NAFTALAN... A MAGICAL GIFT OF NATURE LURKING IN THE DEPTHS OF AZERBAIJANI LANDS, A WORD ATTRACTING PEOPLE FROM ALL OVER THE WORLD. THIS MIRACULOUS SUBSTANCE HAS BEEN BRINGING HEALTH AND JOY TO THOSE IN PAIN FOR CENTURIES. SO WHAT IS NAFTALAN?
First information about Naftalan is found in the works of great Azerbaijani poet and thinker Nizami Ganjavi (1141-1201). Well-known traveler Marco Polo also mentions Naftalan in his treatise “On the Great Tartary”, written in the 13th century.

Naftalan is an Azerbaijani word meaning “a place where there is oil”. This is the name of a city located 320 km west of the Azerbaijani capital Baku and 50 km south-east of ancient Ganja. According to archive data, Naftalan was extracted manually from shallow depths until 1873. In 1890, German concessioner E. Eger bought a piece of land here and established first 250-m wells to start commercial production of oil. However, he suffered a great disappointment as the oil had no gasoline and would not burn. Eger was on the brink of bankruptcy when he noticed that on hot summer days, hundreds of people were coming to the place to sit in baths filled with this oil. After learning about the broad medicinal use of Naftalan and finding out some of the treatment techniques from the local population, he built a small factory to produce ointments from the non-combustible oil [3]. The business proved very successful, while factory products, as well as the raw materials, were exported to Germany where two joint-stock companies, "Naftalan in Magdeburg” and “Naftalan in Dresden”, were launched in 1896. The companies were producing medicines from the Naftalan oil. The Dresden-based firm also issued a guidance on the application of naftalan, which, in addition to Eger’s articles, contained over 600 reviews from doctors [14]. The recipes of Jaeger’s ointments were kept secret, while the ointments proper were widely advertised in many countries as a miraculous remedy for almost all diseases. Curiously enough, during the Russo-Japanese War of 1904-1905, Japanese soldiers had a Naftalan ointment with them, which was prescribed for the treatment of wounds and burns [4].

The Naftalan ointment was applied not only to medicine but also to cosmetology. In 1900-1902, beauty shops in Paris widely used different preparations made from Naftalan. It was mostly used as a basis for ointments [12, 16]. In 1899, “Pharm Zeitung” magazine published 65 composition formulas of ointments, pastes, plasters, suppositories, soaps, powders, etc., all based on Naftalan Over a short period of time, the demand for Naftalan and various drugs made from it significantly increased in Europe. From the late 19th century, Naftalan-based ointments were exported to Russia as a patented German product [4,6].

In 1920, the Naftalan deposit was transferred into the jurisdiction of the Soviet Union and declared a protected zone. In 1926, a specialized resort Naftalan began to operate there, providing treatment to patients from all over the Soviet Union suffering from musculoskeletal, neurological, skin, gynecological and urological diseases. Subsequently, in 1938, an experimental laboratory for the study of biological effects of Naftalan was established at the Baku Institute of Health Resorts.

In 1941, the Pharmacopoeia Committee of the USSR People’s Commissariat approved the production of refined Naftalan: the native (natural) Naftalan dehydrated by way of heat treatment at a temperature of 125-135°C. It served as a basis for the Naftalan ointment widely-known in the USSR. Later on, the Galen chemical and pharmaceutical factory in
Moscow produced over 30 types of Naftalan-based drugs. The total number of Naftalan-based drugs exceeds 200: deresined naphthalene, therapeutic putty, salicyl Naftalan cream, boron-zinc-Naftalan paste, Naftalan phytoncide emulsion, Naphthalan oil, etc. Thus, in addition to recreational therapy of Naftalan, a town visited by more than 80,000 people from all over the former USSR every year, Naftalan has been widely used in medical practice.

So what underlies its medicinal qualities?

The study of the chemical and physicochemical properties of Naftalan was undertaken by the Academy of Sciences, various departments of the Azerbaijan State Medical University, the Institute of Experimental Medicine of the USSR Academy of Sciences [1, 2, 5]. A significant contribution to the study of Naftalan has been made by such illustrious scholars as Y. Mamedaliyev, K. Yegorov, A. Garayev, T. Pashayev, K. Krasusskiy, A. Guliyev, S. Hasanov, M. Nevyadomskiy, A. Babayev, N. Aliyev, G. Abiyev, etc.

Naftalan is a naphthenic oil. In appearance it hardly differs from conventional industrial oils. However, in contrast, it has a high specific weight (from 0.927 to 0.970) and contains a significant amount of resin (25-30 per cent), naphthenic (from 50 to 60 per cent) and aromatic (15 per cent) hydrocarbons. According to scientists, it is naphthenic hydrocarbons that precondition its therapeutic properties [1, 2, 7]. Such hydrocarbons form the basis of many biologically active substances (sterols, bile acids, vitamin D, progesterone). They also participate in biosynthesis reactions of steroid hormones. Naftalan also contains a large number of physiologically active microelements, such as zinc, boron, manganese, iodine, copper, lithium, rubidium, cobalt, molybdenum, etc., which certainly plays a role in medicinal effects. Also biologically active is the nitrogenous basis of Naftalan, as well as naphthenic acids [1, 5].

The first official report on the application of Naftalan for therapeutic purposes was made in Russia in 1896. At a meeting of the Caucasus Medical Society in Tiflis, Doctor F. G. Rosenbaum said he had applied it to burns, acute and chronic eczema, seborrhea, psoriasis, wounds, sprains and rheumatic pains. According to him, Naftalan accelerates the scarring process, has an antiseptic and anti-inflammatory effect. In 1898, Moscow Dermatological Society recognized the findings of well-known scientist A. Pospelov published in journal “Physician”. He used Naftalan oil in dermatology and confirmed its healing properties [3, 4].

The most in-depth research on clinical application of Naftalan is contained in the writings of Azerbaijani scientists M. Topchubashev, B. Eyvazov, E. Efendiyev, Z. Mamiedov, A. Guliyev, A. Allahverdiyev, A. Guliyeva, etc. They have proved the high efficiency of Naftalan and its derivatives in the treatment of various skin, rheumatic, neurological,
surgical, gynecological and other diseases [1,5,6].

Most clinical researches focus on studying the possible application of Naftalan to the treatment of rheumatic diseases of the joints. It has been established that the correct application of the Naftalan therapy helps reduce inflammation of the joints in patients suffering from rheumatoid and psoriatic arthritis. The effectiveness of Naftalan in combination with ultraviolet irradiation has also been established. According to scientists, this is achieved due to the anti-inflammatory, analgesic and immune-modulating effects of Naftalan. Naftalan applications have proved to be an effective means of prevention of spinal deformity (Ankylosing spondylitis) as well [5,6]. After therapy, patients observed a decrease of reflex muscle tension and an increase in the range of motion in the spine.

A differentiated application of Naftalan in the form of two- or four-chamber baths is recommended in the treatment of peripheral vascular diseases: obliterating atherosclerosis, endarteritis, post-thrombophlebitic syndrome and diabetic angiopathies of vessels of lower extremities, which is explained by its vasodilator and anti-inflammatory effect. The selection of this method of treatment depends on the form and stage of the disease and individual characteristics of the patient. In addition, attention should be paid to cardiac activity, blood pressure and cerebral circulation.

The Naftalan therapy is prescribed to women for the treatment of inflammatory diseases in their chronic and sub-acute stages. The best results have been achieved in the treatment of chronic nonspecific salpingo-oophoritis, primary and secondary infertility. Naftalan is applied in the form of swabs, lubrication and gauze trailers. Used for this purpose is deresined Naftalan, which is first sterilized [5].

Local lubrication, both as monotherapy and in combination with ultrasound therapy (phonophoresis) or infrared-ultraviolet radiation, have shown high efficacy in patients with dorsopathy of the cervical and lumbar spine in the sub-acute stage, the stage of incomplete remission and remission. Naftalan helps significantly decrease the severity of pain, restore the motor function and improve peripheral vascular blood flow [3,5].

First information on the effective use of Naftalan in the treatment of eczema, psoriasis, pruritus, burns and other skin lesions in appeared the periodical medical literature more than 100 years ago [13]. According to many dermatologists, the Naftalan oil applied to patients with psoriasis, neurodermatitis and eczema helps reduce pain and tightness of the skin, and leads to its softening and regeneration. [8,9].

Both native Naftalan oil obtained from wells and its various derivatives, such as refined Naftalan, deresined Naftalan oil (a mixture of aromatic and naphthenic hydrocarbons), naphthenic hydrocarbons (cleared from admixtures), external preparations containing refined Naftalan or its components (Naftalan paste, liniment of the Naftalan oil, the Naftalan ointment, etc.), are used for therapeutic purposes. There are numerous techniques of the Naftalan application: general baths, lubrication and application, combination of the Naftalan therapy with various methods of physiotherapy, etc.

The Naftalan oil has no analogues in the world. It still arouses a great deal of interest from academics, doctors and patients around the world. At present, the Azerbaijan Institute of Medical Rehabilitation and
Natural Medical Factors, the Russian Scientific Center for Restorative Medicine and Health Resorts, and other research centers are studying the biological and therapeutic effects of Naftalan at the modern methodological level. The Azerbaijani pharmaceutical company «Biooil» has developed a new generation of Naftalan-based medicines, consisting entirely of naphthenic hydrocarbons [6]. In recent years, Naftalan has been extensively studied and applied to clinical practice in Germany, Russia, USA, Ukraine and other countries. The Naftalan resort is also being revitalized.

More than 100 years have passed since a systematic study of medicinal properties of Naftalan was launched. Its efficacy in the treatment of various diseases has been confirmed by over 2,000 research papers, theses and monographs. The city of Naftalan has the world’s only museum of crutches that have been left there by hundreds of resort visitors who could not walk without them before but don’t need them any longer.

Naftalan, the nature’s gift to Azerbaijan, has earned the country international fame. Thanks to the huge efforts of many generations of scientists, physicians and enthusiasts, the Naftalan resort has become an integral part of Azerbaijan’s cultural heritage. This places tremendous responsibility on each one of us, urges us to respect and take a good care of Naftalan, so that it could also be used by future generations.

REFERENCES