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Cochlicopa nitens (Kokeil) in Czechoslovakia

by

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Recently considerable attention has been paid to the different forms which were formerly included in the species *Cochlicopa lubrica* (Müller). G. MANDAHL-BARTH (1950) and H. E. QUICK (1954) showed that serious reasons exist for considering the small form usually called *Cochlicopa lubrica* var. *exigua* (Menke) specifically distinct. According to QUICK (1954) the correct name of this small species is *Cochlicopa lubricella* (Porro, 1838). Recently A. NILSSON (1956) has dealt with the systematics of *Cochlicopa.* He considers not only the above mentioned *C. lubricella* (Porro) (= *C. minima* Siemashko) an independent species, but also the large form living in swamps, *Cochlicopa nitens* (Kokeil). The same opinion was also expressed by the Swedish malacologist H. WALDÉN (1954, p. 446).

In my revision of Czechoslovak *Cochlicopa* I have ascertained some facts which may help to solve the problem of the status of *C. nitens* (Kok.). The species *C. lubrica* (Müll.) and *C. lubricella* (Porro) are common in the whole territory of Czechoslovakia, with *C. lubricella* (Porro) evidently preferring xerothermic areas and being especially abundant on limestone steppes. On the other hand, *C. nitens* (Kok.) is evidently a rare species, as it has been recorded in only a few localities, in spite of careful investigation. The rare occurrence of this species can be accounted for only by its specialized ecological requirements. As is proved by all the existing observations, it is a typical inhabitant of calcareous swamps, like *Vertigo moulinsiana* (Dupuy).

In the following text I shall briefly deal with the localities so far known for *C. nitens* (Kok.) in Czechoslovak territory, with special regard to their ecological conditions. I am greatly indebted to my

Swedish colleagues A. NILSSON and H. WALDÉN for checking the specimens from Měňany and Dvorce.

Cochlicopa nitens (Kok.) has been up to the present time collected in Czechoslovakia in the following localities:

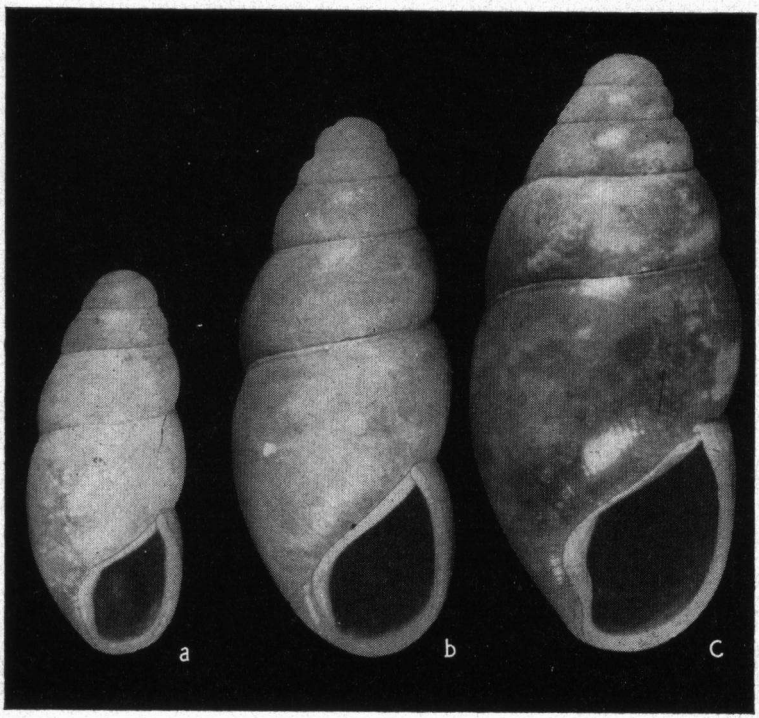

Fig. 1. a: *Cochlicopa lubricella* (Porro), 4.27 × 1.77 mm, Plešivec near Karlštejn, Central Bohemia. — b: *Cochlicopa lubrica* (Müll.), 6.02 × 2.53 mm, Dvorce near Lysá n. Labem, Central Bohemia. — c: *Cochlicopa nitens* (Kokeil), 6.65 × 3.07 mm, Dvorce near Lysá.

Bohemia:

Dvorce near Lysá nad Labem (Elbe basin in Central Bohemia), a strongly calcareous drained peat bog: 10 specimens in all measuring:

6.22 × 2.81 mm	6.48 × 3.02 mm	6.81 × 2.90 mm
6.25 × 2.95 mm	6.50 × 2.97 mm	7.01 × 3.05 mm
6.29 × 2.90 mm	6.60 × 2.91 mm	
6.46 × 2.91 mm	6.65 × 3.07 mm	

Měňany, Na Zelnišťatech (Bohemian Karst), weathered surface of the dried up bed of strongly calcareous peat bogs and freshwater limestones: so far the only specimen measures 6.78 × 2.90 mm.

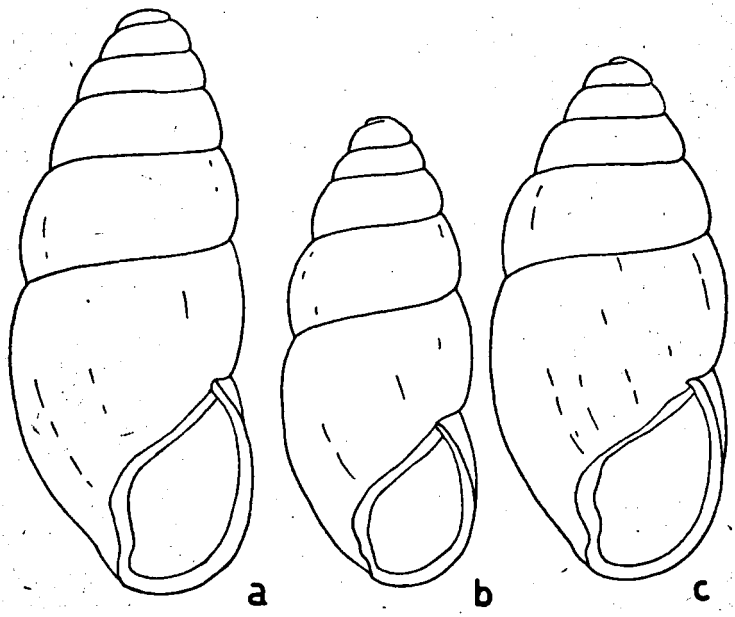

Fig. 2. a: *Cochlicopa nitens* (Kokeil), 7.50 × 3.05 mm, long slender form, Hrhov, Slovakia. — b: *Cochlicopa lubrica* (Müller), 6.02 × 2.53 mm, Dvorce near Lysá. — c: *Cochlicopa nitens* (Kokeil), 6.65 × 3.07 mm, short broad form, Dvorce near Lysá.

The shells from Dvorce were fresh in appearance. They were, however, all empty, from which it can be concluded that the population recently nearly or completely died out during the drainage of the peat bog. The only shell from Meňany is considerably weathered and probably already fossil (Late Holocene). Besides these localities, from which specimens were checked by A. NILSSON and H. WALDÉN, earlier literature contains two records of *C. nitens* (Kok.) from Bohemia. J. ULIČNÝ (1892-1895, p. 68) states that he knows "*Cionella lubrica* var. *nitens* Kok." only from the vicinity of Nový Bydžov, where it was most probably collected in a damp meadow. H. ANKERT (1922) records *C. lubrica* (Müller) from the Elbe high water deposit near Litoměřice, the largest specimens attaining

7.5 × 3.0 mm, so that they probably belong to *C. nitens* (Kok.) (cf. A. NILSSON, 1956, p. 288). In the case of these records we do not, however, know the habitat. Yet we may assume with the greatest probability that they came from the calcareous swamps which are common in the Elbe basin.

Moravia:

So far there is only one record of *C. nitens* from Moravia, from the interglacial travertines at Tučín near Přerov (LOŽEK & TYRÁČEK, 1958). Here *C. nitens* (Kok.) was found in the basal layers of the travertines proper, belonging to an early phase of the Interglacial (shallowpit I), and also in freshwater marls in the underlying beds of the travertines (shallowpit II) which belong to the end of the cold period preceding the Interglacial. This is proved by the late glacial character of the fauna, with *Columella columella* (Benz), *Vertigo genesii* (Grd.), *Valvata pulchella* (Stud.), *Pisidium hibernicum* West., and *P. vincentianum* Woodw. The locality near Tučín belongs most probably to the Penultimate (at the utmost to the Last) Interglacial (= M/R). The specimens can easily be identified, but are mostly so damaged that it is impossible to ascertain the size exactly. I quote, therefore, only perfect specimens from the marls measuring 6.7 × 2.9 mm. Recently a *nitens*-like form of *Cochlicopa* was found in the flood plain forest Skařina near Mikulčice in South Moravia.

Slovakia:

In Slovakia *C. nitens* (Kok.) has been collected in the calcareous swamp of Velké Jazero (Nagy tó) near Hrhov in the South Slovakian Karst, which is now for the most part drained and reclaimed. Only empty, partly fossilized shells were collected here, so *C. nitens* is probably also extinct here. Collected specimens measure:

6.51 × 2.84 mm	7.05 × 3.10 mm	7.50 × 3.05 mm
6.81 × 3.02 mm	7.29 × 3.10 mm	

It has been found also in the interglacial travertines in Bojnice — Zoological garden (probably Early Pleistocene), Vyšné Ružbachy — Hamriska (probably Penultimate Interglacial), and Lúčky — Podskalie (Last Interglacial). The records from Bojnice, Ružbachy, and the Moravian locality Tučín are at present most likely the earliest known occurrences of *C. nitens* (Kok.). The accompanying molluscan fauna of Bojnice and Lúčky is very thermophil and belongs to the climatic optimum of the Interglacial, but the gastropod community of V. Ružbachy is of cold character. This fact proves that *C. nitens* (Kok.) could live in very different temperature conditions.

On summing up the so far existing knowledge of the species *C. nitens* (Kok.) in Czechoslovak territory, we can conclude that it is a good species, well differentiated from the common *C. lubrica* (Müller), as stated by A. NILSSON (1956). In contradistinction to the related species *C. lubrica* (Müll.) and *C. lubricella* (Porro) which are fairly common and live in rather different biotopes, *C. nitens* (Kok.) is an ecologically highly specialised species which occurs only in calcareous swamps, like *Vertigo moulinsiana* (Dupuy) (cf. LOŽEK, 1956). Seeing that today the majority of these habitats are dried up in a natural way or artificially reclaimed, *C. nitens* is relatively rare at present and is one of the species which are obviously declining. Its heyday was evidently in the Early Holocene, i. e. in the period when the greatest number of calcareous swamps arose which were later steadily on the retreat. This observation can also be applied to its occurrence in pleistocene times, when *C. nitens* (Kok.) finds the best conditions of life in the early phases of Interglacials. Its occurrence in Tučín and Ružbachy, where *C. nitens* (Kok.) occurs in communities of late glacial character gives evidence of the fact that this species can endure a cold climate and appears much earlier than the ecologically related *Vertigo moulinsiana* (Dup.).

The experience gained in the territory of Czechoslovakia is obviously valid, with slight changes, for the whole of Central Europe. In future it will be necessary to follow carefully the fossil occurrence of all the three closely related species of the genus *Cochlicopa* whose recognition can fundamentally help to explain their mutual relation and thus also the question of their specific independence.

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