
Systematic position of *Gerasimovcyclus lahuseni* nom. nov. (= *Fusus clathratus* Lahusen, 1883) (Gastropoda) from Jurassic deposits of European Russia

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ABSTRACT. Systematic position of the species “*Fusus clathratus*” Lahusen, 1883 is discussed. It is suggested to be placed in the tribe Eucyclini of the family Trochidae under a new name *Gerasimovcyclus lahuseni* nom. nov., because the original binomen is a junior homonym of *Fusus clathratus* Deshayes, 1835; *F. clathratus* J.C. Sowerby, 1836, and *F. clathratus* Dujardin, 1837.

This paper is devoted to specifying the taxonomic position of the species “*Fusus clathratus*”, which Lahusen [1883] described from the Oxfordian clays of the Ryazan Government. This species was rediscussed in two monographs of P.A. Gerasimov [1955, 1992]. In the first of them Gerasimov considered “*F. clathratus*” in the genus *Purpurina* d’Orbigny emend. Deslongchamps, 1860 (family Purpurinidae), and in the second one — in the genus *Petersia* Gemmellaro, 1869 (family Brachytremidae). Recently A. Kaim [2004] has assigned “*F. clathratus*” to the Recent genus *Turcica* A. Adams, 1854 (family Trochidae), and J. Gründel [2005] has introduced a new genus *Gerasimovcyclus* for which *Fusus clathratus* Lahusen was designated as type species. Gründel placed *Gerasimovcyclus* in the family Eucyclidae, because of its similarity to the genera *Eucycloidea* Hudleston, 1888 and *Eucycloscala* Cossmann, 1895, and due to the presence of characteristic archaeogastropod protoconch, which was studied in *Gerasimovcyclus mittai* Gründel, 2005. The generic diagnosis of Gründel was rather broad, which also affected the species composition of *Gerasimovcyclus*: the type species, *Eucyclus gjeliensis* Gerasimov, 1992, *Turcica gerasimovi* Kaim, 2004, *T. ogrodzieniecensis* Kaim, 2004, *T. wareni* Kaim, 2004, *Brachytrema lorioli* Schmidt, 1905, and *Gerasimovcyclus mittai* Gründel, 2005. Below I will comment on why some of these species are not included in *Gerasimovcyclus* as adopted here. I have abundant material on “*F. clathratus*”, and the results of its study are given below. Based on this study, more exact diagnosis and different specific compo-

sition of *Gerasimovcyclus* are suggested, and also detailed description of the type species is given. First of all, I offer a new name for “*F. clathratus*” — *Gerasimovcyclus lahuseni* nom. nov., because *Fusus clathratus* Lahusen, 1883 is a junior homonym of two species: *Fusus clathratus* J.C. Sowerby, 1836 [Sowerby, 1836: 344, pl. 18, fig. 19] from the Albian of England and *Fusus clathratus* Dujardin, 1837 [Dujardin, 1837: 294, pl. 20, fig. 6] from the Paleogene of France.

Now I will try to determine the systematic position of *Gerasimovcyclus lahuseni*, analyzing proposals of the previous researchers to place this species in different taxa: by Gerasimov in genera *Purpurina* (Purpurinidae) and *Petersia* (Brachytremidae), by Kaim in *Turcica* (Trochidae), by Gründel in a new genus *Gerasimovcyclus* (Trochidae).

Among Purpurinidae, *Gerasimovcyclus lahuseni* most resembles *Purpurina* (*Purpurina*) because of similarity in the shell outline. However, contrary to typical *Purpurina*, in *G. lahuseni* only the last whorl is keeled, and the keel passes along lower sutural margin; therefore it cannot be seen on the spire (Figs. 3D, E; 4F-H). Appearance of keel in *G. lahuseni* is connected to age-related strengthening of spiral ribs and nodes on later whorls, so the keel is absent on earlier whorls (Fig. 4A, B). In *Purpurina* s. s., the keel is well expressed on all whorls and passes much above the suture. *G. lahuseni* and *Purpurina* s. s. well differ in other characters of sculpture. On last whorls of *G. lahuseni* thorn-like nodes in places of crossing of plicae and ribs are developed, which never occur in *Purpurina*. Besides, the spiral sculpture of *G. lahuseni* is well developed above the keel, whereas in *Purpurina* it is reduced there. In basal part of the aperture of *G. lahuseni* there is a well developed triangular projection (Fig. 4D, E), but it is developed much more poorly in *Purpurina* s. s. [Guzhov, 2004, pl. 6, figs. 9a, 11b]. Finally, in *G. lahuseni* the nacreous layer (see the description and Figs. 4E, 5) is found, which excludes its relationship to Purpurinidae that belong to Littoriniformes, lacking a nacreous layer.

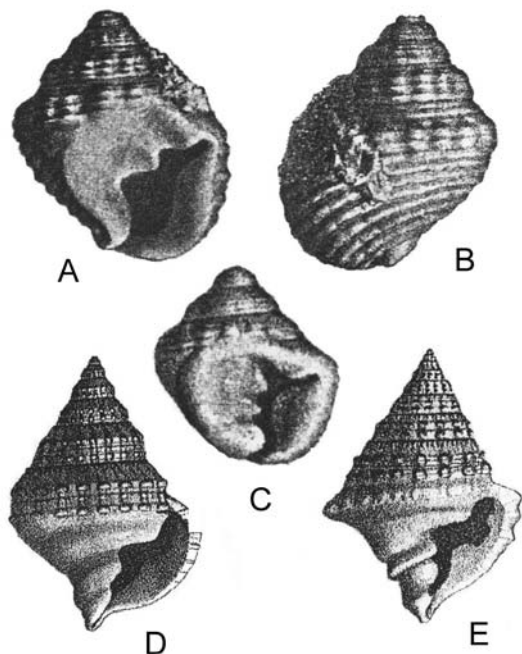


FIG. 1. A, B — *Petersia costata* Gemmellaro, 1869, syntype, Tithonian of Sicilia, $\times 1.5$ (after Gemmellaro, 1869, pl. 4, figs. 18, 19); C — *P. nebrodensis* Gemmellaro, 1869, syntype, Tithonian of Sicilia, $\times 2$ (after Gemmellaro, 1869, pl. 4, fig. 16); D, E — *P. bidentata* Buvignier, 1852, Lower Kimmeridgian of France, $\times 2$ (after Loriol, Bourgeat, 1886, pl. 3, figs. 11a, 14 a).

РИС. 1. А, В — *Petersia costata* Gemmellaro, 1869, синтип, титон Сицилии, $\times 1.5$ (из Gemmellaro, 1869, табл. 4, фиг. 18, 19); С — *P. nebrodensis* Gemmellaro, 1869, синтип, титон Сицилии, $\times 2$ (из Gemmellaro, 1869, табл. 4, фиг. 16); D, E — *P. bidentata* Buvignier, 1852, нижний кимеридж Франции, $\times 2$ (из Loriol, Bourgeat, 1886, табл. 3, фиг. 11a, 14 a).

Distinctions between *G. lahuseni* and *Petersia* are rather obvious. The species considered distinctly differs from *Petersia* in the shell form, sculpture, shape of aperture and absence of plicae on internal surface of whorls. These differences are valid for the type species of *Petersia*, *P. costata* Gemmellaro, 1869 (designated by Cossmann [1906]), and other species of the genus: *P. nebrodensis* Gemmellaro, 1869 and *P. bidentata* (Buvignier, 1852) (Fig. 2). *G. lahuseni* 1850 is much more similar in form of shell and whorls, and in the character of sculpture to *Brachytrema* Morris et Lycett, 1850 (family Brachytremidae) than to *Petersia*. There is only one important difference in the sculpture between *G. lahuseni* and species of *Brachytrema*: the sculpture of *G. lahuseni* changes during shell growth. It is reticulated on early whorls, consisting of more or less identical collabral and spiral elements, whereas on the one or two last whorls the collabral elements become stronger and more distant, while two lower ribs on lateral side become markedly stronger than others, with spiny nodes. In *Brachytrema* the sculpture is uniform through the shell and characterized

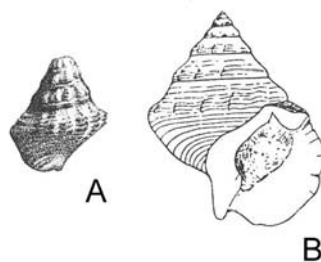


FIG. 2. *Brachytrema buvignieri* Morris et Lycett, 1850; A — holotype, Middle Bathonian of England (after Morris, Lycett, 1850, pl. 5, fig. 7); B — Middle Bathonian of France (after Cossmann, 1899, text-fig. 1). All shells $\times 1$.

РИС. 2. *Brachytrema buvignieri* Morris et Lycett, 1850; А — голотип, средний бат Англии (из Morris, Lycett, 1850, табл. 5, фиг. 7); В — средний бат Франции (из Cossmann, 1899, рис. 1). Все $\times 1$.

by distant and strong plicae. The spiny nodes are not characteristic of species of *Brachytrema*, as can be seen on shells of *B. buvignieri* (Fig. 1). The main distinction between *G. lahuseni* and *Brachytrema* consists in the structure of aperture. The character of aperture in *Brachytrema* is seen in the illustration of the shell referred by Cossmann [1900] to *B. buvignieri* (see Fig. 1B), the type species of the genus (designated by Cossmann [1900]). *B. buvignieri* has a thickened inner lip forming a reflection on shell base, with outer lip extended outside and bearing several furrows on inner surface. Aperture has anteriorly a broad siphonal channel, which is deeply truncated. *G. lahuseni* has aperture with not thickened inner lip, the lips do not form reflections or extensions, and the aperture anteriorly has a projection. So, *G. lahuseni* and *B. buvignieri* strongly differ from each other in the apertural structure and they cannot be considered as closely related. Thus, Gerasimov's suggestions about belonging of *G. lahuseni* to *Purpurina* or *Petersia* are erroneous.

Among other group of Jurassic gastropods, representatives of the tribe Eucyclini (Trochidae) appear most similar to *G. lahuseni*. In samples it is sometimes very difficult to distinguish fragments of *G. lahuseni* from some eucycline species. This is clearly seen on the example of shells of "*Eucyclus*" sp. (Fig. 3A, B; compare to shells of *G. lahuseni* in the same figure — 3D, E). The shape of whorls and character of sculpture of *G. lahuseni* and "*Eucyclus*" sp. are very similar, which is especially prominent on early whorls. However, both species well differ from each other in the apertural structure. The main reason why I did not consider for a long time Eucyclini and *G. lahuseni* as closely related groups

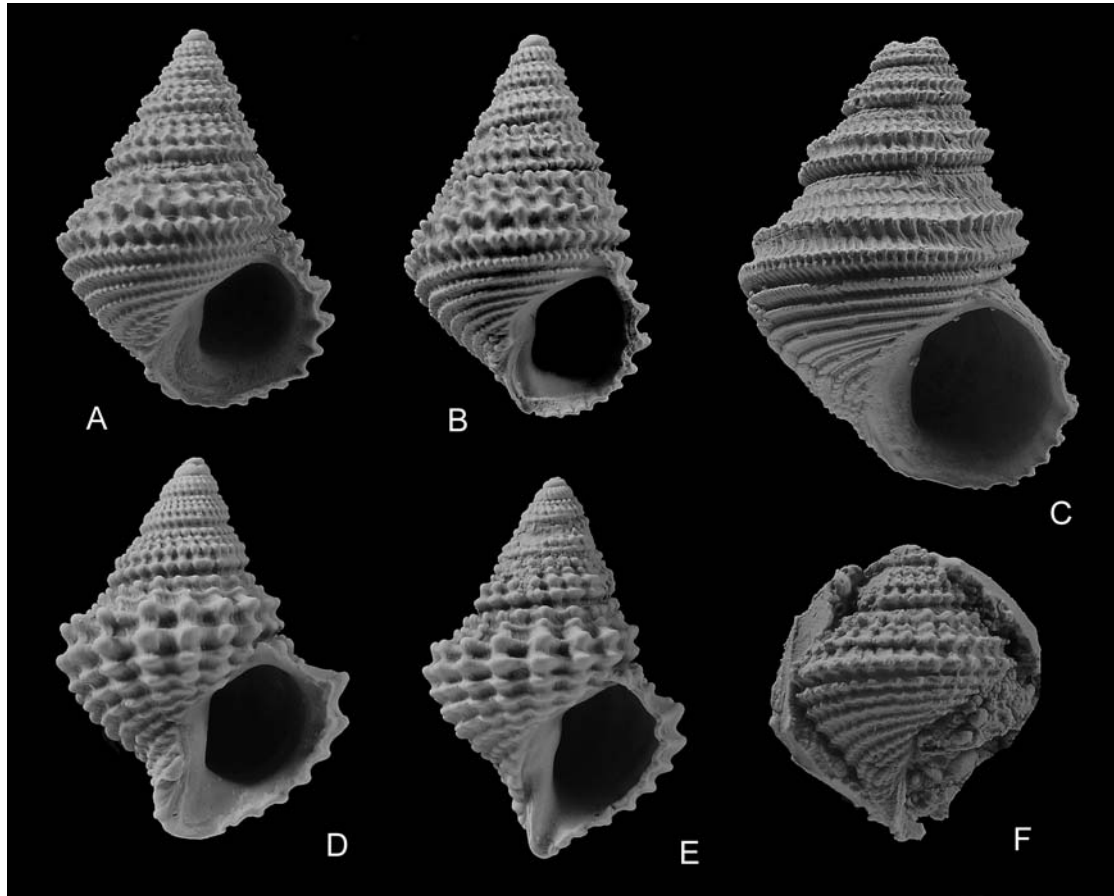


FIG. 3. A, B — “*Eucyclus*” sp.: A — ПИН № 4863/165 (shell height 9.4 mm, figured by Gerasimov, 1992: pl. 9, fig. 1, No. 1821), Moscow Region, Zvenigorodskii District, gill near Yagunino village; Lower Oxfordian; apertural view of adult shell; B — ПИН № 4863/166 (shell height 9.4 mm), Moscow Region, Kolomenskii District, Osenka River near Novoselki village; Lower Oxfordian, Cordatum Zone; apertural view of adult shell; C — “*Eucyclus*” *pseudoarmiger* Gerasimov, 1992, ПИН № 4863/167 (shell height 25 mm, figured by Gerasimov, 1992: pl. 9, fig. 8, under No. 1829), Ryazan Region, Sapozhkovskii District, left bank of the Pozhva River near Izboie village; Upper Callovian; apertural view of adult shell; D, E — *Gerasimovcyclus lahuseni*, Ryazan Region, Ryazan District, right bank of the Oka River near Novoselki village; Lower Oxfordian; apertural view of subadult shell: D — ПИН № 4863/168 (shell height 8.6 mm, most well preserved aperture); E — ПИН № 4863/169 (shell height 9 mm, rather well preserved anterior projection); F — ? *Gerasimovcyclus lahuseni* ПИН № 4814/170 (silicon cast; height of shell 6.5 mm), Moscow Region, Lухovitskii District, right bank of the Oka River below farm of the Alpatyevovillage; Lower Callovian, Koenigi Zone, Curtilobus Subzone.

РИС. 3. А, В — “*Eucyclus*” sp.: А — ПИН № 4863/165 (высота раковины 9,4 мм, оригинал из Герасимов, 1992: табл. 9, фиг. 1, № 1821), Московская обл., Звенигородский р-н, овраг около д. Ягунино; нижний оксфорд; вид взрослой раковины со стороны устья; В — ПИН № 4863/166 (высота раковины 9,4 мм), Московская обл., Коломенский р-н, р. Осенка у д. Новоселки; нижний оксфорд, зона cordatum; вид взрослой раковины со стороны устья; С — “*Eucyclus*” *pseudoarmiger* Gerasimov, 1992, ПИН № 4863/167 (высота раковины 25 мм, оригинал из Герасимов, 1992: табл. 9, фиг. 8, под № 1829), Рязанская обл., Сапожковский р-н, левый берег р. Пожвы у с. Избное; верхний келловей; вид взрослой раковины со стороны устья; D, E — *Gerasimovcyclus lahuseni*, Рязанская обл., Рязанский р-н, правый берег р. Оки у д. Новоселки; нижний оксфорд; вид со стороны устья довольно взрослых раковин: D — ПИН № 4863/168 (высота раковины 8,6 мм, наиболее хорошо сохранившееся устье); E — ПИН № 4863/169 (высота раковины 9 мм, достаточно хорошо сохранился базальный вырост), F — ? *Gerasimovcyclus lahuseni* ПИН № 4814/170 (силиконовый слепок, высота раковины 6,5 мм), Московская обл., Луховицкий р-н, правый берег р. Оки под фермой д. Алпатьево; нижний келловей, зона koenigi, подзона curtilobus.

is the holostomatousity in the former taxon. However, in *Amberleya ornata* Sowerby, 1819 var. *abbas* Hudleston, 1892 the young shells are siphonostomatous, with aperture having an angular basal projection, so that adult shells have a holostomatous aperture [Hudleston, 1892: pl. 21, figs. 16-18; pl. 22, fig. 1]. A similar change in the apertural structure was

also found in *Amberleya densicosta* Hudleston, 1892 [Hudleston, 1892: pl. 22, figs. 4, 5]. The same situation probably occurs in “*Eucyclus*” *pseudoarmiger* Gerasimov, 1992. In Fig. 3C the adult shell of this species, with holostomatous aperture is illustrated, but the holotype is probably a younger shell and has a siphonostomatous aperture [Gerasimov, 1992: pl.

9, fig. 2b; Gerasimov et al, 1996: pl. 23, fig. 16]. Small shells with holostomatous aperture from the Lower Oxfordian, identified by Gerasimov as "*Eucyclus*" *pseudoarmiger* [Gerasimov, 1992: pl. 9, figs. 1, 3; here Fig. 3A, B], belong to another species characterized by more rough collabral sculpture (and therefore more nodose), more uniform spiral sculpture, non-keeled whorls and smaller size of shells. Here it is named as "*Eucyclus*" sp.

Thus, the presence of siphonostomatous aperture is not a diagnostic character for Eucyclini and varies in ontogenesis at least in some representatives, whose adult individuals have holostomatous shells. The aperture of adult shells of *G. lahuseni* is unknown (see Fig. 4F-H), though it can hardly be holostomatous, because siphonostomatousity in *G. lahuseni* increases with shell growth. The whole aperture of a young individual is shown in Fig. 4B, the aperture of more adult individuals can be seen in Fig. 3D, E.

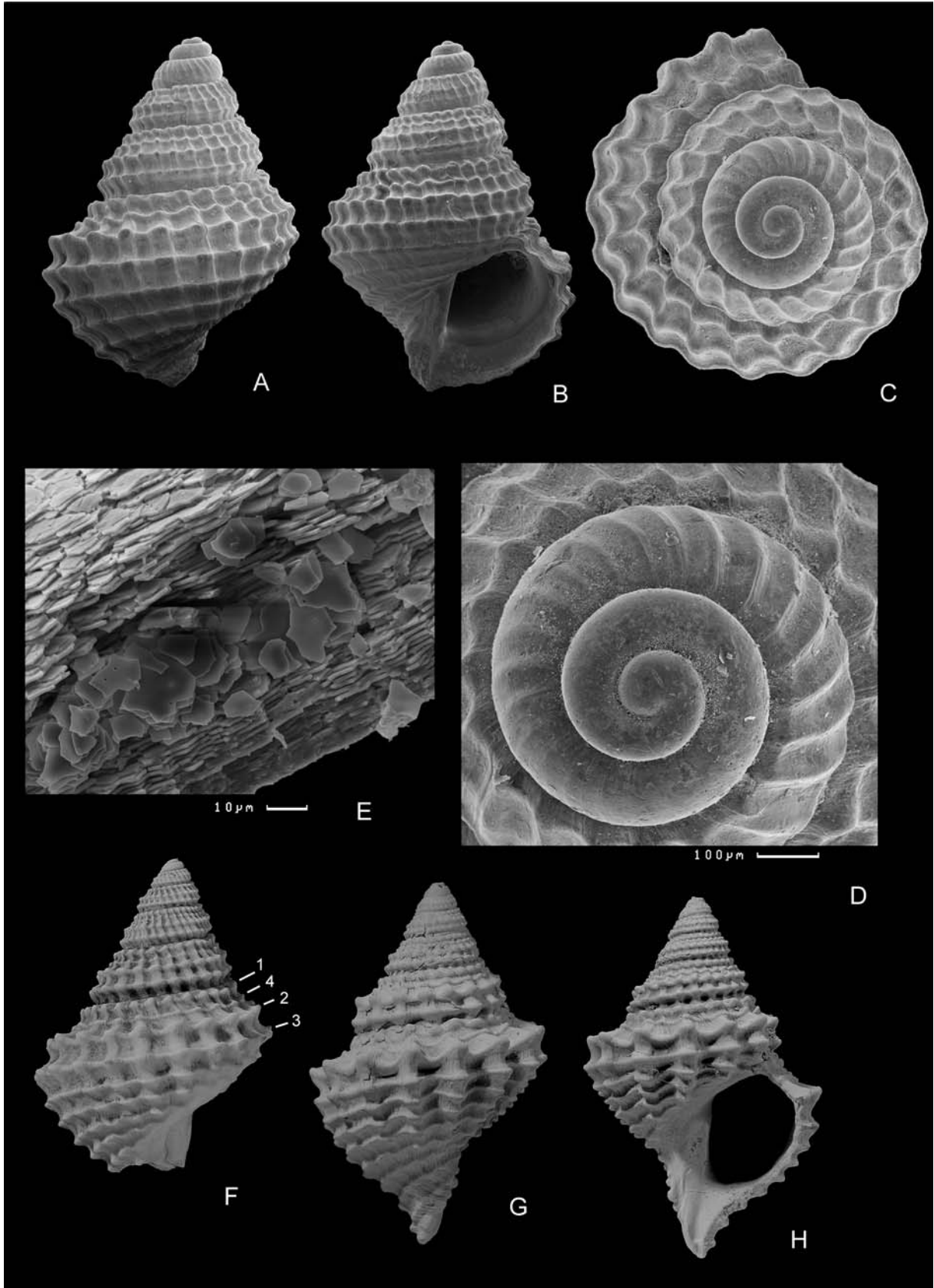
The great similarity in the apertural structure of shells of young individuals, the character of sculpture, the shape of whorls, the presence of nacreous layer in *G. lahuseni* (see Figs. 4E, 5) and Eucyclini are sufficient for placing the Lahusen's species in this tribe, but within a separate genus. Most similar to *G. lahuseni* genera are *Ooliticia* Cossmann, 1893, *Eucycloscala* Cossmann, 1895 and *Eucycloidea* Hudleston, 1888. *G. lahuseni*, as distinct from *Ooliticia*, has a thin inner lip (*Ooliticia* has a thickened inner lip), keeled late whorls with large spiny nodes and strong collabral sculpture (whorls in *Ooliticia* are non-keeled and covered with thick spiral bands, which are wrinkled or weakly nodosed by thin and dense collabral elements). *G. lahuseni* differs from *Eucycloscala* by less high shell, numerous spiral ribs on lateral side of whorl, non-keeled spire whorls, keeled last whorl (in the adult state) and siphonos-

tomatous aperture of subadult shells. *Eucycloscala* has a higher spire, two strong ribs on lateral side of whorl, owing to which all whorls are bicarinate. The siphonostomatous aperture is unknown for *Eucycloscala*. *G. lahuseni* differs from *Eucycloidea* by thick spiral ribs and plicae, which are especially strong on one or two last whorls, large nodes and non-keeled spire. All whorls of *Eucycloidea* shell are keeled because the keel runs in the middle of lateral side of whorl and bent adapically. The spiral and collabral sculpture is thin and dense. *G. lahuseni* is most similar to species like above mentioned as "*Eucyclus*" sp. and "*Eucyclus*" *pseudoarmiger*, but differs from them in the character of sculpture and siphonostomatous aperture at all age-related stages. The two latter should be separated in another new genus, because presently they are erroneously assigned to the genus *Eucyclus* Eudes-Deslongchamps, 1860. The latter is a small and specific group of Eucyclini, including a few species from the Early Jurassic of Western and Eastern Europe.

A. Kaim [2004] has assigned *G. lahuseni* to the Recent genus *Turcica* from the tribe Chilodontini (Trochidae). The reason for this decision was the "similarity" between the Jurassic material and Recent *Turcica*. Indeed, *Turcica* has ribs and plicae, a nacreous layer and a smooth protoconch, like *G. lahuseni*. However, based on such set of characters, many other genera of Trochidae are also similar to *G. lahuseni*. There are strong differences between *G. lahuseni* and *Turcica* species, which were not taken into account by Kaim. *G. lahuseni* has: a) whorl side smoothly passing into high-conic base; b) even columella without thickenings or callousity; c) aperture elongate, siphonostomatous and having projection anteriorly. *Turcica* has: a) lateral side and base divided by a sharp bent, shell base flattened and low; b) columella with several plications; c)

FIG. 4. *Gerasimovecyclus lahuseni*: A, B — PIN No. 4814/144 (shell height 4.5 mm), Ryazan Region, Spasskii District, right bank of the Oka River 1 km downstream of Nikitino village; Middle Oxfordian: A — abapertural view, B — apertural view; C, D — PIN No. 4814/145, the same site and age: C — apical view (shell diameter 1.65 mm), D — apical view of protoconch; E — PIN No. 4814/146, Moscow Region, Kolomenskii District, limestone quarry near Peski village; Upper Callovian — Lower Oxfordian (see the same specimen on Fig. 5); columnar nacreous layer of shell; F — PIN No. 4814/147 (shell height 9.2 mm), Moscow Region, Kolomenskii District, quarry near Shchurovo town (town district Zarechye); Middle Oxfordian, Tenuiserratum Zone: aperural view; G, H — PIN No. 4814/148 (shell height 13.1 mm), Moscow Region, Kolomenskii District, Afanasyevskii quarry; Middle Oxfordian, ? Densiplicatum Zone: G — abapertural view, H — apertural view. In Fig. 4F the rib numeration is shown. Rib numeration shows the order of appearance of spiral ribs in shell ontogenesis. 1 — ontogenically earliest rib, and 4 — ontogenically latest rib, rib 2 and 3 appear simultaneously.

РИС. 4. *Gerasimovecyclus lahuseni*; А, В — ПИН № 4814/144 (высота раковины 4,5 мм), Рязанская обл., Спасский р-н, правый берег р. Оки на 1 км ниже д. Никитино; средний оксфорд: А — со стороны, противоположной устью; В — со стороны устья; С, D — ПИН № 4814/145, местонахождение и возраст те же: С — вид сверху (диаметр 1,65 мм), D — протоконх сверху; E — ПИН № 4814/146, известняковый карьер у пос. Пески; верхний келловей — нижний оксфорд (тот же экземпляр на рис. 5); столбчато-перламутровый слой раковины; F — ПИН № 4814/147 (высота раковины 9,2 мм), Московская обл., Коломенский р-н, карьер у г. Щурово (р-н Заречье); средний оксфорд, зона tenuiserratum: со стороны устья; G, H — ПИН № 4814/148 (высота раковины 13,1 мм), Московская обл., Коломенский р-н, Афанасьевский карьер; средний оксфорд, ? зона densiplicatum: G — со стороны, противоположной устью, H — со стороны устья. На фиг. 4F показана нумерация спиральных ребер по порядку заложения в онтогенезе. 1 — онтогенетически самое раннее ребро, а 4 — онтогенетически самое позднее ребро.



aperture holostomatous and rounded. These distinctions are enough for clear separation of both taxa. Most part of similar discrepancies were specified also by Gründel [2005].

Classification of Trochoacea is given after Hickman and McLean [1990]. The material studied is kept in the Paleontological Institute of Russian Academy of Sciences, collections Nos. 4814 and 4863.

Superfamily Trochoidea Férussac, 1822

Family Trochidae Rafinesque, 1815

Subfamily Eucyclinae Koken, 1897

Tribe Eucyclini Koken, 1897

Genus *Gerasimovcyclus* Gründel, 2005

Type species — *Gerasimovcyclus lahuseni* Guzhov, nom. nov.

Diagnosis. Shell turbiniform, anomphalous, multispiral, up to 15 mm high. Protoconch of two smooth whorls, without clear border with teleoconch. Teleoconch of 6-7 whorls. Early whorls convex, with greatest width at near midwhorl, rest flattened or weakly convex, with greatest width below midwhorl. Last whorl keeled owing to one or two most prominent spiral ribs. Suture straight and deep. Sculpture represented by well-developed spiral and collabral elements. Plicae represented from almost beginning of teleoconch, spiral sculpture appearing somewhat later, but on first whorl. Lateral side of whorl covered by 3-4 spiral ribs, two lower being strongest, with nodes formed in intersections between ribs and plicae. Nodes large and spiny on later whorls. Collabral sculpture rather rough, uniform through shell, or more frequent and dense on early whorls, becoming rough and more distant on one or two last whorls. Shell base regularly covered by weakening ends of plicae and several spiral ribs, bearing nodes in intersections. Aperture siphonotomatous in young and subadult shells (Figs. 3D, E, 4B), drop-like or oval, with greatest width at posterior third. Inner lip thin, with weak convex expansion at shell base. Outer lip not thickened, with thin rim. Siphonal canal looking as angular, concave, more or less wide projection.

Composition. Type species; *Turcica gerasimovi* Kaim, 2004 from Lamberti Zone, Upper Callovian of Poland; *Gerasimovcyclus mittai* Gründel, 2005 from Lamberti Zone, Upper Callovian of European part of Russia, and *Turbo (Eucyclus) behrenderseni* Smith, 1893 from Oxfordian of Germany.

Comparison. Differences of *Gerasimovcyclus* from other genera of Eucyclini are given above.

Discussion. I removed the following species placed in *Gerasimovcyclus* by Gründel [2005]: *Turcica ogrodzieniecensis* Kaim, 2004, *T. wareni* Kaim, 2004, and *Eucyclus gjelinesis* Gerasimov, 1992. *T.*

wareni represents a juvenile shell of an eucycline of unclear systematic position. It also has a spiral rib on first teleoconch whorl, appearing before plicae, which is not characteristic of *Gerasimovcyclus*. I think that *T. wareni* is a species of “*Eucyclus*” group. *T. ogrodzieniecensis* is an even more juvenile shell with sculpture more characteristic for *Eucycloscala*. *E. gjelinesis* is representative of “*Eucyclus*” group with holostomatous aperture in adult shells and with thin and dense collabral elements. It is the ancestor for discussed above “*Eucyclus*” *pseudoarmiger* (my data).

The shells from the Bajocian of Germany, identified by O. Kuhn as *Littorina praetor* Münster, 1844 [Kuhn, 1938: pl. 6, fig. 27], can also belong to *Gerasimovcyclus*.

Gerasimovcyclus lahuseni

Guzhov, nom. nov.

(Figs. 3, D, E; 4, A-H; 5, A-C; 6, A, B)

Fusus clathratus: Lahusen, 1883: 41, pl. 3, fig. 24; Illovaisky, 1903: 264, pl. 10, figs. 20, 21.

Brachytrema lorioli M. Schmidt, 1905: 184, pl. 9, figs. 13-15; Dmoch, 1971: 300, pl. 4, fig. 1; Geology of Poland, 1988: 309, pl. 133, figs. 9-11.

Purpurina clathrata: Gerasimov, 1955: 179, pl. 39, fig. 14.

Petersia clathrata: Gerasimov, 1992: 88, pl. 9, figs. 4-7, 9.

Turcica clathrata: Kaim, 2004, text-fig. 11 A, B.

Lectotype. The specimen originally illustrated by Lahusen [1883: pl. 3, fig. 24] is designated here as lectotype: Mining Museum of Saint-Petersburg State Mining Institute, No. 234/60. Type locality: Russia, Ryasan Region, Spasskii District, left bank of the Oka River near Nikitino village. Age: Middle Oxfordian. Re-illustrated in Fig. 6.

Description. Shell turbiniform, multispiral, anomphalous, up to 15 mm high. Protoconch of two smooth whorls, without clear border with teleoconch. Beginning of teleoconch defined by appearance of visible collabral sculpture. Teleoconch of 7 whorls, two early whorls convex, with greatest width at near midwhorl, rest flattened, with greatest width below midwhorl. Last whorl keeled owing to two most prominent spiral ribs. Suture almost straight and deep. Sculpture represented by well-developed spiral and collabral elements. Spiral angulation forming near adapical sutural edge at 0.5 whorl from appearance of collabral sculpture, on which rib 1 soon developed (rib numeration see in Fig. 4F). Lateral side bears by 4 spiral ribs: rib 1 running adapically, rib 2 forming on midwhorl at 0.7 whorl from appearance of plicae, rib 3 running along abapical sutural edge and formed simultaneously with rib 2, and rib 4 appearing much later, at 1.5-2.3 whorls from appearance of plicae, and running be-

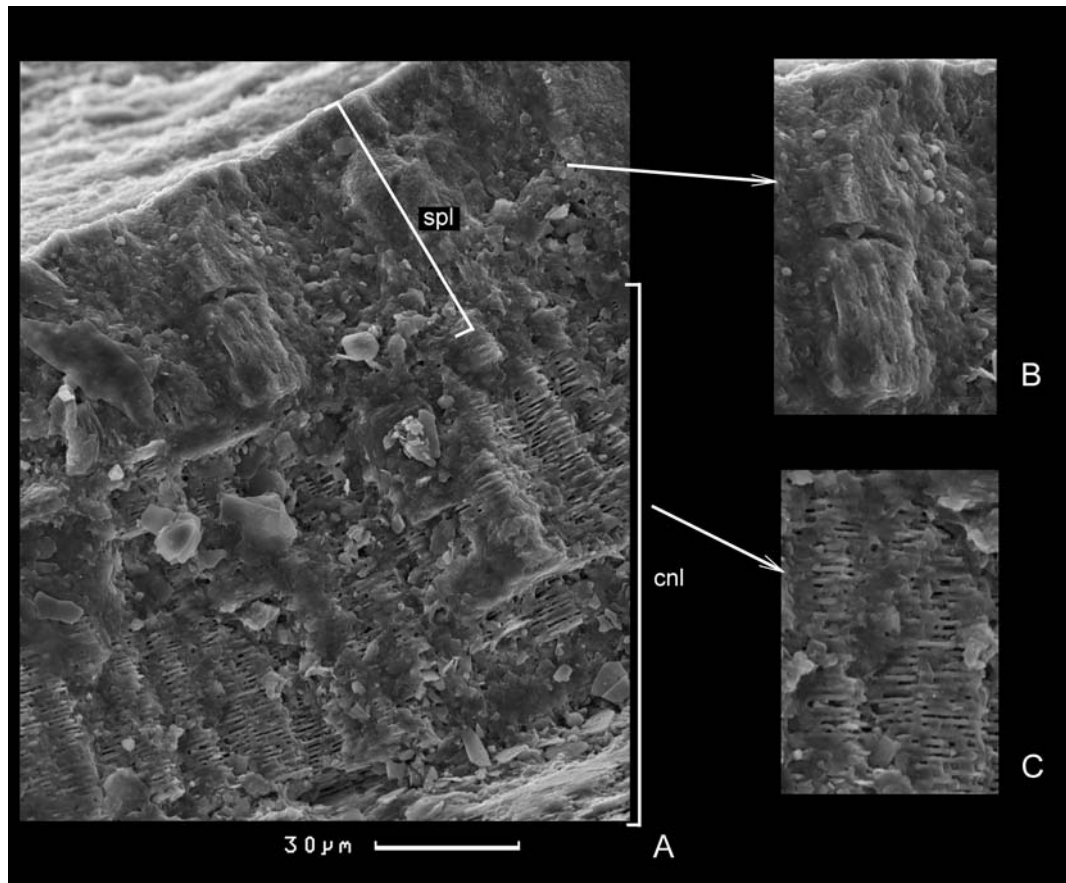


FIG. 5. Structure of outer half of shell wall in *Gerasimovcyclus lahuseni*, PIN No. 4814/146. A — general view, B — enlarged portion of spherulitic prismatic layer, C — same for nacreous layer. Abbreviations: cni — columnar nacreous layer, spl — spherulitic prismatic layer.

РИС. 5. Строение внешней половины стенки раковины *Gerasimovcyclus lahuseni*, ПИН № 4814/146. А — общий вид участка, В — увеличенный участок сферулитово-призматического слоя, С — то же для перламутрового слоя. Сокращения: cni — столбчато-перламутровый слой, spl — сферулитово-призматический слой.

tween ribs 1 and 2. Ribs 2 and 3 strongest, rib 1 little finer than ribs 2 and 3, and rib 4 finest. Ribs 2 and 3 become gradually stronger during shell growth, they especially strong on two last whorls. Collabral sculpture represented by numerous plicae, becoming gradually thicker and more distant with shell growth, especially rough and distant on one-two last whorls, therefore sculpture of these whorls markedly differs from that of previous ones. Whorl at 3-5 mm diameter covered by 22-25 plicae, at diameter 7-8 mm by 19-22 plicae, at diameter 9 mm by 15 plicae. Ribs 2 and 3 on last whorl with large spiny nodes, which commonly larger on rib 2, because of keeled last whorl. Shell base covered by weakening plicae and 6-7 spiral ribs, bearing nodes at crossings. Aperture of young or subadult shells siphonostomatous (Figs. 3D, E, 4B), drop-like, with greatest width at posterior third. Inner lip thin, with weak convex expansion at shell base. Outer lip not thickened, with thin rim. Siphonal canal looking as angular, concave, more or less wide projection.

The shell wall of two last whorls consists of two layers, of which inner layer is columnar nacreous (80% of thickness of shell wall), and outer layer is spherulitic prismatic (20% of thickness of shell wall) (Figs. 4E, 5).

Comparison. *G. lahuseni* differs from *G. gerasimovi* (Kaim, 2004) and *G. behrenderseni* (Smith, 1893) by more numerous (4 against 3) and more densely arranged ribs on lateral side of whorl. Also it differs from *G. behrenderseni* by more rare ribs on shell base (6-7 against 8-9), and from *G. gerasimovi* — by denser and thinner collabral sculpture on early whorls, becoming thicker and more distant on later whorls. *G. mittai* Gründel, 2005 is represented by young, and, probably, unique shell (unfortunately, Gründel did not list the material of this species), therefore its comparison with *G. lahuseni* is complicated. *G. lahuseni* distinctly differs from *G. mittai* by simple keel formed by one strong rib, whereas the keel of *G. mittai* is crowned by two weaker and closely arranged ribs.

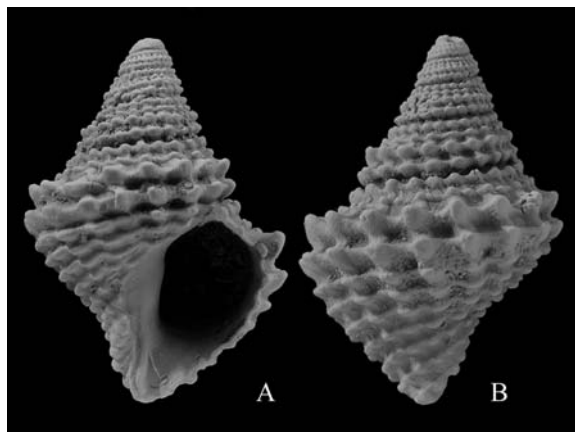


FIG. 6. *Gerasimovicyclus lahuseni*, lectotype, Mining Museum of SPSMI No. 234/60 (shell height 13 mm). A — apertural view, B — abapertural view.

РИС. 6. *Gerasimovicyclus lahuseni*, лектотип, Горный музей СПГИ № 234/60, высота раковины 13 мм. А — вид со стороны устья, В — вид со стороны, противоположной устью.

Remarks. The aberrant forms can be covered by three ribs on lateral side, instead of four. In Lower Callovian sandy-aleurite deposits of Zone Koenigi, Subzone *Curtilobus* on right bank of the Oka River downstream of Alpatyevo village (Moscow Region, Lukhovitskii district), two fragmentary shell impressions were found. They probably belong to *G. lahuseni*, because very similar to it and differ from all "*Eucyclus*", plentifully represented in the same site. Mould of the best-preserved impression is shown in Fig. 3F.

Distribution. Upper Callovian, Athleta Zone, Phaenium Subzone — Upper Oxfordian, Alternoides Zone, Alternoides Subzone of European part of Russia.

Material. 68 shells. Upper Callovian: Ryazan Region, Pronskii District, Tyrnovo village, alluvium of Kazachya River (1); Voronezh Region, Starooskolskii District, quarry near Stoilo village (1); Upper

Callovian, Athleta Zone, Phaenium Subzone: Kostroma Region, Kologrivskii District, Burdovo village (1); Upper Callovian — Lower Oxfordian: Moscow Region, Kolomenskii District, Peski village (1); Lower Oxfordian: Ryazan Region, Spasskii District, right bank of the Oka River near Nikitino village (1), Ryazanskii District, right bank of the Oka River near Novoselki village (8), Moscow, city district Fili, former quarry "Kamushki" (1); Lower — Middle Oxfordian: Ryazan Region, Pronskii District, Tyrnovo village, alluvium of Kazachya River (1); Middle Oxfordian: Ryazan Region, Spasskii District, right bank of the Oka River near Nikitino village (22 + 17 juv.); Middle Oxfordian, ? *Densiplicatum* Zone: Moscow Region, Kolomenskii District, Afanasyevskii quarry (1); Middle Oxfordian, *Densiplicatum* Zone, uppermost part of *Densiplicatum* Subzone: Kostroma Region, Makaryevskii District, section "Northern Makaryev"; Middle Oxfordian, *Tenuiserratum* Zone: Moscow Region, Kolomenskii District, quarries near Shchurovo town (3), Kostroma Region, Makaryevskii District, section "Northern Makaryev" (2) and right bank of the Unzha River near Mikhalevino village (1); Middle — Upper Oxfordian, *Tenuiserratum* and *Alternoides* Zones: Ryazan Region, Rybnovskii District, Konstantinovo village (1); Upper Oxfordian, ? *Alternoides* Zone: Ryazan Region, Spasskii District, right bank of the Oka River near Nikitino village (1); Upper Oxfordian, *Alternoides* Zone, *Alternoides* Subzone: Kostroma Region, Makaryevskii District, right bank of the Unzha River near Mikhalevino village (5).

Etymology. Named after Russian geologist and paleontologist I. Lahusen, who first described this species.

Acknowledgements

I am grateful to Dr. O. A. Erlanger for the given opportunity to study the Gerasimov's collections in the Paleontological Institute and Dr. A.V. Sysoev for valuable remarks to paper and all-round aid. Work was financed by the grant of the Russian Foundation for Basic Research No. 04-04-48703a.

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- Систематическое положение вида *Gerasimovcyclus lahuseni* nom. nov. (= *Fusus clathratus* Lahusen, 1883) (Gastropoda) из юрских отложений европейской части России
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- РЕЗЮМЕ.** Рассмотрено систематическое положение вида “*Fusus clathratus*” Lahusen, 1883, который предложено поместить в трибу Eucyclini семейства Trochidae с новым названием *Gerasimovcyclus lahuseni* nom. nov., так как прежнее оказалось младшим омонимом *F. clathratus* J. C. Sowerby, 1836 и *F. clathratus* Dujardin, 1837.