

Nilufar Komilova Karshiboyevna

Professor Department of Economic and Social Geography National University of
Uzbekistan named after Mirzo Ulugbek.

Abdimo'minov Togoy Nazar Abdinakhmat o'g'li

Teacher of the Department of Geography and Teaching Methodology of Termiz
State Pedagogical Institute

THE GEOGRAPHICAL BASIS OF STUDYING MINERAL SPRINGS

Annotation: In this article the geographical basis of mineral springs is covered and the scientific basis for the research of mineral springs in Uzbekistan is revealed.

Key words: Mineral waters, bath treatment, spa treatment, springs, minerals.

There are the decree of the Cabinet Ministers of the Republic of Uzbekistan dated June 27, 2017 "On measures of adjustment of utilizing underground waters" and the statute of Cabinet Ministers of the Republic of Uzbekistan dated June 27, 2017 "About state monitoring of underground waters". In clauses 1-4 of the 4th chapter of the statute was defined doing practical works on effective using and regular observing underground waters, for example mineral and healthful waters.

Mineral waters are the waters which consist of some chemical elements, compounds and also gases. If the amount of melted minerals in water are up to 1g/l, this is called potable water. Some of the sea and lakes' waters are also mineral waters.

The curative water is consisted of iodine, bromine, barium, iron and etc, carbonate anhydrous, radon, sulphate gases as well.

Hydrogeology and spa treatment learn the Emerson, the legality of location and utilizing matters of mineral waters. Another function of the subject is to confirm the curative water stocks and to find out how to use them in national economy.

What is spring itself? The Emerson of mineral water is a long-term process. Mineral waters are the rains which are gathered in different parts of the ground and rocks. It is considered as a curative water because of its minerals, in addition, its

purity level is depend on how deep it emerges, for example, the deeper it enters the more carbonate anhydrous it has.

As for the scientific literatures: "Springs are the underground waters flow on to the ground naturally which are enriched minerals through Mount rocks." Mineral waters are different from other types of waters their high temperature and pressure. There are two types of springs: the first is flowing down water freely, while the second is ejected from down to up.

Hydrogeologic researches define the physic functions of the underground waters, such as temperature, color, smell and taste. Chemical clean water would be colorless, the color of the water is up to the chemical ingredients. The taste is defined by the substances, while sodium chloride makes water salty and magnesium sulphate makes it sour.

The existence of springs in some territories is depend on the structure of the ground, the ingredients of mounts, tectonic position, functions and climate.[4;145p]

There is mineral salts in mineral waters and they are used in medicine as a cure of some illnesses. These waters are recommended utilizing for year curative level.

In Central Asia Uzbekistan is rich in mineral waters. In the territory of republic any types of springs can be found, such as springs without special components, springs with Sulphur, springs with iodine and radon.

The waters of the without special components springs are the most expensive and they are spreaded over Tashkent, Kyzylkum, Zarafshan, Bukhara-Karshi, Surkhandarya and Fergana watersheds. In Uzbekistan there are 30.000 m³ hour water stocks as for the industrial level. On basis of them more than 100 sanatoriums, hospitals and 20 factories are working. There are over 10 state mineral springs.

In ancient times the flowing water on to the ground was considered as a blessing of God. That's why people saved springs as a holy thing.

It has been interesting exploring mineral springs although it demanded to work hard, to be patient and knowledgeable . Especially many explorations and

experiences has been taken place in the springs of the USA, New Zeland, Russia, the Caucasus and Island.

In the 15th-18th centuries there was organized expeditions on basis of the eastern scientists' approaches who lived in middle ages, as a result the existence and functions of the springs were revealed.

There is some information in literatures about Roman architect and engineer Mark Vitruvii who clarified the causes of mineral springs 2000 years ago.

In fact, as for G.V.Bogomolov the biggest springs of the world are situated in the territories of the U.S.A, South Africa, the U.A.E, Israel, Italy, Turkey, India, Australia. The studies of the Central Asian Great thinkers Abu Rayhon Beruniy, Muhammad al-Xorazmiy a out methods of using curative springs are still relevant in the field of research. Abu Rayhon Beruniy wrote: "Sometimes water flows on to the ground from well. It often happens near mountains".[5;5-p]

Beruniy described the changing of earth elements:" The ace of the sea change with the place of the land. We can find the sea prints when we dig the wells or ponds, that's why the stones which belong to the seas can be found in the sands between Khorezm and Jurjon because there was a lake here".[6;191-p]

The contribution of Xorazmiy is that he made a table of climates, cities, mountains, seas, islands, rivers and springs in his book "Kitob Surat ul- arz" (The picture of the earth). While he was pointing the place of mountain, sea or spring he measured their coordination accurately.

Using water and water project has been regulated by law since ancient times. The first legal acts were applied on breaking mineral springs position in France. Henry the 4th who installed controlled with help of guards. In the period of Pyotr the 1st the works searching and exploring "Main waters" were done.

In our country in 1550-1845 years there were different expeditions which explored the natural climate of underground waters.

There are some important sources about Kyzylkum, Mangishlak and Ustyurt waters; the 1st expeditions were done by E. Eversman who came Bukhara in 1820,

the 2nd was headed by F.F.Berg in 1824- 1845 and last one in 1842 by Braziner and Danilovskiy.

1930-1940 years were the developing period of engineering geology in Uzbekistan. The special organization was organized in order to explore underground waters; “Uzyerostisuv”. After the second World War, particularly, in 1950 years hydrogeologic stations were united in “Hydrogeological trust”.

First explorations in Uzbekistan were done by G'.O.Mavlonov. He did seismologic explorations and learned curative waters. In 1963 the monograph about “The underground waters of pre Tashkent region” was edited by S.M.Mirzayev and A.I.Islomov. Also Xojoboyev N.N, Sultonxojayev A.V, Hasanov A.S, Otajonov I, Zokirov A.Z, Nizamov A did so many researches on this subject.

Specifically, the research of Abdug'affor Zokirov and Asror Nizomov on using mineral waters so as to cure people and their experiments are very essential.

Nizomov did experiments on Hisor mountains. He put the color in the beginning of water to find the source of springs the observe exit of water, whether there is a color or not.

Abdug'affor Zokirov gave instructions on how to drink mineral waters in his book “Curative places and resources of Uzbekistan”. According to his book the amount of water, its speed, time and temperature should be planned in order to cure illnesses. In gastritis 38°C mineral water is drunk 15-20 minutes before eat three times a day per q50-250ml. In chronic gastritis 38-40°C mineral water must be drunk 1-1.5 hour before eat three times a day.

In conclusion, mineral and curative waters are essential for treatment of human body. It is widely known that ancient East medicine was differ from west medicine for natural herbs and waters. For instance, Abu Ali Ibn Sino who was known as Avicenna in western world defined the curable effects of mineral waters. Moreover, in Japan, South Korea and China people are still using natural minerals to treat people. For this reason through learning mineral springs and producing new approaches of using them in the future to contribute for maintaining people's health is our purpose. Is not a secret that to learn mineral springs demands hard work,

because they are mainly located in the mountainous places, that's why it is challenging to take example and observe them in order to analyze. However, the explorations on mineral springs is not enough. In today's world using natural herbs and mineral spring to treat people is becoming urgent and important.

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