (Cerastoderma) shinjiense* (Yokoyama). Plesiotype № 223/С 890. Same locality, as fig. 4. Double-valve cast; view of left side. Natural size.

Фиг. 6а. *Laevicardium (Cerastoderma) shinjiense* (Yokoyama). Same specimen, as fig. 6; dorsal view. Natural size.

Фиг. 7. *Laevicardium (Cerastoderma) shinjiense* (Yokoyama). Plesiotype № 80/5044. Between Cape Maria and Gulf of Machigar, Schmidt Peninsula (northern Sakhalin). Vengeri series. Reproduction of I. Khomenko's illustration of «*Cardium decoratum*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1935, pl. VIII, fig. 5. Cast of left valve with portions of shell preserved. Natural size.

#### Plate LXXIX

Фиг. 1. *Laevicardium (Cerastoderma) californiense* (Deshayes). Holotype. «Côtes de la California». Reproduction of G. Deshayes' illustration of «*Cardium Californiense*» in M. Guérin «Magas. de Zoologie», pl. 47. External view of right valve. Natural size. Page 155.

Фиг. 2. *Laevicardium (Cerastoderma) californiense* (Deshayes). Plesiotype № 127/5294. Between the mouths of Noyami and L. Sertunai rivers (western Sakhalin). Rykhlaya series. Reproduction of N. Kogan's illustration in «Pelecypoda of the Rykhlaya series», pl. VI, fig. 3. Cast of left valve. Natural size.

Фиг. 3. *Laevicardium (Cerastoderma) californiense* (Deshayes). Плезотиоп № 105а/3104а. Берег Охотского моря, вблизи Лярво (восточный Сахалин). Репродукция изображения «*Cardium californiense*» из монографии И. Хоменко «Матер. по страт. трет. пл. в. Сахал.», табл. IV, фиг. 3. Наружный вид левой створки. Natur. велич.

Фиг. 3а. *Laevicardium (Cerastoderma) californiense* (Deshayes). Тот же экземпляр, что и на фиг. 3. Внутренний вид левой створки. Natur. велич.

Фиг. 4. *Laevicardium (Cerastoderma) californiense* (Deshayes). Плезотиоп № 128/5294. Между устьями рек Ноями и Мал. Сертунай (западный Сахалин). Рыхлая свита. Репродукция из монографии Н. Когана «Pelecypoda из рыхлой свиты», табл. VI, фиг. 4. Ядро левой створки. Natur. велич.

Фиг. 5. *Laevicardium (Cerastoderma) californiense* (Deshayes). Плезотиоп № 103/3104а. Правый берег реки Б. Гаромай (восточный Сахалин). Наднутовская свита. Репродукция изображения «*Cardium californiense*» из монографии И. Хоменко «Матер. по страт. трет. пл. в. Сахал.», табл. IV, фиг. 6. Наружный вид сильно потертой правой створки. Natur. велич.

#### Таблица LXXX

Фиг. 1. *Laevicardium (Cerastoderma) fastosum* (Yokoyama). Голотип. «Nagaya. Upper Musashino». Репродукция изображения «*Cardium fastosum*» из монографии М. Йокояма «Foss. Moll. from Kaga», табл. XLVIII, фиг. 5. Наружный вид потертой и несколько обломанной левой створки. Natur. велич. Стр. 392.

Фиг. 2. *Laevicardium (Cerastoderma) fastosum* (Yokoyama). Плезотиоп № 109/5043. К северу от устья р. Венгери, полуостров Шмидта (северный Сахалин). Венгерийская свита. Репродукция изображения «*Cardium californiense*» из монографии И. Хоменко «Стратиграфия трет. эл. пол. Шмидта», табл. XII, фиг. 1. Сильно потертое ядро левой створки. Natur. велич.

Фиг. 3. *Acanthocardia reedi* (Loel & Corey). Голотип № 31772. «La Panza Mountains, San Luis Obispo County. Vaqueros Formation». Репродукция изображения «*Cardium (Acanthocardia) reedi*» из монографии W. Loel & W. Corey «Vaqueros Formation», табл. 37, фиг. 3. Наружный вид правой створки. Уменьш.  $\times 5/7$ . Стр. 398.

Фиг. 4. *Acanthocardia reedi* (Loel & Corey). Плезотиоп № 158/C 400. В 1 км к северу от устья р. Котлах-канч (западное побережье Камчатка). Тигильская свита. Наружный вид несколько поломанной правой створки. Увелич.  $\times 2/1$ .

Фиг. 5. *Acanthocardia reedi* (Loel & Corey). Плезотиоп № 129/C 261. Левый

Фиг. 3. *Laevicardium (Cerastoderma) californiense* (Deshayes). Plesiotype № 105a/3104a. Coast of Okhotsk sea, near Lyarvo (eastern Sakhalin). Reproduction of I. Khomenko's illustration of «*Cardium californiense*» in «Stratigraphy of the Tert. Beds of East. Sakhalin», pl. IV, fig. 3. External view of left valve. Natural size.

Фиг. 3а. *Laevicardium (Cerastoderma) californiense* (Deshayes). Same specimen, as fig. 3. Internal view of left valve. Natural size.

Фиг. 4. *Laevicardium (Cerastoderma) californiense* (Deshayes). Plesiotype № 128/5294. Between the mouths of Noyami and L. Sertunai rivers (western Sakhalin). Rykhlaya series. Reproduction of N. Kogan's illustration in «Pelecypoda of the Rykhlaya series», pl. VI, fig. 4. Cast of left valve. Natural size.

Фиг. 5. *Laevicardium (Cerastoderma) californiense* (Deshayes). Plesiotype № 103/3104a. Right bank of Gr. Garomai river (eastern Sakhalin). Supra-Nutovo series. Reproduction of I. Khomenko's illustration of «*Cardium californiense*» in «Stratigraphy of the Tert. Beds of East. Sakhalin», pl. IV, fig. 6. External view of right valve, badly worn. Natural size.

#### Plate LXXX

Фиг. 1. *Laevicardium (Cerastoderma) fastosum* (Yokoyama). Holotype. «Nagaya. Upper Musashino». Reproduction of M. Yokoyama's illustration of «*Cardium fastosum*» in «Foss. Moll. from Kaga», pl. XLVIII, fig. 5. External view of left valve, rubbed and somewhat broken. Natural size. Page . . . . . 155.

Фиг. 2. *Laevicardium (Cerastoderma) fastosum* (Yokoyama). Plesiotype № 109/5043. North of the mouth of Vengheri river, Schmidt Peninsula (northern Sakhalin). Vengheri series. Reproduction of I. Khomenko's illustration of «*Cardium californiense*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1934, pl. XII, fig. 1. Cast of left valve, badly worn. Natural size.

Фиг. 3. *Acanthocardia reedi* (Loel & Corey). Holotype 31772. «La Panza Mountains, San Luis Obispo County. Vaqueros Formation». Reproduction of W. Loel & W. Corey's illustration of «*Cardium (Acanthocardia) reedi*» in «Vaqueros Formation», pl. 37, fig. 3. External view of right valve. Reduced  $\times 5/7$ . Page . . . . . 156.

Фиг. 4. *Acanthocardia reedi* (Loel & Corey). Plesiotype № 158/C 400. 1 km north of the mouth of Kotlakhkanch river (western coast of Kamchatka). Tighil series. External view of right valve, somewhat broken. Enlarged  $\times 2/1$ .

Фиг. 5. *Acanthocardia reedi* (Loel & Corey). Plesiotype № 129/C 261. Left

берег р. Снато́л, в 1 км выше первого левобережного притока (западное побережье Камчатки). Тигильская свита. Наружный вид правой створки. Задне-нижний конец обломан; видно ядро. Увелич.  $\times 2/1$ .

Фиг. 6. *Acanthocardia reedi* (Loel & Corey). Плезิโอтип № 129/C 255. То же местонахождение, что и фиг. 5. Двустворчатое ядро с частично сохранившейся раковиной; наружный вид правой створки. Увелич.  $\times 2/1$ .

Фиг. 6а. *Acanthocardia reedi* (Loel & Corey). Тот же экземпляр, что и на фиг. 6; вид сверху. Увелич.  $\times 2/1$ .

Фиг. 7. *Acanthocardia reedi* (Loel & Corey). Плезิโอтип № 129/C 256. То же местонахождение, что и фиг. 5. Ядро левой створки с частично сохранившейся раковиной. Увелич.  $\times 2/1$ .

Фиг. 8. *Acanthocardia reedi* (Loel & Corey). Плезิโอтип № 158/C 401. В 1 км к северу от устья р. Котлах-канч (западное побережье Камчатки). Тигильская свита. Наружный вид правой створки с частично потертой поверхностью. Увелич.  $\times 2/1$ .

Фиг. 9. *Acanthocardia reedi* (Loel & Corey). Плезิโอтип № 158/C 402. То же местонахождение, что и фиг. 8. Замок левой створки. Увелич.  $\times 7/2$ .

Фиг. 10. *Acanthocardia reedi* (Loel & Corey). Плезิโอтип № 129/C 420. Левый берег р. Снато́л, в 1 км выше первого левобережного притока (западное побережье Камчатки). Тигильская свита. Наружный вид несколько обломанной и потертой левой створки. Увелич.  $\times 2/1$ .

Фиг. 11. *Acanthocardia reedi* (Loel & Corey). Плезิโอтип № 158/C 401. В 1 км к северу от устья р. Котлах-канч (западное побережье Камчатки). Тигильская свита. Ядро правой створки с частично сохранившейся раковиной. Увелич.  $\times 2/1$ .

Фиг. 12. *Acanthocardia reedi* (Loel & Corey). Плезิโอтип № 158/C 402<sup>1</sup>. То же местонахождение, что и фиг. 11. Наружный вид левой створки. Увелич.  $\times 2/1$ .

#### Таблица LXXXI

Фиг. 1. *Laevicardium* (*Cerastoderma*) *meekianum* (G a b b). Голотип. «Horizon Pliocene; locality Eagle Prairie, Humbolt County». Репродукция изображения «*Cardium meekianum* из монографии W. G a b b «Paleontol. of California», табл. 7, фиг. 46. Наружный вид левой створки. Natur. velich. Стр. 394.

Фиг. 2. *Laevicardium* (*Cerastoderma*) *meekianum* (G a b b). Плезิโอтип № 52/C 241. В 2 км к северу от устья р. Пятибратской (западное побережье Камчатки). Верхний (?) отдел ваямпольской свиты. Ядро левой створки. Увелич.  $\times 4/3$ .

Фиг. 3. *Laevicardium* (*Cerastoderma*) *meekianum* (G a b b). Плезิโอтип № 52/C 243. То же местонахождение, что и фиг. 2. Ядро правой створки; задне-спинной край обломан. Natur. velich.

bank of Snatol river, 1 km above first left-shore tributary (western coast of Kamchatka). Tighil series. External view of right valve. Postero-ventral end broken off; cast is visible. Enlarged  $\times 2/1$ .

Фиг. 6. *Acanthocardia reedi* (Loel & Corey). Plesiotype № 129/C 255. Same locality, as fig. 5. Double-valve cast with portion of shell preserved; external view of right valve. Enlarged  $\times 2/1$ .

Фиг. 6а. *Acanthocardia reedi* (Loel & Corey). Same specimen, as fig. 6; dorsal view. Enlarged  $\times 2/1$ .

Фиг. 7. *Acanthocardia reedi* (Loel & Corey). Plesiotype № 129/C 256. Same locality, as fig. 5. Cast of left valve with portion of shell preserved. Enlarged  $\times 2/1$ .

Фиг. 8. *Acanthocardia reedi* (Loel & Corey). Plesiotype № 158/C 401. 1 km north of the mouth of Kotlakhkanch river (western coast of Kamchatka). Tighil series. External view of right valve with somewhat rubbed surface. Enlarged  $\times 2/1$ .

Фиг. 9. *Acanthocardia reedi* (Loel & Corey). Plesiotype № 158/C 402. Same locality, as fig. 8. Hinge of left valve. Enlarged  $\times 7/2$ .

Фиг. 10. *Acanthocardia reedi* (Loel & Corey). Plesiotype № 129/C 420. Left bank of Snatol river, 1 km above first left-shore tributary (western coast of Kamchatka). Tighil series. External view of left valve somewhat worn and broken. Enlarged  $\times 2/1$ .

Фиг. 11. *Acanthocardia reedi* (Loel & Corey). Plesiotype № 158/C 401. 1 km north of the mouth of Kotlakhkanch river (western coast of Kamchatka). Tighil series. Cast of right valve with portion of shell preserved.

Фиг. 12. *Acanthocardia reedi* (Loel & Corey). Plesiotype № 158/C 402<sup>1</sup>. Same locality, as fig. 11. External view of left valve. Enlarged  $\times 2/1$ .

#### Plate LXXXI

Фиг. 1. *Laevicardium* (*Cerastoderma*) *meekianum* (G a b b). Holotype. «Horizon Pliocene; locality Eagle Prairie, Humbolt County». Reproduction of W. G a b b's illustration of «*Cardium meekianum*» in «Paleontol. of California», pl. 7, fig. 46. External view of left valve. Natural size. Page 156.

Фиг. 2. *Laevicardium* (*Cerastoderma*) *meekianum* (G a b b). Plesiotype № 52/C 241. 2 km north of the mouth of Pyatibratskaya river (western coast of Kamchatka). Upper (?) horizon of Vayempolka series. Cast of left valve. Enlarged  $\times 4/3$ .

Фиг. 3. *Laevicardium* (*Cerastoderma*) *meekianum* (G a b b). Plesiotype № 52/C 243. Same locality, as fig. 2. Cast of right valve. Postero-dorsal edge broken off. Natural size.

Фиг. 4. *Laevicardium (Cerastoderma) meekianum* (G a b b). Плезיותרип № 52/С 242. То же местонахождение, что и фиг. 2. Двустворчатое ядро; вид справа. Увелич.  $\times 4/3$ .

Фиг. 4а. *Laevicardium (Cerastoderma) meekianum* (G a b b). Тот же экземпляр, что и на фиг. 4; вид сверху. Увелич.  $\times 4/3$ .

Фиг. 5. *Papyridea harrimani* Dall. Плезיותרип № S/100. Р. Валевопотка-ваям (западное побережье Камчатки). Ваямпольская свита, нижний отдел. Двустворчатое ядро; вид справа. Увелич.  $\times 6/5$ . Стр. . . . . 402.

Фиг. 6. *Papyridea harrimani* Dall. Голотип. Остров Попова, Аляска. Миоцен. Репродукция из монографии W. Dall «Neozoic Invertebr. Foss.», табл. X, фиг. 5. Несколько обломанное ядро левой створки с частично сохранившейся раковиной. Натур. велич.

Фиг. 7. *Papyridea harrimani* Dall. Плезיותרип № 17/С 602. Утхолокский мыс (западное побережье Камчатки). Ваямпольская свита. Ядро левой створки; задний конец обломан. Натур. велич.

Фиг. 8. *Papyridea angulata* Kogan (in litt.). Голотип № 180/5294. Между устьями рек Ноями и Мал. Сергунай (западный Сахалин). Рыхлая свита. Репродукция из монографии Н. Когана «Pelecypoda из рыхлой свиты», табл. VI, фиг. 2. Двустворчатое ядро; вид справа. Натур. велич. Стр. . . . . 404.

Фиг. 8а. *Papyridea angulata* Kogan (in litt.). Тот же экземпляр, что и на фиг. 8; вид сверху. Натур. велич.

#### Таблица LXXXII

Фиг. 1. *Papyridea kipenensis* Słodkewitsch. Паратип № 127/С 252. Правый берег р. Новая Кипина, в 8,5 км от устья (западное побережье Камчатки). Верхний отдел кавранской свиты. Ядро левой створки с обломанным задним концом. Натур. велич. Стр. . . . . 409.

Фиг. 2. *Papyridea kipenensis* Słodkewitsch. Голотип № 175/С 597. Левый берег р. Снатол, в 18 км от устья (западное побережье Камчатки). Верхний отдел кавранской свиты. Обломанная правая створка с потерянной наружной поверхностью. Натур. велич.

Фиг. 3. *Papyridea sertunayana* Kogan (in litt.). Голотип № 185/5294. Между устьями рек Ноями и Мал. Сергунай (западный Сахалин). Рыхлая свита. Репродукция из монографии Н. Когана «Pelecypoda из рыхлой свиты», табл. VII, фиг. 4. Ядро правой створки. Натур. велич. Стр. . . . . 405.

Фиг. 3а. *Papyridea sertunayana* Kogan (in litt.). Тот же экземпляр, что и на фиг. 3; вид сверху. Натур. велич.

Фиг. 4. *Papyridea utcholakensis* Słodkewitsch. Паратип № 17/С 608. Утхолокский мыс (западное побережье Камчатки). Ваямпольская свита. Ядро правой

Фиг. 4. *Laevicardium (Cerastoderma) meekianum* (G a b b). Плезיותרип № 52/С 242. Same locality, as fig. 2. Double-valve cast; view of right side. Enlarged  $\times 4/3$ .

Фиг. 4а. *Laevicardium (Cerastoderma) meekianum* (G a b b). Same specimen, as fig. 4; dorsal view. Enlarged  $\times 4/3$ .

Фиг. 5. *Papyridea harrimani* Dall. Плезיותרип № S/100. Valevopotka-vayem river (western coast of Kamchatka). Lower horizon of Vayempolka series. Double-valve cast; view of right side. Enlarged  $\times 6/5$ . Page . . . . . 456.

Фиг. 6. *Papyridea harrimani* Dall. Holotype. Popov Island, Alaska. Miocene. Reproduction of W. Dall's illustration in «Neozoic Invertebr. Foss.», pl. X, fig. 5. Cast of left valve retaining a part of the shell.

Фиг. 7. *Papyridea harrimani* Dall. Плезיותרип № 17/С 602. Cape Utkholok (western coast of Kamchatka). Vayempolka series. Cast of left valve; posterior end broken off. Natural size.

Фиг. 8. *Papyridea angulata* Kogan (in litt.). Holotype № 180/5294. Between the mouths of Noyami and L. Sertunai rivers (western Sakhalin). Rykhlaya series. Reproduction of N. Kogan's illustration in «Pelecypoda of the Rykhlaya series», pl. VI, fig. 2. Double-valve cast; view of right side. Natural size. Page . . . . . 457.

Фиг. 8а. *Papyridea angulata* Kogan (in litt.). Same specimen, as fig. 8; dorsal view. Natural size.

#### Plate LXXXII

Фиг. 1. *Papyridea kipenensis* Słodkewitsch. Paratype № 127/С 252. Right bank of Novaya Kipina, 8.5 km of the mouth (western coast of Kamchatka). Upper horizon of Kavrana series. Cast of left valve, posterior end broken off. Natural size. Page . . . . . 159.

Фиг. 2. *Papyridea kipenensis* Słodkewitsch. Holotype № 175/С 597. Left bank of Snatol river, 18 km from the mouth (western coast of Kamchatka). Upper horizon of Kavrana series. Broken right valve with worn upper surface. Natural size.

Фиг. 3. *Papyridea sertunayana* Kogan (in litt.). Holotype № 185/5294. Between the mouths of Noyami and L. Sertunai rivers (western Sakhalin). Rykhlaya series. Reproduction of N. Kogan's illustration in «Pelecypoda of the Rykhlaya series», pl. VII, fig. 4. Cast of right valve. Natural size. Page . . . . . 158.

Фиг. 3а. *Papyridea sertunayana* Kogan (in litt.). Same specimen, as fig. 3; dorsal view. Natural size.

Фиг. 4. *Papyridea utcholakensis* Słodkewitsch. Paratype № 17/С 608. Cape Utkholok (western coast of Kamchatka). Vayempolka series. Cast of right valve.

створки; передний конец обломан. Натур. велич. Стр. . . . . 403.

Фиг. 5. *Papyridea utcholakensis* S l o d k e w i t s c h. Паратип № 17/С 607. То же местонахождение, что и фиг. 4. Несколько обломанное ядро левой створки. Натур. велич.

Фиг. 6. *Papyridea utcholakensis* S l o d k e w i t s c h. Голотин № 17/С 606. То же местонахождение, что и фиг. 4. Ядро левой створки. Натур. велич.

#### Таблица LXXXIII

Фиг. 1. *Papyridea kipenensis* S l o d k e w i t s c h. Паратип. Окрестности зал. Корфа (восточное побережье Камчатки). Верхний отдел глинисто-песчаниковой свиты. Репродукция изображения «*Cardium laqueatum*» из монографии И. Хоменко «О возрасте трет. отл. зал. Корфа», табл. II, фиг. 6. Обломанное ядро правой створки. Натур. велич. Стр. . . . . 409.

Фиг. 2. *Papyridea kipenensis* S l o d k e w i t s c h. Паратип № 175/С 595. Левый берег р. Снатол, в 18 км от устья (западное побережье Камчатки). Верхний отдел кавранской свиты. Ядро правой створки с сохранившейся местами раковиной. Натур. велич.

Фиг. 3. *Papyridea kipenensis* S l o d k e w i t s c h. Паратип. Окрестности зал. Корфа (восточное побережье Камчатки). Верхний отдел глинисто-песчаниковой свиты. Репродукция изображения «*Cardium quadrigenarium fernandoense*» из монографии И. Хоменко «О возрасте трет. отл. зал. Корфа», табл. II, фиг. 7. Ядро левой створки с сохранившейся внизу раковиной. Натур. велич.

Фиг. 4. *Papyridea matschigarica* K h o m e n k o. Котип № 82/5044. Между мысом Марии и оз. Мачигар, полуостров Шмидта (северный Сахалин). Нижняя свита мачигарского разреза. Репродукция из монографии И. Хоменко «Стратиграфия трет. отл. пол. Шмидта», табл. VII, фиг. 6. Ядро левой створки. Натур. велич. Стр. . . . . 407.

#### Таблица LXXXIV

Фиг. 1. *Papyridea matschigarica* K h o m e n k o. Котип № 85/5044. Между мысом Марии и оз. Мачигар, полуостров Шмидта (северный Сахалин). Нижняя свита мачигарского разреза. Репродукция из монографии И. Хоменко «Стратиграфия трет. отл. пол. Шмидта», табл. IX, фиг. 7. Ядро левой створки. Натур. велич. Стр. . . . . 407.

Фиг. 2. *Papyridea matschigarica* K h o m e n k o. Лектотип № 81/5044. То же местонахождение, что и фиг. 1. Репродукция из монографии И. Хоменко «Стратиграфия трет. отл. пол. Шмидта», табл. VII, фиг. 5. Ядро левой створки с несколько обломанным передним концом. Натур. велич.

anterior end broken off. Natural size. Page . . . . . 157.

Фиг. 5. *Papyridea utcholakensis* S l o d k e w i t s c h. Paratype № 17/С 607. Same locality, as fig. 4. Cast of right valve somewhat broken. Natural size.

Фиг. 6. *Papyridea utcholakensis* S l o d k e w i t s c h. Holotype № 17/С 606. Same locality, as fig. 4. Cast of left valve. Natural size.

#### Plate LXXXIII

Fig. 1. *Papyridea kipenensis* S l o d k e w i t s c h. Paratype. In the vicinity of Korf Gulf (eastern coast of Kamchatka). Upper horizon of clayey-sandstone series. Reproduction of I. K h o m e n k o's illustration of «*Cardium laqueatum*» in «On the age of the Tert. Beds of Korf Gulf», pl. II, fig. 6. Broken cast of right valve. Natural size. Page . . . . . 159.

Fig. 2. *Papyridea kipenensis* S l o d k e w i t s c h. Paratype № 175/С 595. Left bank of Snatol river, 18 km from the mouth (western coast of Kamchatka). Upper horizon of Kavrana series. Cast of right valve with portions of shell preserved. Natural size.

Fig. 3. *Papyridea kipenensis* S l o d k e w i t s c h. Paratype. In the vicinity of Korf Gulf (eastern coast of Kamchatka). Upper horizon of clayey-sandstone series. Reproduction of I. K h o m e n k o's illustration of «*Cardium quadrigenarium fernandoense*» in «On the Age of the Tert. Beds of Korf Gulf», pl. II, fig. 7. Cast of left valve with shell preserved below. Natural size.

Fig. 4. *Papyridea matschigarica* K h o m e n k o. Cotype № 82/5044. Between Cape Maria and lake of Machigar, Schmidt Peninsula (northern Sakhalin). Lower series of Machigar section. Reproduction of I. K h o m e n k o's illustration in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1935, pl. VII, fig. 6. Cast of left valve. Natural size. Page . . . . . 159.

#### Plate LXXXIV

Fig. 1. *Papyridea matschigarica* K h o m e n k o. Cotype № 85/5044. Between Cape Maria and Lake of Machigar, Schmidt Peninsula (northern Sakhalin). Lower series of Machigar section. Reproduction of I. K h o m e n k o's illustration in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1935, pl. IX, fig. 7. Cast of left valve. Natural size. Page . . . . . 159.

Fig. 2. *Papyridea matschigarica* K h o m e n k o. Lectotype № 81/5044. Same locality, as fig. 1. Reproduction of I. K h o m e n k o's illustration in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1935, pl. VII, fig. 5. Cast of left valve, anterior end somewhat broken off. Natural size.



## Таблица LXXXV

Фиг. 1. *Papyridea securiformis* S l o d k e w i t s c h. Голотип, № 145/С 601. Между устьями рек Ковачинной и Моросечной (западное побережье Камчатки). Нижний отдел кавранской свиты. Ядро левой створки. Natur. велич. Стр. . . . . 411.

Фиг. 2. *Papyridea matschigarica* K h o m e n k o. Котип № 84/5044. Между мысом Марии и оз. Мачигар, полуостров Шмидта (северный Сахалин). Нижняя свита мачигарского разреза. Репродукция из монографии И. Х о м е н к о «Стратиграфия трет. отл. пол. Шмидта», табл. VIII, фиг. 6. Ядро правой створки. Natur. велич. Стр. . . . . 407.

## Таблица LXXXVI

Фиг. 1. *Papyridea sakhalinensis* K o g a n (in litt.). Голотип № 182/5294. Между устьями рек Ноями и Мал. Сергунай (западный Сахалин). Рыхлая свита. Репродукция из монографии Н. К о г а н а «Pelecypoda из рыхлой свиты», табл. VI, фиг. 5. Двустворчатое ядро; вид слева. Natur. велич. Стр. . . . . 412.

Фиг. 1а. *Papyridea sakhalinensis* K o g a n (in litt.). Тот же экземпляр, что и на фиг. 1; вид сверху. Natur. велич.

Фиг. 2. *Papyridea* cf. *noyamiana* K o g a n (in litt.). Образец № 112/5043. Мыс Маям-Раф, полуостров Шмидта (северный Сахалин). Маямрафская свита. Репродукция изображения «*Papyridea nipponica*» из монографии И. Х о м е н к о «Стратиграфия трет. сл. пол. Шмидта», табл. XII, фиг. 4. Сильно деформированное ядро левой створки. Natur. велич. Стр. . . . . 413.

Фиг. 3. *Papyridea noyamiana* K o g a n (in litt.). Голотип № 181/5294. Между устьями рек Ноями и Мал. Сергунай (западный Сахалин). Рыхлая свита. Репродукция из монографии Н. К о г а н а «Pelecypoda из рыхлой свиты», табл. VI, фиг. 1. Двустворчатое ядро; вид слева. Natur. велич.

Фиг. 3а. *Papyridea noyamiana* K o g a n (in litt.). Тот же экземпляр, что и на фиг. 3; вид сверху. Natur. велич.

Фиг. 4. *Liocyta fluctuosa* (G o u l d). Голотип. «Halifax and Fishing banks Nal-lasik, Greenland». Репродукция изображения «*Tapes fluctuosa*» из монографии А. G o u l d «Report on Invertebr. of Massach.», фиг. 447. Наружный вид левой створки. Natur. велич. Стр. . . . . 421.

Фиг. 5. *Liocyta fluctuosa* (G o u l d). Плезіотип № 154/3104а. Правый берег реки Бол. Гаромай (восточный Сахалин). Наднатовская свита. Репродукция изображения «*Liocyta subaniwana*» из монографии И. Х о м е н к о «Матер. по страт. трет. пл. в. Сахал.», табл. V, фиг. 6. Наружный вид правой створки. Natur. велич.

Фиг. 6. *Liocyta fluctuosa* (G o u l d). Плезіотип № 13/5305. Река Бол. Чажма (восточное побережье Камчатки). Плио-

## Plate LXXXV

Fig. 1. *Papyridea securiformis* S l o d k e w i t s c h. Holotype № 145/C 601. Between mouths of Kovachina and Moroshechnaya rivers (western coast of Kamchatka). Lower horizon of Kavrana series. Cast of left valve. Natural size. Page . . . . . 160.

Fig. 2. *Papyridea matschigarica* K h o m e n k o. Cotype № 84/5044. Between Cape Maria and Lake of Machigar, Schmidt Peninsula (northern Sakhalin). Lower series of Machigar section. Reproduction of I. K h o m e n k o's illustration in «Stratigraphy of the Tert. Beds of the Schmidt Penins.», 1935, pl. VIII, fig. 6. Cast of right valve. Natural size. Page . . . . . 159.

## Plate LXXXVI

Fig. 1. *Papyridea sakhalinensis* K o g a n (in litt.). Holotype № 182/5294. Between mouths of Noyami and L. Sertunai rivers (western Sakhalin). Rykhlaya series. Reproduction of N. K o g a n's illustration in «Pelecypoda of the Rykhlaya series», pl. VI, fig. 5. Double-valve cast; view of left side. Natural size. Page . . . . . 161.

Fig. 1а. *Papyridea sakhalinensis* K o g a n (in litt.). Same specimen, as fig. 1; dorsal view. Natural size.

Fig. 2. *Papyridea* cf. *noyamiana* K o g a n (in litt.). Specimen № 112/5043. Cape Mayam-Raf, Schmidt Peninsula (northern Sakhalin). Mayamraf series. Reproduction of I. K h o m e n k o's illustration of «*Papyridea nipponica*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1934, pl. XII, fig. 4. Badly deformed cast of left valve. Natural size. Page . . . . . 162.

Fig. 3. *Papyridea noyamiana* K o g a n (in litt.). Holotype № 181/5294. Between mouths of Noyami and L. Sertunai rivers (western Sakhalin). Rykhlaya series. Reproduction of N. K o g a n's illustration in «Pelecypoda of the Rykhlaya series», pl. VI, fig. 1. Double-valve cast; view of left side. Natural size.

Fig. 3а. *Papyridea noyamiana* K o g a n (in litt.). Same specimen, as fig. 3. Dorsal view. Natural size.

Fig. 4. *Liocyta fluctuosa* (G o u l d). Holotype. «Halifax and Fishing banks Nal-lasik, Greenland.» Reproduction of A. G o u l d's illustration of «*Tapes fluctuosa*» in «Report on Invertebrata of Massach.», fig. 447. External view of left valve. Natural size. Page . . . . . 163.

Fig. 5. *Liocyta fluctuosa* (G o u l d). Plesiotype № 154/3104а. Right bank of Gr. Goromay river (eastern Sakhalin). Supranutovo series. Reproduction of I. K h o m e n k o's illustration of «*Liocyta subaniwana*» in «Stratigraphy of the Tert. Beds of East. Sakhalin», pl. I, fig. 6. External view of right valve. Natural size.

Fig. 6. *Liocyta fluctuosa* (G o u l d). Plesiotype № 13/5305. Gr. Chazhma river (eastern coast of Kamchatka). Pliocene (?).

цен (?). Двустворчатый экземпляр; наружный вид правой створки. Увелич.  $\times 2/1$ .

Фиг. 6а. *Liocyra fluctuosa* (Gould). Тот же экземпляр, что и на фиг. 6; вид сверху. Увелич.  $\times 2/1$ .

Фиг. 7. *Liocyra fluctuosa* (Gould). Плезнотип № 14/5305. То же местонахождение, что и на фиг. 6. Замок левой створки. Увелич.  $\times 4/1$ .

Фиг. 8. *Liocyra fluctuosa* (Gould). Плезнотип № 15/5305. То же местонахождение, что и на фиг. 6. Замок правой створки. Увелич.  $\times 4/1$ .

#### Таблица LXXXVII

Фиг. 1. *Liocyra fluctuosa* (Gould) var. *subfluctuosa* K h o m e n k o. Лектотип № 139a/3104a. Водораздел между рр. Пильтуком и Паромаем, в 6 км от устья (восточный Сахалин). Наднутовская свита. Репродукция изображения «*Liocyra subfluctuosa*» из монографии И. Хоменко «Матер. по страт. трет. пл. в Сахал.», табл. V, фиг. 3. Наружный вид несколько обломанной правой створки. Natur. велич. Стр. . . . 424.

Фиг. 1а. *Liocyra fluctuosa* (Gould) var. *subfluctuosa* K h o m e n k o. Тот же экземпляр, что и на фиг. 1; внутренний вид правой створки. Natur. велич.

Фиг. 2. *Liocyra fluctuosa* (Gould) var. *subfluctuosa* K h o m e n k o. Котип № 139b/3104a. То же местонахождение, что и на фиг. 1. Внутренний вид обломанной левой створки. Natur. велич.

Фиг. 3. *Venus (Chione) securis* (Shumard). Плезнотип № 153942. U.S.N.M. «Upper Miocene sandstones below the Coos conglomerate at Fossil Point, Coos Bay, Oregon». Репродукция изображения «*Chione securis*» из монографии W. Dall «The Miocene of Astoria», табл. XIII, фиг. 8. Наружный вид несколько обломанной левой створки. Уменьш.  $\times 4/5$ . Стр. . . 416.

Фиг. 4. *Venus (Chione) securis* (Shumard). Плезнотип № 121/C 347. Между устьями рек Аманной и Эталонной (западное побережье Камчатки). Верхний отдел кавранской свиты. Наружный вид правой створки. Natur. велич.

Фиг. 4а. *Venus (Chione) securis* (Shumard). Тот же экземпляр, что и на фиг. 4; внутренний вид правой створки. Natur. велич.

Фиг. 4б. *Venus (Chione) securis* (Shumard). Тот же экземпляр, что и на фиг. 4; вид сверху. Natur. велич.

Фиг. 5. *Tivela snatolana* S l o d k e w i t s c h. Голотип № 173/C 593. Р. Снатол (западное побережье Камчатки). Верхний горизонт тигильской свиты. Наружный вид левой створки. Natur. велич. Стр. 427.

Фиг. 5а. *Tivela snatolana* S l o d k e w i t s c h. Тот же экземпляр, что и на фиг. 5; вид сверху. Natur. велич.

Фиг. 5б. *Tivela snatolana* S l o d k e w i t s c h. Тот же экземпляр, что и на фиг. 5; замок левой створки. Natur. велич.

Double-valve specimen; external view of right valve. Enlarged  $\times 2/1$ .

Fig. 6a. *Liocyra fluctuosa* (Gould). Same specimen, as fig. 6; dorsal view. Enlarged  $\times 2/1$ .

Fig. 7. *Liocyra fluctuosa* (Gould). Plesiotype № 14/5305. Same locality, as fig. 6. Hinge of left valve. Enlarged  $\times 4/1$ .

Fig. 8. *Liocyra fluctuosa* (Gould). Plesiotype № 15/5305. Same locality, as fig. 6. Hinge of right valve. Enlarged  $\times 4/1$ .

#### Plate LXXXVII

Fig. 1. *Liocyra fluctuosa* (Gould) var. *subfluctuosa* K h o m e n k o. Lectotype № 139a/3104a. Water-shed between Piltuk and Paromay rivers, 6 km from the mouth (eastern Sakhalin). Supra-Nutovo series. Reproduction of I. K h o m e n k o's illustration of «*Liocyra subfluctuosa*» in «Stratigraphy of the Tert. Beds of East Sakhalin», pl. V, fig. 3. External view of right valve, somewhat broken. Natural size. Page . . . . . 163.

Fig. 1a *Liocyra fluctuosa* (Gould) var. *subfluctuosa* K h o m e n k o. Same specimen, as fig. 1; internal view of right valve. Natural size.

Fig. 2. *Liocyra fluctuosa* (Gould) var. *subfluctuosa* K h o m e n k o. Cotype № 139b/3104a. Same locality, as fig. 1. Internal view of broken left valve. Natural size.

Fig. 3. *Venus (Chione) securis* (Shumard). Plesiotype № 153942. U.S.N.M. «Upper Miocene sandstones below the Coos conglomerate at Fossil Point, Coos Bay, Oregon». Reproduction of W. Dall's illustration of «*Chione securis*» in «The Miocene of Astoria», pl. XIII, fig. 8. External view of left valve somewhat broken. Reduced  $\times 4/5$ . Page . . . . . 162.

Fig. 4. *Venus (Chione) securis* (Shumard). Plesiotype № 121/C 347. Between mouths of Amanina and Etalonnyaya rivers (western coast of Kamchatka). Upper horizon of Kavrana series. External view of right valve. Natural size.

Fig. 4a. *Venus (Chione) securis* (Shumard). Same specimen, as fig. 4; internal view of right valve. Natural size.

Fig. 4b. *Venus (Chione) securis* (Shumard). Same specimen, as fig. 4; dorsal view. Natural size.

Fig. 5. *Tivela snatolana* S l o d k e w i t s c h. Holotype № 173/C 593. Snatol river (western coast of Kamchatka). Upper horizon of Tighil series. External view of left valve. Natural size. Page . . . . . 164.

Fig. 5a. *Tivela snatolana* S l o d k e w i t s c h. Same specimen, as fig. 5; dorsal view. Natural size.

Fig. 5b. *Tivela snatolana* S l o d k e w i t s c h. Same specimen, as fig. 5; hinge of left valve. Natural size.

Фиг. 6. *Tivela snatolana* S l o d k e - w i t s c h. Паратип № 174/С 594. Р. Тигиль (западное побережье Камчатки). Верхний горизонт тигильской свиты. Наружный вид левой створки. Натур. велич.

## Т а б л и ц а L X X X V I I I

Фиг. 1. *Tivela inezana* (C o n r a d). Плезиотип № 173/С 592. Р. Тигиль (западное побережье Камчатки). Верхний горизонт тигильской свиты. Наружный вид правой створки. Натур. велич. Стр. . . . 426.

Фиг. 1а. *Tivela inezana* (C o n r a d). Тот же экземпляр, что и на фиг. 1; вид сверху. Натур. велич.

Фиг. 1б. *Tivela inezana* (C o n r a d). Тот же экземпляр, что и на фиг. 1; замок правой створки. Натур. велич.

Фиг. 2. *Tivela inezana* (C o n r a d). Голотип. «Santa Inez Mountains, Santa Barbara County, California, Miocene». Репродукция изображения «*Pachydesma inezana*» из монографии Т. С o n r a d «Report on the Paleont.», табл. 5, фиг. 2. Наружный вид правой створки. Уменьш.  $\times 1/2$ .

Фиг. 3. *Dosinia margaritana* W i e d e y. Окрестности зал. Корфа (восточное побережье Камчатки). Основание угленосной свиты. Репродукция изображения «*Dosinia* cfr. *mathewsoni*» из монографии И. Х о м е н к о «О возр. трет. отл. зал. Корфа», табл. III, фиг. 4. Обломанное ядро правой створки с сохранившейся частью раковины. Натур. велич. Стр. . . . 436.

Фиг. 4. *Dosinia margaritana* W i e d e y. То же местонахождение, что и фиг. 3. Репродукция из той же монографии, табл. II, фиг. 10. Отпечаток двух обломков наружной поверхности. Натур. велич.

Фиг. 5. *Dosinia margaritana* W i e d e y. Голотип. «About 0.4 of a mile east of La Panza. Vaqueros formation, lower Miocene». Репродукция из монографии Н. W i e d e y «Notes on the Vaqueros», табл. 18, фиг. 2. Наружный вид правой створки. Натур. велич.

Фиг. 6. *Pitaria gretschischkini* S l o d k e w i t s c h. Паратип № 100/С 478. Берег моря между Непропуском и устьем р. Эталонной (западное побережье Камчатки). Верхний отдел кавранской свиты. Наружный вид левой створки. Натур. велич. Стр. . . . 434.

Фиг. 6а. *Pitaria gretschischkini* S l o d k e w i t s c h. Тот же экземпляр, что и на фиг. 6; вид сверху. Натур. велич.

Фиг. 6б. *Pitaria gretschischkini* S l o d k e w i t s c h. Тот же экземпляр, что и на фиг. 6; внутренний вид левой створки. Натур. велич.

## Т а б л и ц а L X X X I X

Фиг. 1. *Pitaria gretschischkini* S l o d k e w i t s c h. Паратип № 100/С 470. Берег моря между Непропуском и устьем р. Эталонной (западное побережье Камчатки).

Фиг. 6. *Tivela snatolana* S l o d k e - w i t s c h. Paratype № 174/С 594. Tighil river (western coast of Kamchatka). Upper horizon of Tighil series. External view of left valve. Natural size.

## P l a t e L X X X V I I I

Fig. 1. *Tivela inezana* (C o n r a d). Pleisiotype № 173/С 592. Tighil river (western coast of Kamchatka). Upper horizon of Tighil series. External view of right valve. Natural size. Page . . . 463.

Fig. 1a. *Tivela inezana* (C o n r a d). Same specimen, as fig. 1. Dorsal view. Natural size.

Fig. 1b. *Tivela inezana* (C o n r a d). Same specimen, as fig. 1; hinge of right valve. Natural size.

Fig. 2. *Tivela inezana* (C o n r a d). Holotype. Santa Inez Mountains, Santa Barbara County, California, Miocene. Reproduction of T. C o n r a d's illustration of «*Pachydesma inezana*» in «Report on the Paleont.», pl. 5, fig. 2. External view of right valve. Reduced  $\times 1/2$ .

Fig. 3. *Dosinia margaritana* W i e d e y. In the vicinity of Korf Gulf (eastern coast of Kamchatka). Base of the coal-bearing series. Reproduction of I. K h o m e n k o's illustration of «*Dosinia* cfr. *mathewsoni*» in «On the age of the Tert. Beds of Korf Gulf», pl. III, fig. 4. Broken cast of right valve with portion of shell preserved. Natural size. Page . . . 465.

Fig. 4. *Dosinia margaritana* W i e d e y. Same locality, as fig. 3. Reproduction from the same monograph, pl. II, fig. 10. Impression of two fragments of outer surface. Natural size.

Fig. 5. *Dosinia margaritana* W i e d e y. Holotype. About 0.4 of a mile east of La Panza. Vaqueros formation, lower Miocene. Reproduction of H. W i e d e y's illustration in «Notes on the Vaqueros», pl. 18, fig. 2. External view of right valve. Natural size.

Fig. 6. *Pitaria gretschischkini* S l o d k e w i t s c h. Paratype № 100/С 478. Sea coast between sea cliffs and mouth of Etalonnaya river (western coast of Kamchatka). Upper horizon of Kavrana series. External view of left valve. Natural size. Page . . . 465.

Fig. 6a. *Pitaria gretschischkini* S l o d k e w i t s c h. Same specimen, as fig. 6; dorsal view. Natural size.

Fig. 6b. *Pitaria gretschischkini* S l o d k e w i t s c h. Same specimen, as fig. 6; internal view of left valve. Natural size.

## P l a t e L X X X I X

Fig. 1. *Pitaria gretschischkini* S l o d k e w i t s c h. Paratype № 100/С 470. Sea coast, between sea cliffs and mouth of Etalonnaya river (western coast of Kamchatka). Upper

Верхний отдел кавранской свиты. Наружный вид левой створки. Натур. велич. Стр. . . . 434.

Фиг. 2. *Pitaria gretschischkini* S l o d k e w i t s c h. Голотип № 100/C 479. То же местонахождение, что и фиг. 1. Наружный вид левой створки. Натур. велич.

Фиг. 2а. *Pitaria gretschischkini* S l o d k e w i t s c h. Тот же экземпляр, что и на фиг. 2. Внутренний вид левой створки. Натур. велич.

Фиг. 3. *Pitaria gretschischkini* S l o d k e w i t s c h. Аллотип № 100/C 473. То же местонахождение, что и фиг. 1. Наружный вид правой створки. Натур. велич.

Фиг. 3а. *Pitaria gretschischkini* S l o d k e w i t s c h. Тот же экземпляр, что и на фиг. 3; вид сверху. Натур. велич.

Фиг. 3б. *Pitaria gretschischkini* S l o d k e w i t s c h. Тот же экземпляр, что и на фиг. 3; внутренний вид правой створки. Натур. велич.

Фиг. 4. *Pitaria gretschischkini* S l o d k e w i t s c h. Паратип № 100/C 474. То же местонахождение, что и фиг. 1. Наружный вид левой створки. Натур. велич.

#### Таблица XC

Фиг. 1. *Pitaria gretschischkini* S l o d k e w i t s c h. Паратип № 100/C 994. Берег моря между Непропуском и устьем р. Эталонной (западное побережье Камчатки). Верхний отдел кавранской свиты. Наружный вид левой створки. Натур. велич. Стр. . . . 434.

Фиг. 2. *Pitaria gretschischkini* S l o d k e w i t s c h. Паратип № 100/C 987. То же местонахождение, что и фиг. 1. Наружный вид левой створки. Натур. велич.

Фиг. 3. *Pitaria kavranensis* S l o d k e w i t s c h. Аллотип № 109/C 1010 между устьями рек Аmaniной и Эталонной (западное побережье Камчатки). Верхний отдел кавранской свиты. Наружный вид несколько поврежденной правой створки. Натур. велич. Стр. . . . 429.

Фиг. 3а. *Pitaria kavranensis* S l o d k e w i t s c h. Тот же экземпляр, что и на фиг. 3; вид сверху. Натур. велич.

Фиг. 4. *Pitaria kavranensis* S l o d k e w i t s c h. Паратип № 100/C 986. Берег моря между Непропуском и устьем р. Эталонной (западное побережье Камчатки). Верхний отдел кавранской свиты. Наружный вид несколько потертой левой створки. Натур. велич.

Фиг. 5. *Pitaria kavranensis* S l o d k e w i t s c h. Голотип № 109/C 1009. Берег моря между устьями рек Аmaniной и Эталонной (западное побережье Камчатки). Верхний отдел кавранской свиты. Внутренний вид левой створки. Натур. велич.

#### Таблица XCI

Фиг. 1. *Clementia (Egesta) sakhalinensis* sp. nova. Голотип № 86/5044. К востоку от мыса Марии, полуостров Шмидта (север-

horizon of Kavrana series. External view of left valve. Natural size. Page . . . 165.

Фиг. 2. *Pitaria gretschischkini* S l o d k e w i t s c h. Holotype № 100/C 479. Same locality, as fig. 1. External view of left valve. Natural size

Фиг. 2а. *Pitaria gretschischkini* S l o d k e w i t s c h. Same specimen, as fig. 2. Internal view of left valve. Natural size.

Фиг. 3. *Pitaria gretschischkini* S l o d k e w i t s c h. Allotype № 100/C 473. Same locality, as fig. 1. External view of right valve. Natural size.

Фиг. 3а. *Pitaria gretschischkini* S l o d k e w i t s c h. Same specimen, as fig. 3; dorsal view. Natural size.

Фиг. 3б. *Pitaria gretschischkini* S l o d k e w i t s c h. Same specimen, as fig. 3. Internal view of right valve. Natural size.

Фиг. 4. *Pitaria gretschischkini* S l o d k e w i t s c h. Paratype № 100/C 474. Same locality, as fig. 1. External view of left valve. Natural size

#### Plate XC

Фиг. 1. *Pitaria gretschischkini* S l o d k e w i t s c h. Paratype № 100/C 994. Sea coast between sea cliffs and mouth of Etalonnaya river (western coast of Kamchatka). Upper horizon of Kavrana series. External view of left valve. Natural size. Page . . . 165.

Фиг. 2. *Pitaria gretschischkini* S l o d k e w i t s c h. Paratype № 100/C 987. Same locality, as fig. 1. External view of left valve. Natural size

Фиг. 3. *Pitaria kavranensis* S l o d k e w i t s c h. Allotype № 109/C 1010. Sea coast between mouths of Amanina and Etalonnaya rivers (western coast of Kamchatka). Upper horizon of Kavrana series. External view of right valve somewhat injured. Natural size. Page . . . 164.

Фиг. 3а. *Pitaria kavranensis* S l o d k e w i t s c h. Same specimen, as fig. 3; dorsal view. Natural size.

Фиг. 4. *Pitaria kavranensis* S l o d k e w i t s c h. Paratype № 100/C 986. Sea coast between sea cliffs and mouth of Etalonnaya river (western coast of Kamchatka). Upper horizon of Kavrana series. External view of left valve somewhat worn. Natural size.

Фиг. 5. *Pitaria kavranensis* S l o d k e w i t s c h. Holotype № 109/C 1009. Sea coast between mouths of Amanina and Etalonnaya rivers (western coast of Kamchatka). Upper horizon of Kavrana series. Internal view of left valve. Natural size.

#### Plate XCI

Фиг. 1. *Clementia (Egesta) sakhalinensis* sp. nova. Holotype № 86/5044. To E of rom Cape Maria, Schmidt Peninsula (northern

ный Сахалин). Угленосные слои мацигарского разреза. Репродукция изображения «*Clementia (Egesta) pertenuis conradiana*» из монографии И. Хоменко «Стратиграфия трет. отл. пол. Шмидта», табл. X, фиг. 1. Двусторчатый экземпляр; наружный вид левой створки. Натур. велич. Стр. . . . . 419.

Фиг. 1а. *Clementia (Egesta) sakhalinensis* sp. nova. Тот же экземпляр, что и на фиг. 1; наружный вид правой створки. Натур. велич.

Фиг. 2. *Tellina bodegensis* Hinds. «Inhab. Russian Bodegas. From seven fathoms, on a sandy floor. Recent». Репродукция из монографии Hinds «The Zoology of the Voyage of Sulphur», т. II, табл. XXI, фиг. 2. Наружный вид левой створки. Натур. велич. Стр. . . . . 441.

Фиг. 3. *Tellina bodegensis* Hinds, n. var. Образец № 213/C 851. Ковачинская бухта, в 1.2 км к NE от устья р. Морощечной (западное побережье Камчатки). Тигильская свита. Ядро правой створки. Натур. велич.

Фиг. 4. *Tellina aragonia* Dall. Голотип № 153940. U.S.N.M. «Miocene of Coos Bay, Oregon». Репродукция из монографии W. Dall «The Miocene of Astoria», табл. XIV, фиг. 3. Наружный вид несколько обломанной правой створки. Уменьш.  $\times 4/5$ . Стр. . . . . 443.

Фиг. 5. *Tellina eugenia* Dall. Голотип № 110459. U.S.N.M. «Miocene of Smith's quarry, Eugene, Oregon». Репродукция из монографии W. Dall «The Miocene of Astoria», табл. XIX, фиг. 3. Ядро левой створки. Уменьш.  $\times 4/5$ . Стр. . . . . 445.

Фиг. 6. *Tellina eugenia* Dall. Окрестности вал. Корфа (восточное побережье Камчатки). Основание угленосной свиты. Репродукция изображения «*Tellina aragonia*» из монографии И. Хоменко «О возр. трет. отл. зал. Корфа», табл. III, фиг. 8. Ядро правой створки. Натур. велич.

Фиг. 7. *Tellina djakovi* Slodkewitsch. Голотип № 216/C 852. Левый берег р. Матерой Ваямпольки, 1 км ниже устья р. Хали (западное побережье Камчатки). Нижний отдел кавранской свиты. Ядро левой створки. Натур. велич. Стр. 446.

Фиг. 8. *Tellina puchlensis* Slodkewitsch. Голотип № 31/C 850. Правый берег р. Пухль, в 9 км от устья. Нижний отдел ваямпольской свиты. Наружный вид левой створки. Натур. велич. Стр. . . . . 442.

Фиг. 9. *Tellina chibana* Yokoyama. Лектотип. «Kamenary. Upper Musashino». Репродукция изображения «*Tellina alternata* var. *chibana*» из монографии M. Yokoyama «Fossils of Kazusa and Shimoso», табл. X, фиг. 6. Наружный вид правой створки. Уменьш.  $\times 9/10$ . Стр. . . . . 454.

Фиг. 10. *Tellina* cf. *chibana* Yokoyama. Образец № S/102. Р. Тигиль (западное побережье Камчатки). Кавранская (?)

Sakhalin). Coal-bearing beds of Machigar section. Reproduction of I. Khomenko's illustration of «*Clementia (Egesta) pertenuis conradiana*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1935, pl. X, fig. 1. Double-valve specimen; external view of left valve. Natural size. Page . . . . . 162.

Fig. 1a. *Clementia (Egesta) sakhalinensis* sp. nova. Same specimen, as fig. 1; external view of right valve. Natural size.

Fig. 2. *Tellina bodegensis* Hinds. «Inhab. Russian Bodegas. From seven fathoms, on a sandy floor. Recent». Reproduction of Hinds' illustration in «The Zoology of the Voyage of Sulphur», vol. II, pl. XXI, fig. 2. External view of left valve. Natural size. Page . . . . . 166.

Fig. 3. *Tellina bodegensis* Hinds, n. var. ? Specimen № 213/C 851. Kovachina Bay. 1.2 km NE of mouth of Moroshechnaya river (western coast of Kamchatka). Tighil series. Cast of right valve. Natural size.

Fig. 4. *Tellina aragonia* Dall. Holotype № 153940. U.S.N.M. «Miocene of Coos Bay, Oregon». Reproduction of W. Dall's illustration in «The Miocene of Astoria», pl. XIV, fig. 3. External view of right valve, somewhat broken. Reduced  $\times 4/5$ . Page . . . . . 167.

Fig. 5. *Tellina eugenia* Dall. Holotype № 110459. U.S.N.M. «Miocene of Smith's quarry, Eugene, Oregon». Reproduction of W. Dall's illustration in «The Miocene of Astoria», pl. XIX, fig. 3. Cast of left valve. Reduced  $\times 4/5$ . Page . . . . . 167.

Fig. 6. *Tellina eugenia* Dall. In the vicinity of Korf Gulf (eastern coast of Kamchatka). Base of coal-bearing series. Reproduction of I. Khomenko's illustration in «On the age of the Tert. Beds of Korf Gulf», pl. III, fig. 8. Cast of right valve. Natural size.

Fig. 7. *Tellina djakovi* Slodkewitsch. Holotype № 216/C 852. Left bank of Materaya Vayempolka river, 1 km below the mouth of the Khali river (western coast of Kamchatka). Lower horizon of Kavrana series. Cast of left valve. Natural size. Page . . . . . 167.

Fig. 8. *Tellina puchlensis* Slodkewitsch. Holotype № 31/C 850. Right bank of Pukhl river, 9 km of mouth. Lower horizon of Vayempolka series. External view of left valve. Natural size. Page 166.

Fig. 9. *Tellina chibana* Yokoyama. Lectotype. «Kamenary. Upper Musashino». Reproduction of M. Yokoyama's illustration of «*Tellina alternata* var. *chibana*» in «Fossils of Kazusa and Shimoso», pl. X, fig. 6. External view of right valve. Reduced  $\times 9/10$ . Page . . . . . 169.

Fig. 10. *Tellina* cf. *chibana* Yokoyama. Specimen № S/102. Tighil river (western coast of Kamchatka). Kavrana (?)

свита. Несколько обломанное ядро левой створки. Увелич.  $\times 11/10$ .

### Таблица ХСII

Фиг. 1. *Tellina pulchra* Slodkewitsch. Голотип № S/99. Р. Третичная (западное побережье Камчатки). Кавранская свита. Отпечаток наружной поверхности правой створки. Увелич.  $\times 7/5$ . Стр. . . . . 452.

Фиг. 2. *Tellina pulchra* Slodkewitsch. Метатип № 106/C 845. Берег моря, в 3 км к северу от устья р. Кавраны (западное побережье Камчатки). Верхний отдел кавранской свиты. Наружный вид левой створки. Натур. велич.

Фиг. 3. *Tellina pulchra* Slodkewitsch. Метатип № 106/C 847. То же местонахождение, что и фиг. 2. Наружный вид правой створки. Натур. велич.

Фиг. 4. *Tellina pulchra* Slodkewitsch. Метатип № 106/C 846. То же местонахождение, что и фиг. 2. Наружный вид обломанной спереди правой створки и замок левой створки. Натур. велич.

Фиг. 5. *Apolymetis excavata* (Sowerby). Репродукция изображения «*Tellina excavata*» из монографии L. Reeve «Conchologia Iconica», vol. XVII, *Tellina*, табл. XXVI, фиг. 138. Наружный вид правой створки. Натур. велич. Стр. 456.

Фиг. 6. *Apolymetis excavata* (Sowerby). Плезиотип № S/92. Р. Матера Ваямполка (западное побережье Камчатки). Кавранская свита. Ядро правой створки с сохранившейся частично раковинной. Увелич.  $\times 6/5$ .

### Таблица ХСIII

Фиг. 1. *Macoma lorenzoensis* (Arnold). Пластотип № 165439. U.S.N.M. «Branch of south fork of Waddell Creek,  $1\frac{1}{4}$  miles northwest of Eagle Rock. Oligocene». Репродукция изображения «*Tellina lorenzoensis*» из монографии R. Arnold «New Cret. and Tert. Foss.», табл. XXXIII, фиг. 1. Отпечаток наружной поверхности правой створки. Уменьш.  $\times 3/4$ . Стр. 459.

Фиг. 2. *Macoma* cf. *lorenzoensis* (Arnold). Образец № 199/C 680. Правый берег р. Снатол, у устья р. Горелик (западное побережье Камчатки). Ковачинская свита. Отпечаток наружной поверхности левой створки. Натур. велич.

Фиг. 3. *Macoma* cf. *lorenzoensis* (Arnold). Образец № 199/C 683. То же местонахождение, что и фиг. 2. Отпечаток наружной поверхности правой створки с обломанными концами. Натур. велич.

Фиг. 4. *Macoma* cf. *lorenzoensis* (Arnold). Образец № 199/C 681. То же местонахождение, что и фиг. 2. Отпечаток наружной поверхности передней половины правой створки. Натур. велич.

Фиг. 5. *Tellina lutea* Gray. Плезиотип № 16/5305. Тягильский район (западное

series. Cast of left valve somewhat broken. Enlarged  $\times 11/10$ .

### Plate XCII

Fig. 1. *Tellina pulchra* Slodkewitsch. Holotype № S/99. Tretichnaya river (western coast of Kamchatka). Kavrana series. Impression of external surface of right valve. Enlarged  $\times 7/5$ . Page 168.

Fig. 2. *Tellina pulchra* Slodkewitsch. Metatype № 106/C 845. Sea coast, 3 km north of the mouth of Kavrana river (western coast of Kamchatka). Upper horizon of Kavrana series. External view of left valve. Natural size.

Fig. 3. *Tellina pulchra* Slodkewitsch. Metatype № 106/C 847. Same locality, as fig. 2. External view of right valve. Natural size.

Fig. 4. *Tellina pulchra* Slodkewitsch. Metatype № 106/C 846. Same locality, as fig. 2. External view of right valve broken anteriorly and the hinge of left valve. Natural size.

Fig. 5. *Apolymetis excavata* (Sowerby). Reproduction of L. Reeve's illustration of «*Tellina excavata*» in «Conchologia Iconica», vol. XVII, *Tellina*, pl. XXVI, fig. 138. External view of right valve. Natural size. Page . . . . . 169.

Fig. 6. *Apolymetis excavata* (Sowerby). Pleisotype № S/92. Materaya Vayempolka river (western coast of Kamchatka). Kavrana series. Cast of right valve with adhering portions of shell. Enlarged  $\times 6/5$ .

### Plate XCIII

Fig. 1. *Macoma lorenzoensis* (Arnold). Plastotype № 165439. U.S.N.M. «Branch of south fork of Waddell Creek,  $1\frac{1}{4}$  miles northwest of Eagle Rock. Oligocene». Reproduction of R. Arnold's illustration of «*Tellina lorenzoensis*» in «New Cret. and Tert. Foss.», pl. XXXIII, fig. 1. Impression of external surface of right valve. Reduced  $\times 3/4$ . Page . . . . . 169.

Fig. 2. *Macoma* cf. *lorenzoensis* (Arnold). Specimen № 199/C 680. Right bank of Snatol river, near mouth of Gorelik river (western coast of Kamchatka). Kavrana series. Impression of external surface of left valve. Natural size.

Fig. 3. *Macoma* cf. *lorenzoensis* (Arnold). Specimen № 199/C 683. Same locality, as fig. 2. Impression of external surface of right valve with ends broken off. Natural size.

Fig. 4. *Macoma* cf. *lorenzoensis* (Arnold). Specimen № 199/C 681. Same locality, as fig. 2. Impression of external surface of anterior half of the right valve. Natural size.

Fig. 5. *Tellina lutea* Gray. Pleisotype № 16/5305. Tighil region (western coast

побережье Камчатки). Современная форма. Наружный вид правой створки. Натур. велич. Стр. 448.

Фиг. 6. *Tellina lutea* Gray. Плезотиоп № 193/3104а. Берег Охотского моря к югу от Ныйского залива. Репродукция изображения «*Tellina venulosus*» из монографии И. Хоменко «Матер. по страт. трет. пл. в. Сахалина», табл. VI, фиг. 2. Внутренний вид правой створки. Натур. велич.

Фиг. 7. *Macoma astori* Dall. Двуключный овраг (восточное побережье Камчатки). Миоцен. Репродукция изображения «*Macoma middendorffii*» из монографии И. Хоменко «О возрасте трет. сл. р. Тюшевки», табл. II, фиг. 17. Ядро правой створки с сохранившейся частично раковиной. Натур. велич. Стр. 471.

Фиг. 8. *Macoma astori* Dall. Котип № 153937. U.S.N.M. «Miocene of Coos Bay, Oregon». Репродукция из монографии W. Dall «The Miocene of Astoria», табл. XIV, фиг. 1. Наружный вид правой створки. Уменьш.  $\times 4/5$ .

Фиг. 9. *Macoma astori* Dall. Голотип № 153939. U.S.N.M. То же местонахождение, что и фиг. 8. Репродукция из той же монографии, табл. XIV, фиг. 11. Наружный вид несколько обломанной сзади правой створки. Уменьш.  $\times 4/5$ .

Фиг. 10. *Macoma truncatoides* Khomenko. Гомеотип № S/79. Р. Матерая Ваямполка (западное побережье Камчатки). Кавранская свита. Двустворчатое ядро; наружный вид левой створки с остатками раковины. Увелич.  $\times 13/10$ . Стр. 469.

Фиг. 10а. *Macoma truncatoides* Khomenko. Тот же экземпляр, что и на фиг. 10; наружный вид правой створки с остатками раковины. Увелич.  $\times 13/10$ .

Фиг. 11. *Macoma truncatoides* Khomenko. Котип № 42/3104а. Эхаби, шурф № 41 (восточный Сахалин). Свита Эхаби. Репродукция из монографии И. Хоменко «Матер. по страт. трет. пл. в. Сахал.», табл. XI, фиг. 17. Ядро; вид справа. Натур. велич.

Фиг. 12. *Macoma truncatoides* Khomenko. Лектотип № 44/3104а. То же местонахождение, что и фиг. 11. Репродукция из той же монографии, табл. XII, фиг. 1. Ядро; вид слева. Натур. велич.

#### Таблица XCIV

Фиг. 1. *Macoma calcarea* (Gmelin). Побережье залива Лаврентия (Чукотский полуостров). Плейстоцен. Наружный вид правой створки. Передний конец несколько обломан; видно ядро. Натур. велич. Стр. 467.

Фиг. 2. *Macoma calcarea* (Gmelin). Плезотиоп № 132/5043. К северу от устья р. Псыкауф, полуостров Шмидта (северный Сахалин). Маямрафская свита. Репродукция из монографии И. Хоменко «Стратиграфия трет. сл. пол. Шмидта», табл. XIII, фиг. 15. Ядро с отпечатком

of Kamchatka). Recent form. External view of right valve. Natural size. Page 168.

Fig. 6. *Tellina lutea* Gray. Plesiotype № 193/3104a. Coast of Okhotsk sea, south of Gulf of Nyisk. Reproduction of I. Khomenko's illustration of «*Tellina venulosa*» in «Mater. on the Strat. of the Tert. Beds of Sakhalin», pl. VI, fig. 2. Internal view of right valve. Natural size.

Fig. 7 *Macoma astori* Dall. Dvuklyuchnyi ravine (eastern coast of Kamchatka). Miocene. Reproduction of I. Khomenko's illustration of «*Macoma middendorffii*» in «On the Age of the Tert. Beds of Tyushevka River», pl. II, fig. 17. Cast of right valve with portion of shell preserved. Natural size. Page 172.

Fig. 8. *Macoma astori* Dall. Cotype № 153937. U.S.N.M. «Miocene of Coos Bay, Oregon». Reproduction of W. Dall's illustration in «The Miocene of Astoria», pl. XIV, fig. 1. External view of right valve. Reduced  $\times 4/5$ .

Fig. 9. *Macoma astori* Dall. Holotype № 153939. U.S.N.M. Same locality, as fig. 8. Reproduction from the same monograph, pl. XIV, fig. 11. External view of right valve somewhat broken posteriorly. Reduced  $\times 4/5$ .

Fig. 10. *Macoma truncatoides* Khomenko. Homoeotype № S/79. Materaya Vayempolka river (western coast of Kamchatka). Kavrana series. Double-valve cast; external view of left valve retaining a part of the shell. Enlarged  $\times 13/10$ . Page 172.

Fig. 10a. *Macoma truncatoides* Khomenko. Same specimen, as fig. 10; external view of right valve with portion of shell adhering. Enlarged  $\times 13/10$ .

Fig. 11. *Macoma truncatoides* Khomenko. Cotype № 42/3104a. Ekhab, prospect trenching № 41 (eastern Sakhalin). Ekhab series. Reproduction of I. Khomenko's illustration in «Materials on the Strat. of the Tert. Beds of East. Sakhalin», pl. IX, fig. 17. Cast; view of right side. Natural size.

Fig. 12. *Macoma truncatoides* Khomenko. Lectotype № 44/3104a. Same locality, as fig. 11. Reproduction from the same monograph, pl. XII, fig. 1. Cast; view of left side. Natural size.

#### Plate XCIV

Fig. 1 *Macoma calcarea* (Gmelin). Coast of Gulf of Laurence (Chukotsky Peninsula). Pleistocene. External view of right valve. Anterior end somewhat broken off; cast is visible. Natural size. Page 171.

Fig. 2. *Macoma calcarea* (Gmelin). Plesiotype № 132/5043. North of the mouth of Psykauf river, Schmidt Peninsula (northern Sakhalin). Mayamraf series. Reproduction of I. Khomenko's illustration in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1934, pl. XIII, fig. 15.

наружной поверхности правой створки. Natur. велич.

Фиг. 3. *Macoma calcarea* (Gmelin). Плезтиотип № 133/5043. То же местонахождение, что и фиг. 2. Репродукция из той же монографии, табл. XIII, фиг. 16. Ядро левой створки. Natur. велич.

Фиг. 4. *Macoma optiva* (Yokoyama); Лектотип. «Fujina». Нижний (?) плиоцен. Репродукция изображения «*Tellina optiva*» из монографии М. Yokoyama «Some Foss. Moll. fr. Izumo», табл. II, фиг. 3a. Наружный вид левой створки. Natur. велич. Стр. . . . 472.

Фиг. 5. *Macoma optiva* (Yokoyama). Окрестности залива Корфа (восточное побережье Камчатки). Верхний отдел глинисто-песчанниковой свиты. Репродукция изображения «*Macoma astori*» из монографии И. Хоменко «О возрасте трет. отл. зал. Корфа», табл. III, фиг. 10. Ядро левой створки. Natur. велич.

Фиг. 6. *Macoma optiva* (Yokoyama). Синтип. «Fujina». Нижний (?) плиоцен. Репродукция изображения «*Tellina optiva*» из монографии М. Yokoyama «Some Foss. Moll. fr. Izumo», табл. II, фиг. 3b. Ядро правой створки. Natur. велич.

Фиг. 7. *Macoma optiva* (Yokoyama). Плезтиотип № 186/5294. Между устьями рек Ноями и Мал. Сертунай (западный Сахалин). Рыхлая свита. Репродукция из монографии Н. Когана «*Pelecypoda* из рыхлой свиты», табл. VII, фиг. 1. Ядро левой створки. Natur. велич.

Фиг. 8. *Macoma optiva* (Yokoyama). Плезтиотип № 187/5294. Между устьями рек Половинки и Арково (западный Сахалин). Рыхлая свита. Репродукция из монографии Н. Когана «*Pelecypoda* из рыхлой свиты», табл. VII, фиг. 2. Двустворчатый экземпляр; наружный вид несколько обломанной левой створки. Natur. велич.

Фиг. 8a. *Macoma optiva* (Yokoyama). Тот же экземпляр, что и на фиг. 8; вид сверху. Natur. велич.

Фиг. 9. *Macoma optiva* (Yokoyama). Плезтиотип № 187a-b/5294. То же местонахождение, что и фиг. 8. Репродукция из той же монографии, табл. VII, фиг. 2b. Замок левой и правой створок. Natur. велич.

#### Таблица XCV

Фиг. 1. *Macoma echabiensis* sp. nova. Паратип № 33/3456. Р. Эхаби, шурф № 41 (восточный Сахалин). Свита Эхаби. Репродукция изображения «*Tellina corbuloides*» из монографии И. Хоменко «Матер. по страт. трет. пл. в Сахал.», табл. XI, фиг. 7. Обломанное спереди ядро правой створки. Natur. велич. Стр. . . . 474.

Фиг. 2. *Macoma echabiensis* sp. nova. Паратип № 34a/3456. То же местонахождение, что и фиг. 1. Репродукция из той же монографии, табл. XI, фиг. 8. Отпечаток наружной поверхности правой створки. Natur. велич.

Cast with impression of outer surface of right valve. Natural size.

Фиг. 3. *Macoma calcarea* (Gmelin). Plesiotype № 133/5043. Same locality, as fig. 2. Reproduction from the same monograph, pl. XIII, fig. 16. Cast of left valve. Natural size.

Фиг. 4. *Macoma optiva* (Yokoyama). Lectotype. «Fujina». Lower (?) Pliocene. Reproduction of M. Yokoyama's illustration of «*Tellina optiva*» in «Some Foss. Moll. fr. Izumo», pl. II, fig. 3a. External view of left valve. Natural size. Page 172.

Фиг. 5. *Macoma optiva* (Yokoyama). In the vicinity of Korf Gulf (eastern coast of Kamchatka). Upper horizon of clayey-sandstone series. Reproduction of I. Khomenko's illustration of «*Macoma astori*» in «On the Age of the Tert. Beds of Korf Gulf», pl. III, fig. 10. Cast of left valve. Natural size.

Фиг. 6. *Macoma optiva* (Yokoyama). Syntype. «Fujina». Lower (?) Pliocene. Reproduction of M. Yokoyama's illustration of «*Tellina optiva*» in «Some Foss. Moll. fr. Izumo», pl. II, fig. 3b. Cast of right valve. Natural size.

Фиг. 7. *Macoma optiva* (Yokoyama). Plesiotype № 186/5294. Between the mouths of Noyami and L. Sertunai rivers (western Sakhalin). Rykhlaya series. Reproduction of N. Kogan's illustration in «*Pelecypoda* of the Rykhlaya series», pl. VII, fig. 1. Cast of left valve. Natural size.

Фиг. 8. *Macoma optiva* (Yokoyama). Plesiotype № 187/5294. Between the mouths of Polovinka and Arkovo rivers (western Sakhalin). Rykhlaya series. Reproduction of N. Kogan's illustration in «*Pelecypoda* of the Rykhlaya series», pl. VII, fig. 2. Double-valve specimen; external view of left valve somewhat broken. Natural size.

Фиг. 8a. *Macoma optiva* (Yokoyama). Same specimen, as fig. 8; dorsal view. Natural size.

Фиг. 9. *Macoma optiva* (Yokoyama). Plesiotype № 187a-b/5294. Same locality, as fig. 8. Reproduction from same monograph, pl. VII, fig. 2b. Hinges of left and right valves. Natural size.

#### Plate XCV

Фиг. 1. *Macoma echabiensis* sp. nova. Paratype № 33/3456. Ekhabi river, prospect trenching № 41 (eastern Sakhalin). Ekhabi series. Reproduction of I. Khomenko's illustration of «*Tellina corbuloides*» in «Materials on the Strat. of the Tert. Beds of East. Sakhalin», pl. XI, fig. 7. Cast of right valve broken anteriorly. Natural size. Page . . . 173.

Фиг. 2. *Macoma echabiensis* sp. nova. Paratype № 34a/3456. Same locality, as fig. 1. Reproduction from same monograph, pl. XI, fig. 8. Impression of external surface of right valve. Natural size.



Фиг. 3. *Macoma echabiensis* sp. nova. Голотип № 34b/3456. То же местонахождение, что и фиг. 1. Репродукция из той же монографии, табл. XI, фиг. 9. Слепок с отпечатка наружной поверхности правой створки. Natur. велич.

Фиг. 4. *Macoma echabiensis* sp. nova. Паратип № 35/3456. То же местонахождение, что и фиг. 1. Репродукция из той же монографии, табл. XI, фиг. 10. Ядро с отпечатком наружной поверхности левой створки. Natur. велич.

Фиг. 5. *Macoma echabiensis* sp. nova. Паратип № 36/3456. То же местонахождение, что и фиг. 1. Репродукция из той же монографии, табл. XI, фиг. 11. Ядро левой створки. Natur. велич.

Фиг. 6. *Macoma echabiensis* sp. nova. Котип № 122/5043. У устья р. Псякауф, полуостров Шмидта (северный Сахалин). Матитукская свита. Репродукция изображения «*Tellina corbuloides*» из монографии И. Хоменко «Стратиграфия трет. сл. пол. Шмидта», табл. XIII, фиг. 4. Ядро левой створки. Natur. велич.

Фиг. 7. *Macoma nasuta* (Conrad). «Hab. California». Репродукция изображения «*Tellina nasuta*» из монографии L. Reeve «Conchol. Iconica», т. XVII, *Tellina*, табл. IX, фиг. 40. Наружный вид левой створки. Natur. велич. Стр. . . . 460.

Фиг. 8. *Macoma nasuta* (Conrad). Плезнотип № 222/С 893. Берег моря, в 1 км к северу от устья р. Кавраны (западное побережье Камчатки). Верхний отдел кавранской свиты. Друстворчатый экземпляр; наружный вид правой створки. Natur. велич.

Фиг. 8a. *Macoma nasuta* (Conrad). Тот же экземпляр, что и на фиг. 8; наружный вид левой створки. Natur. велич.

Фиг. 9. *Macoma nasuta* (Conrad). Плезнотип № 106/С 882. Берег моря, в 3 км к северу от устья р. Кавраны (западное побережье Камчатки). Верхний отдел кавранской свиты. Наружный вид правой створки. Natur. велич.

#### Таблица XCVI

Фиг. 1. *Macoma inquinata* (Deshayes). «Hab. Vancouver's Island». Репродукция изображения «*Tellina inquinata*» из монографии L. Reeve «Conchol. Iconica», т. XVII, *Tellina*, табл. XXX, фиг. 164. Наружный вид левой створки. Natur. велич. Стр. . . . 465.

Фиг. 2. *Macoma inquinata* (Deshayes). Плезнотип № 130/5043. К северу от устья р. Венгери, полуостров Шмидта (северный Сахалин). Венгерийская свита. Репродукция из монографии И. Хоменко «Стратиграфия трет. сл. пол. Шмидта», табл. XIII, фиг. 13. Ядро правой створки. Natur. велич.

Фиг. 3. *Macoma inquinata* (Deshayes). Плезнотип № 131/5043. К северу от устья р. Венгери, полуостров Шмидта (северный Сахалин). Каскадная свита. Репродукция

Фиг. 3. *Macoma echabiensis* sp. nova. Holotype № 34b/3456. Same locality, as fig. 1. Reproduction from same monograph, pl. XI, fig. 9. Plaster cast of impression of outer surface of right valve. Natural size.

Фиг. 4. *Macoma echabiensis* sp. nova. Paratype № 35/3456. Same locality, as fig. 1. Reproduction from same monograph, pl. XI, fig. 10. Cast with impression of outer surface of left valve. Natural size.

Фиг. 5. *Macoma echabiensis* sp. nova. Paratype № 36/3456. Same locality, as fig. 1. Reproduction from same monograph, pl. XI, fig. 11. Cast of left valve. Natural size.

Фиг. 6. *Macoma echabiensis* sp. nova. Cotype № 122/5043. Near mouth of Psyakouf river, Schmidt Peninsula (northern Sakhalin). Matituk series. Reproduction of I. K homenk o's illustration of «*Tellina corbuloides*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1934, pl. XIII, fig. 4. Cast of left valve. Natural size.

Фиг. 7. *Macoma nasuta* (Conrad). «Hab. California». Reproduction of L. Reeve's illustration of «*Tellina nasuta*» in «Conchol. Iconica», vol. XVII, *Tellina*, pl. IX, fig. 40. External view of left valve. Natural size. Page . . . . 470.

Фиг. 8. *Macoma nasuta* (Conrad). Plesiotype № 222/С 893. Sea coast, 1 km north of mouth of Kavran river (western coast of Kamchatka). Upper horizon of Kavran series. Double-valve specimen; external view of right valve. Natural size.

Фиг. 8a. *Macoma nasuta* (Conrad). Same specimen, as fig. 8; external view of left valve. Natural size.

Фиг. 9. *Macoma nasuta* (Conrad). Plesiotype № 106/С 882. Sea coast, 3 km north of mouth of Kavran river (western coast of Kamchatka). Upper horizon of Kavran series. External view of right valve. Natural size.

#### Plate XCVI

Фиг. 1. *Macoma inquinata* (Deshayes). «Hab. Vancouver's Island». Reproduction of L. Reeve's illustration of «*Tellina inquinata*» in «Conchol. Iconica», vol. XVII, *Tellina*, pl. XXX, fig. 164. External view of left valve. Natural size. Page . . . 470.

Фиг. 2. *Macoma inquinata* (Deshayes). Plesiotype № 130/5043. North of mouth of Vengheri river, Schmidt Peninsula (northern Sakhalin). Vengheri series. Reproduction of I. K homenk o's illustration in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1934, pl. XIII, fig. 13. Cast of right valve. Natural size.

Фиг. 3. *Macoma inquinata* (Deshayes). Plesiotype № 131/5043. North of mouth of Vengheri river, Schmidt Peninsula (northern Sakhalin). Kaskadnaya series. Repro-

из той же монографии, табл. XIII, фиг. 14. Ядро правой створки. Natur. велич.

Фиг. 4. *Sanguinolaria (Nuttallia) ochotica* S l o d k e w i t s c h. Паратип № S/116. Западное побережье Камчатки; Тигильский район. Верхний отдел кавранской свиты. Наружный вид дореставрированной гипсом правой створки. Natur. велич. Стр. . . . . 478.

Фиг. 4a. *Sanguinolaria (Nuttallia) ochotica* S l o d k e w i t s c h. Тот же экземпляр, что и на фиг. 4; замок и внутренняя поверхность верхней части правой створки. Natur. велич.

#### Таблица XCVII

Фиг. 1. *Sanguinolaria (Nuttallia) ochotica* S l o d k e w i t s c h. Голотип № S/117. Западное побережье Камчатки; Тигильский район. Верхний отдел кавранской свиты. Наружный вид дореставрированной гипсом левой створки. Natur. велич. Стр. . . . . 478.

Фиг. 1a. *Sanguinolaria (Nuttallia) ochotica* S l o d k e w i t s c h. Тот же экземпляр, что и на фиг. 1; вид сверху. Natur. велич.

Фиг. 1b. *Sanguinolaria (Nuttallia) ochotica* S l o d k e w i t s c h. Тот же экземпляр, что и на фиг. 1; замок и внутренняя поверхность верхней части левой створки. Natur. велич.

#### Таблица XCVIII

Фиг. 1. *Sanguinolaria (Nuttallia) nuttallii* C o n r a d. Плезіотип № 101/C 881. Берег моря между Непропуском и устьем р. Эталонной (западное побережье Камчатки). Верхний отдел кавранской свиты. Наружный вид правой створки. Передний конец и края раковины дореставрированы гипсом по очертаниям полностью сохранившегося ядра. Natur. велич. Стр. . . . . 476.

Фиг. 2. *Sanguinolaria (Nuttallia) nuttallii* C o n r a d. Голотип. «Inhabitants marshes near St. Diego. Recent». Репродукция из монографии Т. С o n r a d «Descr. of New Mar. Shells», табл. 17, фиг. 6. Наружный вид правой створки. Уменьш.  $\times 1/2$ .

Фиг. 3. *Sanguinolaria (Nuttallia) sp.* indet. Образец № 120/5043. К северу от устья р. Пильтук, полуостров Шмидта (северный Сахалин). Помырская свита. Репродукция изображения «*Soletellina petri*» из монографии И. Х o м e н к o «Стратиграфия трет. сл. пол. Шмидта», табл. XIII, фиг. 1. Обломок задне-спинной части левой створки. Natur. велич.

Фиг. 4. *Solen snatolensis* S l o d k e w i t s c h. Паратип № 232/C 1027. Берег моря, в 0,5 км к NE от устья кл. Точило (западное побережье Камчатки). Тигильская свита. Ядро правой створки с обломанным задним концом. Natur. велич. Стр. . . . . 482.

Фиг. 5. *Solen snatolensis* S l o d k e w i t s c h. Голотип № 231/C 1026. Левый берег в верховьях р. Снатол (западное

duction from same monograph, pl. XIII, fig. 14. Cast of right valve. Natural size.

Фиг. 4. *Sanguinolaria (Nuttallia) ochotica* S l o d k e w i t s c h. Paratype № S/116. Western coast of Kamchatka; Tighil region. Upper horizon of Kavran series. External view of right valve partly restored by plaster. Natural size. Page 173.

Фиг. 4a. *Sanguinolaria (Nuttallia) ochotica* S l o d k e w i t s c h. Same specimen, as fig. 4. Hinge and internal surface of upper portion of right valve. Natural size.

#### Plate XCVII

Фиг. 1. *Sanguinolaria (Nuttallia) ochotica* S l o d k e w i t s c h. Holotype № S/117. Western coast of Kamchatka; Tighil region. Upper horizon of Kavran series. External view of left valve restored by plaster. Natural size. Page . . . . . 173.

Фиг. 1a. *Sanguinolaria (Nuttallia) ochotica* S l o d k e w i t s c h. Same specimen, as fig. 1; dorsal view. Natural size.

Фиг. 1b. *Sanguinolaria (Nuttallia) ochotica* S l o d k e w i t s c h. Same specimen, as fig. 1; hinge and internal surface of upper portion of left valve. Natural size.

#### Plate XCVIII

Фиг. 1. *Sanguinolaria (Nuttallia) nuttallii* C o n r a d. Plesiotype № 101/C 881. Sea coast between sea cliffs and the mouth of Etalonnaya river (western coast of Kamchatka). Upper horizon of Kavran series. External view of right valve. Anterior end and margins of shell are restored by plaster, according to outline of fully preserved cast. Natural size. Page . . . . . 473.

Фиг. 2. *Sanguinolaria (Nuttallia) nuttallii* C o n r a d. Holotype. «Inhabitants marshes near St. Diego. Recent». Reproduction of T. C o n r a d's illustration in «Descr. of New Marine Shells», pl. 17, fig. 6. External view of right valve. Reduced  $\times 1/2$ .

Фиг. 3. *Sanguinolaria (Nuttallia) sp.* indet. Specimen № 120/5043. North of mouth of Piltuk river, Schmidt Peninsula (northern Sakhalin). Pomyr series. Reproduction of I. K h o m e n k o's illustration of «*Soletellina petri*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1934, pl. XIII, fig. 1. Fragment of postero-dorsal portion of left valve. Natural size.

Фиг. 4. *Solen snatolensis* S l o d k e w i t s c h. Paratype № 232/C 1027. Sea coast, 0,5 km NE of mouth of Tochilo spring (western coast of Kamchatka). Tighil series. Cast of right valve; posterior end broken off. Natural size. Page . . . . . 474.

Фиг. 5. *Solen snatolensis* S l o d k e w i t s c h. Holotype № 231/C 1026. Left bank of the upper course of Snatol river

побережье Камчатки). Верхний горизонт тигильской свиты. Ядро правой створки. Натур. велич.

### Таблица XCIX

Фиг. 1. *Solen kamtschaticus* sp. nova. Паратип № 17/5305. Окрестности Усть-Камчатка (восточное побережье Камчатки). Миоцен (?). Обломанное ядро с остатками раковины левой створки. Натур. велич. Стр. . . . . 483.

Фиг. 2. *Solen kamtschaticus* sp. nova. Голотип № 18/5305. То же местонахождение, что и фиг. 1. Двустворчатое ядро с остатками раковины; наружный вид левой створки. Натур. велич.

Фиг. 2а. *Solen kamtschaticus* sp. nova. Тот же экземпляр, что и на фиг. 2; вид сверху. Натур. велич.

Фиг. 3. *Solen tigilensis* S l o d k e w i t s c h. Голотип № 179/С 1018. Ковачинская бухта (западное побережье Камчатки). Тигильская свита. Наружный вид левой створки; задний конец немного обломан. Увелич.  $\times 3/2$ . Стр. . . . . 480.

Фиг. 4. *Solen tigilensis* S l o d k e w i t s c h. Паратип № 159/С 1019. То же местонахождение, что и фиг. 3. Обломанный отпечаток наружной поверхности левой створки. Увелич.  $\times 3/2$ .

Фиг. 5. *Maetra (Spisula) hemphilli* D a l l. Голотип. «San Diego, California. Recent». Репродукция изображения «*Maetra hemphilli*» из монографии W. D a l l «On the Spec. of *Maetra*», табл. V, фиг. 2. Наружный вид левой створки. Уменьш.  $\times 1/2$ . Стр. . . . . 490.

Фиг. 6. *Maetra (Spisula) hemphilli* D a l l. Плезитотип № 184/С 639. Берег моря, в 4 км к СВ от устья р. Утхолок (западное побережье Камчатки). Ваямпольская свита. Обломанное ядро левой створки с частично сохранившейся раковинной. Натур. велич.

### Таблица С

Фиг. 1. *Maetra (Pseudocardium) densata* (C o n r a d). Голотип. «Santa Barbara and shores of San Pablo Bay, California. Miocene?». Репродукция изображения «*Mulinia densata*» из монографии Т. С o n r a d «Descr. of Tert. Foss.», табл. IV, фиг. 12. Наружный вид правой створки. Натур. велич. Стр. . . . . 492.

Фиг. 2. *Maetra (Pseudocardium) cf. densata* (C o n r a d). Окрестности зал. Корфа (восточное побережье Камчатки). Основная угленосной свиты. Репродукция изображения «*Mulinia cfr. densata minor*» из монографии И. Х о м е н к о «О возрасте трет. отл. зал. Корфа», табл. IV, фиг. 7. Ядро левой створки. Натур. велич.

Фиг. 3. *Maetra (Pseudocardium) cf. densata* (C o n r a d). То же местонахождение, что и фиг. 2. Репродукция из той же монографии, табл. IV, фиг. 9. Ядро левой створки. Натур. велич.

(western coast of Kamchatka). Upper horizon of Tighil series. Cast of right valve. Natural size.

### Plate XCIX

Fig. 1. *Solen kamtschaticus* sp. nova. Paratype № 17/5305. In the vicinity of Ust-Kamchatsk (eastern coast of Kamchatka). Miocene (?). Broken cast with adhering shell of left valve. Natural size. Page 175.

Fig. 2. *Solen kamtschaticus* sp. nova. Holotype № 18/5305. Same locality, as fig. 1. Double-valve cast retaining a part of shell; external view of left valve. Natural size.

Fig. 2a. *Solen kamtschaticus* sp. nova. Same specimen, as fig. 2; dorsal view. Natural size.

Fig. 3. *Solen tigilensis* S l o d k e w i t s c h. Holotype № 179/C 1018, Kovachina Bay (western coast of Kamchatka). Tighil (?) series. External view of left valve; posterior end somewhat broken. Enlarged  $\times 3/2$ . Page . . . . . 174.

Fig. 4. *Solen tigilensis* S l o d k e w i t s c h. Paratype № 159/C 1019. Same locality, as fig. 3. Broken impression of external surface of left valve. Enlarged  $\times 3/2$ .

Fig. 5. *Maetra (Spisula) hemphilli* D a l l. Holotype. «San Diego, California. Recent». Reproduction of W. D a l l's illustration of «*Maetra hemphilli*» in «On the Spec. of *Maetra*», pl. V, fig. 2. External view of left valve. Reduced  $\times 1/2$ . Page 176.

Fig. 6. *Maetra (Spisula) hemphilli* D a l l. Pleisotype № 184/C 639. Sea coast, 4 km NE of mouth of Utkholok river (western coast of Kamchatka). Vayempolka series. Broken cast of left valve preserving a portion of shell. Natural size.

### Plate C

Fig. 1. *Maetra (Pseudocardium) densata* (C o n r a d). Holotype. «Santa Barbara and shores of San Pablo Bay, California. Miocene ?» Reproduction of T. C o n r a d's illustration of «*Mulinia densata*» in «Descr. of Tert. Foss.», pl. IV, fig. 12. External view of right valve. Natural size. Page 176.

Fig. 2. *Maetra (Pseudocardium) cf. densata* (C o n r a d). In the vicinity of Korf Gulf (eastern coast of Kamchatka). Base of coal-bearing series. Reproduction of I. K h o m e n k o's illustration of «*Mulinia cfr. densata minor*» in «On the Age of the Tert. Beds of Korf Gulf», pl. IV, fig. 7. Cast of left valve. Natural size.

Fig. 3. *Maetra (Pseudocardium) cf. densata* (C o n r a d). Same locality, as fig. 2. Reproduction from same monograph, pl. IV, fig. 9. Cast of left valve. Natural size.

Фиг. 4. *Maetra (Spisula) polynyma* Stimpson. Плезิโอтип № 106/С 611. Берег моря, в 3 км к северу от устья р. Кавраны (западное побережье Камчатки). Верхний отдел кавранской свиты. Наружный вид несколько обломанной и потерявшей правой створки. Натур. велич. Стр. . . 485.

Фиг. 5. *Maetra (Spisula) polynyma* Stimpson. Плезิโอтип № 173/С 609. Р. Снатол (западное побережье Камчатки). Верхний горизонт тигильской (?) свиты. Наружный вид слегка обломанной спереди правой створки. Натур. велич.

#### Таблица CI

Фиг. 1. *Maetra (Spisula) polynyma* Stimpson. Плезิโอтип № 106/С 611. Берег моря, в 3 км к северу от устья р. Кавраны (западное побережье Камчатки). Верхний отдел кавранской свиты. Внутренний вид правой створки того же экземпляра, что и на табл. С, фиг. 4. Натур. велич. Стр. . . 485.

Фиг. 2. *Maetra (Spisula) polynyma* Stimpson var. *voyi* (Gabb). Голотип № 15038. «Horizon, Pliocene; locality: Humbolt Bay, below Bear River». Репродукция изображения «*Spisula polynyma* subsp. *voyi*» из монографии R. Stewart «Gabb's Type Lamell.», табл. 15, фиг. 6. Наружный вид левой створки. Натур. велич. Стр. . . 489.

Фиг. 3. *Mya (Mya) arenaria* Linné. Современный экземпляр с западного побережья Камчатки. Наружный вид левой створки. Натур. велич. Стр. . . 494.

#### Таблица CII

Фиг. 1. *Mya (Mya) arenaria* Linné. Плезิโอтип № S/136. Река Поворотная (западное побережье Камчатки). Кавранская свита. Ядро; вид слева. Натур. велич. Стр. . . 494.

Фиг. 2. *Mya (Mya) arenaria* Linné var. *japonica* Jay. Голотип. «Habitat: Volcano Bay, Island of Yedo. Recent». Репродукция изображения «*Mya japonica*» из монографии H. Jay «Report on the Shells», табл. I, фиг. 7. Внутренний вид левой створки. Натур. велич. Стр. . . 497.

Фиг. 3. *Mya (Mya) arenaria* Linné var. *japonica* Jay. Плезิโอтип № 276/3104a. На водоразделе между рр. Пильтуном и Паромаем, в 6 км от устья (восточный Сахалин). Наднутовская свита. Репродукция изображения «*Mya arenaria*» из монографии И. Хоменко «Матер. по страт. трет. пл. в Сахал.», табл. VIII, фиг. 1. Наружный вид обломанной правой створки. Натур. велич.

#### Таблица CIII

Фиг. 1. *Mya (Mya) arenaria* Linné var. *japonica* Jay. Плезิโอтип № S/133. Р. Матерая Ваямполка (западное побережье

Fig. 4. *Maetra (Spisula) polynyma* Stimpson. Plesiotype № 106/C 611. Sea coast, 3 km north of mouth of Kavrán river (western coast of Kamchatka). Upper horizon of Kavrán series. External view of right valve somewhat worn and broken. Natural size. Page . . . 175.

Fig. 5. *Maetra (Spisula) polynyma* Stimpson. Plesiotype № 173/C 609. Snatol river (western coast of Kamchatka). Upper horizon of Tighil (?) series. External view of right valve, slightly broken anteriorly. Natural size.

#### Plate CI

Fig. 1. *Maetra (Spisula) polynyma* Stimpson. Plesiotype № 106/C 611. Sea coast, 3 km north of mouth of Kavrán river (western coast of Kamchatka). Upper horizon of Kavrán series. Internal view of right valve of same specimen as on pl. C, fig. 4. Natural size. Page . . . 175.

Fig. 2. *Maetra (Spisula) polynyma* Stimpson var. *voyi* (Gabb). Holotype № 15038. «Horizon, Pliocene; locality: Humbolt Bay, below Bear River». Reproduction of R. Stewart's illustration of «*Spisula polynyma* subsp. *voyi*» in «Gabb's Type Lamell.», pl. 15, fig. 6. External view of left valve. Natural size. Page . . 175.

Fig. 3. *Mya (Mya) arenaria* Linné. Plesiotype № 19/5305. A recent specimen from western coast of Kamchatka. External view of left valve. Natural size. Page 176.

#### Plate CII

Fig. 1. *Mya (Mya) arenaria* Linné. Plesiotype № S/136. Povorotnaya river (western coast of Kamchatka). Kavrán series. Cast; view of left side. Natural size. Page 176.

Fig. 2. *Mya (Mya) arenaria* Linné var. *japonica* Jay. Holotype. «Habitat: Volcano Bay, Island of Yedo. Recent». Reproduction of H. Jay's illustration of «*Mya japonica*» in «Report on the Shells», pl. I, fig. 7. Internal view of left valve. Natural size. Page . . . 176.

Fig. 3. *Mya (Mya) arenaria* Linné var. *japonica* Jay. Plesiotype № 276/3104a. Watershed between Piltun and Paromai rivers, 6 km of mouth (eastern Sakhalin). Supra-Nutovo series. Reproduction of I. Khomenko's illustration of «*Mya arenaria*» in «Materials on the Stratigr. of the Tert. Beds of East Sakhalin», pl. VIII, fig. 1. External view of broken right valve. Natural size.

#### Plate CIII

Fig. 1. *Mya (Mya) arenaria* Linné var. *japonica* Jay. Plesiotype № S/133. Materaya Vayempolka river (western coast

Камчатки). Кавранская свита. Ядро; вид справа. Natur. велич. Стр. . . . 497.

Фиг. 2. *Mya (Mya) arenaria* Linné var. *japonica* J a y. Плезютип № S/133. P. Поворотная (западное побережье Камчатки). Кавранская свита. Ядро с сохранившейся частично раковиной и замком. Вид сверху. Natur. велич.

Фиг. 3. *Mya (Mya) arenaria* Linné var. *truncata* Linné. Плезютип № 112/5044. Между мысом Марии и Мачигарским заливом, полуостров Шмидта (северный Сахалин). Нижняя свита мачигарского разреза. Репродукция изображения «*Mya truncata*» из монографии И. Хоменко «Стратиграфия трет. отл. пол. Шмидта», табл. XIII, фиг. 9. Несколько обломанное ядро левой створки. Natur. велич. Стр. . . . 502.

Фиг. 4. *Mya (Mya) arenaria* Linné var. *truncata* Linné. Современный экземпляр с западного побережья Камчатки. Наружный вид левой створки. Natur. велич.

Фиг. 5. *Mya (Mya) arenaria* Linné var. *truncata* Linné. Плезютип № S/143. P. Аманина (западное побережье Камчатки). Ваямпольская (?) свита. Двустворчатый экземпляр; наружный вид правой створки. Natur. велич.

Фиг. 5а. *Mya (Mya) arenaria* Linné var. *truncata* Linné. Тот же экземпляр, что и на фиг. 5; вид сверху. Natur. велич.

#### Таблица CIV

Фиг. 1. *Mya (Mya) arenaria* Linné var. *paternalis* M a t s u m o t o. Голотип. «Azukijima-Nishi. Fauna of *Arca amacula* zone. Upper Miocene». Репродукция изображения «*Mya paternalis*» из монографии H. M a t s u m o t o «On the Mar. Fauna of three Fossil Zones». табл. XXXIX, фиг. 5; Ядро; вид слева. Natur. велич. Стр. 501.

Фиг. 1а. *Mya (Mya) arenaria* Linné var. *paternalis* M a t s u m o t o. Тот же экземпляр, что и на фиг. 1; вид сверху.

Фиг. 2. *Mya (Mya) arenaria* Linné var. *paternalis* M a t s u m o t o. Плезютип № 109/5044. К востоку от мыса Марии, полуостров Шмидта (северный Сахалин). Нижняя свита мачигарского разреза. Репродукция изображения «*Mya arenaria paternalis*» из монографии И. Хоменко «Стратиграфия трет. отл. пол. Шмидта», табл. XIV, фиг. 2. Наружный вид левой створки. Natur. велич.

#### Таблица CV

Фиг. 1. *Mya (Mya) arenaria* Linné var. *profundior* G r a n t & G a l e. Плезютип № 113/5044. К востоку от мыса Марии, полуостров Шмидта (северный Сахалин). Венгерийская свита. Репродукция изображения «*Mya crassa*» из монографии И. Хоменко «Стратиграфия трет. отл. пол. Шмидта», табл. XIV, фиг. 5. Наружный

of Kamchatka). Kavran series. Cast; view of right side. Natural size. Page . . . 176.

Fig. 2. *Mya (Mya) arenaria* Linné var. *japonica* J a y. Plesiotype № S/133. Povorotnaya river (western coast of Kamchatka). Kavran series. Cast with portion of shell preserved, as well as hinge. Dorsal view. Natural size.

Fig. 3. *Mya (Mya) arenaria* Linné var. *truncata* Linné. Plesiotype № 112/5044. Between Cape Maria and Gulf of Machigar, Schmidt Peninsula (northern Sakhalin). Lower series of Machigar section. Reproduction of I. K h o m e n k o 's illustration of «*Mya truncata*» in «Stratigr. of the Tert. Beds of the Schmidt Penins.», 1935, pl. XIII, fig. 9. Cast of left valve somewhat broken. Natural size. Page 177.

Fig. 4. *Mya (Mya) arenaria* Linné var. *truncata* Linné. A recent specimen from western coast of Kamchatka. External view of left valve. Natural size.

Fig. 5. *Mya (Mya) arenaria* Linné var. *truncata* Linné. Plesiotype № S/143. Amanina river (western coast of Kamchatka). Vayempolka (?) series. Double-valve specimen; external view of right valve. Natural size.

Fig. 5a. *Mya (Mya) arenaria* Linné var. *truncata* Linné. Same specimen, as fig. 5; dorsal view. Natural size.

#### Plate CIV

Fig. 1. *Mya (Mya) arenaria* Linné var. *paternalis* M a t s u m o t o. Holotype. «Azukijima-Nishi. Fauna of *Arca amacula* zone. Upper Miocene». Reproduction of H. M a t s u m o t o 's illustration of «*Mya paternalis*» in «On the Mar. Fauna of three Fossil Zones», pl. XXXIX, fig. 5. Cast view of left side. Natural size. Page . . . 177.

Fig. 1a. *Mya (Mya) arenaria* Linné var. *paternalis* M a t s u m o t o. Same specimen, as fig. 1; dorsal view.

Fig. 2. *Mya (Mya) arenaria* Linné var. *paternalis* M a t s u m o t o. Plesiotype № 109/5044. East of Cape Maria, Schmidt Peninsula (northern Sakhalin). Lower series of Machigar section. Reproduction of I. K h o m e n k o 's illustration of «*Mya arenaria paternalis*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1935, pl. XIV, fig. 2. External view of left valve. Natural size.

#### Plate CV

Fig. 1. *Mya (Mya) arenaria* Linné var. *profundior* G r a n t & G a l e. Plesiotype № 113/5044. East of Cape Maria, Schmidt Peninsula (northern Sakhalin). Vengheri series. Reproduction of I. K h o m e n k o 's illustration of «*Mya crassa*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1935, pl. XIV, fig. 5. External

вид несколько потертой и обломанной левой створки. Натур. велич. Стр. . . . 499.

Фиг. 2. *Mya (Mya) arenaria* Linné var. *profundior* Grant & Gale. Лектотип. «SO-Küste Alaska's bei der Pawlowschen Ansiedlung. Tertiär». Репродукция изображения «*Mya crassa*» из монографии С. Grewingk «Beitr. z. Kenntn. N.-W. Amerikas», табл. VI, фиг. 2a. Наружный вид правой створки. Натур. велич.

Фиг. 3. *Pholadidea penita* (Conrad). Плезотиоп № 101/C 487. Берег моря между Непропуском и устьем р. Эталонной (западное побережье Камчатки). Верхний отдел кавранской свиты. Наружный вид правой створки. Раковина извлечена из отверстия, просверленного животным в гальке из породы ваямпольской свиты (см. фиг. 5). Увелич.  $\times 2/1$ . Стр. . . . 506.

Фиг. 3a. *Pholadidea penita* (Conrad). Внутренний вид левой створки того же экземпляра, что и на фиг. 3. Увелич.  $\times 2/1$ .

Фиг. 4. *Pholadidea penita* (Conrad). Плезотиоп № R/C 488. Современная форма с западного побережья Камчатки. Наружный вид правой створки. Натур. велич.

Фиг. 5. *Pholadidea penita* (Conrad). Плезотиоп № 101/C 486. Берег моря между Непропуском и устьем р. Эталонной (западное побережье Камчатки). Верхний отдел кавранской свиты. Галька из породы ваямпольской свиты в конгломерате верхнего отдела кавранской свиты с ходами *Ph. penita* (см. фиг. 2). Натур. велич.

Фиг. 6. *Pholadidea penita* (Conrad). Голотип. «Inhabits... in the vicinity of St. Diego and St. Barbara». Репродукция изображения «*Pholas penita*» из монографии Т. Conrad «Descr. of New Mar. Shells», табл. XVIII, фиг. 7. Наружный вид правой створки. Натур. велич.

#### Таблица CVI

Фиг. 1. *Pholadidea penita* (Conrad). Плезотиоп № 159/C 489. Берег моря, в 12 км к востоку от устья р. Ковачины (западное побережье Камчатки). Нижний горизонт тигильской свиты. Двустворчатый экземпляр; наружный вид правой створки. Натур. велич. Стр. . . . 506.

Фиг. 1a. *Pholadidea penita* (Conrad). Тот же экземпляр, что и на фиг. 1; вид сверху. Натур. велич.

Фиг. 2. *Panope (Panomya) intermedia* (Khomeňko). Голотип. К N от устья р. Венгери, полуостров Шмидта (северный Сахалин). Венгерийская свита. Репродукция изображения «*Panomya intermedia*» из монографии И. Хоменко «Стратиграфия трет. отл. пол. Шмидта», табл. XI, фиг. 1. Ядро правой створки с частично сохранившейся раковиной. Натур. велич. Стр. . . . 504.

view of left valve somewhat worn and broken. Natural size. Page . . . . 177.

Фиг. 2. *Mya (Mya) arenaria* Linné var. *profundior* Grant & Gale. Лектотип. «SO-Küste Alaska's bei der Pawlowschen Ansiedlung. Tertiär». Репродукция изображения «*Mya crassa*» в «Beitr. z. Kenntn. N.-W. Amerikas», pl. VI, fig. 2a. External view of right valve. Natural size.

Фиг. 3. *Pholadidea penita* (Conrad). Plesiotype № 101/C 487. Sea coast between sea cliffs and Etalonnaya river (western coast of Kamchatka). Upper horizon of Kavran series. External view of right valve. Shell is extracted from the hole burrowed by animal in pebble of the rock of Vayempolka series (see fig. 5). Enlarged  $\times 2/1$ . Page . . . . 178.

Фиг. 3a. *Pholadidea penita* (Conrad). Internal view of left valve of same specimen, as fig. 3. Enlarged  $\times 2/1$ .

Фиг. 4. *Pholadidea penita* (Conrad). Plesiotype № R/C 488. Living specimen from western coast of Kamchatka. External view of right valve. Natural size.

Фиг. 5. *Pholadidea penita* (Conrad). Plesiotype № 101/C 486. Sea coast between sea cliffs and mouth of Etalonnaya river (western coast of Kamchatka). Upper horizon of Kavran series. Pebble of the rock of Vayempolka series in conglomerate of the upper horizon of Kavran series with burrows of *Ph. penita* (see fig. 2). Natural size.

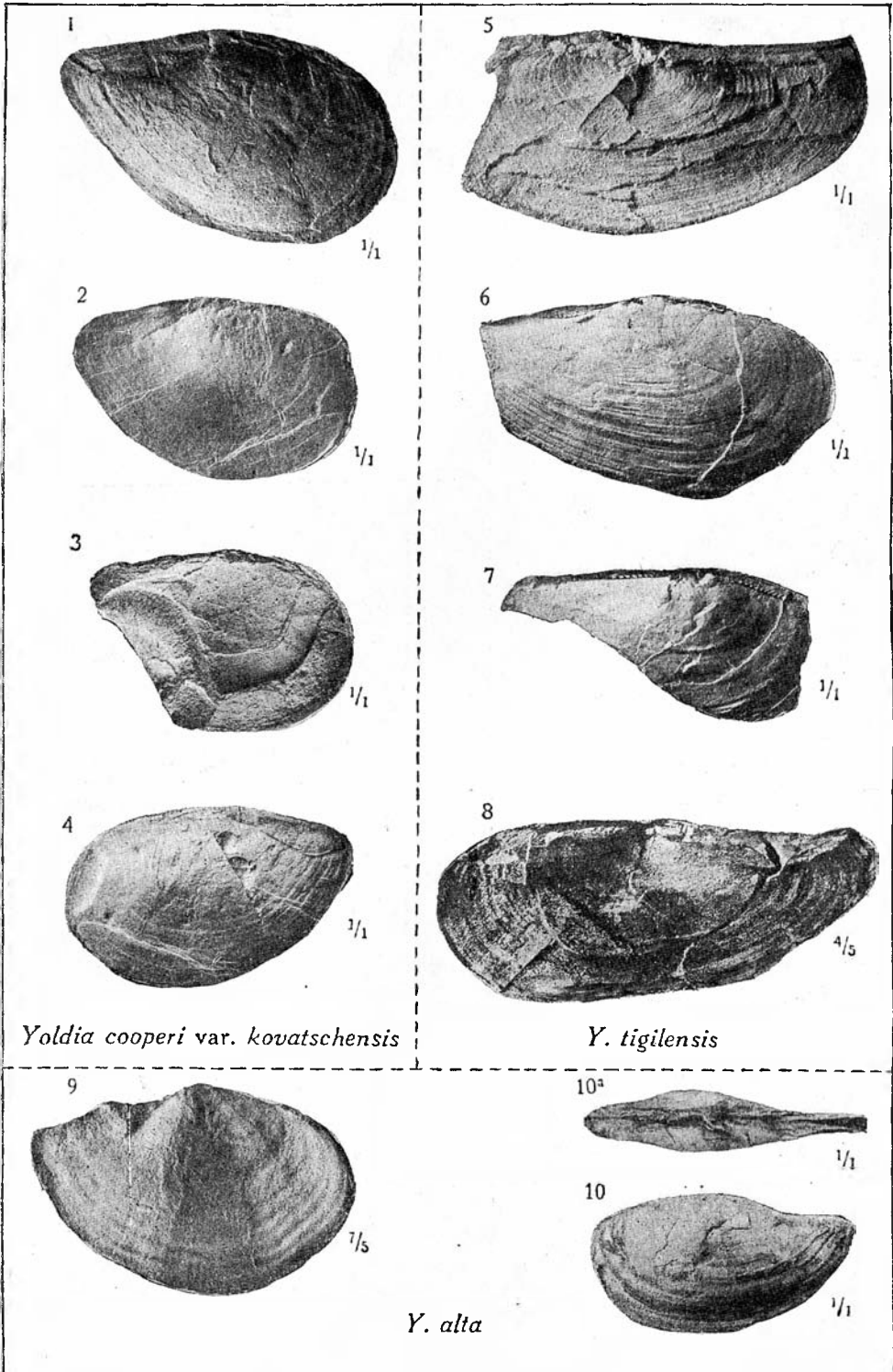
Фиг. 6. *Pholadidea penita* (Conrad). Holotype. «Inhabits ... in the vicinity of St. Diego and St. Barbara». Reproduction of T. Conrad's illustration of «*Pholas penita*» in «Descr. of New Mar. Shells», pl. XVIII, fig. 7. External view of right valve. Natural size.

#### Plate CVI

Фиг. 1. *Pholadidea penita* (Conrad). Plesiotype № 159/C 489. Sea coast, 12 km east of mouth of Kovachina river (western coast of Kamchatka). Lower horizon of Tighil series. Double-valve specimen; external view of right valve. Natural size. Page . . . . 178.

Фиг. 1a. *Pholadidea penita* (Conrad). Same specimen, as fig. 1; dorsal view. Natural size.

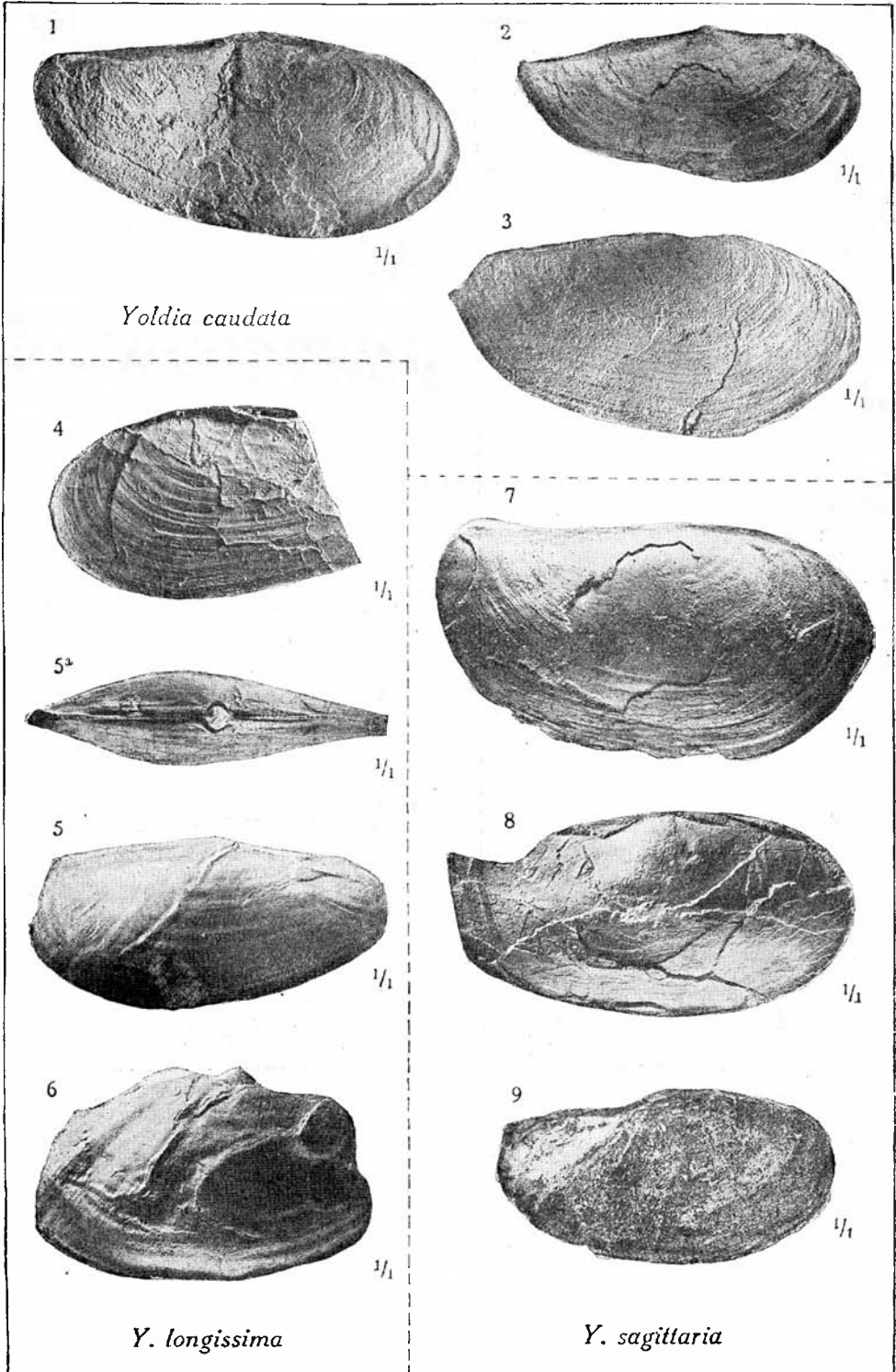
Фиг. 2. *Panope (Panomya) intermedia* (Khomeňko). Holotype. To N of mouth of Vengheri river, Schmidt Peninsula (northern Sakhalin). Vengheri series. Reproduction of I. Khomeňko's illustration of «*Panomya intermedia*» in «Stratigraphy of the Tert. Beds of Schmidt Penins.», 1935, pl. XI, fig. 1. Cast of right valve with shell preserved in part. Natural size. Page . . . . 177.



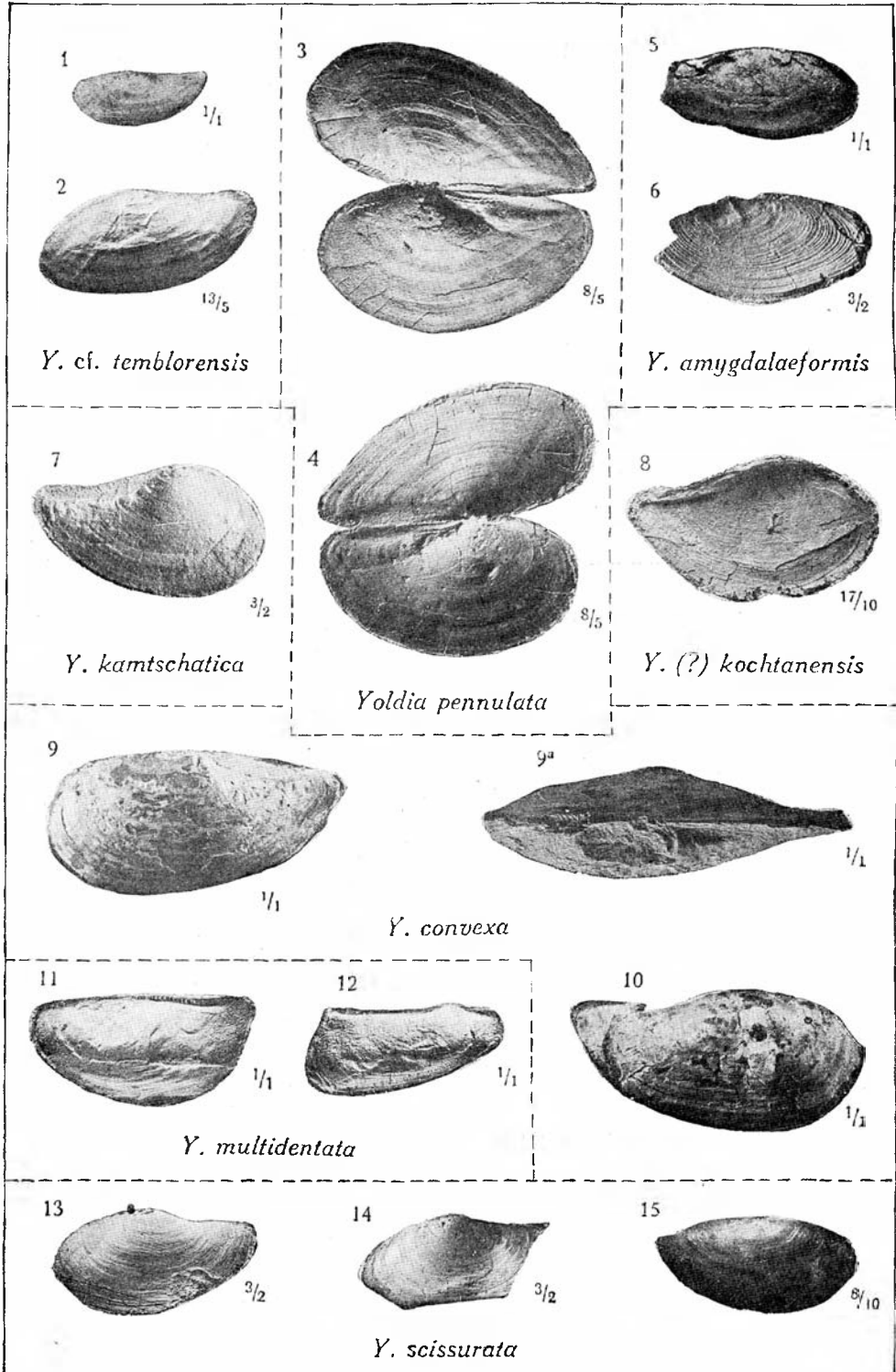
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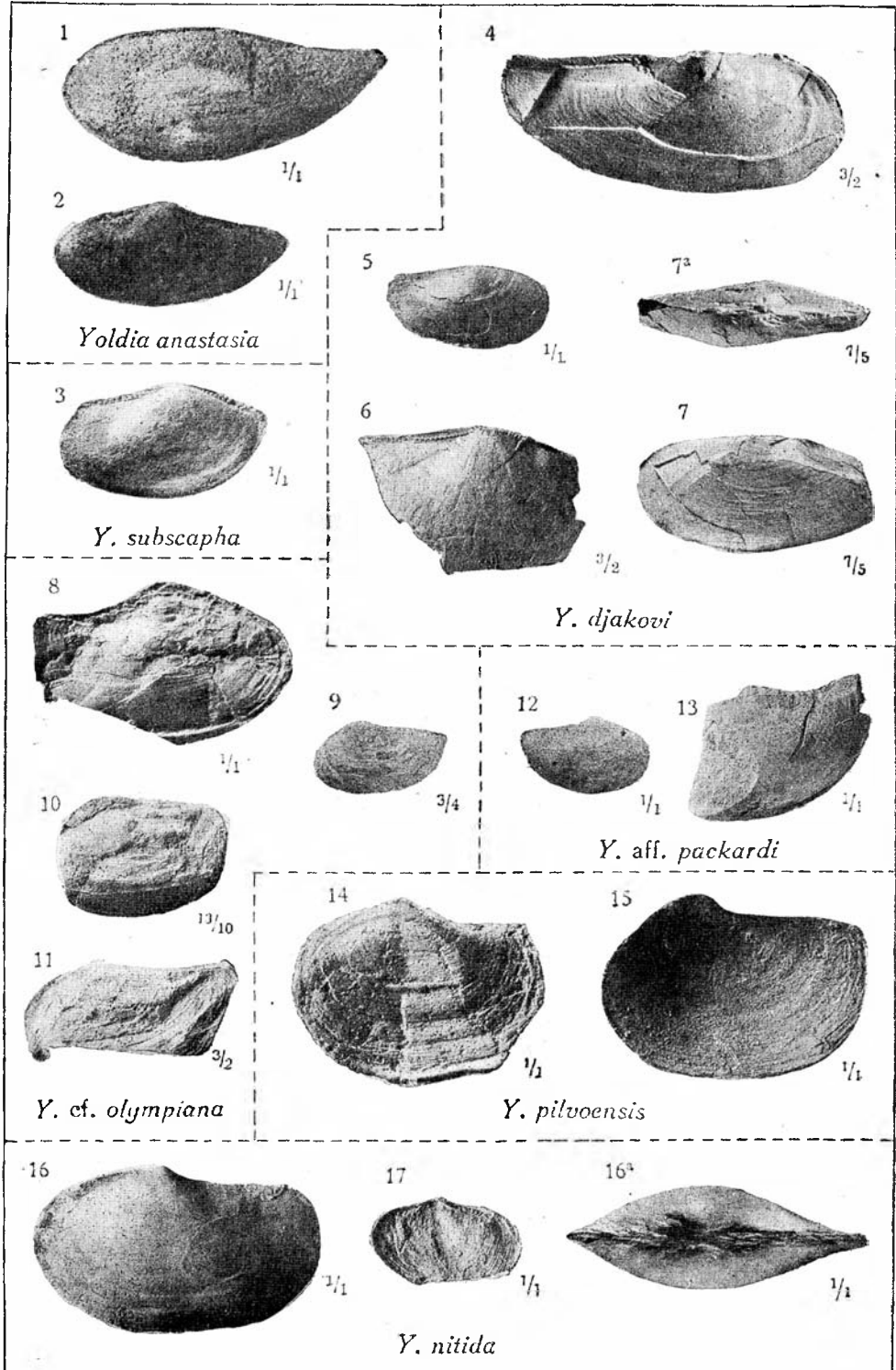
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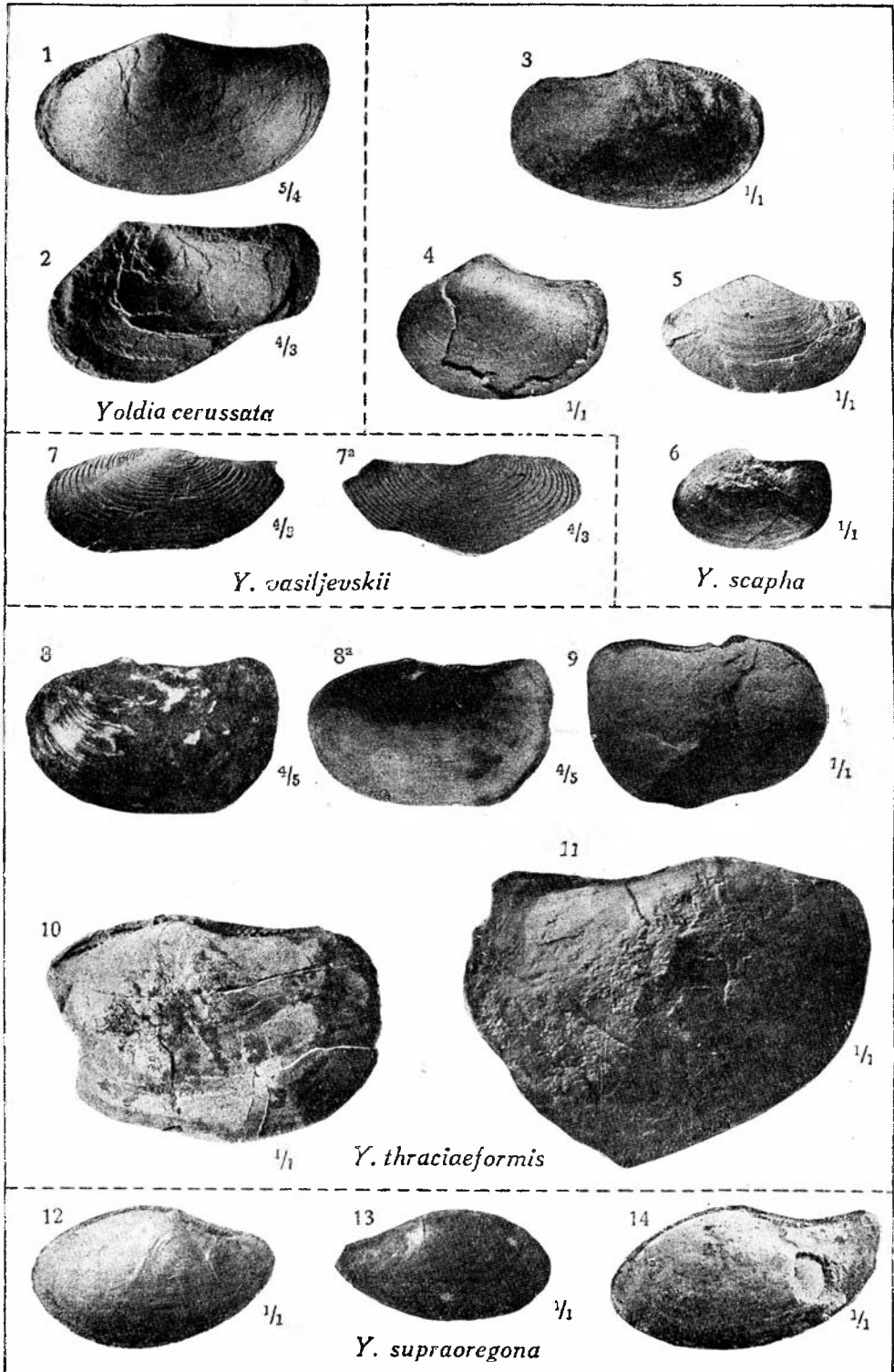
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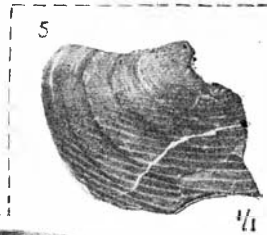




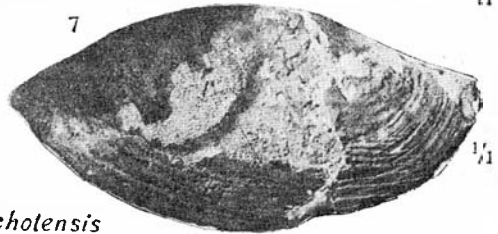




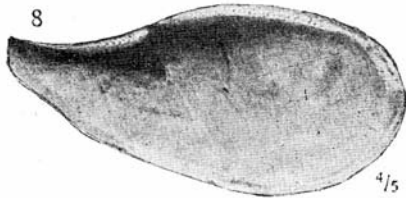




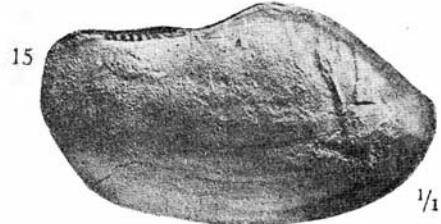
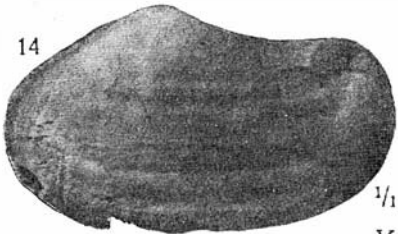
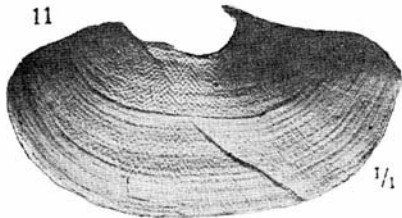
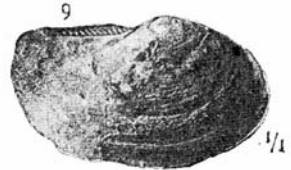
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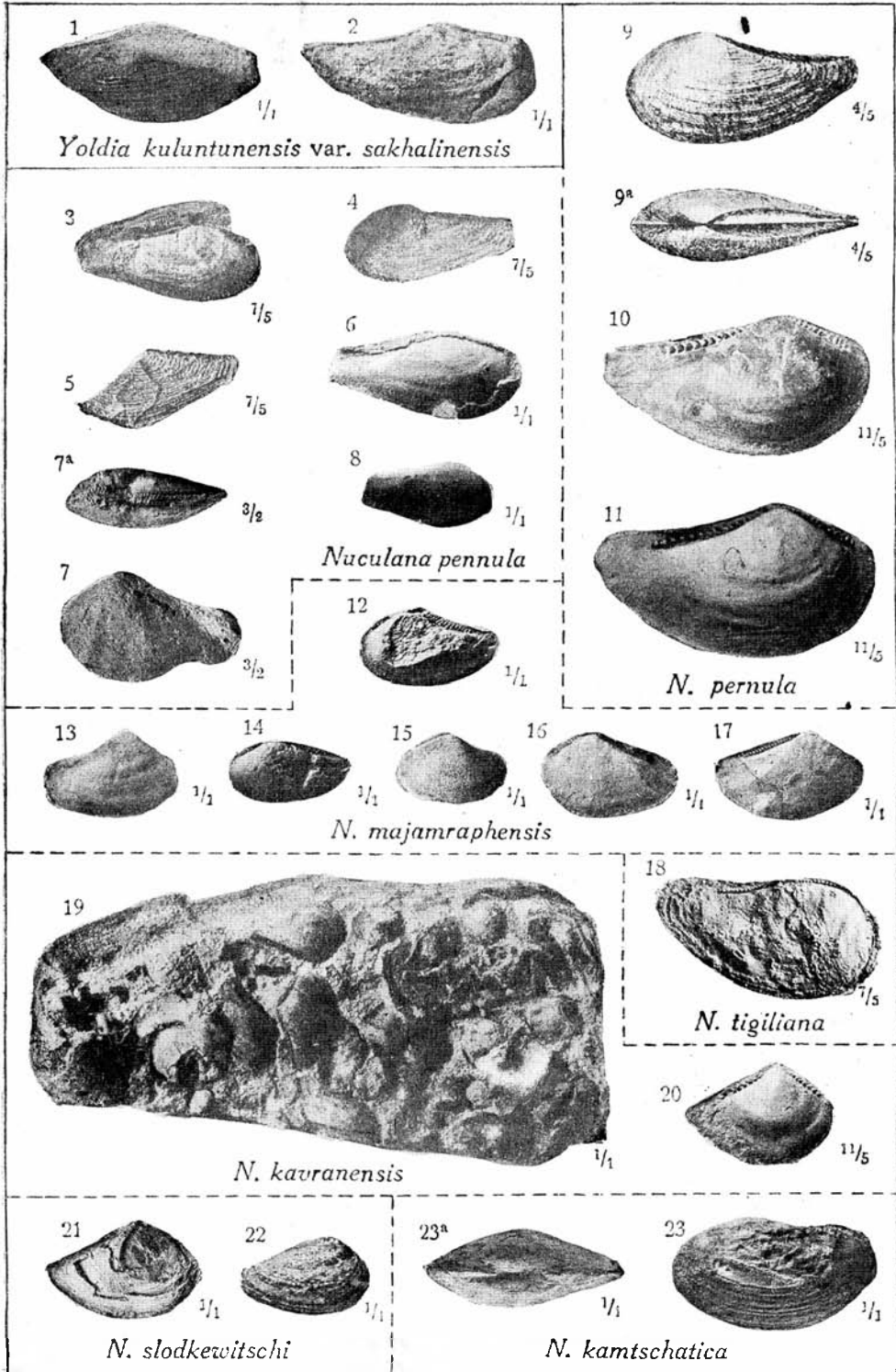
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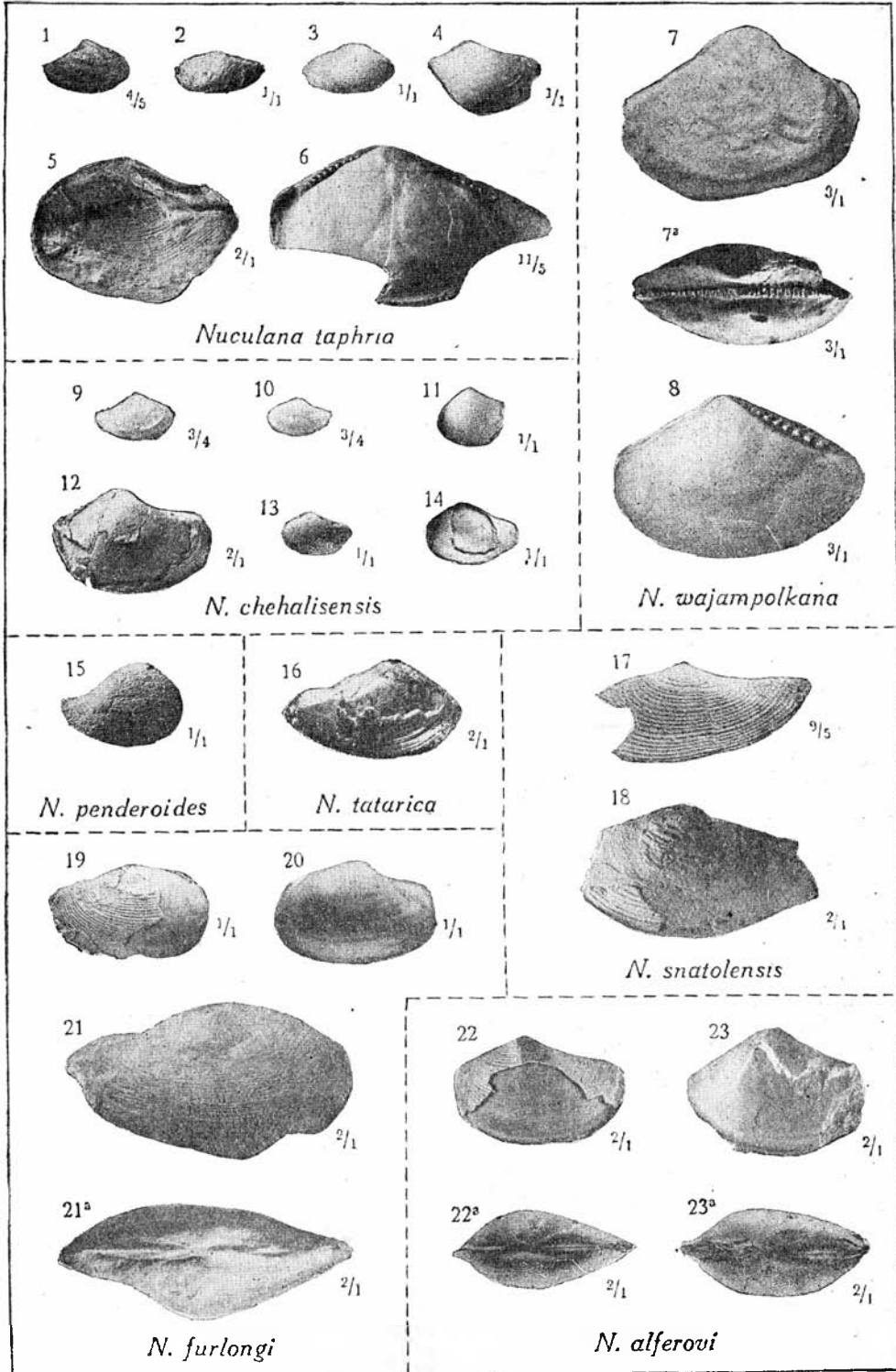


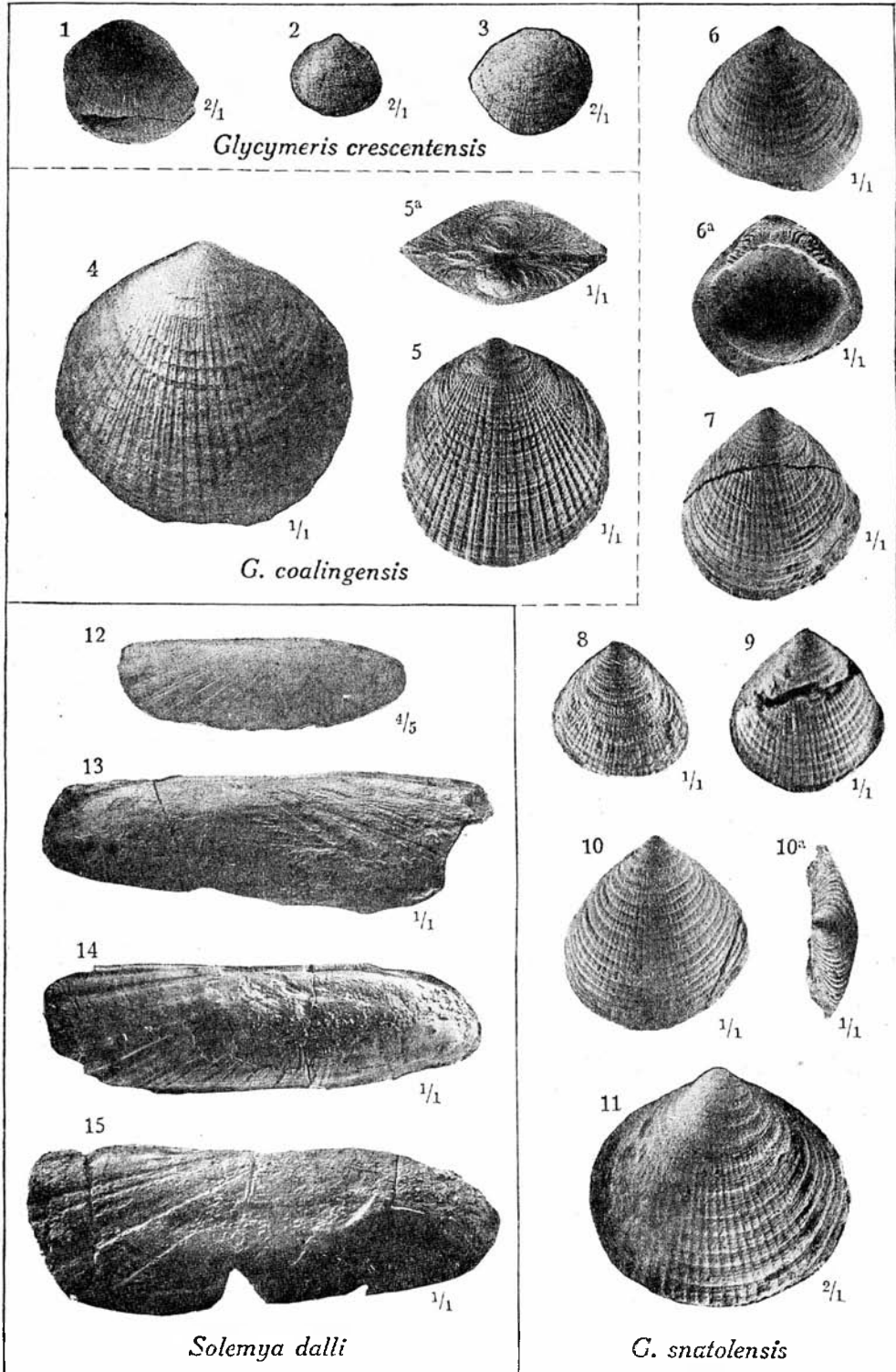
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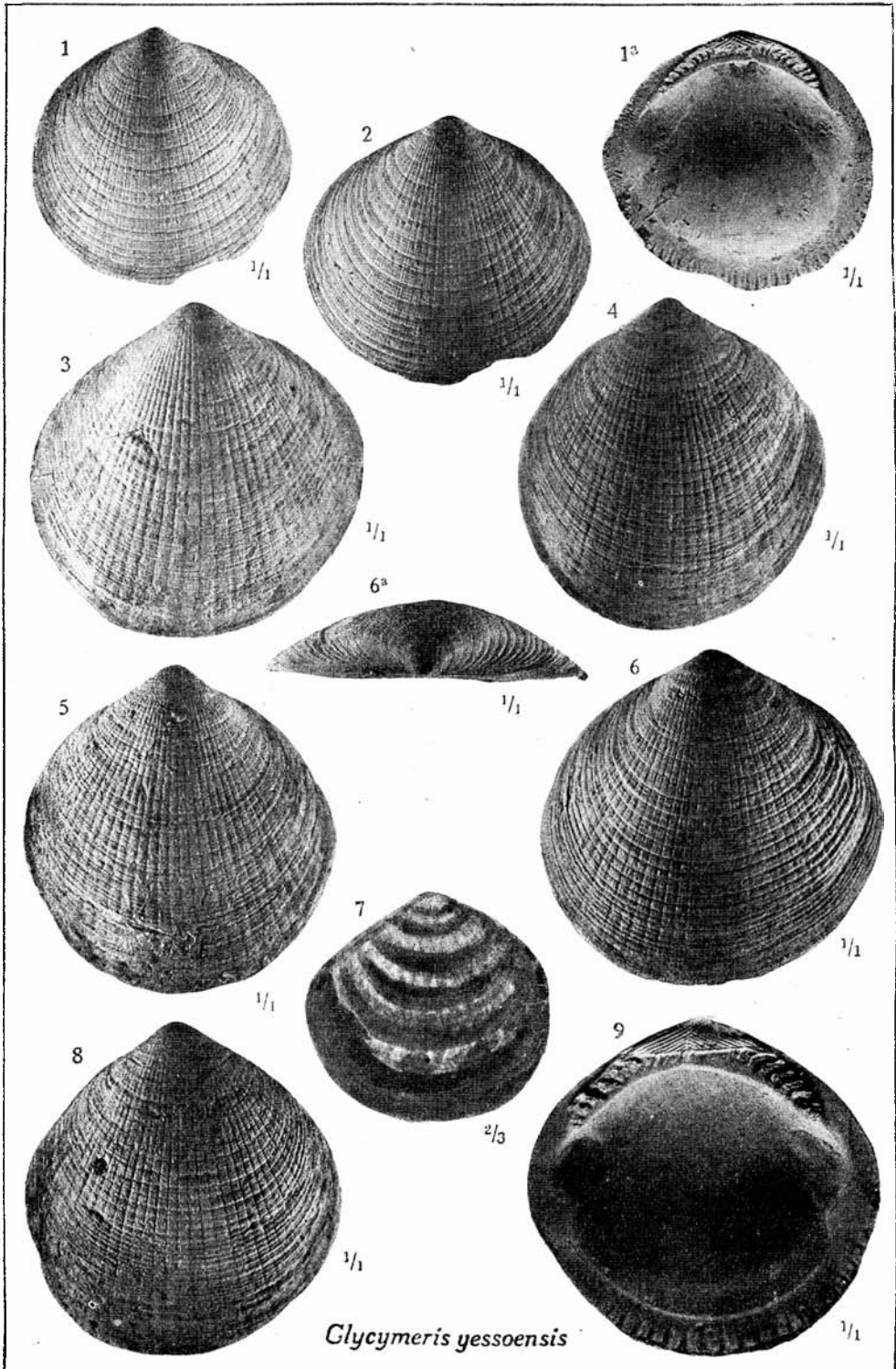


*Y. tokunagai*





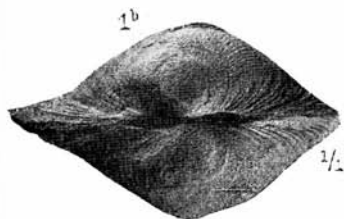




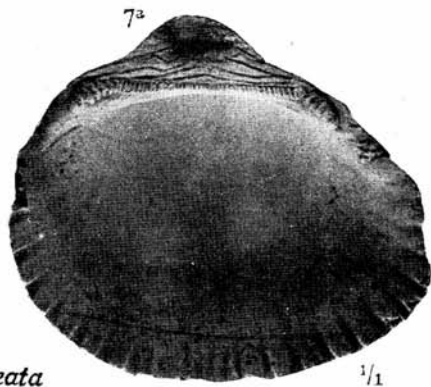
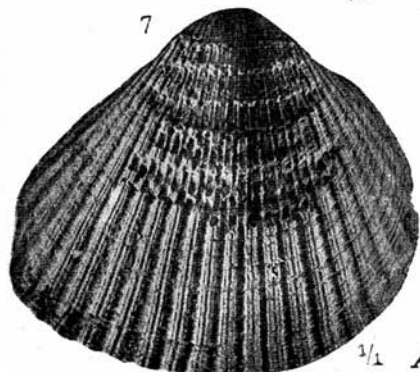
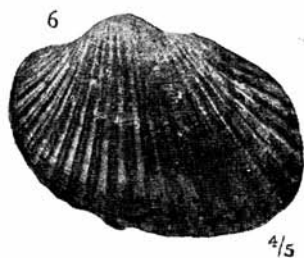
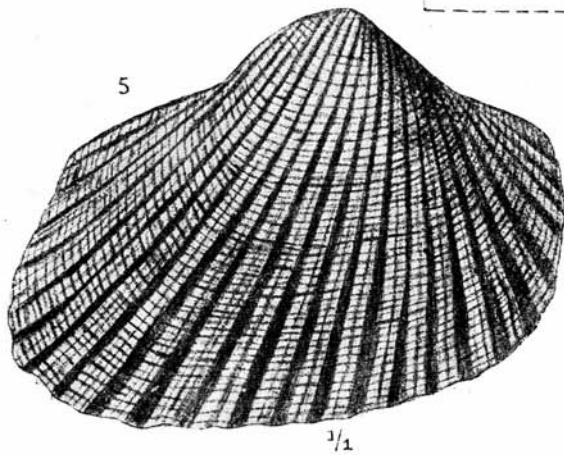




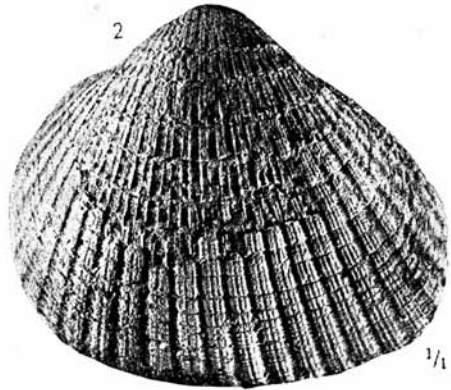
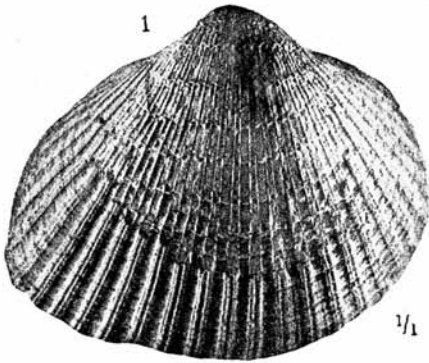
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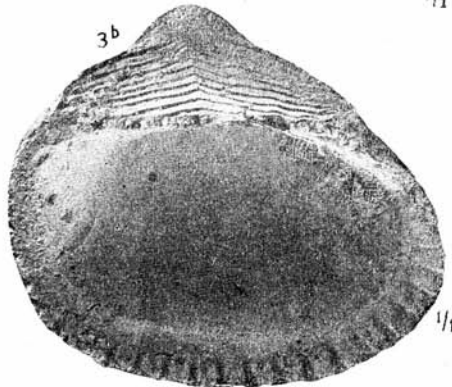
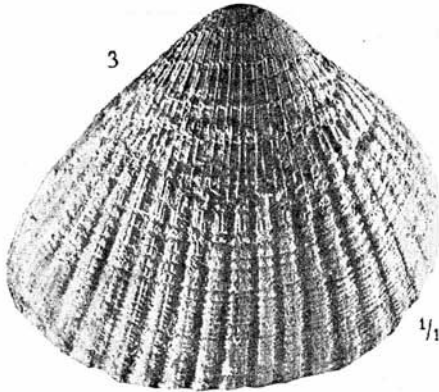
*Arca cf. obispoana*



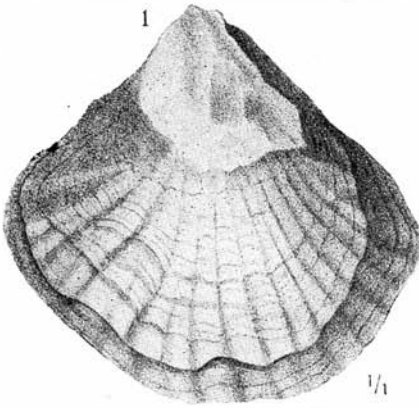
*A. trilineata*



*Arca trilineata*



*Ostrea atwoodi*



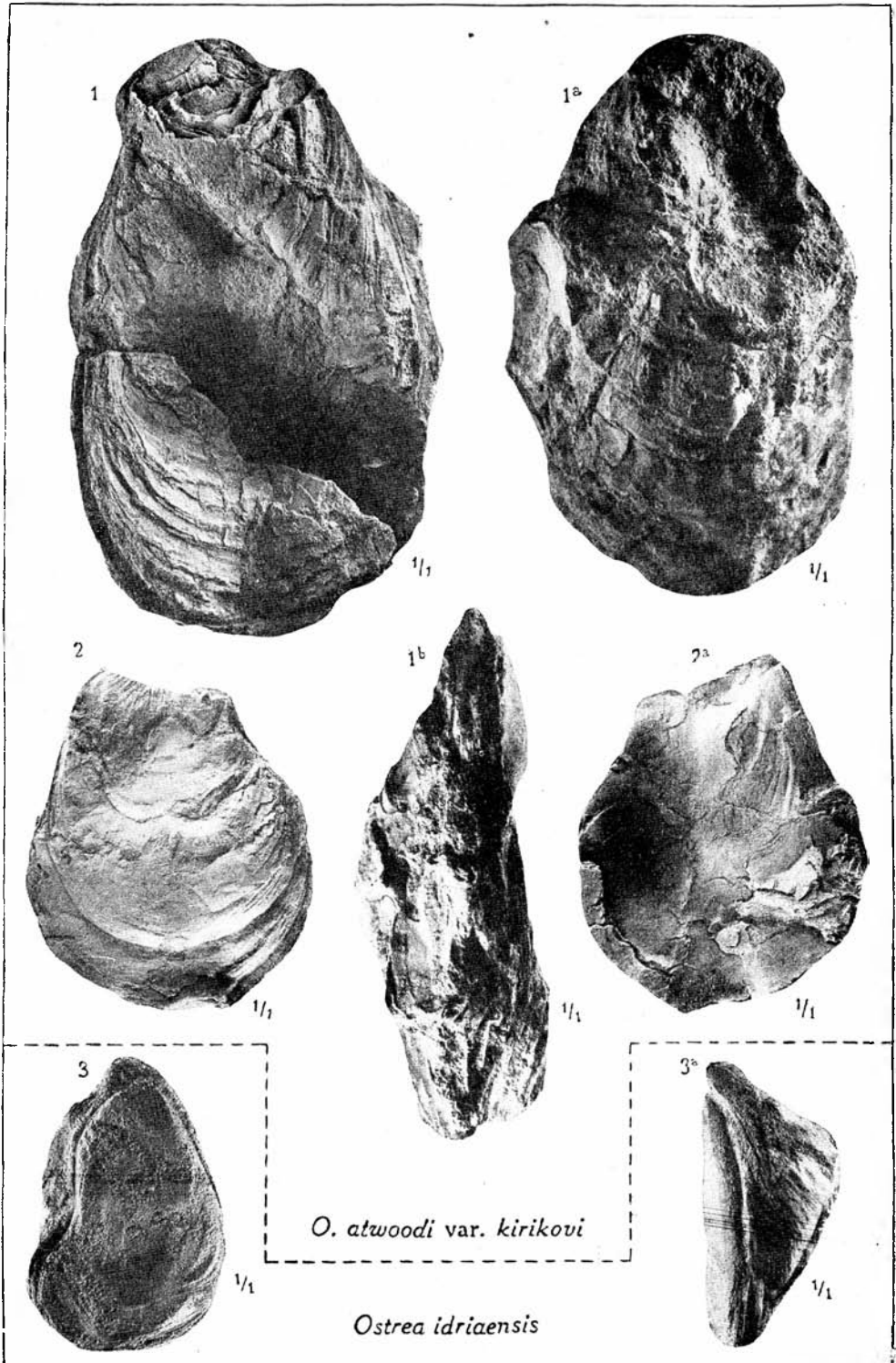
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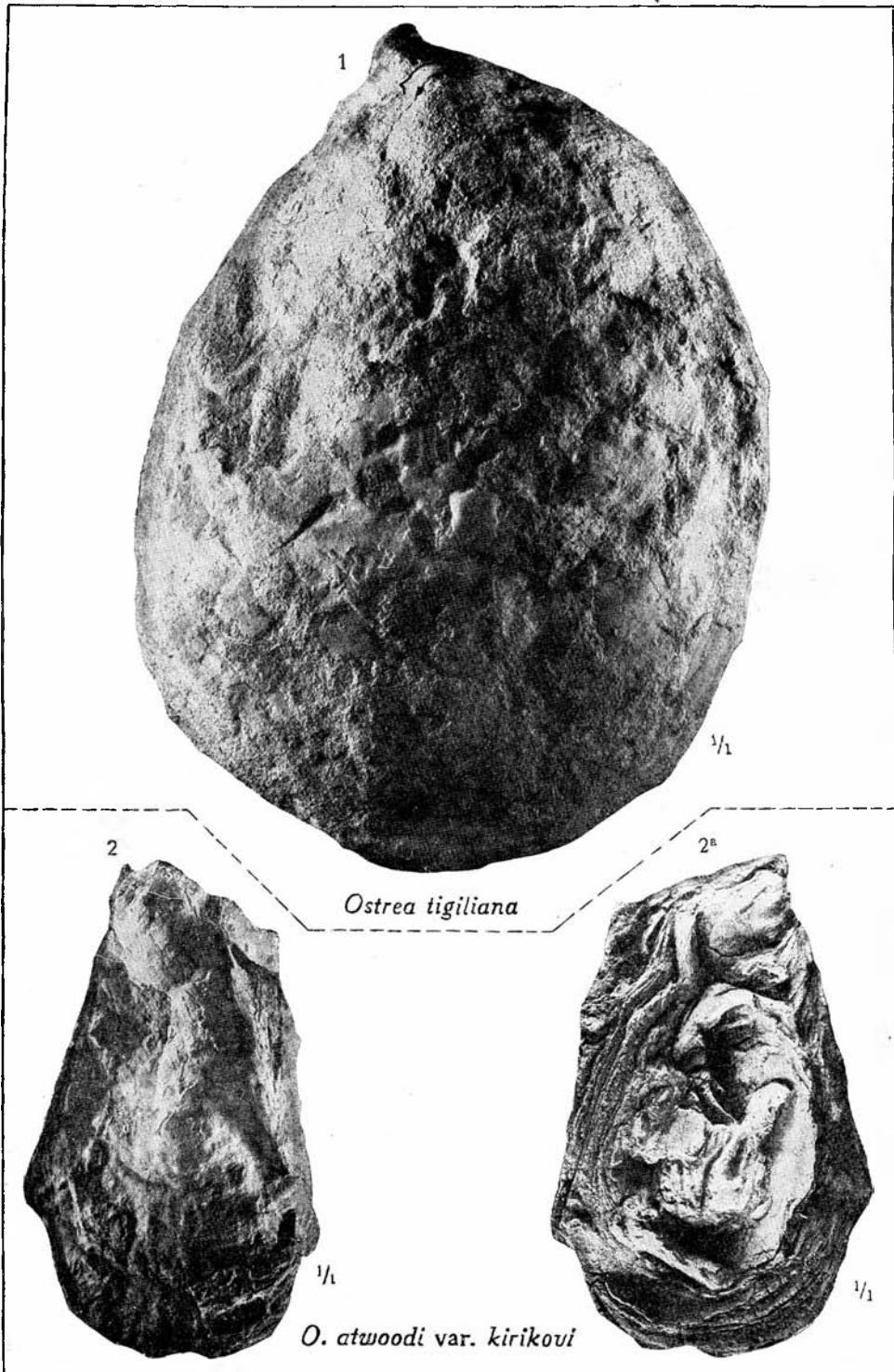


*O. lisjiensis*



*O. idriensis*





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2

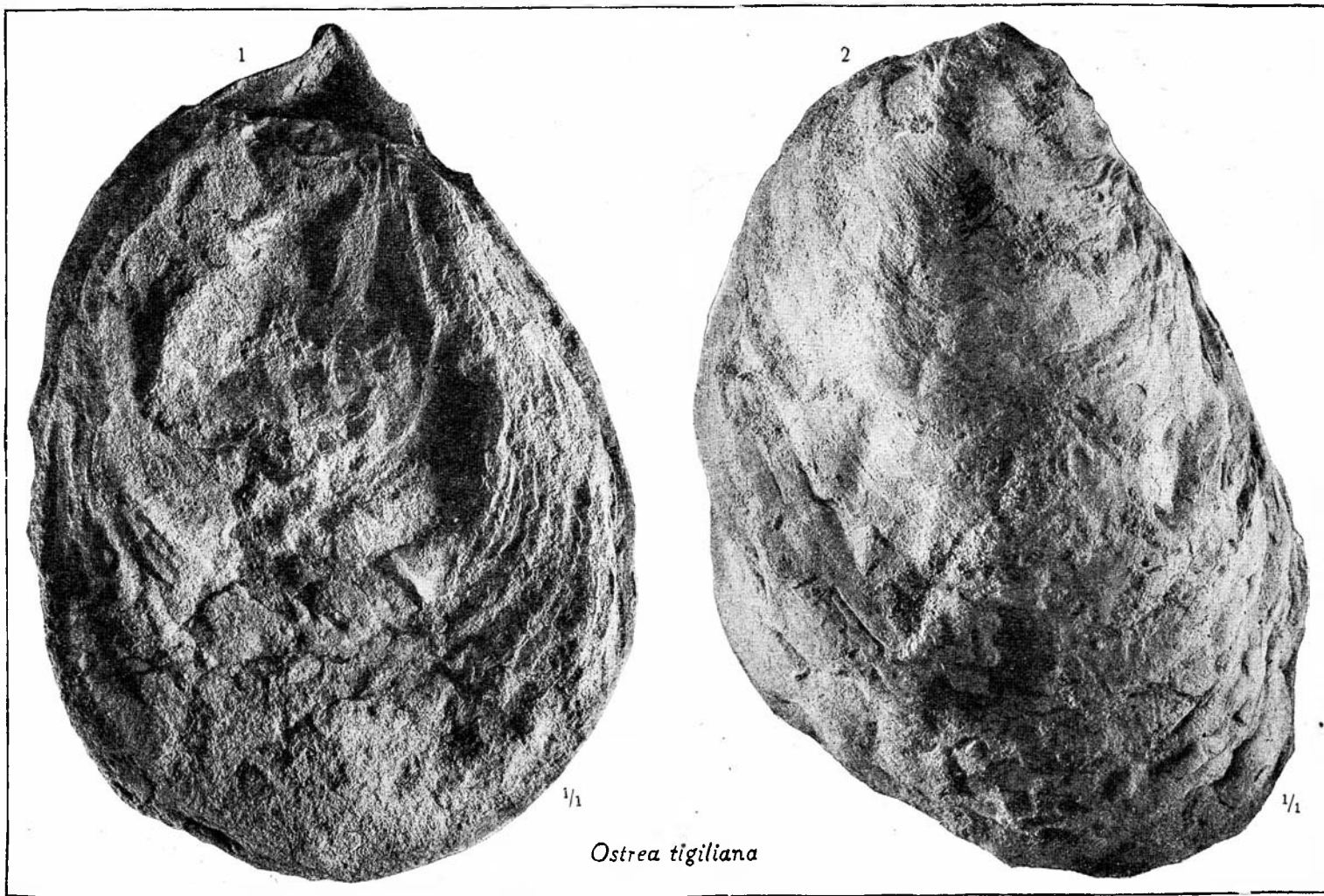
*Ostrea tigiliana*

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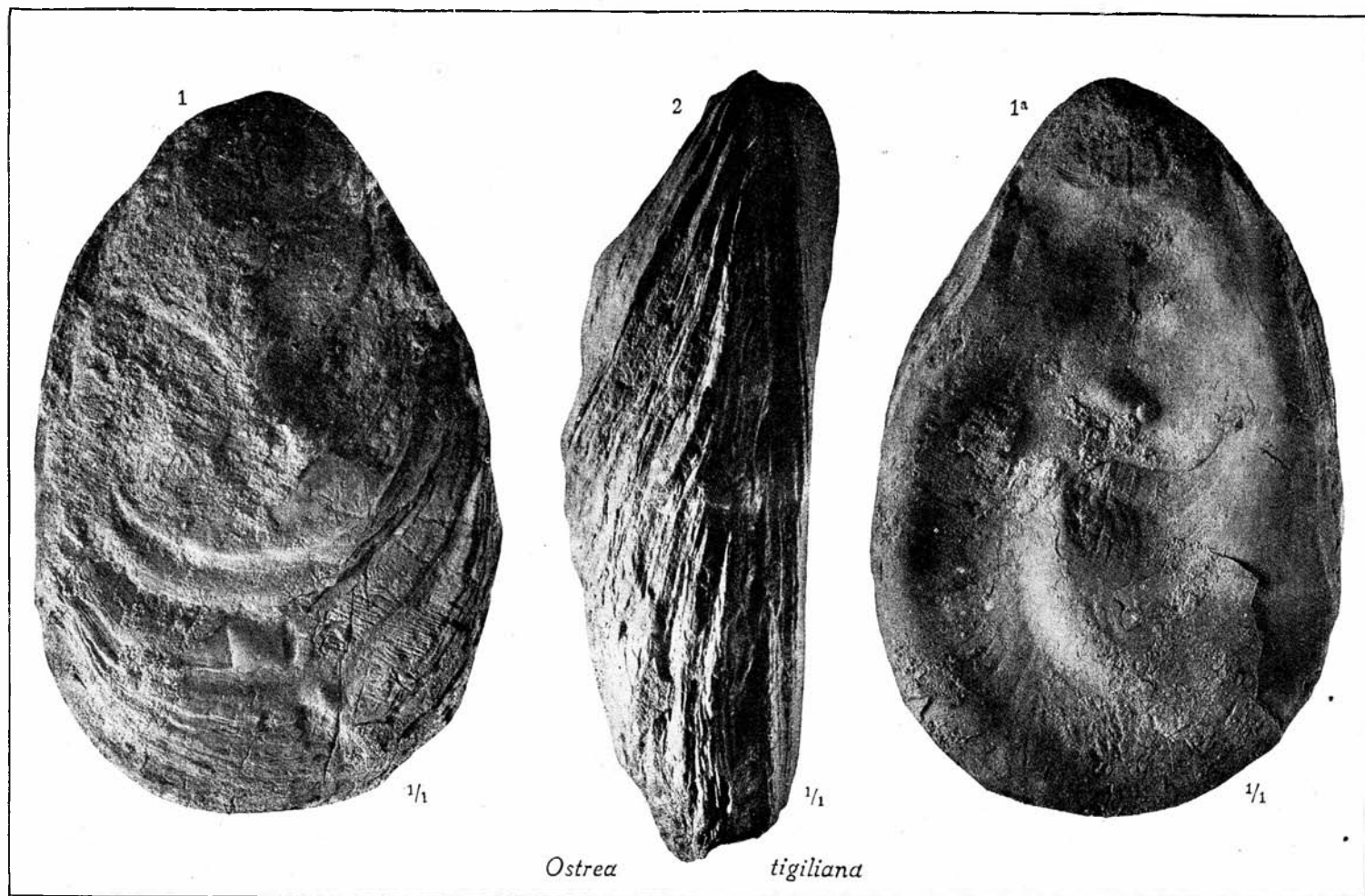
*O. atwoodi* var. *kirikovi*

1/1

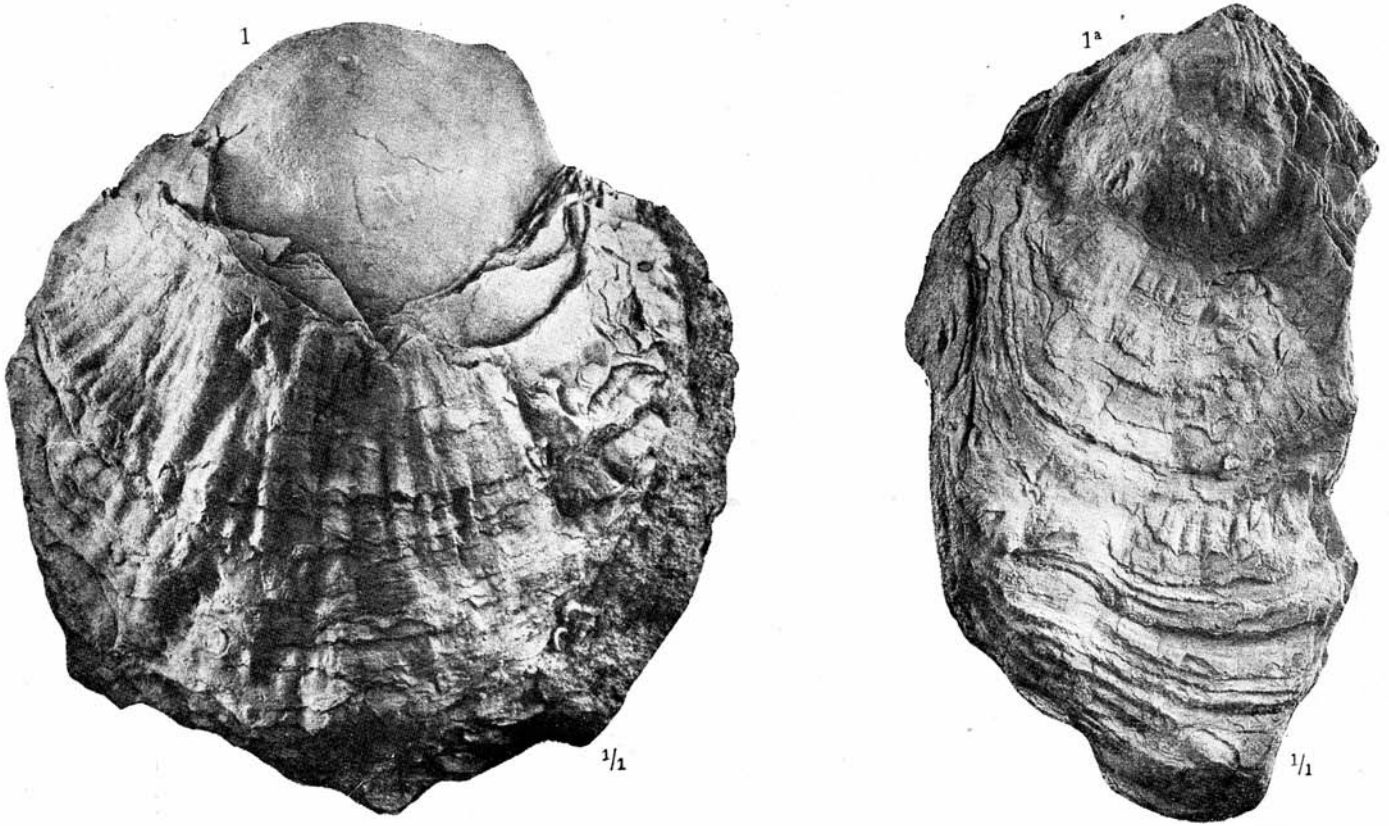


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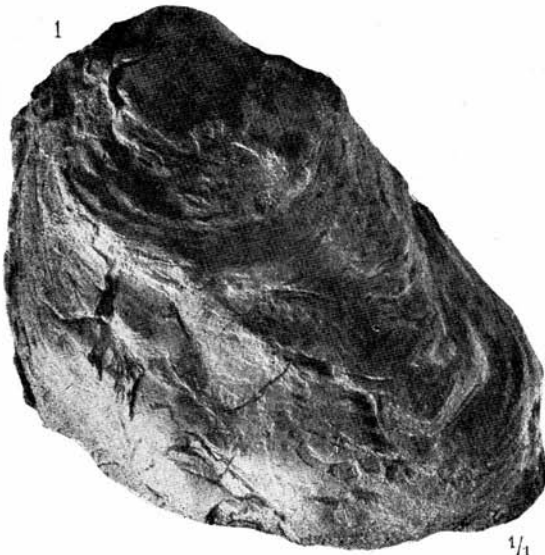








*Ostrea kouatschensis*



*Ostrea rekinikensis*

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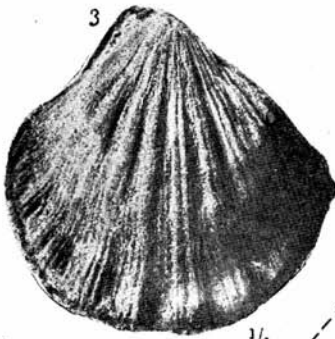


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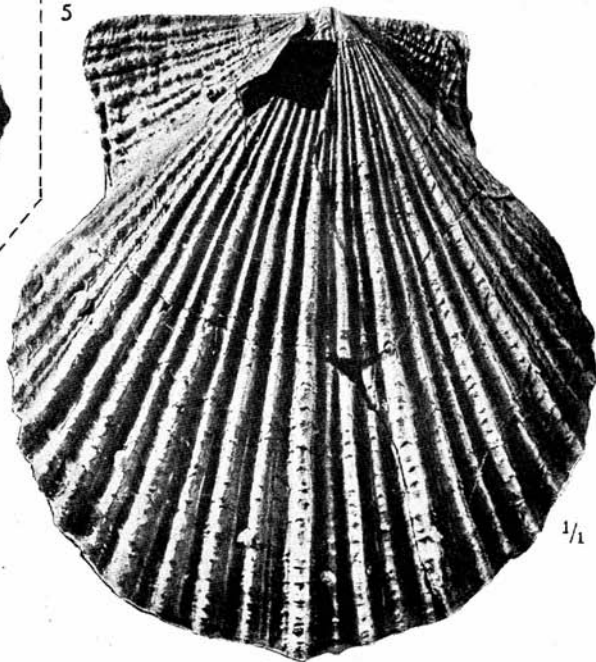


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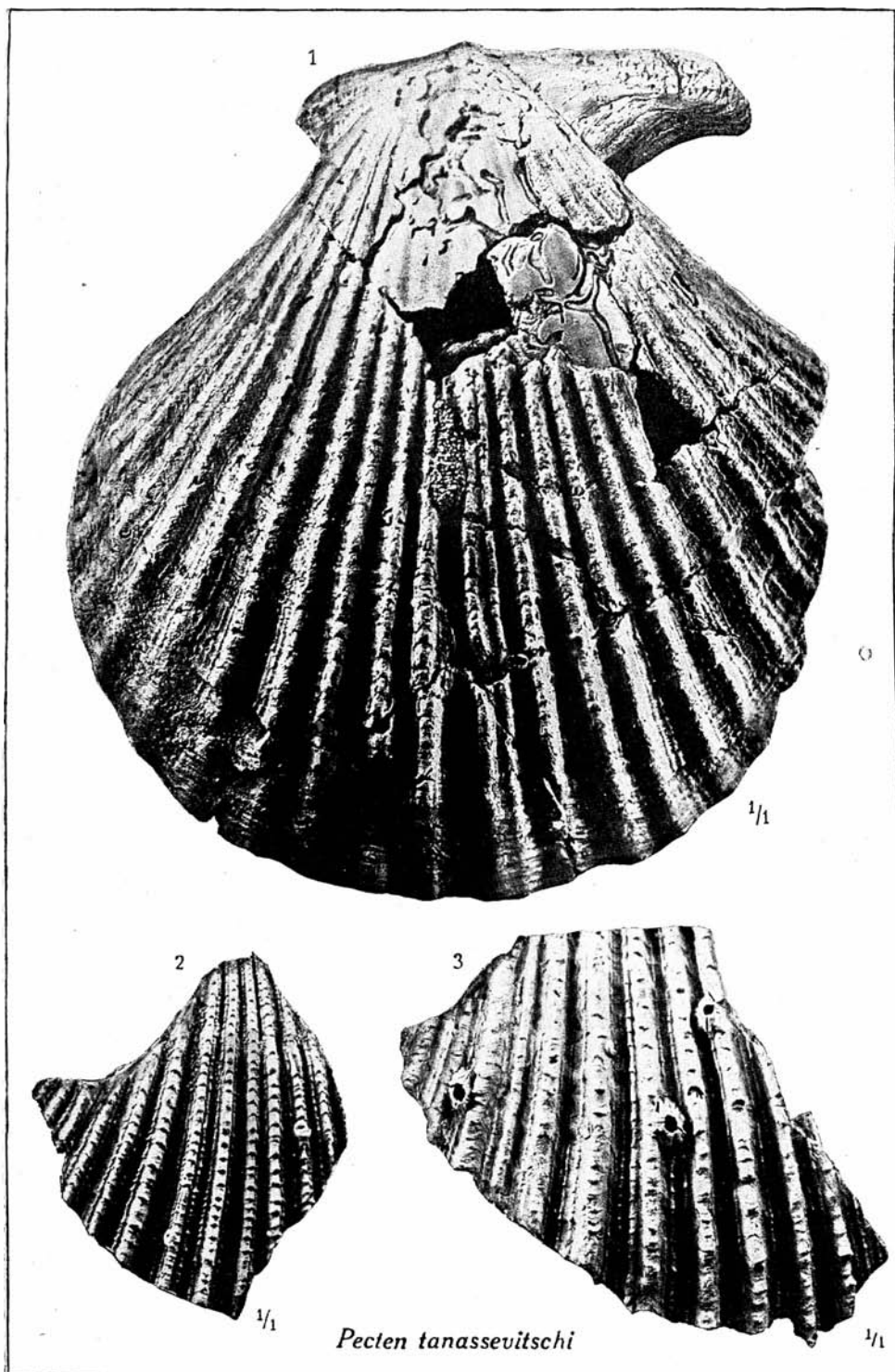
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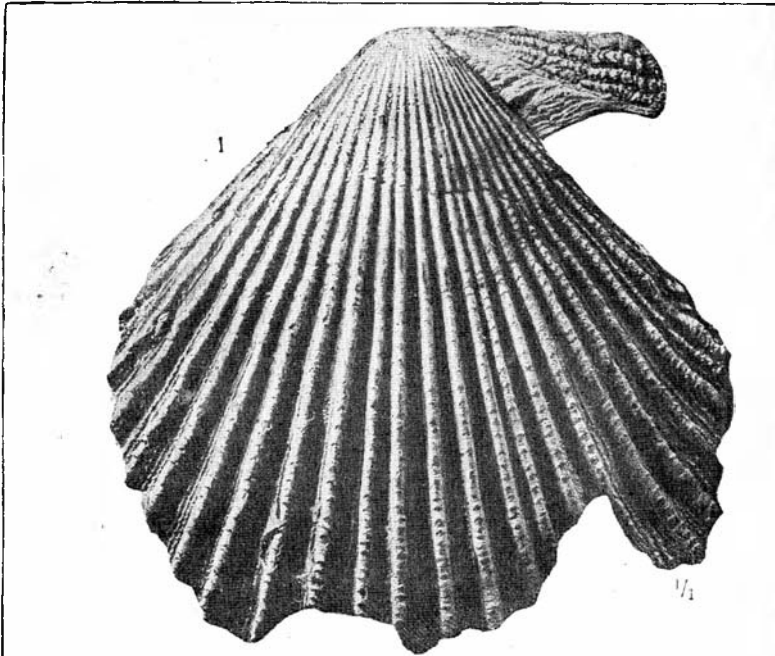
*P. turpiculus*



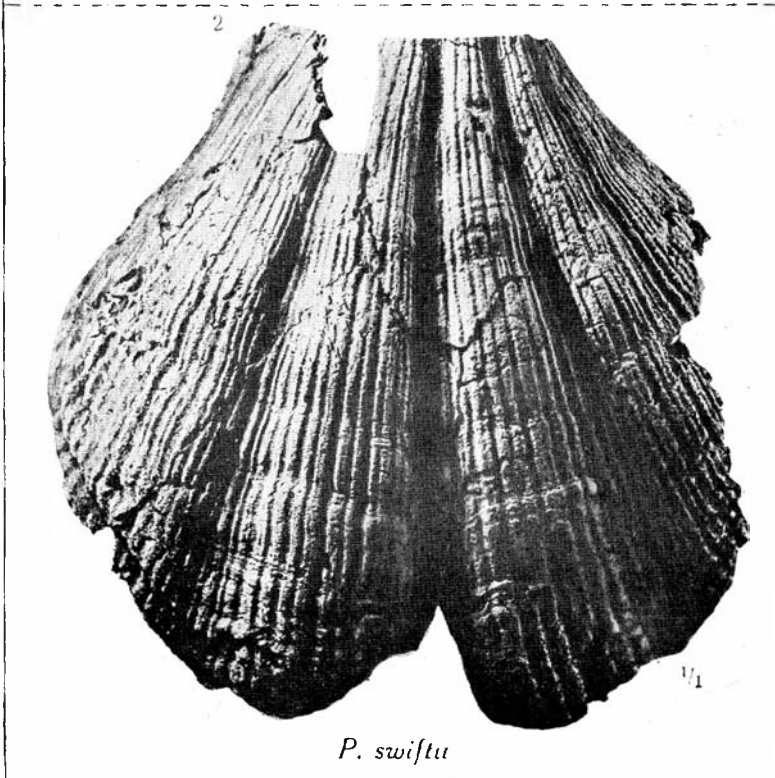
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*Pecten tanassevitschi*

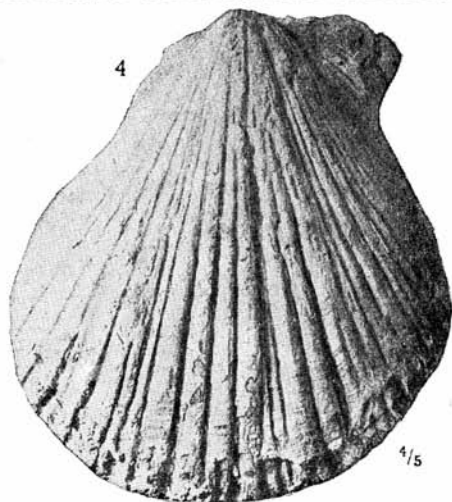
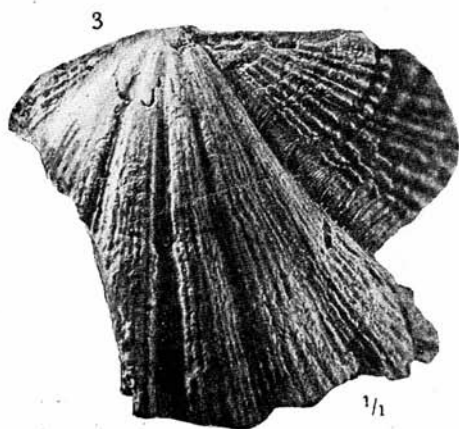
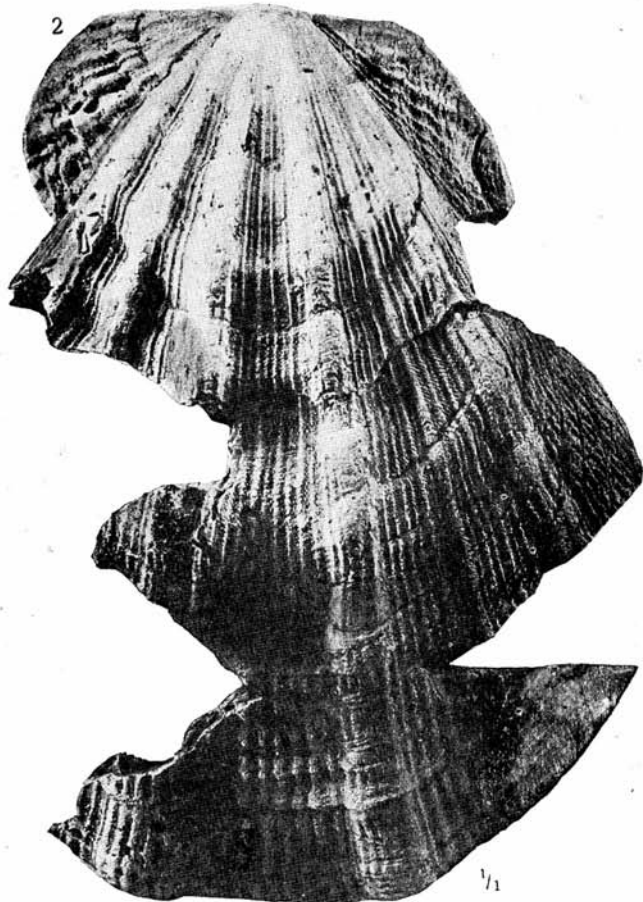
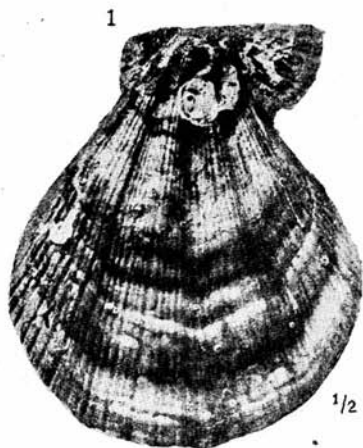




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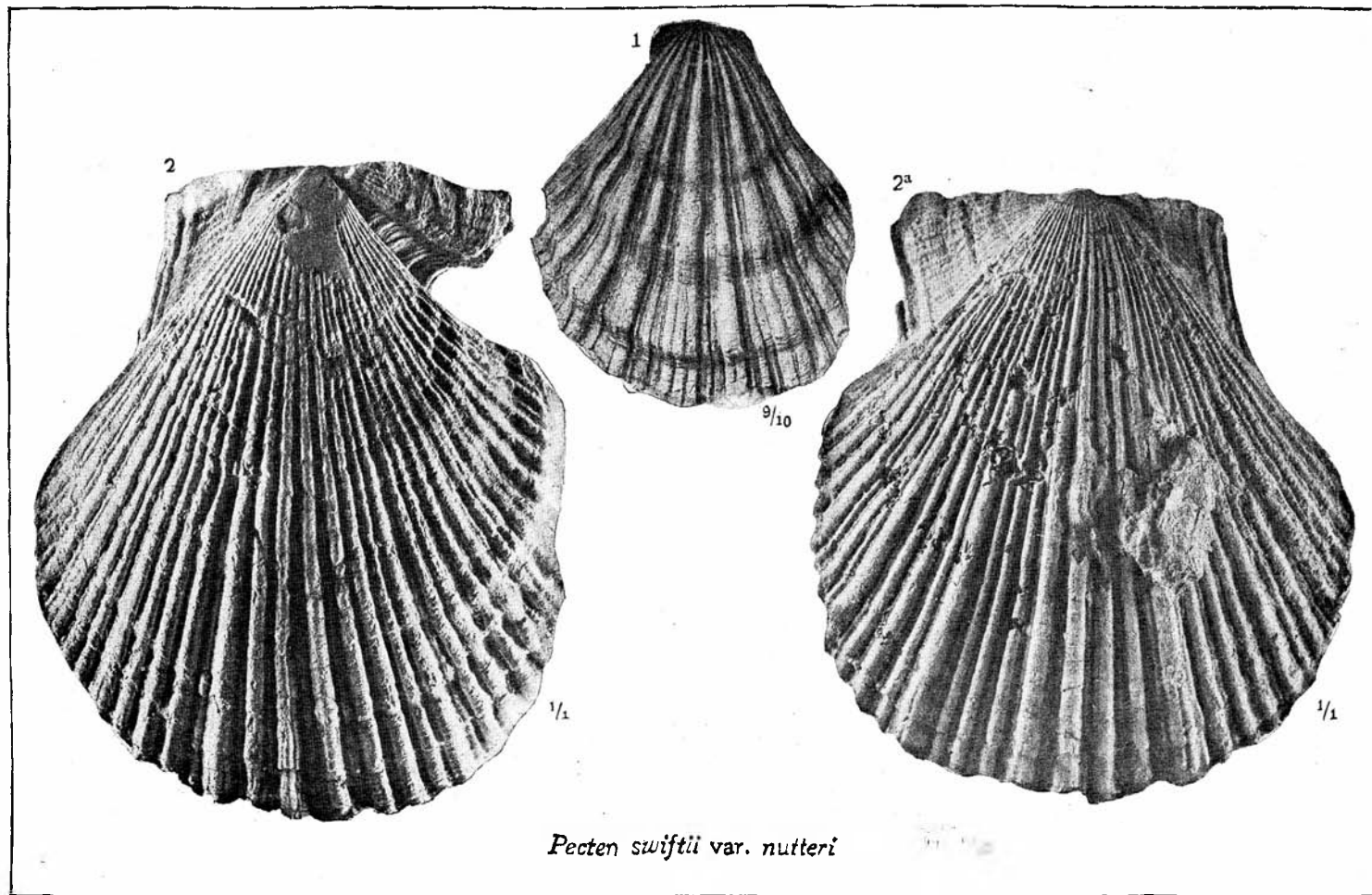


*P. swifti*

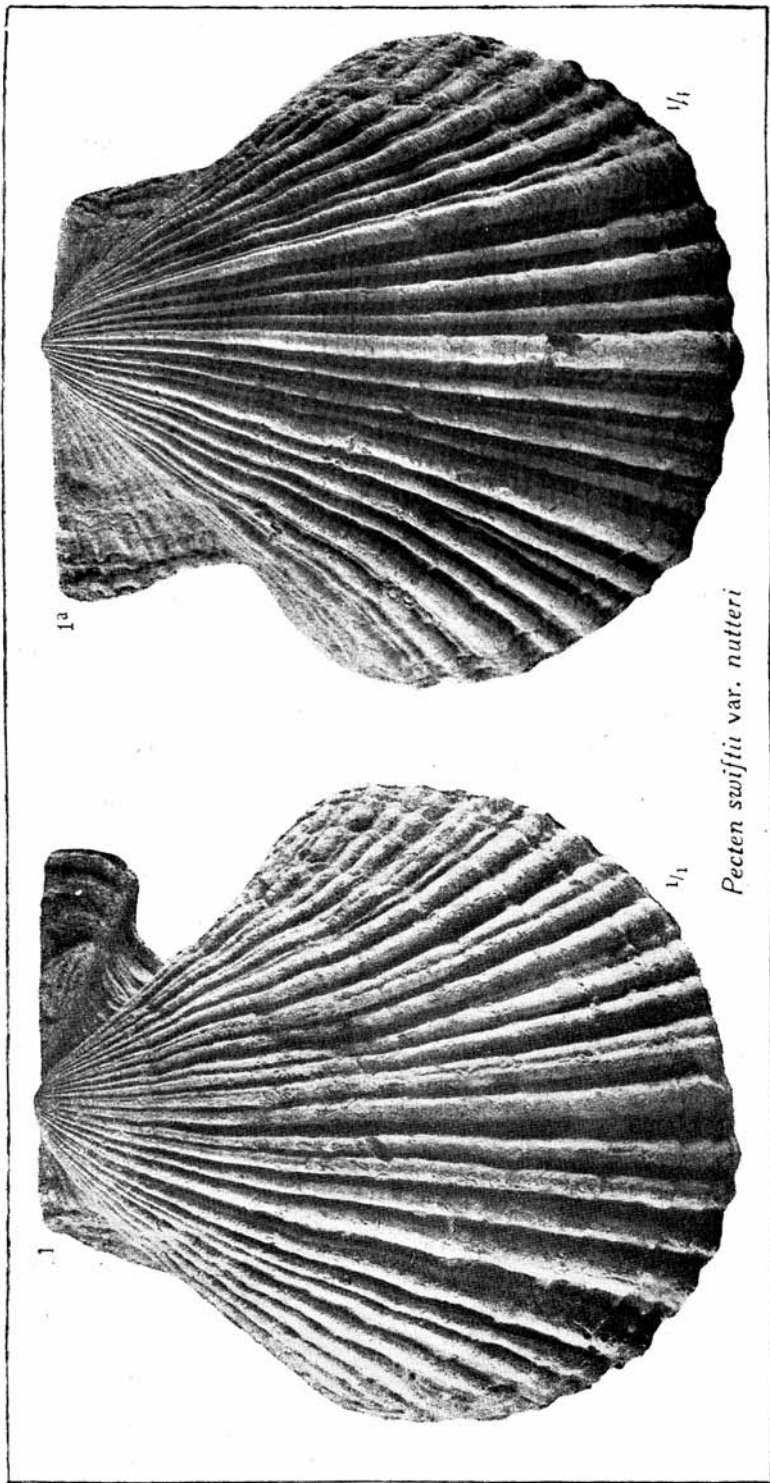


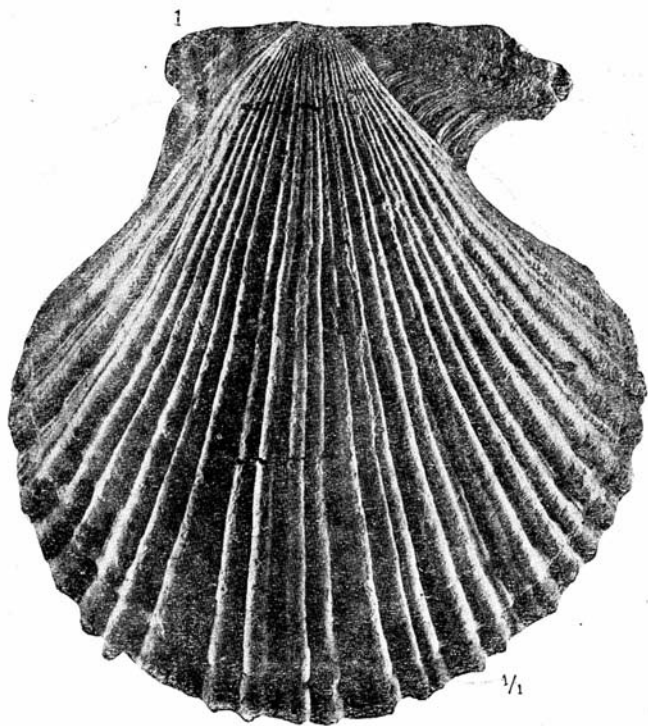
*Pecten swiftii*

*P. swiftii* var. *nutteri*

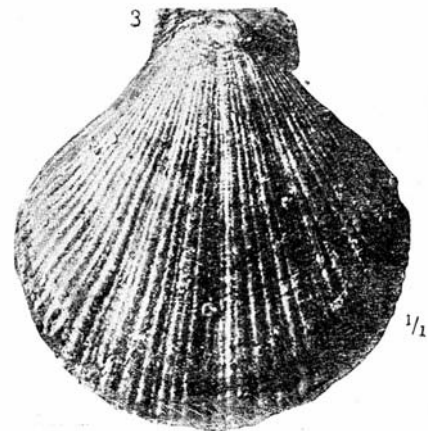
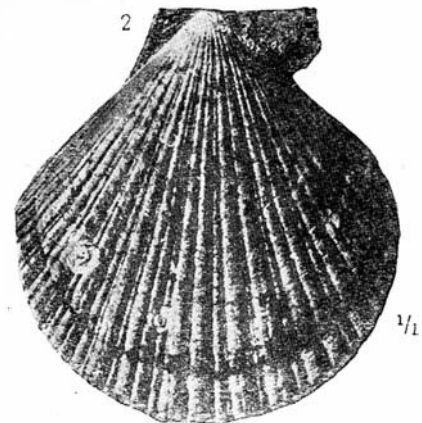


*Pecten swiftii* var. *nutteri*



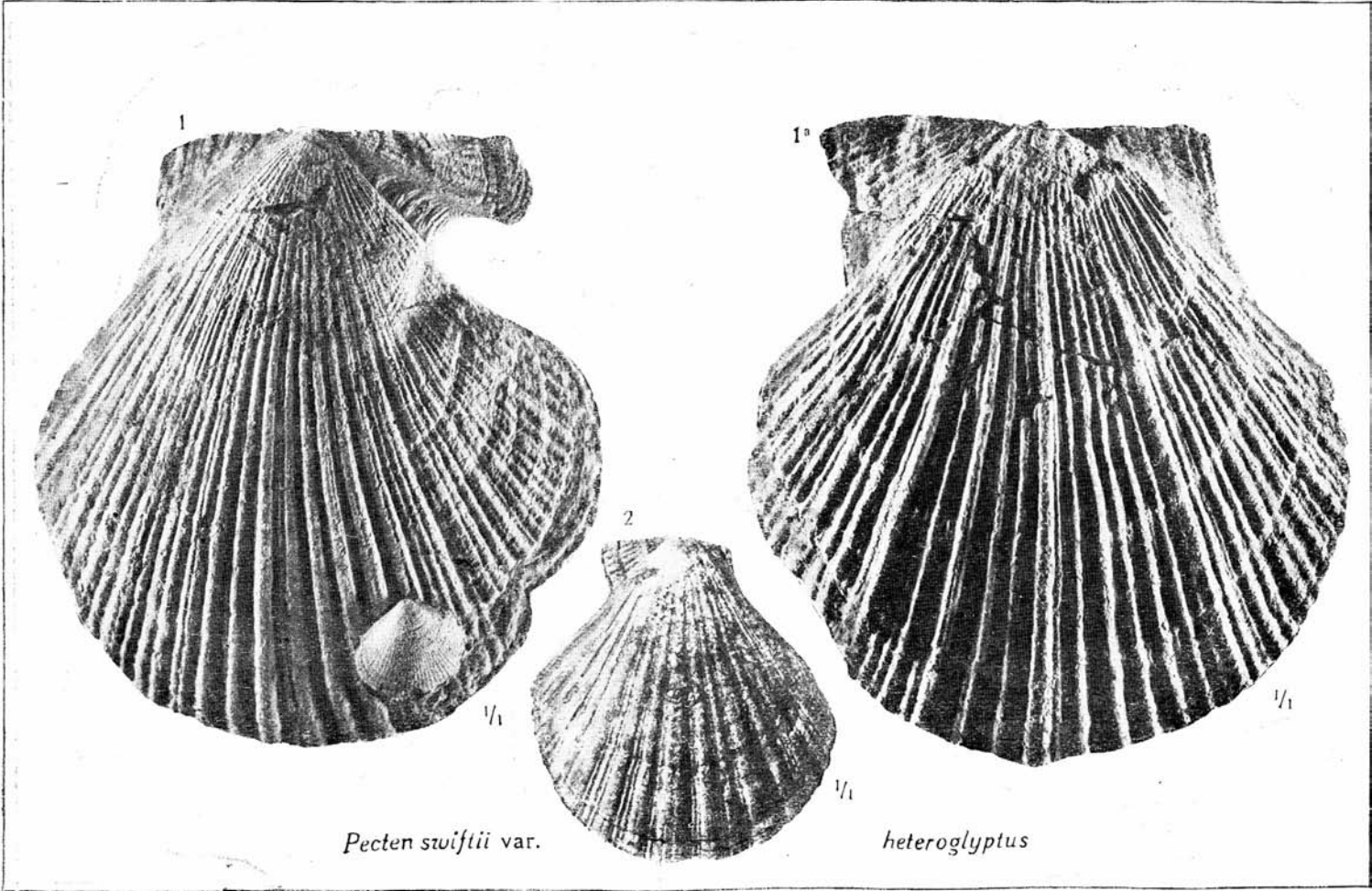


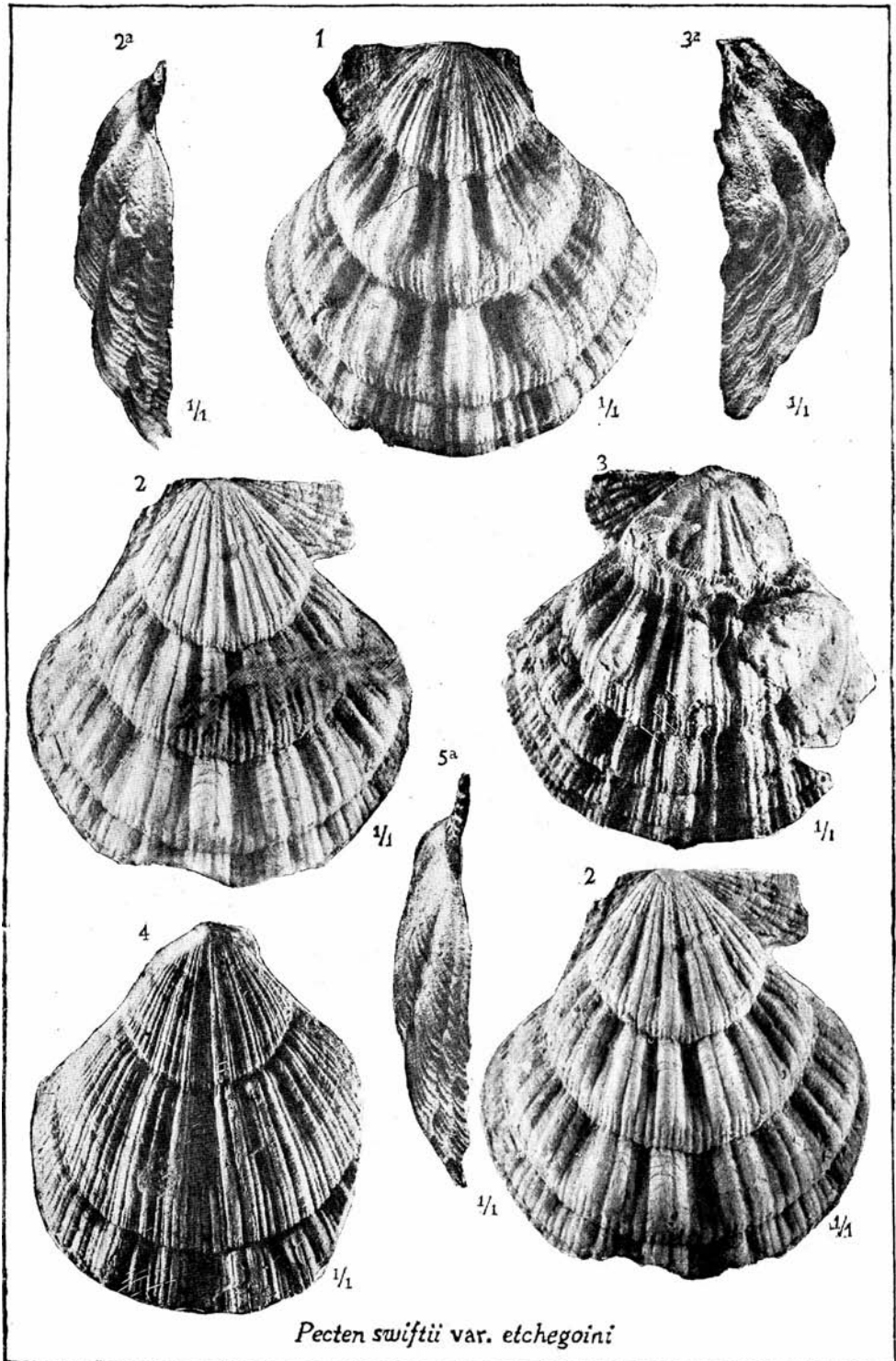
*Pecten swiftii* var. *nutteri*



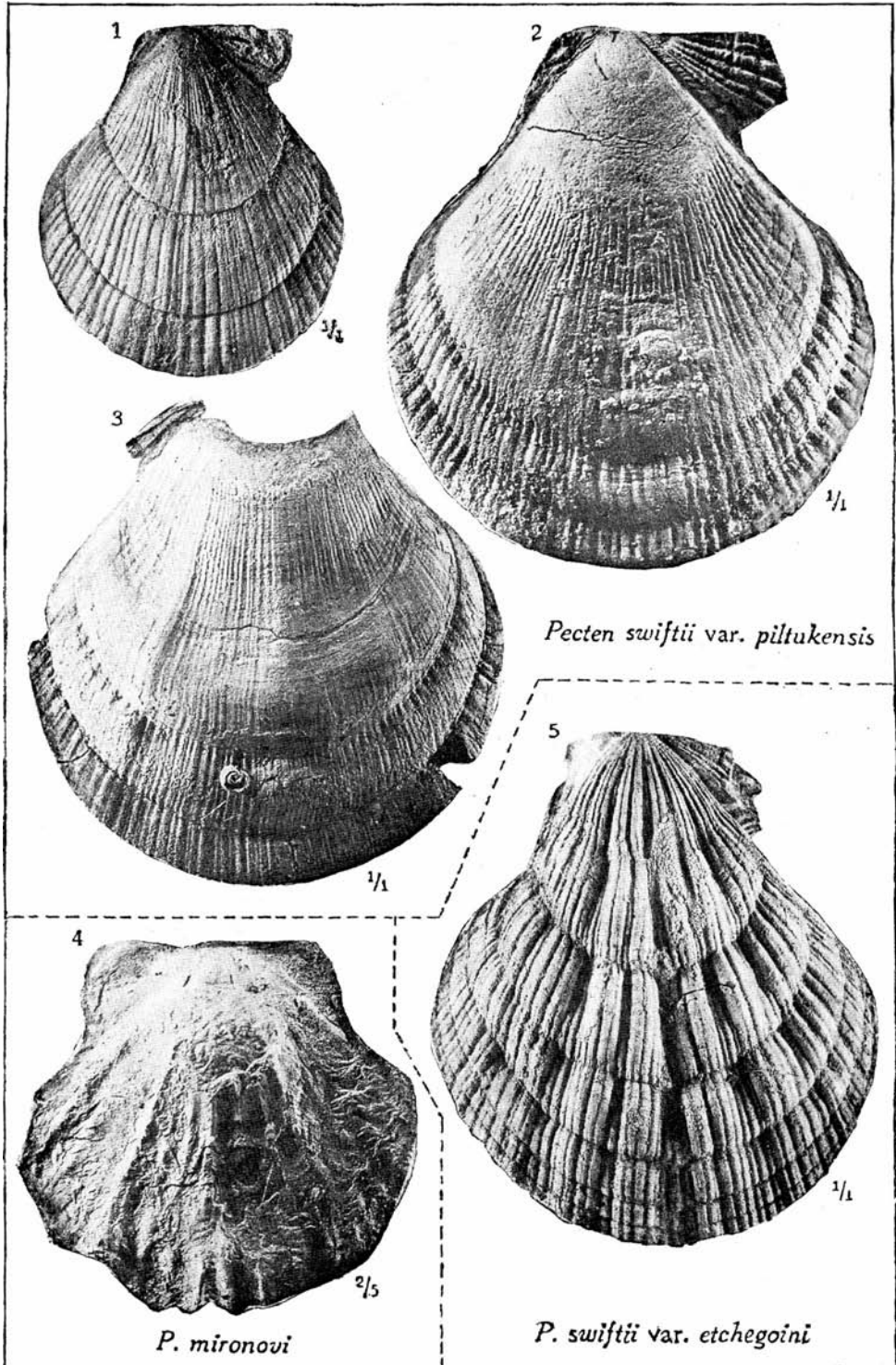
*P. swiftii* var. *heteroglyptus*







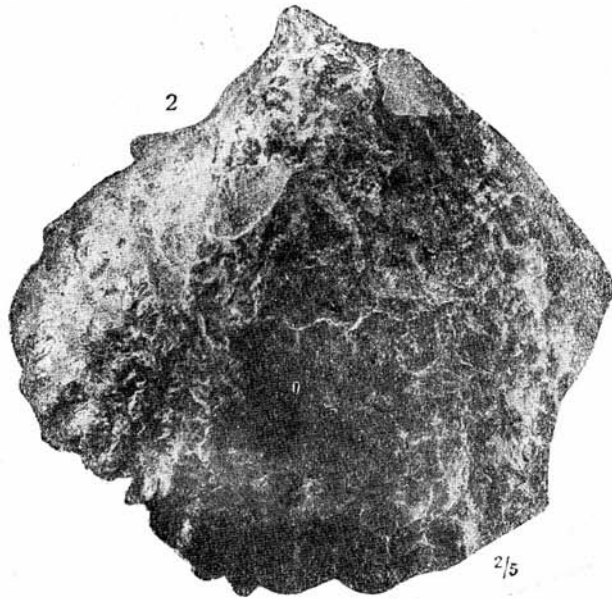
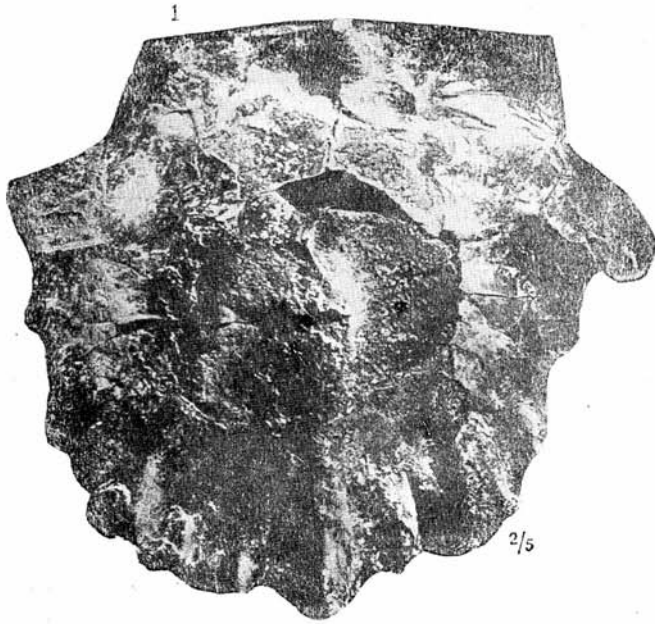
*Pecten swiftii* var. *ethegoini*



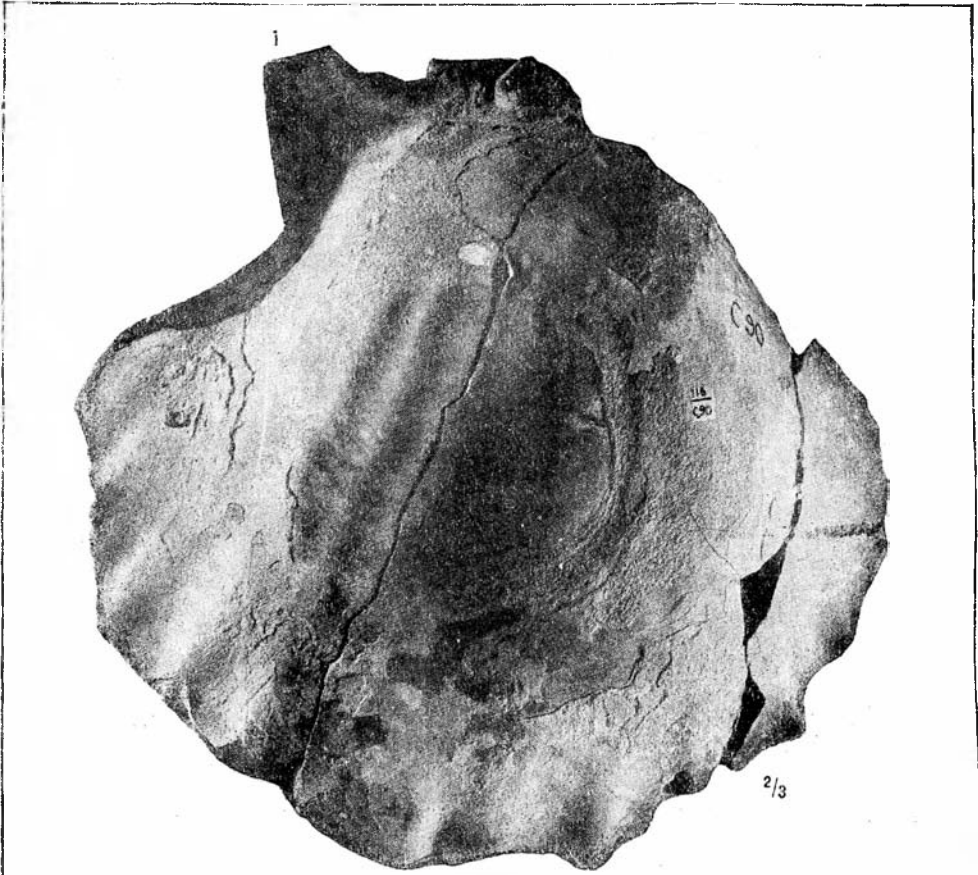
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*P. mironovi*

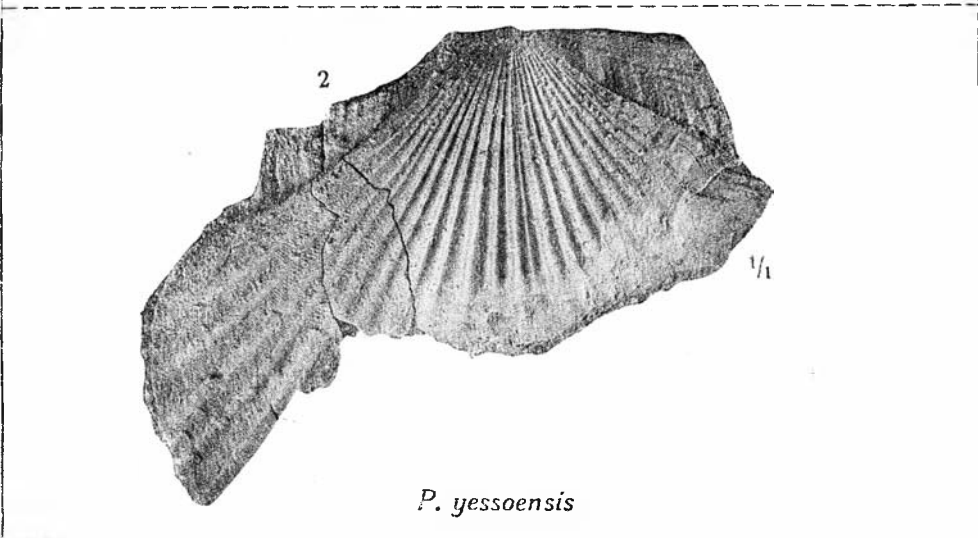
*P. swiftii* var. *etchegoini*



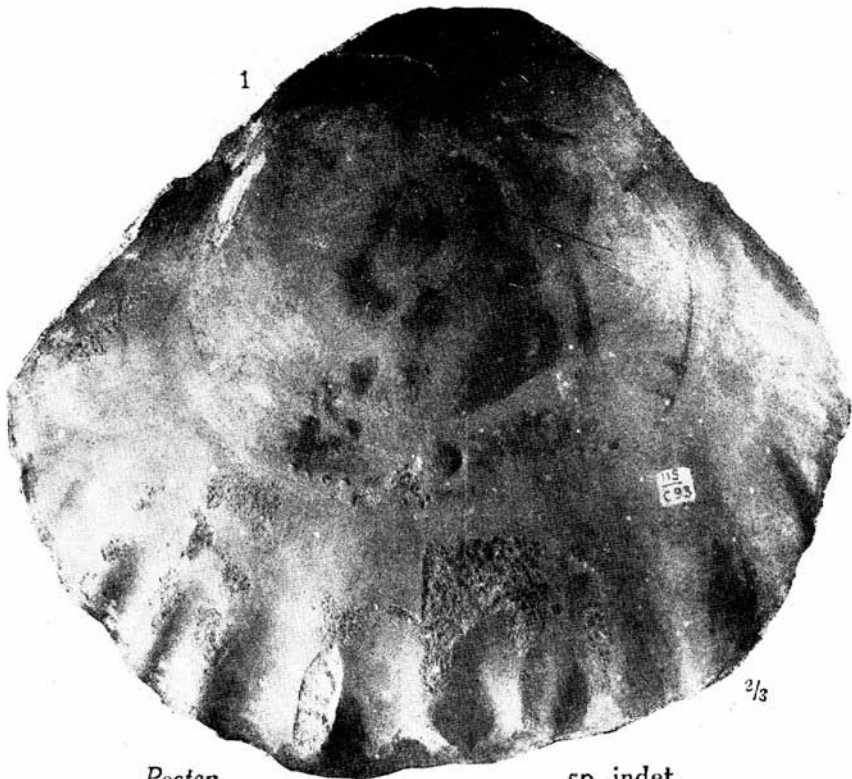
*Pecten mironovi*



*Pecten* sp. indet.

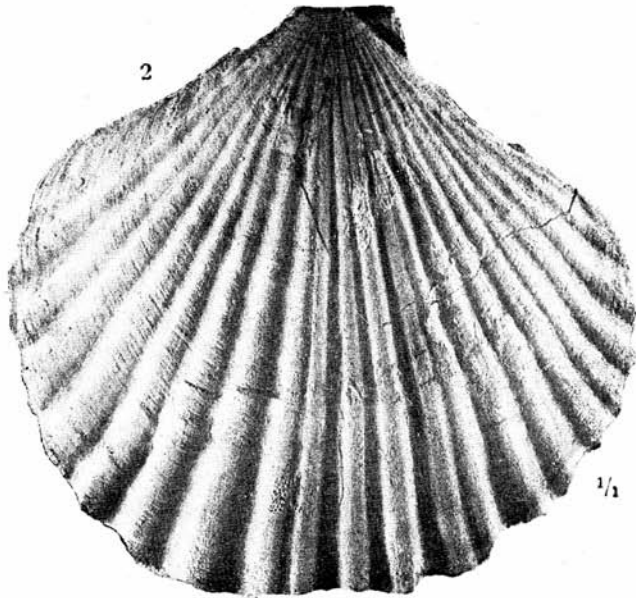


*P. yessoensis*

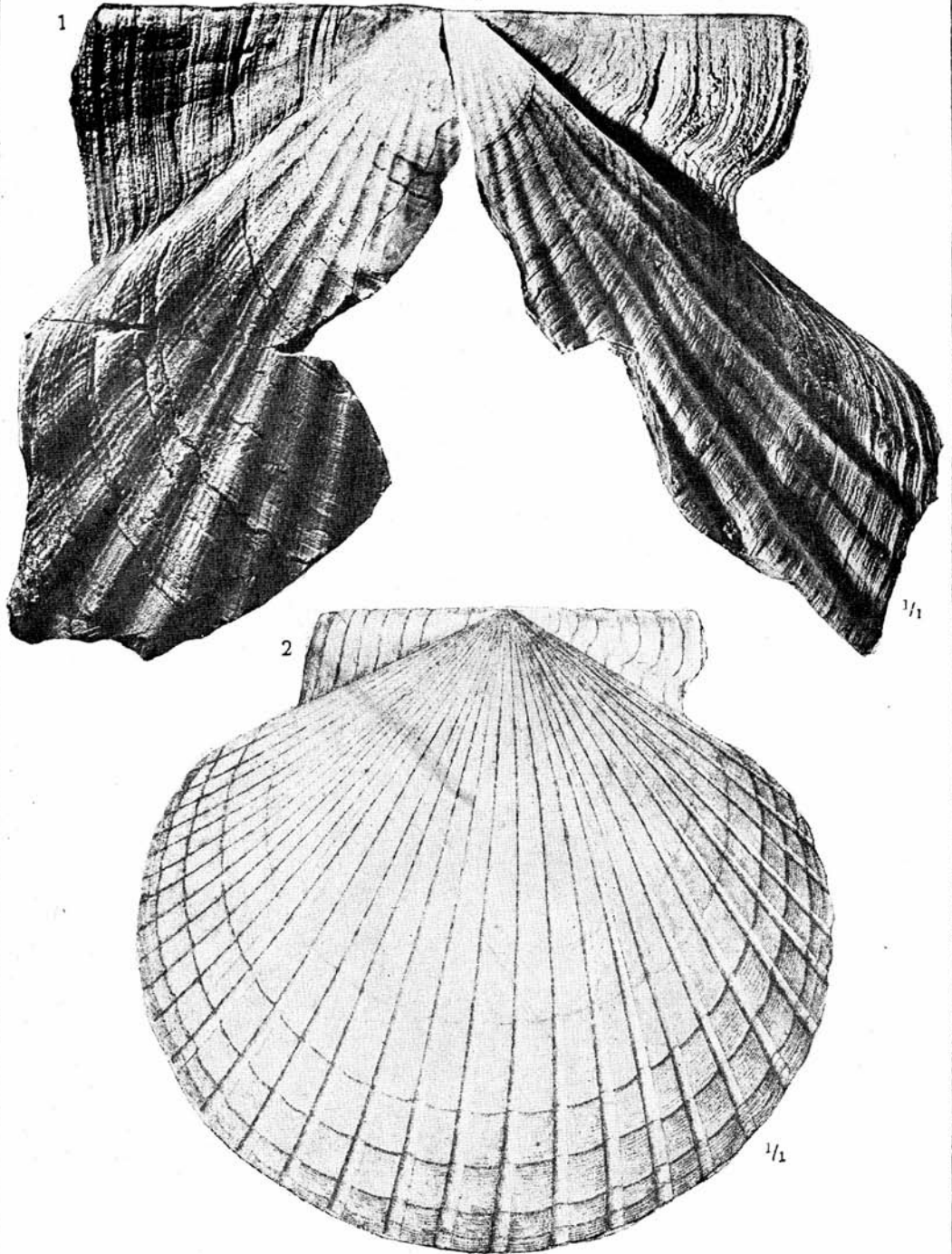


*Pecten*

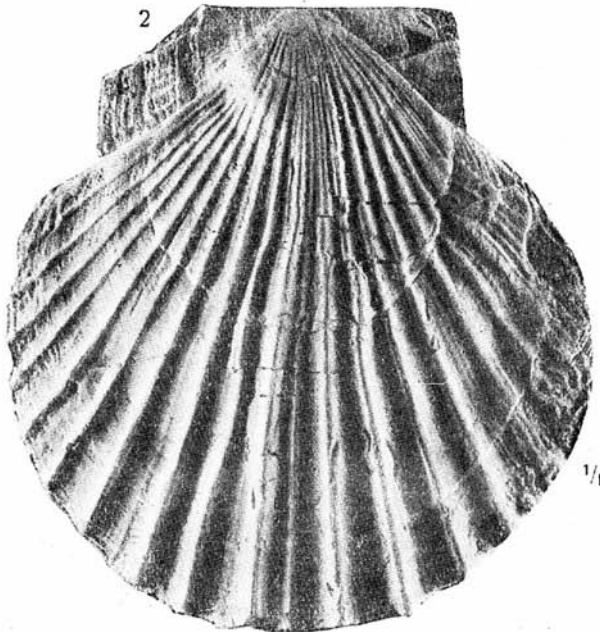
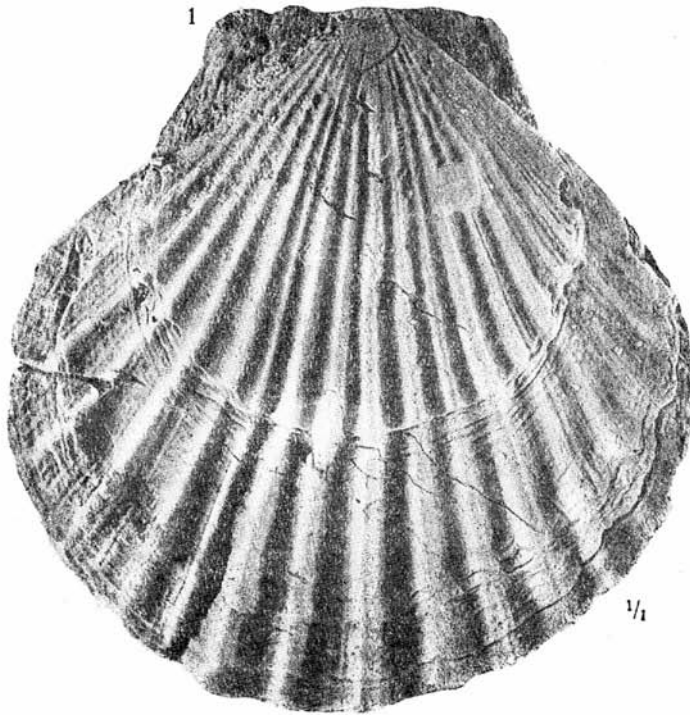
sp. indet.



*P. yessoensis*

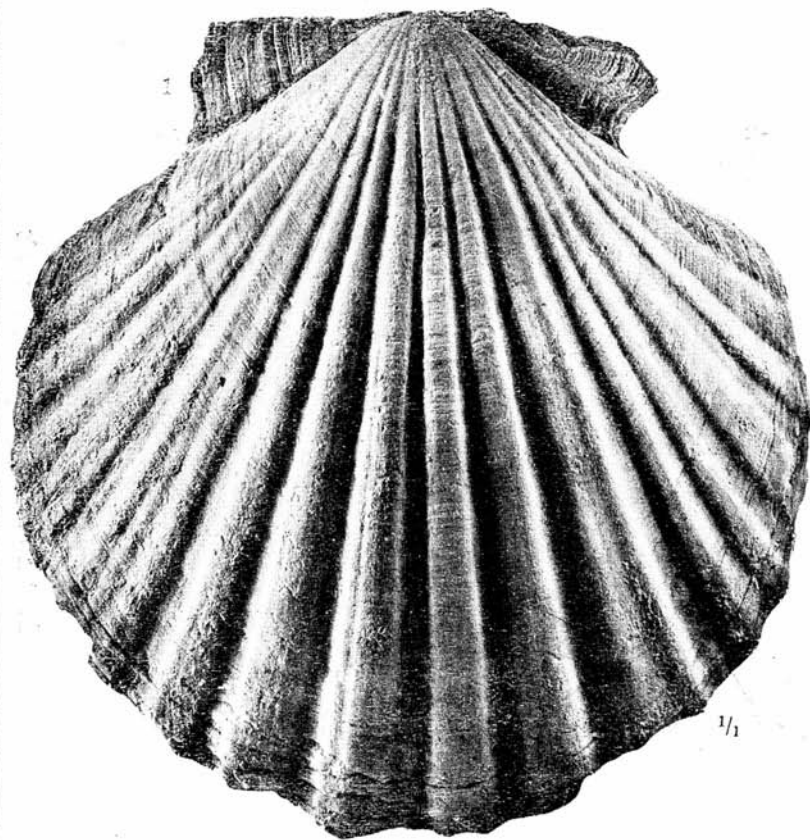


*Pecten yessoensis*

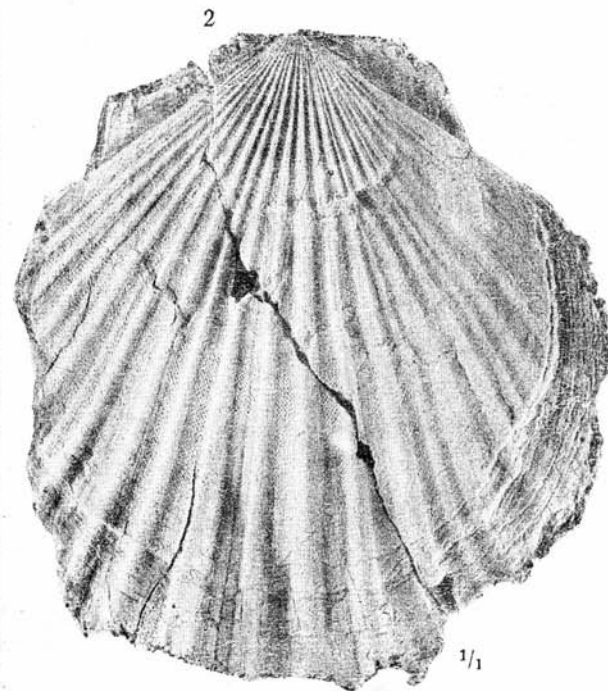


*Pecten gessoensis*

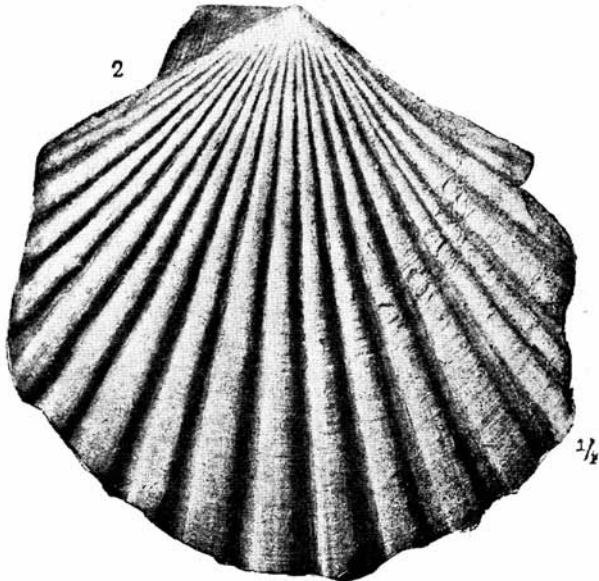




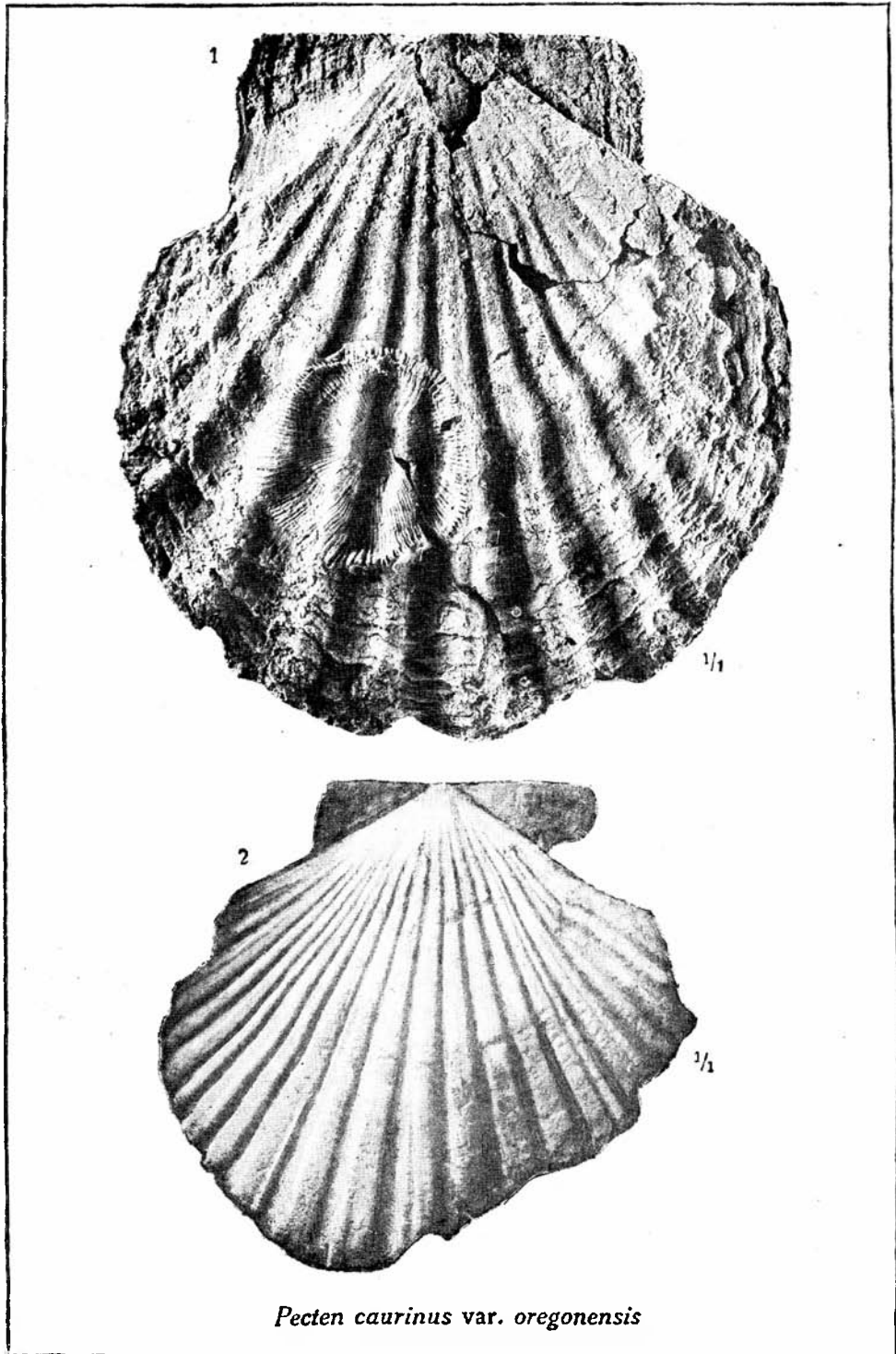
*Pecten caurinus* var. *oregonensis*

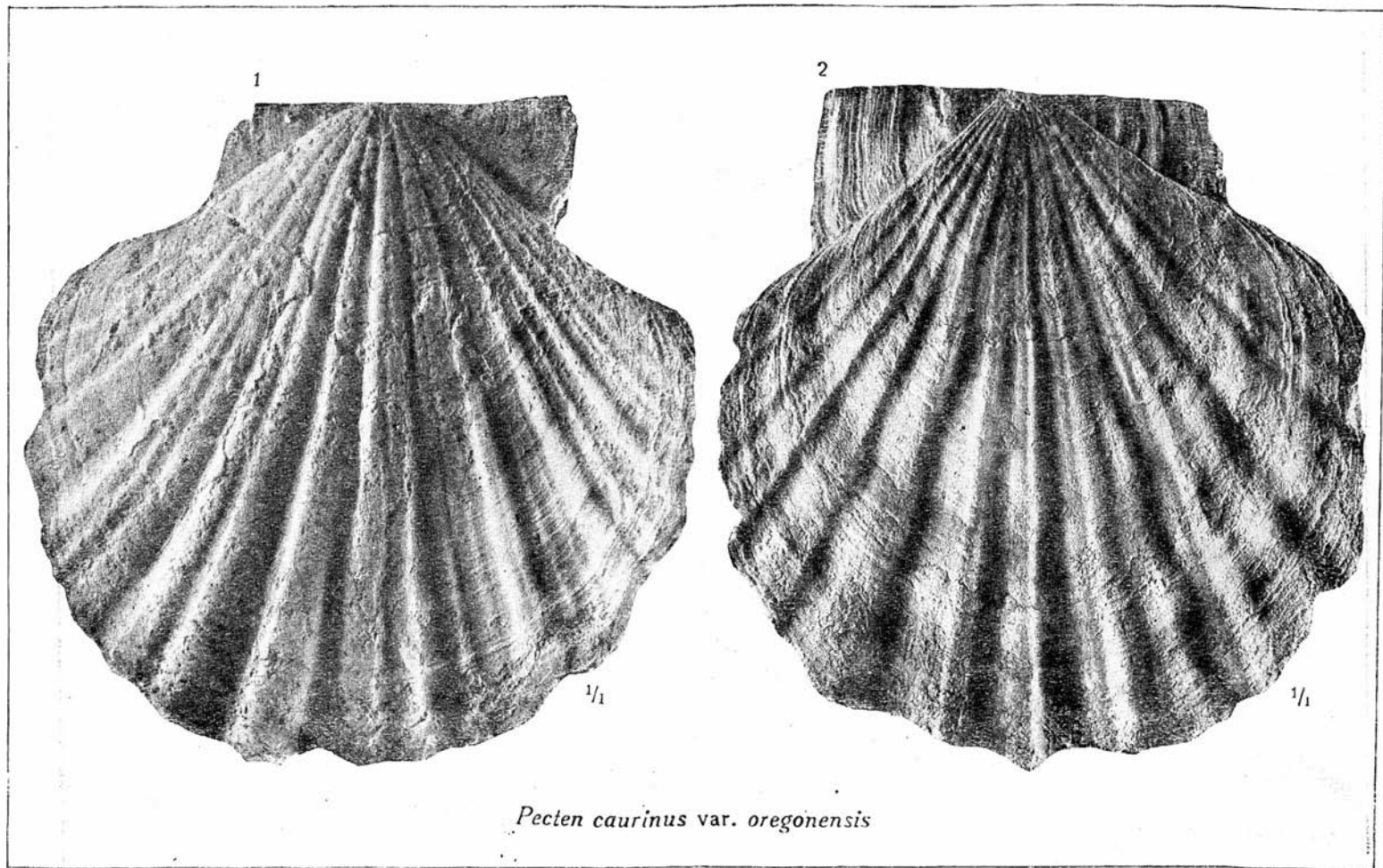


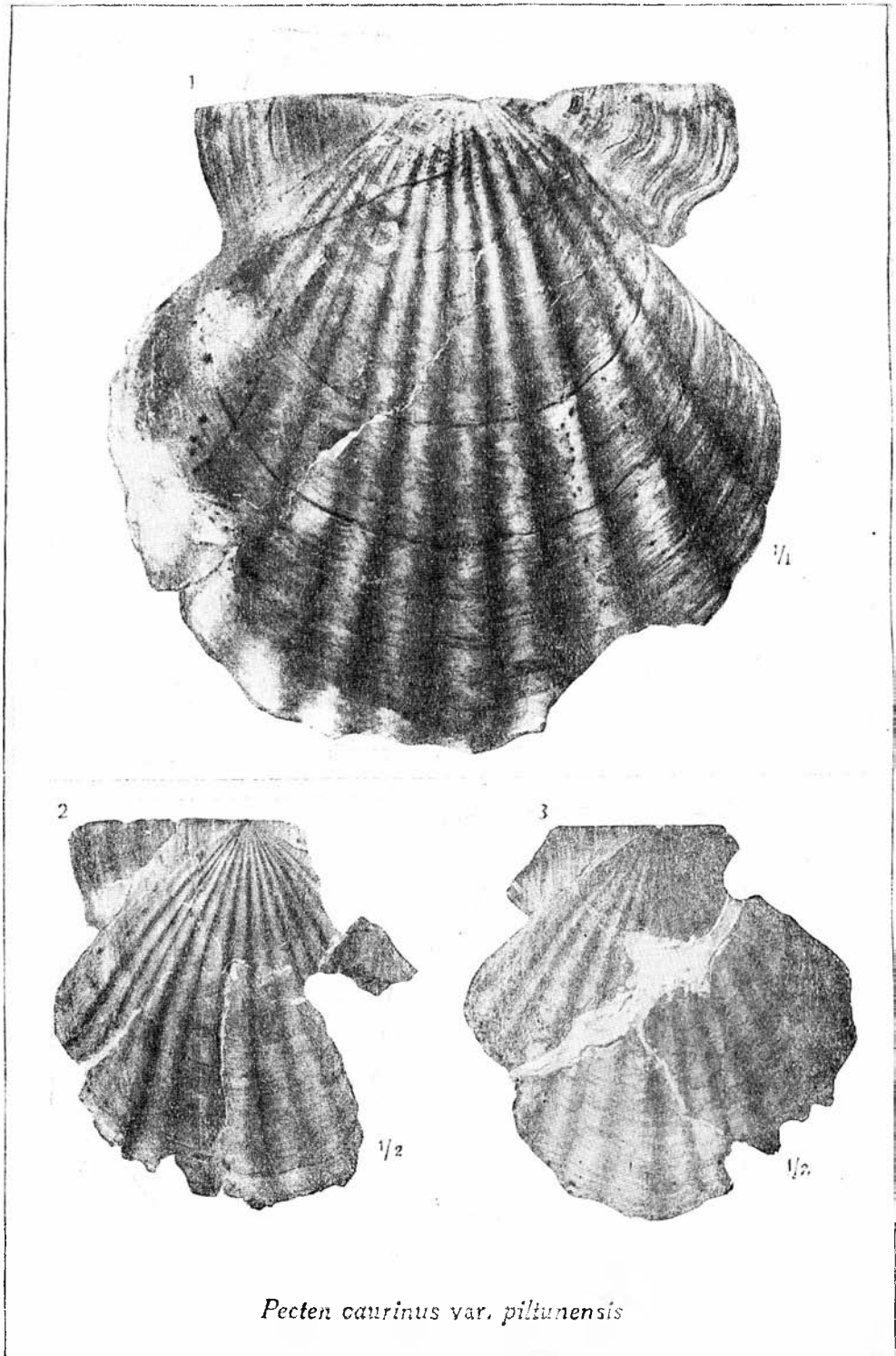
*P. yessoensis*



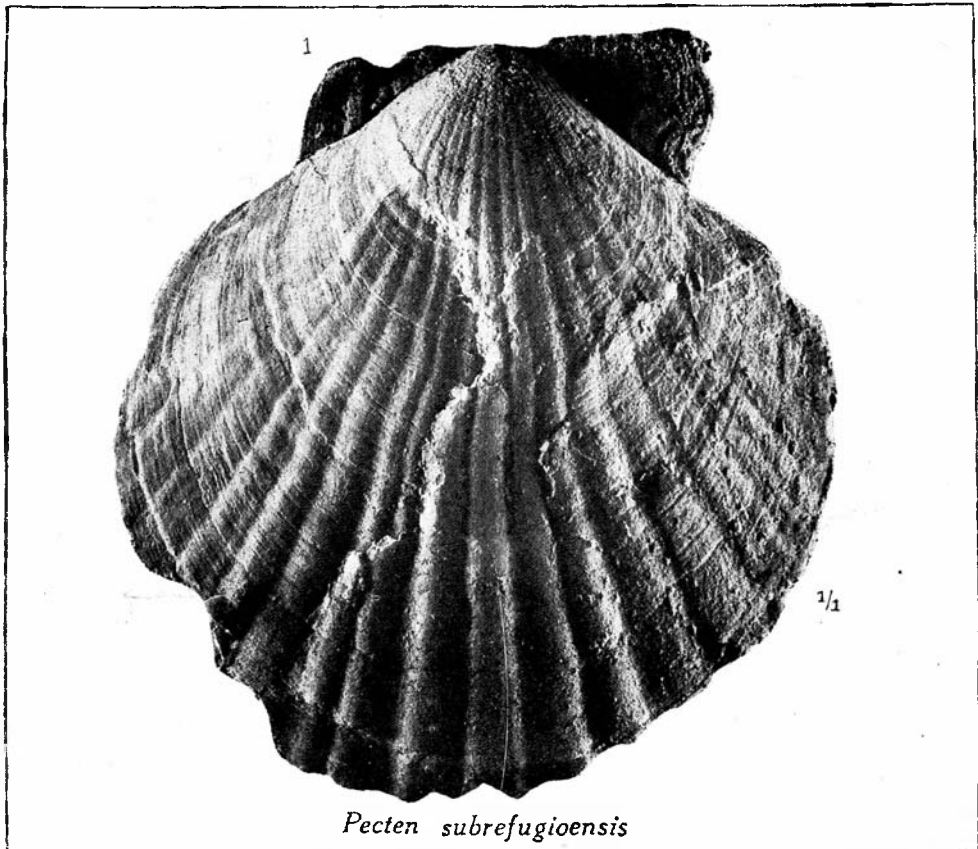
*Pecten caurinus* var. *oregonensis*



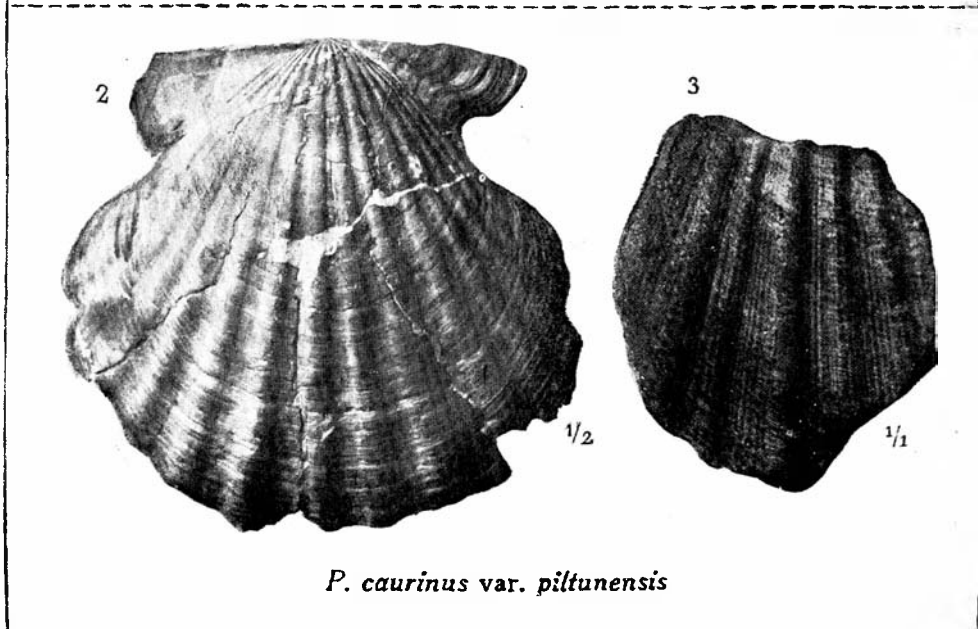




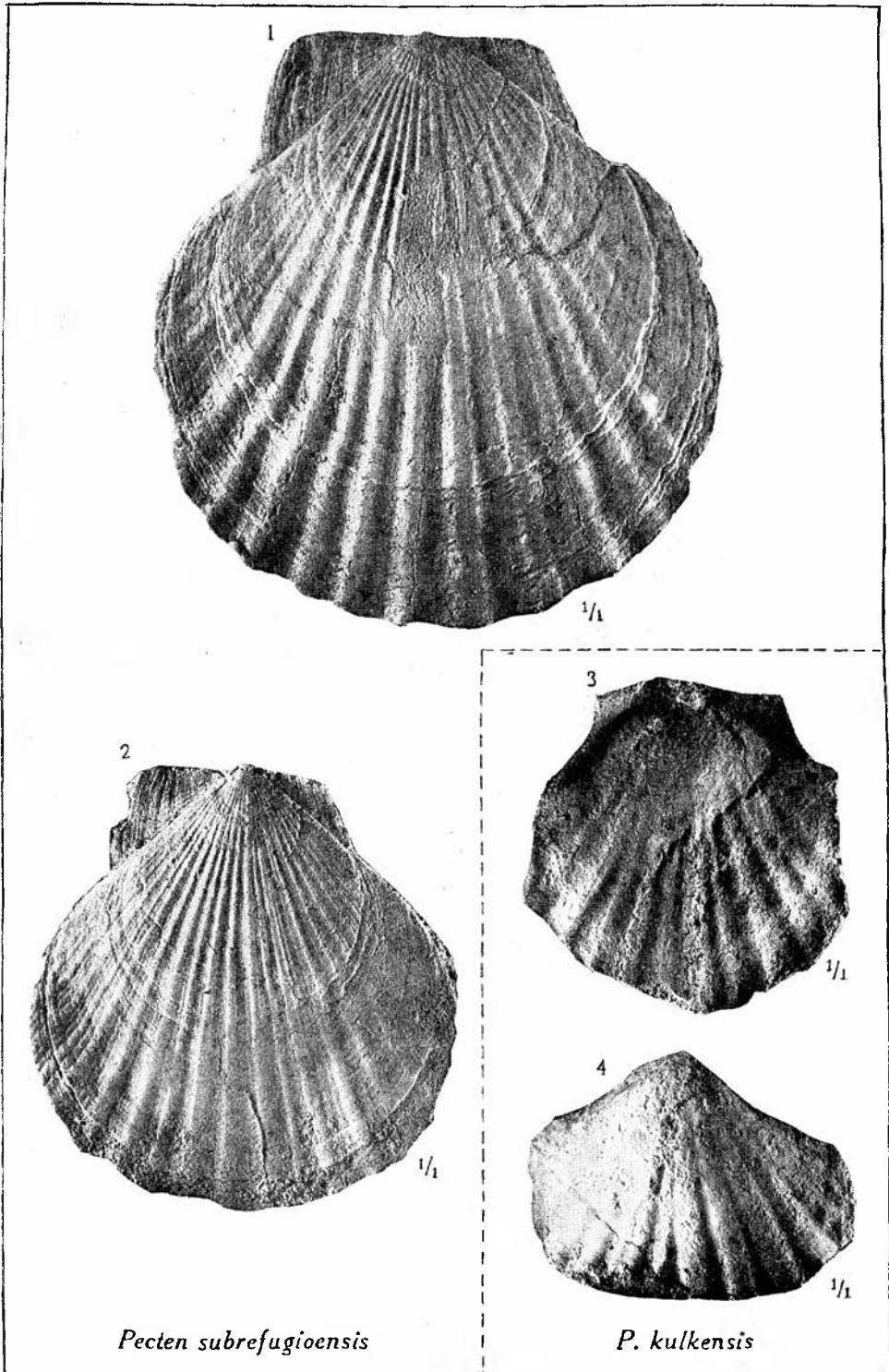
*Pecten caurinus* var. *piltunensis*

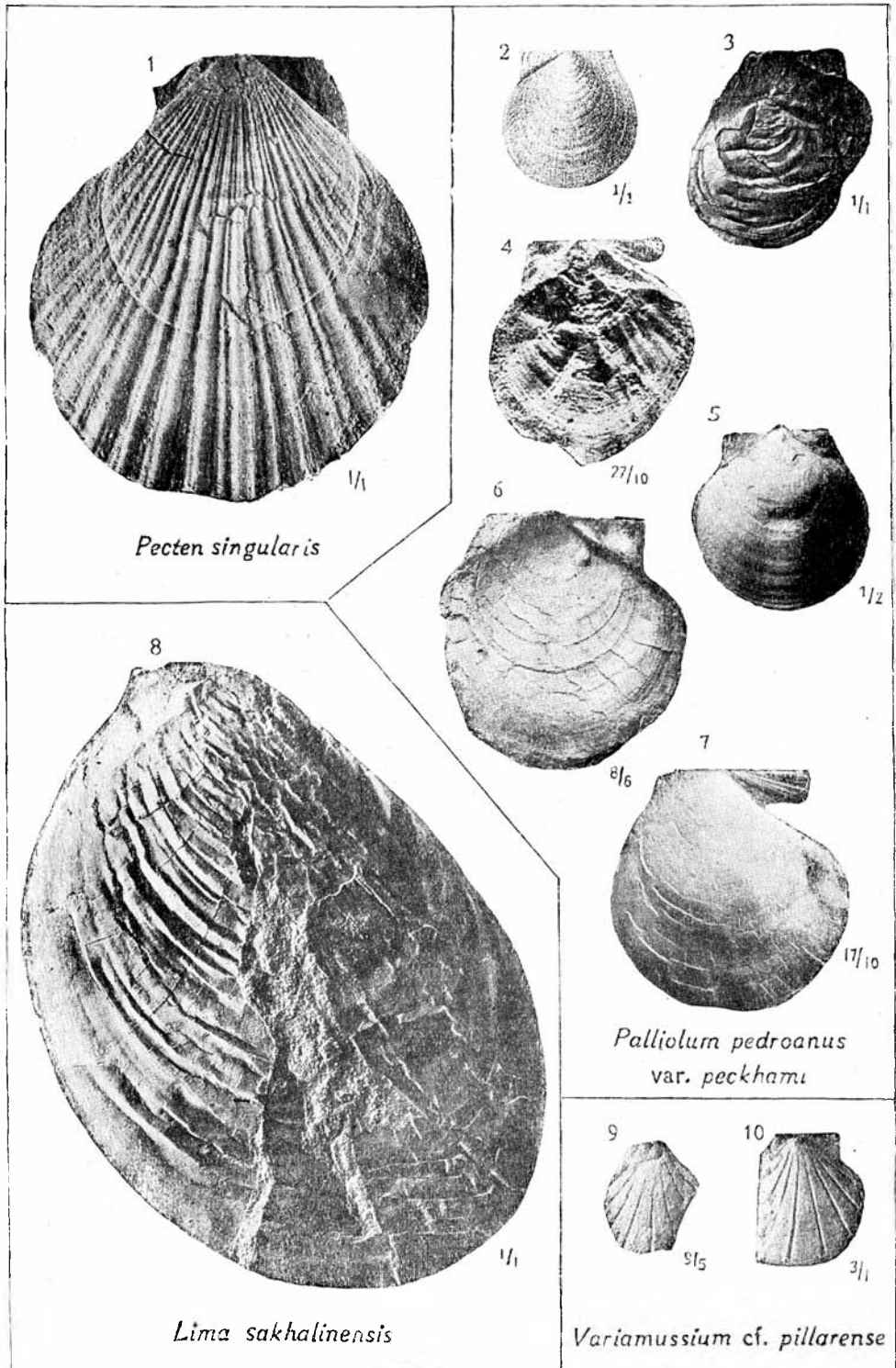


*Pecten subrefugioensis*

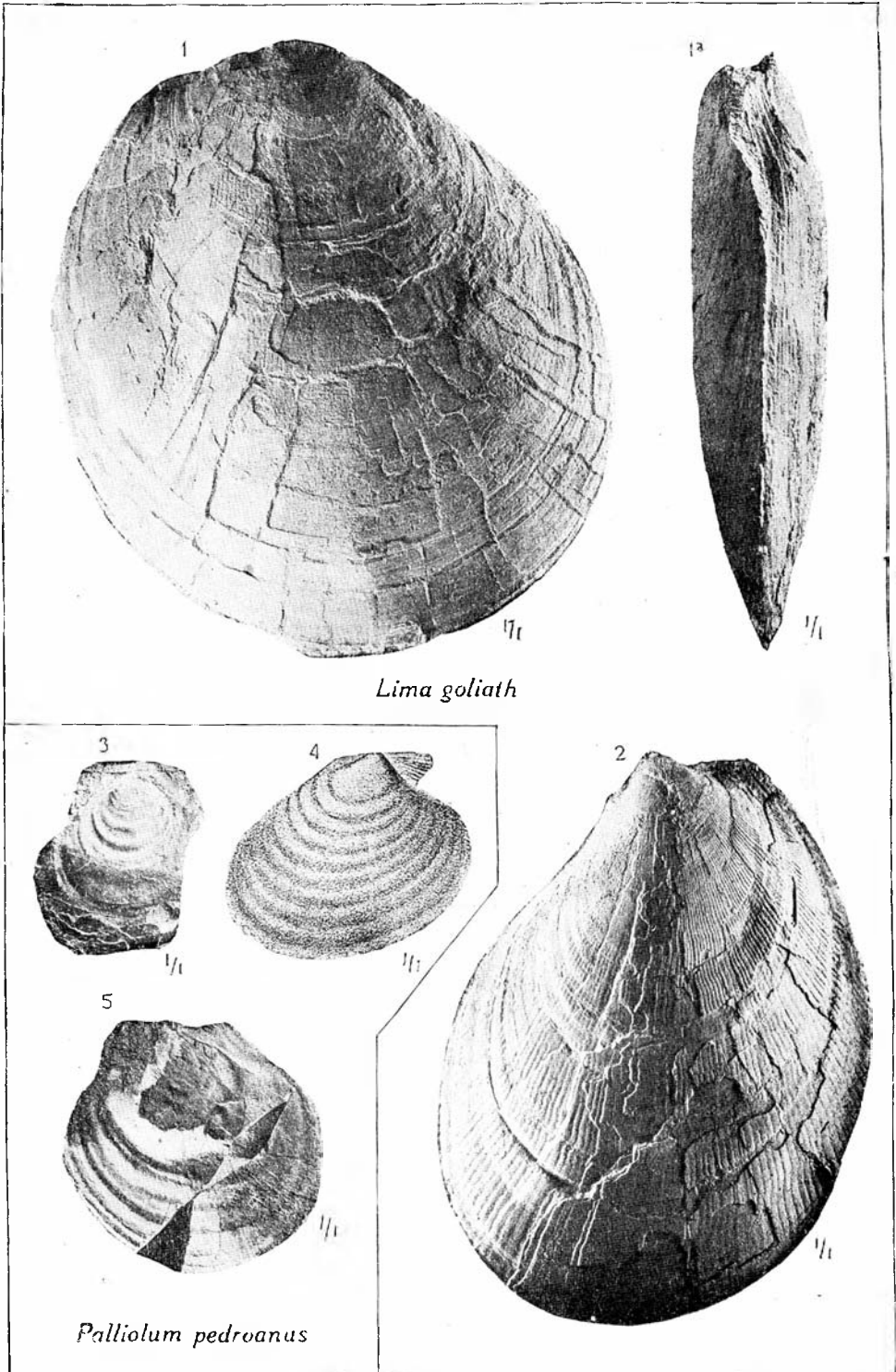


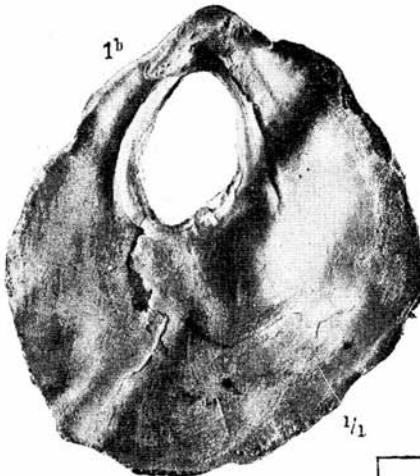
*P. caurinus* var. *piltunensis*



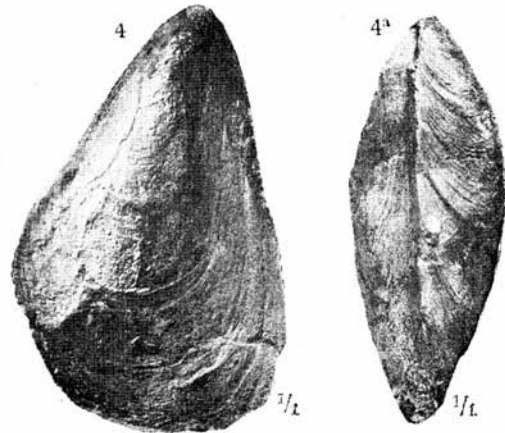
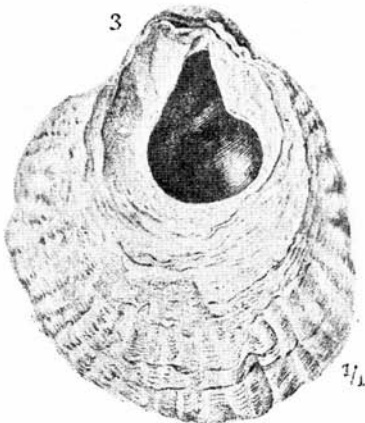




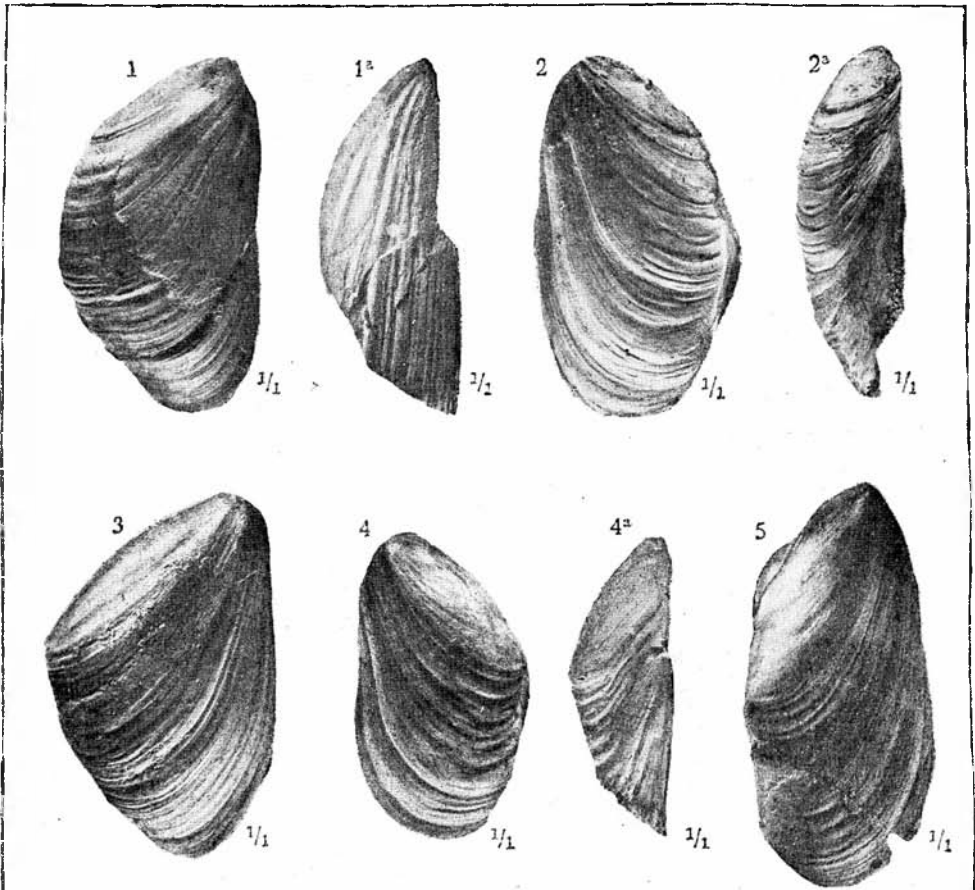




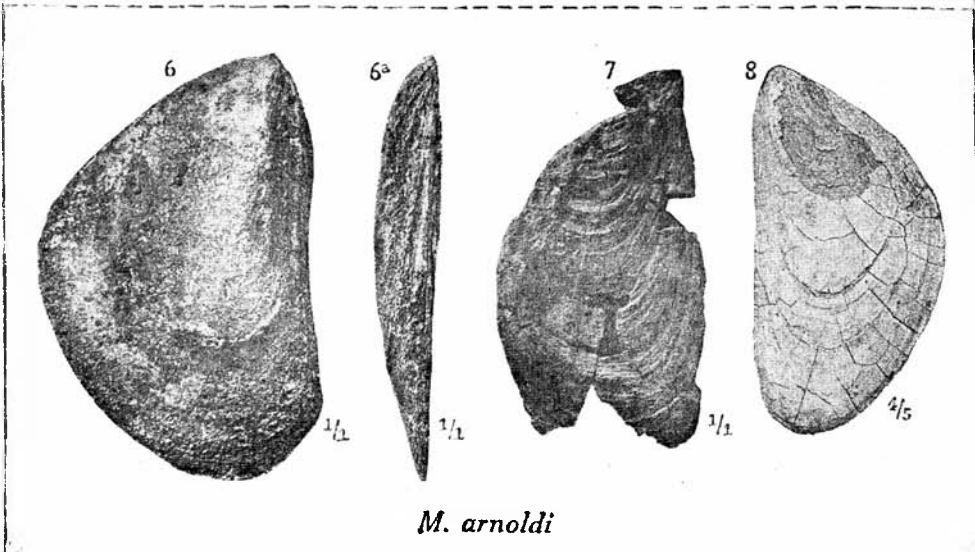
*Pododesmus macroschisma*



*Mytilus podkagernensis*



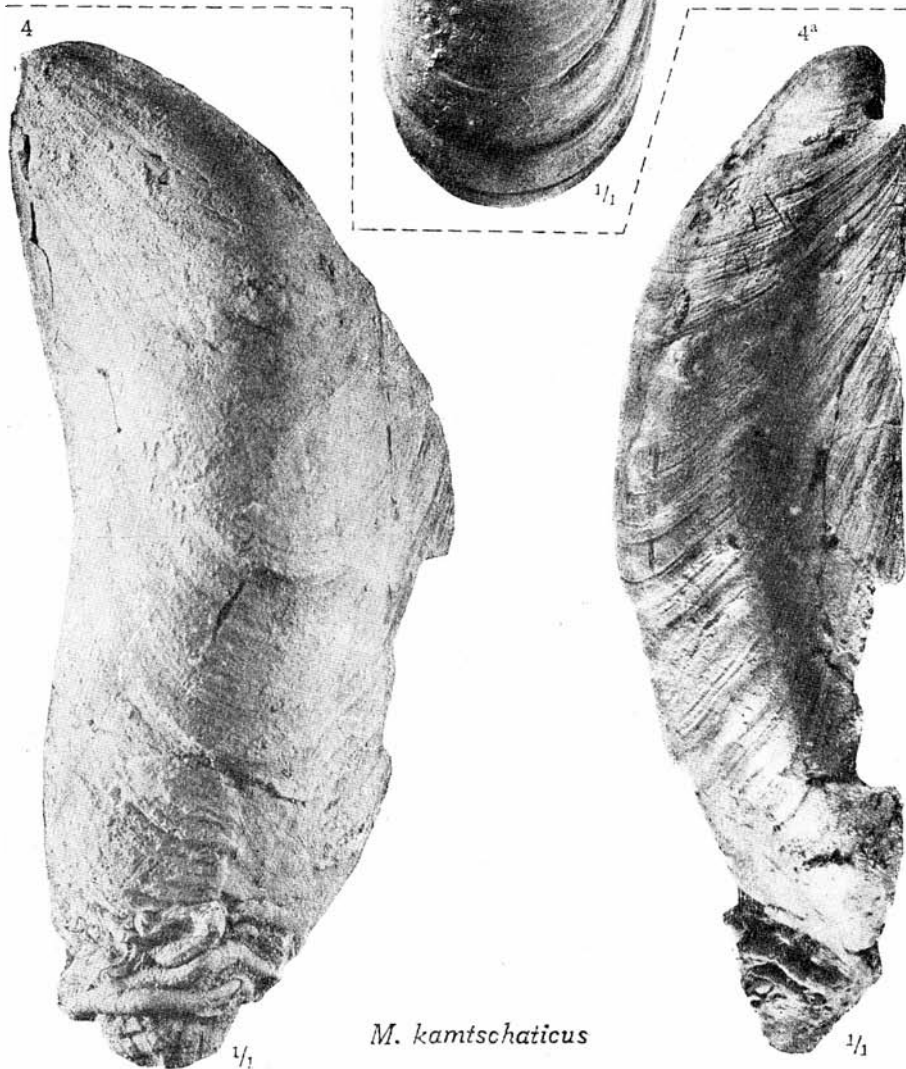
*Mytilus chejsleveemensis*



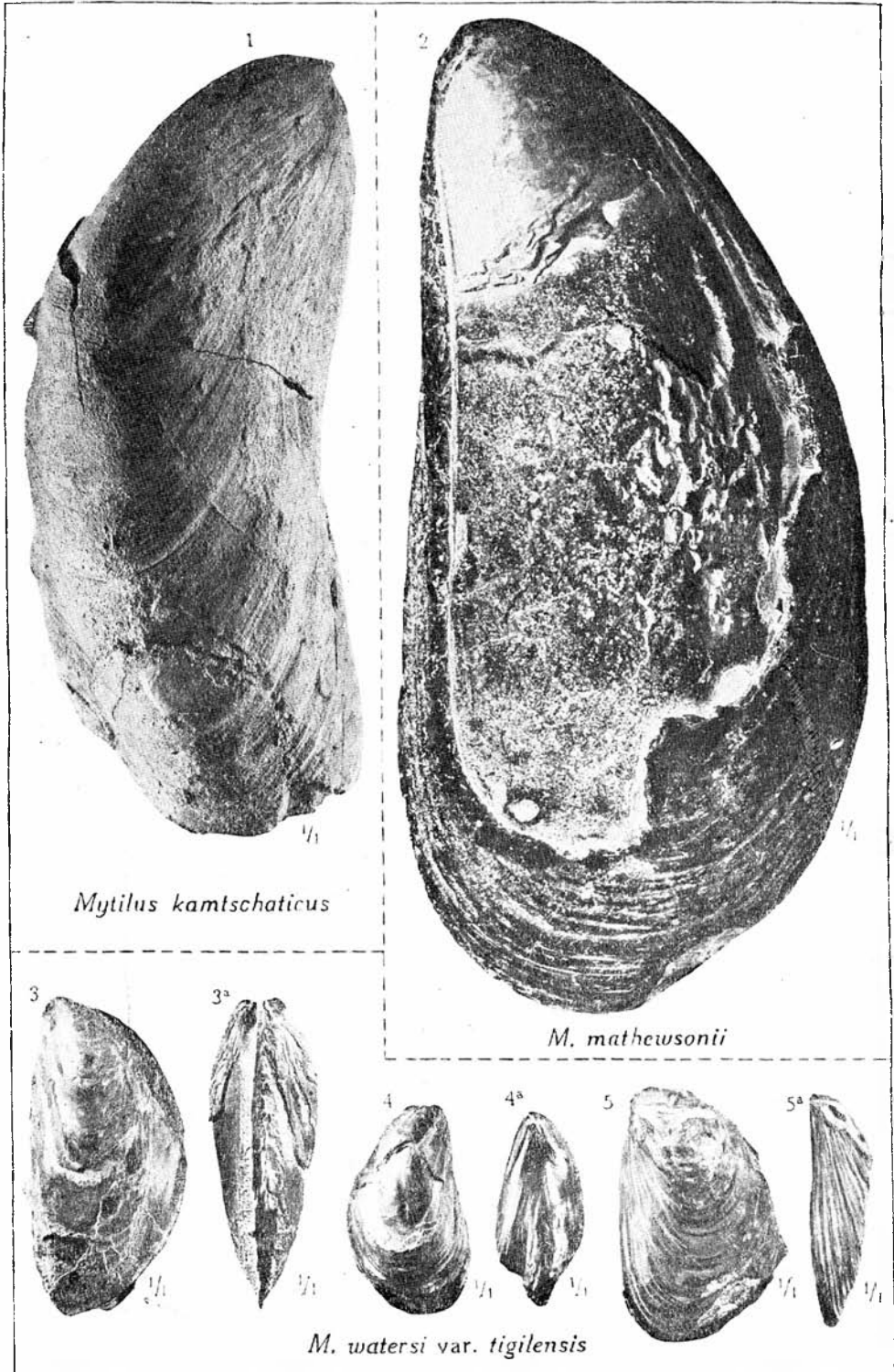
*M. arnoldi*

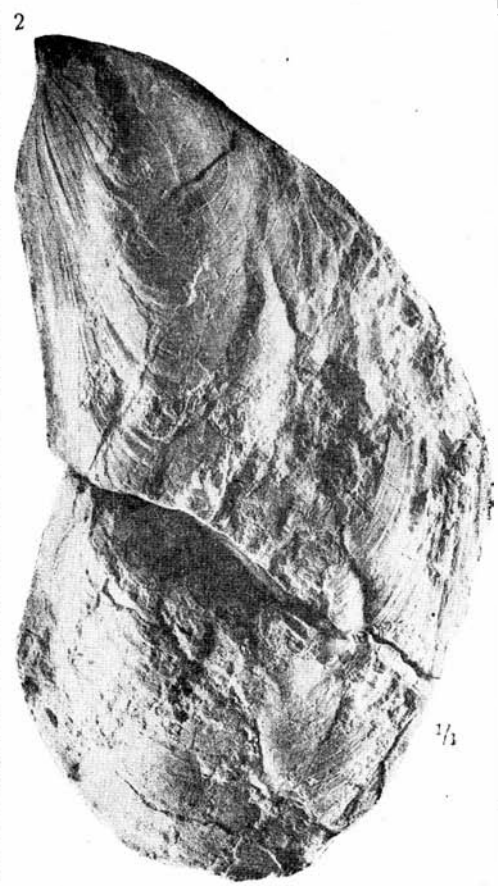
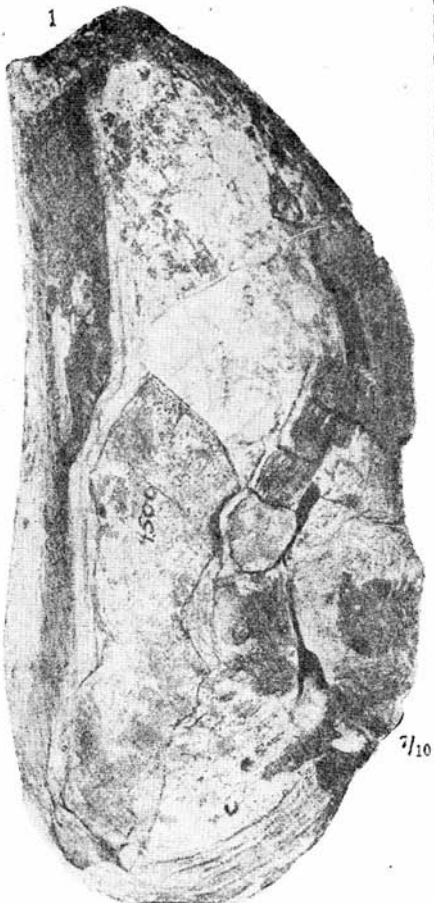


*Mytilus edulis*

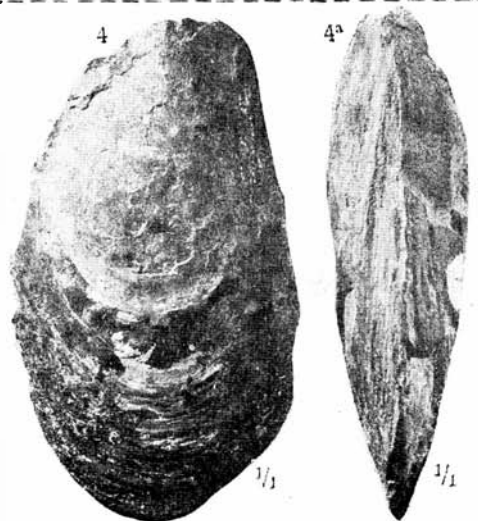


*M. kamtschaticus*

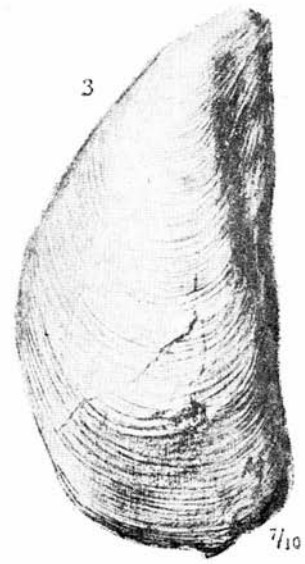




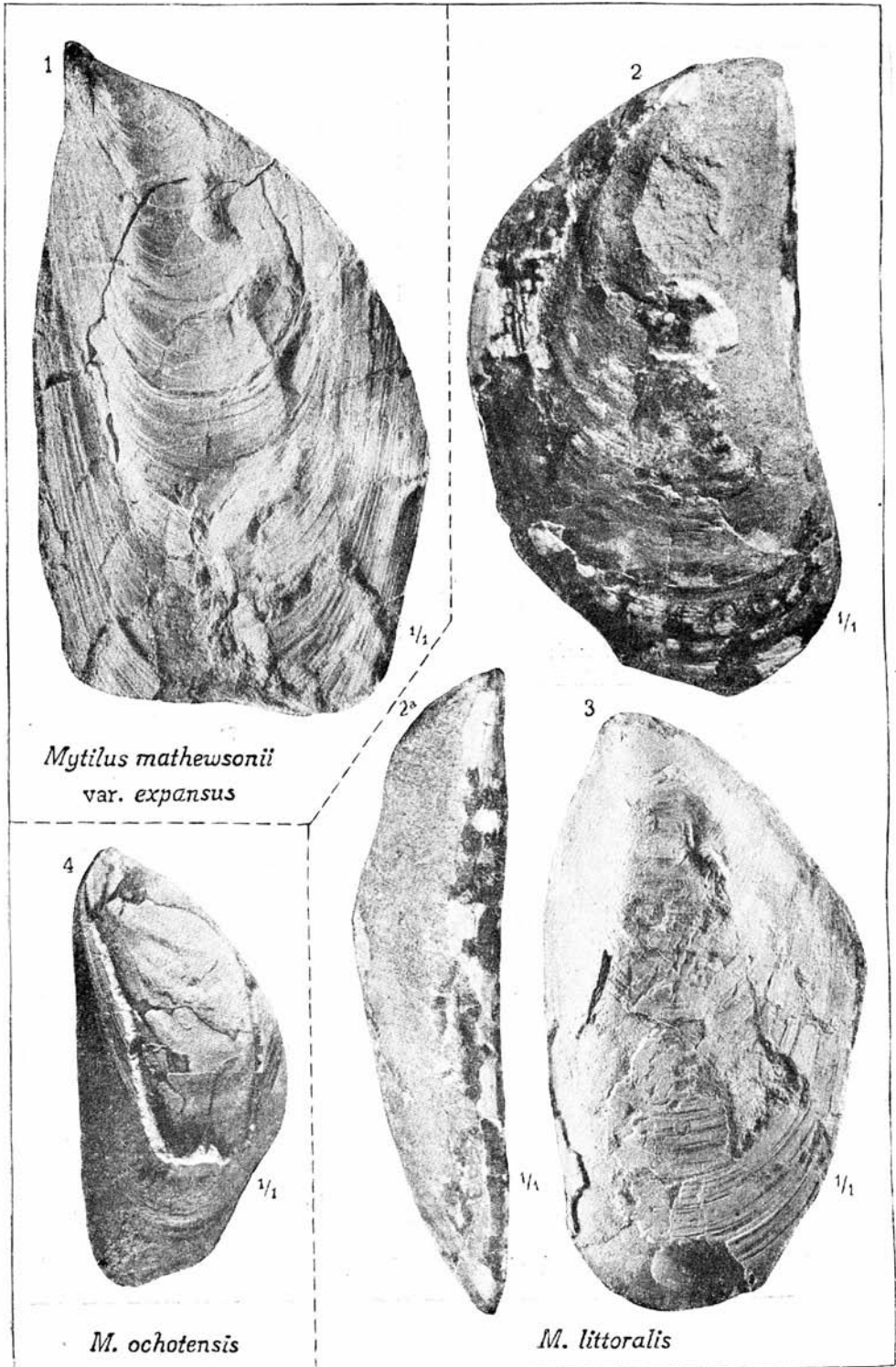
*Mytilus mathewsonii*



*M. perrini* var. *folioformis*

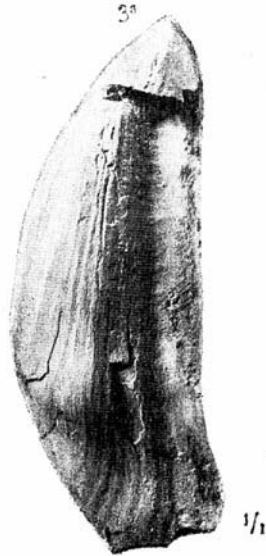


*M. mathewsonii* var. *expansus*



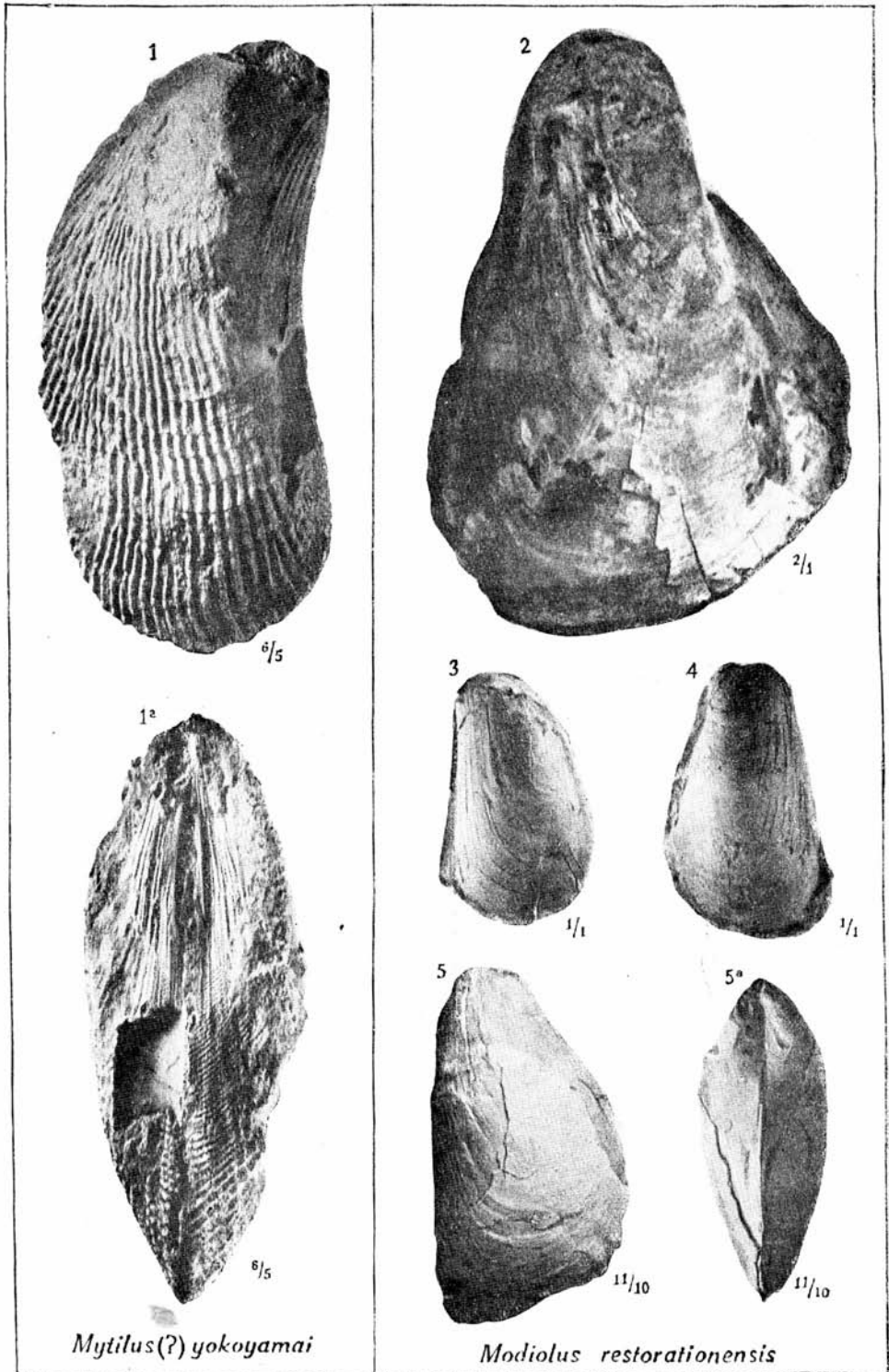


*Mytilus ochotensis*



*M. cf. middendorffi*

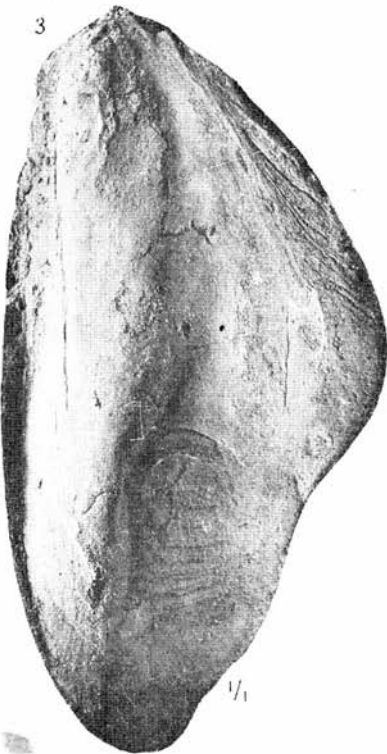






*M. solca*

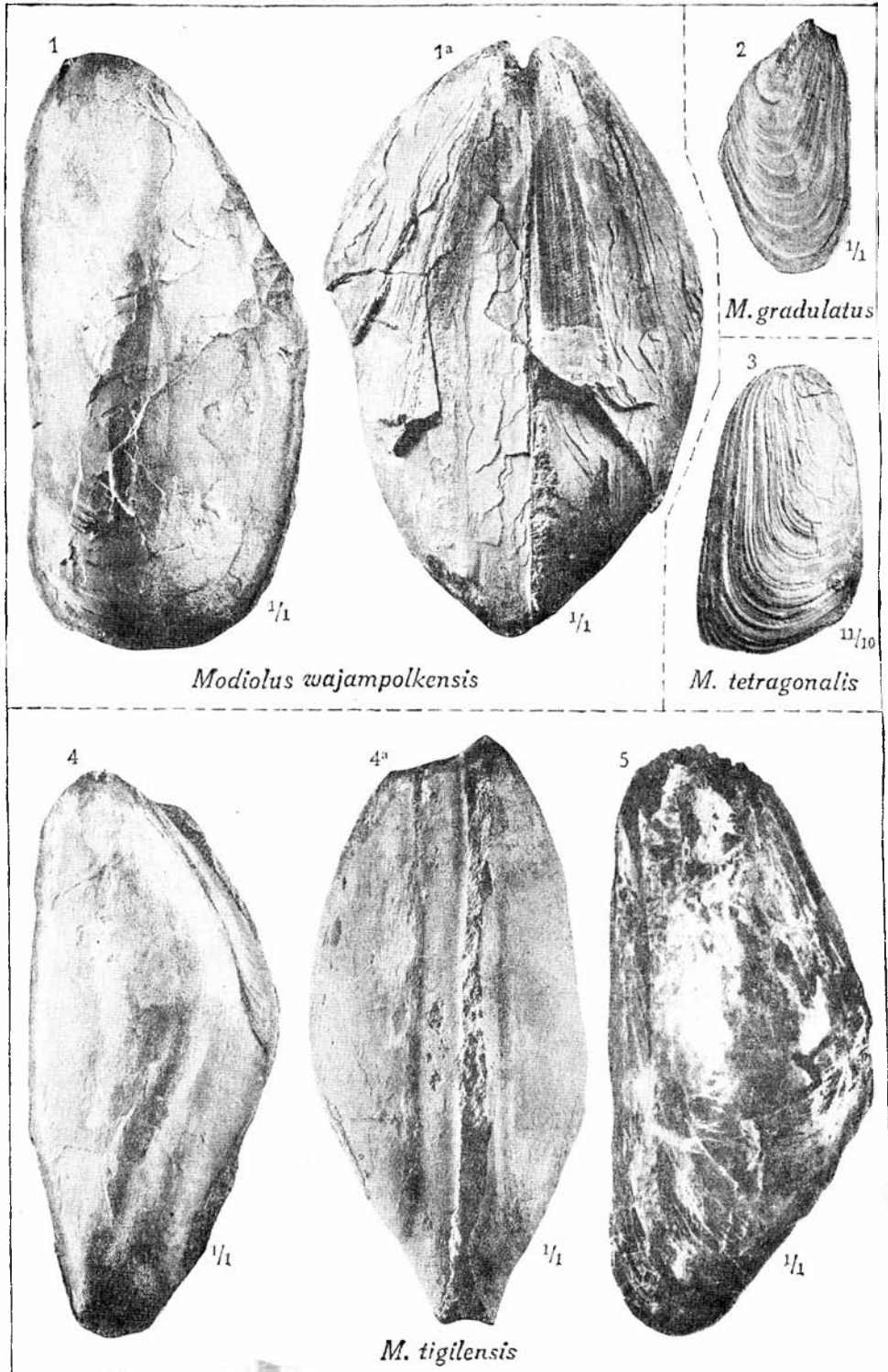
*Modiolus dilatatum*

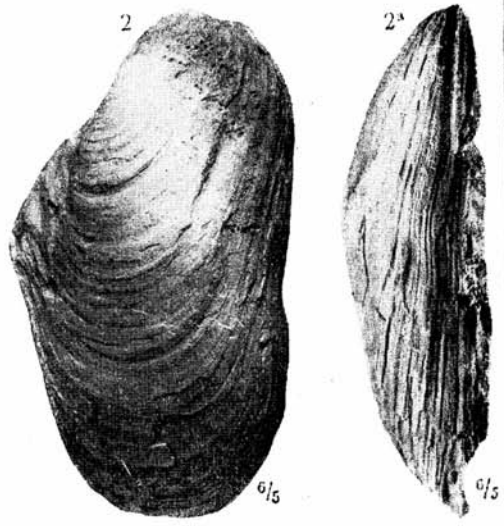
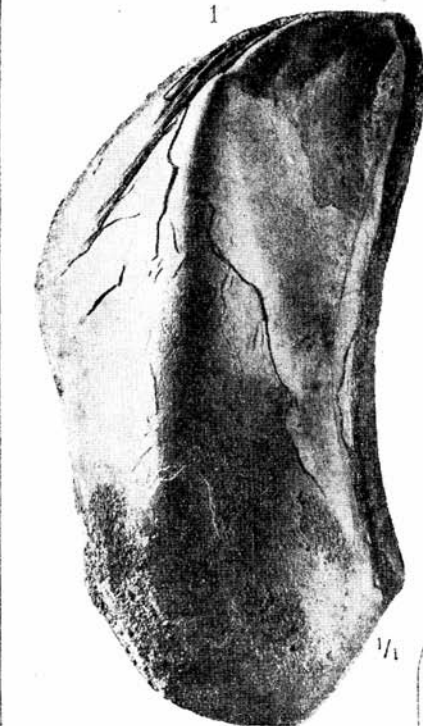
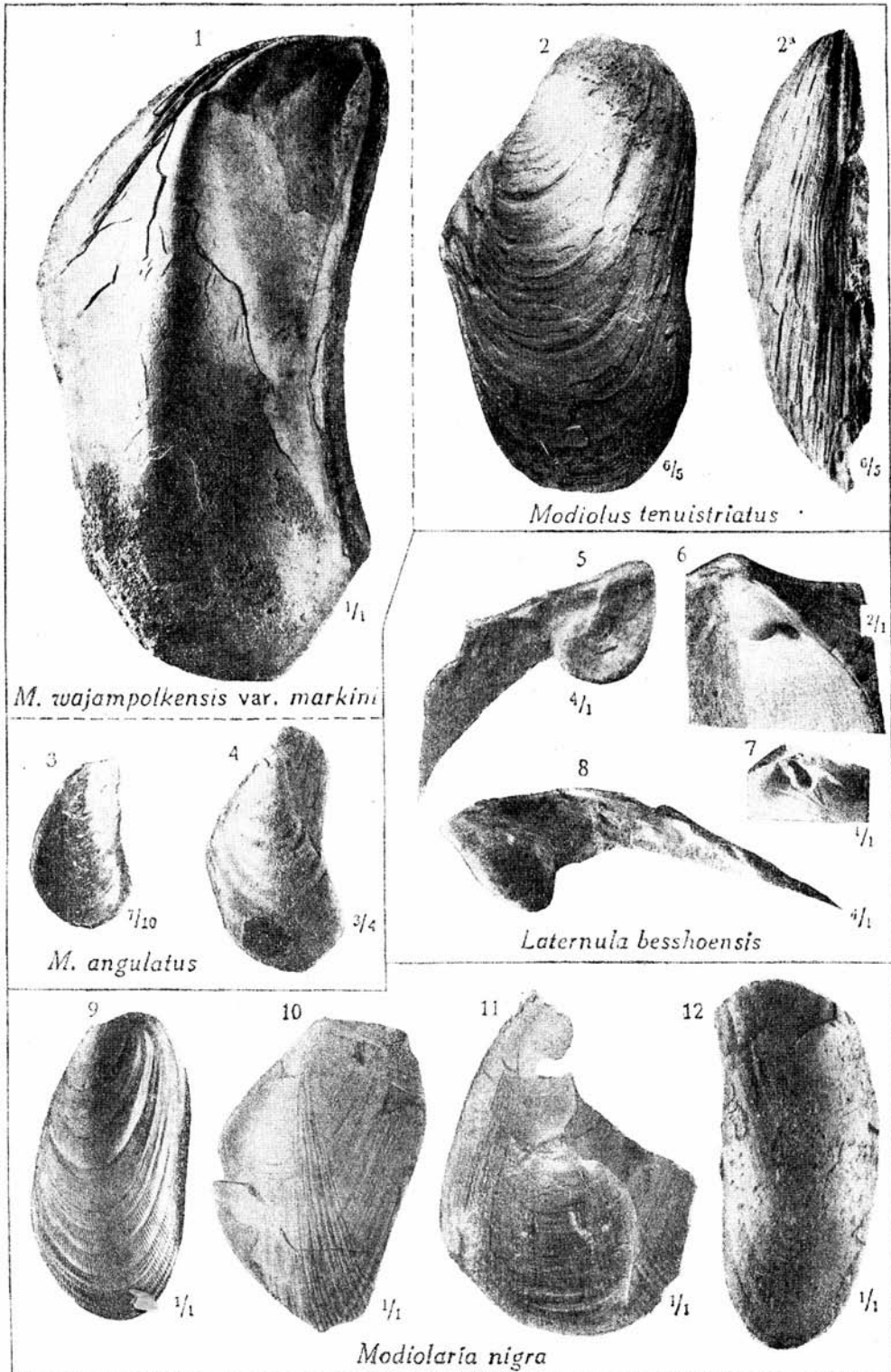


*M. trigonalis*



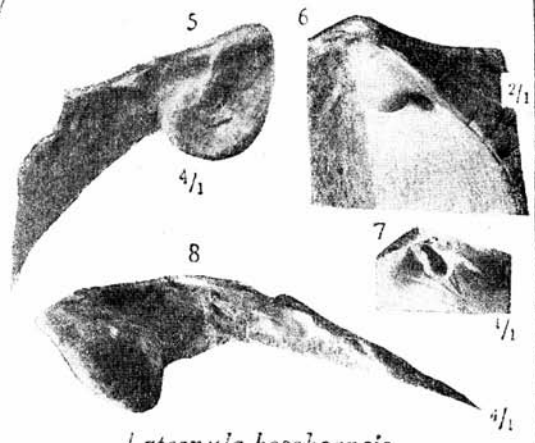
*M. flabellatus* var. *utcholokensis*



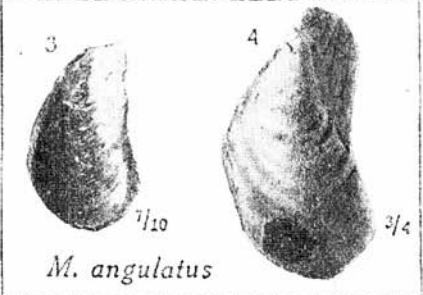


*Modiolus tenuistriatus*

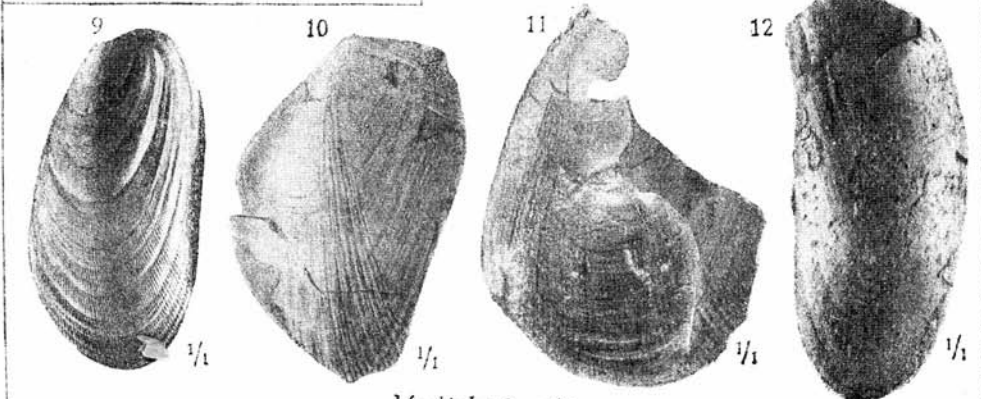
*M. wajampolkensis* var. *markini*



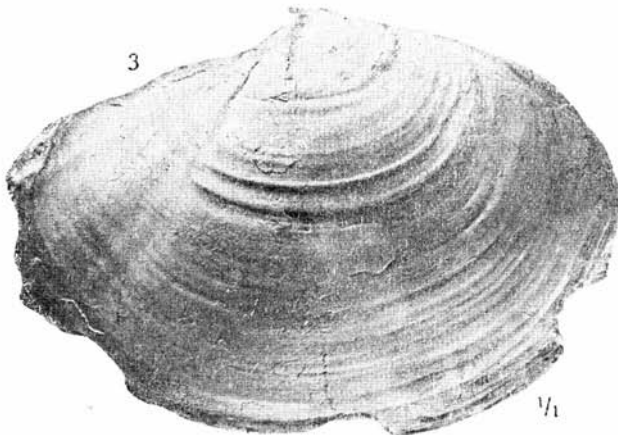
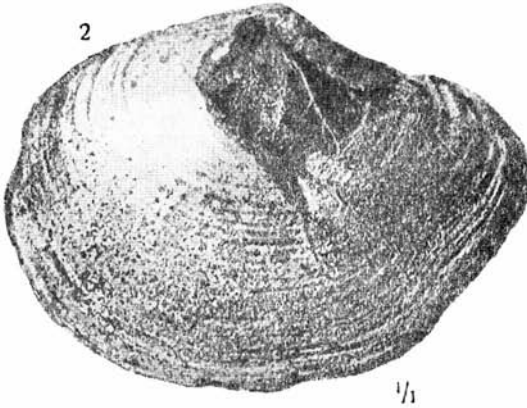
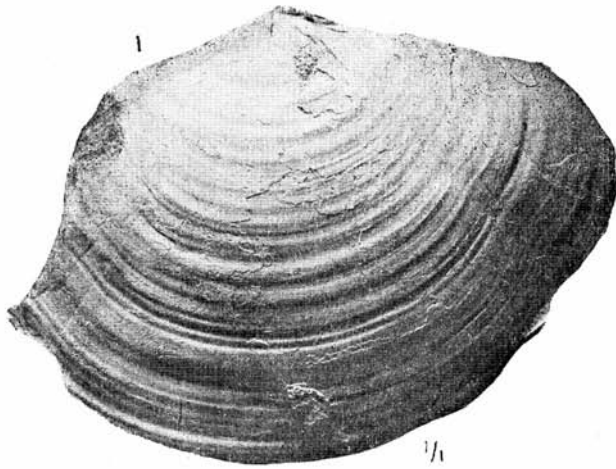
*Laternalz besshoensis*



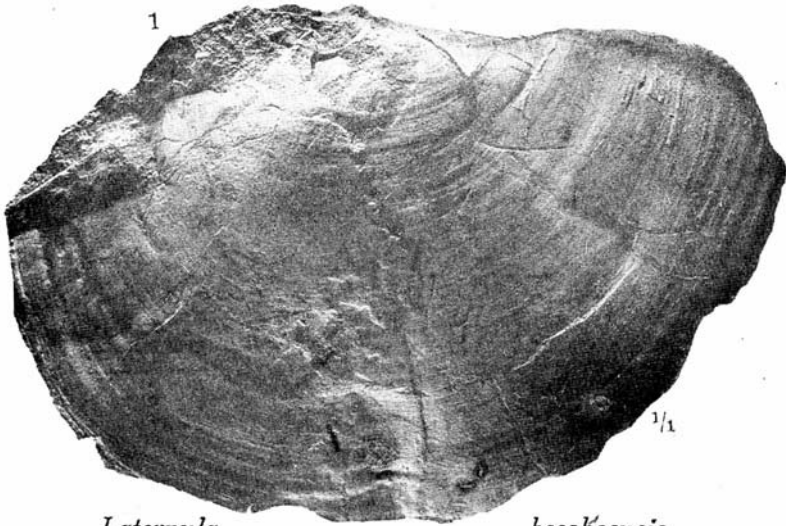
*M. angulatus*



*Modiolaria nigra*

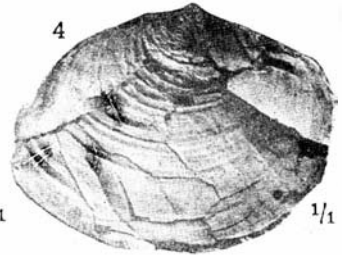
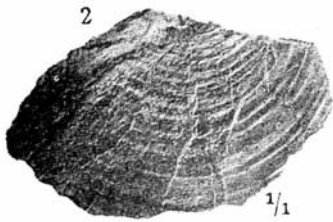


*Laternula besshoensis*

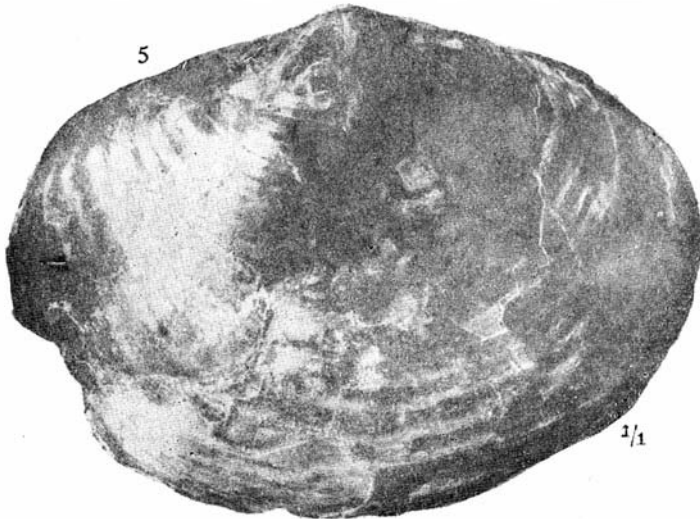


*Laternula*

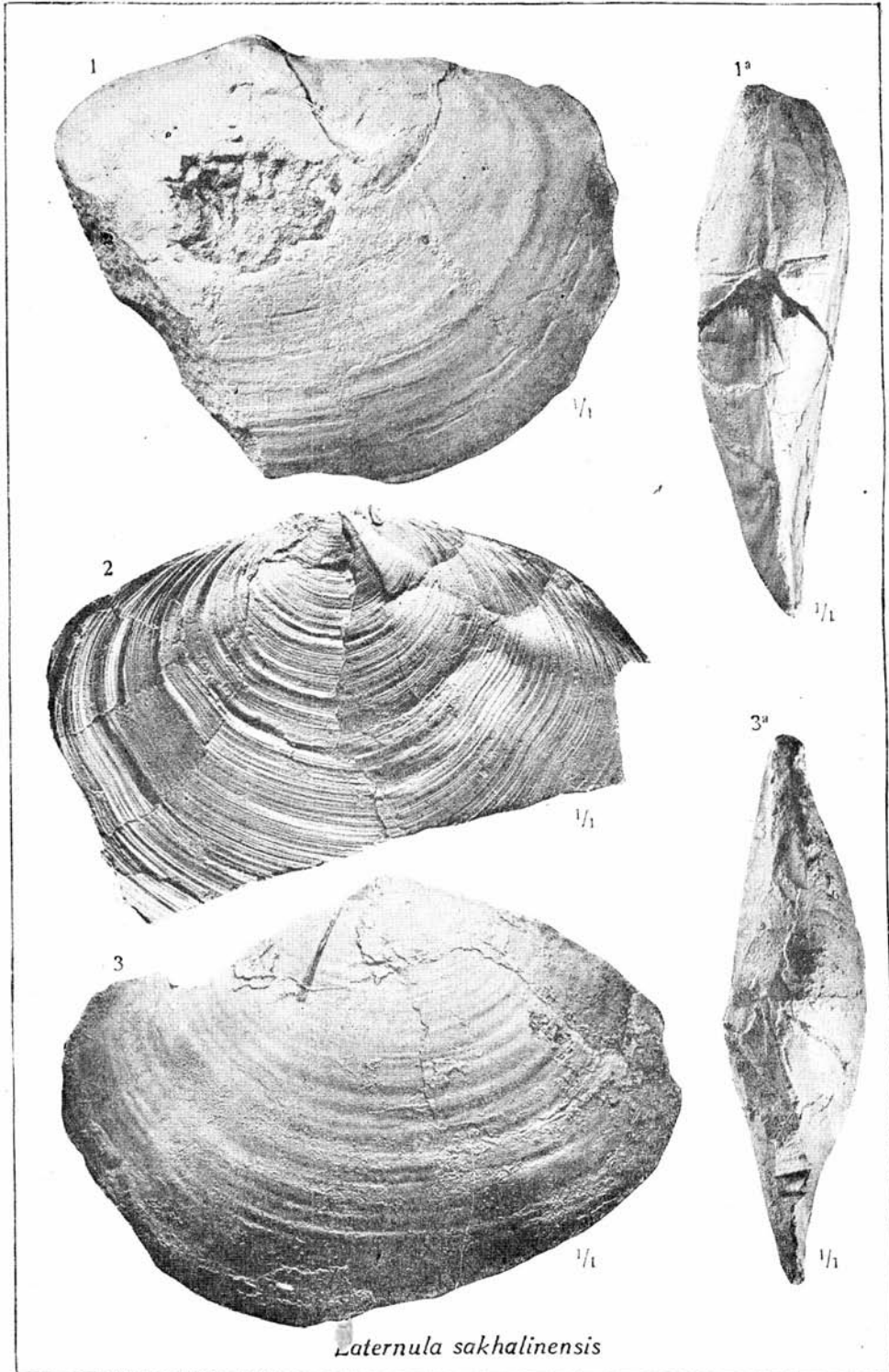
*besskoensis*

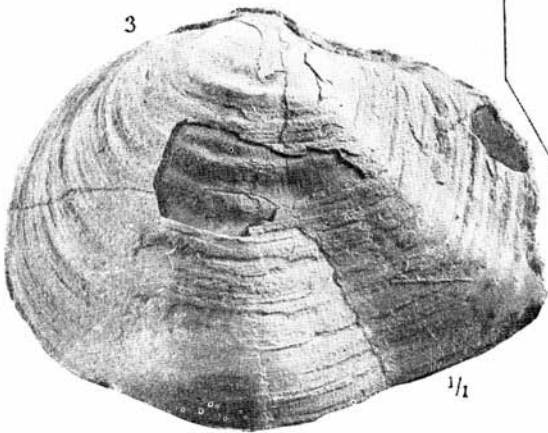
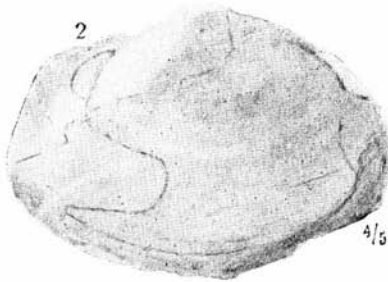
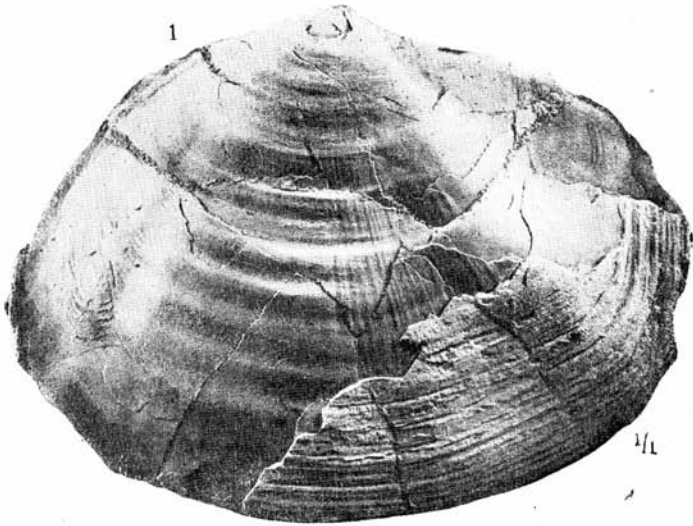


*L. pilensis*

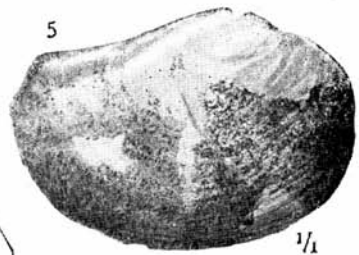
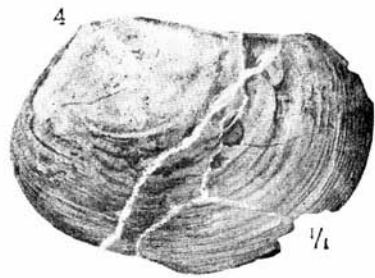


*L. sakhalinensis*





*Thracia condoni*



*Pandora pulchella*





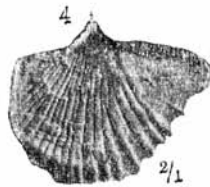
*Pandora wajampolkensis*



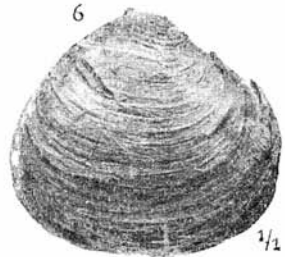
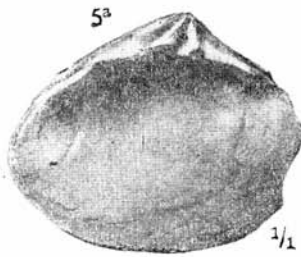
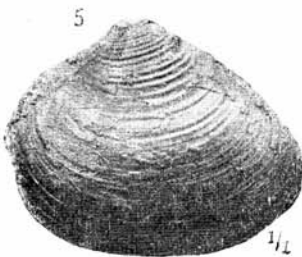
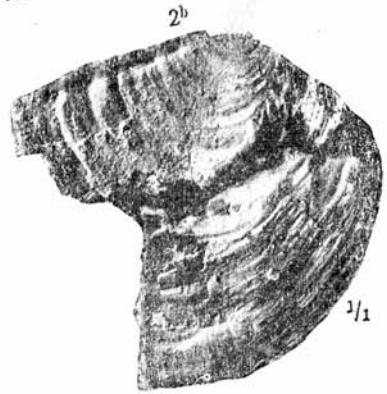
*P. gretschischkini*



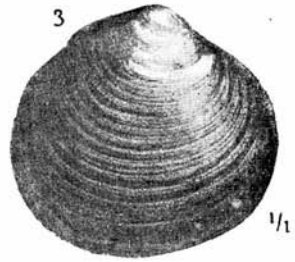
*Cuspidaria  
kaoranensis*



*C. tigilensis*



*Astarte borealis*



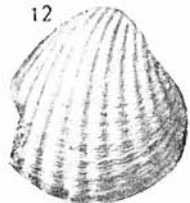
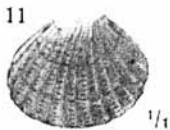
*Astarte cf. actis*



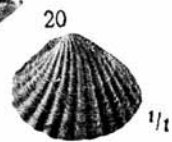
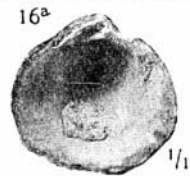
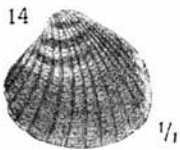
*A. rollandi*



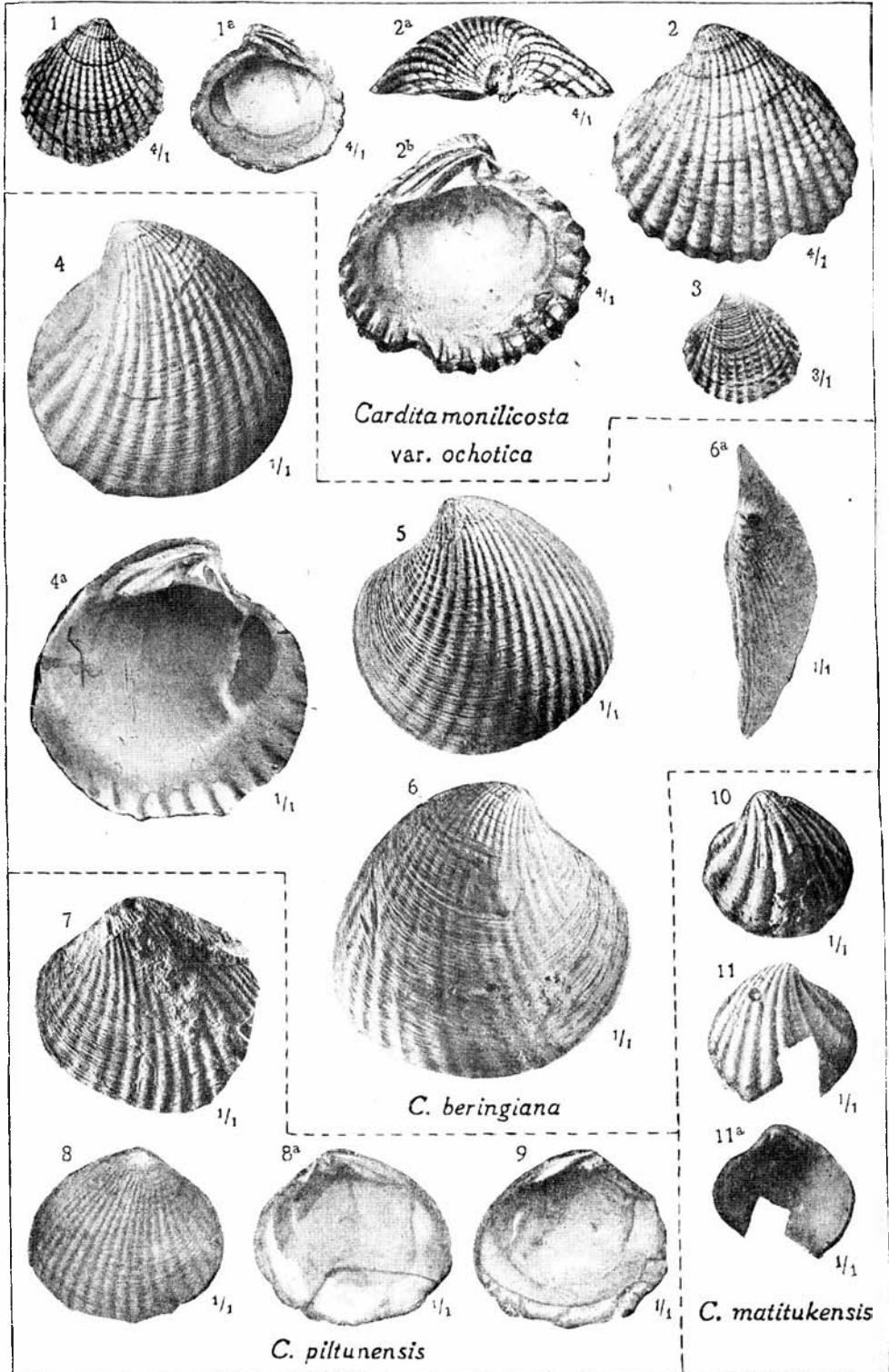
*Cardita kovatschensis*

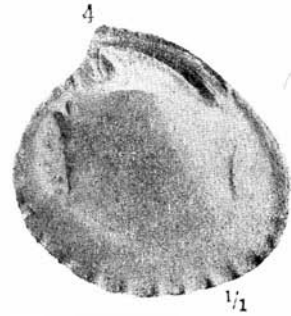
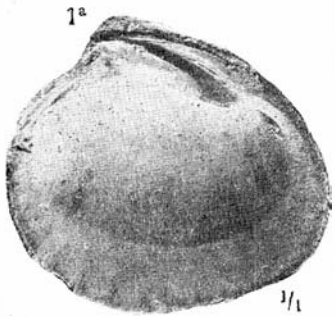


*C. ventricosa*

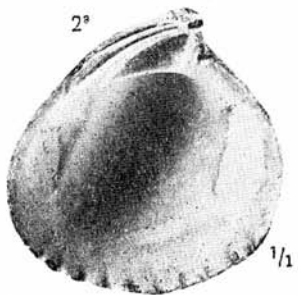


*C. ferruginea*





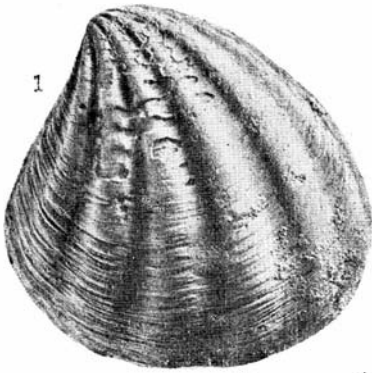
*C. kamschatica*  
*var. dualii*



*Cardita kamschatica*

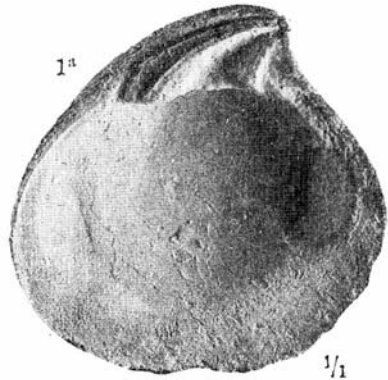
*C. puella*

*C. praeruptensis*



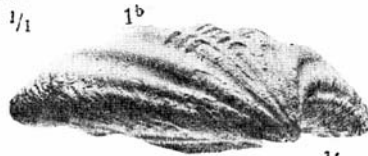
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1/1



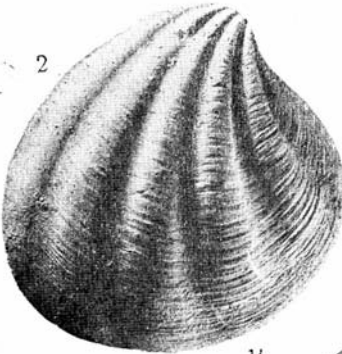
1<sup>a</sup>

1/1



1<sup>b</sup>

1 3/4



2

1/1



2<sup>a</sup>

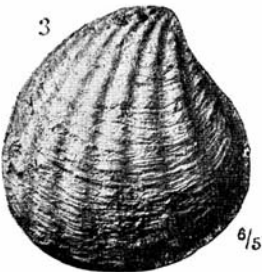
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2<sup>b</sup>

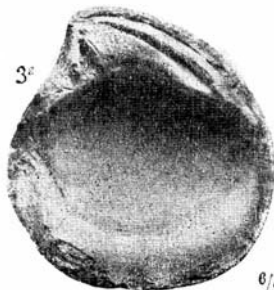
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*Cardita kavranensis*



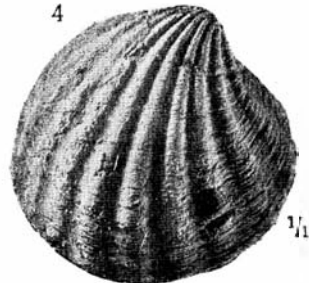
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6/5



3<sup>a</sup>

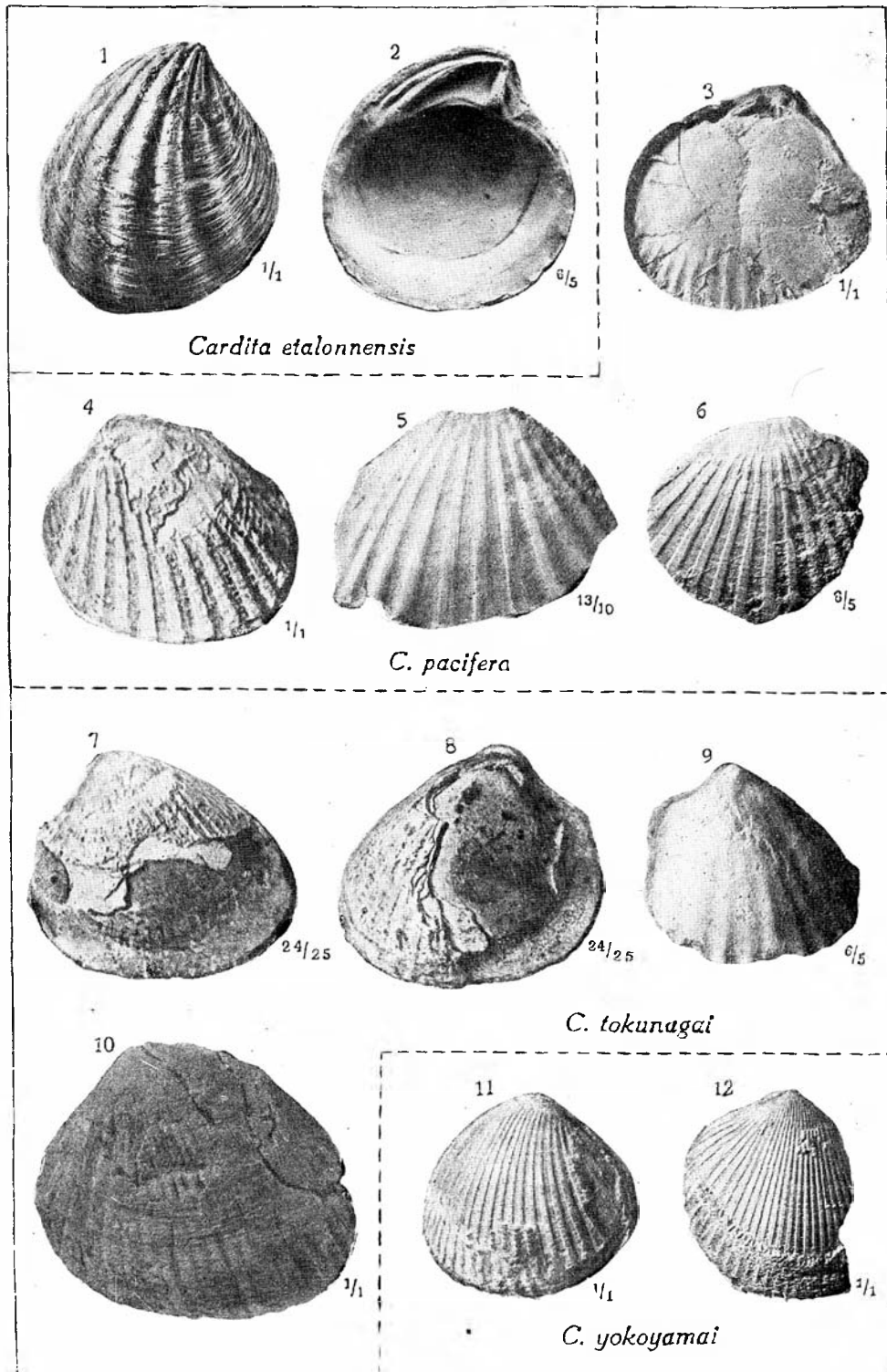
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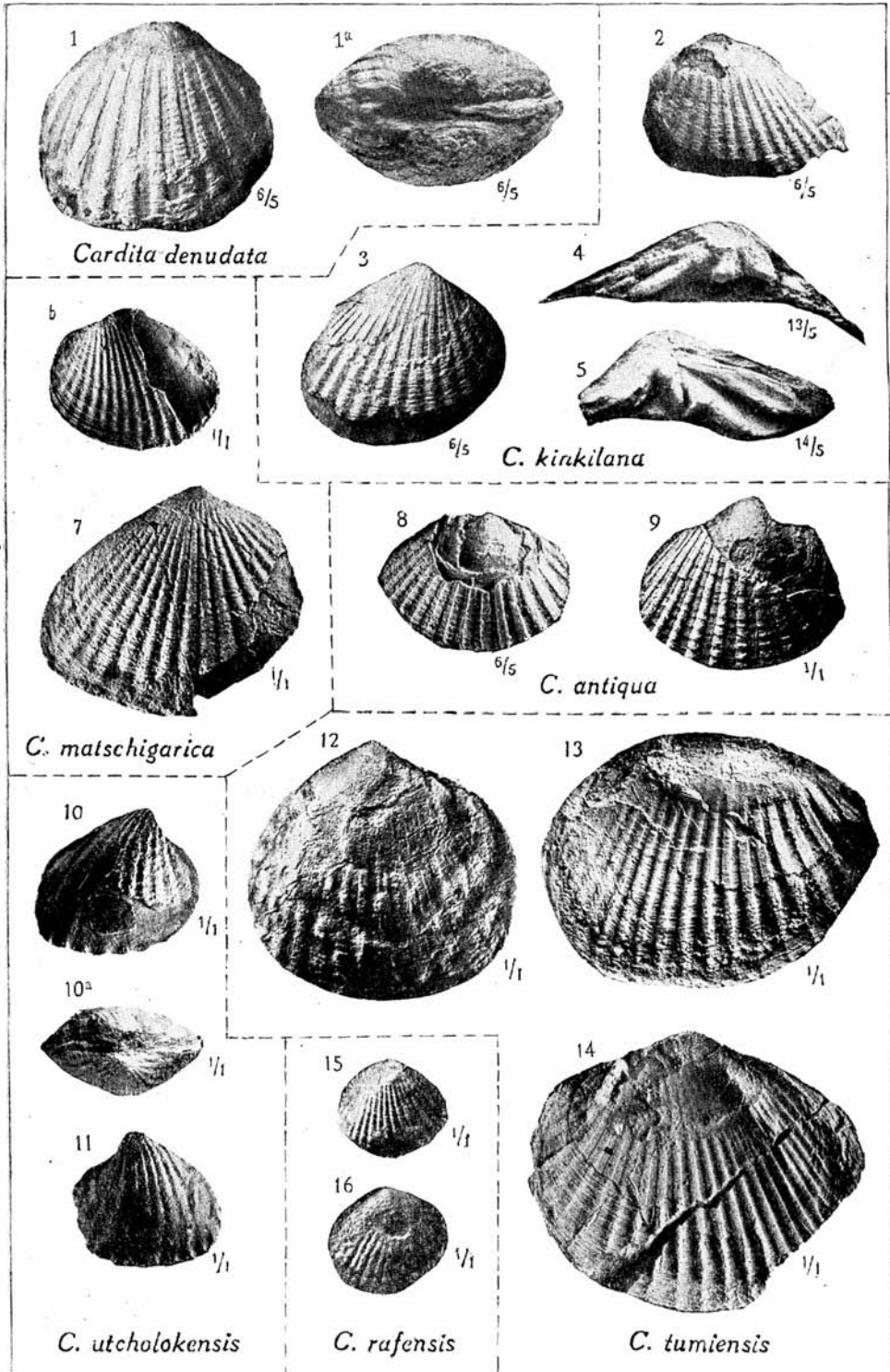


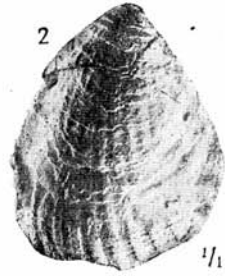
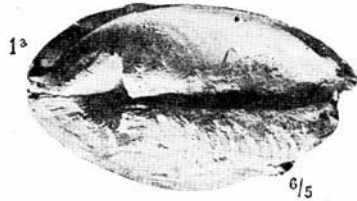
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1/1

*C. etalonnensis*



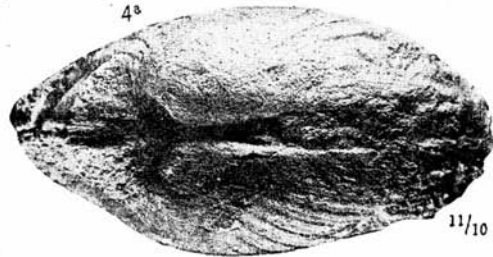
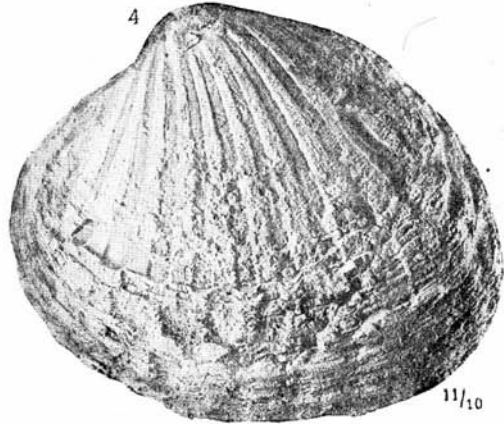




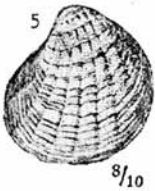
*Cardita snatolana*



*C. sp. indet.*



*C. kevetscheuemensis*

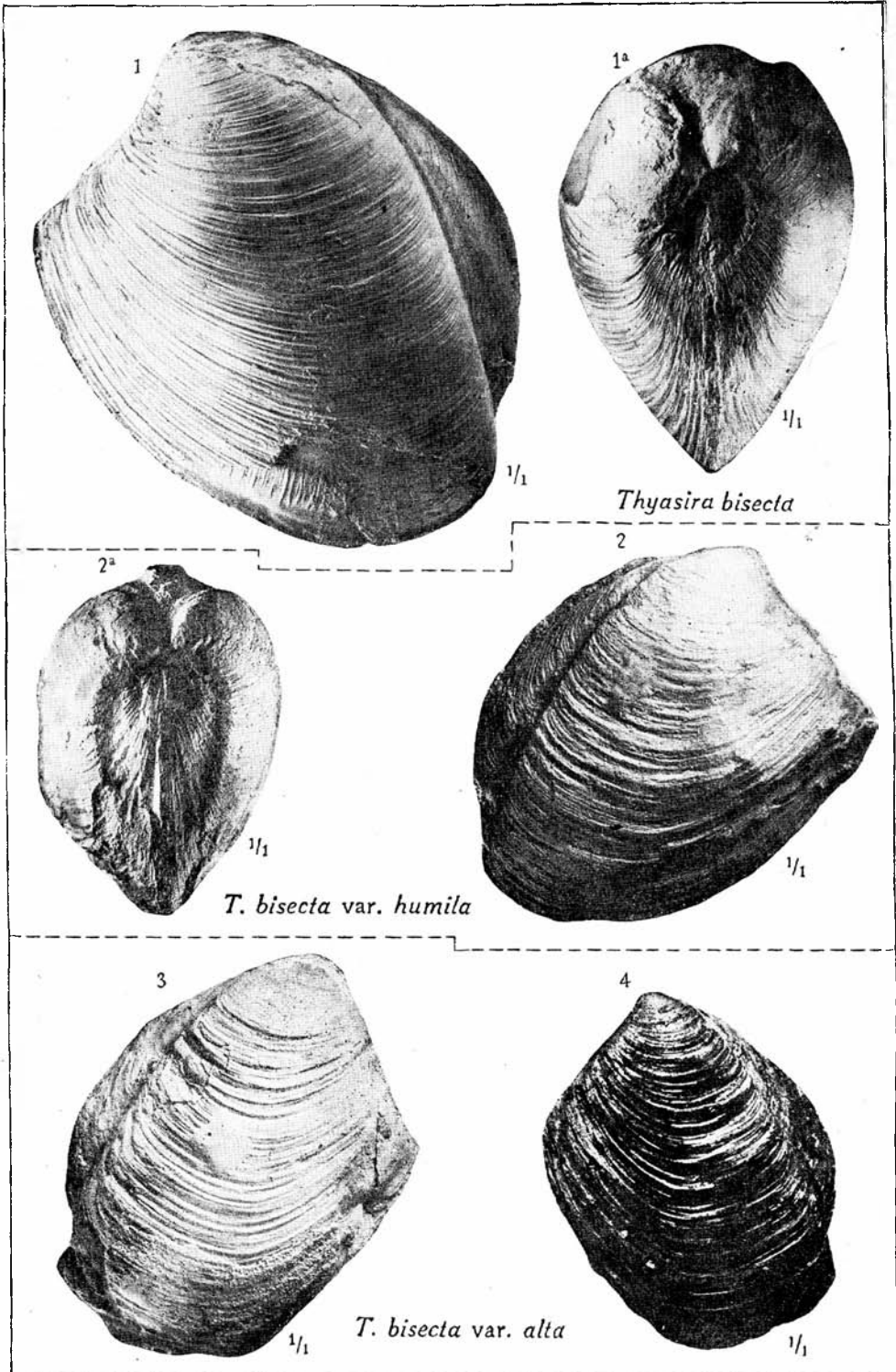


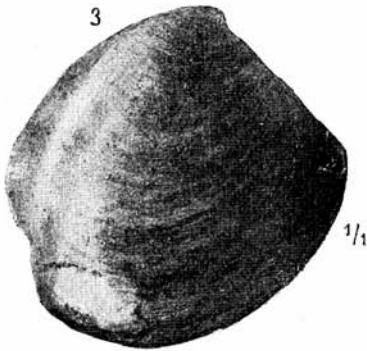
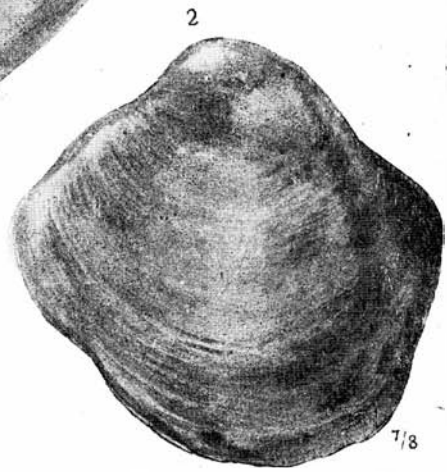
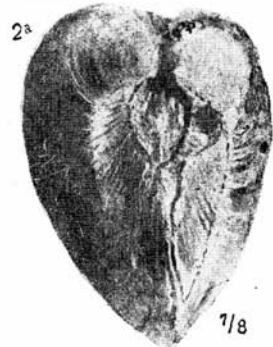
*C. prolongata*



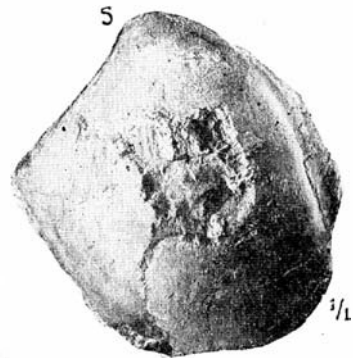
*Thyasira bisecta*



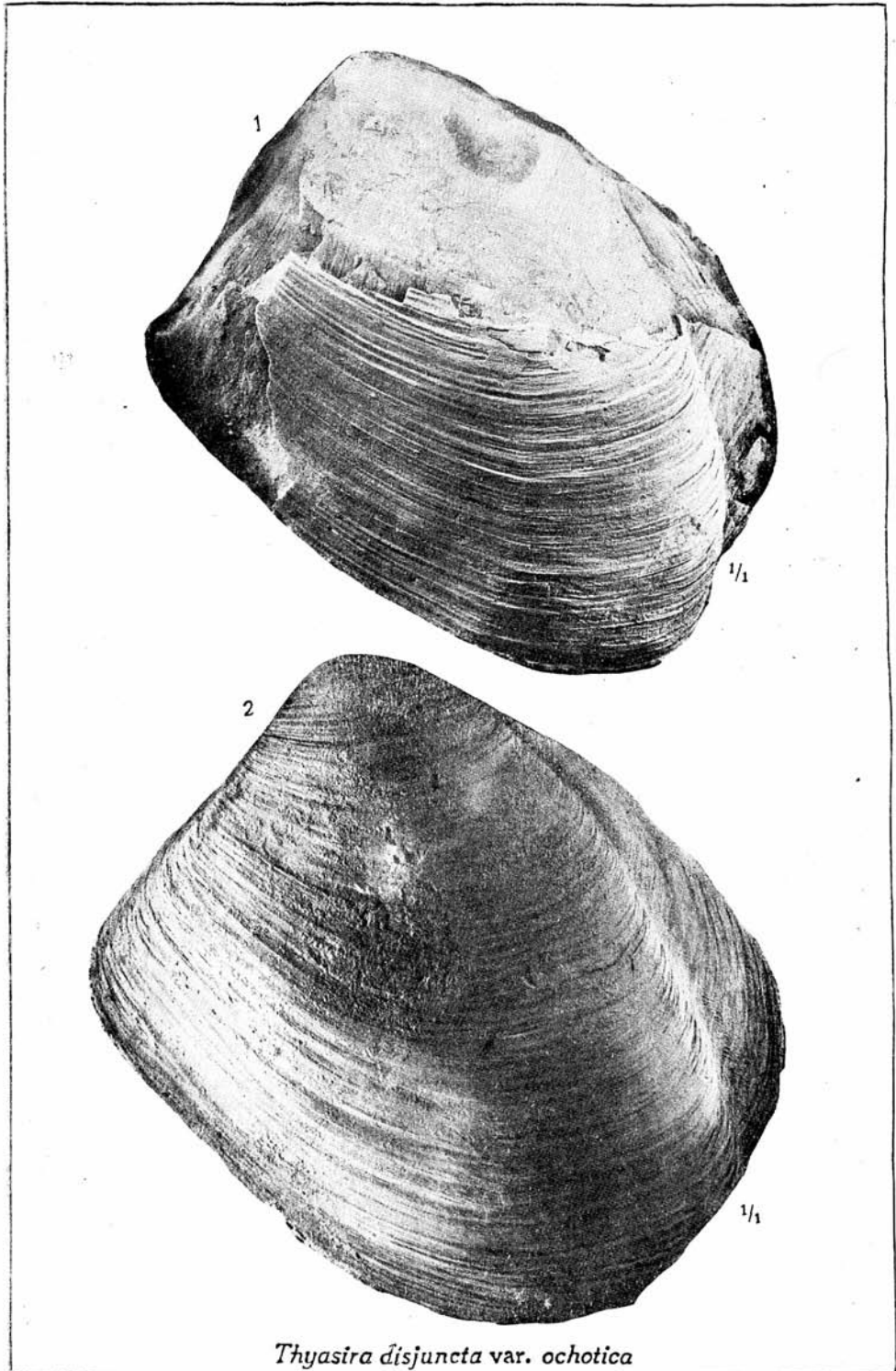




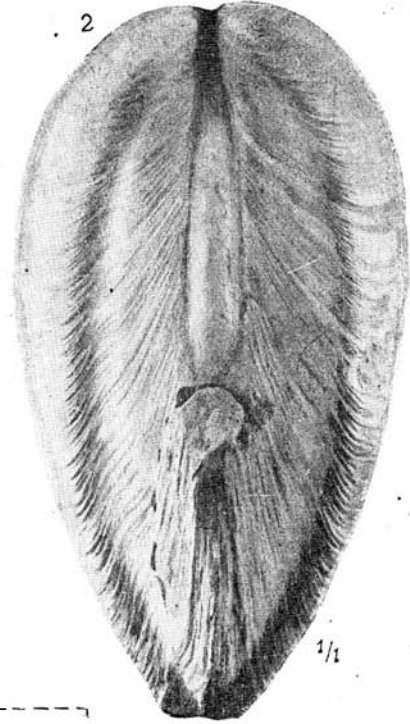
*Thyasira bisecta* var. *nipponica*



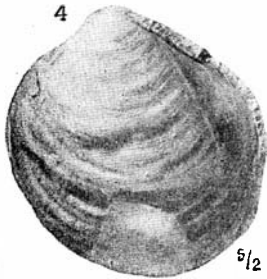
*T. clarki*



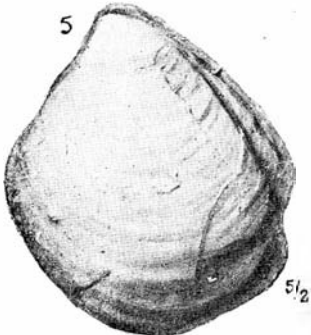
*Thyasira disjuncta* var. *ochotica*



*Thyasira disjuncta* var. *ochotica*

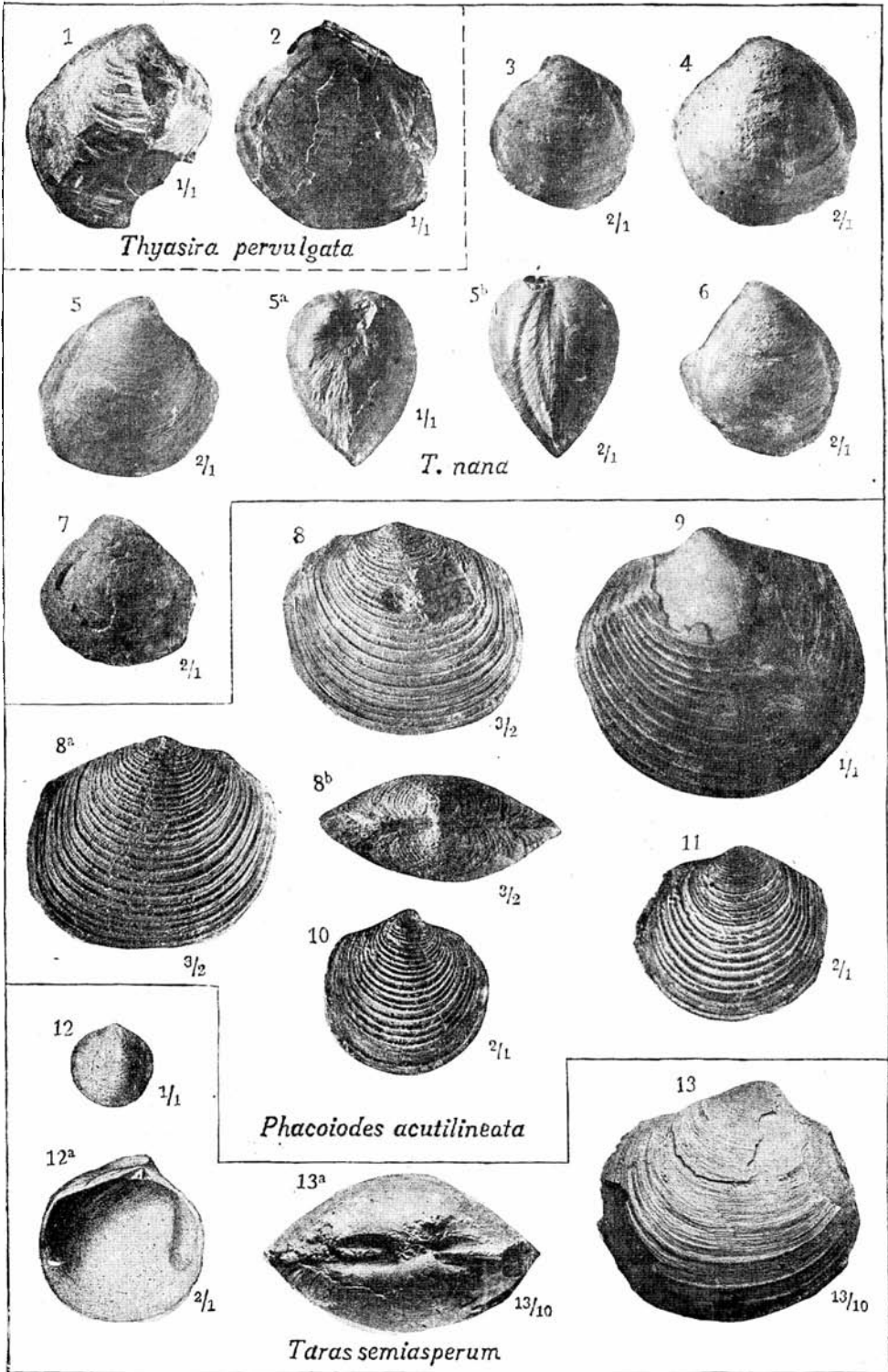


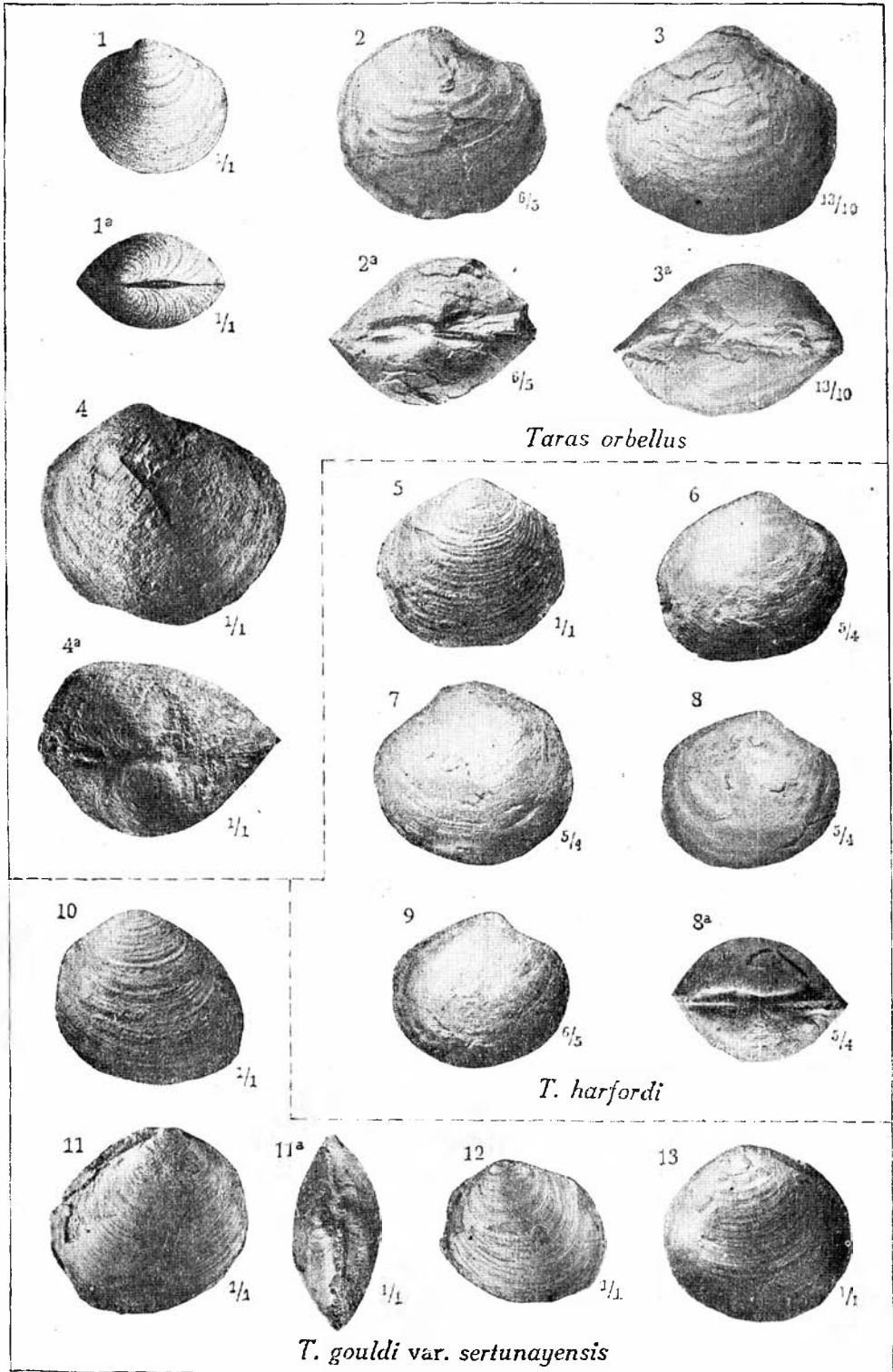
*T. tigiliana*

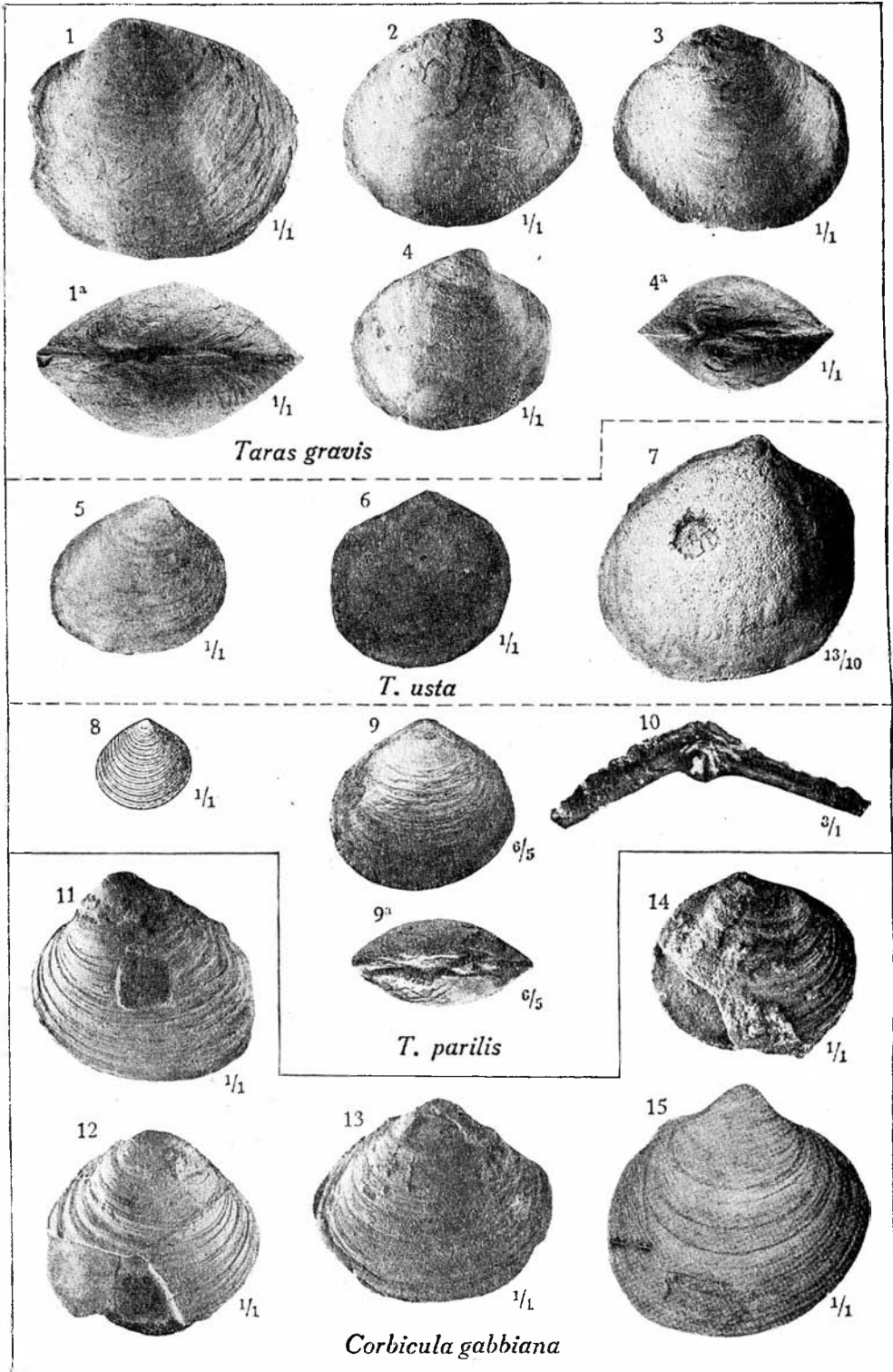


*T. wajampolkana*



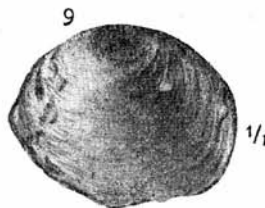
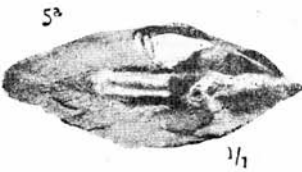
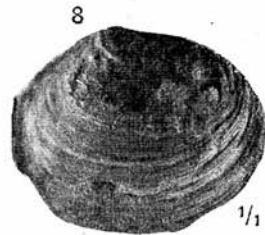
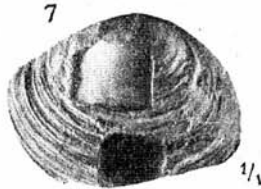
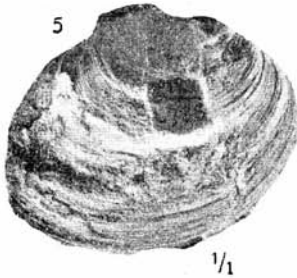
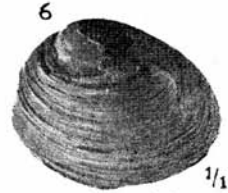
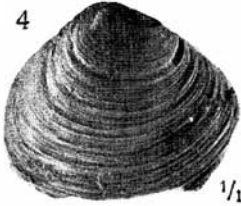
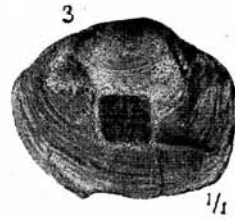




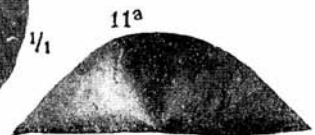
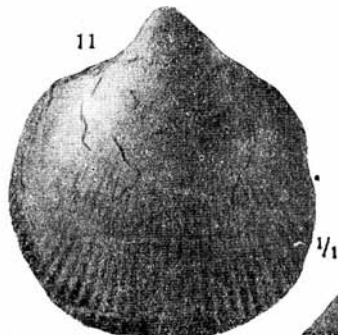
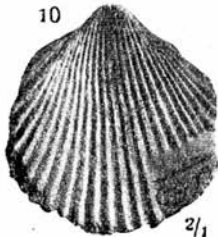




*Corbicula(?) kovatschensis*



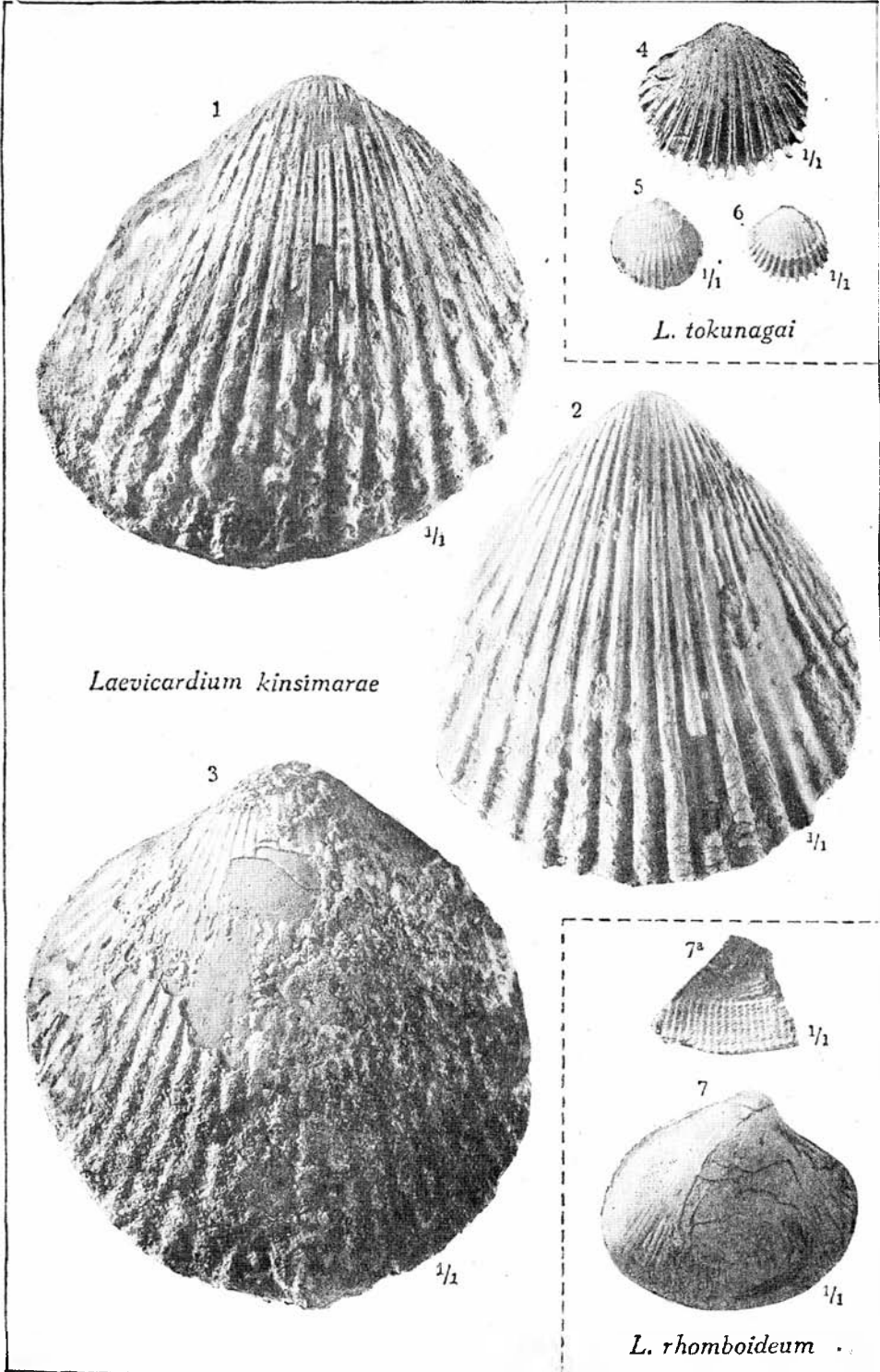
*C. fonsata*

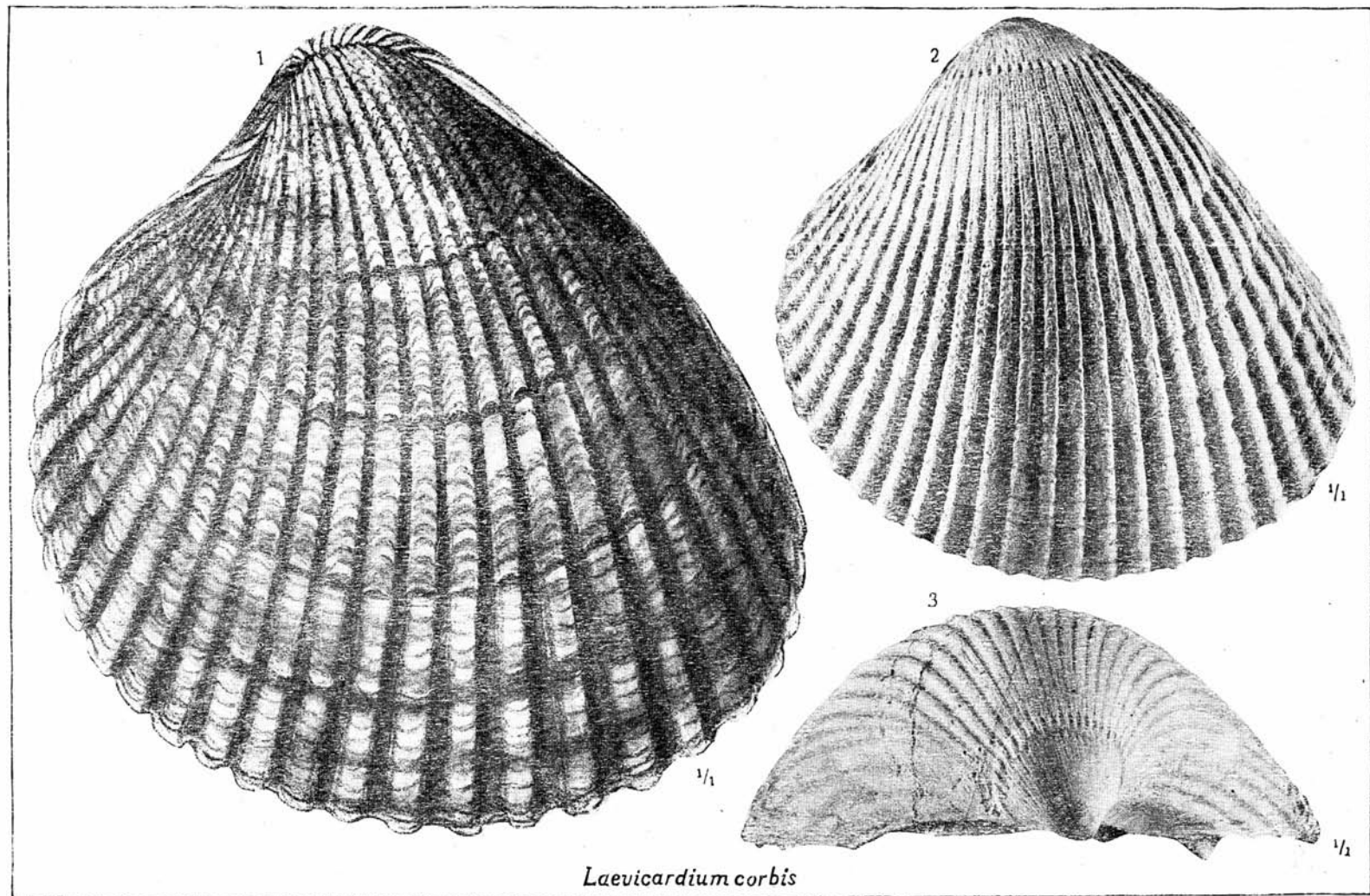


*Laevicardium tigilense*

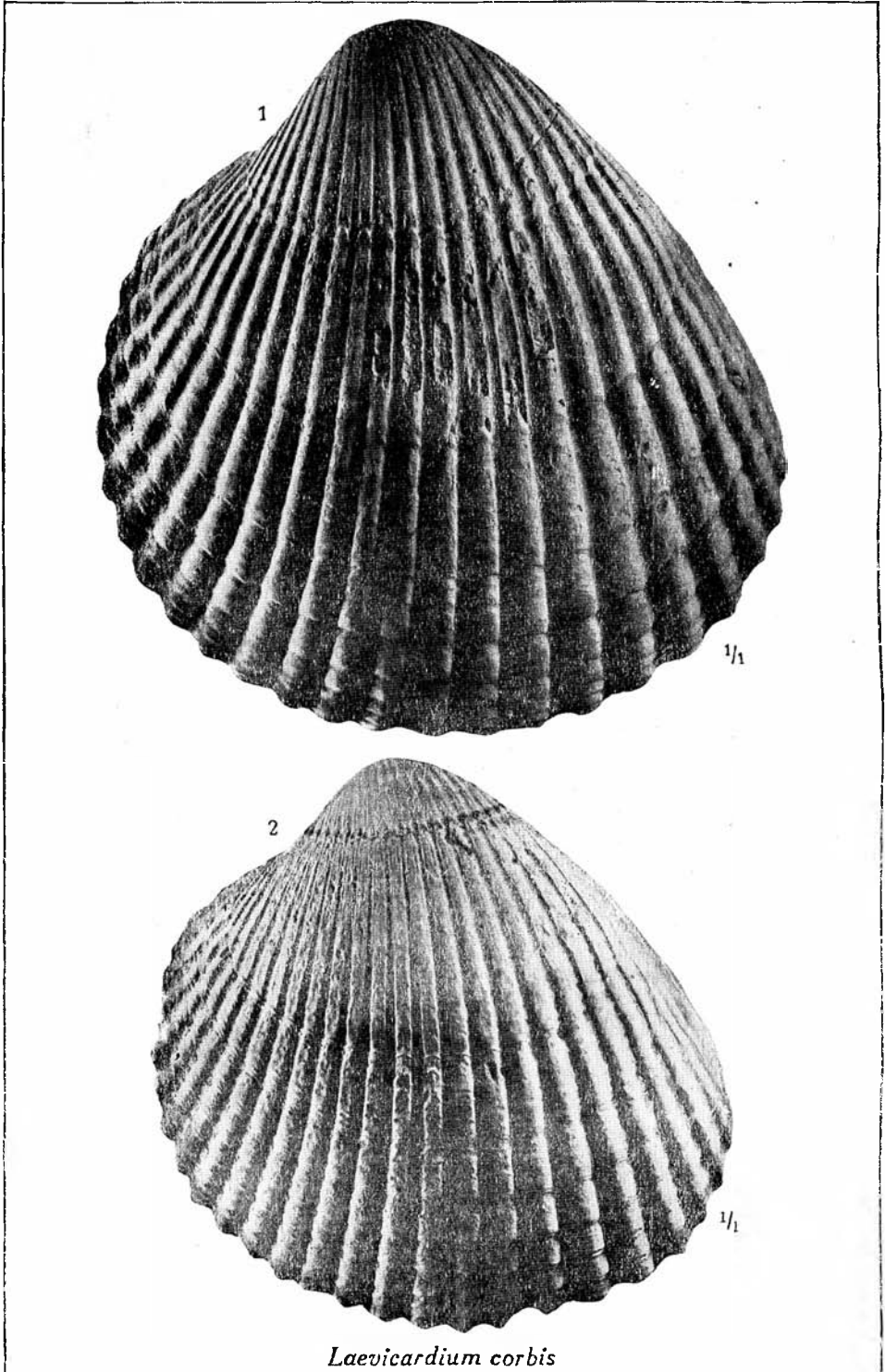
*L. etheringtoni*



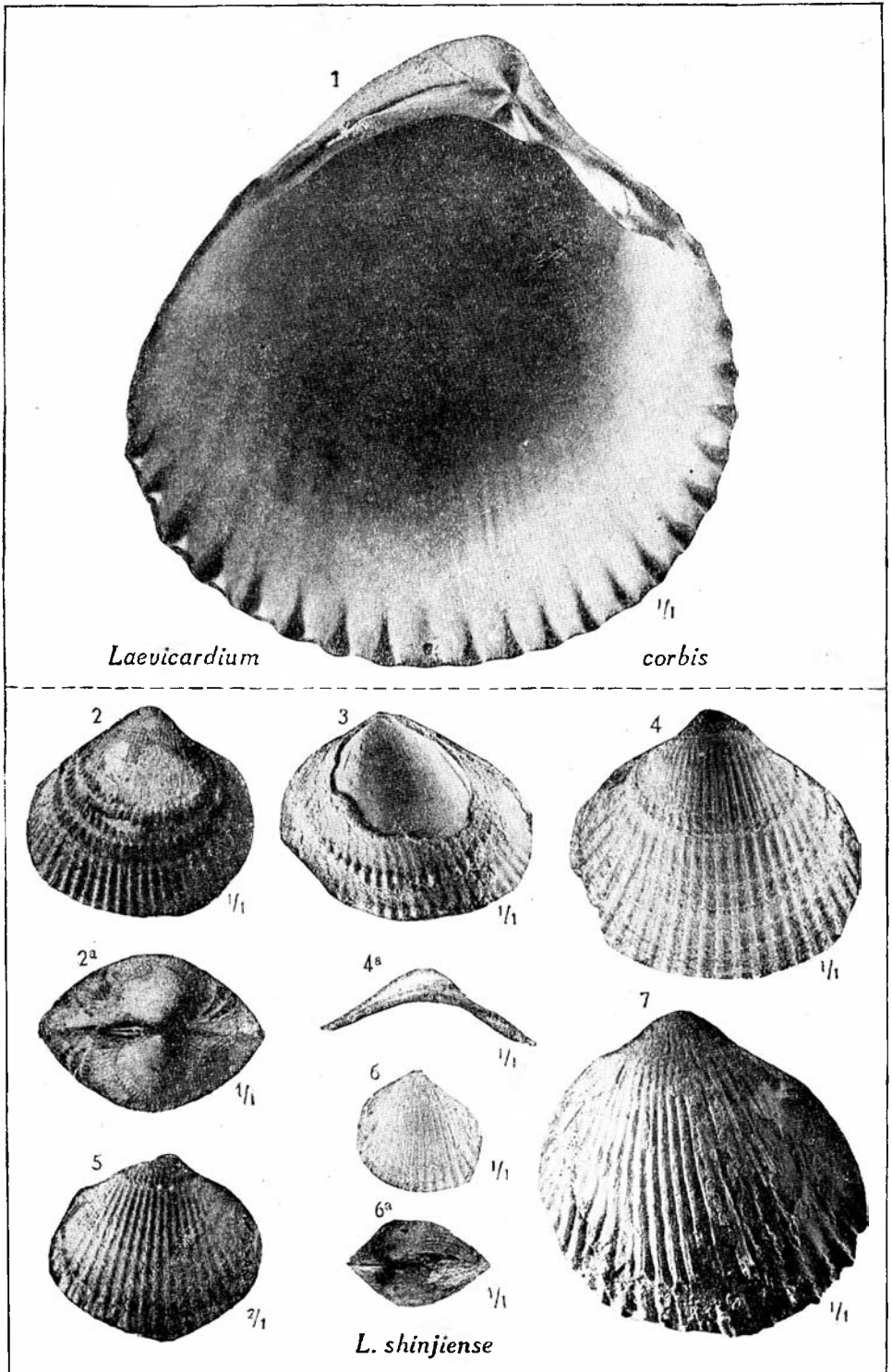


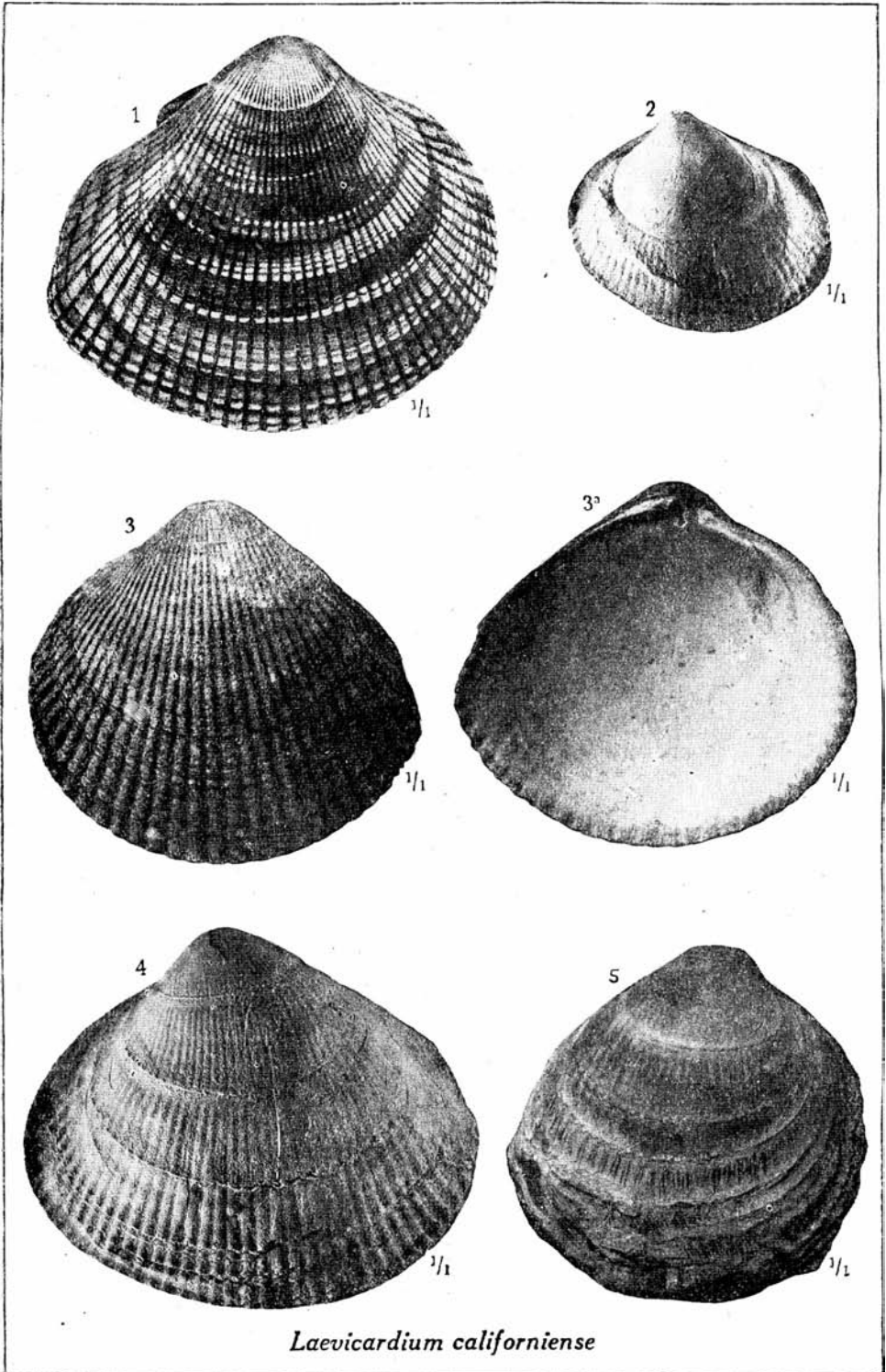


*Laevicardium corbis*

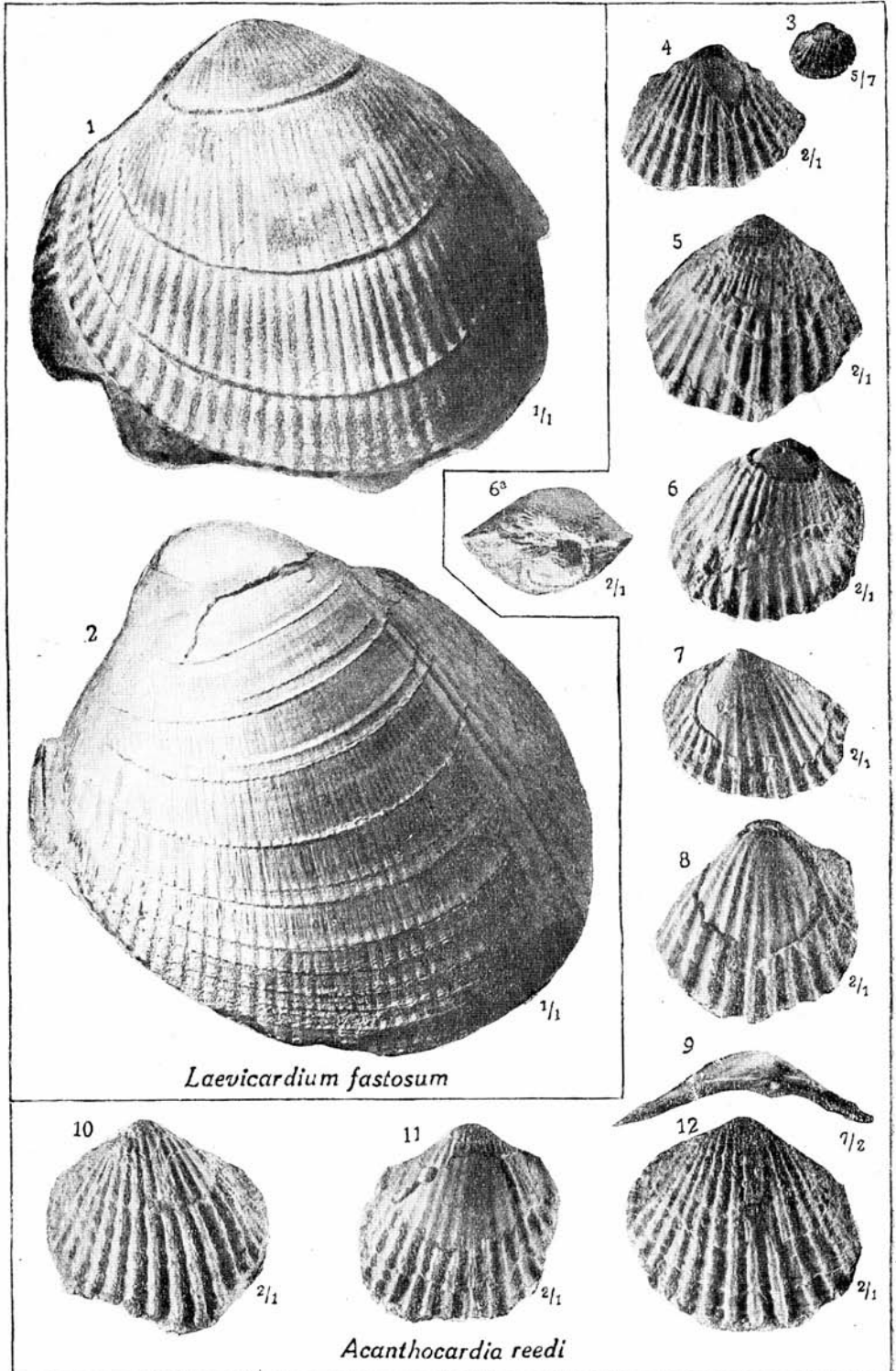


*Laevicardium corbis*



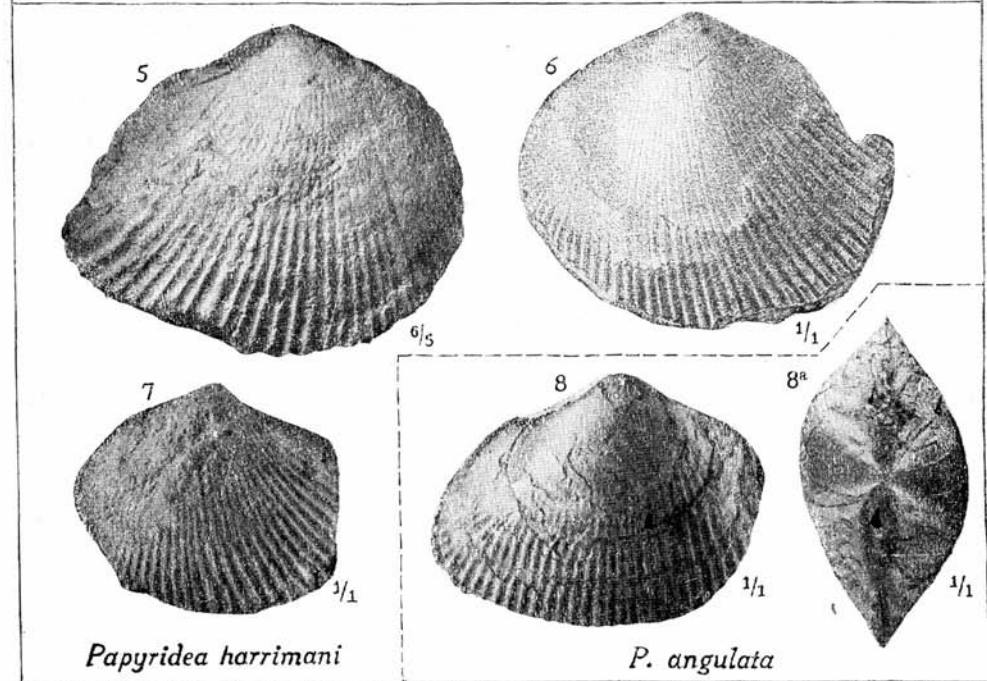
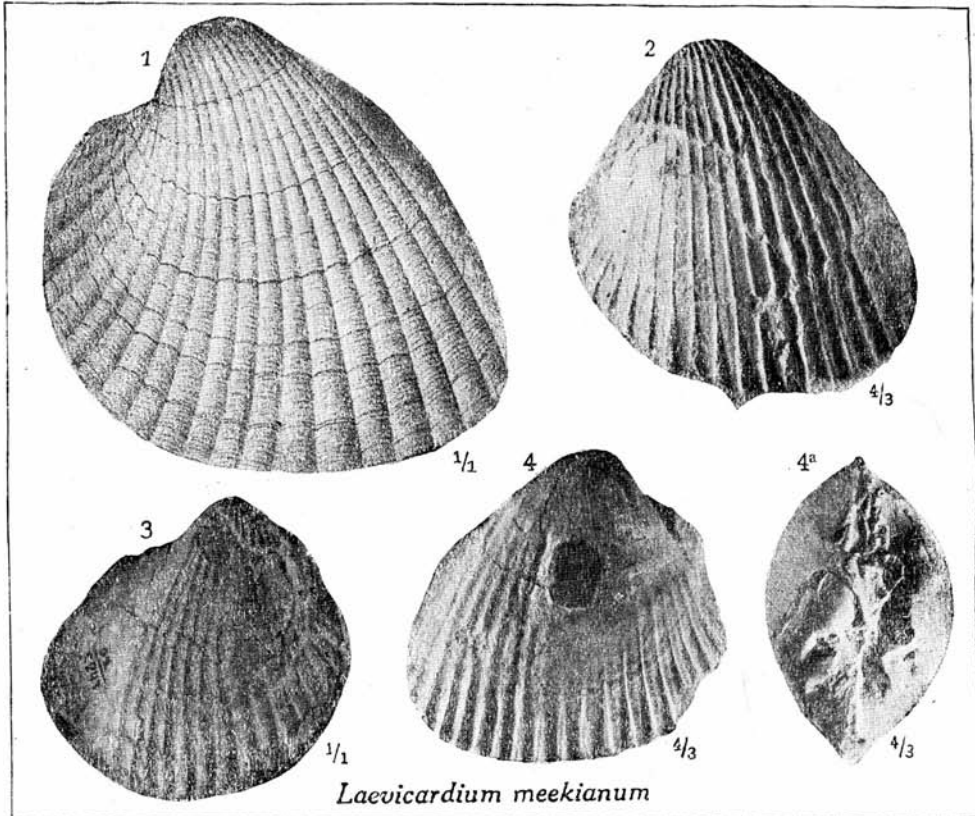


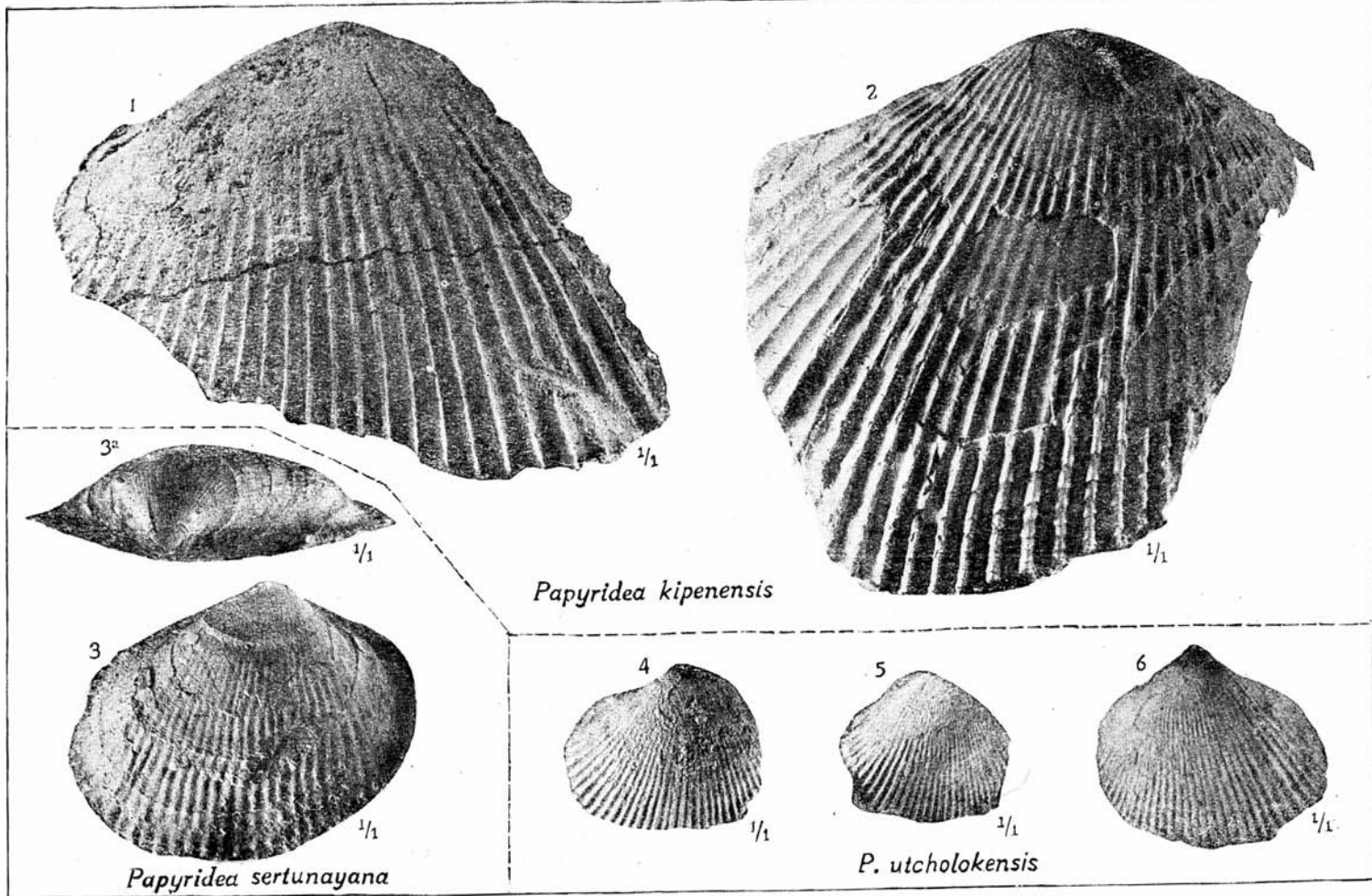
*Laevicardium californiense*



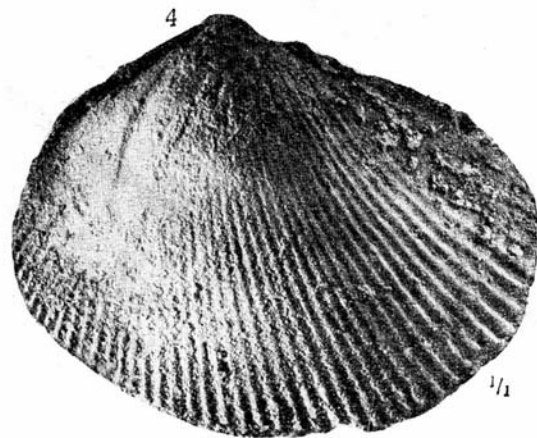
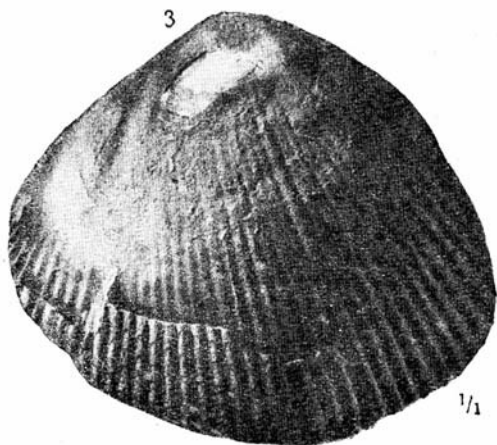
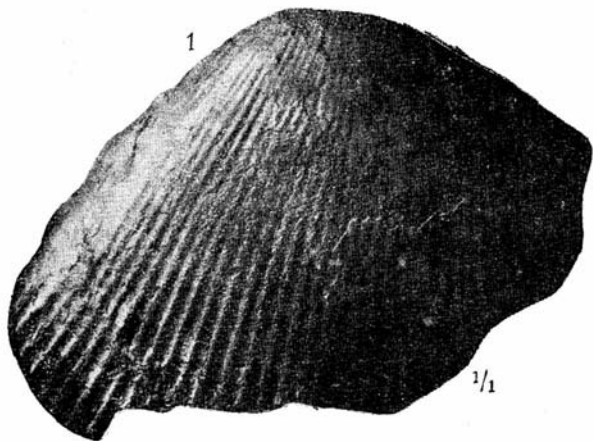
*Laevicardium fastosum*

*Acanthocardia reedi*



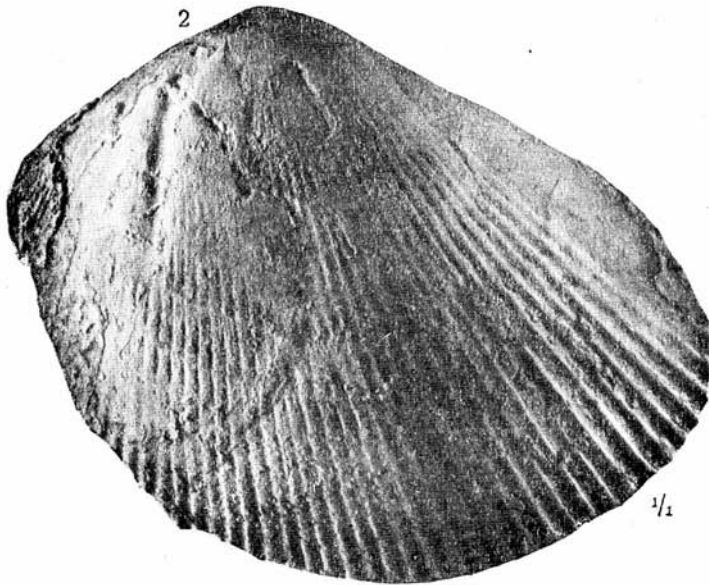




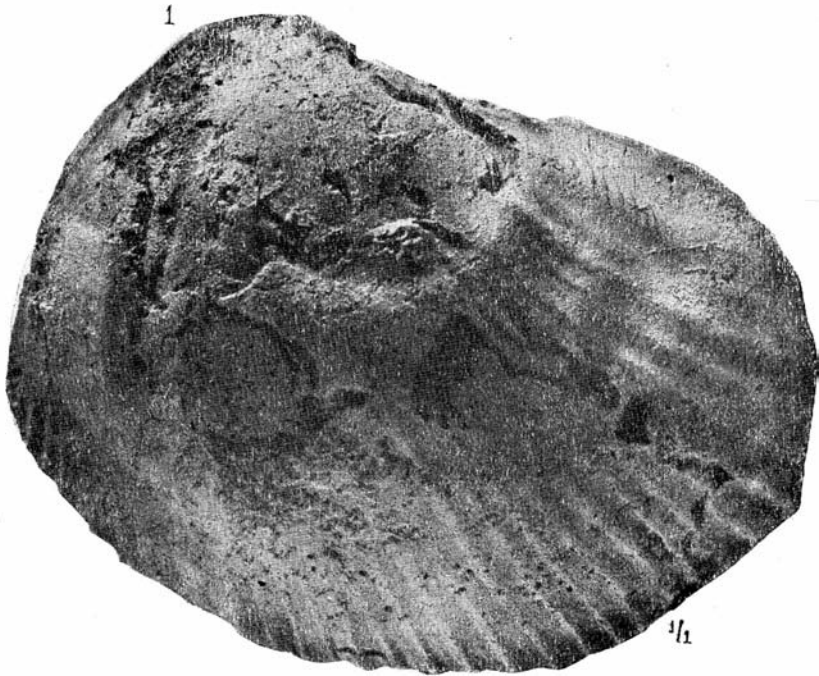


*Papyridea kipenensis*

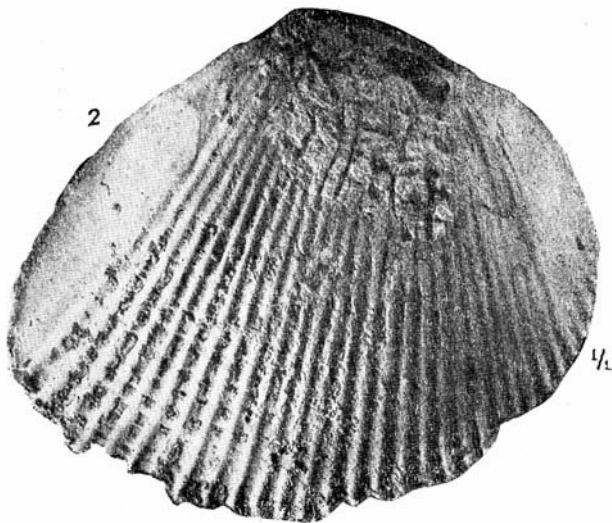
*P. matschigarica*



*Papyridea matschigarica*



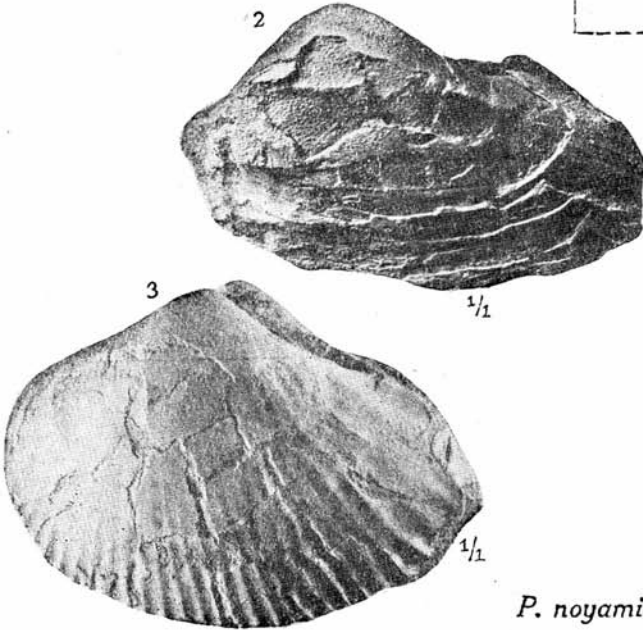
*Papyridea securiformis*



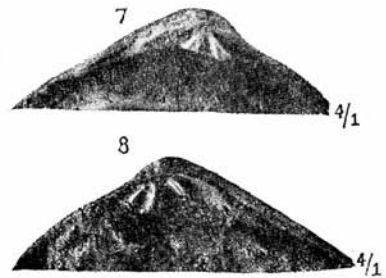
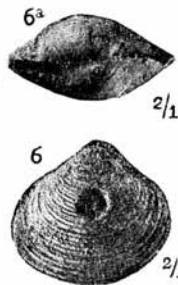
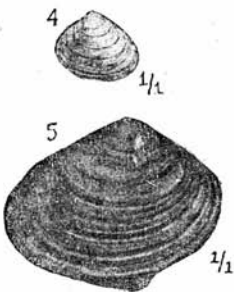
*P. matschigarica*



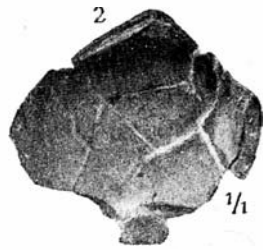
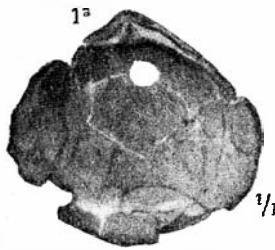
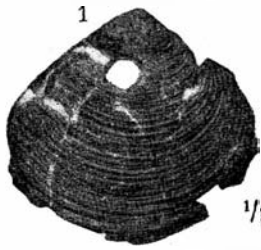
*Papyridea sakhalinensis*



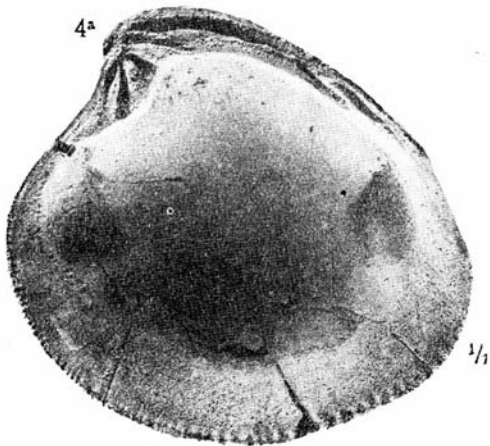
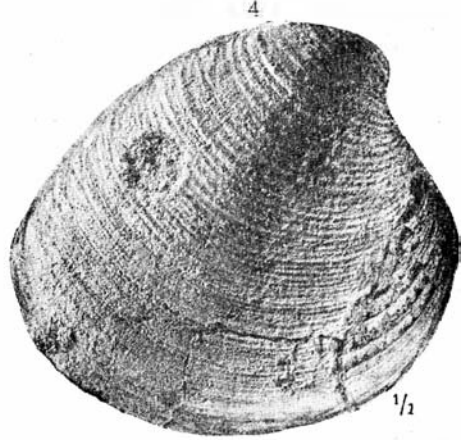
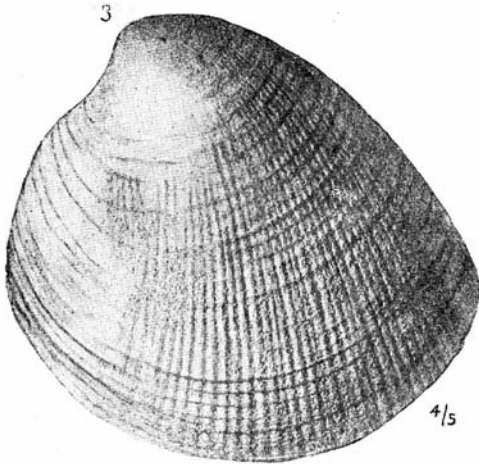
*P. noyamiana*



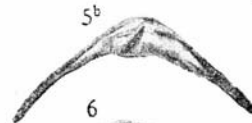
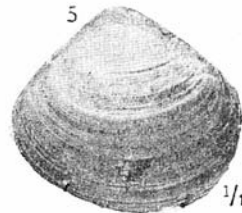
*Liocyma fluctuosa*



*Liocyma fluctuosa* var. *subfluctuosa*



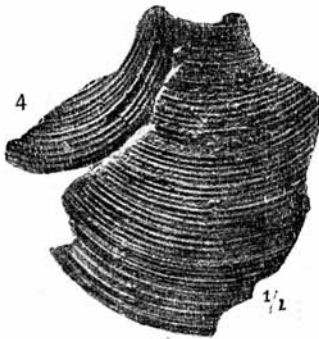
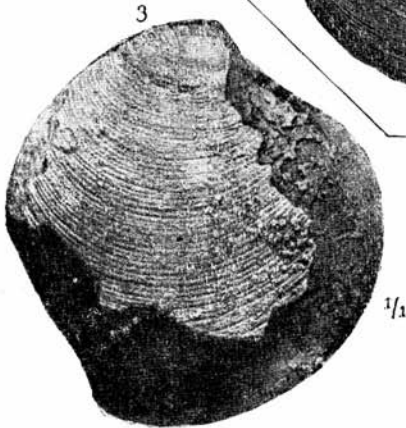
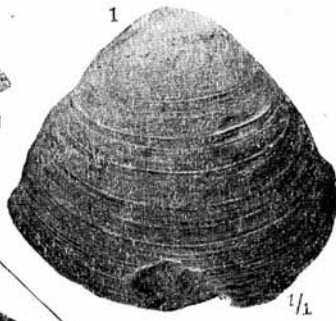
*Venus securis*



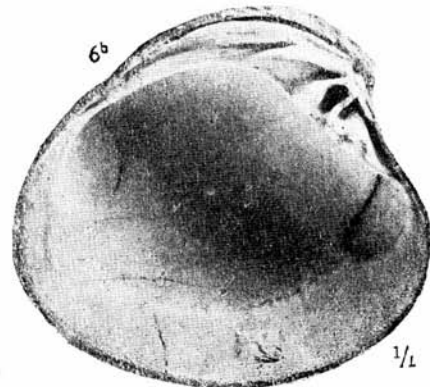
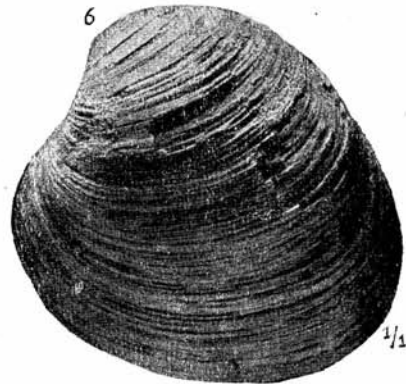
*Tivela snatolana*



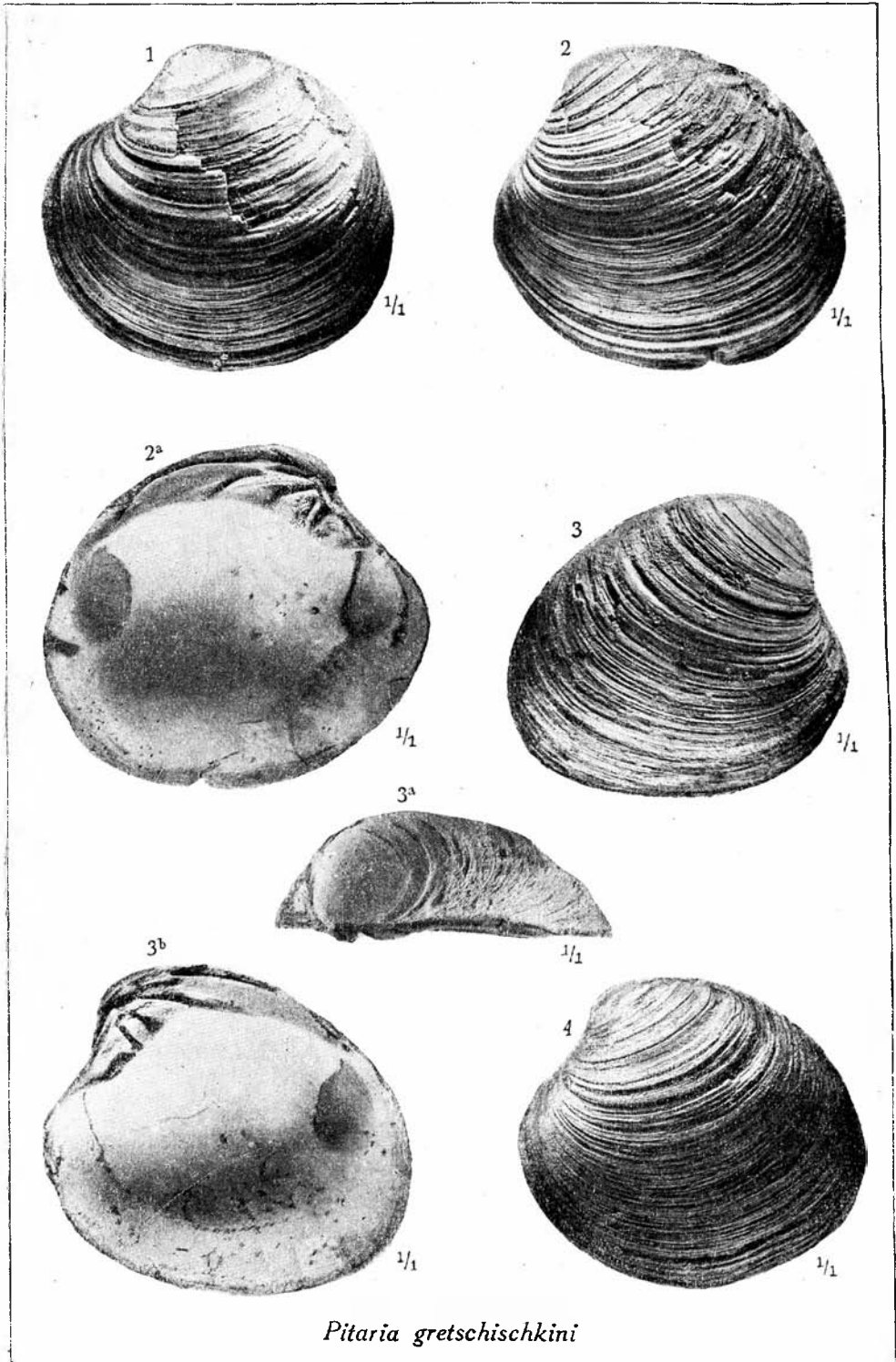
*Tivela inezana*



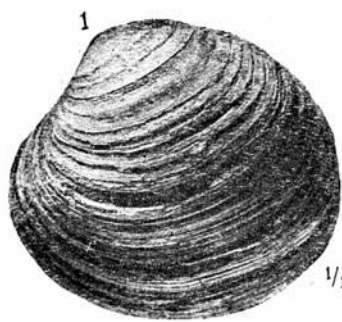
*Dosinia margaritana*



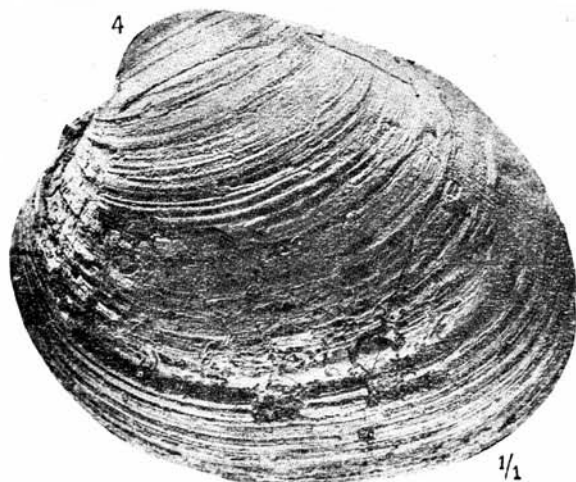
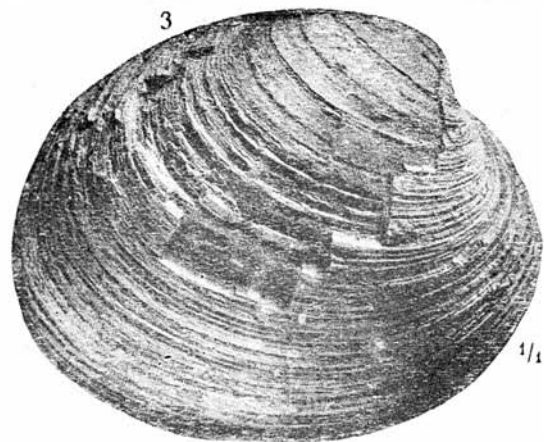
*Pitaria gretschischkini*



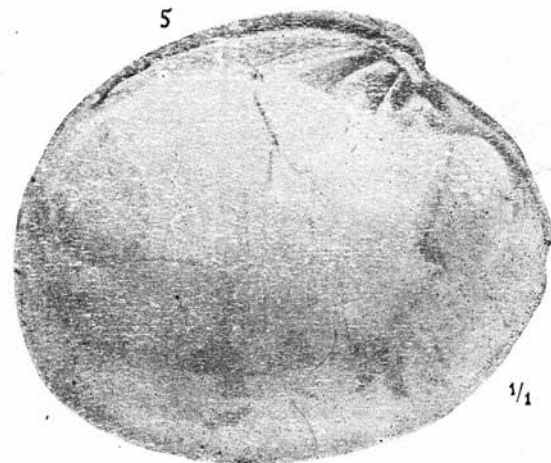
*Pitaria gretschischkini*



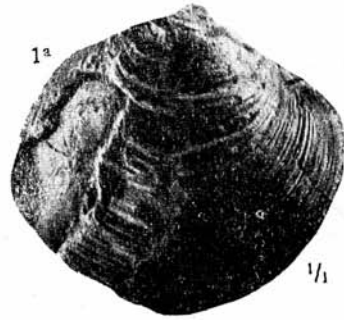
*Pitaria gretschischkini*



*P. kauranensis*



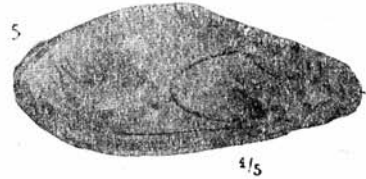




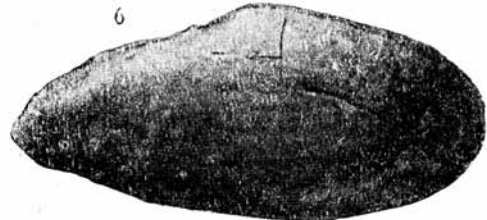
*Clementia sakhalinensis*



*Tellina bodegensis*



*T. aragonia*



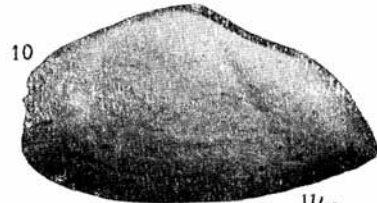
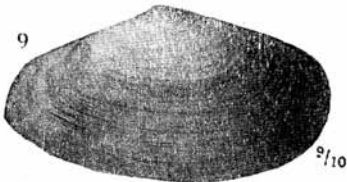
*T. eugenia*



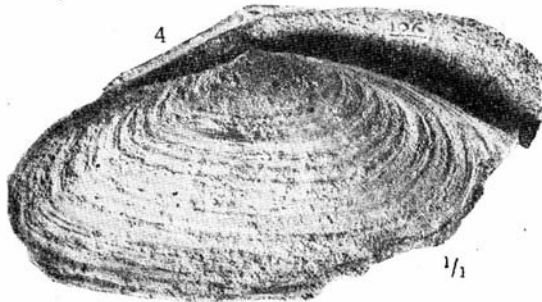
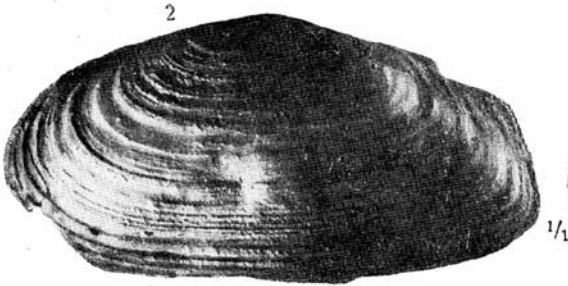
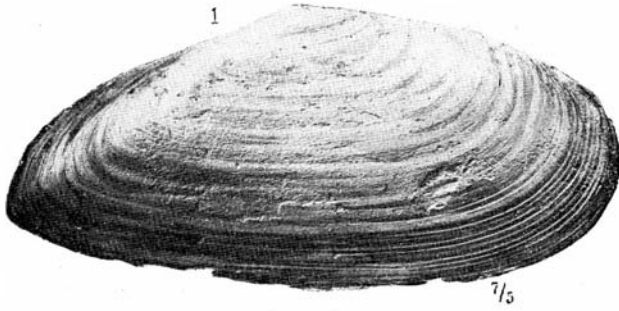
*T. djakovi*



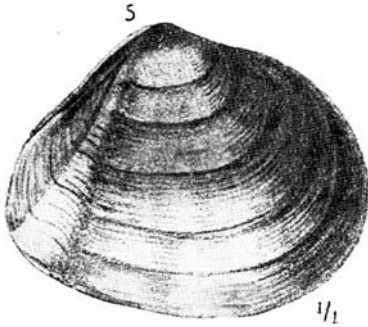
*T. puchlensis*



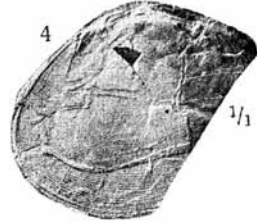
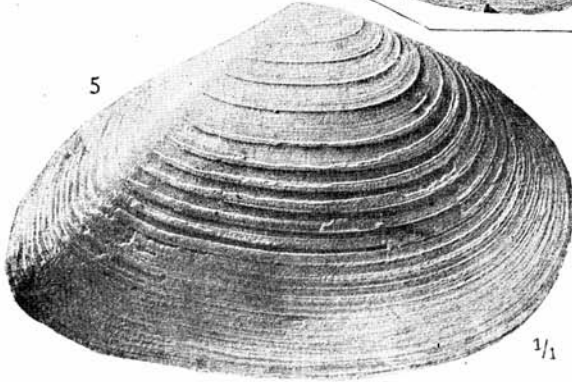
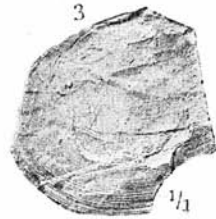
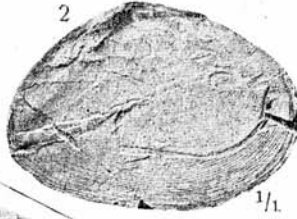
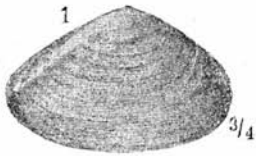
*T. cf. chibana*



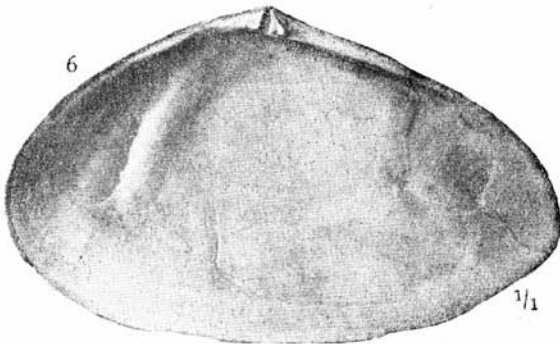
*Tellina pulchra*



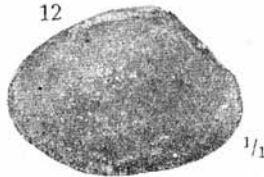
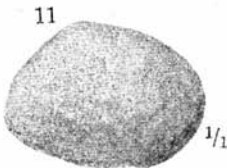
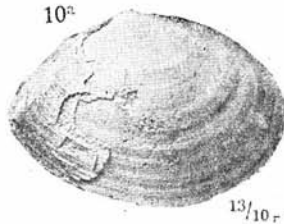
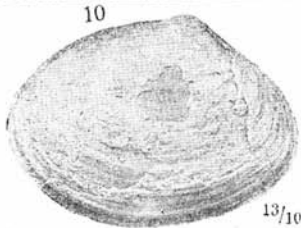
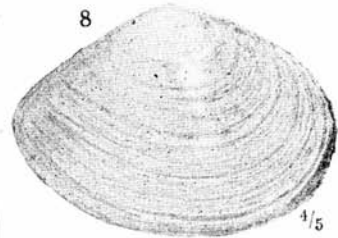
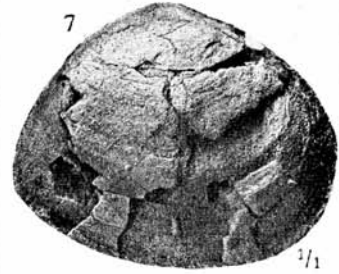
*Apolymetis excavata*



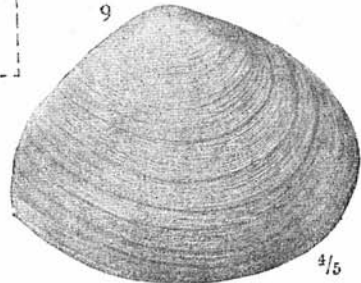
*Macoma cf. lorenzoensis*



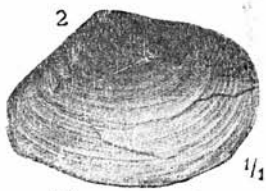
*Tellina lutea*



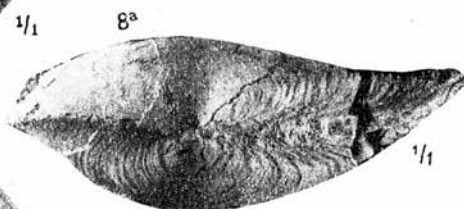
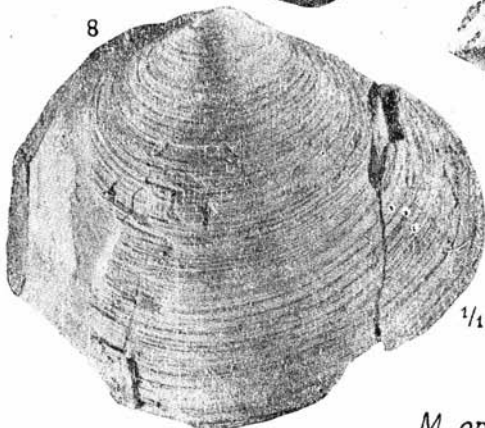
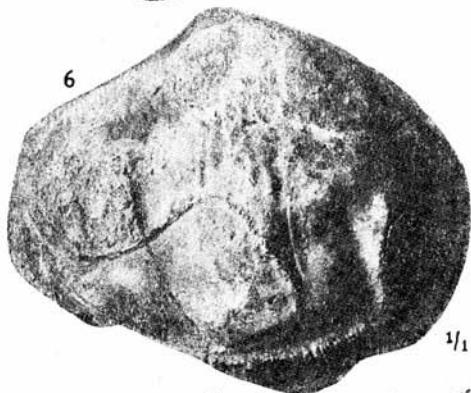
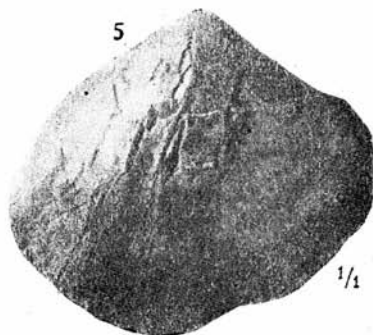
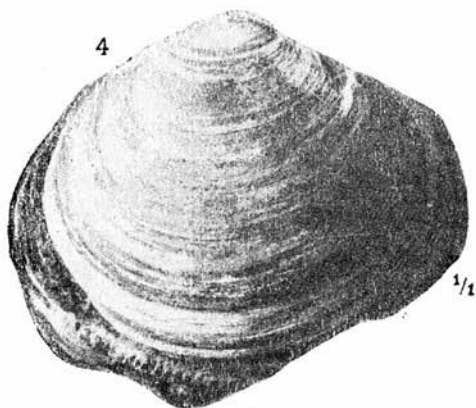
*M. truncatoides*



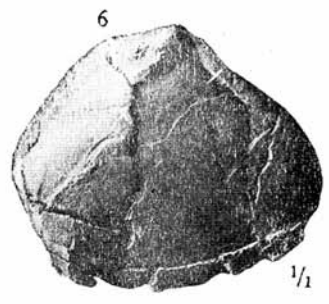
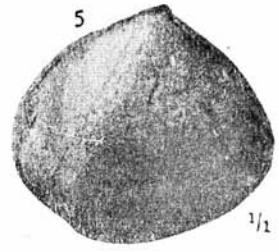
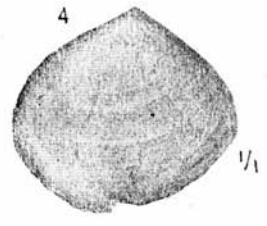
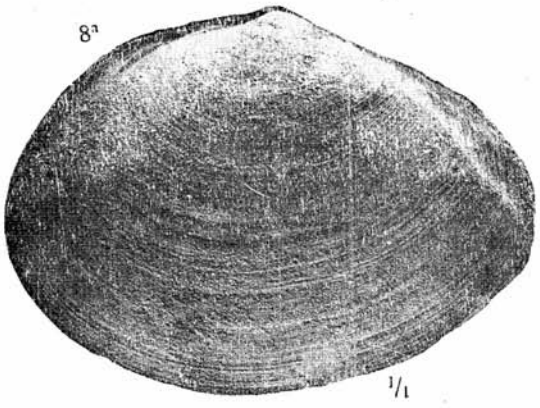
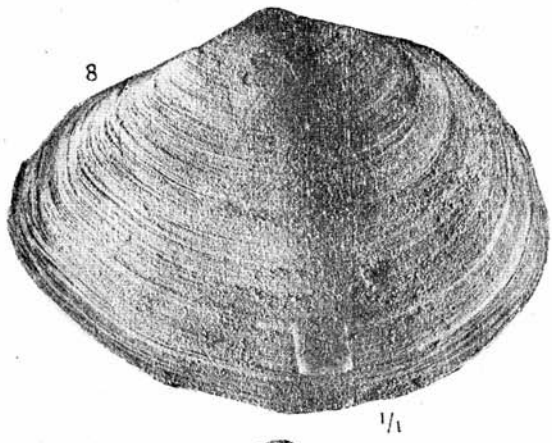
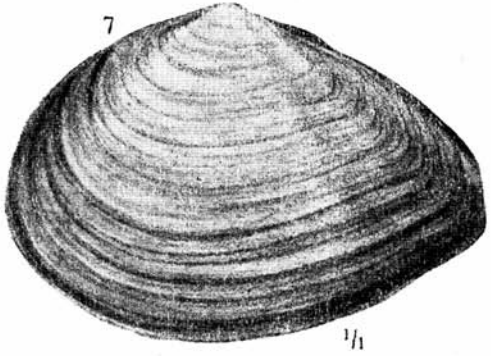
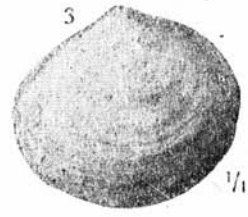
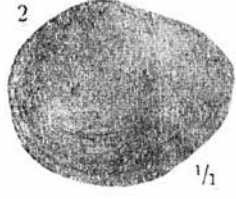
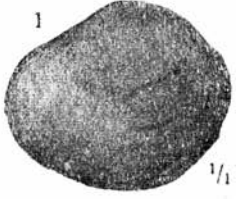
*M. astori*



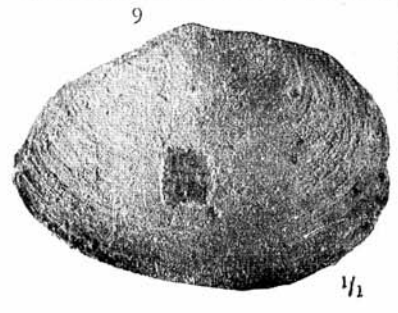
*Macoma calcarea*



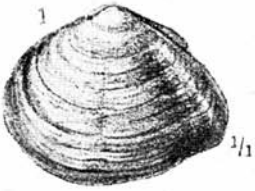
*M. optiva*



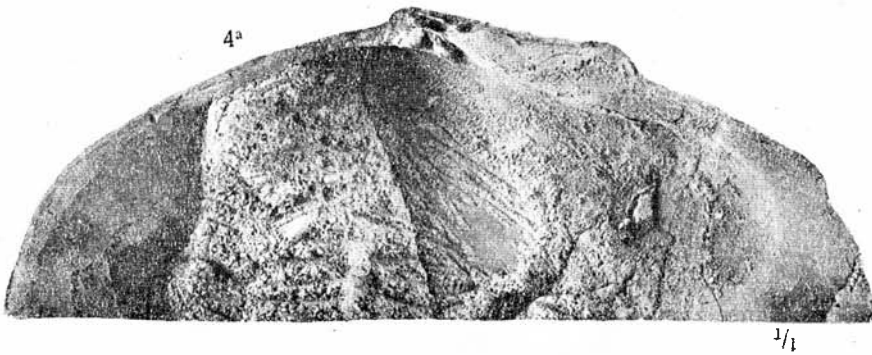
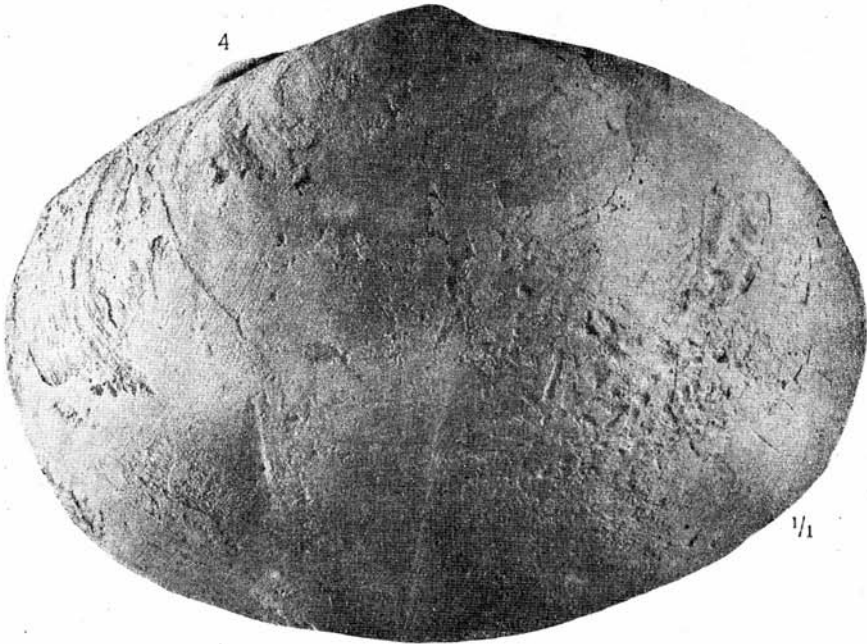
*Macoma echabiensis*



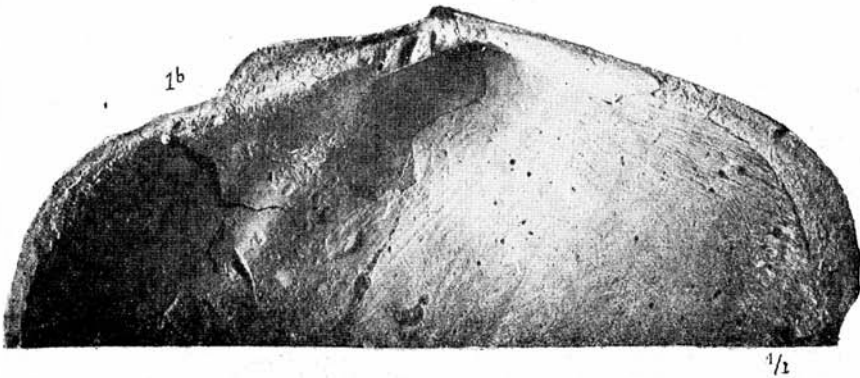
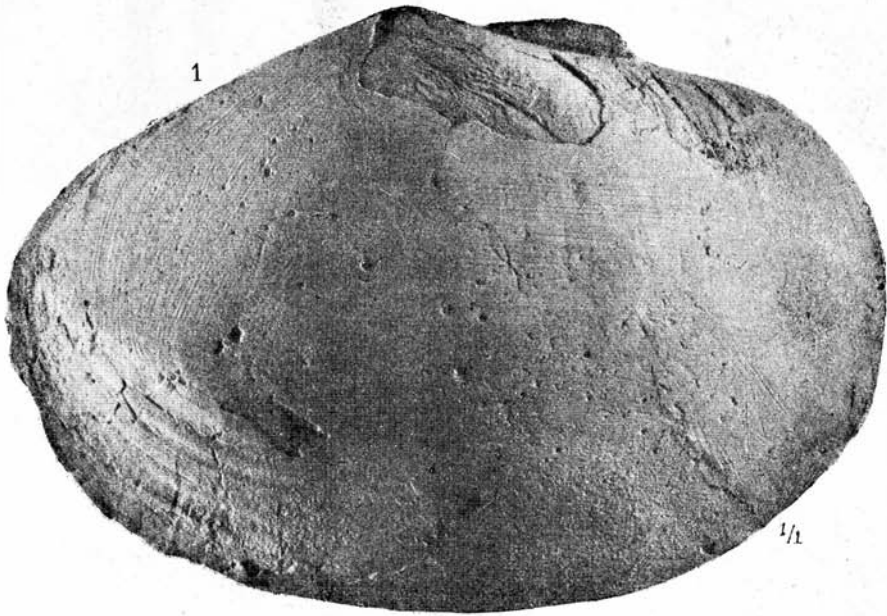
*M. nasuta*



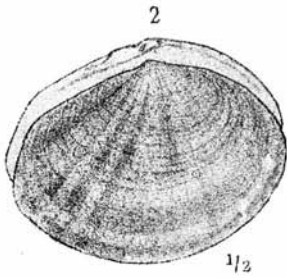
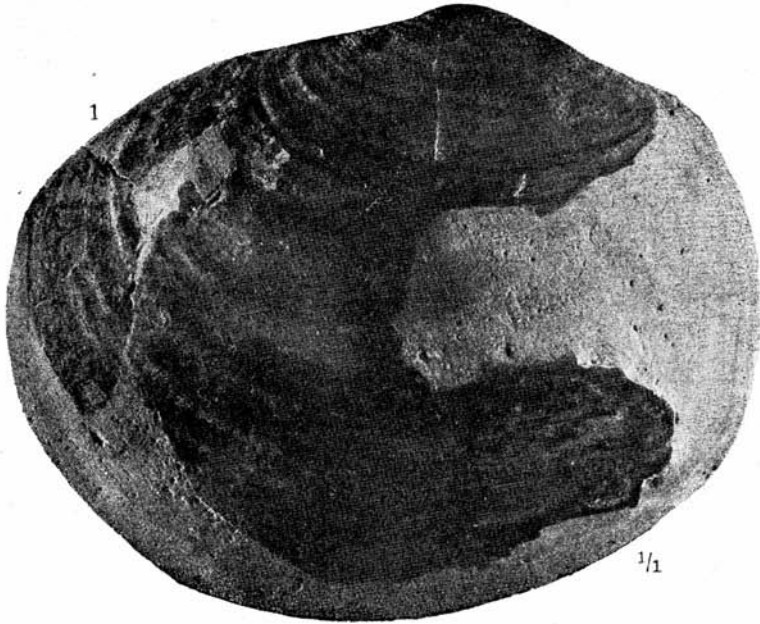
*Macoma inquinata*



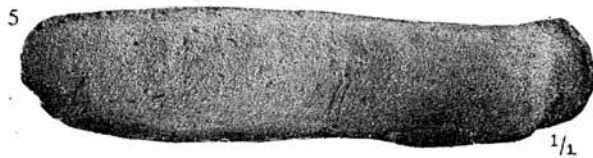
*Sanguinolaria ochotica*



*Sanguinolaria ochotica*



*Sanguinolaria nuttallii*



*Solen snatolensis*



96



1

$\frac{1}{1}$



2

$\frac{1}{1}$



2<sup>a</sup>

$\frac{1}{1}$

*Solen kamtschaticus*



3

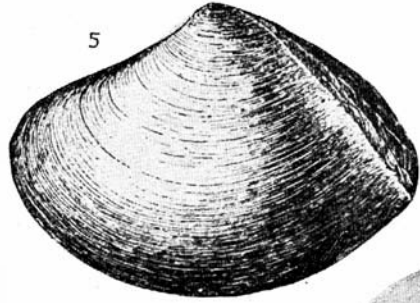
$\frac{3}{2}$



4

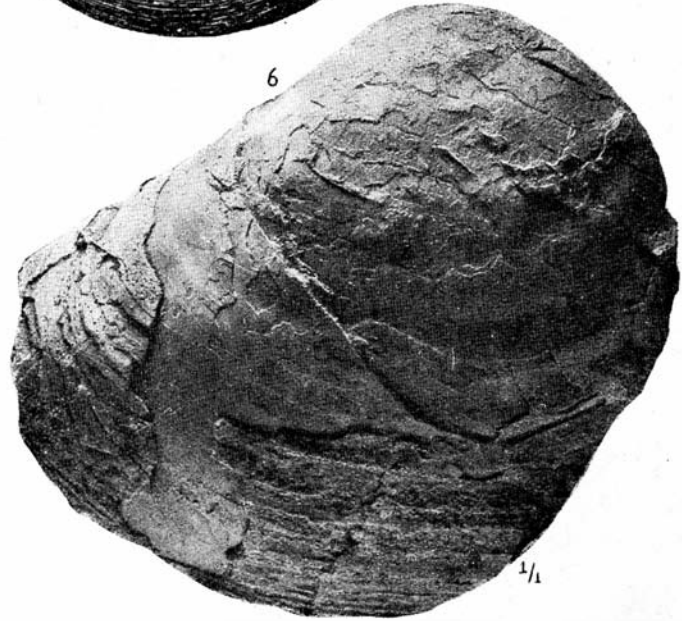
$\frac{3}{2}$

*S. tigilensis*



5

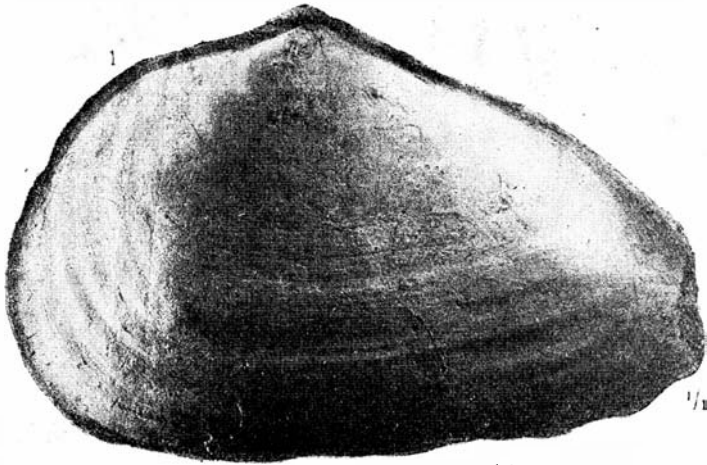
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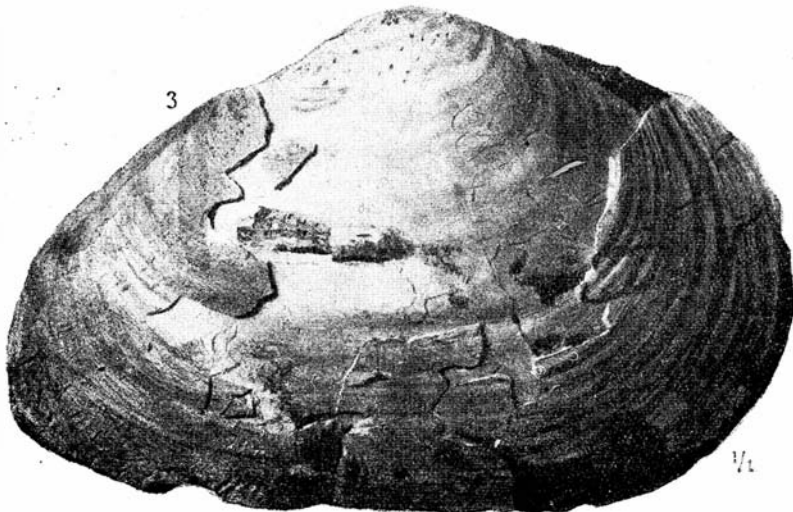
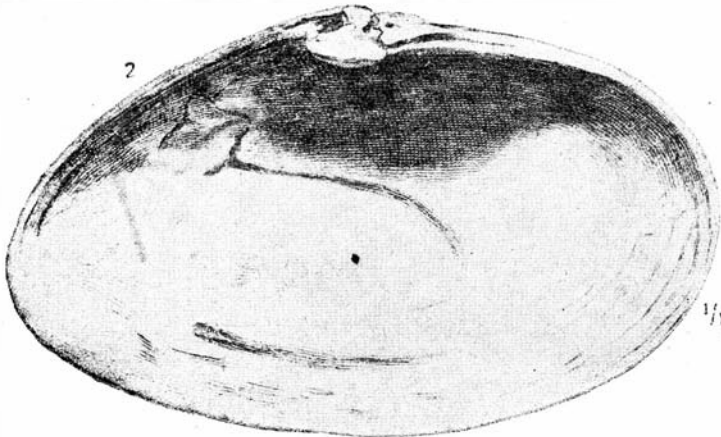
6

$\frac{1}{1}$

*Mastra hemphilli*



*Mya arenaria*



*M. arenaria* var. *japonica*

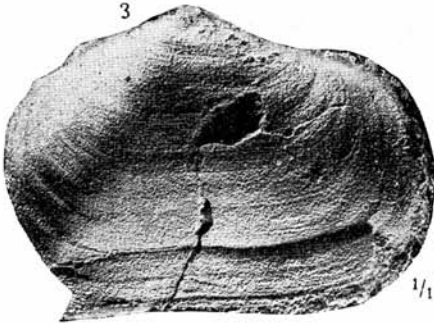


*Mya arenaria* var. *japonica*

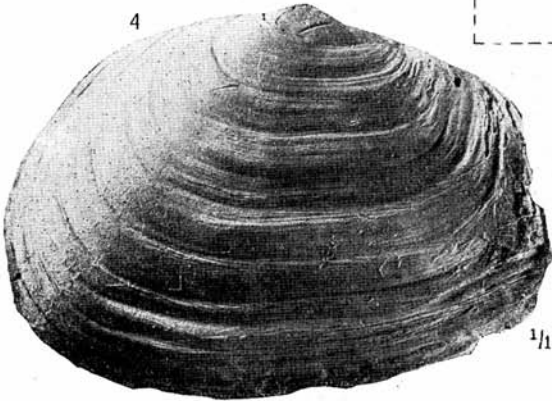
$\frac{1}{1}$



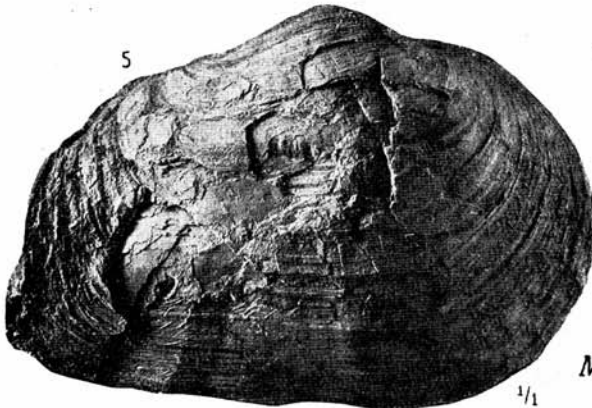
$\frac{1}{1}$



$\frac{1}{1}$



$\frac{1}{1}$

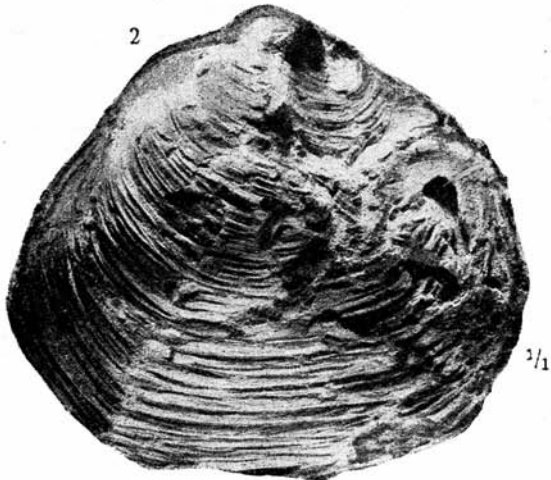
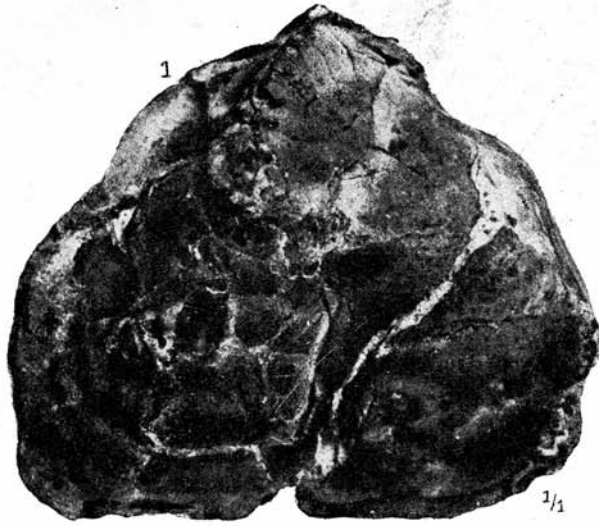


$\frac{1}{1}$

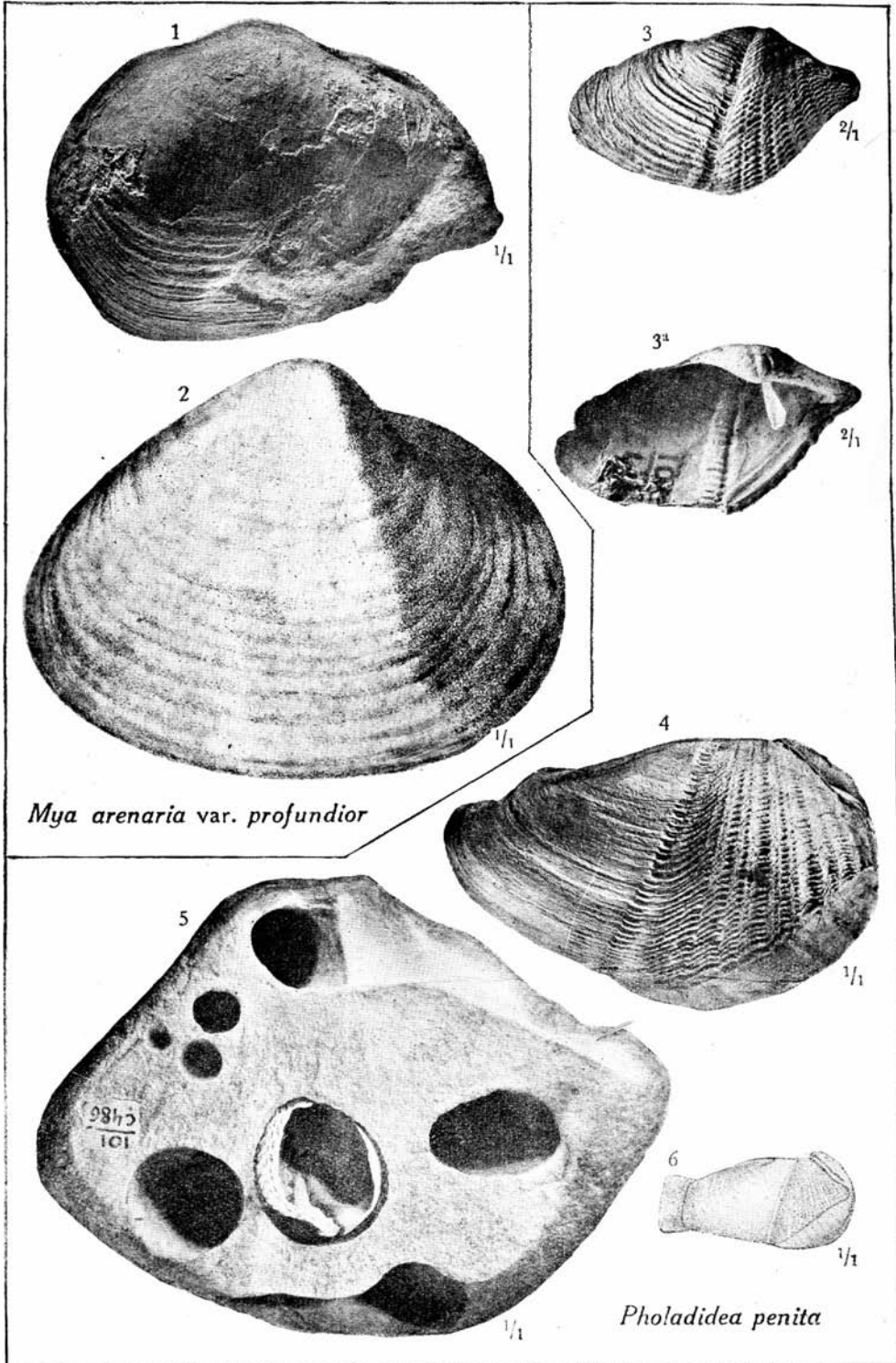


$\frac{1}{1}$

*M. arenaria* var. *truncata*



*Mya arenaria* var. *paternalis*





*Pholadidea penita*



*Panope intermedia*