



Peripatetic careers of Vsevolod and Eugenie Gorsky, mid-20th century Slovenian-educated geoscientists

Popotna kariera Vsevoloda in Evgenije Gorski, študentov geologije in rudarstva v Sloveniji na začetku 20. stoletja

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Abstract

In September 1947, South Africa's most famous geologist, Dr Alexander Logie du Toit, FRS, well known for his support of the concept of Continental Drift, received a visit from a Slovenian-educated Russian émigré couple, Vsevolod and Eugenie Gorsky, who were newly arrived in South Africa. Vsevolod, born in what is now Ukraine, was a mining engineer, geologist and geophysicist with vast experience in the minerals industry, while his wife Eugenie, born in the Russian Caucasus, was an analytical geochemist. Vsevolod had a brief exchange of letters with du Toit, seeking his help in obtaining employment in South Africa's minerals industry. Included in the first letter to du Toit were detailed curricula vitae of both Vsevolod and Eugenie Gorsky. These detailed CVs allow us to reconstruct the training (at the University of Ljubljana, under the influence of Russian mineralogist V.V. Nikitin) and careers of these two earth science professionals in Slovenia and Macedonia, in the early Twentieth Century, and to follow their peripatetic careers as they left the Kingdom of Yugoslavia before the start of the Second World War, in Cyprus, Egypt, Tanganyika and South Africa. They ultimately ended up in Brazil in the 1960s and 1970s, and probably retired there. Eugenie was constrained to follow her husband wherever his career led him, but she always ended up working in most of the countries and places they found themselves in. As a professional couple who travelled the world, the Gorskys were pioneers in a way of life that is commonplace now in a globalized world.

Izveček

Septembra 1947 je najslavnejšega geologa Južne Afrike, dr. Alexandra Logie du Toita obiskal ruski emigrantski par Vsevolod in Eugenija Gorski, ki je univerzitetne študije dokončal v Sloveniji. Du Toit je bil član Angleške kraljeve družbe in znan po podpori konceptu premika kontinentov. Vsevolod, rojen v današnji Ukrajini, je bil rudarski inženir, geolog in geofizik z bogatimi izkušnjami na področju industrije mineralnih surovin, medtem ko je bila njegova žena Eugenija, rojena na ruskem Kavkazu, analitična geokemičarka. Vsevolod si je z du Toitom na kratko izmenjal nekaj pisem in v njih iskal podporo pri zaposlitvi v južno afriški rudarski industriji. V prvem pismu so bili navedeni le podrobni življenjepisi Vsevoloda in Evgenije Gorski. Ti nam omogočajo, da rekonstruiramo šolanje na univerzi v Ljubljani pod vplivom ruskega mineraloga V.V. Nikitina, in razvoj dveh strokovnjakov s področja ved o Zemlji v Sloveniji in Makedoniji. Sledimo lahko njuni popotni karieri, ko sta zapustila Kraljevino Jugoslavijo pred začetkom druge svetovne vojne. Odšla sta na Ciper, v Egipt, Tanganjiko in Južno Afriko. Svojo profesionalno pot sta v šestdesetih in sedemdesetih letih končala v Braziliji in se tam verjetno upokojila. Eugenija je bila vezana na svojega moža, kamorkoli ga je vodila njegova karierna pot in vedno je delala tam, kamor je zaneslo njenega moža. Gorska sta bila profesionalni par, ki je potoval po svetu. Bila sta pionirja v načinu življenja, ki je v današnjem globaliziranem svetu običajno.

Introduction

In the aftermath of the Second World War, in the late 1940s, there were large migrations of people who had fled their countries, and were now seeking either to return, or to find a new place to live. In Southern Africa there was a huge demand for technical professionals in the Mining Industry, which was one of the most important in the world, having some of the world's largest gold, diamond, chrome and platinum mines (du Toit, 1939).

At that time in South Africa, the most famous geologist was Dr Alexander Logie du Toit, FRS (1878-1948), who had written three definitive books on South African geology and geography (especially du Toit, 1939), and two internationally renowned books concerning comparative geology of wandering continents (du Toit, 1927, 1937), which provided strong support for Alfred Wegener's theories of Continental Drift. Because he had been President of the Geological, Geographical and Archaeological societies of South Africa, as well as having been an Editor of Economic Geology, and Consulting Geologist for the largest diamond mining company, De Beers, he was often contacted or visited by people in connection with Economic Geology, and Southern African geology in general, as well as palaeobotany (Gevers, 1950). Du Toit had retired to his home in Cape Town in 1941, but spent the last seven years of his life actively pursuing his research interests, and doing consulting work in economic geology and geohydrology.

In 1947 du Toit was contacted by a Slovenian-trained mining engineer, Vsevolod Gorsky, who had come to South Africa from Tanganyika, together with his wife Eugenie Gorsky, who was an analytical geochemist. The Gorskys were looking for technical employment in the mining industry of South Africa, in their respective fields, and visited Alex du Toit and his wife Evelyn at their home in Cape Town. Because du Toit had worked in Tanganyika, and had maintained a correspondence with several heads of the Geological Survey Department in Dodoma, it is possible that the Gorskys were introduced to du Toit through that connection. The Gorskys and du Toits were supposed to meet again, but Vsevolod had to go urgently to Pretoria, the capital city, in connection with residence permits. He wrote to du Toit on 14th September 1947, enclosing detailed curricula vitae for both himself and for his wife Eugenie. Du Toit sent a brief letter back, outlining prospects in the chrome industry in South Africa, as well as possibilities of utilizing gyp-

sum in the cement industry, and opportunities in the nascent asbestos industry. Asbestos had been regarded as a strategic mineral during the War, and du Toit (1945) had published a major study on the genesis of amphibole asbestos in South Africa (which also explains why he had "excellent specimens of asbestos" in his collection which he was able to show to Gorsky). Gorsky himself had also worked on asbestos in Cyprus, where chrysotile asbestos deposits were mined in the serpentinites of the Troodos Massif (Sagui, 1925; Henckmann, 1941). Gorsky replied to du Toit from Johannesburg on 28th September 1947, telling him that he had managed to obtain permanent residence status in the country, and that he would be looking for a job in the chrome industry, since that was his "speciality". No further correspondence between the Gorskys and du Toit is preserved in the du Toit archives. Du Toit passed away rather suddenly and unexpectedly just a few months later, on 25th February 1948.

Letters and Curricula vitae

The originals of the letters and curricula vitae reproduced here are in the Alex du Toit Papers (Jagger Library, University of Cape Town).

1. Letter from V. Gorsky to A.L. du Toit, 14 September, 1947

V. Gorsky
146 Yeo Str.
Bellevue East,
Johannesburg,
14th September 1947.

Dear Dr. du Toit,

We left Capetown unexpectedly owing to my business in connection with permit for permanent residence which I hope to get this month. So we lost an opportunity to have once more an enjoyable meeting with you and your wife.

I expect to get an interesting consulting work on problems of beneficiation of rather difficult Platinum, Nickel and Lead Ores.

I touched also a group of S. African people who are very interested in Asbestos and would like to start prospecting of new areas or to acquire a small or medium size mine or favourable deposits.

I understand that besides asbestos bearing areas in the Transvaal, Griqualand, etc. described in the "Mineral Resources of S.A." there are new discoveries and small deposits in Cape Province too. I remember also a few excellent specimens of asbestos I saw in your collection. Please would

be kind to communicate me any information in that connection you may kindly give me. Thanking you in anticipation and wishing all the best to you and your wife both of us, I remain,

Sincerely yours,
V. Gorsky

2. Curriculum vitae, Vsevolod A. Gorsky

Professional Record

Vsevolod A. Gorsky, Qualified Mining Engineer

Born at Proskurov, Russia of 7th August 1898; Yugoslav subject. Married. No children.

Educated at the University of Kharkov, Russia, and Zagreb, Yugoslavia, 1917-1921, Geological Department, and at Technical and Mining Department, University of Ljubljana, Yugoslavia 1922-1926.

Graduated in Ljubljana, Yugoslavia, on 12th November 1926 and received the degree of Mining Engineer.

Received state authorization for private mining practice 1938.

Employments

1926-1929 Assistant Professor of Mine Surveying and Geophysical Prospecting in the Mining Department, University of Ljubljana.

1929-1932 Mine Superintendent and Assistant Technical Director with Allatini Mines Ltd. (registered in London, Skoplje, Yugoslavia).

1932-Consulting Engineer to Coal Mine Nerezi, Skoplje. Simultaneously with the previous service.

1932-1938. General Superintendent (Technical Director) of Chromasseo Mines, Skoplje.

1938-1942 Mine and Mill Superintendent and Chief Engineer with the Cyprus Chrome Company, Limassol, Cyprus.

1942-1943 with Selection Trust Ltd., first as Representative in Cyprus, then in charge of the Wolfram Concentrating Plant in Alexandria, Egypt.

1943-1944 consultant in ore dressing of tin, lead, zinc and other ores for the Egyptian Metal Refining Co., Anglo-Egyptian Chemical Industries, Um Ghaig and El Egly Mines, Cairo. At the same time on special war time service for the Yugoslav Red Cross Society, as a Liaison Officer with the M.E. Relief and Refugee Administration, British Minister of State Office in Cairo, Egypt.

1945-1946 Underground Manager of Uruwira Minerals Ltd., Uvinga, Tanganyika (Lead-Copper-Gold-Silver Mine).

1946 Temporary Metallurgist at the Geological Division, Department of Lands and Mines, Dodoma, Tanganyika Territory.

Other professional activities

1923-1925 student practice in Coal Mines: Trbovlje, Kočevje, Tresibaba, etc., Yugoslavia.

From 1930 Contributing Editor to "Geophysical Abstracts" of U.S. Bureau of Mines, Washington.

From 1936 Member of the American Institute of Mining and Metallurgical Engineers, New York.

From 1938 Member of Engineers' Chamber in Belgrade, Yugoslavia.

1923-1932 studying Yugoslav Coal, Iron, Lead, Zinc, Copper, Magnesite and Bauxite Mines and Concentrating Plants.

Travelling to England and France in 1937, to Austria, Belgium and Germany in 1938 for studying ore dressing problems and purchasing Concentrating Plant equipment for the Chromasseo Co.

1940-1942 studying Copper, Gold, Pyrite and Asbestos Mines and Concentrating Plants in Cyprus.

Published 28 papers including original research in geophysics, geochemistry, mining engineering and surveying in Serbo-Croatian, Slovenian & Russian technical and scientific journals and magazines.

Expert knowledge in general mining engineering, economical geology and ore dressing, especially development, underground extraction (stopping), open-cast mining, estimation of ore reserves, testing and concentrating of Chrome, Wolfram, Tin, Lead, Zinc, Nickel and other ores. Wide experience in the mining geology and prospecting of base metal ore.

Wide experience in laboratory investigation and scientific research.

Knowledge of languages: Russian, Serbo-Croatian and Slovenian perfect, English and German good and French fair.

Testimonials and references are available.

3. Curriculum vitae, Eugenie Gorsky

Curriculum vitae
Mrs. Eugenie Gorsky

Nee Gvozdev; born at Vladicaucasus, Russia on
13th December 1902. Yugoslav subject.

Education

8 years of secondary school College in Armavir.
Maturity certificate 1920, Armavir, Russia.

1926–1931 Faculty of Science, University of Ljubljana, Yugoslavia.

Graduated in the Faculty of Science (Philosophical Faculty) of the University of Ljubljana on 19th October 1933. Scientific group: Mineralogy, Petrography, Geology, Paleontology, Chemistry, Physics.

Employment and activities

1931–1933 worked in the assay laboratories of Allatini Mines Ltd and Chromasseo Ltd, Skopje, Yugoslavia.

1938–1941 worked in the drawing office of the Cyprus Chrome Co, Troodos, Cyprus.

1941–1942 worked in the assay laboratory of the Cyprus Chrome Co, Ay. Nicolaos, Cyprus.

From 1.3.1943 to 1.8.1943 Analytical Chemist with the Selection Trust Ltd at the Wolf-ram Concentrating Plant in Alexandria, Egypt.

From 11.9.1943 to 20.10.1944 on military service with the Yugoslav Red Cross Society in Cairo, Egypt. Part time service.

From 1.12.1943 to 30.11.1944 Assayer with the Um Ghaig Mine, Cairo.

From 19.2.1945 to 15.3.1946 Assayer in charge of the assay laboratory of the Uruwira Minerals Ltd., Mpanda near Uvinga, Tanganyika.

Published an original research “Petrography of the Mine Casak near Skoplje”, Bulletin des service geologique de Yougoslavie, vol. 5, Belgrade 1937 (Summary in German), a thesis intended for submission for the degree of Ph. Dr. The final examination was not taken owing to departure from Yugoslavia in 1938 and the war.

Expert knowledge in mineralogy, petrology and especially in the use of Fedorov universal method; also in inorganic chemical analysis and especially mineral, rock and soil analysis and in the assay of the ores of chromium, wolfram, lead, zinc, tin, copper, iron, nickel, gold, silver etc. Experience in technical drawing.

Testimonials and references available.

4. Letter from A.L. du Toit to V. Gorsky, 22 September, 1947

2 Bye Way,
Pinelands
Cape Town
22 Sept., 1947

Mr V. Gorsky
146 Yeo St.
Bellevue East

Dear Mr Gorsky

I reply to your letter of the 14th Sept. I should like to tell you that I had to go to the Northern Transvaal not long after I had seen you, & that, when I enquired at Sea Point, I found that your wife & yourself had already gone to Johannesburg. I was myself in Johannesburg on the 10th but of course did not know your address.

I hope that you may obtain a permit for permanent residence & am pleased to observe that in the meantime, you have been able to make certain contacts in mineral problems, which I trust may lead to important consulting business.

There are several cases in which beneficiation of ore would seem of some importance. One of these is that of the Chromite ore of the Bushveld, seeing that a good deal of it just falls below the standard. Another curiously is that of Gypsum, where used & mined by Cement Companies, though I understand it is being applied at one spot at Windsorton Road.

As for asbestos, there is room for improvement of the amphibole kinds, but unfortunately the larger producers – Egnep Ltd & Cape Asbestos Co. Ltd, have some large plants & probably not willing to make further changes in machinery. The smaller concerns are satisfied with hand-cobbing, which is probably cheaper in the end, milling being only profitable on a large scale. You might however try to get in touch with firms such as Dominion Asbestos, Kuruman or Warrendale Asbestos, Daniels Kuil, to the west of Kimberley. If I learn anything I shall try & let you know.

Another mineral for which there is a shortage, that will get more important in the future is soft limestone suitable for making cement, as the existing deposits are used up.

With the best of wishes to Madame Gorsky from my wife & myself.

Your sincerely

A.L. du Toit

5. Letter from V. Gorsky to A.L. du Toit, 28 September, 1947

V. Gorsky,
146 Yeo Street,
Bellevue East,
Johannesburg
28.9.1947

Dear Dr du Toit,

Many thanks for your kind and very interesting letter of the 22nd inst.

In the meantime, I got a permit for permanent residence and I am very happy indeed that all my worries in this connection are over. At last I can start to arrange our life in the country on a sure base and to take some interesting job.

I hope I will get a chance to see you sometimes on your travelling in Transvaal and in Johannesburg.

I would like to touch chrome people here as chromite is my chief "speciality" and object of work during many years.

With the best wishes and many thanks from both of us to your wife and yourself,

Sincerely yours,
V. Gorsky.

At the top of this letter, du Toit had penciled in "No reply needed". This was the end of their correspondence.

Discussion

The curricula vitae of both Vsevolod and Eugenie Gorsky are interesting documents, giving insights into the training of professionals in the field of geology, mining engineering, mineralogy and geochemistry; and revealing the peripatetic nature of life in the mining industry in pre-War Kingdom of Yugoslavia, as well as forced relocations to exotic destinations like Cyprus, Egypt, Tanganyika and South Africa during and after the War. In an overwhelmingly male-dominated field, Eugenie Gorsky provides a rare example of a female geochemist who was active in Africa, especially in the first half of the twentieth century, in countries such as Egypt, Tanganyika and South Africa. Her story is one that needs to be told, alongside that of other pioneering women in geoscience in Africa such as geologist Katharine Fowler-Billings (1902-1997; née Fowler) (Fowler-Lunn, 1938; Fowler-Billings, 1996), and palaeobotanist Dr. Edna Plumstead (1903-1989; née Janisch) (Maguire, 1990). Eugenie Gorsky was not as free in her choices as these other women,

since her career and movements were intimately connected and dependent on her husband's own career, and she followed him around the world. Nevertheless, in their peripatetic lifestyle, the Gorskys as a working professional couple were pioneers of a way of life that is now commonplace in a globalized world.

From their curricula vitae, it is possible to reconstruct the early careers of both Vsevolod and Eugenie Gorsky. Vsevolod was born in 1898 in "Proskurov, Russia". This town is located in Proskurov County, Kamenets-Podolsk District, Ukraine (just north of the Dniestr River, close to the border with Moldova), and today is called Khmelnytskyi. Proskurov was the site of a major anti-Jewish pogrom by the Nazis in 1941, and an earlier one in 1919 (Voskoboynik, 2002). In 1897 the Jewish population was 11,411, about 50 % of the population of the town (Voskoboynik, 2002). Thus it is possible (though unproven) that Vsevolod was of Jewish origin. Consistent with this possibility, it should be noted that the Gorskys' address in Johannesburg in 1947 was in Yeo Street, in Bellevue East which formed part of Yeoville, which was one of the suburbs most densely populated with immigrant Jews at that time (Mendelsohn & Shain, 2008, p. 99). This may be important, since Vsevolod and his wife Eugenie left Yugoslavia in 1938, after which it was occupied by Nazi Germany during the Second World War, and they apparently never returned there. Vsevolod left his hometown in 1917 to study at the University of "Kharkov, Russia", and then in Zagreb until 1921. The University of Kharkov (now Kharkiv) was, and remains, one of the main universities in what is now the Ukraine, with a renowned Geological Faculty (Lobenko, 2018). In 1921, at the time when Vsevolod was in Zagreb (the capital of Croatia), there was just a rudimentary department of geology at the Technical College, where a Chair of Geology and Mineralogy had been established in 1919. This was the nucleus for what eventually developed into the Faculty of Mining Geology and Petroleum Engineering at the University of Zagreb, where mining engineering studies only commenced in 1939 (Vlahović et al., 2009). Prior to that time, the only well established university department of geology and mining in the Balkans was at the Technical Faculty of the University of Ljubljana, where in 1919 a Mineralogical-Petrographical Institute (headed by Professor Karel Hinterlechner from Vienna), and an Institute for Mineral Deposits, were founded, and which were later merged in 1927 (Internet 1). In 1920 an Institute of Geology

and Palaeontology was formed in the Faculty of Arts, headed by Prof. Marijan Salopek, from Zagreb. It was to the University of Ljubljana that Vsevolod Gorsky went to further his studies in 1922.

Eugenie Gorsky (née Gvozdev) was born in 1902 at Vladikavkaz (today known as Vladikavkaz, in the Republic of North-Ossetia-Alania, Russia). This town was visited by Alex du Toit on 4th July 1937, on a field excursion to the Caucasus with the 17th International Geological Congress, which was held in Moscow (Master, 2017). At that time, Vladikavkaz was known as Ordzhonikidze. Her first name was also spelled “Eugenija” (e.g., Gorsky, 1937). Her maiden surname “Gvozdev” derives from “gvozd”- nail or peg (nickname of thin person), or someone with strong, firm character, metaphorically made of iron. Although her name is not a specifically Jewish name, it is possible (though unproven) that she may also, like Vsevolod, have had Jewish origins. A Jew with the name of Moysey Gvozdev appeared on a list of Records of Bay Area Council for Soviet Jews 1952, 1954-1999 (Gardiner & Filimonov, 1999). According to census records, in 1897 there were 1214 Jews in Vladikavkaz (2.8 % of the population), while the 2010 census revealed that about 3.1 % of the population of Vladikavkaz is Jewish (Russian Federal State Statistics Service, 2011). Eugenie was educated at a school in Armavir, which is located in the eastern part of the Russian administrative region of Krasnodarskiy Krai, along the railway line linking Vladikavkaz and Rostov on Don.

It is interesting to note that both the Gorskys, although Yugoslav nationals who studied in Slovenia, were born in far-flung regions of the Russian empire, before the formation of the Soviet Union. How and why they both ended up in Ljubljana (in what is now the Republic of Slovenia) is not known, though after the 1917 October Revolution in Russia, many Russians fled to the “Kingdom of Serbs, Croats and Slovenes”, later called the Kingdom of Yugoslavia. The fact that they were both “Yugoslav subjects” suggests that they may have been either voluntary émigrés, or refugees, fleeing from the communist USSR, who had been granted domicile in the Kingdom of Yugoslavia. Both Vsevolod and Eugenie were most likely attracted to the University of Ljubljana because of its reputation in the fields of science and engineering, and this is where they probably met. In 1926-31, Eugenie was enrolled as an undergraduate student in the Faculty of Science. During this same period, Vsevolod was finishing his

degree in Mining Engineering. It is probable that Vsevolod and Eugenie may have gotten married during that time. Their married names (given as “Vsevolod Gorskiy and Eugenija Gorskiy”) appear on a membership list of the Ljubljana Cave Research Society in 1927 (DZRJL, 2015).

Vsevolod was very productive in the late 1920's- in his CV he mentions that he had published 28 papers and articles including original research in geophysics, geochemistry, mining engineering and surveying, in Serbo-Croatian, Slovenian and Russian technical and scientific journals and magazines. A few of these articles are accessible through internet searches- they include several papers on geophysical methods and applications (Gorsky (1926a,b; 1929a,b,c), a paper on geochemistry applied to landscapes, reviewing the ideas of the Russians Vladimir Vernadsky and Alexander Fersman (Gorsky, 1927), and a paper about the Institute of Surveying of Mines and Geodesy at the University of Ljubljana (Gorsky, 1929d).

Gorsky's (1927) interest in the ideas of geochemist and philosopher Vladimir Vernadsky (1863-1945) may have been sparked by one of the most famous professors in the Geology Department of the University of Ljubljana, Vladimir Vasilievich Nikitin (1867-1942), who had corresponded with his fellow countryman Vernadsky from 1915 to 1930 (Brenčič, 2018). Professor Nikitin had also had a notable formative influence on Eugenie Gorsky, who asserted in her CV that she had “expert knowledge in mineralogy, petrology and especially in the use of Fedorov universal method”. Nikitin (1936) was world-renowned for his use of the method pioneered by Russian mineralogist Evgraf Fedorov (1853-1919), which utilized a Universal Stage mounted on a petrographic microscope to study the optical indicatrix to determine the composition of feldspar (Duhovnik, 1953). As a Russian émigré, Nikitin clearly influenced the Russian émigré couple of Vsevolod and Eugenie Gorsky. After graduating as a Mining Engineer, Vsevolod was hired by the Mining Department as Assistant Professor of Mine Surveying and Geophysical Prospecting from 1926 to 1929, after which he was replaced by another immigrant from the Russian Empire (Nagorno Karabakh), Dimitry Arshakovich Chahnazaroff (Mihael Brenčič, written comm., 2020), who soon emigrated to South America (Tchoumatchenco et al., 2018). Russian immigrants among the Faculty and students of the University of Ljubljana played an important role in broadening the internationalization of teach-

ing and research, and in maintaining strong links with renowned researchers in Russia.

While Eugenie was still completing her degree, both she and Vsevolod started working at the chrome mines near Skoplje. Skoplje is the former (Serbo-Croat) spelling of the name of the capital of North Macedonia, which is today called Skopje. Vsevolod worked at Allatini mines near Skopje as Mine Superintendent and Assistant Technical Director from 1929-32, and then was at the Chromasseo Mines as General Superintendent and Technical Director, from 1932 to 1938. During this time, Eugenie worked in the assay laboratories at both Allatini and Chromasseo mines from 1931-1933. In 1938, in response to a worsening political and economic situation, and perhaps sensing the gathering clouds of war, the Gorskys left Yugoslavia for Cyprus, to work for the British firm Selection Trust, which owned chromite mines there. Selection Trust also owned the largest lead-zinc mines in Yugoslavia, at Trepča (Wright & McCroskey, 1944), where Vsevolod had worked before.

The Gorskys' move to Cyprus was vindicated by subsequent events which unfolded in Yugoslavia during the Second World War. The Chromasseo (or "Asseo") mines, which had been owned by the Jewish family of its late founder Moses Asseo, were confiscated in 1941 by the invading Germans and taken over by a company called Yugochem, which was 50 % owned by a subsidiary of the German Krupp conglomerate called Deutsch-Bulgarische Chromerzbergbau A.G. (War Department, 1944), and 50 % owned by the Hermann Goering Works (US Military Tribunal Nuremberg, 1948). Later in 1941 the Krupp conglomerate obtained full control over these mines (War Department, 1944). The Allatini Mines, which are situated at Orasje, 24 km NW of Skopje, had been opened with British capital in 1928 (Wright, 1939), but also came under German control during the war (Hehn, 2005).

The Gorskys in Cyprus worked at the chrome mines in the ultrabasic Troodos Massif in the centre of the country (Henckmann, 1941). After four years in Cyprus, working on the chrome mines, Vsevolod became the country representative for Selection Trust. Eugenie had worked from 1938 to 1941 in the Drawing Office of Cyprus Chrome Company at Troodos, then from 1941-1942 she worked in the Assay Laboratories of the company at Ayios Nikolaus.

In 1943 Vsevolod was transferred to Selection Trust's operations in Alexandria, Egypt, where he relocated with Eugenie. He worked there at

the Wolfram (Tungsten) Concentrating Plant where rare metal concentrates were produced, from ores derived from pegmatites in the Neoproterozoic basement complex. Eugenie worked in the Assay Laboratory of the Concentrating Plant from March to July 1943.

Later in 1943, the Gorskys moved to Cairo, where Vsevolod worked as a metallurgical consultant for lead, zinc and other ores for the Egyptian Metal Refining Company, and for Anglo-Egyptian Chemical Industries, on their tin and rare metal (Ta-Nb) deposits associated with greisenised and albitised pockets and pegmatites in granites at Um Ghaig and El Egly Mines, situated in the Red Sea Hills south of Quseir (Abouzeid & Khalid, 2011). Eugenie worked as an Assayer for Um Gheig Mines at their Cairo laboratory, from December 1943 to November 1944. While they were in Cairo, both the Gorskys enrolled for special wartime service for the Yugoslav Red Cross Society, and Vsevolod also served as a Liaison Officer with the Middle East Relief and Refugee Administration, British Minister of State Office in Cairo. They contributed to the long history of medical cooperation between the British and Yugoslavs in both peace and war (Löwenthal, 1961).

In 1945, the Gorskys moved again, this time to Selection Trust's Uruwira Minerals operations in Tanganyika (now Tanzania), East Africa. In the Uruwira mineral field (Stockley, 1939), a rich gold-copper deposit was discovered at Mpanda in 1939 (de la Vallée Poussin, 1939). This Proterozoic polymetallic (Cu-Au-Pb-Ag) vein-type deposit in the Ubendian Belt was mined well into the 1980s (Nanyaro, 1989). From February 1945 to March 1946, Vsevolod worked as an Underground Manager at the Mpanda mine, while Eugenie worked as Assayer in Charge of the Assay Laboratory of Uruwira Minerals Limited at Mpanda. Later in 1946, the Gorskys moved again, this time to Dodoma, where Vsevolod was Temporary Metallurgist at the Geological Division, Department of Lands and Mines, of Tanganyika Territory.

At the time of his correspondence with Alex du Toit in September 1947, Vsevolod Gorsky had arrived in South Africa with Eugenie not long before, since they were still in the process of applying for residence permits. They had probably arrived by steamer from Dar-es-Salaam, and disembarked either in Lourenço Marques, Portuguese East Africa (now Maputo, Mozambique), or Durban, South Africa, and then travelled by train to Johannesburg and Cape Town.

Aside from the biographical information revealed in their *curricula vitae*, not much is known about the subsequent careers of the Gorskys. In his last letter to du Toit dated 28 September 1947, from Johannesburg, Vsevolod revealed that he had managed to obtain permanent residence permits, and was looking forward to working in the minerals industry in South Africa. However, it has not yet been determined how long the Gorskys spent in South Africa, and where they spent the decade of the Fifties. In the 1960s and 1970s, they were living and working in Brazil, and they produced a number of mainly unpublished joint reports for the Brazilian National Commission for Nuclear Energy (Gorsky & Gorsky, 1962, 1966, 1972, 1974). No information has yet been found about the fate of the Gorskys, but at the time of their last known report (Gorsky & Gorsky, 1974), Vsevolod was 76 years old and Eugenie was 72, both long past retirement age. After having spent at least a dozen years there, it is likely that they ended their nomadic careers and retired in Brazil, and may have died there.

In today's globalized era, many professional couples roam the world as expatriates, having given up their homes in their countries of origin, to become roaming "free agents". The case of Vsevolod and Eugenie Gorsky shows that this was happening in the first half of the Twentieth Century, when the driving force for their peripatetic existence was not just professional and financial advancement, but also imperatives forced on them by circumstances of revolution, war, and social upheaval, following the Russian Revolution and the Second World War. As a professional couple active in geosciences in Africa, they led the way in their field. Eugenie, as a female analytical chemist working in the mining industry in several European and African countries, was also a pioneer in what was then, and still is, a male-dominated profession. Like many other émigré geoscientists of Russian origin who ended up in Latin America (Tchoumatchenco et al., 2018), the Gorskys spent the final years of their careers in Brazil.

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References

- Abouzeid, A.-Z.M. & Khalid, A.-Z.M. 2011: Mineral Industry in Egypt- Part I: Metallic Mineral Commodities. *Natural Resources*, 2: 35-53.
- Alex du Toit Papers. File BC 722, B1 General Correspondence (1930's-1940's). Jagger Library, Univ. of Cape Town, Cape Town, South Africa.
- Brenčič, M. 2018: Correspondence between Vasily Vasilyevich Nikitin and Vladimir Ivanovich Vernadsky. *Geologija*, 61/2: 229-238. <https://doi.org/10.5474/geologija.2018.016>
- de la Vallée Poussin, J. 1939: Découverte d'un nouveau gisement cupro-aurifère de Tanganyika Territory. *Bull. Acad. R. Belg., Cl. Sci.*, 25: 279-288.
- Duhovnik, J. 1953: Vasilij Vasiljevič Nikitin – in memoriam. *Geologija*, 1: 5-10.
- du Toit, A.L. 1927: A geological comparison of South America and South Africa. *Publications of the Carnegie Institution of Washington*, Washington, D.C., 381: 1-158.
- du Toit, A.L. 1937: *Our Wandering Continents: a Hypothesis of Continental Drifting*. Oliver & Boyd, Edinburgh: 366 p.
- du Toit, A.L. 1939: *Geology of South Africa*. 2nd edition. Oliver & Boyd, Edinburgh: 539 p.
- du Toit, A.L. 1945: The origin of the amphibole asbestos deposits of South Africa. *Trans. Geol. Soc. S. Afr.*, 48: 161-206.
- DZRJL 2015: DZJRL Members 1910-2010. Društvo za raziskovanje jam Ljubljana (Ljubljana Cave Research Society). Internet: <https://www.dzrjl.si/en/dzrjl-members-1910-2010/>.
- Fowler-Billings, K. 1996: *Stepping-Stones: The Reminiscences of a Woman Geologist in the Twentieth Century*. *Transactions of the Connecticut Academy of Arts and Sciences*, New Haven, CT, 53: 224 p.
- Fowler-Lunn, K. 1938: *The Gold Missus: A Woman Prospector in Sierra Leone*. Allen & Unwin, London: 303 p.
- Gardiner, H.N. & Filimonov, A. 1999: *Guide to the Records of Bay Area Council for Soviet Jews and Bay Area Council for Jewish Rescue and Renewal* undated, 1952, 1954-1999, I-505, I-505A. Center for Jewish History, American Jewish Historical Society, New York, NY. Internet: <http://digifindingaids.cjh.org/?pID=365617>
- Gorsky, E. 1937: Petrography of the Mine Čašak near Skoplje (Summary in German: *Zur Charakteristik der Eruptivgesteine in der Umgebung des Bergwerkes Čašak bei Skoplje*).

- Bull. Serv. Géol. Royaume de Yougoslavie, Beograd, 5.
- Gorsky, E. & Gorsky, V.A. 1966: Quartzitos com cheralita da Serra de Itiúba, Bahia. XX Congresso Brasileiro de Geologia em Vitória-SBG. Núcleo de Rio de Janeiro. Resumos das Comunicações, Publ. Nf 1: 108-109.
- Gorsky, E. & Gorsky, V.A. 1972: A Mineralização Vanadífera em Tucano, Bahia. Congresso Brasileiro de Geologia, XXVI, SBG, Belém, 1972. Resumo das Comunicações. Sessões Técnicas. Bol., 1: p. 46.
- Gorsky, V. 1926a: A critical review of different electrical methods of prospecting and a laboratory study of one of these methods (in Slovenian). Institute of the Surveying of Mines, University of Ljubljana, Yugoslavia. Abstract in English in: Lee, F.W. (Compiler), U.S. Bureau of Mines Inf. Circ. 6287, Geophys. Abstr., XVII, 1930, p. 26.
- Gorsky, V. 1926b: The importance of applied geophysics for the mining industry (in Slovenian). Institute of the Surveying of Mines, University of Ljubljana, Yugoslavia. Abstr. in English in: Lee, F.W. (Compiler), U.S. Bureau of Mines Inf. Circ. 6287, Geophys. Abstr., XVII, 1930, p.18.
- Gorsky, V. 1927: Geokemija in kemijsko geografsko proučevanje pokrajine. Geografski Vestnik, 3: 112-131. zgs.zrc-sazu.si/Portals/8/Geografski_vestnik/2_Pred1999/GV_0301_112_131.pdf
- Gorsky, V. 1929a: Geophysical investigation of bauxites in Yugoslavia (in Serbian). Rudarski i Topionicski Vesnik (Bulletin of Mining and Metallurgical Industry), Belgrade, 8, 350-358. Abstr. in English in: Lee, F.W. (Compiler), U.S. Bureau of Mines Inf. Circ. 6287, Geophys. Abstr., VII, p. 24.
- Gorsky, V. 1929b: Scientific importance of applied geophysics. Transactions of the Fourth Meeting of Russian Academic Organizations Abroad, 1929, 85-91. Abstr. in English in: Lee, F.W. (Compiler), U.S. Bureau of Mines Inf. Circ. 6287, Geophys. Abstr., VIII, p. 34.
- Gorsky, V. 1929c: Applied geophysics- a new conquest of the mining industry (in Slovenian). Rudarski i Topionicski Vesnik (Bulletin of Mining and Metallurgical Industry), Belgrade, 1(4), 160-167. Abstr. in English in: Lee, F.W. (Compiler), U.S. Bureau of Mines Inf. Circ. 6287, Geophys. Abstr., XII, 1930: 20-21.
- Gorsky, V. 1929d: The Institute of Surveying of Mines and Geodesy at the University of Ljubljana (in Slovenian). Rudarski i Topionicski Vesnik (Bulletin of Mining and Metallurgical Industry), Belgrade, 1(9), 394-403. Abstr. in English in: Lee, F.W. (Compiler), U.S. Bureau of Mines Inf. Circ. 6287, Geophys. Abstr., XII, 1930: p. 21.
- Gorsky, V.A. & Gorsky, E. 1962: Further contribution to the study of uranium bearing auriferous metaconglomerate of Jacobina, State of Bahia, Brazil. Comissão Nacional de Energia Nuclear (CNEN), Brasil-4th Interamerican Symposium on the Peaceful Applications of Nuclear Energy, 9-13 April 1962, Mexico, 1: 301-312.
- Gorsky, V.A. & Gorsky, E. 1974: Contribuição à mineralogia e petrografia do planalto de Poços de Caldas. Comissão Nacional de Energia Nuclear (CNEN), Boletim, 13: 93 p.
- Hehn, P.A. 2005: A Low, Dishonest Decade: The Great Powers, Eastern Europe, and the Economic Origins of World War II, 1930-1941. The Continuum Publishing Group, New York, USA and London, UK: 498 p.
- Henckmann, W. 1941: Geologie und Lagerstätten der Insel Cypern. Zeitschrift für praktische Geologie, 49/7-9: 75-84, 89-97, 107-110.
- Lobenko S. 2018: Forming and development of the geological scientific school of the imperial Kharkov university (the second half of the XIX – beginning of XX century). History of Science and Biographical Studies, 3, Article No. 23: 314-327. (In Ukrainian, with English Abstract).
- Löwenthal, Z. 1961: Anglo-Yugoslav medical relations in peace and war. British Medical Journal, 16 December 1961, 2: 1634-1637.
- Master, S. 2017: South African geologist Alex L. du Toit, pioneer of continental drift, in the Caucasus (17th IGC, July, 1937): diaries and photographs of an excursion. In: Abstracts Volume, 42nd INHIGEO Symposium, Yerevan, Armenia, 12-18 September 2017, p. 156.
- Maguire, J.M. 1990: Dr Edna P. Plumstead FRSSAf. Trans. Roy. Soc. S. Afr., 47/3: 355-357. doi: <https://doi.org/10.1080/00359199009520247>
- Mendelsohn, R. & Shain, M. 2008: The Jews in South Africa: An illustrated history. Jonathan Ball, Johannesburg and Cape Town: 234 p.
- Nanyaro, J.T. 1989: Proterozoic gold-base metal veins in the Mpanda mineral field, western Tanzania. Ann. Mus. Roy. Afr. Centr., Tervuren, Belgium, Sci. Géol., 97: 144 p.
- Nikitin, W. 1936: Die Fedorow-Methode. Borntraeger, Berlin: 109 p.
- Russian Federal State Statistics Service 2011: Всероссийская перепись населения 2010 года. Том 1 [2010 All-Russian Population Census,

- vol. 1, in Russian]. Federal State Statistics Service, Moscow, Russia.
- Sagui, C.L. 1925: Asbestos deposits of Cyprus. *Econ. Geol.*, 20: 371-375.
- Stockley, G.M. 1939: An outline of the geology of the Uruwira Mineral Field. *Geol. Surv. Tanganyika*, Short Paper 22.
- Tchoumatchenco, P., Riccardi, A., Durand Delga, M., Alonso, R., Wiazemsky, M., Boltovskoy, D., Charrier, R. & Minina, E. 2018: Geologists of Russian origin in Latin America. *Revista del Museo de La Plata*, 3/2: 223-295.
- US Military Tribunal Nuremberg 1948: Chomasseo Mines, Yugoslavia. In: KRUPP et al., so-called KRUPP Trial, US Military Tribunal Nuremberg, Judgment of 31 July 1948, 113-118. <http://werle.rewi.hu-berlin.de/KRUPP-Case%20Judgment.pdf>
- Vlahović, I., Vrkljan, M., Dudjak, D., Garapić, M., Golub, M., Kapor, F. & Salopek, B. (eds.) 2009: First 90 years of Faculty of Mining, Geology and Petroleum Engineering of University of Zagreb (in Croatian). Rudarsko-geološko-naftni fakultet Sveučilišta u Zagrebu, Zagreb.
- Voskoboynik, D. 2002: History of the Jews of Proskurov, Ukraine. Thesis, History Department, Union College, Schenectady, N.Y.
- War Department 1944: German economic penetration and exploitation of Southeastern Europe. Civil Affairs Information Guide, United States War Department, Washington D.C., 19 July 1944, Pamphlet No. 31-127: 26 p.
- Wright, C.W. 1939: The Iron and Steel Industries of Europe. U.S. Department of the Interior, Bureau of Mines, Washington, D.C., Economic Paper 19: 1-98.
- Wright, C.W. & McCroskey, B.B. 1944: Mineral Resources of Yugoslavia. In: U.S. Department of the Interior, Bureau of Mines, Washington, D.C., Foreign Minerals Survey, 1/6: 1-24.
- Internet source:
 Internet 1: History of the Geology Department. Faculty of Natural Sciences and Engineering, University of Ljubljana. <https://www.ntf.uni-lj.si/history> (10-08-2020)