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THE ROLE AND IMPORTANCE OF MEERSCHAUM-TYPE SEPIOLITE IN THE PROMOTION OF TÜRKİYE

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ABSTRACT

The main factors in the recognition and promotion of countries, cities and regions can be summarised as economic strength, sports achievements, cultural accumulations, underground resources, and scientific and technological developments. Within the scope of underground resources, meerschaum-type sepiolite continues to be used in the production of ornaments, jewellery and souvenirs, and the display of items made of this type of sepiolite in showcases and museums in areas where other types of sepiolite cannot be used continues to ensure the recognition of the countries and cities where it is produced and processed. The meerschaum-type sepiolite is a magnesium-based clay mineral that has played an important role in the recognition and promotion of our country in the world for centuries. The role and importance it plays in the recognition and promotion of Türkiye is considered to be the work of its attributive properties based on its formation mechanism. Many of these unique features have enabled it to find more and more usage areas, turn into a work of art, and be recognised. This first recognised type of Turk sepiolite is described as an ambassador of culture and peace, as it has served as a bridge between our country and some countries for centuries. The quality of the Turk meerschaum-type sepiolite based on its superior properties, the fact that it has maintained this quality throughout the reserve for a long time, and the very important works created by valuable craftsmen and artisans are other points that play an essential role in the recognition of our country. In addition to training meerschaum masters and artisans when processed, it also creates significant added value. The export of raw meerschaum was banned in 1972 due to its importance in recognising and promoting our country by creating significant added value and training meerschaum masters and artisans. Meerschaum-type sepiolite has given birth to an important business line and a branch of art in Eskişehir. Meerschaum processing workshops, which are intensively visited by local and foreign tourists coming to Eskişehir, and the Meerschaum Museum in Odunpazarı district will accelerate the better explanation and promotion of this vital clay and the abandonment of the name "Vienna Stone".

Keywords: Clay, Sepiolite, Meerschaum, Promotion

1. INTRODUCTION

There are fundamental elements that are effective in the recognition and promotion of countries, cities and regions. These fundamental elements are stated under the following headings: (a) economic strength, (b) diversity and achievements in sports, (c) cultural accumulations (history, religion, beliefs, customs, art and artists), (d) scientific and technological developments and scientists, (e) tourism activities, diversity and achievements, (f) underground resources and wealth, (g) leaders and businessmen recognised by the world. The development, expansion and continuity of each of these topics makes a significant contribution to the promotion of a country, city or region. Each country's unique underground resources, such as mines, oil and natural gas, are promotional tools. Each of these underground resources is an important promotional tool for the country concerned and a natural resource that appeals to foreign countries. Meerschaum-type sepiolite is a very important mineral that has continuously fulfilled the most important role for centuries within the scope of underground resources and richness for our country [1-3].

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This study aims to emphasise that the richness and quality of Türkiye's underground resources can be promoted more effectively abroad, to draw attention to the attributes of meerschaum-type sepiolite, which has historical importance, and to offer solutions to the problems experienced (such as lack of domestic and foreign promotion, production, insufficient support).

2. TYPES AND PROPERTIES OF SEPIOLITE

2.1. Definition of Sepiolite

Sepiolite is a type of clay mineral that is composed of magnesium hydrosilicate. It belongs to the sepiolite-paligorskite (atapulgite) clay group. The most significant magnesium-based speciality clay is a type of sepiolite known as meerschaum. Experts suggest that it can be classified into two different models [4, 5].

(a) $Si_2Mg_9O_{30}(OH)_6\ (H_2O)_4\ .6(H_2O)$
(b) $Si_{12}Mg_8O_{30}(OH)_6\ (H_2O)_4.8(H_2O)$

Sepiolite in the theoretical (hence meerschaum-type sepiolite) has the following proportions:

SiO_2 / MgO ratio is 2.22, SiO_2 = %55.60 and MgO=%24.99

Mainly, though;

SiO_2 = % 53.90 ± 1.9
MgO = %21-25 [4, 5]

2.2. Types of Sepiolite

Three types of sepiolite formation have been identified in our country in terms of scientific studies, local nomenclature and matching definitions in the literature. These three types of sepiolite have been scientifically called "sepiolite clay" worldwide since the middle of the 19th century (1847) as a result of the examinations and research carried out by German Mineralogist E.F. Glocker. It is also known as "sepiolite" in Türkiye. The sepiolites of Türkiye are mainly divided into three subtypes (types) in terms of geological aspects brought about by the formation environment and shape, physical properties and other features:

(a) Meerschaum-type sepiolite (meerschaum, Eskişehir Meerschaum, lumpy/tuberous sepiolite, alpha (α) sepiolite, para sepiolite, white gold sepiolite),

(b) Sedimentary-type sepiolite (stratified/layered sepiolite, industrial sepiolite, industrial sepiolite, beta (β) sepiolite, Sivrihisar (Eskişehir) Sepiolite),

(c) Volcanic-type sepiolite (sepiolite of volcanic origin, hydrothermal sepiolite, Kıbrıscık (Bolu) sepiolite, aluminium sepiolite)

All of the economically exploitable deposits of meerschaum-type sepiolite formations, which are the subject of this study known for centuries, are located in the Eskişehir region in Türkiye. In the region, meerschaum-type sepiolite was formed in different areas of different sizes in the form of nodules independent of each other. Apart from the Eskişehir region, meerschaum-type sepiolite formations are encountered in a few regions of our country (Yunak-Konya, Gelendost-Isparta, Çanakkale, Kütahya) [5-9].

2.3. Properties of Meerschaum-Type of Sepiolite

The importance and value of meerschaum-type sepiolite for centuries and its role in promoting countries have emerged depending on its unique properties (attributes). These properties (mineralogical, physical, colloidal, rheological, catalytic, thermal, chemical, sorptive, etc.) have given this sepiolite type of our country a distinct privilege, superiority, quality and advantage. These attributive properties (completely specific to the meerschaum type) that determine the value of this type of sepiolite can be summarised as follows [2, 4, 6-8]:

(a) It is resistant to heat and fire, doesn't shrink, expand, crack or disintegrate, and can withstand temperatures up to 3800°C.
(b) Floats in water when dry, softens when wet/moist, becomes slippery, does not swell and does not disperse.
(c) It has a fibrous structure and good interlocking of its fibres provides resistance and the property of not dispersing in water.
(d) It does not crack, lightens, hardens and increases its strength when it loses its water/moisture/dries. It has the feature of absorbing nicotine, gas and water, it does not undergo deformation and keeps its volume the same.
(e) It does not crumble, crumble, break, crack or disperse when dropped/thrown on the ground.
(f) Microscopically, it does not contain foreign mineral and rock fragments, and capillary veinlets are not seen.
(g) It is slippery like soap, soft, easy to cut, chipped, processed and shaped in its original state. It also does not pollinate.
(h) It has a porous structure. This porosity provides lightness and natural moisture and increases the absorption feature.
(i) If the cigarette/tobacco smoke turns yellow when it absorbs nicotine, it can be whitened again by wiping it with cologne cotton.
(j) Even the dust and trimmings can be utilised for different purposes by pressing without wasting, leaving no waste/waste.
(k) Since it is suitable for making many ornaments based on its light weight (0.988–1.279 g/cm^3) and hardness (2-2.5), it is the most utilised metal in every respect.
(l) It can be polished, painted and lacquered, but its natural white colour is generally preferred.
(m) It occurs in compact, massive nodules and is predominantly uniform in colour (white).
(n) Non-transparent/opaque in appearance, pure, clean, characterised as a symbol of simplicity, peace and sincerity.
(o) After the final product is made, it gains a new appeal if the exterior is varnished/waxed to provide protection and shine.
(p) The homogeneous distribution of the components in terms of volume enables easy chipping and obtaining a spotless, white and smooth surface.
(q) It is an alkaline clay and when wetted and rubbed like soap, it dissolves and cleans the dirt on hands and clothes.
(r) When the pipe absorbs nicotine, if it is rested for a while (7-10 days) without being used, it vomits the nicotine absorbed.
(s) It can be coloured in all kinds of colours by wrapping it with special paper (marbling paper) and burning it, and it keeps its colour, it is permanent.

Besides these properties of meerschaum-type sepiolite, it is also desired to be of a certain size (dimension). This size feature is one of the criteria determining the quality. Criteria such as size, colour and processing quality are primarily sought. The size of the stone guides the master/craftsman. The size of the stone, which can be transformed into which product (artefact), is determined during the smoothing process in the chipping process.

In the Eskişehir region, seven sub-dimensions (group, type) are used in raw production and sales (Table 1). The ornaments, jewellery and souvenirs to be produced are also adjusted according to this size and selected from this size. The most important factors affecting the value of meerschaum-type sepiolite are perfection and size. A defect in the colour or texture of the nodule of this type of sepiolite, even if it is rare, greatly reduces its value. The classification and naming of meerschaum-type sepiolite is based on centuries of habit, experience and tradition rather than scientific criteria.

Table 1. Nomenclature of meerschaum-type sepiolite according to size [5].

Type/size	Explanation/comprasion
Sıramalı	4-5 pieces Pamuklu
Birimbirlik	2 pieces Pamuklu
Pamuklu	Suitable for making 1 pipe
Daneli	½ piece Pamuklu
Orta	¼ piece Pamuklu
Dökme/cılız	It consists of 300-400 pieces and is evaluated by the sack (weight is 40 kg.)

Pamuklu has an average weight of 200 grams. Very rarely, larger lumps (pieces) called "omuzlama" and "budama" can be produced. Approximately 15% of meerschaum-type sepiolite belongs to the first four sizes (sıramalı, birimbirlik, pamuklu, daneli), while approximately 85% belongs to orta, dökme, and cılız [5].

2.4. The Nomenclature of Meerschaum-Type Sepiolite

Meerschaum-type sepiolite is known by many different names in the world and Türkiye. These different names have increased and continue to increase the production centre, importance and value of meerschaum-type sepiolite for centuries. Lûle is derived from the Persian word "Lûle" meaning pacifier, mouthpiece for smoking tobacco. Lûle, tobacco stick, pipe and hookah are also called the "nest" that allows tobacco to be placed on the ends of products such as pipe and hookah. In science (geology); as a result of the naming of mineralogist A. F. Glocker, it has been named as sepiolite since 1847, in Europe as königin (queen) or king (king), and in Vienna (Austria) as Vienna Stone (Wiener stein). German: meerschaum (sea foam), English: sea foam/sea foam, Italian: schiuma di mare, French: Écume de mer, Latin: spuma maris, Latin: sepiolite, Helen: halos hachne, Greek; sepion (cuttlefish), Czech; mořská pena, Swedish; sjöskum, Finnish; merenvaha, Portuguese; espuma de mar, Spanish; sepiolita (for all types of sepiolite).

Meerschaum-type sepiolite has also received various local names in our history. For example; Old Uyghur Turk; Tolay kopugu, Ottoman Turk; derya kopugu, among the people and in different regions of our country; meerschaum, Eskişehir Lületaşı, Eskişehir Taşı, Aktaş, Patal, Patal Taşı, Soap Foam, Sea Foam, White Gold, Lûle Lülü (mouthpiece, stick, peace stick) (Nusret Güngör's personal interviews with meerschaum producers and artisans and domestic and foreign experts on various dates).

3. RECOGNITION, IMPORTANCE, AND REASONS FOR PREFERRING MEERSCHAUM-TYPE SEPIOLITE

3.1. The Importance of Promoting a Country: A Historical Perspective on Awareness

Archaeological excavations show that meerschaum-type sepiolite has been known in the world for about 5,000 years and has been used for various purposes. This sepiolite type of the Eskişehir region can be dated as the oldest. This point can also be confirmed by some archaeologists.

Eskişehir, which is an important region in terms of meerschaum-type sepiolite, has economic potential in terms of agriculture, industry and trade. Mineral deposits within the provincial borders play an important role in this potential. The main minerals important for Eskişehir are meerschaum-type sepiolite, magnesite, boron, manganese, perlite and chromium. Meerschaum-type sepiolite is considered to be the oldest of these mines according to its historical development [10].

The work by Ali Bin Abibakr Al-Haravi, who travelled around Anatolia in 1173, is considered to be the first source in which meerschaum is mentioned. However, in this work, the author did not give any information about the use of meerschaum [11, 12]. Meerschaum-type sepiolite became a mineral that Europe recognised and started to demand, especially after the 1850s. The Austro-Hungarian Empire was the main buyer of meerschaum and the country that both made the main profit from meerschaum and introduced it to Europe and the world. Detailed information on the export of meerschaum and the Austro-Hungarian connection can be found in Viennese sources. In a report published on June 3, 1886, by Das Handels-Museum, it was stated that Vienna had a history of over half a century in the meerschaum industry. In other words, it is seen that Vienna's connection with Eskişehir goes back to the 1830s [11].

Charles Texier stated that in 1834 meerschaum-type sepiolite was monopolised by the Ottoman Empire. At that time, meerschaum was sold only in the general warehouses in Eskişehir and its export was carried out by the Ottoman Empire and a chest of meerschaum was purchased for 1.500 kuruş, i.e. 625 francs. This price is a good monetary value according to the conditions of that day and corresponds to 30 gold coins according to the Ottoman market [10, 13]. In the absence of roads and vehicles developed to today's standards, one of the most important problems was the transport of the ore rather than its export. Until the advent of railway transport, the transport of meerschaum-type sepiolite purchased in Eskişehir was carried out by merchants through animals (camel caravans). This road between Eskişehir and İznik was named "Meerschaum Road" by A. Reinhardt. Meerschaum-type sepiolite, which reached İstanbul from İznik, was shipped to Belgrade and Budapest and from these centres it passed into the hands of Viennese merchants. Since no customs tax was levied on meerschaum-type sepiolite by Austria, Vienna became the centre of its exploitation and trade. In other words, the meerschaum-type sepiolite trade was almost entirely dominated by Viennese merchants in the 19th century [10, 14].

Meerschaum-type sepiolite, which has been more recognised in the world for centuries, especially in Europe, is still known and promoted as "Vienna Stone" abroad, although not as much as in the past. However, the fact that this sepiolite, which is of the highest quality and used in any field, belongs to Türkiye (Eskişehir) has not been explained and promoted knowingly or unknowingly. This type of sepiolite has been recognised in our country for about 550 years, and has been better known and continues to be better known for the last 250 years. However, the awareness and recognition of this sepiolite type is not sufficient for our country. It is known that as a result of being smuggled abroad for centuries and being marketed as raw or processed, it has caused the depletion of important quality reserves.

Researchers agree that Ali Osman Denizköpüğü, one of the meerschaum veterans, was the person who started the meerschaum business in the Republican period. He was given the surname Denizköpüğü because of the award he won as a result of a competition organised in Italy [12]. The first workshop was opened in the bazaar with Ali Osman Denizköpüğü, whom Ataturk met and guided, and many masters and craftsmen were trained. The apprentice-master relationship continues, although not at the desired level.

Festivals have been organised to promote this type of sepiolite both domestically and globally. The "International White Gold Festival" organised every year in September-October between 1988-1991, the first of which was in 1988, was aimed to make this natural quality in Eskişehir more aware, to

promote it more comprehensively on a global scale, to train masters and artisans/craftsmen and to better explain its economic value. Significant progress has been made in this regard in the years mentioned.

In addition to being used in ornaments, jewellery and souvenirs, meerschaum-type sepiolite has been used in state protocol, homes, guesthouses, showcases and museums for a long time in areas where other types of sepiolite cannot be used. This situation has enabled the country and especially the cities where it was produced and processed to be promoted in history. This first recognised type of Turk sepiolite is essentially an ambassador of culture, tourism and peace for our country. It is known that it has fulfilled and has been fulfilling the duty of a bridge between our country and some countries for centuries. Meerschaum-type sepiolite, a special clay mineral that has played this role naturally and without any effort for centuries, continues to increase its importance and value both in the world and in our country, although not enough [5, 15, 16].

When its raw exports were stopped in 1972, especially after this year, meerschaum-type sepiolite provided the birth and survival of both an important business line and a branch of art in Eskişehir. The quality of the Turk meerschaum-type sepiolite based on its superior properties, the fact that it has maintained this quality throughout the reserve for a long time, and the very important works of valuable masters and artisans/craftsmen within the scope of semi-precious metal/stone play a very important role in the recognition of our country [5, 7].

The first museum in the world dedicated to only one type of a mineral was established independently in the early 1990s by the Governorship of Eskişehir. In the following years, this museum was moved to the Kurşunlu Kulliye established by Odunpazarı Municipality in 2008 (Figure 1). The precious crafted products exhibited in this museum are the works of craftsmen and artisans from Eskişehir. The artefacts were donated during the establishment of the museum to explain the importance and promotion of meerschaum-type sepiolite, which is an important value for Eskişehir. This mini museum is an important step in the recognition of meerschaum-type sepiolite, but it is not enough. More visual promotion should be made through public service announcements to be made with the media (mass) communication tools and exhibitions to be established especially in schools for the final products. Odunpazarı Municipality also continues its national promotions under the title of "sea foam".

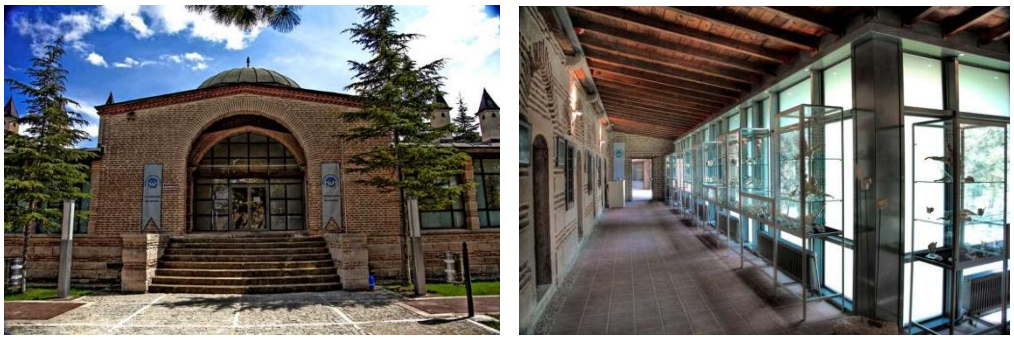

Figure 1. Views from the meerschaum museum in Odunpazarı/Eskişehir) (The images are taken from the web page of Türkiye Cultural Portal)

3.2. The Reasons for Preference

Meerschaum-type sepiolite, sometimes exported in raw form and sometimes smuggled during the Ottoman Period, was processed in Europe, especially in Austria, and gained an important commercial value for a long time and was used in the promotion of some countries and is still being used. The reasons for this uninterrupted preference abroad can be summarised as follows [5]:

(a) The quality of Turkish meerschaum, made from sepiolite, is superior due to its advantageous properties. Formation in the form of tubers, lightweight and size suitable for smuggling (in raw form),
(b) In the first years, the reserves at levels closer to the surface can be produced more easily in a shorter time and manually (manually),
(c) It is easy to process and transform into different works of art due to its rarity,
(d) As countries are introduced to Turkish meerschaum-type sepiolite, the commercial revenues for those countries increase continuously,
(e) Light, durable, easy to transport (can be carried by hand),
(f) The fact that its importance and value were not sufficiently known in Türkiye, especially in the the region where it was formed before the Republic of Türkiye,
(g) The fact that it has been well known, recognised, marketable and providing added value abroad for centuries,
(h) Colour (white) homogeneity, purity, cleanliness, simplicity and the ability to be formed and obtained in seven different accepted sizes,
(i) Every piece of particles and dust can be pressed without waste and can be commercially utilised for different purposes,
(j) Good awareness abroad of the continuous increase in the commercial value of the finished (crude) and especially the final product after processing,
(k) Being one of the first minerals exported abroad and being heavy in cost when processed,
(l) The fact that the apprentice-apprentice-master relationship was established centuries ago and continues uninterruptedly,
(m) Creating employment and being adopted as an important branch of art and advertising and promoting their countries.

3.3. The Main Regulations and Criteria for Meerschaum-Type Sepiolite

The export of meerschaum-type sepiolite was originally authorised in 1960. In the Ministerial Decree No. 7/3812 published in the Official Gazette of Türkiye dated 14.2.1972 and numbered 14099, its export was prohibited with the provision "... unprocessed Eskişehir Meerschaum and all kinds of trimmings" in the minerals section of the list of goods whose export is subject to licence. 06.06.2006/Export 2006/7 numbered Communiqué on Goods whose Export is Subject to Registration is also prohibited with "raw meerschaum and draft pipe". In this way, the prohibition of exporting raw meerschaum has led to the revival of meerschaum craftsmanship in Eskişehir and the opening of many workshops. Accordingly, meerschaum masters and artisans/craftsmen were trained in greater numbers in a certain period. On 27.10.1997, as a result of the application (no: C 97/02) made by Eskişehir Chamber of Industry, the Turk Patent Institute issued a "geographical indication registration certificate" as "Eskişehir Meerschaum" with registration number 26 on 07.01.1999. Everyone and every sector has important duties for the quality required by this certificate, traditionalism, belonging to a certain region, having products that have gained a certain reputation, protection, transferring them to future generations, and more promotion in the world, especially in our country.

Meerschaum-type sepiolite, briefly known as "meerschaum", is included in the "precious and semiprecious stones" section of Group V in the mineral groups listed in Article 2 of the Mining Law no. 3213, and is processed and evaluated as "semi-precious Stones". In this group of stones, there is an international "4C rule" which determines the properties and quality of the stone. The 4C rule consists of the initials of four characteristics in English. These characteristics are (a) colour, (b) carat weight, (c) cut, and (d) clarity. In addition to the characteristics of the 4C rule, "4 basic criteria" are sometimes taken into account. These criteria are; formability, cutability, workability, and polishability. Meerschaum-type sepiolite fully complies with the 4 basic criteria and partially complies with the 4C rule (approximately 2/4 = colour and cut predominantly).

3.4. Transition from Underground Resource to Final Product/Value and Problems Experienced

The process of discovering and utilizing meerschaum-type sepiolite as an underground resource can be broken down into several stages. Firstly, the material was sourced from underground, and then it was mined and transformed into industrial raw material. Afterwards, it became clay and eventually became magnesium-based clay. From there, it became sepiolite and was refined into meerschaum-type sepiolite, also known as meerschaum. The next step was to produce it using a shaft-wheel-skip system, which resulted in a semi-finished product. This product was then turned into final products and exported or marketed domestically for commercial gain. Finally, the product was promoted to increase sales.

Meerschaum-type sepiolite is subjected to some processes in order to become semi-finished products after it is produced from the quarry. These processes can be counted as beating, counter-scaling, roughing, chipping technique, embossing technique, sanding, polishing, tandooring, wet aba, oil aba, polishing, sorting and boxing (crating). In addition, in the decoration of products made of meerschaum-type sepiolite, embossing technique, milling technique, soaking in wax, burning technique, marbling paper painting, and painting technique processes are applied [17].

The mining method of meerschaum-type sepiolite has been carried out for centuries without much change until today. After the 1960s, within the scope of modernisation in the mines, the production of a method called the spinning wheel method was changed to the skip method. In this method, there is an electric winch placed at the mouth of the mine pit, a compressor used from time to time in digging operations and motor pumps used to discharge the groundwater accumulated in the pit out of the pit. The quarries where meerschaum, also called wells, are operated can be classified as dry and wet wells according to the water status. Water can accumulate at the bottom of the quarries where water income is available. The water accumulated at the bottom affects the working environment and makes working conditions difficult. In these quarries, problems may be encountered in terms of operational safety. However, meerschaum produced from these quarries is of higher quality [12].

The problems encountered in mining in general (lack of financing, bureaucracy, lack of coordination, environment, property permit, transportation, lack of qualified personnel and expert engineers and fuel costs etc.) are also valid for meerschaum-type sepiolite. In addition to these general problems, there are also special problems related to this mine.

These problems can be summarised under the following headings (Nusret Güngör's personal interviews with meerschaum producers and artisans and domestic and foreign experts on various dates) [2]:

(a) Difficulty of raw (raw) production-mining-cooking water (groundwater) problem,
(b) Problems related to processing (producer, intermediary, master-artisan relations),
(c) Discontinuity of training, failure to train new masters and craftsmen,
(d) Lack or errors in marketing and promotion,
(e) Operational safety in terms of production activities and occupational health and safety for employees (especially spinning, shaft spinning, skip methods),
(f) Problems of organisation and lack of unity,
(g) Lack of literature, inventory, reports and scientific studies on informality,
(h) Other problems (local problems, labour, insufficient incentives... etc.).

3.5. Usage Areas of Meerschaum-Type Sepiolite

The areas where meerschaum-type sepiolite is utilised (used) are increasing day by day. There are thousands of patents in Spain and Japan for direct and indirect technological uses of sepiolite. In general,

sepiolite is currently used in more than 100 fields. However, this type of sepiolite is used in specialised areas such as decorative household items, stationery products, clothing accessories and tobacco products, based on its superior properties, scarcity, diminishing reserves and the fact that it is the most suitable natural raw material/specialised clay for the production of many works of art only from this type. In addition, it is among the raw materials preferred in recent years in spaceships and factory chimneys [5, 15, 16]. Meerschaum-type sepiolite can also be used in areas where other sepiolite types are used. However, due to its low reserves and the increase in the known reserves of sedimentary-type sepiolite as a result of research, it is only used in areas with high added value. In addition, other types of sepiolites cannot be used in areas where meerschaum-type sepiolite is used.

Tobacco products: Pipe types, cigar mouthpiece, cigar mouthpiece, cigarette mouthpiece, hookah mouthpiece, tobacco box, tobacco tray, hookah, tamper.

Decorative household items: Magnet, incense holder, candle holder, panel, candlestick, table clock, jewellery box, prayer, picture frame, Ottoman/Turk head figures, famous/leading human figures, trinket, animal figures, sugar bowl, spice holder, napkin holder, different purpose box, chess set.

Clothing accessories: necklaces, bracelets, bangles, wristbands, buckles, earrings, rosaries, eyeglasses, strings, brooches (pins), thimbles, anklets, beads, key rings, walking sticks, pocket watches, belts, etc.

Stationery products: Pen holders, bookmarks, envelope openers, paper clips, pincushions, eraser holders, etc [5, 15, 16].

4. DISCUSSION

As is the same for all civilised countries, Türkiye faces great loneliness and loss in many areas, mainly economic, cultural and political, if the country is not promoted. In this respect, promotion in every respect is important and necessary for all countries. Some countries have unique underground resources. These resources play an important role in the culture, history, tourism, works of art and civilisation of that country and promote their countries abroad. Among these underground resources (mines) specific to our country, meerschaum-type sepiolite comes first.

From the past to the present, it should be well known that the meerschaum-type sepiolite found in Türkiye is a magnesium-based quality sepiolite clay, which is a mine with a historical past in the world.

This type of sepiolite has been much better known and recognised in Europe than in Türkiye for centuries. The fact that it has been smuggled from Türkiye to abroad for centuries, that research has been carried out on it, that it has been processed and exported to some countries of the world, especially from Vienna, and that it has been known as "Vienna Stone" dates back to ancient times. In this way, Vienna-Austria was both well-known and gained commercial value for centuries. The importance, value and indispensability of meerschaum-type sepiolite in the recognition and promotion of our country has been better understood after the commercial activities of meerschaum-type sepiolite were encouraged after the Republican period and started to be processed by masters and craftsmen from Eskişehir. However, the level reached today is not sufficient. Illegal production and informality, which cannot be adequately controlled, should be completely prevented and severe sanctions should be imposed.

Meerschaum-type sepiolite is among the most important minerals that have been ambassadors of tourism, peace and culture on behalf of our country for centuries. This type of sepiolite should be recognised and declared as a "national mineral" taking into account its historical background, importance and value.

The areas where meerschaum-type sepiolite is formed and the production sites must be taken under protection in terms of security and informality. If possible, geological formations (locations) and locations where this sepiolite is found should not be built.

Some exceptions and incentives should be introduced in the legislation related and related to meerschaum-type sepiolite in terms of production activities and the training of craftsmen and artisans.

The State should provide more support to those who produce and process the processed meerschaum type sepiolite (craftsmen and artisans) rather than those who buy and sell it. This mineral, as a historical mineral in the world, should be granted some more special privileges for it to reach the level it deserves, as it promotes our country as an ambassador of culture, art and tourism.

Since the mining of meerschaum-type sepiolite is related to many disciplines, especially geology, academicians, producers, exporters, craftsmen and artisans who are directly or indirectly involved in the mining of meerschaum-type sepiolite, and those who are responsible for implementing the relevant legislation should ensure that the problems are solved with common sense under a scientific roof. Producer associations should be established through a good organisation in the process, extending from production to marketing and these associations should be guided and supervised by experts.

Since meerschaum-type sepiolite is better known abroad than in our country, it would be appropriate to organise activities such as symposiums, panels and seminars by all institutions, organisations and relevant local administrations to prevent it from being known as Vienna Stone and to make our country better known in this regard. In addition, this important underground resource of ours should be better explained and promoted to our citizens through public service announcements to be made with the media (mass) communication tools and exhibitions to be established for the artefacts made from meerschaum-type sepiolite.

Turkish meerschaum-type sepiolite is very special and important in every respect. This point should be constantly emphasised, and the fact that there is no other mineral/clay that can be substituted for it should be well explained.

Meerschaum-type sepiolite, its quality based on its superior properties, the fact that it is a historical mineral and that it has been exported sometimes as raw since the Ottoman Period and that it has been processed in Europe long before has caused the reserve of this type of sepiolite to be consumed mainly years ago. There is a problem in terms of the reserves that can be obtained by manpower, generally for quality meerschaum-type sepiolite. No significant progress has been made in the operation/production of meerschaum below the groundwater level due to various reasons. Relevant public institutions and organisations should take the necessary initiatives in unity.

Production by the spinning wheel method continued until the beginning of the 1960s, and although the skip method was introduced, problems regarding production and reserves persisted. These problems should be solved by the relevant institutions and organisations with a common mind.

5. CONCLUSION

Every meerschaum is definitely sepiolite. However, every type of sepiolite is not meerschaum.

Türkiye is the only country in the world where three geological and mineralogical types of sepiolite clays have been identified. In terms of known reserves and quality, it ranks first in the world in all three sepiolite types. As can be understood from this, Türkiye is a sepiolite country without hesitation.

Meerschaum-type sepiolite has been economically produced in Türkiye mainly within the borders of Eskişehir province around the villages of Margi (Kozlubel), Beyazaltın (Sepetçi), Karatepe, Gökçeoğlu, İmişehir, Sarısu, Başören, Türkmentokat, Karatokat, Karaçay, Söğütçük, Kümbet, Kepeztepe, Karahoyuk, Yenişehir, Nemli, Gündüzler, Taycılar for about 550 years with mining activities. Sivrihisar-Eskişehir region is also the region with the highest sedimentary/industrial-type sepiolite reserves in Türkiye.

The superior properties of meerschaum-type sepiolite (colour homogeneity, whiteness, lumpy formation in different sizes, lightness, (porosity, easy processing, etc.) and the fact that it was first discovered as the highest quality in the world and based on this quality, it has ensured and continues to ensure that Eskişehir and Türkiye remain in the world market as raw and processed for centuries.

Meerschaum-type sepiolite is a valuable piece of jewellery worn on the body and clothes, which is easy to carry, light in weight, but heavy in value.

CONFLICT OF INTEREST

The authors stated that there are no conflicts of interest regarding the publication of this article.

AUTHORSHIP CONTRIBUTIONS

The authors contributed to equally in all parts of the article.

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