

## DMITRIY ALEKSEEVICH GOLITSYN – DIPLOMAT, ART CRITIC, SCIENTIST AND COLLECTOR

Nina A. Mokhova

*Fersman Mineralogical Museum, Russian Academy of Sciences, Moscow, nina@fmm.ru*

The article describes Russian diplomat Dmitriy Alekseevich Golitsyn (1734 – 1803). Facts of his activities, scientific work, mineralogical collection are presented.

3 figures, 12 references.

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*The history of Russian amateur mineralogists of 17–19 centuries is not yet written. There were remarkable people among them, government officials, the rich, peasant stone prospectors, mining officials and intellectual commoners. They discovered many new minerals, preserved precious and important forms of nature, our big national collections could not be composed without their efforts.*

V.I. Vernadsky (Thought and notes on Goethe as a naturalist)

There was an article “*News from Yena*” published by the author in Mineralogical almanac “*In the World of Minerals*” in 2008. It was dedicated to the finding of several specimens from the collection of prince Dmitriy Alekseevich Golitsyn. The note was a part of a bigger article and now the time has come to publish the whole material on the topic.

This work is a research paper based on few primary sources of information with one major reference. We decided to introduce the paper about the man *from the past* with a story about our contemporary, Grant Konstantinovich Tsverava, the author of the book on D.A. Golitsyn's life. The unintentional analogy between the diplomat, polyglot, scientist and educator and the author of the book will be cleared below. The book of G.K. Tsverava “*Dmitriy Alekseevich Golitsyn. 1734–1803*” published in 1985 is the only complete work of biography of our prominent compatriot. The book is both serious scientific study and very absorbing reading, which rarely combine. The seriousness of the completed research can be illustrated by the bibliography list of over 400 items, most of which were archive documents in German, English and French. G.K. Tsverava wrote many other books on history of science and technology besides biography of Golitsyn. The book on French radical politician Jean-Paul Marat, Hungarian scientist Nikola Tesla, physicist Georg Wilhelm Richmann, series of articles “*From the history of Russian-Swedish Scientific relations of the 18<sup>th</sup> century, Philosophy and Physics*” and many other. Astonishing variety of topics of his

works leads us to think that he dedicated his whole life to the history of science. We would be mistaken. Surprisingly, Grant Konstantinovich his whole life worked in the field of electrical engineering at Boksitogorsk aluminum plant far away from big cities' research institutes, libraries and archives. “*It is surprising how Tsverava, living in the country, obtained unique material on the foreign scientists... his communication with foreign experts, historians, open-mindedness, clarity of ideas, wonderful memory and language skills contributed to his success*” – a person, who knew Grant Konstantinovich well wrote in memorial article about him (Sverdlova, Chistyakov, 1994).

Some facts in this paper originated from a fine article “*Dmitriy Alekseevich Golitsyn. His life and work*” by Wendell Wilson (Wilson, 1991).

All the citations from D.A. Golitsyn's correspondence and works placed here as published in Tsverava's book.

Academician Georgy Sergeevich Golitsyn, the director of Physics of the Atmosphere Institute of the RAS, provided the picture of D.A. Golitsyn portrait sculpture (Fig. 1). He carried out a big research work to find portrait of D.A. Golitsyn as there was no portraits known before his research in 2000. G.K. Tsverava wrote that no portraits of Dmitriy Golitsyn existed except for the known silhouette.

Let us return back to the 18<sup>th</sup> century...

The history of Russian mineralogy roots into the time of Peter the First and is connected to the names of Mikhail Vasilyevich Lomonosov, Peter Simon Pallas and Johann

Gottlieb Lehmann. They were the first to write works on mineralogy in the period of very intensive data acquisition in expeditions and collection gathering. Vasily Mikhailovich Severgin was usually regarded the most prominent person of the second period of mineralogy development – the period of “active analysis of collected facts and ordering them”. He became the first and the most noticeable scientist of qualitative descriptive mineralogy in Russia (Grigoryev, Shafranovsky, 1949). It is true. However, he was a successor of the author of the “*Collection of the Names in Alphabetical Order That Are Used in Mineralogy for Earths, Stones, Metals and Semi-metals and Rock Tars*”. Severgin cited complete paragraphs from that work in his “*Detailed Mineralogical Dictionary*” (Tsverava, 1985). It was diplomat prince Dmitriy Alekseevich Golitsyn who was the author of the “*The Collection of Names...*”. That work was written in French and was not well known in Russia. It was translated by American authors of “*The System of Mineralogy*” and listed among the “fundamental works” in 1946.

### Biography milestones

The prince Dmitriy Alekseevich Golitsyn was born on May 15, 1734. His grandfather, Ivan Alekseevich Golitsyn was a stolnik at the court of Ivan V Alexeevich, the brother and coregent of Peter I. I.A. Golitsyn married princess A.P. Prozorovskaya. Anastasia Petrovna Prozorovskaya was a dominatrix and socially active person who moved in the circle of Peter the Great and his wife, the future Empress Catherine the First. The Golitsyns couple deceased in 1729 and was laid to rest in the Lords Epiphany Cathedral in Epiphany monastery. This monastery is one of the oldest in Moscow deemed to be found in 1296. The Epiphany Cathedral was a burial place of many noble Russian persons: Golitsyns, Dolgorukiys, Saltikovs, Yusupovs, Sheremetyevs and many others (Kondratyev, 1996).

Feodor Ivanovich and Alexey Ivanovich, sons of the Golitsyns' couple were born in Moscow. Aleksey was a warrant officer in the Butyrsky regiment. The regiment fought in all the wars Russia was involved in from the second part of the 17<sup>th</sup> and all of the 18<sup>th</sup> century. A.I. Golitsyn received family estate Spasskoye, Gubino and Gireyevo (Novogireyevo now) in Moscow County. By the petition of Ivan Golitsyn the stone church of the Holy Image of the Savior Not Made by Hand was built in the estate. The church is still there.

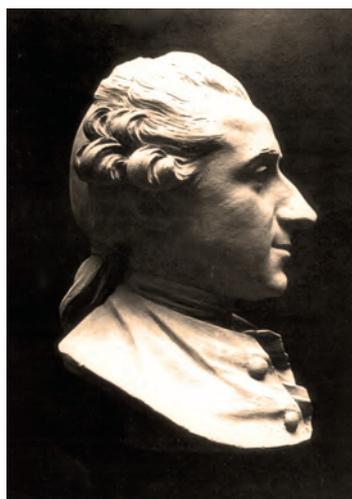


Fig. 1. Sculpture portrait of D.A. Golitsyn (Gallitzin) by Marie-Anne Collot. 1766. Terracotta.

Aleksey, the younger son of A.I. Golitsyn got married to princess Darya Vasilyevna Gagarina in this church.

Five sons: Ivan, Petr, Feodor, Aleksey, Dmitriy and a daughter Ekaterina were born to the family in the period 1729 – 1735 when Butyrsky regiment was not in a campaign. Tsverava suggested that all of them were born in their Gireyevo estate. This version is supported with fact that officer of Butyrsky regiment could not always live in Petersburg and that the Golitsyns being in disgrace during the reign of Anna Ioannovna, preferred to “take shelter in their family estates”. It is important though, that the Brockhaus and Efron dictionary and consequently later similar reference books stated that D.A. Golitsyn was born in Petersburg.

A.I. Golitsyn took part in the Russian-Turkey war of 1735 – 1739 with his regiment and died most likely in battle on 5 June 1739.

The 1730-s were very hard decade for Russia. Sergey M. Solovyov wrote that unprecedented tasteless luxury of the Court in the “very poor nation” worsened with dominance of Germans who disdained and relentlessly robbed the country (Tsverava, 1985). Other things made it even worse: reestablishment of the Secret Office of Investigation, crop failure in 1733 followed by the famine, the war with Turkey finished with adoption of the Treaty of Belgrade that brought to naught all the gains of the war.

In this situation the widow with small children was easier to survive in the estate near Moscow. However, the boys needed education and after coronation of Elisaveta Petrovna the family moved to Petersburg to the house on Vasilyevsky Island.

The widow with little wealth and many children had only possibility to educate her sons in Cadets Corps. It was established for young noblemen to become officers bypassing compulsory soldierly service.

Students of the Corps studied common educational subjects together with the military ones "since not every persons' nature is inclined only to the military". They learned mathematics, history, geography, artillery, fortification, fencing, equitation and "other sciences demanded in the military art". Also they studied German, French and Latin, writing and grammar, rhetoric, drawing, dancing, morality, heraldry and other.

It is known that all the Golitsyn brothers were officers. No documents left on this fact, but we can suggest they all had graduated from the Cadet Corps. Dmitriy Alekseevich served in army as a captain upon graduation and then was transferred to Office of Foreign Affairs the Russian central agency dealt with external politics.

Diplomatic staff rejuvenation was a crying need at the end of the reign of Elisaveta Petrovna. The writ from April 14, 1758 ordered to assign "three dignified young persons from the nobility apt to become titular counselors" to each minister (ambassador). According to the "Name list of the circulating at foreign courts..." "acting gentleman-in-waiting prince Dmitriy Alekseevich Golitsyn" was an ambassador to Paris and "the chancellor counselor Feodor Chernov, captain prince Dmitriy Alekseevich Golitsyn were appointed at his authority". This citation was dated from 1760. D.A. Golitsyn likely manifested himself as a "dignified and apt" student at the Corps and in the writ order was sent to Paris to learn diplomatic intricacies with the guidance of his relative.

Many of the Golitsyns family dedicated themselves to diplomatic career. The family was well known in Paris where young D.A. Golitsyn was directed. Alexander Mikhailovich Golitsyn was Russian ambassador to France in 1749–1755 followed by Dmitri Mikhailovich Golitsyn, who continued the service till 1761.

Dmitriy Alekseevich came to Paris in a difficult time. Russian-French relationships were not stable. They worsened when recently assumed power Peter III signed a separate peace treaty with Prussia. The French ambassador Louis Auguste Le Tonnelier, Le baron de Breteuil was recalled from Petersburg with the following withdrawal of Russian ambassador count P.G. Chernyshev from

Paris, leaving Nikolay Khotinsky as an embassy counselor in charges d'affaires. "I was not surprised that he preferred this gentleman over me", D.A. Golitsyn wrote later to the vice-chancellor A.M. Golitsyn – "neither the Golitsyns, nor other noble person... would be in Mr. Chernyshev's favor". Golitsyn ended his letter with request to authorize him in charge d'affaires. This promotion was made in August of 1762 and already in the fall of next year Catherine the Great, valuing the talents of the young diplomat, appointed him to the "ministrate plenipotentiary at the Versailles Court in the rank of chamber valet".

Meanwhile the relations between Russia and France worsened and at the end "prince Golitsyn was ordered to leave Paris without an audience". Golitsyn's last letter from Paris was dated 1767 and most likely he left French capital the same year.

Tsverava wrote little about Golitsyn's diplomatic activity in France, mentioning only "his intelligence, a habit of observation and high level of culture favored success of Russian external politics in the first unsecure years of reign of Catherine the Great". This activity also included an aspect, which in modern language we could name as attaché on issues of culture, science and technology.

The high rank and personality of the young diplomat opened him doors to Paris's saloons, where he could meet and come close with the most prominent people of the French Enlightenment. He found trust and respect from such people as creators of Encyclopedia: Denis Diderot and Jean Le Rond D'Alembert, writer Jean-François Marmontel, economists François Quesnay and Viktor Mirabeau, philosophers Claude Helvétius and Paul-Henri Holbach, historian Gabriel de Mably, sculptor Étienne Falconet. "Each of them made his own impressions in Golitsyn's mind and owed him friendly help, moral support, hospitality and at last patronage of the great Empire". Golitsyn met English historian and philosopher David Hume in Paris and translated his works into French. His activities benefited Russia in many respects.

Golitsyn participated in purchasing and delivering to Russia all the volumes of famous French "Encyclopedia or Explanatory Dictionary of Sciences, Arts and Trades" in 1773. It will be to add that the article on Russia was created with Golitsyn's participation supplying materials and information on our country.

Golitsyn persuaded Catherine the Great to purchase the library of Diderot that acco-

unted 2900 volumes. He also used to send recently published works of Voltaire to Russia with the first occasion. He had correspondence with him and they possibly met.

D.A. Golitsyn attended meetings of the Paris Academy of Science and was in the course of scientific achievements and frequently wrote about them to the Motherland. He sent in his letters drawings of 12 phases of sun eclipse of 1764, notes on bridge construction in France, successful operation on eyes of born blind adolescent and other information.

The Empress also trusted the taste of her ambassador. Golitsyn selected and purchased art masterpieces in Paris and Hague to send to Petersburg piece by piece and as entire collections. Those paintings now add to the world's fame of The State Hermitage. "Return of the Prodigal Son" by Rembrandt, "Perseus and Andromeda" and "The Landscape with a Rainbow" by P.-P. Rubens were among the paintings purchased by Golitsyn. Precious pearls from Crozats' collection stand out from the other paintings: "Bacchus" and the "Portrait of Waiting Maid" by Rubens, his sketches to series of "Life of Maria Medici", five pieces from Anthony van Dyck including his "Self-Portrait", seven paintings by Rembrandt including "Danaë", "The Holy Family"; Italian Renaissance masterpieces: "Judith" by Giorgione, "Danaë" by Titian, "The Lamentation of Christ" by P. Veronese and "The Birth of St. John The Baptist" by J. Tintoretto.

Golitsyn was the one who was involved with invitation of Etienne Falcone to Russia. Falcone signed a contract to build the monument to Peter I on August 27, 1766.

D.A. Golitsyn assisted students of Petersburg Academy of Arts, who came to Paris for internship. The Academy asked Golitsyn to "look after" its alumnae in one of the letters. Well-known painters A.P. Losenko and S.F. Shchedrin, sculptors F.G. Gordeyev and F.I. Shubin, architectures I.E. Starov and V.I. Bazhenov were among of the students who were taken care of by the prince. Dmitriy A. Golitsyn was elected an Honorary Member of the Academy of Arts in admittance of his merits.

D.A. Golitsyn had to withdraw from Paris for reasons of high politics as it was mentioned. He did not want to leave the capital and tried to ask permission to stay to "continue his education" and even asked his Petersburg protégé Falcone solicit the Empress for his stay. He received the answer on November 29, 1767: "He has to leave Paris...

*in the end he will have a chance to practice his God's given talents with benefit in the Patria".*

Dmitriy Alekseevich did not rush back to Russia using his health issues as an excuse to go to Aachen spa. There he met Adelheid Amalie, a daughter of Samuel Graf von Schmettau, Prussian field marshal. The acquaintance grew into mutual affection and the young couple got married on August 14, 1768 in a church in Aachen. The trip to Russia became the honeymoon for the couple. The Golitsyns came to Petersburg in October, 1768 and had reception with Catherine the Great. Documented fact of Golitsyns presence in Petersburg was only that Dmitriy Alekseevich was granted a title of acting gentleman-in-waiting and a rank of secret councilor was appointed "plenipotentiary minister at General Unites provinces of Lower Netherlands". Daughter Marianna was born to the Golitsyns on the way to Hague on December 7, 1769 and son Dmitriy was born on December 22, 1770 upon the arrival to Hague.

To finish the story about the Golitsyn's family we need to tell, that the marriage happy at the start practically ended in 1780, nevertheless the couple kept friendly relationship all their life. Dmitriy Alekseevich visited his wife and children who resided in Munster in Westphalia.

The information about daughter of D.A. Golitsyn is very scarce. It is only known that Marianna-Dorothea Golitsyna (1769–1823) in marriage had name of the princess Salm-Reifferscheidt-Krautheim.

Dmitriy, the Golitsyns' son was received into Roman Catholic Church in 1787, went to Baltimore and entered Catholic Seminary. Father Demetrius was ordained on March 16, 1795 and became the second priest that was ordained on American land. Father Demetrius served 40 years as a country priest known as Augustine Smith and died in Loreto (USA) on May 6, 1840. Gallitzin, a town in Pennsylvania was named after him.

And again back to his father. D.A. Golitsyn started a new chapter in his diplomatic career in 1770. Service in Holland gave the Russian ambassador a chance to "write few new pages to the Russian diplomatic history". It was meant establishing of diplomatic relationship with United States of America that proclaimed independence in 1776. The British colonies in North America were supported in the war for independence by France, Spain and Holland. The war was lead mainly at sea and had very negative impact

on the sea trade. The diplomatic way to solve the problem was more effective. Russia declared famous declaration on armed neutrality in February 1780. It gave possibility to neutral countries to continue free sea trade during the war even with the countries participating in a war. All the interested countries including France and Spain recognized the declared right to neutral navigation. Historians still look for the answer who was the actual author of the declaration. Research of N.N. Bolkhovitinov, the most prominent Russian specialist in American studies, showed that it was "D.A. Golitsyn, who the most likely inspired and outlined if not authored the draft document" (Bolkhovitinov, 1991). Russia did not recognize the USA before the war was over in 1784. Meanwhile, Golitsyn kept in contact with the representatives of the United States who resided in the country. He did it in spite of the prohibition issued to him "to receive or visit Mr. Adams or any other person, accredited from the colonies, separated from Britain" (Bolkhovitinov, 1991). This initiative had a big cost to Golitsyn who was withdrawn in 1782 and was appointed to ambassador to Turin. It was significant career downgrade and in the end of next year of 1783 he submitted resignation and chose to reside in Holland.

Dmitriy Alekseevich wrote some works on economics. He expressed his ideas in very typical for him form of letters. At least 16 letters on economics written by Golitsyn are known. They were addressed to the vice-chancellor A.M. Golitsyn, but were directed to the attention of the Empress. Her numerous notes on the edges support this fact. These small compositions were focused on various economic issues in different periods.

Golitsyn verbalized ideas on the forms and means how to eliminate serfdom in Russia. He wrote on September 30, 1770: "By granting peasants the property I meant the following:

1) Their liberation, meaning ownership of their own personal lives, no other type of property is possible if this one does not exist;

2) Movable property, their household goods and other; and at last,

3) Permission to ones who are able to purchase land on their own and own the land as we, the masters do; which will form their land register estate with time".

### The naturalist, mineralogist, collector

Golitsyn was a true man of his time, the time of encyclopedia writers and had very

wide interests: studied economics, art, history and politics and also explored the area of booming natural sciences. Natural sciences were developing more dynamically in The Republic of the United Provinces than in the rest of Europe. There were six universities and some 20 scientific societies in Holland at the time. Royal Netherlands Society of Sciences and Humanities, the oldest and the best known of them is still active. Works of Dutch scientists became recourse books for the first generation of Russian natural scientists.

D.A. Golitsyn could not be isolated from those activities. He decided to dedicate himself to natural sciences in the middle of 1770-s. His resignation followed few years later gave him free time to accomplish his dreams. "Changing his lifestyle he challenged Russian aristocracy in certain way as no one from Russian nobility did before descending "so low" to be occupied in physics or chemistry".

Golitsyn dedicated 30 years of his life to science, which put him on the same level as most prominent naturalists of the time. His interests in science were very wide: from physics, chemistry, geology, mineralogy, volcanology to medicine.

He carried out tests on nature of electricity in a laboratory and also in the field. The result of his studies was a series of works on electricity. The article "Letter on some subjects of electricity" was his first published work. It was his works with electricity that made a reason to elect D.A. Golitsyn an honorable member of Petersburg Academy of Sciences on September 13, 1778. He felt part of the highest scientific agency in the country and helped the Academy as much as he could. Brussels Academy of Science chose Golitsyn to be a foreign member in the same year.

In the spring of 1793 revolution-struck France was at war with almost all the countries in Europe including Netherlands. Russia also broke diplomatic and trade relations with France. D.A. Golitsyn in this situation had to leave Holland just before the French troops occupied the country.

A reasonable question arises about why the diplomat did not return to his country. Many facts can explain that. First of all, after Paul I coronation he was not remembered and called to the court. At second, he was close friend to French politicians and scientists, supported reformation of the serfdom law and could well fall into disgrace. At third, he did want to have opportunity to see the fami-

ly. Golitsyn moved to Braunschweig, the German town halfway between Berlin and Munster, where his wife and daughter lived. He moved there his large library, laboratory and mineralogical collection.

Now we came close to the subject matter of Golitsyn as mineralogist and collector.

Dmitriy Alekseevich Golitsyn in this period started to be more involved in mineralogy and collecting minerals. He began enjoying his new hobby already in Holland in 1780-s. As with most people, his interest started from collecting. His first mineralogical trips were to Germany. Extinct volcanoes near Bonn and Spessart plateau in Bavaria became his most popular places for mineral search. Golitsyn did not limit his activities to sample collecting. He started to immerse deeper into the new subject of his interest as a true scientist. "The zeal he utilized to acquire fundamental knowledge in all aspects of physics" was directed now to the thorough study of mineralogy, "the new discipline that was developing before his own eyes and that completely absorbed his attention and brought recognition later in his life".

D.A. Golitsyn started to study descriptive mineralogy in the time when so called naturalistic systematization approach initiated by Abraham Gottlob Werner dominated. Werner's system was based on supremacy of visual characteristics in classification. He thought that chemical composition was clearly displayed in the "exterior features, which can determine essential difference in fossil species" (Goryainov, 1835). Chemical composition exclusively could neither be a basis for an accurate classification. Jean Baptiste L. Romé de l'Isle published his "Crystallography or Description of Forms Essential to all Bodies in Mineral Kingdom" in 1783. René Just Haüy published five volumes of his "Traité de Minéralogie" in 1801, which anticipated contemporary approach in mineral classification. We need to draw reader's attention to the fact that back then "mineralogy was a voluminous science about inorganic world as a whole" (Grigoriev, Shafranovskiy, 1949) and branching of mineralogy from geology started only at the end of the 18<sup>th</sup> century.

Geosciences were blooming in those years. Many fundamental works were written then and works of D.A. Golitsyn were also noticed. He published at least 11 papers during 15 years of hard research work.

Among those he wrote two fundamental papers: "The Work on Brief Description of Minerals" (Gallitzin D. "Traite ou Description ab-

reege et methodique desmineraux", Maestricht) published in 1792 and "The Collection of the names in alphabetical order that are used in mineralogy for earths, stones, metals and semi-metals and rock tars" (Gallitzin D. "Recueil de noms par ordre alphabetique appropriés en Mineralogie aux terres et pierres. Aux mataux et au bitumen...", Brunswick) published in 1801. We will get in details of these books.

The "Traite..." had five issues published in 1792, 1796, 1801, 1808 and 1815. The work was based on the ideas of French naturalist Georges-Louis de Buffon. They met in 1760-s in Paris and Golitsyn had correspondence with Buffon for several years. He suggested systematics of minerals in his work, following Buffon's ideas which he resumed in the following: "Genesis of the bodies in mineral kingdom is the principle I prefer and will follow as long as I can. I think that it is more advantageous to others not just because it is an idea of a great person, but for it leads to the true goal. This primary goal is in the most generalized classification of objects..., reduction in number of species, which can be nothing but varieties and obstruct studying of mineralogy with multistep divisions". The author divided minerals into "8 ranks or families, which, in turn divided into classes and varieties". Down the text detailed data on almost all minerals known by that time was given in order according to the classification. The description of minerals was featured with historical facts. The names were given in Latin, French, Russia and German. The next edition was published after discovery of series of new minerals.

"The collection of Names..." was one of the last D.A. Golitsyn's works and practically was a mineralogical dictionary. It contained explicit data on known minerals and rock types. It had several editions and the second edition was published after Golitsyn had read the work of Haüy. He wrote about it: "The exceptional "The Mineralogy Course" by Mr. de Haüy... made necessary a new addition of "The Collection of names...". This "Course" helped me to realize my mistakes... I did not think twice deciding to use the guidance of this excellent work in mineral identification and comparison of minerals. I would not dare to write my opinion on the new nomenclature of the crystal shapes... when teachers speak, pupils should be silent. And I have rewritten the nomenclature... for the crystallography is the most essential part of the mentioned work and keeping in mind that it is not widely

known in Germany yet, so my work can be useful to those who would read it". One cannot underestimate the scientist's courage, modesty, his realization of his own place in science and unselfish service to the enlightenment.

Several copies of the "*Collection of names*" are kept at the Library of the Academy of Sciences in Saint Petersburg. Golitsyn sent them to Russia in August, 1801. There is no Russian translation of the book yet.

The most known Golitsyn's work besides the two works mentioned above was "*The Letter to Mr. Councilor and professor Crell*". Golitsyn's idea about amount of information one needs describing minerals mentioned in the letter is remarkable as follows: "*the bodies from mineral kingdom needs to be overviewed from every aspect... e.g. chemical analysis needs to be supplemented with data on their allocation in mountain chains, as well as with crystallization shape, their density, homogeneity, fusibility and flammability...*". Golitsyn also explains his view on origin of rocks disputing with the supporters of Verner's "neptunism". The last suggested that all rocks (including basalts and granites) were formed in result of deposition and crystallization of primordial ocean. Golitsyn was the follower of "plutonism" and supported magmatic theory of basalt formation. He wrote: "*I, honestly, do not see enough basis to exclude basalts from the generation of volcanic rocks... Basalts were formed in the depths of volcanoes and it does not matter how they formed, staying in the place of origin till some point*". Another citing from the same letter needs no comment: "*There are two approaches to the observations of minerals: one of mineralogist and the other of geologist. The first... does not achieve anything but determining and characterizing the rank, type and variety of the fossil... The physic geologist goes far beyond that: to the research of mineralogist he adds study of mode of occurrence, distribution and interrelationship of the fossils in the depths of Earth. Based on that he makes conclusions that disclose mystery of structure and composition of the globe. Pure mineralogist, no matter what place in science he has, cannot lead us to discoveries of this kind if he is not involved in geological knowledge. We would wish both sciences to come together*".

Golitsyn realized well the meaning of then actively developing analytical chemistry, mentioning particular importance of analysis of composition of minerals. Thanks

to his wide connections in scientific circles he was one of the first who learned about new sensational discoveries of new "metals and semi-metals". He kept terms with Petrus Camper, Martin Klaproth, Louis Vauquelin and many others, keeping correspondence with them and sending them samples from his collection for investigations, in particular minerals from Russia.

Golitsyn chose a phrase of French geologist Déodat de Dolomieu as an epigraph to his fundamental study: "*It is under the lead of chemistry that mineralogy could enter into internal mysteries of fossils and gain knowledge on their composition*". It is peculiar that he was very critical of works on minerals' chemistry. He wrote: "*whether the chemists have not found the best means to investigate composition of minerals yet, or of the other reasons that I do not know about, results of their analyses correspond with each other very little and we do not know how to respect all that was done and described on minerals*".

Some works of Golitsyn were dedicated to the new field of knowledge back then what now is known as volcanology. Academician S.A. Fedotov, the director of the Institute of Volcanology FEB RAS wrote: "*D.A. Golitsyn was one of the few neptunism opponents in the late 18<sup>th</sup> century. ...Most regrettably his remarkable works were forgotten and came back to attention of historians of science only in 1985*".

Golitsyn read his "*Memoirs on several extinct volcanoes in Germany*" on a session of Academy of Science of Belgium on February 18, 1785. He was amazed at that fact he was the first to study those numerous interesting volcanoes, which "were totally neglected" then. Description of the volcanoes was presented in "*The Memoirs*" and basalts, lavas and breccias were shown to be volcanic products in spite of neptunism idea of basalts being sedimentary rocks.

D.A. Golitsyn discussing the nature of volcanic activity with Italian natural scientist Lazzaro Spallanzani in 1792 came to conclusions that anticipated geological science for centuries. He wrote: "*volcanic heat*" did not originate from underground coal fires. He suggested that "*the amount of heat*" in molten rocks depended on concentration of gases in it, most importantly oxygen and sulfur compounds. Presence of the gas mixture could make "*volcanic heat*" of lower temperature than in glass making furnaces" (Fedotov, 1986).

Dmitriy Alekseevich works in natural sciences became widely known and gained him

a deserved reputation. It is enough to list titles of our compatriot to understand his position in scientific community of his time: corresponding member of Dutch Society of Sciences (1777), foreign member of Imperial and Royal Academy of Science and Letters of Brussels (1778), honorable member of Petersburg Academy of Sciences (1778), foreign fellow of Royal Swedish Academy of Sciences (1788), foreign fellow of Berlin Academy of Sciences (1793), fellow of the German Academy of Sciences Leopoldina (1795), foreign fellow of the Royal Society of London (1798), member of Free Economic Society (1798); honorable member (1799) and the president (1799) of Jena Mineralogical Society.

The last Society is of particular interest.

Town of Jena located in Duchy of Saxe-Weimar-Eisenach hosts a university founded in 1558. The university was famous by its wide and rational program in sciences. Johann Ernst Immanuel Walch was the first to introduce mineralogy in his course of natural history. His vast collection *From Three Kingdoms of Nature* (cabinet of naturals) was purchased by Karl August the Grand Duke of Saxe-Weimar-Eisenach upon initiative of J.W. Goethe in 1799 and placed in Jena ducal castle. This collection was the core of future Mineralogical Museum in Jena. Master of Philosophy Johann Georg Lenz (1748 – 1832) became the museum's custodian in the same year. Lenz introduced teaching mineralogy as an independent university course in 1872. Lenz became a chair at the University in 1794 and dedicated himself completely to mineralogy to "contribute to flourishing of this science". He found The Ducal Society of Common Mineralogy in Jena on January 7, 1796. Golitsyn's works could not be overlooked by the members of the Society and our compatriot was elected an honorable member of it in May, 1799. Goethe, Klaproth, Haüy were also honorable members of the Society.

The rule of the Society supported president and director positions. Lenz was irreplaceable director of the Society till the end of his life in 1832. The president position was offered to Dmitriy Alekseevich Golitsyn. He was elected to the president on the common meeting of the Society on June 21, 1799. Dmitriy Alekseevich could not visit Jena as for his poor health. Lenz went to meet him in Braunschweig. He was the president for four last years of his life and led frequent correspondence with Lenz. Twenty-five of his letters from that correspondence are kept in archives of Jena University. Golitsyn's activi-

ty in the Society was not limited to communication. He also transferred books and minerals including ones that came from Russia from his collection to the Society. He shared scientific news from Russia with it. For example, he told several times about A.A. Musin-Pushkin and his trip to Caucasus. He wrote that he request him to "gather a collection of beautiful minerals for our Society". He also informed that a Petersburg scientist "checked and confirmed" presence of chromium in the composition of "the red lead ore from Siberia" (crocoite). Golitsyn's works given to the Society are kept in the library of Jena University. Furthermore, Dmitriy Alekseevich continued to supply new publications and distributed new scientific information from Russia.

Meanwhile, degraded health of Dmitriy Alekseevich was complicated with financial difficulties. He started to undergo hardship as he always had little money. This situation made him think about future of his library and the mineral collection. To transport them to Russia was a risky project considering military and political situation in Europe. Need to move out from his house to a cheaper place complicated the problem. Dmitriy Alekseevich found a brilliant solution to hand his mineralogical collection and the library to the Mineralogical Society that he was heading. This gift was received with gratitude. Here is the letter composed by Goethe and signed by Duke Karl August: *"This institution [meaning the Mineralogical Society, author] that started little and reached stable life solely thanks to your care, Dear Sir, is indebted to you for the respect and brilliance distinguishing it from the rest of similar organizations. You favored to carry the burden of the president position to support the Society with your knowledge and also demonstrated superior kindness to donate magnificent collection, that interests us as both for the value and rarity of the samples and for the art of the expert who collected them"*.

It was very difficult to hand the collection and Golitsyn asked Lenz on August 8, 1802 to speed the process: *"I have to leave the house... if you receive my collection, I will leave it in the house, which I abandon..."* Dmitriy Alekseevich was informed on October 29, that all the minerals were packaged and would be the same day at expediter who would not procrastinate to send them to Jena. The collection was moved to Jena and exhibited in the old Duke's castle.

What was Golitsyns collection donated to Jena Mineralogical Society like? The information on it is fragmental and scarce. Private archive of Golitsyn that was kept in Braunschweig was destroyed during the Second World War as Tsverava mentioned. There was no catalog of the collection survived. Horst Frank, the custodian of the mineral collection of Jena University wrote about this fact to Wendell Wilson in a private letter in 1991 (Wilson, 1991).

It is known that by the time it moved from Hague to Braunschweig the mineral collection impressed the contemporaries with its quantity, variability and rarity of the samples. G. Forster who visited Golitsyn in 1790 wrote: *"The mineralogical cabinet of the prince is a collection of an expert, he gathered and kept on his own, which is rare and very didactic in its own way"*.

Golitsyn wrote: *"My collection is remarkable by the number of very large size minerals from faraway countries"*.

There is no doubt that the collection was replenishing from the numerous correspondents including ones from Russia. Visiting different cities the prince used every chance to familiarize himself with museums and private collections and purchase something interesting for himself.

The author picked all information from Tsverava book that was connected to description of the collection. There was very few things mentioning it: *"I have just received very interesting minerals from Siberia: singular aquamarines in a coat, crystal malachite, coated gold bearing pyrites, fragile gold bearing quartz, huge piece of hornblende from a*

*silver mine, stone of Russian labrador and many other"*. He mentioned also the following: *"half a foot block of flexible Peiresc sandstone"; "peculiar set of tellurium ores, sent by abbot Arnoldi from Vena", "very beautiful hummocky malachite, weighing around a quintal (centner)", "beryl veins from the Urals and Dauria, mixed with yellow and colorless topaz"; "zeolites of all kinds"; "tourmaline group with well preserved pyramids"*.

It is known that when the collection was transferred the cargo weight sent from Braunschweig to Jena accounted 1850 kg.

V.I. Vernadsky wrote about D.A. Golitsyns collection: *"Unfortunately, the collections of Goethe, of Jena University, Golitsyn's collection and other collections were not looked through by anybody who knew mineralogy of our country. They may contain unique and new deposits that were not kept in our museums. Unfortunately, the collection was not available due to some renovations during my visit to Weimar in 1936"* (Vernadsky, 1981).

There were two opinions on the fate of the collection. Tsverava wrote in his book: *"I requested information about the mineralogical collection of Golitsyn during my visit to Jena. It was gradually dissolved in the exposition of Jena Mineralogical Museum. The Mineralogical Society came to closure in 1890-s and the collection could not find a new owner after the old castle (where it was kept) was demolished in 1908. 35 000 mineral samples are kept in one of warehouses of Jena University till now"*.

The other citing is from Wendell Wilson's article: *"Jena Mineralogical Society closed in*



Fig. 2. Slab of sandstone. 44 × 17 cm. Brazil. Mineralogical collection of Friedrich Schiller University, Jena, Germany. Photo: M.B. Leybov.

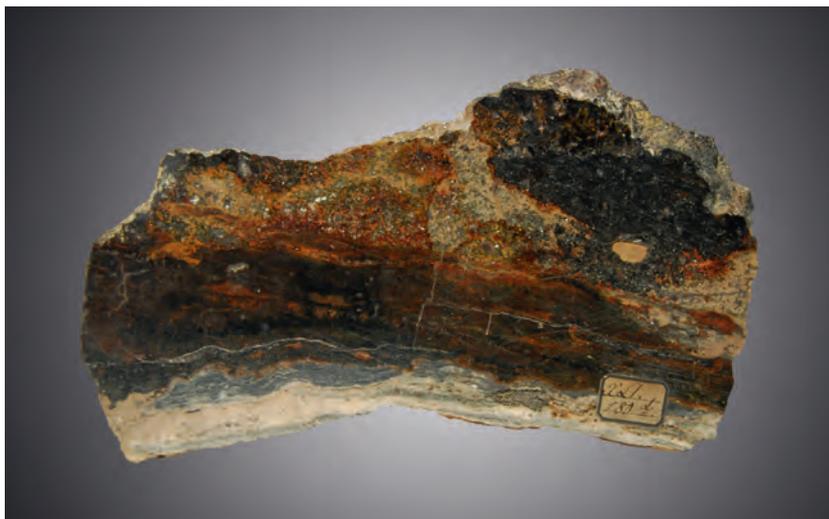


Fig. 3. Skarn with garnet and biotite 17 × 9 cm. Vesuvius, Italy. Mineralogical collection of Friedrich Schiller University, Jena, Germany. Photo: M.B. Leybov.

1890-s and the castle was demolished in 1908. Golitsyns collection, though did survive and was moved to newly build building of Mineralogical-Geological Institute where minerals were kept till 1945. They perished in bomb attack on the building" (Wilson, 1991), thus Wilson cited Tserava, whose text was a bit different.

The last known manuscript of D.A. Golitsyn was a letter to Lenz from March 8, 1803. The prince wrote that he hoped the collection was received in good condition and informed that he received a silver medal from Free Economic Society in Petersburg for "his *Collection of names...*" was recognized as the most useful for science...". That letter had the last mentioning of the collection: "I suppose, Dear Sir, that all minerals from my collection are currently unpacked and are in your disposal. I want to ask you to take care of putting them in order of Haüy system and do not worry ordering them as they were organized before. I had an honor to tell you that I had no time to change this order, nevertheless I felt an extreme necessity to change it lately".

Dmitriy Alekseevich died in Braunschweig on March 4 (March 16 by Gregorian calendar), 1803 and was laid to rest on the cemetery of St. Nicolas church.

Dr. Birgit Kreher-Hartmann prepared a report on the history of Mineralogical Museum of Jena University on 5<sup>th</sup> Mineralogical Museums Symposium in Saint Petersburg in 2005 (Kreher-Hartmann, 2005). She told about finding of at least two samples from D.A. Golitsyns collection and according description of the samples in the catalog of the University collection (mineralogical collection of Friedrich

Schiller's University, Jena) and in the catalog of Golitsyns collection (Goethe and Schiller archive, Weimar). One of the samples is a flat slab of sandstone (Fig. 2) and the second was skarn with garnet and biotite (Fig. 3).

Photographs of the samples and the catalogs were made by M.B. Leybov in 2008 with the kind permission from Brigit Kreher-Hartmann.

The founding of the samples of Golitsyns collection as well as an interest to it from our German colleagues show us that the name of our compatriot is still remembered and will stay forever in the history of mineralogy.

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