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«PROCEEDINGS OF THE MINING INSTITUTE»: HISTORY AND MODERNIZATION (to 110-th anniversary of first publication)

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The paper is dedicated to one of the oldest scientific and technical periodicals in Russia, scientific agent of the Saint-Petersburg Mining University – «Proceedings of the Mining Institute». In 2017 we shall celebrate the 110-th anniversary of the first issue of the magazine coming from the press. That event gains a particular meaning because of the growing role of periodicals in operative gaining, storing, translating and practically applying scientific information. Modern society is duly called the information society, in which intense and efficient use of one of its main resources – knowledge – is the chief factor of successful development of all the spheres of the society. «Proceedings of the Mining Institute» – is an exceptionally important fragment of that resource, shaped by all of its history.

The paper considers the pre-history and historical stages of establishment of the «Proceedings of the Mining Institute». It stresses the high authority of the majority of participants of that process: starting from the initiators of its publication (professors of the Mining Institute) and all the way to its current authors – outstanding scientists of Russia, the near and the far abroad, as well as the well-known political and economic leaders of the country.

Reconstruction of the past of the «Proceedings of the Mining Institute» demonstrates that the magazine has rich and valuable history. Being itself a necessary expression of tribute and gratitude to the magazine forerunners, the reconstruction is not the only principal purpose of this study, that purpose consisting in identification and substantiation of ways and means of upgrading the magazine, to support its competitive edge in the extremely complex information space, both global and domestic, saturated with information as never before.

Key words: «Proceedings of the Mining Institute», scientific magazine, Saint-Petersburg Mining Institute (University), E.S.Fedorov, V.S.Litvinenko, mining, geology.

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Introduction. The year 2017 will meet the 110-year jubilee of one of the oldest scientific-technical periodicals in Russia – «Proceedings of Mining Institute» («Proceedings» hereunder). That event is worth special attention due to significant input of that publication into the progress of the national and global science, technology and industry. In the previous years only the 50-the anniversary of the magazine was highlighted with just a single, though quite substantive, paper by B.V.Bokiy, Professor of the Mining Institute [2].

The forthcoming jubilee of the «Proceedings» prompts one to analyze and assess the roads the publication went, its current state and define its prospects in the society of the XXI century, which depends so much on the progress of science and technology, on the scientifically founded exploitation of natural resources and the development of mineral resources complex. «Proceedings», together with other publications of similar profile, is called to present in operative manner the current level of setting and resolving scientific and technological issues in those spheres.

Methodology. When reviewing the stages of development and the current state of the «Proceedings», their main purpose and goals various techniques, principles and study routines are used: systemic-structural, historical, logical, analytical, synthetic, interpretational, comparative.

Results of studies and their interpretation. Predecessor of the «Proceedings of the Mining Institute», the «Mining Journal» – the first periodic publication in Russia of scientific and technical profile. The year 2015 was the year of almost the bicentennial of the unique periodic publication, the «Mining Journal», close to the «Proceedings» in its purpose and goals, the topics and the place of its foundation (Saint-Petersburg). In a certain sense the «Proceedings» carried on the deeds of the Journal thus providing for the retaining and relay of mining and geological knowledge. It is important to note the value (at the supreme level too) attributed in Russia as early as the first half of the XIX century to publication of a scientific magazine, and to development, together with it, of the mining science and technology in general, to propagation of scientific and technical knowledge, to mastering the global experience in mining.

On February 28, 1825 E.F.Kankrin, the Minister of Finances of Russia submitted a report to Alexander I, the Emperor «On convening a Scientific Committee on mining and salt divisions and on publishing a «Mining Journal», in which he wrote: «On presentation by the Manager of the Department of Mining and Salt Affairs [the person meant was E.V.Karneev, Member of the Council of the Ministry of Finances, Director of the Department of Mining and Salt Affairs since August 16, 1824, Director of the

Mining Kadet Corps – I.R.] on publishing the «Mining Journal», *for general proliferation of the data and new discoveries in that area, especially to ease the officers of the mining service in fortifying their knowledge with successes of all of educated Europe*, I dare asking the Supreme Permission by Your Imperial Majesty for: Appointing the Scientific Committee on mining and salt divisions at the Mining Kadet Corps on the basis of the detailed report attached herein [6, p.IV. The orthography and style of the documents are preserved herinunder; the italics are mine – I.R.]. E.F.Kankrin also proceeded reporting that the Manager of the Department of Mining and Salt Affairs had submitted a report on the benefit and need to publish a journal on behalf of the said Department, entitled: «*The «Mining Journal», or the collection of data on mining and salt affairs, with the addition of new discoveries in sciences related to the said subject*» [22, c.VI].

So, it was supposed to establish a Scientific Committee on mining and salt affairs under the Mining Kadet Corps presided by E.V.Karneev and publish a magazine with ten «sections», which would combine to *cover in full the system of mining sciences and arts*: «Mineralogy», «Chemistry», «Mining», «Factory Business», «Coin Business», «Salt Business», «General Mining and Salt Bibliography», «Mining and Salt Legislation», «Biography News», etc.

Upon reviewing these proposals, E.F.Kankrin found them «rather advantageous» and the «plan of that undertaking to be wisely disposed» and, approaching the Emperor with the request to approve them, concluded: «The advantage of that journal (the «Mining Journal» – I.R.) is apparent. It would serve as the closest and surest means to proliferate every kind of knowledge ...to update every part of the mining and salt production; the publication of the said under the management of the Scientific Committee is recognized to be more correct and better substantiated in every respect» [22, p.XI]. The prescription by E.F.Kankrin to E.V.Karneev went to advise the latter that: «*On your presentation the Sovereign Emperor has deigned to permit publishing the «Mining Journal», for which purpose to establish under the Mining Kadet Corps the Scientific Committee on mining and salt affairs, chaired by yourself*» [23, p.XII; italics mine – I.R.].

During the inauguration of the Scientific Committee on March 21, 1825 E.V.Karneev, speaking about the «Mining Journal», pointed to the pragmatic goals of its publication at the start of his speech: «Thinking about the publication of «Mining Journal» or such a periodic composition, that would, in respect of technical sciences, serve as the closest and surest means for proliferating... every kind of knowledge on the mining and salt parts, I would wish to strengthen that publication, founding it on the solid beginnings of education and experience, making it as unerring as possible, and fitting it for the public benefit» [25, p.XV]. Further on he asked a question: «Can there be a purpose nobler and a benefit richer from such a publication, in which the reader does not only draw one's pleasure, does not only satisfy one's commendable inquisitiveness, but gains insight to innermost entrails of the Nature, learns the tricks of mechanics and chemistry, gets acquainted with precise sciences?» [25, p.XVI]. That purpose and that benefit, similar to the purpose and benefit of the future «Proceedings», were then formulated as: «proliferating new discoveries», «serving an important aid in teaching sciences at the Mining Kadet Corps», «attending the very sciences» [25, p.XVII]. Finishing his speech E.V.Karneev expressed his hope that «...maybe the publication of the «Mining Journal», that we started, will make an epoch in the Russian mining history; maybe it will serve to important and beneficially successful changes in that respect. But even if that does not come about, our prize is that we will not labor in vain, that our purpose will be sacred: the benefit of Fatherland, the enlightenment of our contemporaries and the gratitude of our posterity» [25, c.XXV].

The «Mining Journal» was printed at the Mining Kadet Corps (since March 1833 – the Institute of the Corps of Mining Engineers, and since 1866 – the Mining Institute) in Saint-Petersburg up to 1918. However the October Revolution of 1917 and the Civil War in the country resulted in evacuation of the Editorial Board of the magazine to Moscow. It worked to distance the magazine from the Mining Institute in Saint-Petersburg, thus accentuating the need for the latter to start publishing its own periodic scientific agent, though in all fairness one should say that such need was understood even before that time.

Prehistory of publishing the «Proceedings of the Mining Institute». Consider now in more detail what preceded the start of publishing the «Proceedings». Commonly the scholars place their origin to 1907 and relate it with the name of E.R.Fedorov, whose role in that deed can hardly be overestimated [10, 19, 29].

Meanwhile actually it was as early as November 14, 1903 when the report addressed to the Director of the Mining Institute (whose duties were then executed by Professor G.T.Lebedev) by Professor

Extraordinary, Member of Scientific Committee, A.N.Mitinsky (1875-1953) with a request to discuss the issue of publishing the minutes of the sessions of the Scientific Council of the Institute (the «Council» hereunder). At its meeting of December 3 the Council adopted a decision: consider it quite desirable to start, provided the means for that appear available, publishing «Proceedings of the Mining Institute», where excerpts from the minutes of the Council, scientific studies by professors, reviews of dissertations, etc. may all be placed; apply at the Scientific Mining Committee for a permit to print excerpts from the minutes of the Council in the «Mining Journal»; submit the petition on that topic to the Scientific Mining Committee [2]. That petition was sent on December 9, 1903.

Three months later A.N.Mitinsky had sent another report on the need to publish a printed agent by the Mining Institute that was reviewed by the Council on February 12, 1904. The decision on it was positive. The Council nominated an Editing Committee, that included professors of the Mining Institute: N.R.Kournakov, K.I.Bogdanovich, A.N.Mitinsky, N.P.Aseev and had to decide on the format of that agent: either collected works or Journal. However that decision by the Council was not implemented at that time, mainly because of the revolutionary events of 1905. After 1905 the Director of the Mining Institute became Professor Evgraph Stepanovich Fedorov (1853-1919), under whom scientific studies by both professors and students enlivened. One of the stimulating factors of such work and the form of its manifestation became the activities in originating the «Proceedings of the Mining Institute».

The question of starting a printed agent at the Mining Institute was raised once again by E.R.Fedorov at the session of the Council on May 3, 1906. members of the Council present at it: the Institute Inspector V.V.Nikitin, the Honorary Professor I.A.Time, ordinary Professors N.R.Kournakov, V.N.Lipin and Extraordinary Professors K.I.Bogdanovich, V.I.Bauman, D.R.Zernov, N.P.Aseev adopted a decision to organize issuing of the new publication.

Thus the outstanding personality of national science stood at source of the «Proceedings»; not only did they become aware of the need to found a printed organ of the Mining Institute but took the principal decision on it and undertook specific practical steps to implement that idea. Indeed, E.R.Fedorov who chaired that Council was an outstanding scientist – a crystallographer, mineralogist and mathematician, later an Academician of the Russian Academy of Sciences. V.V.Nikitin (1867-1942), the Inspector of the Institute, was an Ordinary Professor of the Chair of Mineralogy and Crystallography since 1901, a disciple and follower of E.R.Fedorov, as demonstrated by his publication in the «Proceedings» [17]. Professor I.A.Time (1838-1920) was a founder of the mining mechanics as a science. Professor N.R.Kournakov (1860-1941) was an outstanding physical chemist, Academician of the Russian Academy of Sciences since 1913. Professor V.N.Lipin (1858-1930) was a mining engineer, a metallurgist, later a Corresponding Member of the USSR Academy of Sciences. Professor K.I.Bogdanovich (1864-1947) of the Chair of Geology and Ore Deposits was a mining engineer, geologist and traveller, scientific worker (Director since 1914) of the Geological Committee. V.I.Bauman (1867-1923) was a Professor of the Chair of Geodetics and Surveying. D.R.Zernov (1860-1922) was a Professor of mechanics who played an outstanding role in the Union of Professors of Higher Education Bodies. N.P.Aseev (1871-1952) was an Adjunct-Professor at the Chair of Metallurgy.

Thus the participants of that Session of Scientific Council of the Mining Institute of May 3, 1906 represented here, including its Director, E.R.Fedorov, at which the final decision was taken to publish the «Proceedings», were scientists of formidable input to mineralogy and crystallography, geology, mining mechanics, chemistry, metallurgy, which pre-defined, in its turn, the topics and the structure, the position in the world of science, and the high scientific level of the publication.

The title of the new printed organ – «Proceedings of the Mining Institute» – was first voiced during the Session of the Council on December 6, 1906, and on January 8, 1907 the «Regulation on the «Proceedings» was approved. It was decided that it will be published volume by volume of 50 printer's sheets each, with indication of the date of each paper submission to the Council for printing. Responsibility for following its academic style was charged with the Director of the Institute. It was also recommended to distribute the issue to the universities of Russia, Western Europe and America, to editorial boards of the popular Russian newspapers and magazines, to all the major bodies of book trade.

The start of publishing «Proceedings of the Mining Institute». On January 8, 1907 the Scientific Council approved the first paper for publication in the «Proceedings», a paper by E.R.Fedorov [27] and considered the list of papers by the professors of the Mining Institute for the first issue of the first volume. On April 9 the decision was taken to print it. The first issue saw the light on November 12 under

the title «Proceedings of the Mining Institute of Empress Catherine II» and on the same day E.R.Fedorov presented it to the Council.

So, November 12, 1907 has become the day of founding the new scientific edition of the mining and geological profile in Russia – «Proceedings of the Mining Institute», which became an important event in the cultural life of Russia. Further on one may agree with the periodization of the history of publishing the «Proceedings», suggested by B.V.Bokiy: Period I – 1907-1917 (6 volumes); Period II – 1926-1941 (8 volumes) and Period III that has started in 1946 [2].

Stages of publishing the «Proceedings of the Mining Institute» to the year 2000 and their particular features. During the first stage the «Proceedings» had papers on crystallography, mineralogy, geology (including petrography), geodetics, mathematics and chemistry published. This is what the authors' list of 58 papers from Volume I tells us (Issue 1 – 1907, Issue 2-5 – 1908): E.R.Fedorov, A.K.Boldyrev, V.V.Nikitin, D.N.Artemyev, R.P.Ershov, A.E.Kupfer (crystallographers and mineralogists), V.I.Sokolov, A.N.Zavaritsky (petrographers), V.I. Bauman (surveyor), P.P.Weimarn, N.I.Stepanov, N.I.Podkopaev (chemists), I.P.Dolbnya, M.I.Akimov, E.K.Mitkevich-Volchassky (mathematicians).

Crystallography was represented in the most fundamental way (about 30 papers by E.R.Fedorov alone), mathematics (6 papers) and chemistry, colloid and physical, electrochemistry (6 papers). Future Academician of the Ac.Sci.USSR (1939), the founder of petrochemistry, A.N.Zavaritsky (1884-1952) had published a paper on the collection of minerals of the Mining Museum of the Mining Institute [7]. Volume II (Issue 1-2 – 1908, Issue 3-4 – 1909, Issue 5 – 1910) had 61 papers published, and such topics as: «Search and survey. Geophysical surveying techniques. Drilling», «Mining mechanics. Mining Electric technology. Mining Machines», «Metal and Non-Metal natural resources. Caustobioliths» were added. By that time Fedorov rounded up the results of development of crystallography as a science [27]. I.M.Gubkin joined the section «Petrography» (1871-1939), – the future Academician (1929) and Vice-President of Ac.Sci.USSR (1936), founder of the national oil geology [5]. P.P.Weimarn was outlying his theory of complex dispersed systems in a series of publications. One of the issues of the «Proceedings», that had put down the fine tradition of noting scientific input by the scientists of the Mining Institute was dedicated to the mining engineer, Professor I.A. Time.

From 1910 to 1917 the «Proceedings» included papers by the already mentioned authors on the same sciences, as well as metallurgy, technology of metals, mining mechanics. A separate volume was dedicated to the activities and commemorated I.P.Dolbnya, who passed away on February 15, 1912 – a mathematician well-known in the country and an outstanding pedagogue who had actively cooperated with the «Proceedings», Professor of the Mining Institute since 1896, its Rector since 1910. B.V.Byzov, the developer of the technology for producing synthetic rubber from oil summed up the results of developing colloid chemistry [4]. The final issues of volume IV (1913) included a number of papers by E.R.Fedorov, most of them belonging the the «Mathematics» section, and papers by I.M.Bakhurin on geodetics, A.K.Boldyrev, V.M.Derviz on crystallography, P.P.Weimarn on chemistry.

Volumes five and six of the «Proceedings» were specific in having a large number (39) of papers by E.R.Fedorov, and also included materials on geology, petrography, metallurgy, physics. Late 1915 and 1916 became the years of active cooperation of the «Proceedings» with another well-known mathematician and physicist N.M.Krylov (1879-1955), a graduate of the Mining Institute, its Professor, Academician of the USSR Ac.Sci. (1929), who offered new techniques for solving the problems of mathematical physics.

So, the first six volumes of the «Proceedings», that saw the light in 1907-1917, included papers on the founding disciplines of the mining geological and general theoretical (mathematics, chemistry) sciences. Authors of papers were the outstanding scientists of Russia, mainly those working at the Mining Institute. So far the «Proceedings» had no papers on mining itself, just a few works on geology, since they were more often printed, respectively, in the «Mining Journal», «Proceeding» and «Works» of the Geological Committee.

In 1917 publication of the «Proceedings» was suspended because of revolutionary events in Russia, till 1926, when the volume dedicated to the 150-th anniversary of the Mining Institute was published, which highlighted the outstanding role in starting them by E.R.Fedorov and formulated the purpose of the publication – «joint cooperative promotion with other similar organs of the development of sciences related to the techniques of mining and mining production and to certain fields of natural sciences» [2,



p. 6]. The same volume had recollections on his training at the Mining Institute published by A.P.Karpinsky, Professor and Head of the Chair of geology geognosy and ore deposits since 1877, one of the founders and the Director of the Geological Committee, Academician of RAS since 1889, the future first elected President of RAS (USSR Academy of Sciences), President of Mineralogical Society (1899-1936), whose attention to the Mining Institute and whose article in its scientific organ, the «Proceedings» was an honor for both [9].

Particularities of the second period of publishing the «Proceedings» (1926-1941) were conditioned by the turbulent progress in mining industry of our country, growth of the number of discoveries in geology, exploration and exploitation of the riches of Earth entrails. These were also the causes of significant change in its content: together with the traditional studies in crystallography, mineralogy, petrography, mathematics, chemistry its started printing studies in physics, geology and mining. The magazine sections kept becoming more diverse as the sciences kept differentiating, acquiring and grasping their own new techniques, study targets and boundaries of research, and a number of new sections appeared: «Metal and non-metal natural resources», «Mining Mechanics», «Enrichment of natural resources», «Exploration and survey of natural resources», «Field development of natural resources», «Hydrogeology and engineering geology», «Mine ventilation», «Mine transportation», «Mining economics».

The range of authors expanded, it was entered by professors of the Mining Institute (who had by that time or through the years to come leading experts in the mining and geological sciences): M.I.Akimov, V.I.Bauman, I.M.Bakhurin, K.F.Beloglazov, A.G.Betekhtin, A.K.Boldyrev, V.I.Gerontyev, D.P.Grigoryev, V.V.Dolivo-Dobrovolsky, Yu.A.Zhemchuzhnikov, A.M.Zhuravsky, A.N.Zavaritsky, D.A.Kazakovsky, N.G.Kell, P.I.Mustel, D.I.Mushketov, D.V.Nalivkin, N.P.Nerronov, G.A.Osolodkov, V.D.Slesarev, N.I.Stepanov, N.I.Tolstikhin, N.I.Trushkov, I.I.Shafranovsky, F.N.Shklyarsky, N.N.Yakovlev and others. Publishing the results of their studies in the «Proceedings», each of them has made his own input to both the progress of science and to another important deed: relaying his own ideas to his disciples and followers. Some of those scientists have started their own original scientific schools, such as V.I.Bauman, I.M.Bakhurin, A.K.Boldyrev, A.N.Zavaritsky, D.A.Kazakovsky, N.G.Kell, V.D.Slesarev et al.

During that second stage the «Proceedings» started to reflect scientific life of the Mining Institute in fuller way, that life becoming more diverse and multifaceted. Though publications on crystallography still dominated, the number of papers on geology, geodetics, surveying, metallurgy, mining technology, mathematics and physics increased. Among the authors of the magazine were the professors of the Mining Institute – the future Corresponding Member of the USSR Ac.Sci. N.G.Kell, the future Academician of the USSR Ac.Sci. D.V.Nalivkin and other outstanding scientists.

Thus the second period of publishing the «Proceedings» was fruitful, the contents of materials was diverse, scientific level was maintained by highly qualified authors. A weak point of the magazine was the absence of papers and authors «external» with respect to the Mining Institute including foreign ones. One of the reasons for that was the absence of translations of papers into foreign languages. Positive changes and trends that manifested themselves in publishing the «Proceedings» through 1926-1941 in the topics, scientific and theoretical level, practical importance were suspended in 1941 with the start of the Great Patriotic War.

According to the idea by B.V.Bokiy, the third period of publishing the «Proceedings» had started in 1946, when the leading place among its topics was won by papers on mining and geology.

High scientific, theoretical and practical level of the magazine during post-war years was provided by the authoritative team of authors formed by both the already well-known and young promising scientists of the Mining Institute: M.I.Akimov, P.A.Alatortsev, V.I.Bodylevsky, O.B.Bokiy, Yu.A.Zhemchuzhnikov, V.G.Zdanovich, D.A.Kazakovsky, N.G.Kell, V.D.Lomtadze, I.N.Maslenitsky, D.V.Nalivkin, N.P.Neronov, G.A.Osolodkov, A.V.Rysyev, P.Ya.Saldau, V.D.Slesarev, R.R.Smirnov, R.R.Smorodin, G.I.Sokratov, P.M.Tatarinov, F.A.Shamshev et al. Noteworthy were the papers on the history of geology by G.I.Sokratov [26], D.V.Nalivkin [16] and on the development of mining technologies by F.A.Shamshev [30].

Further decades have become the time of developing the traditions laid down earlier for the «Proceedings» in both the topics and contents, and the quality of the materials published. Results of their studies were published by practically all the scientists of the Mining Institute, widely known to the scientific community both in the country and abroad. Since it is impossible to list all the authors, even limiting oneself to most active ones within the scope of a magazine paper, we shall name only those who

managed to Institute for some time parallel to their own scientific research and cooperation with the «Proceedings». These were Professors D.A.Kazakovsky (1953-1958), P.I.Mustel (1958-1962), L.N.Kell (1963-1978), V.I.Ternovoi (1978-1980), N.I.Eremin (1980-1984), N.M.Proskuryakov (1984-1994), and, second, those who made significant input to science – Corresponding Members and Academicians elected to the USSR (Russian) Academy of Sciences at this or that time: N.G.Kell (1946), D.V.Nalivkin (1946), V.D.Nalivkin (1968), N.M.Proskuryakov (1987), Yu.B.Marin (2008), L.A.Vaisberg (2011).

After organizing the Engineering Economics Faculty at the Mining Institute in 1965, the first such faculty among the mining and geological universities in Russia the «Proceedings» started publishing topical papers on the issues of economic efficiency and quality of geological exploration, survey and scientific research [15, 20, 21].

An important event in the history of the «Proceedings» has become the publication of a fundamental paper by Vladimir Vladimirovich Putin «Mineral resources in the strategy of developing the Russian economy» [24], which defined the value and role of mineral resources and in the strategy of development of Russia for the nearest years on the basis of deep analysis of their potential and the state of capital funds and employed technologies in the mining complex of the country. In particular, it stressed that «...a key factor in the development of the state in the nearest perspective remains the state of the mineral resource complex of the country. It is on the level of rationality, well thought-through responsibility and scale of using the potential of natural riches that the rate of overcoming the crisis phenomena in the country will overwhelmingly depend, as well as forming the scientific and technical base for producing hi-tech scientifically intense products...» [24, c.9].

The paper by President V.V.Putin in the «Proceedings», published by the very end of the XX century, was in a sense finalizing and almost century-long stretch in the history of the «Proceedings» and at the same time was opening a new page in it, leading both into the new century and – as importantly – into the new social-economic, social-political and cultural situation in the country and the world with their exceptionally complex problems, including the problems of exploiting the nature.

«Proceedings of the Mining Institute» in the XXI century: purpose and goals of its modernization. During the last two decades the Editor-Chief of the «Proceedings of the Mining Institute» is V.S.Litvinenko – the Rector of the magazine founder, the Saint-Petersburg Mining University, renowned social worker, Laureate of the State Prize by the Russian Federation in science and technology, Laureate of the Government of the Russian Federation in science and technology of 2008, statesman in the national economy, Doctor of Engineering Sciences, Professor, whose input into the development of the magazine in general, and lately in achieving the key goal of entering the global information space may hardly be overestimated. His input consists in both the organizational support of the «Proceedings» and his personal participation as a regular author (co-author) of numerous scientific papers. Currently it makes sense to point to his papers on research and development of progressive new technologies for well drilling, maintaining safety in the course of mining mineral resources in Russia [8, 12, 14, 18], and also those dedicated to analyzing and solving fundamental problems of our times, the need to perfect the system of state management of Earth entrails: mining, transporting and processing mineral resources and metals [11, 13].

Recently significant changes have taken place in the process of preparing and publishing the «Proceedings». First, the Editorial Board has become international: well-known foreign scientists have joined it, including representatives not only of different countries, but of different continents: Sweden, Estonia, Finland, Germany, Czech Republic, Slovakia, Australia. The international composition of the team of authors of the «Proceedings» has expanded considerably: scientists from Australia, Austria, Azerbaijan, Brazil, Great Britain, Vietnam, Germany, Egypt, Canada, Congo, Cuba, Mongolia, Poland, Republic of Belarus, Ukraine, Finland, Sweden, Estonia and other countries are publishing their papers in it (including those composed together with our researchers). Just the second half of 2015 – first half of 2016 had 21 papers by foreign scientists or those with their participation published. The circle of Russian authors – scholars from various cities and regions of our country, representatives of universities profiling in natural science, technology and economics keeps expanding as well.

Despite the noticeable expansion of the «geography» of authors of the magazine and growth in the quality of published materials, one still needs to put in a lot of effort for international recognition of the «Proceedings». The proof of the fact that the «Proceedings» begin gaining such recognition consists in their inclusion in both the scientific electronic library eLIBRARY.RU – the largest Russian information



analytical portal in science, technology and education, and the international database that embraces the global literature on geology and geosciences, GeoRef.

The form of international scientific cooperation of the «Proceedings» is their response to historical events of scientific and cultural life of Europe and various events in modern scientific life. Papers dedicated to the two jubilees may serve as examples of that trend: Bicentennial and 250-the anniversary of the Freiberg Mining Academy, focused on cooperation at all the stages of the existence of the Academy with the Saint-Petersburg Mining Institute [1, 3]; publication of papers by the participants of the XVIII International Congress on Coal Enrichment, that was held in 2016 in Saint-Petersburg on the basis of the Mining University.

Currently the topics of the «Proceedings», while preserving its traditional sections on (geology, the mining business itself, metallurgy and enrichment of mineral resources, electromechanics and machine building, geo-economics), have been augmented with the promising topics of: «Oil and gas», «Geonanomaterials», «Engineering geology and occupational health and safety», «Goeconomics and management» etc.

Because of the need to upgrade the system of higher education in Russia, including that in mining and technology, and with the account of input of tutors and managers of the Saint-Petersburg Mining University into the process, the «Proceedings» have a new topic included: «Mining education: traditions and perspectives in the XXI century», open for every worker in the system of higher education and also for the people not indifferent to the problems of education and raising of future experts in the mining and geological sphere of social life. Besides, lately the discussion has escalated on training pedagogical staff for the system of mining education, its specifics and quality. The «Proceedings», published by the oldest mining and technical university of Russia that has graduated many an expert – mining engineer and geologist, may rightfully become the forum for discussing the urgent issues in education.

One can't help noticing such a positive occasion as the launch of its own site by the magazine in 2014: «Proceedings of the Mining Institute» with free access to the full contents of its papers with their extended abstracts in English. Due to that the possibilities to translate scientific contents of the materials published in the magazine to Russia and beyond have abroad have expanded considerably. It will also be promoted by publication of full scale translation of the papers into English and attribution of DOI to them – the international Digital Object Identifier that defines their permanent position in the virtual space in the Internet.

Conclusion. Thus the chief purpose of the scientific magazine «Proceedings of the Mining Institute» during its current stage consists in publishing topical materials of different genres that reflect both the current level of development of the complex of sciences of mining and geological profile, and new issues that have emerged lately, including those of environmental, social-economic and educational aspects. Attaining that purpose shall serve as a basis and pledge that the «Proceedings of the Mining Institute» will take their worthy position adequate to their real input into the common system of scientific knowledge in the global information space.

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