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Industrial and Craft Activities in the Rural Areas of the Eastern Beylik during the Ottoman Period (1519–1837)

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ABSTRACT

This study aims to shed light on the industrial and craft activities in the rural areas of the Eastern Beylik. It seeks to explore the factors that contributed to the spread of craft and industrial activities in the Beylik, particularly the availability and diversity of raw materials throughout its territory. The geographical characteristics of the region especially its mountainous areas encouraged the inhabitants to engage in craftwork due to the scarcity of arable land, in order to meet their essential needs. This was reflected in the specialization of many families in specific professions passed down from generation to generation.

Despite the simplicity of industrial and craft activities and the primitive means of production in the Beylik's countryside, there was remarkable diversity, especially in processing, metal, and woodworking industries, as well as other crafts. However, the various obstacles and difficulties that the industrial sector in the Beylik's rural areas faced prevented its transformation into an organized and economically significant industry.

Keywords: Eastern Beylik, crafts, industrial activity, Ottoman period.

INTRODUCTION

A careful study of Algerian history during the Ottoman period reveals the significant economic role played by the Eastern Beylik, whose countryside represented the demographic and economic core of the region. The vastness of the Beylik's territory, its human diversity, geographical position, and abundance of natural resources collectively contributed to its distinguished status. Moreover, the inhabitants' needs and their ingenuity in exploiting the available resources to meet those needs laid the foundations for notable craft and industrial activities despite the simplicity of production methods. Among these were textile, wool, and leather industries, which became renowned for their quality and reputation even in foreign markets. This does not negate the fact that many tribes in the Beylik's

countryside practiced fine and highly skilled crafts such as weapon making, gunpowder production, jewelry, and coin imitation.

Our motivation to address this topic stems from a desire to highlight the industrial and craft role of the rural areas of the Eastern Beylik during the Ottoman period. Accordingly, this study raises a central research question:

What were the main foundations of craft and industrial activity in the Beylik's rural areas? What were the most important types of crafts and industries practiced? And what were the main obstacles and challenges that hindered the development of industrial and craft activities in the Beylik's countryside?

FIRST: INDUSTRY AND CRAFTS IN THE BEYLIK'S COUNTRYSIDE

Rural families, in addition to agricultural activity, relied on numerous crafts they practiced to meet their needs especially textile and pottery products. It is also worth noting the role played by women alongside men in various craft activities such as weaving rugs, carpets, and burnooses. The manufacture of iron tools, pottery, and wooden utensils spread widely. These families succeeded in diversifying their production between items intended to meet daily needs and others directed to markets as a source of livelihood. [1]

A. Foundations of Industrial and Craft Production in the Beylik

- During the Ottoman period, Algeria experienced an abundance and diversity of agricultural and livestock production, particularly in basic raw materials such as wool and silk. This was reflected in the diversity of industrial and craft activities and laid the foundations for industries specific to each region—especially the textile industry, such as rugs, weaving, and burnooses, which became known for their quality. Part of this output was marketed locally, while some was allocated for export. [2] The same applied to the Eastern Beylik one of the richest beyliks in Algeria renowned for the scale of its agricultural and livestock production.
- Al-Wazzan indicates the abundance of raw materials produced by the fertile agricultural lands surrounding the city of Constantine, known for their quality and high yield, reaching thirty times what is planted in them. He also notes the spread of craftsmen and artisans in its markets and, elsewhere, the presence of many weavers and artisans in Annaba who engaged in selling linen fabric, [3] which indicates the availability of a skilled workforce engaged in various craft activities in the Beylik.
- Some regions of the Beylik were rich in precious minerals. Al-'Awwāmir mentions the presence of small pieces of gold, such as "al-Bariqī," which the people of Souf sold in the Jarid. Its "chotts" also contained saltpeter near the Dhawaheb area, in addition to salt in Chott al-Tajer. [4]
- Many of the Beylik's tribes exploited mines of iron, lead, copper, and other minerals in their areas, laying the groundwork for various craft and industrial activities arising from the needs of rural inhabitants. Hamdan Khodja, upon visiting the mountains of Felissa, the zawāyā of Beni 'Abbas, and Oued Bejaia, described them as large villages built of stone and whitewashed, containing workshops for manufacturing weapons, rifle barrels, and coin imitation. [5]
- The geography of the Beylik—especially in mountainous areas where agriculture was limited—compelled inhabitants to turn to craft activities to meet essential needs, relying on available raw

materials or visiting markets to acquire what they lacked. Entire families practiced specific crafts inherited across generations, distinguished by the skill with which they fashioned available iron, stone, and wood to meet their needs. [6]

- The authorities in the Beylik, in cooperation with some tribes, worked to exploit the Beylik's vast forest wealth especially in the regions of Jijel, Bejaia, and Collo. To that end, they established the *Karasta* service. Abdelkader Nour al-Din notes that the Ottomans used timber from the mountains of Bejaia to build their ships. [7]

B. Industrial and Craft Production in the Beylik

1. Processing Industries

a. Textile and Wool Industries

From Ibn al-Faqūn's Nawāzil (legal cases), we observe that women in the Constantine Beylik were engaged in certain textile crafts such as embroidery and sewing. One nawāzila states: "A man fell ill; he had a daughter to whom he confessed during his illness that he owed her a debt from her late mother's estate stemming from her marriage bond and from the daughter's service, namely what she earned from embroidery and sewing." [8] Another case mentions women of the Beylik practicing wool-working, spinning, and weaving various types of garments and furnishings: "What I inform of, verify, and attest regarding the condition of women in Constantine widows and maidens of humble status and of standing is their procuring of wool, spinning it, working it, and preparing what they need to prepare of felts, carpets, blankets, aprons, and cloaks, and acquiring such items for utility." [9]

Schlösser also describes the way rural women worked at the loom inside the tent: "Two women sit behind the loom to weave garments for the man, for themselves, and for the children. The loom is set upright, part of the warp is tied to it, and the rest is passed by the fingers and fixed with wood. At the same time, a third woman sits outside the tent, stretches woolen threads between four poles, and weaves the cloth from which the tent is made." He continues describing spinning: "Meanwhile, another woman spins the wool using a spindle with a wooden whorl turned by it. Under her arm she holds a stick around which the wool is wrapped; she draws a thread from it, winds it onto the spindle, and rolls it over her thigh, then lets it drop and spin. As she slowly draws the thread from the wool, a thick yarn is formed. After dinner, the women return to their former work and weave late into the night."[10]

In the Kabyle regions, inhabitants made looms and wove woolen garments such as the 'abāya, burnous, the white cap (chechia), and the women's haïk. [11] The tribes of Beni 'Abbas possessed great skill in the production [12] and mending of burnooses, meeting the needs of the tribes and nearly the whole country. They also owned shops in Algiers where they practiced this craft. [13] Among the most prominent tribes that produced woolen clothing especially the burnous were Beni 'Abbas, Beni Ourthelan, and Zemoura. [14]

Al-'Ayyashi, upon entering the city of Ouargla, was struck by the large quantity of wool and linen garments lying at the city gate, noting: "At the city gate we entered, there were many pieces of wool and linen—most intact, with no tears fit for use, unlike what is usually discarded. We were amazed by their abundance and soundness."[15] From his account, two inferences may be drawn: first, the presence of a thriving hand-made garment industry in the area; second, a local

custom of discarding the clothes of the deceased at the city gate a point al-‘Ayyashi did not definitively confirm.

In the desert regions, besides the burnous and haïk, coarse textiles were made such as loading sacks, the jelāl (a cover placed on a horse’s back), the gharāra (camel saddlebag), as well as the falīj (tent cloth) and the hanbal (a long rug). This industry spread in the Lamour mountains and the Ziban oasis, where the town of Tolga was the most important center for this craft. What distinguishes desert textiles from those of Djurdjura is that they are finer and less densely packed. [16]

The region of Ouargla was also known for various textile products such as rugs, burnooses, hawāli, and qashāshib, owing to the abundance of raw materials like camel hair and wool and the inhabitants’ mastery of the craft.[17] Burnooses coming from the desert were among the finest in circulation, in addition to the haïk woven of silk and wool. The method of weaving burnooses and gandouras varied according to the types of fabrics coming from Touggourt, Oued Souf, and the Jarid region.[18]

b. Leather Industry

This included the manufacture of footwear, belts, satchels, weapon sheaths, coin purses, some carpets, garments used for protection in war, and protection from thorns during harvest and threshing seasons. Related to this craft was decorative stitching with leather threads on saddles, satchels, and carpets. This industry was widespread in the Beylik, especially in oasis areas and major urban centers. [19]

Kabyle inhabitants used oak trees in tanning. The people of Zemoura amassed significant wealth from tanning by exploiting the oak trees in Mount Bouchiouane to extract tanning material; they also used the bark of salkh trees when oak was unavailable, or they imported it from distant regions. Leather goods diversified into ordinary and high boots, saddles, rifle slings, and leather belts products to which many tribes contributed, such as Ouled Maryoub, Beni Maimoun, and Zemoura.[20]

Common methods of hide preparation included cleaning and washing the skin, salting the inner side, folding it several times to ensure salt penetration, then stretching it from the edges to prevent shrinkage and exposing it to sunlight for drying. These hides were then used to make sandals and oil- and water-skins. [21]

In Ouargla, inhabitants produced footwear, water skins, the rikwa (a container made of goatskin), and an open-mouthed bucket fixed on a round stick called al-‘amūra.[22] They also made buckets and ewers well-known desert crafts that used locally available animal hides.[23]

c. Jewelry Making

Jewelry making in the Beylik’s countryside diversified, generally including bracelets, anklets, radīf, rings, necklaces, turbans, tiaras, earrings, mushrifāt, and maqāyis. This craft spread in Djurdjura, Constantine, and some desert oases. [24]

The province of Mijana was known for silver jewelry, especially in the Biban, al-Ja‘afra, and al-Māyin areas.[25] The people of Djurdjura did not use gold in jewelry making; the only precious metal exploited was silver, extracted from the Spanish coin duro, which was melted and hammered on an anvil into thin sheets, then drawn into wires for various ornaments such as rings

and chains. Production was usually based on an agreement between the buyer and the craftsman: the former provided the necessary coins, while the latter supplied copper, plating, and coral, receiving half the coin's value as a wage. [26] Devaux relates a dispute between a goldsmith and a customer who had provided coins to be melted into a woman's bracelet by a set deadline; when the goldsmith failed to deliver, a quarrel ensued.[27] Among the most renowned items produced were anklets, bracelets, necklaces, earrings, and pins for fastening the women's haïk, as well as head ornaments. Many tribes excelled in producing and trading jewelry, notably Beni 'Abbas. [28]

Schlösser further notes the extraction of metals by Kabyle inhabitants, mentioning that one notable man showed him silver ingots 15–16 inches long, which he himself had overseen extracting and smelting. [29]

In desert regions especially Ouargla Jewish craftsmen specialized in jewelry making by melting available gold coins, after residing in the area for several months each year. Inhabitants also procured gold from West Africa to be refined and purified of impurities before being transported to mints, after being cast in special molds. [30]

It is noteworthy that Tunisia was among the most important sources from which gold reached the Beylik, sometimes presented as gifts. One archival document mentions a mithqāla adorned with stones, in addition to ḥakkak box-like containers inlaid with precious stones that were sent as gifts to the Bey of Constantine. [31]

d. Soap Making

Kabyle inhabitants exploited oils to make soap, and the region produced large quantities of it. Among the most famous tribes practicing this industry were Beni Oughlis, Fennaya, and Beni 'Abbas. [32] Some made it from potash and lime by mixing equal amounts of ash from elm, holm oak, and beech woods with lime. After boiling the mixture and washing it with water, hot oil was poured over it to produce a soap saturated with oils, taking different colors depending on the oil used. [33]

In the Djurdjura region, soap was also made from the potash found in mastic trees [34] and elm, producing a soft, dark-brown soap used to wash woolen fabrics and sold in markets due to high demand. [35] They also exploited olive residues and oleander ash to make soap. Some areas, such as Qal'at Beni Rashid and Boussaada, were known for this craft; the French found forty soap makers there.[36]

e. Pottery

Many tribes in the Beylik were known for shaping clay, such as Beni Muslim. With the availability of clay and water along the banks of Oued el-Kébir between El-'Ansar and El-Milia, they produced roofing tiles (qarmūd) for construction. [37]

Inhabitants also made millstones used in oil presses especially with widespread olive cultivation and high production.[38] The tribe of Fennaya specialized in pottery: clay was brought from the Oughlis tribe or from the area between the two villages. The tribe produced wide, white tiles of good quality priced at 2–3 bessita per hundred pieces and owned many kilns in the villages of al-Jinān and al-Mātan. The craft was mostly practiced by women: they dried the clay for two or three days, then dissolved it in water to separate components, forming a paste to which shards from old pottery were added for strength. Simple tools were used for shaping, such as a wooden

scraper and a rounded stone to smooth the exterior. To protect vessels from cracking, they were coated with a type of clay slip diluted in water and applied with cloth; finally, the pieces were placed on an outdoor hearth to gain the required hardness.[39] Devaux confirms that women practiced pottery and had great expertise; they used various colors to decorate pieces and fixed them with a mixture made of resin[40] from pine or cedar dissolved in a little olive oil.[41] The main items produced included jars for collecting water and storing oil, small vessels for drinking water and milk, and utensils for preparing bread and couscous. [42]

In Mijana (the highlands of the Dj'afra mountains), the region was known for producing dishes, jugs, qullal (water coolers), lamps, grinders, pots, and large bowls, in addition to stone olive presses—given the spread of olive cultivation.[43] The tribe of Beni 'Abbas stood out for artisanal industries, especially making olive millstones; they possessed more than two hundred presses—evidence of the tribe's wealth and influence. Devaux mentions that some people practiced quarrying millstones for oil and grain mills, noting that such stones were available only in certain areas and that their extraction costs were high, including quarrying, workers' food, transport, and finishing to the required shape. [44]

Hand mills were essential household items for rural families in the Beylik. Each consisted of two limestone stones placed one atop the other; the lower stone was pierced in the center to pour grains from above, and as the mill turned, flour fell onto a mat made from sheepskin.[45] These mills were also used to prepare all components of bread such as chickling vetch, peas, and chickpeas—alongside wheat. In mountainous areas, and especially when these ingredients were scarce, acorn flour was mixed with wheat flour to make bread. [46]

Constantine had four mills operated by mules and horses, in addition to two watermills outside the city.[47] Professor Yahia Bouaziz notes that, in addition to family hand mills in homes, there were large water-powered mills on the edges of streams and rivers especially in Djurdjura while horses and donkeys were used to drive olive presses. [48]

2. Metal Industry

Iron existed in several parts of the Beylik. In Bejaia, there was high-quality white iron that local tribes extracted and processed, then transported to the markets of Bejaia and Algiers.[49] Many tribes, such as Beni Slimane, smelted local iron ore using picks and heavy hammers, melting it in furnaces; once extracted, it was fashioned into agricultural tools such as mattocks and ploughs. However, the inhabitants used European iron arriving via Tunisia, Constantine, and Algiers for precision items, whereas local iron was used for simple frameworks due to its poor quality.[50] Large quantities of iron and lead were also extracted from the mountains of Djurdjura.[51] Blacksmiths were widespread, aided by access to iron from Algiers and Bejaia, which they used to make ploughs, horseshoes for horses, mules, and donkeys, nails, small adzes, chains and animal locks, and knives. [52] They also made winnowing shovels used to toss wheat in the air to separate it after harvest and threshing, and some of these shovels were used for digging.[53] The region produced most of the country's output of iron and lead of high quality, sold to desert tribes. Iron was extracted from mountains around Bejaia and to its east in Djurdjura[54], and used to make iron tools and plates in a thriving local trade.[55] Here we note a discrepancy between Carette and Spencer regarding iron quality: the former points to its poor quality and reliance on imported iron, while the latter states it was of high quality.

As for lead, there were rich lead mines near Hammam al-Lif, Ouarsenis, and Beni Boutaleb. Refining was done by alternating layers of wood and ore, igniting the stack, and yielding, from one quintar of lead ore, eighty ratls of lead. [56]

In Jijel, each tribe had its own blacksmith, due to their need for this craft linked to making agricultural tools such as axes, sickles, ploughshares, and wooden ploughs. [57]

Al-Aghwati mentions a great lead mine in the desert called "Jabal al-Rusas" (the Lead Mountain), under no tribal authority, from which inhabitants extracted large amounts of lead for sale. The mine lay east of the Ouled Naïl area. [58]

Copper was found in several parts of the Beylik, notably the Oum al-Taboul mine; Jabal al-Ouenza mine north of Tebessa; Jabal Boujabor mine west of Tebessa; the Zawziya mine east of Meskiana in Batna; Jabal Sidi Rghis mine north of Aïn Beïda; and Beni Tellilin mine southwest of Constantine. [59]

In the desert regions, metalworking flourished during the Ottoman period—especially with the development of trade between West Sudan and Ouargla. Many raw materials reached the area, and numerous locals practiced blacksmithing due to the need for agricultural tools and the spread of weapon-making. Access to native gold (tibr) also endowed them with expertise in metal processing. [60]

3. Woodworking Industry

The Beylik's regions abounded in vast forested areas; yet, in the late Ottoman period in Algeria, this wealth was heavily depleted through everyday use—such as cooking and furniture-making—alongside the turn toward shipbuilding, which led to a marked contraction of vegetal cover in Béjaïa and Jijel.[61] After the overexploitation of the Cherchell forests, attention shifted especially to the forests of Béjaïa and Jijel due to their richness in quality trees such as oak and pine, despite the state of rebellion against authority in those regions. Consequently, the authorities resorted to cooperating with influential local notables—particularly saintly (marabout) families—to secure timber at reasonable prices and to required specifications in exchange for gifts and privileges. Among the most prominent families collaborating with the authorities in the timber trade was the Al-Muqran family in Mijana. The state also established the Karasta service in Béjaïa as a sorting and procurement center, to which Jijel and Collo were later added. [62]

The inhabitants from Djurdjura to Collo practiced timber exploitation and turned to shipbuilding workshops; however, this exploitation lacked rational management and did not give rise to a true shipbuilding industry, and they relied on European expertise to exploit it.[63] William Shaler adds that timber was transported from Béjaïa to the port of Algiers and was of poor quality, unsuitable for ship construction, while noting the presence of fertile soil and a climate favorable to vegetal growth. [64] He also notes that most wood used at construction sites in Algiers was taken from forests irrigated by valleys such as Oued Mansouria. [65]

In the Jijel region, each tribe specialized in a particular craft. The Beni Foughal tribe, due to abundant vegetative cover, felled trees and sawed them into planks for use.[66]The Al-Muqran family was charged with negotiating with tribes to procure timber for the Algerian navy. Timber was drawn from the beech forests in the territory of the Beni Foughal confederation, while the Ben Habils 'Awaz family local notables controlled the management of the works yard.[67]

Annaba was surrounded by well-irrigated plains and forested mountains.[68] The areas along the banks of the Seybouse, Saba‘ ‘Uyoun, and Zenani rivers contained mountainous tracts with dense forests of tall trees. [69]

The mountainous zones of the Beylik contained some of Algeria’s finest forests, covered by dense greenery. The region was rich in pine, cedar, and all kinds of oak. The most resilient and deeply rooted species was the Faris beech oak in the Beni Foughal area locally called Tasha or Tashta whose dark, hard wood retained its broad leaves on the branches for longer; it resembles European oak in origin, which led the Ottomans to prefer it for building their warships.[70] Massive beech trees also spread across the lands of the Beni Saleh tribes south of Annaba, rivaling in quality those of Italy and Russia. In El Kala, forests of cork oak, mastic, elm, ash, cedar, and melz (holm oak) were common. European powers especially France and England obtained concessions to fell large trees such as karoush (evergreen oak) and beech, notably an agreement with the English in (1817) to exploit beech forests, prized for their quality and rarity in the areas between Beni Saleh and El Kala to the Seybouse River, in return for an annual payment of (200,000) francs. [71]

The Djurdjura mountains were also covered with dense forests where mastic trees, wild olive, Aleppo pine, sweet chestnut oak, cork oak, Phoenician juniper, and oleander grew. [72]

This timber wealth fostered a thriving charcoal industry in the Beylik, used for smelting iron and melting precious metals especially in Djurdjura. Wood was buried in pit-kilns shaped like small wells, ignited for a set time, then covered with soil to extinguish the fire and extract charcoal. Oak, due to its sturdiness and high heat, was preferred over pine. [73]

Oaks, beech, olive, juniper, pine, zabbūj (wild olive), cedar, and fernan (a local oak) were exploited for diverse wooden manufactures: small spoons and large ladles, chests, tables and chairs, sieves and carriers, and handles for knives, daggers, and sickles, in addition to flourishing wood-carving craftwork. [74]

Despite irrational timber exploitation during the Ottoman era, vegetal cover at that time exceeded that of France: Algeria’s forested area was estimated at (1,251,757) hectares consisting mainly of cork oak along the coastal belt from El Kala to Béjaïa, alongside other species such as pine, wild olive, and karoush surpassing France’s forest area of (1,092,000) hectares. [75]

4. Arms and Gunpowder Manufacture

Arms and gunpowder manufacture spread across many parts of the Beylik. In Béjaïa, where vast forests of oak, oleander, and hazel abounded, inhabitants produced gunpowder using charcoal. Gun-making also spread in the Zwawa (Kabyle) regions.[76] The area became known for quality rifles. Schlösser, describing their manufacture, writes: “Their length reaches six or seven feet; the barrel is octagonal, not square; the stock extends to the middle of the barrel; its base is angular; it is usually adorned with stones or small multi-colored gems; the underside is covered with brass or fine wood; the barrel is attached to the stock by eight or ten silver rings…” He adds that locals preferred their heavy, locally made rifles to European ones due to their precision craftsmanship. [77]

In Beni ‘Abbas, Felissa was famous for workshops specializing in arms and knives, in addition to swords known locally as khaddāma. Villages such as Tazayirt and Talefsa used walnut and beech wood for rifle stocks sold cheaply locally but costly to obtain from itinerant vendors (around (17) centimes per piece).[78] They produced various weapons—rifles, pistols, and cannon using walnut

wood; a well-made, undecorated rifle cost between (60) and (100) francs. The region was also known for a type of cannon once thought to be imported and manufactured by European methods.[79] However, it is likely, as Devaux reports, that this information about cannon-making was imprecise, since most sources mention the manufacture of firearms such as rifles and pistols but not cannon; or, if they existed, their quality was insufficient for wider renown. Owing to their skill, many villages grew wealthy from this craft: a finely crafted rifle decorated with silver capucine (nasturtium-style) motifs and coral sold for (70) simple reals about (175) francs whereas ordinary weapons ranged between (15) and (20) simple reals (i.e., (37.5) to (50) francs).[80]

As for preparing saltpeter used in gunpowder, refineries in Biskra and elsewhere built brick-and-stone vats lined with wood and sealed with mats or palm fronds. These were filled with soil and watered with ordinary water for six to eight hours a day over five or six consecutive days. As the water filtered through, it absorbed all nitrogenous components, percolated into small tanks beneath the vats, and—once sufficient quantities were collected was boiled in dedicated cauldrons. [81]

In Djurdjura, only skilled specialists prepared saltpeter powder, using nearly the same proportions as in France but with simpler methods: (75) parts saltpeter, (12.5) sulfur, and (12.5) charcoal, with extra sulfur added as a preservative. [82]

Gunpowder was produced by placing saltpeter, sulfur, and charcoal together in a mortar, pounding them while adding water to form a paste, then granulating it in a manner similar to preparing couscous. The grains were sieved, sun-dried, then placed in large jars and tumbled for a day or two to round them into smooth pellets, which were dried and stored.[83]

Schlösser points to high prices for gunpowder when discussing Ahmad Bey's army and the scarcity and costliness of powder: "The army receives gunpowder only a short time before the attack; given its high price in Constantine, a man cannot take more than ten cartridges, and when they run out he must fight with the sword." [84]

In the desert, saltpeter was found at Jabal Barqa near and west of Khanqat Sidi Naji, and in several places in the Ziban oasis especially al-Kiyada, at the mouth of ad-Dusan exploited by the Bouazid and al-Shurfa. The Ouled Naïl made a popular gunpowder known as al-barūd al-Jirfī, its saltpeter extracted from the bank of Oued Jirf, a tributary of Oued Jdi. Saltpeter was also present in Oued Righ and in the area between Lake M'sila and Oued Jdi especially the villages of 'Amoura, al-Hamil, al-'Allaq, Bouferdjoun, ad-Dis, Ben Nezou, and Boussaada.[85]

Al-Aghwati describes desert gunpowder-making: "All the inhabitants of these deserts know the art of manufacturing gunpowder. Their method is as follows: soil from the ground—or mortar from ruined villages originally consisting of a salty substance, is placed in a basin and water is poured over it, in the same way ash is treated in soap-making. The water is boiled until it thickens; then one ratl of it is mixed with four ratls of sulfur and four ratls of charcoal made from oleander. These elements are mixed for four hours and become gunpowder." [86]

Among the questions posed to al-Sijlmassi on his pilgrimage across the desert was whether gunpowder was ritually impure, since locals produced its salt from earth mixed with impure dung, then boiled it so no trace of dung remained and the liquid later solidified. [87]

Evidence of arms-making in several desert areas appears in al-Sijlmassi's note that the people of Ouled Djellal made a type of cannon called Abū Fitīla ("match-lit"), saying: "Some came out with their cannon, their matchcords lit, for the cannon of these parts have no flintlocks but are fired by

a burning match." [88] Arms-making was also known in Ouargla—for self-defense against Ottoman punitive expeditions and due to conflicts over authority that exposed the region to hostile tribes. The spread of smithies and this craft suggests the availability of metal locally or nearby, as well as the practice of manufacturing and maintaining weapons.[89]

5. Salt Production

The Sahara is rich in salt, and its trade was brisk both for prepared salt and naturally sun-dried salt. Constantine received salt from the Sahara in stone blocks weighing up to (two quintars).[90] Al-Aghwati also notes the presence of salt and the spread of salt flats in Touggourt: "There is a salt flat in Touggourt in fact, the whole area is a salt flat." [91]

In the Djurdjura region, salt was extracted from watercourses crossing the area. The method mirrored that used elsewhere: diverting streams into open, deep basins made of stone and lime to facilitate collection and solar evaporation. [92]

6. Other Industries

Doum palm [93] and halfa (esparto) were used to produce many items: from the former, mats, cushions, and storage sacks (shawārī); from halfa, baskets and ropes. Tribes specializing in these activities included Beni Ouzlaghen, Beni Oughlis, and Beni Ya'li.[94] Djurdjura tribes used cork oak bark to make basket bases, cage bottoms, beehive bodies, and measures for grain, salt, and figs. [95]

Halfa abounded in the Biban mountains and the High Plateaus, where inhabitants crafted a variety of household items mats, rugs, plates, brooms, baskets, ropes, and more bartering them for grains, vegetables, fruits, and oils.[96] In Jijel, the Beni Saleh confederation specialized in prayer mats and baskets thanks to abundant raw material, while the Habili tribe, having plentiful dis (diss/halfa), focused on rope-making.[97] The Beni 'Abbas tribe was known for palm-frond baskets from Chott al-Jarid and mats woven from dis. [98]

In Ouargla, palm components were used to make many household utensils: fronds for containers to carry sand (zanbīl and qiffa), household vessels including water bottles (qanīna) and food bowls (tabriq, mathrad) and sunshades; fibers were twisted into various ropes.[99]

7. Counterfeiting Coins

Counterfeiting largely disappeared with the advent of French rule, but in prior years it had been a significant trade using silver ingots, tinned copper, and lead. Some individuals continued to exploit French coinage by alloying it with additional base metals to secure profit, minting boujou and double boujou.[100] The coins were left to age for a time to dispel suspicion and ease circulation. The manufacturing process required few tools: metals were melted to fusion, poured into a prepared mold set in sand, and immediately pressed with a die for the second face so both sides bonded as the metal cooled; excess around the edges was then trimmed.[101]

When copper or silver was used, pre-cast ingots were divided into discs and tightly stacked to cohere. The dies steel molds were engraved with great skill. A die was set on a small anvil, the blank placed on one face and fixed with the die of the other face; the piece was then struck with a hammer to impress both sides. [102]

Schlösser reports that tribes counterfeited especially Spanish and French coin and passed it among Arabs and desert inhabitants. [103] He also recounts an incident of two Kabyles who came to Constantine to trade carrying counterfeit money, ending with their hands being cut off.[104] Numerous workshops specialized in minting: tribes used two methods—casting molten metal into molds and striking with die and hammer. Such coins were circulated discreetly in markets through outsiders.[105]

Professor Saïdouni attributes Algeria's early-19th-century monetary disorder to the competition from counterfeit foreign coins arriving via European ports, as well as counterfeit pieces coming from the mountains of Kabylia.[106]

C. Constraints and Problems of Industrial and Craft Activity in the Beylik's Countryside

- The industrial and craft activities in the Beylik's rural areas were largely simple and rudimentary. In the rural districts of Jijel, for instance, there was no self-sustaining handicraft industry; efforts focused instead on meeting local needs through basic crafts transmitted among clans and tribes according to the availability of raw materials. Among the most notable activities were charcoal burning, timber work, roofing tile (qarmūd) production, soap-making, blacksmithing, and the manufacture of saddles and pack pads.[107]
- Pélissier attributes the weakness of Algerian industry to Ottoman policy, which neither encouraged this sector nor provided adequate support to Algerians despite their intelligence and skill. As he states: "What Arabs and Maghrebis lack is encouragement to return to the industrial progress of their ancestors; they nevertheless possess the intelligence and dexterity suited to mechanical work, as well as an innovative spirit and an eye for perfection."[108]
- Industry was directly tied to agriculture. The decline of the agricultural sector in the late Ottoman period negatively affected industrial and craft activity, resulting in shortages of agricultural and animal raw materials and higher prices for them along with rising prices of manufactured goods and exposing local products to foreign competition.[109]
- Algerian manufactured goods in the late Ottoman era faced strong competition from foreign products, especially Tunisian ones, which reduced the number of workers in industry due to diminished profits.[110]
- Rural industry generally did not go beyond meeting local needs. It relied primarily on simple manual skills and failed to evolve into an organized industry with real economic weight. This does not, however, negate the existence of tribes that practiced fine, specialized crafts. As Saleh 'Abad notes regarding the Beni 'Abbas tribes, they were among the most adept in local industries owning a large number of olive mills (a sign of wealth) and specializing in sewing and repairing burnooses.[111]

CONCLUSION

In light of our study entitled Industrial and Craft Activities in the Rural Areas of the Eastern Beylik during the Ottoman Period (1519–1837), a number of conclusions can be drawn, which can be summarized as follows:

- The industrial activity in the rural areas of the Beylik was closer to craftwork than to actual industry, as it emerged mainly from the population's need for certain tools particularly those used in agriculture such as sickles and ploughs. This activity was further supported by the availability of raw materials in the Beylik's countryside, as well as by the inhabitants' need to produce defensive weapons such as rifles and gunpowder. In addition, several processing industries—such as grain mills and olive presses spread throughout the rural areas to meet the population's food requirements.
- Despite the richness of the mountainous and desert regions in the Beylik's countryside with economic potential, the instability that characterized these areas hindered their exploitation and rather turned them into zones of conflict with the authorities.
- The strategic location of the Beylik, along with its abundance of natural and human resources, greatly contributed to the prosperity of industrial and craft activities, making it an important economic hub in Algeria during the Ottoman period.
- The rural population of the Beylik was able to achieve several gains in their external trade relations, particularly with Tunisia. They succeeded in compensating for shortages in many goods and exporting their surpluses. However, their openness to these markets and the importation of Tunisian and European products created strong competition for local production, which negatively affected the development and spread of crafts in the Beylik.
- Although the industrial and craft activities in the Beylik were largely primitive, this does not negate the skill and mastery of the inhabitants in many industries requiring high craftsmanship, such as coin minting, gunpowder production, and weapons manufacturing.
- Women contributed significantly to the prosperity of industrial and craft activities in the Beylik's countryside, as they were the men's partners in the constant effort to meet their families' needs. This was reflected in their engagement in various crafts and industries—particularly weaving and in their mastery of wool clothing production, making use of the large livestock resources characteristic of the Beylik's rural areas, which provided the main raw material: wool. These products gained wide recognition beyond the region's borders and even abroad.

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FOOTNOTES

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[32] E. Carette, previously cited source, vol.(3), p.(275).

[33] A. Hanoteau & Letourneux, previously cited source, vol.(1), p.(650).

[34] A short evergreen tree whose fruit, similar to berries, ripens in October, turning red then black. It produces a resin used in cosmetics such as incense, oils, and perfumes. See the website https://sehaweghethaa.com, accessed on (10/02/2024) at (16:25).

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[92] E. Carette, previously cited source, vol.(3), p.(265).

[93] Doum: a type of dwarf palm tree.

[94] E. Carette, previously cited source, vol.(3), p.(266).

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[100] Known during this period as Zawj Boujou.

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