
On the name *Cryptobranchia* Middendorff, 1851, with proposal of a new genus *Cryptolepeta* gen. nov. (Gastropoda, Lepetidae)

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ABSTRACT. The generic name *Cryptobranchia* Middendorff, 1851 is a junior objective synonym of *Lepeta* J.E. Gray, 1842. Designation of *Patella caeca* var. *concentrica* Middendorff, 1848 as a type of *Cryptobranchia* is invalid. For two species previously assigned to the genus *Cryptobranchia* [*Lepeta concentrica* (Middendorff, 1848) and *Acmaea kuragiensis* Yokoyama, 1920], the new generic name *Cryptolepeta* gen. nov. is proposed.

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О названии *Cryptobranchia* Middendorff, 1851, с предложением нового рода *Cryptolepeta* gen. nov. (Gastropoda, Lepetidae)

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РЕЗЮМЕ. Родовое название *Cryptobranchia* Middendorff, 1851 является младшим объективным синонимом *Lepeta* J.E. Gray, 1842. Обозначение *Patella caeca* var. *concentrica* Middendorff, 1848 в качестве типа *Cryptobranchia* является ошибочным. Два вида, ранее относимые к роду *Cryptobranchia* [*Lepeta concentrica* (Middendorff, 1848) и *Acmaea kuragiensis* Yokoyama, 1920], предложено выделить в новый род *Cryptolepeta* gen. nov.

In the recently published article with the phylogeny of the family Lepetidae J.E. Gray, 1850, the genus *Cryptobranchia* Middendorff, 1851 was restored [Ilin *et al.*, 2026]. However, Dr. Maxim V. Vinarski drew our attention that this name could be a

junior objective synonym of *Lepeta* J.E. Gray, 1842. While resolving this nomenclatural situation, we found out another one; the current note is dedicated to the review of these two issues.

The name *Cryptobranchia* was proposed by Middendorff [1851] as a subgenus of *Patella* Linnaeus, 1758. Middendorff included one species in the subgenus – *Patella caeca* O.F. Müller, 1776 with two varieties (var. *genuina* Middendorff, 1848 and var. *concentrica* Middendorff, 1848). *Patella caeca* var. *genuina* Middendorff, 1848 is a junior objective synonym of *Patella caeca*, because while establishing this variety Middendorff based solely on the original description of *Patella caeca*. *Patella caeca* var. *concentrica* Middendorff, 1848 later gained the status of a separate species [Dall, 1869]. Dall [1869] used the name *Cryptobranchia* Middendorff, 1851 as a subgenus of *Lepeta*, fixing “*Cryptobranchia concentrica* Dall ex Midd.” as a type species. In the latter binomen, Dall used *Cryptobranchia* as a generic name for the first time, although he listed it as a subgenus. Since then, many authors have been considering *Patella caeca* var. *concentrica* to be a type of the genus *Cryptobranchia* [Thiele, 1929; Moskalev, 1977; Golikov, Kusakin, 1978; Ilin *et al.*, 2026]. How correct was Dall’s nomenclatural act? The Article 68.3 ICZN [1999] states: “When an author establishes a new nominal genus-group taxon for a single taxonomic species and denotes that

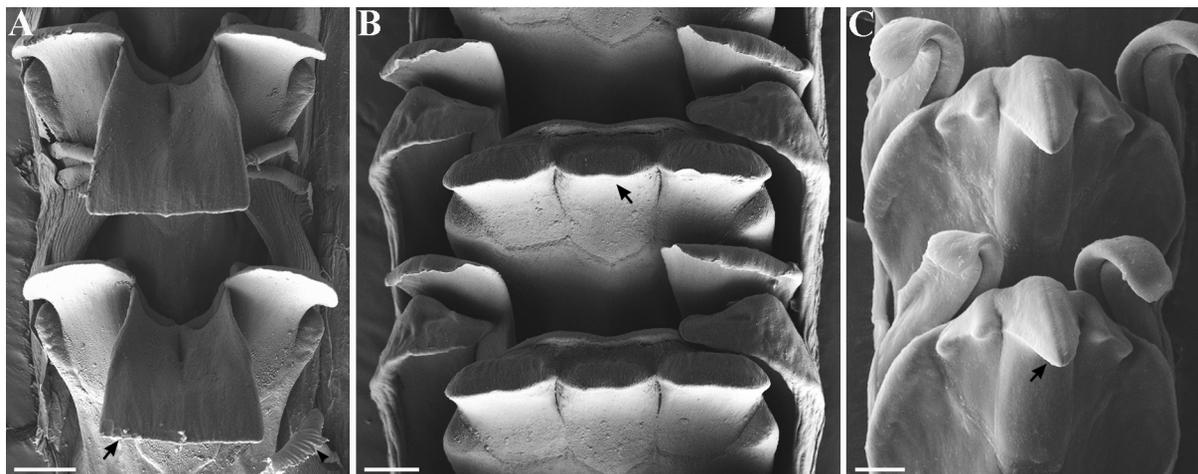


FIG. 1. Radular morphology of the lepetids. **A.** *Cryptolepeta kuragiensis*. **B.** *Limalepeta lima*. **C.** *Lepeta caeca*. Arrows show median cusp of the “central tooth”, arrowhead shows denticles on edge of the marginal teeth. Scale bar = 20 μ m. [From Ilin *et al.*, 2026 with modifications]

РИС. 1. Морфология радулы лепетид. **A.** *Cryptolepeta kuragiensis*. **B.** *Limalepeta lima*. **C.** *Lepeta caeca*. Стрелки указывают на средний зубец “центрального зуба”, наконечник указывает на зубчатую поверхность маргинальных зубов. Масштаб = 20 μ m. [Из Ilin *et al.*, 2026 с изменениями].

species by an available name, the nominal species so named is the type species. Fixation by this means is deemed to be fixation by monotypy, regardless of any cited synonyms, subspecies, or unavailable names, and regardless of whether the author considered the nominal genus-group taxon to contain other species which he or she did not cite by name, and regardless of nominal species-group taxa doubtfully included or identified” (emphasis added). In Middendorff’s paper [Middendorff, 1851, p. 183], only a single species – *Patella caeca* is mentioned, and presence of both var. *genuina* and var. *concentrica* should not be taken into account according to the above-mentioned Art. 68.3. Thus, *Patella caeca* is the type species of the genus *Cryptobranchia* Middendorff, 1851 by monotypy. The same species is also the type of the genus *Lepeta* J.E. Gray, 1842. Therefore, the name *Lepeta* is a senior objective synonym of *Cryptobranchia* [ICZN, 1999: Art. 61.3.3].

The question arises: which generic name should be used for the two species, which are referred to “*Cryptobranchia*” by morphology and molecular genetics: *Cryptobranchia concentrica* (= *Patella caeca* var. *concentrica*) and *C. kuragiensis* (= *Acmaea kuragiensis* Yokoyama, 1920)? Dall [1918] deemed that “name *Cryptobranchia* having been used by Gray, thirty years before Middendorff’s application...” [Dall, 1918, p. 233] and proposed the substitution of *Cryptobranchia* Middendorff, 1851 with the new subgeneric name *Cryptoctenidia* Dall, 1918. Actually, Gray [1821] used the name *Cryptobranchia* as a subclass name in *Gastropoda*. Since homonymy involving Latin names above superfamily rank is not regulated by the Code [ICZN, 1999: Art. 1.2.2],

Dall’s conclusion about the homonymy was incorrect and rejected by the subsequent authors [Thiele, 1929; Wenz, 1938; Moskalev, 1977].

Returning to the topic of *Cryptobranchia concentrica* and *C. kuragiensis*, these two species exhibit a unique radular morphology [Ilin *et al.*, 2026] (Fig. 1A) and cannot be placed in either *Lepeta* (= *Cryptobranchia*) or *Limalepeta* Moskalev, 1977. No alternative generic names have yet been proposed for these species. Therefore, we here assign them to a separate genus, *Cryptolepeta* gen. nov.

Genus *Cryptolepeta*

Ilin et Chernyshev, gen. nov.

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(= *Cryptobranchia* sensu Moskalev, 1977, non *Cryptobranchia* Middendorff, 1851).

Type species: *Patella concentrica* Middendorff, 1848, here designated.

Diagnosis. Radial shell sculpture without tubercles. Marginal radular teeth with pectinated denticles; medial cusp of “central teeth” rectangular, protruding (Fig. 1A).

Remarks. Other lepetids differ from genus *Cryptolepeta* gen. nov. by medial cusp of radular “central teeth”: rectangular, non-protruding (genus *Limalepeta* Moskalev, 1977) (Fig. 1B) or triangle (all other genera) (Fig 1C).

Composition. Two species: *Cryptolepeta concentrica* (Middendorff, 1851) comb. nov. and *Cryptolepeta kuragiensis* (Yokoyama, 1920) comb. nov.

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