

Reason that:
"success in life can
only



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Reason for Expeditions December 17, 1915 I do not plan to expound a revolutionary theory, expose new laws of nature, nor find my name next to Darwin or Mendel, but in a more practical way, I hope my research will contribute to the supply of food for millions of people around the world. In a lecture delivered by Kliment A.

Timiryazev in 1901, ' A Review of a Hundred Years of Plant Physiology', it was stated that: " Success in life can only be achieved by the one who sets up great tasks for himself, who proceeds step by step while checking up on himself and who stops from time to time to look back at what has been done and forward to what remains to be done." These statements hold especially true for the long expeditions and discoveries that lay ahead. I once said, " By knowledge of the past, by studying the elements from which agriculture has developed, by collecting cultivated plants and domestic animals in the ancient centers of agriculture, we seek to master the historical process.

We wish to know how to modify cultivated plants and domestic animals according to the requirements of the day." 1 Currently botanists are aware of 200, 000 species of flora 1, although I believe this figure to be far from the truth, the large number indicates that there is a huge abundance of flora existent. However, among the most known principle of phytogeography remains the idea that species variety is not evenly distributed world-wide. In fact, almost 33% of the world's species are located in southeastern Asia. The major agricultural areas of the globe are approximately 850 million hectares (8. 5 billion kilometers), which is only 7% of all land that occupies the earth.

And, not including purely ornamental plants, the total number of cultivated flora is only around 1500 species. My investigation of the geography, cultivation, and species of flora will hopefully reveal certain basic geographical centers of origin. I also firmly believe it is time to care for the people of the world, the starving people who are denied access to the rich crop diversity that could save their lives, “ Certainly the future belongs to us. It should be clear as two times two to our world-wandering kin... The main point is that there is more good than bad in the world and in people. It’s better to the the good, not the bad.” 1 I have been witness to the disaster of the Soviet Union and the hardships of famine, but my faith will remain unshakable. This horrific chapter in Russia shall perish as the millions have starved. This journey will take me to places that have been left untouched by scientists, but hold the solution to starvation.

I will be documenting my discoveries, my routes, and my days along the treacherous paths that hold promise for the future of the planet. Expedition to the Pamirs January 11, 1916 The goal of my journey to the Pamirs was to gather samples of early ripening agricultural crops, much needed for the northern provinces. Even before my journey I am able to predict that in the low valleys of the western Cis-Pamirs, on an average elevation of more than 2000 meters and having short vegetative periods, that it should be possible to grow early-ripening grain crops 2.

The Pamirs are a high plateau on the border between India, Afghanistan, and Turkestan. They seem to appear as a junction in which gigantic Asiatic chains of mountains radiate in all directions: Hindu Kush, Kuenlun, Karakoram, Himalayas, and the Tien-Shan. The Pamirs, ‘ the Roof of the

World,' are a desert-like mountain stepp with destitute vegetation. The land is sporadically occupied by clusters of nomadic people 2. There are many mulberry trees.

There are trees even in villages where there is no arable soil. The mulberries, together with some apricot trees, are the main sources of food for the people living here. The paper mulberry seems to replace the spot of wheat and barley for which there seems to be no space. The mulberries are dried and ground and are used not only as sweets but also as bread! I am bringing home many samples of such bread they call, ' tut-pikht', I hope this will be useful to the people in the Soviet Union 2. It tastes sweet and has many nutritional qualities, it stays edible for many months and does not require any baking. I just had the pleasure of meeting a Pamirir plant breeder, Abdul Nazarov, who is very knowledgeable. He was able to study plants and genetics in detail as he was exiled by Russians to the province of Saratov on no legal grounds. Fortunately, he was able to gain intelligence from the journey to Russia and is now the most schooled chief in all of Shugnan.

He had such valuable knowledge, he told me that near Kabul there was an unusually early-ripening wheat, which ripened up to 20 days before the ordinary Pamiri wheat did. My small crew and I made the difficult journey to find the wheat which was named by Pamirs ' dzhindam-dzhal'-dak,' which means literally ' early-ripening wheat'. The passage across the Pamir mountains turned out to be much harder than I imagined; I am still a very immature traveler. The maps I was provided by the military were not accurate and could only serve as an indicator for the broader direction to go in.

“ It could be said that a plant breeder and botanist have no business looking for new plants to cultivate among the mountains and deserts of Middle Asia, a region where the plateau of the Pamirs is one of the most characteristic natural areas.”² From Garm we went towards Darvaz along pictorial placed at an altitude of around 3000 meters along the mountains. This is actually much better than unbeaten paths below.

The villagers were friendly and offered places to stay and cultivated crops for us to keep. What I found at the height of 2500 meters surpassed my wildest expectations: gigantic rye up to one and a half meters tall and with large ears and large grains and most definitely the original form of non ligute rye! It had characteristically large anthers and large pollen, for this alone it was worth coming to the Pamirs! I had begun to lose hope in the beginning. The expeditions to the Pamirs have influenced the direction of my future trips. The part the mountains of southwestern Asia play became entirely clear. I now know it it “ possible to solve the most fascinating and the most complicated problems of evolution”² by simply looking at the mountainous areas; they hold the wonderful wild relatives of barley, rye, lentils and Aegilops a close relative to wheat. Expedition to Iran May 29, 1916 – Aug 15, 1916 During the early days of World War I had been exempt from military service due to an eye injury. Oh, I sure do remember the day I learned to produce ozone at school.

I brought home the chemical ingredients: I poured sulfuric acid over potassium permanganate and the mixture exploded! Never was my eye the same. But, on February 26, 1916 I was drafted. The army did not take me, but I was directed by the Ministry of Agriculture to undertake an expedition

into Iran. 1 In 1916 I made my first expedition into Asia to research the cultivated plants of northern Iran, a place in which a general imperialistic war raged on.

The Asian continent, being the largest in expanse, also has the largest number of cultivated plants. In fact, it is estimated that approximately 70% of the species of all cultivated plants of the world came initially from Asia. 2 I found a particular strain of Persian wheat *Triticum persicum* which had shown to be absolutely immune to mildew, because of this important discovery, I decided to plan a complicated route which would navigate my team and I across the main agricultural areas of Iran. I was gifted by the Russian council and Iranian citizen to guide us, as well as a modest caravan, and three horses (two for riding and one for luggage).

Iran seems to be a very sealed country, with the villages being guarded as though they were castles with walls 10 feet high. In June the air was filled with the strong pleasant scent of the Persian clover known as shadbar *Trifolium resupinatum*. Enormous fields of opium poppies *Papaver somniferum* are found everywhere, all I see is pink! But things took a turn, our occupation seemed to have caught wind and we appeared suspicious. We were taken to the guard post where they carefully inspected us, but the fact that I have been writing in this journal in English and had many foreign German reference books seemed to have provoked further concern. They declared us German spies, and three days later the commander arrived at the decision to ask for verification of our documents through telegraph. I found out through an interpreter why we had had such unwelcoming times. To my astonishment, he told me that I, a Russian botanist, was the brother of the

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tsar's wife! Of course this would have promoted intrigue and speculation. In Teheran I decided to leave the interpreter.

I have grown more accustomed to the Farsi language and I can get along without one, and I want to take advantage of the even terrain that allows me to stop anywhere I wish. Since the parts of Iran are now apparent to me, it is now possible to study more desert areas. Before I left I went to Mashhad. It had a gorgeous blue mosque that resembled the sky! This was without a doubt one of the ancient centers of agricultural civilization.

It is a huge area with abundant crops of wheat, not only suitable for very dry conditions, but also never before discovered! The odd composition of the varieties of this wheat also indicates the primitive nature of this species. This is exclusively the origin of soft wheats. My next mission is to solve the riddle of the origin of ' Persian wheat'. Expedition to Afghanistan July 19, 1924 In 1857 the traveller J. P. Ferriar wrote in his book, " A foreigner, who happens to find himself in Afghanistan, must be under a special protective sky, if he shall escape from there in a healthy state, unharmed and with his head on his shoulders." 2 I have thus found that the solutions to many genetic problems that deal with the centers of origin of our most critical plants are often found in areas that remain unexplored.

I have also noticed that the centers of origin of plants gravitate towards the mountain regions of southwestern Asia and northern Africa. I have so far discovered many interesting varieties of rye wheat here, which are currently not known in Europe. These findings have led me to suggest that the center of variability of these plants could be Afghanistan itself! Out of this bore my

need to visit this country. Additionally, I wished to explore Afghanistan because it remains a relatively unexplored place. The Middle Asiatic republics border Afghanistan for about 1500 km, yet no Russia scientists have been able to go into that country before the Soviet era.

The knowledge of these place was very sparse and consisted of only a few samples of zoological and botanical materials that were collected by nearby provinces. This is a mostly agricultural country in which the entire lives of its dwellers are connected to agricultural produce. In comparison, cities are of lesser importance. Afghanistan is special in that it has remained very isolated and has thus has gone on with almost no interference, leaving many plants extremely primitive in nature. However, the most primitive type of rural economy is found in Nuristan, which I will be visiting next. Despite my original exuberance, as soon as I entered, the misfortunes began. We were first detained for 24 hours and found ourselves poorly prepared in terms of the language and customs of this place.

We were forced to fire our interpreter because he lacked knowledge of the Farsi language and was quite taken with alcohol. I was forced to perfect my own education of this language, it was the only way. I find myself waking up very early to memorize the grammar and words of such a bland language.

An interesting finding I discovered in the oasis of Herat is the oddly prevalent dovecotes, which are supposedly not built for breeding doves but rather for collecting the excrement of the birds, which is a potent fertilizer. The architecture is so wonderful, although it does not make up for the unbearable heat that and horrendous stench during the summer. Because of

the heat infectious diseases run wild; syphilis, trachoma, and tuberculosis are much too common. “ It is as if all the worst of what represents city life had been assembled in the midst of the most developed agricultural oasis of Afghanistan, bearing visual witness to the contrast existing between the concepts of ‘ civilization’ and ‘ cultivation.’² Atop a mountain where I could now see the Hindu Kush, men on horse sped towards us. They stopped the caravan and explained that we must wait for their leader. Somebody had shot their leader and badly wounded him. To them, it seemed, that any European in this country was equivalent to a doctor and had the innate ability to heal.

The bullet had gone through his body and we searched desperately for disinfectant. We poured boiling water mixed with iodine, then proceeded to bandage the injury. Apparently this operation helped in the morning we were met with great gratitude. We received many dried apricots and seeds as gifts.

In relation to the news of our success, during the following days large crowds of sick people sought out help. We tried as much as we were able to supply them with the medicine and painkillers they needed, but our medical arsenal was running low. “ The origin of cultivated rye has become very simple. The ancient crops of winter barley and winter wheat, when transferred from the south towards the north, east to west brought with it rye in the form of weed. When cultivated under worse conditions with harsher winters and less arable soil, rye began to overpower the weaker barley and wheat types!”²

Expedition to Nuristan Oct 16, 1924 Until now, Nuristan had been the most isolated place in all of Afghanistan. It was not only unknown in the botanical

sense, but it was actually not even rightfully known geographically. My expedition was to enter a region still unknown.

I do not know exactly what lies ahead. I began in Zibak, where the weather is extremely harsh and the people are just as poor. Despite the extreme cold, they go without covering for their heads. Instead of sweetening their tea with sugar, they use salt. A poet named Aga-i-Mirza Shir-Akhamed wrote a poem about Zibak that depicts precisely the nature of this place: “ Nowhere else is there so much snow and wind during winter in Zibak nor is there much hard frost in any other place under the sky. All the ground is as if covered by cotton wool; neither mountains nor plains are free of ice and nowhere are there any green leaves to be seen..

. The winter lasts three to four months in other areas but eight months in this region. There is no other food, day or night, for the inhabitants than dry bread and pea soup. If somebody takes ill, there are no medicines nor any doctor. There is no barber to cut the hair of the head.”² Despite the extremes of Nuristan, in Magnul, after descending down a mountain to find at the base of a glacier violet colored barley.

And just in front of us lay wheat with simplified leaves, even dominating here! Nuristan is extremely primitive. As I traveled through Nuristan I found limited inhabitants. There were very few children living here, the reasoning was there was no food to feed them. As we continued for 9 hours in the caravan, we did not pass a single soul. The path will haunt me for As we continued for 9 hours in the caravan, we did not pass a single soul.

The path will haunt me for many years, we even had to unload the packs and carry them by hand, going as far to pull the horses down steep mountains. The horses often tripped and became wedged between cracks of rock. We were forced to move very slowly. Minutes, hours, days would go by and accident after accident would occur. We are now in Vama.

Although the people here are Muslims, the women do not cover their heads, and the children wear goatskins with their hair tucked in and no sleeves. My god, the first humans on earth could have been dressed like that. Elements of a more primitive life definitely mixed with their culture such as wooden dishes and fixtures made of untamed wood. Unfortunately, based off of my studies, the Kafirs cannot be identified as an original region. In fact, possibly the opposite; the alien nature of the crops and the odd composition of the number and types of flora cultivated lead to the deteriorating civilization. The Kafirs seem to be declining, “ driven by fate into impassable forested massifs and into inaccessible mountain ravines.

” 2 The crops of Nuristan are awful, poor barely crops, an admixture of rye, average peas, and other simply basic crops. The soil was very bad and lacked any sort of manure. Unfortunately, this expedition was disappointing. Centers of Origins of Plants Dec 4, 1940 I have attempted to launch a worldwide plant exploration program. I have gone on 115 expeditions, visited 64 countries, and been to 5 continents, all in order to collect seeds of crop varieties and locate their origins.

I have taken detailed notes of my findings, photographed my journey, and brought home endless samples to add to my ever growing collection of about

200, 000 specimens from both the Soviet Union and from abroad. The Institute of Plant Industry by this time has completed detailed studies on some 75, 000 plants, well over half of these being wheat samples. I wished to house the greatest seed bank of the world, to bring the Soviet Union to the top of the world in science. However, Stalin's support of Lysenko has grown in the recent decades. His mistrust in me will soon come to the worst, I can feel it.

He has arrested most of my staff, and the anti-science campaigns are the most harmful I have ever witnessed, but, " We shall go into the pyre, we shall burn, we shall not retreat from our convictions." I will continue to fight until I can no longer. Perhaps my most profound contribution to science is my theory of the Centres of Origin of cultivated plants. I found there are 12 main centers of the world: Chinese center, Indian(Hindustan) center, Indo-Malayan center, Central Asiatic center, Persian center, Mediterranean center, Abyssinian center, South American center, Central American center, Chilean center, Brazilian center, and the North American center. I have detailed maps in my briefcase that outline all my findings. Understanding these facts are a matter of investigating the world, with the possibility of saving mankind from an eventual downfall.

If my expedition journal gets published as I intend, I encourage you to consider going on an expedition yourself, to discover the unknown, and to explore the crops of the world. My investigation went far beyond what I could have imagined. I was taken much further than the borders of my country. I have visited in fact, all of the main agricultural territories of the entire world!