

## *Liapinella*, a new epitonioidean genus (Gastropoda) from the Upper Jurassic of European Russia

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**ABSTRACT.** In the Middle Oxfordian of European Russia a new gastropod was found, for which a new species and genus *Liapinella liapini* are proposed. This form is referred to the family Nystiellidae.

In the Middle Oxfordian clays (Ryazan and Kostroma regions), an unusual minute gastropod was collected, which strongly differs from other known groups of Mesozoic gastropod mollusks. It is described below as *Liapinella liapini* Guzhov, gen. et sp. nov. Externally *Liapinella* very much resembles a rissoid as its teleoconch consists of several convex volutions covered with well-developed collabral sculpture. Its aperture, as in rissoids, looks almost holostomatous. Besides the collabral sculpture, the whorls of *Liapinella* are covered with numerous and densely arranged spiral rows of microscopic granules. In the teleoconch morphology *Liapinella* almost does not differ from *Pisillina (Vicinirissoa) harpa* (Verrill, 1880), the type species of *Vicinirissoa* Ponder, 1985 (Rissoidae, Rissoinae) [Ponder, 1985: 31, fig. 83A, B], but it has a different type of protoconch. As distinct from Rissoidae, *Liapinella* has a collabrally sculptured protoconch. Such protoconch was found in Cerithiiformes, Epitoniiiformes and some Neogastropoda. However, *Liapinella* differs from Cerithiiformes and neogastropods in almost holostomatous aperture, that is more typical of Epitoniiiformes. Besides, the teleoconchs of Epitoniiiformes are also frequently covered with collabral sculpture, and the spiral sculpture can be absent or vary from rows of microscopic nodes to well developed ribs. Shells of the family Epitoniiidae have smooth and often pike-like protoconch, whereas Nystiellidae frequently have collabrally sculptured protoconch and are especially similar to *Liapinella*. Most representatives of the Nystiellidae have shells with rather short spire. Therefore, it seems natural to place *Liapinella liapini* in the latter family. *Liapinella* differs from other nystiellid genera by its short teleoconch of rissoid outline, consisting of convex and rapidly growing whorls, covered by strong collabral and dense and very thin spiral sculpture.

Systematic position of the described gastropod is given according to the classification of Minichev and Starobogatov [1988]. The material is stored in the Geological and Mineralogical Museum of the Moscow State Pedagogical University (GMM MSPU), collection No. 12. The work was supported by a grant of the Russian Foundation for Basic Research, No. 04-04-48703a.

Order Epitoniiiformes  
Minichev et Starobogatov, 1979

Superfamily Epitonioidei  
Minichev et Starobogatov, 1979

Family Nystiellidae Clench et Turner, 1952

Genus *Liapinella* Guzhov, gen. nov.

**Type species** — *L. liapini* sp. nov.; Upper Jurassic, Middle Oxfordian, Densiplicatum Zone, Densiplicatum Subzone; Russia, Kostroma Region.

**Gender** — feminine.

**Diagnosis.** Shell minute, paucispiral, low-turriculate. Protoconch consists of several volutions: smooth in the beginning and with collabral sculpture later. Teleoconch consists of roundish whorls divided by deep suture. Teleoconch sculpture represented by strong collabral folds and numerous rows of microscopic granules. Body whorl high. Base convex, covered by same spiral sculpture and weakening collabral folds. Lower base with a spiral groove, encircled by a spiral ridge abapically. Aperture weakly oval, roundish anteriorly. Lips thin. Growth lines on the outer side of body whorl have a prosocyrct character.

[Диагноз. Раковина мелкая, малооборотная, низкобашенковидная. Протококонх из нескольких оборотов. сначала гладких, позже с коллабральной скульптурой. Телеококонх из округлых оборотов, разделенных глубоким швом. Скульптура телеококонха из сильных коллабральных валиков и многочисленных рядов микроскопических бугорков. Последний оборот высокий. Основание выпуклое, покрыто такой же спиральной скульптурой и ослабевающей коллабральной. По внут-

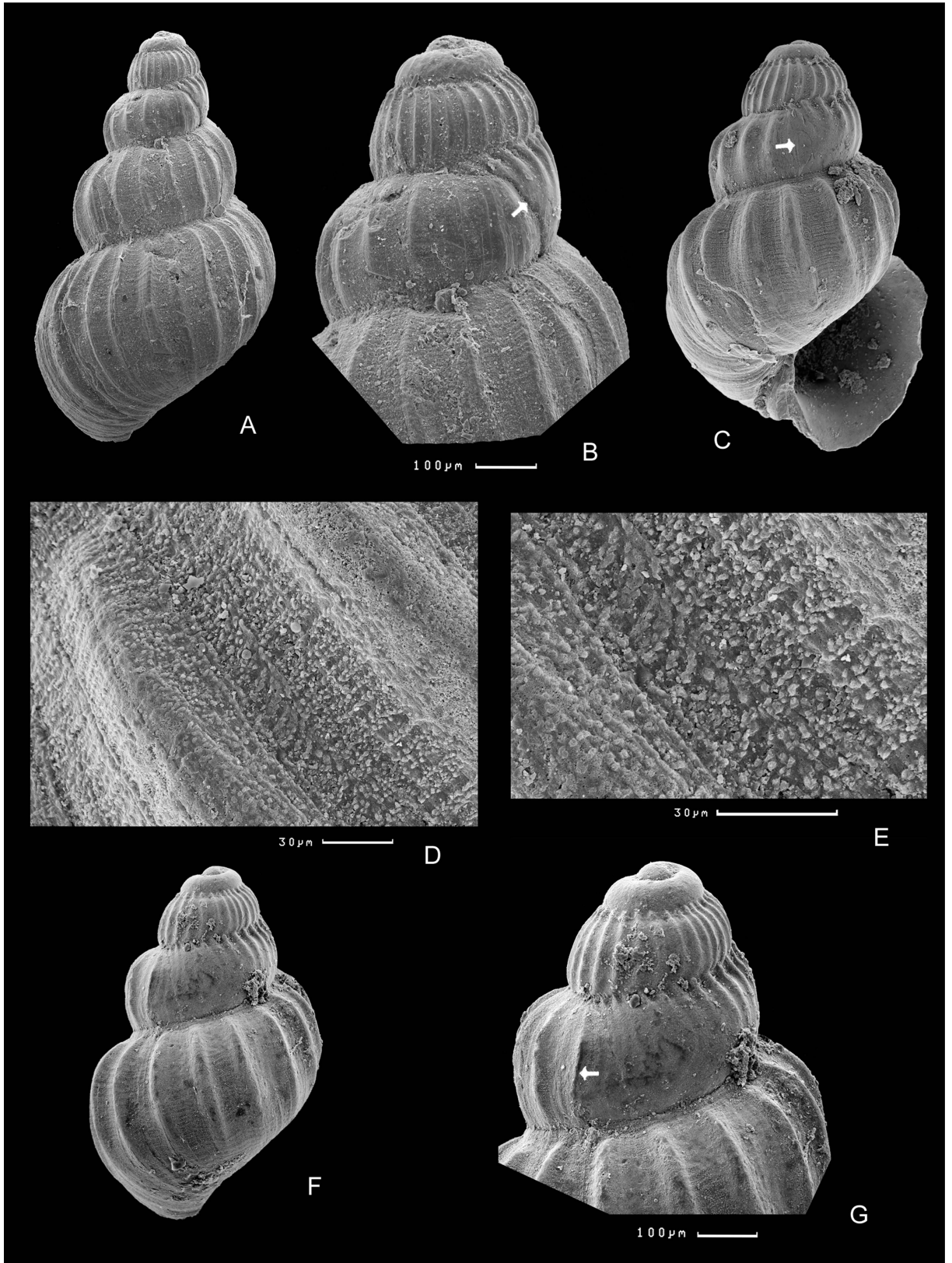


FIG. 1. *Liapinella liapini*, gen. et sp. nov. A, B – holotype, GMM MOPU No. 12/168 (shell height 2 mm): A – abapertural view of shell, B – protoconch; C-E – lost specimen, Ryazan Region, Spassk District, right bank of the Oka River below village of Nikitino; Middle Oxfordian (shell height 1.3 mm): C – apertural view of shell, D, E – teleoconch microsculpture; F, G – GMM MOPU No. 12/169, the same site and age (shell height 1.13 mm): F – abapertural view of shell, G – protoconch. White arrow indicates the position of protoconch/teleoconch boundary.

ренной стороне основания идет борозда, за которой идет спиральный гребень. Устье слабоовальное, с тонкими губами и округлое внизу. Линии нарастания на наружной стороне последнего оборота имеют прозоциртный характер.]

**Composition.** Type species.

**Discussion.** As it has been said above, the taxonomic placement of the new genus largely depends on interpretation of its shell morphology, particularly the protoconch. In my opinion, the protoconch of *Liapinella* consists of two parts, thus indicating a planktotrophic mode of development. The protoconch I consists of two smooth whorls markedly differing from later whorls in the sculpture. The protoconch II is composed by 1.5 collabrally sculptured whorls, whose sculpture is very similar to that of teleoconch. The border between protoconch and teleoconch is often not clearly expressed. In the holotype it is well seen (Fig. 1B) whereas in some other specimens the borderline is visible only at a very high magnification. However, the beginning of teleoconch is additionally marked by an area with strongly smoothed sculpture. The protoconch II stage has also a row of nodules along the suture, the collabral folds are more densely arranged than on the teleoconch, and there is no spiral microsculpture.

Morphological similarity between protoconch and teleoconch frequently occurs in the Nystiellidae and their ancestors, Pseudozygopleuridae [e.g., see Nützel, 1998], although there is always clear difference in the sculpture. In *Liapinella*, the protoconch II morphology is much more similar to that of the teleoconch.

**Etymology.** Named in honor of V.R. Liapin, whose paleontological materials are frequently used in my researches.

*Liapinella liapini* Guzhov, sp. nov.  
(Рис. 1, A-G)

**Holotype** – GMM MSPU, No. 12/168. Russia, Kostroma Region, Makaryev District, right bank of the Unzha River in 0.5 km above village of Mikhalenino; Upper Jurassic, Middle Oxfordian, Densiplicatum Zone, Densiplicatum Subzone.

**Description.** Low-turriculate shell about 2 mm high. Protoconch of 3.5 whorls: two smooth volutions in the beginning and one and 1.5 collabrally sculptured later. First whorl planispiral. At the end of protoconch collabral folds quickly smooth out, all over again disappearing below, and then above.

Protoconch-teleoconch border marked by appearance of collabral folds and spiral microsculpture. Teleoconch consists of 1.75 volutions. Teleoconch angle 41° (holotype). Suture angled and deep. Teleoconch whorls convex and covered by numerous collabral folds and densely arranged spiral rows of microscopic granules. The rows can consist of chain of individual and twin granules or they can have more complex structure. Diameter of granules about 1.5 µm, width of rows varies from 1.5 to 8 µm. Last whorl of holotype has 21 collabral ribs. Spiral sculpture on shell base same as on whorl side. Base near collumella with spiral ridge margined by a spiral groove adapically. Aperture suboval, rounded, with thin lips, without edge lapel anteriorly.

[**Диагноз.** Раковина малооборотная низко башенковидная, ее высота около 2 мм. Протоконх имеет около 3,5 оборотов: два гладких оборота в начале и полтора коллабрально скульптурированных в конце. Первый оборот планиспиральный. В конце протоконха коллабральные ребра быстро сглаживаются, сначала исчезая внизу, а затем вверху. Граница протоконха и телеоконха обозначена появлением коллабральных ребер и спиральной микроскульптуры. Телеоконх состоит из 2,5 оборотов. Угол телеоконха 41° (голотип). Шов угловатый, глубокий. Обороты телеоконха выпуклые, покрыты многочисленными коллабральными ребрами и многочисленными густо расположенными спиральными рядами микроскопических зерен. Ряды могут состоять из цепочки одиночных, парных зерен или иметь более сложное строение. Толщина зерен около 1,5 мкм, а их рядов — от 1,5 до 8 мкм. На последнем обороте голотипа 21 коллабральное ребро. Спиральная скульптура на основании такая же, как на боковой стороне. На основании в районе столбика идет спиральный гребень, который снаружи окружен спиральной бороздой. Устье слабоовальное, с тонкими губами, в базальной части округлое, без краевого отворота.]

**Remarks.** All material from the Ryazan Region is represented by juvenile specimens with teleoconch of less than one whorl. However, the majority of these shells have an intact aperture with characters described above.

**Material.** Middle Oxfordian: Ryazan Region, Spassk District, right bank of the Oka River one kilometer below village of Nikitino – 7 shells. Middle Oxfordian, Densiplicatum Zone, Densiplicatum Subzone: Kostroma Region, Makaryev District, right bank of the Unzha River 0.5 km above village of Mikhalenino – one shell.

**Etymology.** Named in honor of V. R. Liapin.

РИС. 1. *Liapinella liapini*, gen. et sp. nov. A, B – голотип, ГММ МОПУ № 12/168 (высота раковины 2 мм): А – раковина со стороны, противоположной устью; В – протоконх; С-Е – утерянный образец, Рязанская обл., Спасский р-н, правый берег р. Оки ниже д. Никитино; средний оксфорд (высота раковины 1,3 мм): С – раковина со стороны устья, D, E – микроскульптура телеоконха; F, G – ГММ МОПУ № 12/169, возраст и местонахождение те же (высота раковины 1,13 мм): F – раковина со стороны, противоположной устью; G – протоконх. Белая стрелка указывает на положение границы протоконха и телеоконха.

## REFERENCES

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***Liapinella*** – новый род эпитониоидей (Gastropoda) из верхней юры европейской России

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**РЕЗЮМЕ.** В среднем оксфорде европейской России обнаружена новая гастропода, для которой выделены новые род и вид ***Liapinella liapini***. Эта форма отнесена к семейству Nystiellidae.

