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MEDICAL AND GEOGRAPHICAL ASPECTS OF THE STUDY OF MEDICINAL PLANTS (ON THE EXAMPLE OF THE ZOMIN STATE RESERVE)

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ABSTRACT

This article presents the history of the study of medicinal plants, factual material related to the provision of information concerning such plants in the works of Central Asian scientists. The data on medicinal plants growing in the Zomin State Reserve located in the Zamin district of the Jizzakh region are analyzed. The article presents an analysis of research, scientific literature, articles and statistical data conducted in this area.

KEYWORDS: *Medicinal Plants, Flora, Zoning, National Natural Park, Climate, Wild Plants, Genus, Nature Reserve, Spicy Plants, Plant Distribution, Medical Geography.*

INTRODUCTION

Actuality of the Research Topic

In the conditions of stagnation caused by the coronavirus pandemic in the world, the need for such areas as medicine and pharmaceuticals has increased even more. At the same time, there was a need for a deeper study of medicinal plants in medicine.

According to the research of scientists, more than 4.3 thousand species of plants belonging to the local flora are considered medicinal, of which 112 species are registered for use in scientific medicine, of which 70 species are actively used in the pharmaceutical industry. In 2019 , products from processed medicinal plants were exported in the amount of 48 million US dollars[1]. In this regard, the decree of the President of the Republic of Uzbekistan “On measures for the protection, cultivation, processing of wild medicinal plants and rational use of available resources” dated April 10, 2020 is also important. This resolution notes the need to further improve the cultivation and processing of medicinal plants, increase the export potential of the industry, as well as the integration of educational, scientific and production processes in this area. At the same time, in the new development strategy of Uzbekistan, Goals No. 62 define such important tasks as “The organization of modern pharmaceutical clusters and zones and the

development of additional measures for the further development of existing ones."[2] In this regard, in particular, in the Jizzakh region, it will be relevant to further strengthen research related to existing medicinal plants.

Nowadays, one of the urgent tasks of the pharmaceutical industry has become the naturalization of medicines and meeting the need for raw materials of medicinal plants. According to the World Health Organization, about 60% of all available medicines are products derived from the raw materials of medicinal plants.

These include the preservation and reproduction of the gene pool of medicinal plants, especially during their cultivation, their origin, connection with the climate and geographical factors of the areas of their natural distribution.

Goals and Objectives: the analysis of data on medicinal plants growing in the Zomin State Reserve, located on the territory of the Zamin district of the Jizzakh region, is the main purpose of this work. To achieve this goal, the following tasks were set:

- Analysis of the research of botanists and geographers who studied the flora that existed in Central Asia;

- Study and analysis of medicinal plants, rare and endangered wild plants, medicinal and nutritious species of wild plants growing in the Zomin State Reserve.

Results and their Discussion

Throughout the entire historical development, people have known about the healing properties of various herbs and used them to treat various diseases. They left information about the features of these plants, the places(including mountains, hills, deserts, etc.) where they occur. Information about the properties of herbs was left by representatives of the science of medicine in Ancient Egypt, Mesopotamia, China, India, Central Asia and most other regions. There is evidence that medicinal plants were used for medicinal purposes in the Sumerian civilization 5000 years ago. Medicinal plants have served as the only source of medicines for a long historical period [3,7].

Among the mature representatives of Oriental medicine, special attention in their writings was paid to medicinal plants and their properties by Abu Ali Ibn Sina(Avicenna), Bakr Muhammad ibn Zakaria ar-Razi, Abu Abdallah Muhammad ibn Musa al-Khorezmi, Abu Rayhan Muhammad ibn Ahmad al-Beruni, Ismail al-Jurjani Allama. In particular, our compatriot Abu Ali ibn Sina in his five-volume work "Al-Qonun" ("Laws of the Tib" (Canon of medical science)) left information about more than 500 medicinal plants and more than 40 medicines from them.

The outstanding encyclopedic scientist of his time Abu Rayhan Beruni (973-1048) made a significant contribution to the development of astronomy, mathematics, physics, mineralogy, geodesy, geography and natural sciences. Among the scientific works created by Beruni, the book" Kitab as-saidana fit-Tib " contains information about 674 medicinal plants and 90 medicinal plant products that were used in Oriental medicine at that time[3].

Medicinal plants of our republic, especially their woody and shrubby species, have a diverse and rich gene pool. Representatives of the famous A.P. Orekhov Scientific School, Academician O.S. Sadykov and S.Y. Yunusov, have achieved great success in their scientific study. The merits of K.Z. Zokirov, H.A.Abduazimov, P.H. Yuldashev, N.K. Abubakirov, A. Y. Butkov, I.K. Komilov, K.H. Khodzhimatov, I.I. Maltsev, I.I. Granitov, A.G. Kurmukov, I.V. Belolipov, R.L.

Khazanovich, M.B. Sultonov, F.S. Sadriddinov, P.K. Zokirov, S.S. Sakhobiddinov, H.H. Kholmatov, Y.M. Murdakhaev, B.Y. Tukhtaev andothers are of very high significance. In the study of medicinal plants of the Republic of Uzbekistan, the identification of stocks, cultivation, introduction, preparation of raw materials, the study of biochemical composition is significant.

The contribution of geographer scientists to the research of the flora existing in Central Asia is also important. Among them, the merits of such scientists as Babushkin L.N., Kogai N.A. [4], Zakirov K. [5,6], Korovin Y. [8], Mushketov D.I. [9,10] areof great importance. In particular, the issues of zoning of the plant world are covered in detail in the works of Babushkin L.N., Kogai N.A.

Protection and rational use of natural resources of medicinal plants is one of the most important tasks of today. In this research work, attention was paid to medicinal plants widely distributed in the Zamin district of the Jizzakh region, and their geographical distribution.

Zomin State Reserve is located on the territory of the Bakhmal, Zamin districts of the Jizzakh region and borders with the velvet forestry, the Barkhal Farmers' Association, the Zomin Forestry, the Zomin National Nature Park and the state border with the neighboring Republic of Tajikistan. The area is 26921 hectares [11].

The Republic of Tajikistan has a protected area with a total area of 8770 hectares at a distance of up to 1.5-2.0 km within the reserve on the border territories, except for the border territory.

The climate on the territory of the reserve is sharply continental, the average annual precipitation according to long-term data is 405 mm. compose. Summer precipitation falls in the form of rain, on mountain peaks -in the form of snow. In the highlands, snow is observed most often in May and June. In January - February, the snow thickness reaches half a meter and even thicker. A high temperature of +35 +37 C is observed in July and August, in December-January it drops to -14-18, spring frosts continue until the end of May, early autumn frosts begin from the end of September. Winter in the reserve is stable and lasts for five months. The low height of the slopes, the peaty shape of the relief under the influence of the direction of the sun and wind, the presence of vertical territoriality, sunlight and humidity cause a variety of soil-forming and denudation processes, determine the local character of trees of various breeds, in particular black spruce[11].

In order to ensure the preservation of unique natural junipers and the natural conservation of the animal and plant world in junipers, the ZaminMountain Junipers State Reserve was established in 1928 in the Turkestan MountainRange.

The lands the reserve mainly include mountain ranges. The reserve is located mainly in the Zomin and Bakhmal districts and includes three zones - the lower, middle and upper parts of the mountains - with altitudes from 1700 to 4029 meters above sea level. The southern part of the territory consists of steep cliffs of the Turkestan ridge. The northern part consists of slightly flatter relief sandy loams covered with layers of marl and loam-like soils.

Three types of fir trees grow on the territory of the reserve - black fir, Apricot fir and cypress fir. Cypress firs grow on the high slopes of the mountains, naturally mixed with apricot firs. It grows in the lower part of the mountain, mixing with black fir. Shrubs and trees grow around junipers, such as Turkestan hawthorn, Fedchenko rosehip, Korolkov woodbine, black barberry, dogwood.

105 plant families, about 1216 species of higher plants of 531 genera grow on the territory of the Zomin reserve, including 21 species included in the “Red Book" of the Republic of Uzbekistan[12,13].

There are more than 200 species of medicinal plants in the reserve, such as Aconítum soongáricum, colchicum, helichrysum arenarium, V. fi carifolia Boiss, Thalictram minus, Lagochilus inebrians, Artemisia absinthium L. and others. Both rare and endangered wild plants are found among them (Table 1).

TABLE 1 RARE AND ENDANGERED WILD PLANTS

No.	Scientific name	Their names in Uzbek
1	*Astragalusleptophysus*	Pufakastragal
2	*Astragalusbelolipovii*	Belolipovastragali
3	*Astragalusknorringianus*	Knorringastragali
4	*Ferullasumbul*	Sumbulkovrak
5	*Ferulafedtschenkoana*	Fedchenkokovraki
6	*Ferulavicaria*	O'rinbosarkovrak
7	*Tulipakorolkovii*	Korolkovlolasi
8	*Tulipaaffinis*	Dilbandlola
9	*Tulipadasystemon*	Sarg'ishlola
10	*Colchicumkesselringii*	Kesselringsavrinjoni
11	*Serratula lancifolia*	Nashtarsimonserratula
12	*Pseudosedumcampanuliflorum*	Qo'ng’iroqgullisoxtasemizak
13	*Allium isakulii*	Isoqulpiyozi
14	*Loniceraparadoxa*	G'alatiuchqat
15	*Aconitumtalassicum*	Tallasparpi
16	*Eremurusrobustus*	Norshirach
17	*Eremuruschloranthus*	Yashilgullishirach
18	*Lagochilusinebrians*	Sarxushbozulbang
19	*Cousiniadshisakensis*	Jizzaxkarragi
20	*Cousiniahaesitabunda*	Shubhalikarrak
21	*Helichrysumnuratavicum*	Nurotao'lmaso'ti

The table is compiled by the authors on the basis of data from the Zomin State Reserve of the State Committee of the Republic of Uzbekistan for Ecology and Environmental Protection.

There are also more than 15 species of ornamental plants in this area, including Delphinium semibarbatum, Eremurus, tulips, Anemone protracta, Folia Ungerniae (Ungernia victoris), crocuses. In addition, many species of forage, fodder, honey-bearing, resin-containing plants are found in this area[10]. Of these, 53 species of herbivores, 47 species of edible, 38 species of poisonous plants, 12 types of dyes, 16 types of essential oils, 4 types of resin-containing, 91 types of fodder, 6 types of spicy plants. In addition, the following can be attributed to medicinal and food types of wild plants (Table 2)

TABLE 2 MEDICINAL AND NUTRITIOUS SPECIES OF WILD PLANTS

No.	Scientific names of species	Their names in Uzbek

1	*Juniperussemiglobosa*	Yarimsharsimonarcha, saurarcha
2	*Juniperusturkestanica*	Turkistonarchasi, o'rikarcha
3	*Juniperussarawschanica*	Zarafshonarchasi, qizilcha, qoraarcha
4	*Loniceraaltmannii*	Altmanuchqati
5	*Thalictrum minus*	Kichiksanchiqo't
6	*Thalictrumsultanabadense*	Sultonobodsanchiqo't
7	*Ranunculus olgae*	Ol'gaayiqtovoni
8	*Delphinium oreophilum*	Tog'sevarisfarak
9	*Arenariagriffithii*	Griffitqumo'ti
0	*Rumexcrispus*	Jingalakotquloq
1	*Rumexconfertus*	Oddiyotquloq
2	*Rheum maximowiczii*	Maksimovichravochi, chukra
3	*Acantholimonerythraeum*	Qizg'ishkirpiO’t
4	*Hypericumperforatum*	Teshikbargliqizilpoycha, dalachoy
5	*Hypericumscabrum*	Dag'albargliqizilpoycha, dalachoy
6	*Berberisoblonga*	Zirk
7	*Alcea nudiflora*	Oqgulxayri
8	*Capsellabursa-pastoris*.	Jag'-jag'
9	*Amygdalusspinosissima*	Tikanlibodom, bodomcha
0	*Crataegusturkestanica*	Qizildo'lana
1	*Cerasuserythrocarpa*	Qizilmevachiya
2	*Potentillaasiatica*	Osiyog'ozpanjasi
3	*Potentillaorientalis*	Sharqg'ozpanjasi
4	*Potentillareptans*	O'rmalovchig'ozpanja
5	*Rosa canina*	Itburunna'matak
6	*Rosa fedtschenkoana*	Fedchenkona'matagi
7	*Rosa hissarica*	Xisorna'matagi
8	*Rosa kokanica*	Qo'qonna'matak
9	*Rosa maracandica*	Samarqandna'matagi
0	*Rosa nanothamnus*	Pastakna'matak
1	*Spireahypericifolia*	Dalachoybargtobulg'i
2	*Cotoneaster pojarkovae*	Poyarkovirg'ayi
3	*Epilobiumpalustre*	Toqaqizilbarg
4	*Astragaluslasyostylus*	Tukustunchaliastragal
5	*Astragalussesamoides*	Kunjutastragal
6	*Onobrychis echidna*	Exidnazirako'ti
7	*Onobrychisgrandis*	Kattazirako't
8	*Trifoliumpratense*	O’tloqsebargasi
9	*Trifoliumrepens*	O'rmalovchisebarga, o'qqiztepa
0	*Trigonellagrandiflora*	Kattagulshambala. Sariqyo’ng’ichqa

1	*Melilotusofficinales*	Dorivoryo’ng’ichqa, dorivorqashqarbeda
2	*Haplophyllumlatifolium*	Kengbarglitoshbaqao't
3	*Geranium collinum*	Qiryoronguli, anjabor
4	*Geranium regelii*	Regelyoronguli
5	*Hippophaerhamnoides*	Chakanda
6	*Buniumchaerophylloides*	Zira
7	*Carum carvi*	Oddiyqorazira
8	*Eryngiummacrocalyx*	Shaytonkelmas, kattakosabargko'kbosh
9	*Ferula kokanica*	Qo'qonkovraki
0	*Scabiosasongarica*	Jung'orskabiozasi
1	*Achilleamillefolium*	Oddiybo'ymadoron
2	*Artemisiadracunculus*	Sherolg’in
3	*Artemisia absinthium*	Achchikshuvoq (ermon)
4	*Artemisia tenuisecta*	Ingichkabarglishuvoq
5	*Artemisia vulgaris*	Oddiyshuvoq (oddiyermon)
6	*Cichoriumintybus*	Sachratqi
7	*Cousiniahorridula*	Karrak
8	*Cousiniaumbrosa*	Oqboshtikan
9	*Cousiniaverticillaris*	Kuziniya
0	*Ligulariathomsonii*	Tomsonmingtumori
1	*Matricariadisciformis*	Moychechak
2	*Scorzoneraacanthoclada*	Takasag'iz
3	*Taraxacumelongatum*	Cho'ziqqoqio't
4	*Tussilago farfara*	Oddiy oqqaldirmoq (ko’ka)
5	*Rubus caesius*	Ko’kimtir maymunjon
6	*Convolvulus arvensis*.	Dalapechagi
7	*Convolvulus lineatus*	Ingichkabargpechak, chumchuqoyoq
8	*Verbascumsongaricum*	Jung'orsigirquyruq
9	*Plantagolanceolata*	Bargizub, ilontili
0	*Plantagomajor*	Kattazubturum
1	*Menthaasiatica*	Osiyoyalpizi
2	*Nepetapungens*	Tikonlizufo
3	*Nepetaucranica*	Ukrainzufo
4	*Leonurusturkestanicus*	Turkistonarslonquyrugi
5	*Phlomisolgae*	Olgaqo'ziquulog'i
6	*Phlomissalicifolia*	tolbargqo'ziqulog'i
7	*Phlomisthapsoides*	Qo'ziquloq
8	*Phlomoidesconiscenes*	Qo’ng’irrangqo’ziquloq
9	*Ziziphorapedicilata*	Kiyiko’ti
0	*Perovskia scrophulariifolia*	Muhalisbargxapri, qisroq

1	*Lallemantiaroyleana*	Royllallemantiyasi
2	*Urticadioica*	Ikkiuyligazanda
3	*Gageachomutovae*	G'ozpiyoz
4	*Ungerniaoligostroma*	Kamqobiqomonqora
5	*Ixioliriontataricum*	Tatarchuchmoma
6	*Allium barszczewskii*	Barshevskiypiyozi
7	*Allium kaufmannii*	Kaufmanpiyozi
8	*Allium Suvorovii*	Anzurpiyoz
9	*Eremurus fuscus*	Toblanganshirach
0	*Eremurusolgae*	Olgashirachi
1	*Eremurusregelii*	Regelshirachi
2	*Juncusinflexus*	Og'ishyakan
3	*Carex divis*a	Ajralganqorabosh
4	*Carex melananhta*	qoragulqorabosh
5	*Carex orbicularis*	Yumaloqqorabosh
6	*Carexturkestanica*	Turkistonqoraboshi
7	*Elytrigiarepens*	Sudraluvchibug'doyiq
8	*Poapratensis*	O'tloqqo’ng’irboshi
9	*Poanemoralis*	Qorag’ayzorqo’ng’rboshi
0	*Poalitvinoviana*	Litvinov qo’ng’irboshi
1	*Poabulbosa*	Piyozboshliqo’ng’irbosh

The table is compiled by the authors on the basis of data from the Zomin State Reserve of the State Committee of the Republic of Uzbekistan for Ecology and Environmental Protection.

CONCLUSION

The healing properties of medicinal woody-shrubby and herbaceous plants growing in mountainous, riparian forestsand sandy-desert forests, desert areas of Uzbekistan, and their role in strengthening human health are extremely great, and the conservation of declining species is one of the urgent problems of today. This article analyzes information about medicinal plants growing in the Zomin State Reserve. Not only the Zamin district of the Jizzakh region, but also the Bakhmal, Gallaorol and other districts stand out in our Republic for their endemic species of medicinal plants. In the future, the creation of maps of the distribution and prediction of medicinal plants based on GAT technologies will require numerous studies in the field of medical geography.

REFERENCES:

1. Resolution of the President of the Republic of Uzbekistan dated April 10, 2020 No. PK-4670 “On measures for the protection, cultivation, processing of wild medicinal plants and rational use of available resources”. https://lex.uz/docs/4785256

2. Decree of the President of the Republic of Uzbekistan dated January 28, 2022 No. UP-60 “on the new development strategy of Uzbekistan for 2022-2026". http://lex.uz//docs/5841063

3. National Encyclopedia of Uzbekistan. Volume 3. T., Publishing House "National Encyclopedia of Uzbekistan". 2002. pp. 358-359.

4. Babushkin L.N., Kogai N.A. Questions of geographical zoning of Central Asia and Uzbekistan // Proceedings of the Tashkent University. 1964. Issue 231. –pp. 115-145.

5. Zakirov K. Z. To the problem of zoning terminology of botanical geography in Central Asia // Bulletin of Central Asia. un-ta. 1947. Issue 25. –p.46.

6. Zakirov P.K., Norboeva. T, et al. Distribution of Rigel geranium communities in the western part of the Turkestan range and in the Malguzar mountains / Distribution and natural reserves of useful plants of Uzbekistan. – Tashkent, 1976. – issue 2. –pp. 410-422.

7. Berdiev E.T., Khakimova M.X., Makhmudova G.B. Forest medicinal plants (textbook). - Tashkent, Minitipografiya AN RUz, 2016. - 252 P.

8. Korovin E. P. Botanical and geographical areas of Uzbekistan and features of its vegetation. / In the book: Flora of Uzbekistan. – Tashkent, 1941. – Vol. 1. – pp. 23-38.

9. Musketov D. I. Geological sketch of Turkestan. - - L.: Geog. com., 1928. - 103 p.

10. Musketov D. I. Northern foothills of the Turkestan ridge (Laylyak-Sulyuktinsky district) // III All-Union geologist. Exit: The tour guide.exped. - Tashkent, 1928. – pp. 32-36.

11. State Committee of the Republic of Uzbekistan on Ecology and Environmental Protection data of the Zomin State Reserve, 2021.

12. The Red Book of the Republic of Uzbekistan. Chinar, 2009. 356 p.

13. "Red Book of the Republic of Uzbekistan" vol. 1-2. Tashkent 2019