

**RUSSIAN NATIONAL COMMITTEE FOR IGCP**  
**ANNUAL REPORT ON IGCP ACTIVITIES FOR 2015**

This report informs on the Russia's activities on the IGCP projects in 2015.

Chairman: Prof. Mikhail A. Fedonkin

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The current Committee's membership comprises twenty four members including the following Bureau members:

Mikhail A. Fedonkin (Chairman, Geological Institute, GIN RAS); Igor D. Ryabchikov (Vice Chairman, Institute of Geology of Ore Deposits, Petrography, Mineralogy and Geochemistry, IGEM RAS); Oleg A. Bogatkov (Institute of Geology of Ore Deposits, Petrography, Mineralogy and Geochemistry, IGEM RAS); Eric M. Galimov (Vernadsky Institute of Geochemistry and Analytical Chemistry , GEOKHI RAS ); Alexander O. Gliko (Institute of Physics of the Earth, RAS); Yury G. Leonov (Geological Institute, GIN RAS).

**Projects with Russian co-leaders:**

**Project 587 Entity, Facies and Time – the Ediacaran (Vendian) Puzzle (2010-2014, OET in 2015)**, Leaders: Mikhail Fedonkin (Russia), Patricia Vickers-Rich (Australia), Jim Gehling (Australia), Guy Narbonne (Canada)

**Project 592 Continental construction in Central Asia (2012-2015)**, Leaders: Inna Safonova (Russia), Reimar Seltmann (UK), Min Sun (China)

**Project 596 Climate Change and Biodiversity Patterns in the Mid-Paleozoic (2011-2015)**. Leaders: Peter Konigshof (Germany), Thomas G. Suttner (Austria), Iliana A. Boncheva (Bulgaria), Nadezhda G. Izokh (Russia), Phuong Ta Hoa (Vietnam), Thasinee Charoentitirat (Thailand), Johny A. Waters (USA), Wolfgang Kiessling (Germany).

**Project 609 Cretaceous Sea-Level Changes (2013-2017)**. Leaders: M. Wagreich (Austria), X.Hu (China), S.Voigt (Germany, J.J. Rahman (Bangladesh), I.O.Yilmaz (Turkey), S. Zorina (Russia).

**Project 610 From the Caspian to Mediterranean: Environmental Change and Human Response during the Quaternary (2013-2017).** Leaders: V. Yanko-Hombach (Ukraine), N.Panin (Romania), M.C. Özdoğan (Turkey), O Smyntyna (Ukraine), T.Yanina (Russia)

**Project 630 Permian-Triassic Climatic and Environmental Extremes and Biotic Response (2014-2018).** Leaders: Zhong-Qiang Chen (China), Thomas J.Algeo (USA), Margaret L. Fraiser (USA), Steve Kershaw (UK), Jinnan Tong (China), Sylvie Crasquin (France), Michael J. Benton (UK), Guang R. Shi (Australia), Charles Henderson (Canada), Arne Winguth (USA), Paul B. Wignall (UK), Kunio Kaiho (Japan), Ghulam Bhat (India), Yuri D. Zakharov (Russia)

Russian geoscientists are members of 14 IGCP projects, including 3 started in 2015: Nos.: 587, 589, 591, 592, 596, 608, 609, 610, 628, 630, 632, **637, 640, and 648**

This report has been prepared on the basis of the information submitted by Russian members IGCP projects in response to the Committee's request for information on 'significant' developments in 2015.

Reports were not received from IGCP Project 637, 640, and 648, as they started in 2015 and so far there have not been any significant achievements on them.

**Project 587 Entity, Facies and Time the Ediacaran (Vendian) Puzzle (2010-2014 OET in 2015).**

The report was presented by acad. M.A.Fedonkin, co-leader of the project (Geological Institute RAS, Moscow)

Main results of the research activities in 2015:

- Planned examination and geological description of locations of late Vendian organisms residues were carried out in the Zimnegorst and Solzin deposits at the Zimniy (Winter) coast of the White Sea and at the Onega peninsula (Arkhangel'sk district). Considerable collection of overprints was obtained in the Verkhoyansk, Zimnegorsk, and Erginsk formations (about 150 samples);
- Late Vendian organisms were studied and described in late Vendian deposits of the Ust'-Yudoma formation;
- the Groot-Kleeberg (eastern part of Namibia) range was investigated; widespread biogenic species and sedimentological biota-controlled structures were studied.

**Publications**

1. Ivantsov A.Yu., Fedonkin M.A., Zakrevskaya et al., Upper Vendian macrofossils in Eastern Europe. Middle Dnestr area and Volyn. M.: PIN RAS, 2015.143 p.

2. Razumovskii A.A., Ivantsov A.Yu. et al. *Kuckaraukia multituberculata*: new Vendian species from the Basinskaya formation of the ashin sequence in south Urals // *Paleontological Journal*. 2015, 5, pp. 3-9.
3. Razumovskiy A.A., Ivantsov A.Yu. et al., *Kuckaraukia multituberculata*: new Vendian species in the late Vendian in Southern Urals// *Prehistoric Paleontological heritage: studying and conservation*. M.: Mediagrand. 2015.
4. Chumakov N.M., Ivantsov A.Yu. Reworked Neoproterozoic glacial rocks in the beach of the Winter Mountains, White Sea // *Stratigr, Geol. Corr.*, V. 23, part 5, 2015.

### **Participation in conferences**

#### **Paleostrat-2015: Annual Assembly of the Paleontological Section of the Moscow Society of Nature Explorers (Moscow, January 26-28, 2015 )**

The following report was presented:

1. Ivantsov A.Yu. et al. “New sedimentological and paleontological data on the lower part of the upper Vendian in Southeast Belomorian region”.

#### **The LXI session of the Paleontological Society. Modern problems of paleontology (St.Petersburg, April 13-17, 2015).**

The following reports were presented:

1. Ivantsov A.Yu. and Zakrevskaya M.A. “The evolution of views on nature *Dickinsonia costata* (multicellular Vendian animal)”
2. Ivantsov A.Yu.” Characteristics of *Margarituflabellum anatolii* ( late Vendian macrofossils)”
3. Ivantsov A.Yu., Serezhnikova E.A. “Charniodiscus is lower Metazoa in Late Precambrian”.

#### **The XII All-Russia scientific school of young scientists-paleontologists “Recent paleontology: classic and modern methods” (Moscow, October 5-7, 2015)**

The following report was presented:

1. Zakrevskaya M. A. “Comparative characteristics of paleoecological parameters of some late Vendian fossil communities”.

#### **The XVI All-Russia micropaleontological conference “Recent micropaleontology” (Kaliningrad, August 24-27, 2015).**

The following report was presented:

1. Serezhnikova E.A., Ivantsov A.Yu. “*Beltanelliformis brunsae* Menner, 1974, *Chuaria circularis* Walcott, 1899; Precambrian macro- and microfossils with “intersecting” features”.

**Field activities:**

Field work was carried out in Russia in the territory of the park “Lesnye stolby” (Forest pillars) (SAHA Republic), at the Winter coast of the White Sea and on the Onega Peninsula (Arkhangelsk district), as well as in Namibia –Groot Kleeberg Range.

**Project 589 Development of the Asian-Tethyan Realm (2012-2016)**

The report was presented by Pospelov I.I. (Geological Institute RAS, Moscow)

The main results of the research activities in 2015

- In 2015 the Explanatory Note to the Tectonic Map (monograph “Tectonics of Northern-Central-Eastern Asia”) was published. This Explanatory Note reflects the new data on tectonics and geology (stratigraphy, magmatism, tectonic evolution) of the Asian Tethyan Domain and includes the chapter on the tectonics of the Pamirs, as the central part of the Tethyan Domain between the Tibet and the Middle East part of the Alpine-Himalayan belt.

**Participation in conferences:**

**The 12<sup>th</sup> Symposium on Mesozoic Terrestrial Ecosystems (China, Shenyang, August 16-20, 2015)**

The following report was presented:

1. Pospelov I.I. et al. “New tectonic map of Northern-Central-Eastern Asia: position and evolution of Mesozoic sedimentary basins”.

**The XIII International Conference on the project “3D geological structures and metallogenesis of the Northern-Central-Eastern Asia” Stage 3: Deep processes and metallogenesis. (Kazakhstan, Chimkent, October 12-16, 2015).**

The following report was presented:

1. Pospelov et al. “Tectonic map and explanatory notes to the Tectonic and geological maps of Northern-Central-Eastern Asia”

**Project 591 Early to Middle Paleozoic Revolution (2011-2015)**

The report was submitted by A.V. Dronov (Geological Institute RAS, Moscow).

Main results of the project activities in 2015:

- first cryptospores were found out in the Upper Ordovician deposits of the Tungus basin. It is the first evidence of early land plants on the Siberian palaeocontinent.

**Participation in conferences:**

**The XII International Symposium on the Ordovician System (USA, Harrisonburg, June 3-17, 2015)**

The following reports were presented:

1. Dronov, A.V., Munnecke, A. & Kushlina, V.B. " A new-type of cool-water carbonate buildups: Middle Ordovician *Moyeronia-Angarella* "reefs" of the Siberian Platform."
2. Dronov, A.V., Kanygin, A.V., Timokhin, A.V, Gonta, T.V. " Ordovician sequence stratigraphy of the Siberian Platform revised"
3. Huff, W.D., Dronov, A.V., Sell, B., Kanygin, A.V., Gonta, T.V. " Traces of explosive volcanic eruptions in the Upper Ordovician of the Siberian Platform."
4. Kushlina, V.B., Dronov, A.V., Harper, D.A.T. " A new tube-like enigmatic animal and its burrows from the Upper Ordovician of the Siberian Platform"
5. Raevskaya, E.G., Dronov, A.V. " New data on the Late Ordovician acritarchs and cryptospores from the Moyero and Moyerokan River sections, northeast of the Siberian Platform"
6. Zaitsev, A., Ziyatdinova, I., Kozhevnikova, E., Dronov, A. " Carbonate microfacies analysis of the Middle-Upper Ordovician succession of the Moyero River section, northeast of the Siberian Platform"

**Fieldwork activities**

In July and August 2015 within a framework of the project, a fieldwork on the Ordovician of Leningrad region and Siberia was carried out.

**Project 592 Continental construction in Central Asia (2012-2015),**

The report was submitted by I.Yu. Safonova (Institute of Geology and Mineralogy SB RAS, Novosibirsk);

Main results of research activities in 2015:

- Identification of major epochs of juvenile mafic and granitoid magmatism and evaluation of juvenile and recycled crust segments in the western CAOB (Central Asian Orogenic Belt)(Russian-Kazakh-Chinese Altai and Junggar and Kyrgyz-Chinese Tienshan), southern CAOB (Beishan orogen, Dunhuang block) and eastern CAOB (Inner Mongolia, NE China);

- late Permian closure of the Paleo-Asian Ocean (PAO) was questioned in some regions of the CAOB. Our results suggest that it could be closed much later in the southern CAOB. However, several smaller PAO branches, i.e. between the North and South Orogens of Inner Mongolia, could have closed earlier, in Devonian time;

- we applied a new approach for recognizing the origin of accreted mafic volcanic and subvolcanic rocks from accretionary complexes of P-type orogenic belts based on geological, petrologic and geochemical data;

- three peaks of post-Permian deformations in the southern CAOB were induced by the Eurasia/Qiangtang (late Triassic-early Jurassic), Eurasia/Lhasa (early Cretaceous) and Eurasia/Karakorum (late Cretaceous-early Palaeogene) collisions.

### Publications

1. Chen M., Sun M., Buslov M., Cai K., Zhao G., Zheng J., Rubanova E.S., Voytishchik E.E. Neoproterozoic–middle Paleozoic tectono-magmatic evolution of the Gorny Altai terrane, northwest of the Central Asian Orogenic Belt: Constraints from detrital zircon U–Pb and Hf-isotope studies. *Lithos* 233 (2015) 223–236.
2. Chen M., Sun M., Cai K., Buslov M., Zhao G., Rubanova E.S., 2014. Geochemical study of the Cambrian–Ordovician meta-sedimentary rocks from the northern Altai-Mongolian terrane, northwestern Central Asian Orogenic Belt: Implications on the provenance and tectonic setting. *Journal of Asian Earth Sciences* 96, 69–83. (not included in the 2014 report)
3. Ershova V.B., Prokopyev A.V., Khudoley A.K., 2015. Integrated provenance analysis of Carboniferous deposits from Northeastern Siberia: Implication for the late Paleozoic history of the Arctic. *Journal of Asian Earth Sciences* 109, 38–49.
4. Ge, S., Zhai, M., Safonova, I., et al., 2015. Whole-rock geochemistry and Sr–Nd–Pb isotope systematics of the Late Carboniferous volcanic rocks of the Awulale metallogenic belt in the western Tianshan Mountains (NW China): Petrogenesis and geodynamical implications. *Lithos* 228-229, 62-77.
5. Khanchuk A.I., Kemkin, I.V., Kruk N.N., in press. The Sikhote–Alin orogenic belt, Russian South East: terranes and the formation of continental lithosphere based on geological and isotopic data. *Journal of Asian Earth Sciences*; <http://dx.doi.org/10.1016/j.jseaes.2015.10.023>
6. Kuibida M.L., Safonova I.Yu., Yermolov P.V., Vladimirov A.G., Kruk N.N., Yamamoto S. Early Carboniferous tonalites and plagiogranites of the Char suture-shear zone in East Kazakhstan: implications for the Kazakhstan-Siberia collision. *Geoscience Frontiers*, <http://dx.doi.org/10.1016/j.gsf.2015.09.002> .
7. Popov, N.V., Safonova I.Yu., Postnikov A.A., Terleev, A.A., Komiya, T., Tokarev, D.A., 2015. Paleoproterozoic Granitoids from the Basement of the central Siberian Platform (Borehole Mogdinskaya-6): U–Pb Age and Composition. *Doklady Earth Sciences* 461, 34-38.
8. Safonova I., Maruyama, S., Kojima S., Komiya T., Krivonogov S., Koshida K. (in press, A). Recognizing OIB and MORB in accretionary complexes: a new approach based on ocean plate stratigraphy, petrology, and geochemistry. *Gondwana Research* (2015), <http://dx.doi.org/10.1016/j.gr.2015.06.013>.
9. Safonova, I., Biske, G., Romer, R.L., Seltmann, R., Simonov, V., Maruyama, S. (in press, B). Middle Paleozoic mafic magmatism and ocean plate stratigraphy of the South Tianshan, Kyrgyzstan. *Gondwana Research* (2015), <http://dx.doi.org/10.1016/j.gr.2015.03.006>.
10. Safonova, I., Seltmann, R., Sun, M., Xiao, W., Dong Y., Eyuboglu Y., Pushkarev E., Kruk N. (in press, C) Juvenile crust, mantle magmatism and metallogeny of the Central Asian Orogenic Belt. *Episodes* (accepted).

11. Xiao W., T. Kusky, I. Safonova, R. Seltnann and M. Sun. Tectonics of the Central Asian Orogenic Belt and its Pacific Analogues, p. 1-6.
12. Likhanov I. I., V. V. Reverdatto, P. S. Kozlov, V. V. Khiller and V. P. SUKHORUKOV. P–T–t constraints on polymetamorphic complexes of the Yenisey Ridge, East Siberia: Implications for Neoproterozoic paleocontinental reconstructions 391
13. Safonova I. Yu., S. Kojima, S. Nakae, R. L. Romer, R. Seltnann, H. Sano, and T. Onoue, 2015. Oceanic island basalts in accretionary complexes of SW Japan: Tectonic and petrogenetic implications 508 (was reported in 2014)
14. Kozlovsky A. M., V. V. Yarmolyuk, E. B. Salnikova A, A. Travin, A. B. Kotov, J. V. Plotkina, E. A. Kudryashova , and V. M. Savatenkov. Late Paleozoic anorogenic magmatism of the Gobi Altai (SW Mongolia): Tectonic position, geochronology and correlation with igneous activity of the Central Asian Orogenic Belt, p. 524-539.
15. E. De Pelsmaeker, S. Glorie, M.M. Buslov, F.I. Zhimulev, M. Poujol, V.V. Korobkin, F. Vanhaecke, E.V. Vetrov and J. De Grave. Late-Paleozoic emplacement and Meso-Cenozoic reactivation of the southern Kazakhstan granitoid basement, p. 416.
16. I. Safonova, S. Maruyama and K. Litasov. Generation of hydrous-carbonated plumes in the mantle transition zone linked to tectonic erosion and subduction, p. 454.

### **Participation in conferences:**

In 2015, IGCP#592 participated in organization of **6 scientific meetings**, including Russia, (Sankt-Petersburg, June 2-5; Kazan, August 11- 15.2015), China (Beijing, September 23-28; Wuhan, October 16-18, 2015); and Japan (Nagoya, July 26-August 8, Tsukuba, October 21-23, 2015); there were totally 204 participants from 40 countries.

### **Field work activities**

IGCP#592 participants joined several **field work** missions in China, Japan, Kazakhstan, Kyrgyzstan, Mongolia, Russia, Tajikistan, and Uzbekistan, totally about 170 participants.

Field training courses, schools, and lectures for **young scientists** have been organized in Japan, China, Kazakhstan, Russia and Turkey. Over 350 young scientists participated in them.

### **Project 596 Climate Change and Biodiversity Patterns in the Mid-Paleozoic (2011-2015).**

The report was submitted by Dr. Izokh N.G., project co-leader (Institute of Petroleum Geology and Geophysics, Siberian Branch RAS, Novosibirsk)

The main results of the research activities in 2015:

- Isotope–geochemical studies of the Upper Devonian in the Rudny Altai were conducted. Whole-rock carbon isotope analyses of the studied section represented by carbonate forereef facies reveal a negative excursion at the base of *punctata* Zone;

- microfossils analysis of limestones samples from the Shipunovo marble quarry (Novosibirsk region, south of West Siberia) revealed middle Frasnian (Upper Devonian) *hassi* Zone conodont association including *Ancyrodella nodosa* Ulrich et Bassler, *Icriodus symmetricus* Branson et Mehl, *Belodella resima* (Philip) and *Palmatolepis hassi* Muller et Muller;

- Early Carboniferous conodonts *Lochriea commutata* (Branson et Mehl) and new species of genus *Gnathodus* were identified from the limestones of stratotype section of the Belovo Formation, Gorlovo Basin (Novosibirsk region). New data substantially change the age estimation for the upper beds of the Belovo Formation. It was revealed that Belovo Formation limestones of the Gorlovka Basin yielded Early Carboniferous conodonts *Lochriea commutata* (Branson et Mehl) and a new species of genus *Gnathodus*.

### **Publications**

1. Izokh O.P., Izokh, N.G, Saraev S.V., Dokukina G.A. C isotopic variations in the lower–middle Frasnian (lower Upper Devonian) of the Rudny Altai // Geol. Mag. 2015. – V. 152. – N 3. – P. 565-571.

2. Izokh, N.G, Yazikov, A.Y. New data on the age of limestones from the Shipunovo marble quarry (vicinity of Iskitim town, Novosibirsk region) // Interekspo Geo-Siberia-2015

3. Izokh, N.G, Yazikov, A.Y. The first findings of the Early Carboniferous conodonts in Gorlovo Basin (Novosibirsk region) // Interekspo Geo-Siberia-2015: XI International conference “Subsurface management. Mining new trends and techniques for prospecting, exploration and exploitation of mineral resources. Geoecology” (Novosibirsk, April 13-25, 2015). – Novosibirsk: SGGGA, 2014. – Vol. 1.P.59-62.

### **Participation in conferences**

#### **The II International Congress on Stratigraphy, STRATI 2015, (Austria, Graz, July 19-23, 2015)**

The following report was presented:

1. Izokh O.P., Izokh, N.G., Yazikov, A.Y. “Carbon isotope correlation markers of the Lower Devonian Emsian Stage in Zeravshan-Hissar Mountainous Region (Uzbekistan) and Salair (southern West Siberia, Russia)” - poster presentation

#### **Joint meeting of the IGCP 596 and the Subcommittee on Devonian Stratigraphy (Belgium, Brussels, September 20-22, 2015)**

The following report was presented:



1. Kurilenko A.V. & Minina O.R. “The correlation of Devonian deposits of Eastern and Western Transbaikal (Eastern Russia)” - poster presentation

### **Project 608 Asia-Pacific Cretaceous Ecosystems (2013-2017)**

The report was presented by Kirillova G.L and Shurygin B.N. (Institute of Tectonics and Geophysics DVO RAS)

Main results of research activities in 2015:

- Regional and global geological records influence on the evolution of the Cretaceous ecosystems in Asia and Western Pacific was studied;
- comparative analysis was performed among the Mesozoic sedimentary basins in the Far Eastern petroleum province;
- lithochemical classification of the Jurassic-Lower Cretaceous sedimentary rocks is proposed for the Bureya sedimentary basin, Far East of Russia;
  - first evidence of coexisting Boreal and Tethyan /Pacific Berriasian fauna was discovered Tetori Basin (Japan);
  - the Upper Cretaceous magnetobiostratigraphic section at the Bakchar iron ore deposit (southeastern West Siberia) was compiled as a result of detailed integrated paleomagnetic and palynological studies. The large stratigraphical hiatus is identified at Cretaceous- Palaeogene boundary strata in this region.

### **Publications**

1. Kirillova G.L., Krapiventseva V.V., Gresov A.T. Cretaceous evolution of the Jiamusi-Bureya fragment of the continental margin, as exemplified by the Bureya and Hegang Basins // *Tikhookeanskaya Geologiya*. 2015. V. 34, N 2. P. 18-31
2. Kirillova G.L. The Cretaceous in the Earth's history // *Tikhookeanskaya Geologiya*. 2015. V. 34, N 1. P. 109-112
3. Merkulova T.V., Mishin L.F. Oxidation-reduction processes in the Mesozoic-Cenozoic volcano-plutonic systems and their role in the formation of regional gravitation and magnetic anomalies of the Far East // *Tikhookeanskaya Geologiya*. 2015. V. 34, N 6. P. 109-112
4. Sano S., Iba Y., Isaji S., Asai H., Dzyuba O.S. Preliminary report of earliest Cretaceous belemnites from Japan and their paleobiogeographic significance // *J. Geol. Soc. Japan*. 2015. Vol. 121. No. 2. P. 71-79.
5. Gnibidenko Z.N., Lebedeva N.K., Levicheva A.V. Magnetostratigraphy of the Campanian–Maastrichtian Bakchar Basin (southeastern West Siberia)// *Russian Geology and Geophysics*. 2015. V56. P. 1652-1661.
6. Marinov V.A., Zlobina O.N., Igol'nikov A.E., Mogucheva N.K., Urman O.S. The biostratigraphy and sedimentary environments of the Lower Cretaceous section, Malaya Kheta structural-facies region, West Siberia // *Russian Geology and Geophysics*. 2015. V56. P. 1451-1460.

7. Shurygin B.N., Dzyuba O.S. The Jurassic/Cretaceous boundary in northern Siberia and Boreal–Tethyan correlation of the boundary beds // Russian Geology and Geophysics. 2015. V56. P. 652–662.

### **Participation in conferences**

**The XLVII Tectonic meeting “Tectonics and geodynamics of the continental and ocean lithosphere: general and regional aspects” (Moscow, February 3-7, 2015)**

The following report was presented:

1. Kirillova G.L. “Mesozoic-Cenozoic pull-apart systems on the East Asian continental margin and related sedimentary basin”.

**“XII Symposium on Mesozoic Terrestrial Ecosystems” (MTE-12) (China, Shenyang, August 16-20, 2015)**

The following reports were presented:

1. Kirillova G.L.” Cretaceous ecosystems of Priamurye and their response to paleoenvironmental changes in Asia and West Pacific”.

2. Lebedeva N.K. “Middle-Late palynofloras of West Siberia: biodiversity, geographical differentiation, evolution stage”.

3. Shurygin B.N., Dzyuba O.S. “The lowermost Cretaceous of Western Siberia: Bio-, lithostratigraphy, and palaeoenvironmental analysis”.

### **Project 609 Cretaceous Sea-Level Changes (2013-2017).**

The report was submitted by S.O Zorina (Research Institute of Geology and Industrial Minerals, Kazan) and Yu.D.Zakharov (Far East Geological Institute, DVO RAS, Vladivostok)

Main results of research activities in 2015:

- The undertaken studies have shown that the depositional environments in the Russian Platform in the Late Cretaceous were influenced by volcanic activity of different intensity;

- on the basis of high-resolution chronostratigraphic background of the Eastern Russian Platform a comparison between Late Barremian - Aptian global and regional sea-level trends was performed;

- new isotope data, important for reconstructing the mode of life of the main ammonoid groups, have been obtained.

### **Publications**

1 Zorina, S.O., Afanas'eva, N.I. "Camouflaged" pyroclastic material in the Upper Cretaceous-Miocene deposits of the southeastern East European Craton. *Doklady Earth Sciences*. 2015. Vol. 463. P. 770-772.

2. Zorina, S.O. Sea-level and climatic controls on Aptian depositional environments of the Eastern Russian Platform. *Palaeogeography, Palaeoclimatology, Palaeoecology*. 2015.

3. Sames B., [Wagreich M.](#), [Wendler J.E.](#), [Haq B.U.](#), [Conrad C.P.](#), Melinte Dobrinescu M.C., [Hu X.](#), [Wendler I.](#), [Wolfgring E.](#), [Yilmaz I.Ö.](#), [Zorina S.O.](#) Review: Short-term sea-level changes in a greenhouse world – a view from the Cretaceous. *Palaeogeography, Palaeoclimatology, Palaeoecology*. 2015.

4. Zakharov Yu.D. , Tanabe K, Shigeta Y., Safronov P., Smyshlyaeva O.P., Dril S. Early Albian marine environment in Madagascar: an integrated approach based on oxygen, carbon and strontium isotopic data. *Cretaceous Research*, 2015.

### **Participation in conferences**

#### **The 3rd workshop on project N609 (China, Nanjing, September 5-11, 2015)**

The following report was presented:

1. S.Zorina "Late Cretaceous depositional environments on the Eastern Russian Platform "

#### **Field work activities**

After the conference the field trip was organized to visit Cretaceous continental sections in the South-East China.

#### **Project 610 From the Caspian to Mediterranean Environmental Change and Human Response during the Quaternary (2013-2017)**

The report was submitted by T.A, Yanina (Moscow State University, Geographical Faculty);

Main results of research activities in 2015:

- New data on the structure of the upper Quaternary deposits have been obtained: the existence of deposits of Girkanian transgression is confirmed, sediments of the Atelian regression were studied.
- research on Quaternary deposits thickness on the Caspian Sea coast of Turkmenistan was carried out. Samples on the dendrochronological analysis are selected for the first time, now they are studied.

### **Publications**

1. Bezrodnykh, Yu., Deliya, S., Romanyuk, B., Sorokin, V., Yanina, T. New data on the upper Quaternary stratigraphy of the North Caspian Sea // *Doklady Earth Sciences*. 2015. Vol. 462, no. 1. P. 479–483.

2. Arslanov, Kh., Yanina, T., Chepalyga, A., Svitoch, A., Makshaev, R., Maksimov, F., Tertychniy, N., Starikova, A. On the age of the Khvalynian deposits of the Caspian Sea coasts according to  $^{14}\text{C}$  and  $^{230}\text{Th}/^{234}\text{U}$  methods // *Quaternary International*. 2015.
3. Makshaev R., Svitoch A. Chocolate clays of the northern caspian sea region: Distribution, structure, and origin // *Quaternary International*. 2015.
4. Bolikhovskaya N., Faustov S., Markova A. Pleistocene climatic stratigraphy and environments of the terek-kuma lowland (nw caspian sea region) inferred from palynological, paleomagnetic and rodent records of the long otkaznoye sediment sequence // *Quaternary International*. 2015. P. 2–17.
5. Badyukova E., Solovieva G. Coastal eolian landforms and sea level fluctuations // *Oceanology*. 2015. Vol. 55, no. 1, P. 124–130.
6. Bezrodnykh, Yu, Sorokin, V., Yanina, T. Ob Atelskoy regressii Kaspiyskogo morya [About Atelian regression in the Caspian Sea]. Moscow State University Vestnik. Ser. 5: Geography. 2015. No 2. P. 77-85
7. Svitoch A., Makshaev R. K voprosu o proiskhozhdenii shokoladnykh glin Severnogo Prikaspiya [To a question of an origin of chocolate clays of Northern Precaspian], *Priroda [Nature]*. 2015. No. 5. P. 58-60
8. Svitoch A., Makshaev R. Shokoladnye gliny Severnogo Prikaspiya [Chocolate clays of Northern recaspian], *Geomorphologiya [Geomorphology]*, 2015, No 1, p. 101-112 .

### **Participation in conferences**

Conference and field excursions on the IGCP project 610 was organized and carried out by the Russian participants of the Project in the Astrakhan on September 22-30. 80 people from 8 countries took part in the conference (Russia, Azerbaijan, Canada, the Netherlands, Romania, the USA, Turkey, Ukraine). 17 reports were presented on the project by Russian and foreign scientists.

Field researches were conducted in the Caspian region (the Lower Volga area, Kalmykia, Turkmenistan).

### **Project 628 The Gondwana Map Project (2013-2016)**

The report was presented by I.I.Pospelov (Geological Institute RAS, Moscow)

The main results of the project activities in 2015:

In 2015 the first draft of the Second Edition of the “Tectonic map of South America” was made with an inset map “Gondwana – 150 Ma”. The inset map is devoted to the Geological composition of Gondwana land in Jurassic

### **Project 630 Permian-Triassic Climatic and Environmental Extremes and Biotic Response (2014-2018)**

The report was presented by Yu.D.Zakharov (Far East Geological Institute FarEast Branch RAS, Vladivostok)

Main results of research activities in 2015:

. The C-isotope composition of mudstones and organic carbonates of the P-T boundary beds of the Suol section in the Verkhoyansk area indicates six C-isotope intervals, which are well recognizable in some Tethys and Boreal reference sections;

- the middle Olenekian in the Kamenushka River basin, South Primorye, is characterized by rhynchonellid (e.g., *Piarorhynchella* sp. nov.), spiriferinid, terebratulid (e.g., "*Fletcherithyris*" *margaritovi* (Bittner), ?*Heterelasma* sp. nov.), and athyridid (*Hustedtiella planicosta* Dagys) brachiopods;
- the inner shell structure of some representatives of ammonoid lineages, *Inyoceras*, *Anasibirites*, *Yvesgalleticeras* (Meekoceratina) and *Koninckitoides* (Proptychitina) has been investigated by us in detail.

### **Publications**

1. Arefiev, M.P., Kuleshov, V.N., Pokrovsky, B.G. 2015. Carbon and oxygen isotope composition of Late Permian and Early Triassic terrestrial carbonates of the Russian Platform: global ecological crisis against the fluctuated climate. Doklady Akademii Nauk, vol. 460, no. 2, p. 193-197.

2. Zakharov, Y.D., Biakov A.S., Richoz, S. and Horacek M. 2015. Importance of carbon-isotope data on the Permian-Triassic boundary beds in the Verkhoyansk region for global correlation of the basal Triassic beds. Doklady Earth Sciences, vol. 460, part. 1, p. 1-5.

### **Participation in conferences**

**The XVIII International Congress on the Carboniferous and Permian (Russia, Kazan, August 11-15, 2015).**

The following reports were presented:

1. Popov, A.M., Zakharov, Y.D. "Additional data on brachiopod recovery after end-Permian mass extinction: Evidence from the Olenekian brachiopods of Kamenushka sections, South Primorye".
2. Smyshlyaeva, O.P., Zakharov, Y.D. "New data on phylogenetic relationships of ammonoids evolved after the end-Permian mass extinction: Evidence from the inner shell structure of some Olenekian ammonoids from South Primorye".

### **Field work activities:**

*Churkites*-, *Tirolites*-, and *Inyoceras*-bearing sediments of the Kamenushka River basin, South Primorye have been investigated during field-work 2015.

**Project 632 Continental Crises of the Jurassic (2014-2018)**

The report was presented by Kirillova G.L.(Institute of Tectonics and Geophysics DVO RAS)

Main results of research activities in 2015:

- Gradual landscape changes, types of sedimentation, ecosystems, and climate began at the Jurassic/Cretaceous boundary as exemplified from a number of the Russia Far East basins. This boundary is marked by both concordant and unconformable bedding.

### **Participation in conferences**

**The II Symposium of International Geoscience Programme Project 632, (China, Shenyang, September 12-13, 2015)**

The following report was presented:

1. Kirillova G.L." Geologic and biotic events in Priamurye during the Jurassic/Cretaceous transition".

**The VIII All-Russia lithological meeting "Evolution of sedimentary processes in the Earth's history", (Moscow, October 27-30, 2015).**

The following report was presented:

1. Kirillova G.L. "Comparative analysis of the evolution of Mesozoic sedimentary basins of the Far Eastern petroleum province".

### **IGCP Committee's Activities in 2015**

During 2015 the Russian National Committee for Geosciences maintained contacts with the Commission of the Russian Federation for UNESCO. There were also close interactions with Russian members of IGCP projects.

The Committee also supported the IGCP Committee website.



Mikhail A. Fedonkin

Academician

Chairman of the Russian National Committee for Geosciences

**IGCP Projects, in which Russian scientists participated in 2015**

- Project 587** Entity, Facies, and Time – the Ediacaran (Vendian) Puzzle (2010-2014);
- Project 589** Development of the Asian Tethyan Realm (2012-2016);
- Project 591** Early to Middle Paleozoic Revolution (2011-2015);
- Project 592** Continental construction in Central Asia (2012-2015);
- Project 596** Climate Change and Biodiversity Patterns in the Mid-Paleozoic (2011-2015);
- Project 608** Asia-Pacific Cretaceous Ecosystems (2013-2017)
- Project 609** Cretaceous Sea-Level Changes (2013-2017)
- Project 610** From the Caspian to Mediterranean: Environmental Change and Human Response during the Quaternary (2013-2017)
- Project 628** The Gondwana Map Project (2013-2016)
- Project 630** Permian-Triassic Climatic and Environmental Extremes and Biotic Response (2014-2018)
- Project 632** Continental Crises of the Jurassic (2014-2018)
- Project 637** Heritage Stone Designation (2015-2019)
- Project 640** S<sup>4</sup>LIDE (Significance of Modern and Ancient Submarine Slope LandSLIDEs) (2015-2020)
- Project 648** Supercontinent Cycles and Global Geodynamics (2015-2019)





