

The First Russian Volcanologist: Vladimir Petrushevsky

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In 2009, while preparing for fieldwork in Indonesia, we read Simon Winchester's wonderful popular-science book, *Krakatau*. As Winchester explains in his very informative book, the new volcanic island of Anak Krakatau, which appeared in the Krakatau caldera in 1928, was given its name by Russian volcanologist Vladimir Petrushevsky. Though we know the history of Russian volcanology quite well, this name was completely foreign to us. We were also surprised by the date. At that time, for obvious reasons, the Soviet Academy of Sciences was not carrying out any volcanic expeditions, neither in the USSR or abroad. The first real volcanological expedition took place on Kamchatka in 1931, and was overseen by Soviet academician A.N. Zavaritsky. The Kamchatka Volcano Observatory was established on September 1, 1935 in the central part of Kamchatka, thus marking the birth of the discipline of volcanology in Russia. So then who was this Petrushevsky and how did he end up on the Malay Archipelago at the beginning of the 20th century?

The all-knowing Internet seemed to be at a loss for words. Google gave us little information: Vladimir Petrushevsky (1891-1961) was a Hussar, a poet, and a civic leader. This seemed unrelated to our search. Only after reading into his biography did we discover that he served in the army under Admiral Kolchak and that he was evacuated from Vladivostok to the island of Java in 1920, after which he worked for the Mining Survey from 1921 to 1950. This explains why he was unknown in the USSR! Further: "He showed remarkable will, commitment, and genuine talent as an organizer and researcher ... he was responsible for 130 volcanoes, participated in 280 expeditions ... he traveled, walked, and flew all around the islands Java, Sumatra, Sulawesi, Borneo, Bali, and some other islands of Oceania. His duty was to report on volcanological behavior and recommend the appropriate evacuation measures for the local population. Petrushevsky ascended to the top of the professional ladder and by the end of his career he was the head of Volcanological Survey. But yet even volcanologists in Russia haven't heard of him!

The above-cited quotes are taken from the foreword to Petrushevsky's book of poetry, published soon after his death in Australia in 1961 (with a new edition published in 2004). His poetry seemed to be the only public evidence of his expansive work on volcanoes. We wanted to know more about this unique man and decided to find his descendants. Surprisingly, this was rather easy. As it turns out, when the family's last name was transliterated from Russian in English, it took on the Dutch spelling—Petroeshevsky. Nonetheless, we were able to find the exact Petrushevskys for whom we were looking. Soon enough we connected with the scientist's son, Sergei, who was living in Australia not far from Brisbane. Sergei Vladimirovich had carefully preserved his father's archives, which comprised many unique photos, drawings, and diaries. What follows is a portrait of just one area of volcanologist Vladimir Petrushevsky's multifaceted life, which we have illustrated with excerpts from his diaries and poetry.



Cavalier, a Colonel in the Kolchak army. Vladivostok. 1918.

Hussar on Top of a Volcano

*All is well on top of the volcano
 Where, removed from conflict and passions,
 I live as though in a wondrous fairytale
 With my magic dream.
 The wind whispers miraculous tales,
 The clouds wander past to greet me,
 At morning ethereal colours
 Light up the eastern horizon
 And blaring and humming
 Solfataras emit roiling steam
 As the fanfares of the Black Hussars
 Long gone into oblivion.
 The crater in the shape of a giant horseshoe
 Guards the secret of the eruption
 And upon it lie the shackles of lava
 And sulphur glistening like gold.*

*Should the clouds suddenly begin to weep
 Fiery zigzags will flash,
 Waterfalls will leap, like chamoix,
 Threading twixt cliff and rock.
 Near the camp in the forest of orchids
 The latticework of endless lianas,
 By night the stars are like cameos in the dark.
 Like the doloman of the immortal Hussars
 A chorus of exotic nightingales
 Serenades to me of love
 And cicadas chirp to me of legends,
 Keeping watch over the flowers,
 And the diminutive hummingbirds
 Fly up to me, fearless.
 Day after day is burnt up
 In the constant bright flare of the sun.
 Yet at times the lazuli horizon
 Where the boundless ocean lies
 Brings a reminder of the eternal sadness
 And envelops my soul in a mist.*

*All is well on top of the volcano
 On a fine day it is beautiful beyond embellishment
 I live as though in a wondrous fairytale
 But... in the land of my birth it is one hundred times better.*

translated by Theodore Reiss

Before the Bolshevik Revolution, the noble Petrushevsky name was well known for having contributed much to Russia. It is worth briefly noting that one of Vladimir's great grandfathers, Foma Ivanovich Petrushevsky (1785 – 1848), was a metrologist. He translated Euclid and Archimedes and wrote several books, including the award-winning monograph *General Metrology* (published 1849), which was the first fundamental work on metrology in the Russian language. Vladimir's grandfather, Vasily Fomich Petrushevsky (1829 – 1891), was a chemist by training, a Lieutenant-General of artillery, and the first (even before Alfred Nobel) to invent a safe method of making nitroglycerin (Nobel worked in Vasily Petrushevsky's laboratory and, according to rumors, patented Petrushevsky's idea). Vladimir's great uncle and Vasily Petrushevsky's brother, Fyodor Fomich Petrushevsky (1828 – 1904), was a highly esteemed professor of physics at Saint Petersburg University and the lead editor of the sciences section of Brockhaus and Efron's *Encyclopedic Dictionary*. Many of Vladimir's ancestors were honored in the military and awarded medals of valor, but his father, Colonel Alexander Vasilievich Petrushevsky (1865 – 1919), served in the Grenadier Artillery Brigade in Moscow and then moved to the Far East where he was assigned to the Ussuri Cossack Army.

Vladimir Alexandrovich Petrushevsky was born on February 17, 1891 in Moscow. Growing up in the environment in which he did, it is not surprising that he was military “to the bone,” religious, and fully loyal to his Tsar and his homeland. He graduated from the Khabarovsk Cadet Corps in 1908 and from the Nikolayev Cavalry Academy in 1911. He served in wars with Japan and Germany and was awarded several medals for his service. Throughout the Russian Civil War, Vladimir Petrushevsky fought as a Colonel in the White Army. After the defeat of the Kolchak army there was only one path remaining for him: emigration. From his journal:

Chita, March 29, 1920. ...Sold a horse, a saddle, a rifle, and a sword and hitched a ride like a pirate in an American Red Cross cart, wearing a cap like a hooligan. I want to pass through Vladivostok (occupied by the Japanese – Auth. add.).

Vladivostok, April 1. I went to the bathhouse. I traded my Browning for a watch. And just like that, I am a civilian.

July 1. Received a foreign passport. And now I turn my attention to matters of visas and money. I want to go to Java to “try my luck at happiness.”

August 25 - 26. The Steamship “Hozan Maru.” Forgive me, my homeland, my dear Russia. I am abandoning you, your son, your defender. I am leaving to find some solace from all this impurity, from all the corruption and scheming, from the Bolsheviks and the Mensheviks, from all of these parties and rallies... I am sorrowful. I love you deeply. I am going in search of happiness abroad. I hope to find repose there, but I will never forget you. I will return when you are cured of this dangerous affliction, of “freedom”...

Ships, ship, ships.

In the infinite expanse how many of you can there be?

They are the children of this pitiful earth.

Sailing away into the open sea.

Excerpt from the poem “Vladivostok Fell” (1922)

At that time the island of Java was part of the extensive Dutch Colony in the East Indies (now Indonesia). Even today it is unclear just how many active volcanoes there are in Indonesia. It is estimated that there are close to 100—more than in any other country in the world. Moreover, the volcanoes on Java are very active and their eruptions are predominantly explosive in nature. Java has been home to the largest and most devastating caldera-forming eruptions in the history of man—namely, at the Tambora volcano in 1815 and the Krakatau volcano in 1883. After the Kelud volcano’s catastrophic 1919 eruption, which resulted in nearly 5,000 casualties, the Mining Survey decided to organize a department tasked with observing volcanoes in the East Indies (in 1922, Vulkanebewakingsdienst was renamed to Vulkanologisch Onderzoek). When Petrushevsky arrived on Java, the department was undergoing rapid expansion, and this played out in his favor. He could find serious work there. In his journal he writes:

Batavia (Jakarta), March 1 – 3, 1921. I was at the Vice-Governor’s, who herself undertook the task of finding me work. She gave me a letter. Yesterday I delivered it and today I was accepted into the Mining Survey with a salary of 320 guilders and all benefits, and on the 4th of March I must go to the center of Java, to the volcanoes. I am pleased that I have work. I’m

not yet sure about the rest. I was busy purchasing things. I bought a camping bed, a blanket, hiking boots, etc. All of it cost me 150 guilders.

Working at the Mining Survey not only provided him with a living wage, but also spoke to him on a personal level. The job involved frequent expeditions in wild mountain regions that were beautiful and untouched and required of Petrushevsky impeccable physical preparation and the skills to act in dangerous, life-or-death situations. As a military officer, Vladimir was knowledgeable in the fields of topography, chemistry, and physics, understood technical documentation, was a talented sketch artist, and, most importantly, was used to camp life. These qualities compensated for his lack of specialized geological training, which he would gradually acquire during his field work at the volcanoes.

Much of the scattered information we have from that time concerns only the most active volcanoes of the East Indies. This despite the fact that most of these volcanoes were never visited by researchers, whose early work was more geographical in nature. They worked to find or cut trails to volcano craters, to make sketches, to take photographs, to draw topographical maps, and to record the location of local fumaroles and mountain springs and measure their temperatures.

For the first few years of his field work, Petrushevsky was almost constantly on expeditions. Excerpts from his journal give us some insight into the character of his work:

Island of Bali, Mount Batur, April 8, 1921. *Today at 7 in the morning I set off for the large caldera of Mount Batur with the doctor (George Kemmerling, the first director of the Volcanological Survey – Auth. add.) and the coolies carrying our baggage. There were no paths for us to follow. There is a flat area in the crater. The crater itself is deep: 120 – 130m. Hot sulfurous gas flows from the holes and cracks. We took pictures from the edge of the crater of the active volcano. The road was terrible for travelling. The lava is sharp, like a needle, and scrapes our shoes. We ascended one way, but descended another. As we were descending, two of the natives and I reached a gorge so steep that twice we very nearly dropped off the cliff at an 80 degree slope. There was no fog in the evening, so we could see the volcano in all its glory—a steady stream of fireworks.*

Island of Sangir, Mount Awu, May 18, 1921. *We are trying to work, but it has been raining every day. The doctor went down to the town in the morning and I stayed alone for two weeks with eight prisoners (working as porters – Auth. add.). Stocked up on pineapples and coconuts. I eat pineapples every way: salted, fried, with soup, and with rice. I have three chickens and some canned food. In the “reserve” there’s even beer and whiskey. In the evenings cockroaches fly into the tent. Remarkably like those in Russia, only these fly... Must finish the measurement of the crater and then I’ll go down to the sea and around the island. From 3 to 5 there was a break in the rain so I managed to do a bit of drawing – that’s my job. I never imagined I’d become an artist.*

Most of the work needed to be done at Mount Merapi (on Java), one of the most active and dangerous volcanoes. Even then it was surrounded by a dense ring of villages and rice fields, which rose high onto the slopes, and almost every eruption would result in human casualties. The work was very dangerous. From his journal:

Merapi, March 27, 1921. *This morning I climbed the volcano again and, once more, drew the crater. I think that the volcano will soon build up enough strength that it will become dangerous. There is a mass of smoke around the crater and sometimes it spews lava so*

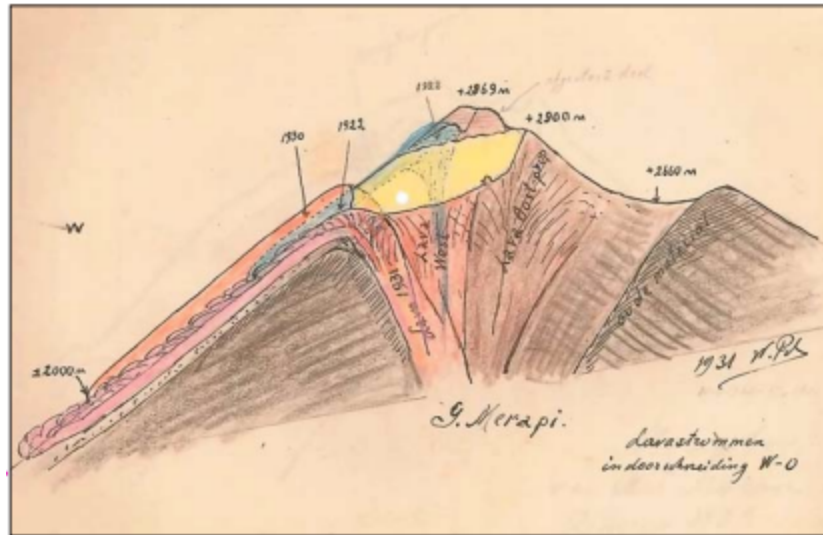
strongly that it scares me. Today, as I peered over the edge, it made such a gust that my hat was torn straight off my head.



Ready for the ascent up the volcano.

February 18, 1922. *Since late last night the volcano has been active and spewing rocks. In the morning it was covered with clouds. Even on my way to the volcano I could hear loud explosions near the summit. By 10am, together with a coolie and a camera, I reached the spot where stones were coming down. I waited for 40 minutes, but visibility was very poor. As soon as we started descending we heard more explosions. It was 10:45 am. I was already at the bottom of a deep gorge in the Blonkeng river. The coolie turned and shouted: "The gas is getting closer. We need to run." Indeed, black clouds of gas were approaching, rolling down the volcano. We ran for 5 minutes along the river. I stopped and, in spite of the coolie's fear, started taking photos. Today you cannot see the summit clearly, but the lava (pyroclastic flow - Auth. add.) stopped not far from the place where we were standing. The grass was visibly covered with ash. The next day I went to investigate. The volcano had expelled stones and ash, which filled the bottom of the ravine at the Senova river. The stones were up to 2.5 meters in diameter and they were hot. The tree branches were bent under the weight of the ash. At a depth of 15 centimeters, the ash was up to 100 degrees.*

August 26, 1922. *Went up the peak and was almost killed by stones flying from the peak. It was worse than gunfire. At the summit I measured sulfur with a temperature of over 145 degrees.*



A geological cross-section of the Merapi volcano. V. A. Petrushevsky, 1931.

As time went on, Petrushevsky used his observations to master new methods of analysis and learn how to use different scientific instruments. From his journal:

Merapi, February 18-26, 1924. After much difficulty, they finally delivered the seismograph that they plan to set up here. In the morning I'm going on an expedition, then I will work with the seismograph until evening. Omori, the inventor of the seismograph, is Japanese. He was killed during Japan's last terrible earthquake. A lot of improvements were made, some of which fell on me to do. I went to the summit and almost suffocated. I measured the temperature as over 364 degrees. There is probably going to be an eruption soon.

Papandayan volcano, April 3, 1925. I work a lot. Now I have three seismographs, a barograph, a galvanometer, a millivoltmeter...



Measuring the temperature of the fumaroles at the Papandayan volcano. 1924.

May 3. *This is my second month in the crater. Staying in the crater helps me save money. Perhaps I can settle up with my dentist and put some money away for taxes. However, it's painfully dreary to be here alone. I haven't reported about things happening in the outside world for a long time. Spring is here again, but there is still no hope that anything will change in Russia. I spend hours at a time sitting in the shelter next to the Wiechert seismograph—it is a devilish machine. On a good day I record 6 tremors, but today I recorded 22 tremors.*

May 7. *Today is a day of earthquakes—we had one at 1:25 pm and another one at 5:45 pm. The earth shook so much that one of the seismographs stopped working—it wasn't designed to deal with such shocks. What is the reason for this? Is there indeed going to be an eruption?*



Petrushkevsky's observation "fort" on the Papandayan volcano. 1924.

Tanguban Prahu volcano, December 9-23, 1925. *Unexpectedly, I have to stay here until the 23rd of December. I am learning how to conduct quantitative analyses of the gases H_2S and CO_2 . During one of the gas tests, one of the volcano watchdogs ended up in the gas. It lost almost all feeling and I gave it some oxygen, but towards the evening it passed away... The weather is terrible—the wind is strong, the clouds hang above, and it is drizzling.*

Petrushkevsky approached the dangers of observing eruptions as would a soldier. Next to the craters he built bunkers or forts, as he called them, some of which had ceilings made of logs and which saved observers' lives a number of times. Here are the notes from his journal:

Papandayan volcano, August 25, 1924. *Today at noon something happened: a new crater, Kava Baru, unexpectedly became active. From 12 to 5pm I was under "fire." The bunker withstood the bombing brilliantly. Stones, trees, and mud flying through the air. Some mud even reached my hut. Now it is my job to draw and describe the incident (the phreatic eruption –Auth. add.)*



The volcano bunker at Merapi and its lead engineer, V. A. Petrushevsky. 1941.

Later in 1941 on Merapi he built a real bomb shelter with an iron-clad door and oxygen supply tanks. To this day his shelter is the pride of the Indonesian Volcanological Survey. From his journal:

I started the construction of the new post in Babadon, laid the foundation. I am in charge of completing this project. I was on my feet from 6am to 5pm. I was so busy I didn't even read the newspapers. It is very difficult to keep an eye on the coolies—they work poorly and slowly. I added an 18-meter long passageway and a concrete casemate to the old tunnel. I want to see to all the details and to construct the ideal station, as Merapi is a dangerous volcano and this station should serve to promote our organization. Although I'm tired, I'm happy to see the results of my work. I hope that my concrete block will serve observers of Merapi for centuries to come.

In 1927, there began a long-lasting underwater eruption in the center of the sea-covered caldera of Karakatoa. The volcano was under constant observation, as the locals were afraid of a repeat of the 1883 catastrophe when around 38,000 people were killed. Petrushevsky, who had more than once spent months at a time on one of the uninhabited islands (Lang island, now Pandjang) of the Krakatau archipelago, was appointed head of monitoring the eruption. From his journal:

May 2, 1928. *Tonight and all day yesterday the volcano was firing, and for almost an hour the flames from the lava were visible on the surface of water. Soon an island will probably form there. At its highest point, the eruptions (volcanic emissions —Auth. add.) reached 500 meters. Before it was up to 400 shots per day with up to 580 tremors, but now it is quiet and there are no earthquakes.*

May 18. The crater has been inactive for three days. I decided to measure the depth, otherwise it would be too late. At 9am we were at the surface point of the eruption. As I suspected, the depth was 5 meters. We took a swim and then went to Verlaten Island, where we walked around for two hours. Suddenly, three hours after our measurements, the crater ejected a lot of ash and lava at a height of 500 meters. We didn't even manage to take a picture.

January 20, 1929. The volcano is active with all its might. More than 5,000 explosions per day with heights of 500-1000 meters. The seismograph records continuous vibrations. Just now there was a very beautiful explosion at an altitude of 1,100 meters with a mass of ash and bombs.

January 22. Yesterday there were 6,800 explosions throughout the day. At night the crater was almost visible in the water, but then it was washed away. Several times we got covered with ash. After that a thunderstorm came, and you could see the electric discharges at the peak. After noon it calmed down; the eruption got smaller, and stopped at 7pm. The rumbling from underground was the only indication that the volcano hadn't died.

January 28. Yesterday, the volcano was active almost constantly. 8,000 explosions! Today the crater was visible in the water again.

February 1. Yesterday there were more than 9,000 explosions.

Today there was an explosion at an altitude of 1,200 meters. The crater could be seen from the water at a height of 15 meters. To be more specific, two of its edges could be seen—the East one and the North one.

February 10. I named the new island Anak Krakatau—the child of Krakatau. It grows in leaps and bounds. It is already 24 meters high. I'm tired, my head is heavy, my stomach is in knots. If not for the money, I would ask to be replaced.

February 18. I turned 38 yesterday. The crater became quiet and was hardly active today. If only the first Russian hussar could step foot on it!

February 20. Today was "Her Majesty's Hussars Raid" on Anak Krakatau. Among the items seized—one big stone, lapilli, and ash.

February 22. Another raid today. These moments remind me of carrying out attacks during war.

February 23. I went to the new island again. This time I collected a lot of samples: lava, sand, ash, etc.

May 4, 1930. My day started at 3am. I was at my post until 6 am. The volcano was not very active. The subsequent events are as follows.

First I composed a telegram for my boss, the governor-general, and the governor of western Java, as well as two residents of Java and Sumatra: "Over a period of 13 hours there were 114 big explosions up to a height of 125 m, 429 small explosions, 264 lava fountains, and more than 3000 shots. N-S component of the seismograph: 158 weak tremors, 50 very weak tremors, and many micro-tremors. W-E component: 175 weak, 58 very weak, and a few micro." At 8 am I went to find the triangulation station. On the way the dogs caught a Komodo Dragon. I took it and hung it from a branch. I encountered a lot of crabs. I found the station and returned at 11 am. Fishermen from Sumatra brought coconuts and bananas as gifts. I noticed that the red spruce seeds have taken. I was on watch. At 1 pm the first chick hatched. At 4 pm I finished my watch and went to bed. I still have to write the daytime report and prepare paper for the barograph and hygrometer. I was on watch again from midnight until 3 am. And there you have a day in the life of Her Majesty's Hussar.

June 27. *Today I sent the last (534th) telegram under my signature and gave up my post. I wasn't on watch at night. Tomorrow I'll be on board the Albertina and my 130-day stay on the island will come to an end. The crater is active with all its might; the island is already 20 m high and the entire crater is expanding outward.*

In 1934, Petrushevsky's career as a volcanologist was unexpectedly interrupted. Funding for work on volcanoes was drastically cut with the outbreak of a worldwide economic crisis. For the first time Petrushevsky lived on government aid, earning money by collecting and selling agates and by conducting topographical fieldwork on plantations. From 1936 through 1939 he worked as a topographer on Borneo.

In 1940, Petrushevsky returned to his job at the Volcanological Survey and to his old friends—the volcanoes. From his journal:

Krakatau. December 13-19, 1940. *How long since I've been here! I sailed on a ship with a cannon. The weather is fantastic. My old camp on the Long Island has become rather overgrown, and the coconut trees grew a lot. There is so much ash. I was on Anak Krakatau. It's 120 m high. Everything is quiet in the crater and it's full of water. I swam in the crater. All five days I was extremely busy—I built a concrete shelter (three meters deep) and got the camp, tanks of water, and everything else in order. I killed two Komodo Dragons with a pistol.*

World War II and the independence of East India dealt serious blows to the Volcanological Survey. First, its director, Charles Stein, was suspended from his position in 1940 by the Dutch because of his German nationality. He died in an internment camp in India in 1945. Rein van Bemmelen became the head of the service in his place. In 1941, Java was occupied by the Japanese and Van Bemmelen (a Danish citizen) was placed in a concentration camp (however, he was allowed to conduct geological work there). At that time, Russia and Japan weren't yet at war and the Japanese appointed Petrushevsky as the director. Fun fact: when the temperature of the fumarole on the Tangkuban Perahu volcano—where the Japanese Anti-Aircraft Defense station was located—increased by one degree (which was entirely normal), Petrushevsky convinced the Japanese that the volcano might erupt. The Japanese quickly closed the station. Petrushevsky didn't stay director for long. He was caught transferring food to a war-prisoner camp and was suspended from his position. When the USSR declared war on Japan in 1945, the Japanese wanted to arrest Petrushevsky but did not succeed.

With the end of the war came unrest between the people of Java and the Dutch. It grew more and more difficult to live and work on the island. Many researchers started leaving for Europe and Australia. In 1946, van Bemmelen left for the Netherlands, and Petrushevsky again became the director of the Volcanological Survey. From his journal:

June 14, 1946. *Latently our seismograph at the museum—which I look after like I'm the "last volcanologist"—began to record many earthquakes from the middle region of Java. People are again leaving our service, wanting to get out of East India. I'm very sorry for Dr. van Tangerren from the laboratory, he's so nice, polite, and always willing to help. He was one of the eight prisoners-of-war for whom the Japanese expelled me.*

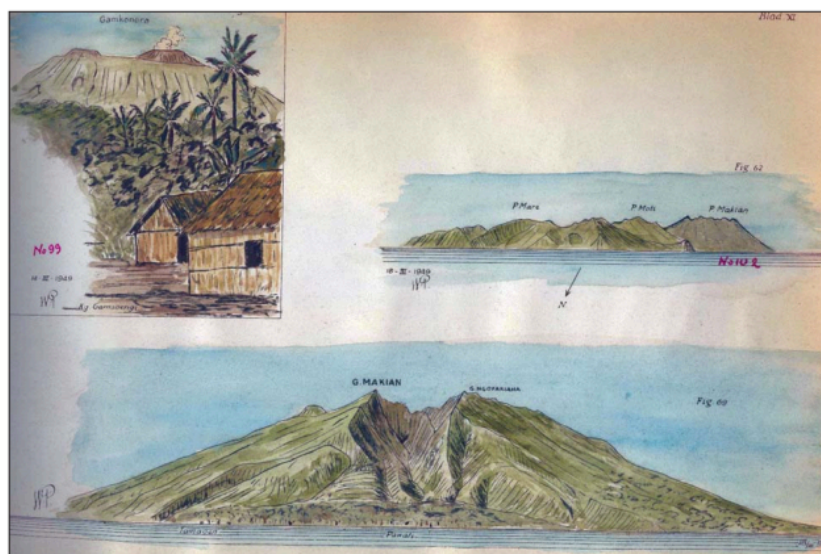
December 1946. *It's difficult: I'm the only worker out of 28 people, the boss, and everything else. I have to make maps, redo drawings made for illustration, keep up with the literature, and put our library, maps, and inventory in order.*

Despite all the difficulties Petrushevsky conducted several long expeditions to a large number of volcanoes in the postwar years. The volcanoes were situated on small islands to the north and east of Sulawesi. From his journal:

Dukono volcano, Halmahera island, 13-16 August. *Today we got up early gathered our things in the dim light of the moon, and set off on the truck at 4 am: 9 coolies, a doctor, 2 soldiers, and I. At 6 am we arrived at the village where we were supposed to receive our guides, I took along another 6 coolies—which were very handy—to cut a path and carry the water. Carrying water, thankfully, wasn't necessary. Already after an hour of walking we had begun to clear the road of broken-down twigs and bamboo, which had been beaten down by ash. Just*

imagine the clouds of dust that our coolies stirred up with each blow of their knives. They looked like devils. We moved slowly and stopped at the first camp at 2 pm, where rainwater had collected among the stones. We did not walk much the next day. Already at 11 am we approached the edge of the lava. It was still far to the volcano—4-5 versts (1 versta = 1.06 km – Author added). But how were we to walk over the lava with our baggage? Today a spring unexpectedly burst in the chronometer, I ripped my pants, and the soles of my boots began to tear. The guide didn't know the "road" any further. I decided to set up camp near the lava at a height of 450 m, since to our fortune there was rainwater there. The volcano was 1200 m high. No one had ever been at the crater. On August 15, the doctor, a soldier, five coolies, and I went on an exploration. Walking on the lava was terrible: there was so much ash that you could fall into the holes between the rocks.

There are many dead trees with dry trunks. We decided to follow the lava and discovered two oases. For some reason the lava had not covered these areas and there was wonderful vegetation, ferns, and bananas. The lava was very sharp. By noon, I understood it would be difficult to move the camp and decided to go on an adventure. By about 4 pm I arrived at the crater and spent the night out in the open air. Four coolies received orders to go back to the camp and meet us tomorrow morning with packages of tea, coffee, etc. By 4 pm we reached the rim of the crater, which was separated from the lava and from a distance looked like the top of some sliced Dutch cheese. At first I thought it was calm, but judging from the air trembling above the solfataras, the temperature of the air was more than 500 degrees Celsius. At the bottom of the crater there were four distinctly visible craters of various sizes. I was unbelievably tired and happily sat down to record observations and do some sketches. The crater was relatively small: 300-350 m in diameter and 120-140 m in depth. An hour later we went to find a place to camp at the other old crater and we were able to gather branches for our fire by sunrise. We had little water and I was terribly thirsty. That night the doctor and I tried to sleep under his raincoat, but that went poorly since it was very windy. Early in the morning we set off on the return trip and at eight am we met up with the coolies carrying water, coffee and tea, and food. At 10 am I saw the volcano explode but we were already far away. By 11 am we were back at camp.



Halmahera Island, 1949. Drawing by V. A. Petrushevsky

Raung Volcano, 12-18 September. *Every volcano has its own “physiognomy,” its own character. We spent two hours on the climb because some of our companions fell behind. On the edge of the old crater I set up an encampment and gave a lecture about how to conduct observations and how we should “call a spade a spade,” rather than talk about fire and steam. Everybody was impressed when from a distance I said, “That steam without the smell of sulfur has a temperature of 70-80 degrees Celsius.” The crater of the volcano turned out to be very interesting and from the edge of the crater I discovered a suspicious place with temperatures up to 480 degrees Celsius. I spent a lot of time sketching. I decided to visit the crater one more time and warned my supervisors to evacuate the unsuspecting residents of the island.*

Later notes, Bandung. *A report came from Tagulandang: on October 2 my students explored Raung and measured temperatures above 505 degrees Celsius (and maybe higher, they were worried that the thermometer would melt). Will there be an eruption this year and what type? Will there be a slow river of lava or the sudden destruction of the peak? We’re awaiting more information. On November 12, the situation on Raung became very dangerous according to a telegram from a resident. I took it upon myself to send a telegram recommending that five to six thousand people be evacuated.*

The eruption that Petrushevsky predicted happened three years later and thanks to the evacuation, no one was killed.

Petrushevsky’s achievements were held in high regard and in 1947 he was raised to the rank of practicing geologist, the highest rank for a scientist without specialized education. At the 1948 International Conference of Volcanologists in Oslo, Professor G. Escher (the organizer of the Volcanological Survey) proposed that a volcano in Indonesia be named after him: a viscous lava dome over 190 m high, called Ilipetrush. It appeared that same year on the southeast slope of the Volcano Iliwerung on the island of Lomblen (now called Lembata). Petrushevsky had studied its formation. From his journal:

May 8-10, Volcano Iliwerung. *Everything is covered by 3-4 cm of ash. It’s very unpleasant. We stayed in the countryside. Of course, the native people hunkered down indoors and peeked through the window. The next day I made the unexpected decision to “attack” the crater. Seven people came with me. We lost an hour on the road because there was an eruption and the ash was so thick that it irritated our eyes. As it turned out, there are four craters in the lava dome of the volcano, and a fifth has appeared on the east side near the shore and is spewing lava and exploding. Since April 7, there have been around thirty eruptions. In Lerek, it is raining down lightweight pumice the size of eggs. The damage is serious—around 300 goats have been killed and around 100 gardens destroyed. Near the volcano it is just like winter, but instead of snow there is ash.*

After retiring in 1950, Petrushevsky moved with his family to Australia and settled outside Sydney, where he actively volunteered in the Russian community. Fate dictated that for most of his life Petrushevsky would be forced to live outside his homeland, but he never took Dutch, Indonesian, or Australian citizenship. He never stopped considering himself a citizen of Russia. Vladimir Aleksandrovich Petrushevsky died on August 30, 1961.



At home in his office. Bandung, 1932.

Volcanology is something you cannot learn in school; you become a volcanologist only by doing field work on volcanoes. Few experts can boast the kind of experience that Petrushevsky had documenting the severity of eruptions, assessing their levels of danger, and making evacuation recommendations. Van Bemmelen even once called him the “world champion of volcano research.” Petrushevsky is the only volcanologist who has descended into sixty-eight craters.

Petrushevsky’s work was mostly of a technical nature and his eruption observations are included in numerous reports of volcanologists in the East Indies. He is the author of many of the maps and sketches in the canonical works of Dutch volcanologists V. van Bemmelen and N. van Padang. He published only a few scientific articles of his own. One of these articles, which addresses the aftermath of the 1815 eruption of the Volcano Tambora, is still widely cited today.



Measuring the temperature in the crater. One of the last photographs of Petrushevsky on the volcano.

Now the name Petrushevsky is gradually making its way out of obscurity. There are several websites (for example, <http://russky.com/history/library/petrushevsky.htm>) where you can read his poems, each syllable of which, although written in the old style, is filled with his love for Russia. It is our hope that this article will secure a place for Petrushevsky in Russian scientific history.

We are looking for those interested in publishing the diaries and other archival material of Vladimir Petrushevsky.

Published articles by V. A. Petrushevsky

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