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## The family Orthonemidae (Gastropoda) from Middle and Upper Carboniferous of the Central part of Russian Plate

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**ABSTRACT.** The genera *Altadema* Kues, *Arribazona* Kues, *Laschmaspira* gen. nov. and *Callispira* Nelson are mentioned for the first time from the Middle and Upper Carboniferous of the Central part of Russian Plate. Seven new species are described here. *Altadema* and *Arribazona* were previously known as monotypic. A new genus *Laschmaspira* gen. nov. is proposed here for one new species from the studied region, and four other species previously described by Licharew from Fergana valley. Two new species and 3 species described by Yakowlew and Licharew are assigned here to *Arribazona*. The diagnoses of studied genera were specified. Together with taxa described in two previous papers [Mazaev 2001, 2002], the family Orthonemidae is represented by 8 genera and 28 species in the studied region. From them, only 8 species are known from other regions (Illinois Basin and New Mexico, North-Western China, Central Asia, Central Urals, and Donetsk Basin). The stratigraphic and geographical distribution of these taxa is discussed.

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Gastropods of the family Orthonemidae Nützel et Bandel are common faunal elements in many localities in most Carboniferous marine units in the Central part of Russian plate. The representatives of the family are among the most diverse and species-rich in the studied region. Twenty species assigned to four genera, *Stegocoelia* Donald, 1889, *Vebericochlis* Licharew, 1967, *Orthonema* Meek et Worthen, 1862 and *Cibecua* Winters, 1956 were for the first time found in the region and described in two previous papers [Mazaev 2001, 2002]. Other 8 new species from four genera *Callispira* Nelson, 1947, *Arribazona* Kues, 1990, *Altadema* Kues, 2002 and *Laschmaspira* gen. nov. are described in this paper. Thus, 28 taxa representing 8 genera have been found and described from the region. This result is based on over 350 specimens collected from 49 localities. The stratigraphic occurrences of studied species are shown in Fig. 1. Among those species only 8 proved to be common for other areas: *Stegocoelia alta* Licharew, *S. knighti* (Licharew), and *Vebericochlis arguta* (Licharew) from Urals province, *Stegocoelia berestovensis* Zernetskaja from Donetsk Basin, *Orthonema frequens* Licharew from Middle Asia, *Orthonema marvinwelleri* Knight from Illinois Basin,

*Orthonema cochleoides* Yin from Central Asia and North-Western China; possibly the latter species was described as *Orthonema telescopiforme* Erwin from New Mexico [Kues, Batten 2001: 52], and *Cibecua magnum* Mazaev also was described as *Orthonema* sp. 2 Kues et Batten [2001: 57] from New Mexico. The above-listed taxa, except for *Stegocoelia alta*, *S. knighti*, and *S. berestovensis*, appeared in the studied region earlier than in other areas. *Stegocoelia alta* and *S. knighti* appeared in different regions almost simultaneously. *Stegocoelia berestovensis* were found in later deposits in the studied region than in Donetsk Basin.

### Material

Over 160 specimens from the Moscow Basin and Oksko-Tzninskiy Swell have been studied during preparation of the paper. Many taxa are represented by few specimens, which is, however, adequate to describe their morphology in detail. All the material was represented by imprints and studied with using their latex moulds. Some samples demonstrated fine imprints of aperture margin with complete slit (Fig. 2 M) or well preserved fine growth lines that distinctly reflect the morphology of the slit (Figs. 2 B, 3 A, G, J). This type of preservation is unique and allows to observe the morphology of aperture margin of the genera for the first time. All the material described here is housed in the Paleontological Museum of the Russian Academy of Sciences (Moscow), collection No. 4471. Register of the localities was given in one of preceding papers [Mazaev, 1997].

### Taxonomy

The systematic position of the family Orthonemidae has been discussed in the previous paper [Mazaev, 2002]. Many genera, which formerly belonged to Acanthonematidae and Murchisoniidae, were referred to the Orthonemidae in that work. The generic composition of the family was changed, and 12 genera were referred to it. Although *Bicuerda* Kues et Batten, 2001 have been originally assigned to Orthonemidae [Kues, Batten, 2001], this taxon had not been mentioned in the conducted revision. The assignment of *Bicu-*