The International Subcommission on Cambrian Stratigraphy (ISCS) has recommended a subdivision of the Cambrian System into four series and ten stages. The first appearance datum (FAD) of the cosmopolitan agnostoid trilobite Lotagnostus americanus has been chosen as a good indicator for the base of the uppermost Cambrian stage (Stage 10). The Khos-Nelege section located in the north-eastern Siberian Platform (Western Yakutia, Russia) is proposed as the Global Standard Stratotype Section and Point (GSSP) for the base of the ‘Cambrian Stage 10’. The proposed GSSP coincides with the FAD of L. americanus at 339 m above the base of the Ogon’or Formation. The section fulfills the geological and biostratigraphical requirements for a stratotype and the GSSP horizon can be constrained by a number of auxiliary marker taxa. The first appearance of L. americanus is an easily recognizable level in the Cambrian which can be recognized from all major Cambrian continents, including Baltica, Laurentia, Avalonia, South China and Australia.

Key word: Cambrian, Stage 10, trilobite, GSSP, Lotagnostus americanus, Russia.


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Subdivision of the Cambrian System into series and stages that can be applicable in a global scale is among major objectives of the International Subcommission on Cambrian Stratigraphy (ISCS) for a number of years. The absence of internationally recognized global standard for the Cambrian System partly a consequence of different stratigraphical approach developed historically by researches working in different regions, but also reflects faunal provincialism resulted the scarcity of suitable biostratigraphical markers applicable for intercontinental correlation at the Stage level. However, current progress in research on Cambrian trilobite biostratigraphy in combination with chemostratigraphy improved significantly long-range correlation of the regional Cambrian chronostratigraphic units (Babcock et al. 2005).

The ISCS came to the conclusion that the Cambrian System subdivision into four series and ten stages, looks as the most practical strategy (Babcock et al. 2005). So far, only four stages have been formally named and formally approved by the Commission on Stratigraphy IUGS. These are the Fortunian Stage (= base of Terreneuvian Series and Cambrian System), the Drumian Stage, Guzhangian Stage and the Paibian Stage (= base of Furongian Series). Apart from the Paibian, the two succeeding stages (Cambrian Stage 9 and 10) in the Furongian Series remain to be defined. In addition, in 2010, Duibian B section in Zhejiang, China was chosen by the ISCI as GSSP for the base of the Cambrian Stage 9 (= Jiangshanian Stage) defined by the FAD of the agnostoid trilobite Agnostotes orientalis. However, this decision is still awaiting ratification from the Commission on Stratigraphy IUGS. Babcock et al. (2005) suggested that the FAD of the agnostoid trilobite Lotagnostus americanus, may be the best choice for defining the base of the Cambrian Stage 10, which is the only Furongian Stage remaind awaiting for formal designation (Fig. 1).

The main objective of this paper is to present updated and refined documentation for a stratigraphic sequence through the upper part of the Furongian Series in the Khos-Nelege section which is presented as a GSSP candidate for
designated by the Cambrian Stage 10 and its lower boundary (modified from Babcock et al., 2005).

Motivation for selection of the boundary level and of the potential stratotype section

Lotagnostus (Lotagnostus) americanus (Billings) is easily recognizable agnostoid taxon, which was recently revised by Peng & Babcock (2005). It was demonstrated that a number of species, including Lotagnostus asiaticus Troedson, L. xinjiangensis Zhang, L. punctatus Lu, L. trisectus (Salter), L. obscurus Palmer and Gontagnostus verrucosus Rusconi represent junior objective synonyms of Lotagnostus americanus, thus presently this trilobite species is documented from almost all major Cambrian paleocontinents, which makes it a valuable tool for global correlation.

The diagnostic characteristics of Lotagnostus americanus include: lengthwise partition of the axis into three parts; pleurae with distinct scrobiculae; cephalon with a narrow roll-shaped border; a pentagonal anterior glabellar lobe; F3 curved backwards; node on the main glabellar lobe occupying the most elevated part of the cephalon; elongated basal lobes; presence of a preglabellar furrow; a long pygidial axis; medially effaced F1; broad border furrow; and presence of posterolateral marginal spines. Based on these criteria, L. obscurus Palmer should be excluded from the synonymy of L. americanus, because it has a nonscrobiculate surface and a short pygidial axis with a rounded posterior termination. This suggests that Lotagnostus obscurus has the closest affinity to the subgenus Lotagnostus (Eolotagnostus) Zhou.

Lotagnostus americanus has a short stratigraphic range in the late Furongian and is a common taxon in the open shelf lithofacies (Peng & Babcock 2005 and references therein) (Fig. 2).

Presently, occurrences of L. americanus are documented from Quebec, Newfoundland, Precordilleran Argentina, Sweden, China, Kazakhstan (Malyi Karatau), Kyrgyzstan (north Tien Shan), Australia, Avalonia (England and Wales), and Siberia (Babcock et al. 2005, Geyer & Shergold 2000, Peng & Babcock 2005, Peng et al. 2005) and it can be identified with precision using multiple lines of evidence. Lotagnostus americanus is widely used as the index taxon in Siberia, China and Scandinavia (Lazarenko et al. 2008, Peng & Babcock 2005, Terfelt et al. 2008). The early representatives of Lotagnostus emerged at the time, when Eurudagnostus and Oncagnostus (Oncagnostus) went into extinction or were in terminal decline, and the agnostoid genus Trilobagnostus had just appeared (Ergaliev & Ergaliev 2008, Ergaliev et al. 2011, Lazarenko et al. 2008).

Lotagnostus (Lotagnostus) americanus occupied an intermediate position in the evolution of Lotagnostus. Species of Lotagnostus (Eolotagnostus), which differ in having poorly scrobiculate cephalic pleurae (sometimes pygidial pleurae too) and a rounded posterior termination of a relatively short pygidial axis, appeared earlier in the sequence than the first representatives of Lotagnostus (Lotagnostus) and Lotagnostus (Distagnostus). For instance in China Lotagnostus (Eolotagnostus) occurs at the Furrongian Lotagnostus (Eolotagnostus) decorus-Kaolishaniella Biozone and Probilacunaspis nasalis-Beiischenia chuanensis Biozone (Peng 1992), whereas in Kazakhstan (Malyi Karatau) it is documented from the Lotagnostus (Eolotagnostus) scrobicularis-Jegorovaia Biozone (upper Aksayan Regional Stage) (Ergaliev & Ergaliev 2008).

The evolutionary lineage of the genus Lotagnostus terminated with L. hedini, which is the index-species of a biozone designated for the uppermost Furongian in China (West Zhejiang, Peng 1992) and in Kazakhstan (upper part of Batrybaian Regional Stage of Malyi and Bolshoi Karatau ranges) (Ergaliev & Ergaliev 2008). In the Batyrbai section of the Malyi Karatau Range, Kazakhstan, Lotagnostus hedini occurs in the upper part of the Proconodontus notchpeakensis conodont zone (Apollonov & Chugayeva 1983). In the Dadoushen section, Duibian, China, Lotagnostus hedini occurs together with the conodonts Eoconodontus notchpeakensis and Cordyodus proavus.
In the same area, the species *Lotagnostus americanus* (= *L. punctatus*) is common in underlying strata (Lu & Lin 1989). The global correlation of the FAD of *L. americanus* is supported by data on the polymerid trilobites. In Scandinavia, *Lotagnostus americanus* ranges through the *Ctenopyge tumida*, *C. affinis*, *C. bisulcata* and *C. linnarssoni* biozones, which are correlated with the *L. americanus* to lower *Trilobagnostus holmi* agnostoid biozones (Terfelt et al. 2008, 2011). In South China, *L. americanus* is characteristic for the *L. americanus* (= *L. punctatus*) Biozone and *L. americanus* (= *L. punctatus*) – *Hedinaspis regalis* Biozone (Lu & Lin 1989, Peng 1992). The first occurrence of the polymerid trilobites *Ctenopyge* (*Mesoctenopyge*), *Macropyge*, *Peltura* in Scandinavia (Terfelt et al. 2011), *Promegalaspides*, *Skljarella* in Western Yakutia, Russia (Lazarenko et al. 2008), *Saukia*, *Niobella*, *Hedinaspis*, *Skljarella* in Kazakhstan (Ergaliev 1983, Ergaliev & Ergaliev 2008), *Niobella*, *Hedinaspis*, *Skljarella* in China (Peng 1992) was documented close to the FAD of *L. americanus*.

The Cambrian sections of the Tuora-Sis Ridge represent a part of the Siberian platform carbonate cover, formed in the large Yudoma-Olenek Basin. The basin is contured by thick reef deposits in its western and northern margins. Significant depths and uniform sedimentational settings of basin and deep ramp characterized the region in the Middle-terminal Late Cambrian. Selection of a GSSP in the basin of slope deposit from low palaeolatitudes such as the Siberian Platform, is desirable because it allows correlation with strata deposited in both open-shelf and basinal areas of low or high palaeolatitudes. Slope areas are characterized by a combination of shelf-dwelling taxa and basindwelling taxa. A combination of cosmopolitan agnostoids (which have intercontinental correlation utility) shelf-dwelling polymers (which mostly allow for intracontinental correlation) and pan-tropical polymers (which allow for limited intercontinental correlation), constitute a tool box facilitating precise correlation of the base of the *Lotagnostus americanus* Zone between Siberia, South China, Gondwana, Laurentia, Baltica, and the Kazakh terranes.

**Potential stratotype section**

Selection of the the Khos-Nelege section as the potential GSSP for the base of the Cambrian Stage 10 is well supported by the analysis of new and previously accumulated data on the palaeontology and biostratigraphy of the Furongian
deposits across the northeastern Siberian Platform (e.g. Lazarenko 1966, 1973; Lazarenko et al. 2008; Lazarenko & Nikiforov 1972; Lazarenko & Pegel 2001).

The Khos-Nelege section is located in the Lower Lena River basin, at approximately 25 km north-east of the Chekurovka village and at about 60 km south-west of the town Tiksi in north-west Yakutia, Russia (Fig. 3). It can be reached by helicopter from Tiksi in twenty minutes. The Khos-Nelege River is part of the Neleger River system, which is a confluent to the Lena River (Figs 4, 5). The Neleger River dissects the Tuora-Sis Ridge (northeastern part of the Verkhoyansk Ridge) from the east to the west. The section is located on a public land under permanent protection by the government of the Republic of Sakha (Yakutia). This will ensure unrestricted free access to the site for research purposes.

The Ogon’or Formation in the Khos-Nelege section is a thick, mostly monotonous succession of rhythmically alternating limestones, calcareous argillites and fine siliciclastic sediments deposited in a distal slope environment (outer fan to basin transition). The strata strike at about 295–305° and dip at about 55–60°. Soft-sediment deformation, truncation surfaces and slide surfaces are rare throughout the section and absent near the proposed GSSP. The proposed GSSP position for the base of the Cambrian Stage 10 defined by the FAD of *L. americanus* is at 339 m above the base of the Ogon’or Formation (Figs 6, 7). This level is within a continuous succession of foliated silty mudstones with thin lenticular limestone interbeds.

**Figure 3.** Location map of the Siberian Platform showing the position of the Khos-Nelege reference section. 1 – the Siberian Platform boundary; 2 – the boundary between Krasnoyarsk territory and Western Yakutia; 3 – the Khos-Nelege reference section (from Lazarenko et al. 2008); 4 – the airports.

**Figure 4.** Geological map and location of the section proposed as a stratotype for the Nelegerian Stage lower boundary (the Khos-Nelege reference section, Western Yakutia, Russia). 1 – Upper Proterozoic; 2 – upper part of the Cambrian, Ogon’or Formation; 3 – middle and lower part of the Cambrian; 4 – Permian; 5 – Triassic; 6 – Jurassic; 7 – Cretaceous; 8 – sills of basic rocks; 9 – unconformity; 10 – tectonic disturbances; 11 – stratotype section; 12 – the reference section of the Cambrian open basinal deposits along the Khos-Nelege River (from Lazarenko et al. 2008).

**Trilobite biostratigraphy**

Trilobite biostratigraphy of the Ogon’or Formation in the measured section (Figs 6, 8) exhibits a complete, tectonically undisturbed marine succession from the uppermost part of the Drumian Stage (the lowermost 10 m of the Ogon’or Formation below the base of the *Lejopyge laevigata* Biozone) and up to the Cambrian Stage 10 (Nelegerian Stage of Lazarenko et al. 2008) marked by the FAD of *L. americanus*.

Specimens of *L. americanus* were sampled from at least 21 horizons over the interval almost 90 m thick in the Khos-Nelege section (at 339 m, 349 m, 357 m, 362.2 m, 362.6 m, 366.3 m, 368.3 m, 369 m, 370.3 m, 370.7 m, 374.4 m, 375.3 m, 382 m, 382.15 m, 384 m, 393.35 m, 395 m, 391.7 m, 401.7 m, 421.35 m and 421.4 m above the base of the Ogon’or Formation, respectively). At the lowest 10 m of the sampled interval (339 m and 349 m)
*L. americanus* is relatively rare. Numerous disarticulated cephalas and pygida of the species occur at: 357 m, 362.2 m, 370.3 m, 382.15 m, 391.7 m and 421.35 m, respectively. A complete range of *L. americanus* cannot be determined at Khos-Nelege, because the top of the section is cut by the unconformity.

Observed ranges of agnostoids and polymerid trilobites across the stratigraphical interval including the proposed GSSP are summarized in Fig. 8. The new material, obtained from the Ogon’or Formation in the Khos-Nelege section together with a comprehensive revision of previously assembled collections revealed that the specimens
previously identified as *Lotagnostus hedini* (Lazarenko et al. 2008, pl. 21, figs 1, 5; pl. 23, figs 3, 4; Figs 19, 25), should be re-assigned to *Lotagnostus (Eolotagnostus)* and their closest relative is *Lotagnostus (Eolotagnostus) agnostiformis* Apollonov & Chugueva. These specimens are the first representatives of the genus *Lotagnostus* in the Ogon‘or Formation and they occur at 18 m below the FAD of *L. americanus*. In Kazakhstan, *Lotagnostus (E.) agnostiformis* occurs in the *Lotagnostus (Eolotagnostus) scrobicularis-Jegorovia* Biozone (Ergaliev & Ergaliev 2008). This biozone is of similar age to the *Lotagnostus (Eolotagnostus) decorus-Kaolishania* Biozone of South China, which is stratigraphically below the *Lotagnostus (Lotagnostus) punctatus-Hedinspis regalis* Zone (Peng 1992).

In addition to *L. americanus*, a number of other biostratigraphically informative trilobite taxa, which are useful for intercontinental correlations, are present near the proposed stage boundary in the Khos-Nelege section (Figs 9, 10). For instance, *Trilobagnostus rudis* (Salter) occurs at 40 m above the FAD of *Lotagnostus americanus*. In Scandinavia, the FAD of this species is documented at the base of the *Lotagnostus americanus* Biozone (Terfelt et al. 2011). *Skljarella cf. marinae* Petrunina occurs in the lower half of the *Lotagnostus americanus* Biozone above the first occurrence of *Lotagnostus (E.) agnostiformis*. *Skljarella marinae* Petrunina, first described from the Dobrinskii Regional Stage of the Altai-Sayan Region. It can be correlated to the lower part of the Batyrbai Regional Stage (uppermost Furongian) of Malyi Karatau in Kazakhstan (*Trisulcagnostus trisulcus-Saukilla and Lotagnostus (Eolotagnostus) scrobicularis-Jegorovia biozones*). The genus *Eurycarina* Ivshin in *Petrunina* is common in the Zoologikiatskii Regional Stage and sporadically occurs in the Dobrinskii Regional Stage in the Altai-Sayan Region (*Petrunina & Gabova 2008*), which is equivalent to the upper part of Aksayan and the lower part of Batyrbai regional stages in Kazakhstan. In the Ogon‘or Formation section, different species of this genus occur below the *Lotagnostus americanus* Zone. *Promegalaspides pelturnae* and *P. kinnekullensis* occur at the FAD of *Lotagnostus americanus* in the Ogon‘or Formation, and in Scandinavia they are found within the lower *Tri lobagnostus holmi* Biozone (Terfelt et al. 2011). In the Khos-Nelege section, *Macropyge (Aksapyge) transita* occurs at 55 m above the base of the *Lotagnostus americanus* Biozone. In Kazakhstan, it is widespread in the upper part of the *Hedinspis sulcata* Biozone (the upper part of the Aksayan) (Apollonov et al. 1984).

The trilobite assemblage of *L. americanus* Biozone in Khos-Nelege suggests a close palaeobiogeographic link with Baltica. Taxa in common include *Lotagnostus americanus, Trilobagnostus rudis, Promegalaspides kinnekullensis, P. pelturnae*, and representatives of the genera *Parabolinites, Parabolinella, Macropyge*, and *Niobella*. Moreover, the presence of *Neoagnostus, Ketyna (= Kujandaspis)*, and *Skljarella* in this zone indicate clear links with other parts of Siberia, as well as with South Kazakhstan and China.

In the Khos-Nelege section the FAD of *L. americanus* occurs in an interval marked by a distinct change in taxonomic composition of polymerid trilobite fauna (see Fig. 8). At approximately 10 m below the FAD of *L. americanus*, the species ranging upwards from the *Plicatolina perlata* Biozone disappear and the first representatives of the genera *Skljarella, Westonaspis* and *Promegalaspides*, which is particularly common in the *L. americanus* Biozone, appear. A similar change has been documented at the base of the *Lotagnostus americanus* Biozone in Scandinavia. In underlying the *Cienopyge spectabilis* Biozone the first representatives of *Peltura, Macropyge* appear, whereas at the base of *L. americanus* Biozone the first occurrence of *Sphaerophthalmus* and *Parabolinites* was reported (Terfelt et al. 2011). In South China *Charchaqia, Hedinspis, Macropyge* and *Niobella* first appear at about the same level (Peng 1992).

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**Figure 7.** The FAD of *Lotagnostus americanus* (marked by the red line) at 339 m above the base of Ogon’or Formation in the Khos-Nelege reference section (from Lazarenko et al. 2008).
Figure 8. Stratigraphical distribution of agnostoids and polymerid trilobites in the upper part of the Furongian Series in the Ogon’or Formation, Khos-Nelege reference section: 1 – dark-gray wavy limy flagstone (mud-wackestone) with greenish siltstone and black argillaceous laminae; 2 – gray-greenish argillaceous-dolomitic wackestone with gray silty lens-nodular limestone; 3 – alternation of marl, argillite and lens-nodular wackestone; 4 – carbonate breccia.
Application of conodonts for the Cambrian biostratigraphy is relatively limited and increased only for the upper Furronian, when euconodonts appeared and diversified. In the Khos-Nelege section the upper part of the Cambrian Stage 9 and the lower part of the Cambrian Stage 10 are characterized by conodont assemblages referred to the *Westergaardodina amplicava* Biozone (Fig. 11). Most of the conodont taxa first documented from the Cambrian Stage 9, including *Westergaardodina bohlini*, *W. amplicava*, *W. tricuspidata*, *C. bicostatus*, *Prooneotodus rotundatus*, *Prosagittodontus dunderbergiae*, *P. minutus*, *Problematoconites perforatus*, *Prooneotodus gallatini*, *Laiwugnathus laiwuensis expanses*, are transitional into the Cambrian Stage 10. Conodont assemblage of the Cambrian Stage 10 includes also *Westergaardodina cf. procer*a, *W. cf. wimani*, *Viroidaspis*, *Muellerodus* sp., *Furnishina ovata*, *F. bicornata*, *F. cf. alata*, *Bengtsonella triangularis*, *Proacontiodus multicoostatus*, *Phakelodus tenuis*. This conodont assemblage shows distinct similarity to the assemblage characteristic of the *Westergaardodina amplicava* Biozone (the upper part of the Ak-sai Regional Stage, the *Hedinaspis sulcata* Trilobite Biozone) in the Batyrbai section of Malyi Karatau (Dubinina 2000). In Malyi Karatau, Kazakhstan, the first occurrence of euconodont is documented only from the base of overlying Batyrbai Regional Stage (Dubinina 2000), whereas they are not yet found in the Khos-Nelege section.

**Brachiopod biostratigraphy**

Brachiopods are present in the Khos-River section but they are rare, have long stratigraphic ranges and are known only from preliminary identifications. Only *Quadridonia minor* and *Quadridonia* sp. yet documented from the Ogon’or Formation, but they have long stratigraphical ranges and are considered here as biostratigraphically uninformative.
The FAD of *Lotagnostus americanus* is not marked by a distinctive shift in carbon isotope values, although its position can be broadly recognized within a longer sequence of $\delta^{13}C$ values (Fig. 12). The FAD of *L. americanus* and the base of the proposed Nelegerian Stage is placed in a field of positive $\delta^{13}C$ values, which shows a gradual increase from +0.25‰ to +1.25‰. Strata in the upper part of the underlying Cambrian Stage 9 reach a minimum value of –0.25‰. A small positive shift, which peaks at about +0.5‰, is near the base of the Cambrian Stage 10. This is followed by small oscillations in the $\delta^{13}C$ curve through the overlying Cambrian Stage 10 with values ranging between +0.25‰ and +1.25‰. The most distinct position in the Furongian $\delta^{13}C$ curve is the onset of the SPICE excursion, one of the
largest positive δ¹³C excursions known from the Lower Paleozoic. In the proposed section of the Khos-Nelege it reaches peak values of about +4.5‰ and is located within the upper third of the Paibian Stage (about the middle of the Eugonocare (Pseudeugonocare) borealis Biozone) below the FAD of trilobites Irvingella and Agnostotes orientalis.

Sequence stratigraphy

Cambrian strata exposed along the Khos-Nelege section were mainly deposited in a deep-water, middle to distal slope environment setting stable for a substantial amount of time (see Fig. 12). Therefore, developmental phases of the sedimentary basin are not easily distinguishable in comparison with relatively shallow-water shelf successions. Deposition of the Ogon’or Formation took place well below storm wave base and there were no any significant change of lithofacies, submarine erosion or non-deposition caused by sea level fluctuations of eustatic or tectonic nature. The lower part of the Ogon’or Formation displays lithofacies transitional from an outer-fan fringe to outer-fan lobe, which was followed by gradual progradation of the slope during the rest of the late Cambrian.

Other regional sections and reasons for rejection

Lotagnostus americanus has been documented from a number of section in various parts of Siberia. Some of them are potentially useful for definition of the FAD of Lotagnostus americanus. In particular these include (1) the section of the Stepanovo Formation in the Trautfetter River basin, the south-western Taïmyr Peninsula (Sobolevskaya et al. 1995), and (2) the section of the Dzhunyukan and Billyakh formations exposed along the Dzhunyukan River in Southern Verkhoyanie (Gogin 2009). However, these
sections are stratigraphically less complete and existing data on palaeontology and stratigraphy need to be upgraded to make them competitive candidates for the Cambrian Stage 10 GSSP definition.

### Other extraregional sections

There are several Cambrian (Furongian) sections in Sweden and in South China, which can be considered as potential candidates for Cambrian Stage 10 GSSP defined by the FAD of *L. americanus* (Terfelt et al. 2008, Lu & Lin 1989, Peng 1992). However the upper Furongian sequence in Sweden (Scania) is poor in agnostoids whereas accompanying complexes of polymerid trilobites are largely endemic, or have limited geographical distribution.

The Duibian B section in a vicinity if the Duibian village, Jiangshan County, Zhejiang Province, China (Peng et al. 2009) has been voted by the ISCS as the GSSP for the Cambrian Stage 9. The adjacent profile, called the Duibian A section, exhibits one of the most complete Cambrian sequences in western Zhejiang, comprising strata, which extend from the Ediacaran to the Ordovician. It is located approximately 9 km north-east of the city of Jiangshan and was one of the candidate stratotype sections proposed for the base of the Ordovician (Peng et al. 2009). The Siyanshan Formation at the top of the Duibian A section is a highly fossiliferous unit rich in polymerids and
agnostoids. *Lotagnostus americanus* appears at the base of the Formation and in the upper 3 m contain *Lotagnostus hedinii* in abundance, where it occurs together with the conodont *Cordylodus proavus* (Lu & Lin 1989). This section is inferior to the Khos-Nelege section as the Cambrian Stage 10 GSSP candidate, because the rocks underlying the FAD of *L. americanus* are poorly fossiliferous (only two horizons with *Macropyge longa* and *Pseudagnostus josepha*, respectively are indicated). Furthermore, the appearance of *L. americanus* coincides with a sedimentary change, suggesting an environmental change and possible biofacies shift (Peng et al. 2005, 2009).

The alternative proposals for global correlation levels defining the base of the upper stage of the Cambrian

Besides trilobites, several conodont levels have been suggested as possible markers to define the base of the Cambrian Stage 10. In particular, Miller et al. (2005) suggested the Lawson Cove section (Utah, USA) as the terminal Cambrian Stage GSSP candidate. The proposed horizon coincides with the FAD of *Cordylodus andresi* Viira and Sergeeva at the base of the *Cordylodus proavus* Biozone. Recently, Landing et al. (2010) proposed the level of the FAD of *Eoconodontus notchpeakensis* as the primary correlation point for the base of the Cambrian Stage 10 and suggested the Lawson Cove section as a potential stratotype.

*Eoconodontus notchpeakensis* occurs in the Dobry Regional Stage of the Altai-Sayan Region and its FAD is recorded in the Loparion Regional Stage of the Kulumbe River (Siberian Platform) reference section, which exposes a typical inner-shelf sequence. Endemic species of trilobites *Dolgeu- loma* and *Saukiella* are also present in these deposits. Reviews by Abaimova and Tolmacheva (Abaimova et al. 2008, Tolmacheva & Abaimova 2009) suggest that a part of the Mansian Regional Stage, the Loparion and the lower part of the Nyaian Regional Stages of the Siberian Platform can be correlated with the *E. notchpeakensis* Biozone. *E. notchpeakensis* is still unknown in the basinal settings around Siberia.

Dubinina (2009) suggested the Batyrbai section in Malyi Karatau (South Kazakhstan) as a potential GSSP of the Cambrian Stage 10 defined by the FAD of the conodont *Cordylodus proavus*. This species is geographically widespread and is found in all major Cambrian continents. On the Siberian Platform it is recorded only in inner-shelf sequences of the upper part of the Lopian Regional Stage close to the base of the Nyaian Regional Stage. *Cordylodus proavus* is accompanied here by the polymerids *Plethopeltides magnus*, *Nyaya nyanensis*, and *Eoapatokephalus nyicaus*. A precise trilobite based correlation with basinal sequences across Siberia within this interval proved difficult.

Conclusions

The Khos-Nelege section of the Ogon’or Formation at the Kharaulakh Mountains, Western Yakutia, Russia, is proposed as a candidate stratotype for the GSSP of Cambrian Stage 10, which is defined by the FAD of the agnostoid *Lo- tagnostus americanus*. The proposed name of the stage is Nelegerian after the Neleger River.

The proposed GSSP is at 339 m above the base of the Ogon’or Formation in the Khos-Nelege section. It fulfills all biostratigraphical, chemostratigraphical, paleogeographic, facies-relationship, and sequence stratigraphy requirements for the GSSP (Remane et al. 1996).

Nelegerian Stage is here proposed to be the uppermost of the three stages (Stage 10) of the Furongian Series of the Cambrian System.

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