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Cosmetic Techniques: A Historical and Botanical Approach

Introduction

Through its long history, Arabia was renowned as the land of valuable aromatics, together with the Punt or the coast of Somalia, the Yemeni island of Suqutra and the Indian coast of Coromandel. This contribution will focus mainly on frankincense and myrrh, referring to the lands of the aromatic trees, to the botanical species, the technique of collecting the gum resins, and the uses in religious and funerary rituals, in medical prescriptions and finally in the preparation of perfumes. At the same time, the economic and political effects of the trade will be summarized through the historical periods of Arabia.

The Earlier Historical Records

In the Early Bronze Age, around 2800 BC, the Pharaohs of Egypt dispatched regular expeditions to "God's Land" or Punt. Incense (*sntr*) and myrrh (*'ntyw*) were brought from that country by traders to the Upper Nile and were used in religious and funerary ceremonies, as attested by the early ritual texts (Groom 1981: 22-23). The Egyptian ships could reach the coast of the Red Sea by the eastern branch of the Nile in Wādī Ṭumaylāt, the Bitter Lakes and then the Gulf of Suez. Geographically, the Punt is to be identified with "Nubia, the ancient Land of Kush, in Sudan" (Groom 1981: 28). But Ethiopia, Somalia and the East Coast of Africa in general were rich in aromatics. The bedouins of the Punt who controlled the land trade, attacked the Egyptian vessels. Pepi I launched punitive raids, but with no success, and in the time of Pepi II (mid-third millennium BC), the Egyptian expeditions were interrupted (Montet 1946: 181). During the Middle Kingdom, the trade was resumed but ceased under the Hyksos occupation. It was Queen Hatchepsut of the New Kingdom who mounted an expedition to the Punt in 1493 BC, as recorded on the walls of her temple at Dayr al-Baḥrī: The explorers reached, after a journey by land and sea, "the incense terrace". They brought back "quantities of incense, together with trees in tubs, ebony, ivory, gold, cinnamon, eye-paint, apes, monkeys, dogs and leopard skins" (Groom 1981: 22). The paintings of Dayr al-Baḥrī reveal that the natives met in the Punt are partly of Negroid, partly of Hamitic stock. The villages are of rounded huts on piles with ladders to reach the doors. Other animals depicted on the wall paintings, such as giraffes, point to an African country. It is assumed that the Pharaohs brought myrrh from the Punt, rather than frankincense, because this resin was extensively used for mummification (*infra*). The trees grow in the eastern part of Somalia (frankincense) and in the northern hilly country, especially in Wādī Labarra (Balsan 1965: 113-117); the incense tree is called in the local dialect "*djeggar*" while the myrrh is "*malmal mour*". The aromatic species grow farther west inland in the high plateau of Haud, Dubahanta and Ogaden and "the region of Wahash in Ethiopia" (Groom 1981: 25-26). The harvest of the gum resin in that country begins in November and continues until March (Balsan 1965: 119).

Similarly, Southern Arabia is reputed for its excellent aromatic species, mainly in western Ḥaḍramawt, in eastern Dhufār and Mahra. In 1977-78, Professor Theodore Monod from the Museum of Natural History in Paris visited 16 stations in these mountainous lands and described the variety of trees (see *infra*). Although Arabia is known as the major producer of frankincense and myrrh, no mention of these spices appears before the first millennium BC: From the eighth to the first centuries BC, the history of Yemen is dominated by the caravan states who collected the gum resins and other aromatic plants and transported them to the Mediterranean markets (Robin 1991-93: 52). The episode of the queen of Sheba' (*Saba'*?) in the Bible, however, introduces the spices of Arabia as early as the tenth century BC: According to *I Kings*, 10:1-10, the South Arabian queen was attracted by the fame of Solomon's wisdom and visited him in Jerusalem, bringing with her "camels laden with spices, great quantities of gold and precious stones" (*I Kings*, 10:1-2). The holy Qur'an relates the same episode in sourat al-Naml, 27:23-45, with many attractive details.

The story of Solomon (965-928 BC) and the queen of Sheba' raises arduous chronological issues, since the

kings of South Arabia, the *mukarrib*, priest-kings or federal chiefs, are not attested before the eighth-seventh centuries BC, although the South Arabian states are believed to have been organised as early as the beginning of the first millennium BC (Eph'al 1982: 64). Even though, there is no single mention of a queen in the bulk of South Arabian inscriptions. Eph'al tried to prove, with difficulty, that the biblical tradition had "a bit of authenticity": Some authors identify the Sabaeans with the nomads of North Arabia, mentioned in the Annals of Tiglath-Pileser III and the Book of *Job* 1:15. However, it should be recalled that the biblical account mentions the queen of Sheba' and not the "Sabaeans" of *Job* 1:15, of the Assyrian *Annals*. It could be argued that we possess no information about the political situation in Saba' in the tenth century BC. It seems more plausible, at any rate, that the episode is a later literary topos, celebrating the glory of Solomon and at the same time his mercantile activities in the Red Sea, with the help of Ḥiram, king of Byblos in Phoenicia. It is also likely that the story is related to one of the North Arabian queens who are recorded in the Assyrian *Annals* in the eight-seventh centuries, in connection with the spices (*infra*).

Tiglath-Pileser III (745-727) launched a campaign against Samsi, queen of the Arabs in 733 BC and mentions in his Annals the booty he gained: "500 (bags) of all kinds of spices..." (Eph'al 1982: 35). Later, Sargon II received as tribute from the desert "all kind of aromatic substances" (Pritchard 1954: 286). King Esarhaddon (680-669) imposed on Iata', king of Arabia 100 bags "with aromatic matters, (more than) his father" (Pritchard 1954: 292). It should be noticed that the myrrh and frankincense are not mentioned in these Annals, but only "aromatic spices." Nevertheless, those gum resins existed in North Arabia before Islam for the rituals and the medical prescriptions and should have been included in the tribute rendered by the Arabs. This is confirmed by the records from the Persian period, since Herodotus (III: 97) notes that the Arabs rendered yearly to the Achaeminid king a thousand talents' weight of frankincense, equivalent to 27 tons. The trade flourished in the sixth-fifth centuries as evidenced by the numerous incense burners excavated in Transjordan and Palestine.

A remarkable limestone vase of this type was discovered at Tall as-Sa'īdiyya, in the Jordan Valley in 1966 by J. B. Pritchard (1972: 3-17). It is decorated with a geometric design in five registers, consisting of teeth of the saw, diagonal incisions and cross-hatching (FIG. 1). An Aramaic inscription on one side, dated to the fifth-fourth century BC, reads "*LZKWR*", to Zakkur. The burner was found in the open-court building and a sample of charcoal from the floor of the room where it was retrieved, produced a C14 date of 343 +/- 52 BC (Pritchard 1972: 3). In his analysis of the Tall as-Sa'īdiyya in-

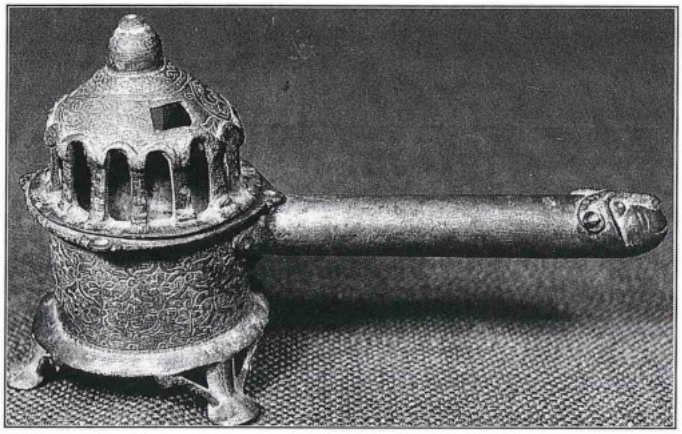
1. The Tall as-Sa'īdiyya incense burner (after Pritchard 1972: FIG A-F).

cense burner, Pritchard mentions thirteen similar objec from Tall Jammah, in southern Palestine, discovered b F. Petrie and dated to the sixth-fourth centuries BC. Si burners were discovered at Gezer and about two hur dreds limestone altars or stands were collected at La chish; an Aramaic inscription on one vase reads "*lbnt* (incense) (Pritchard 1972: 12). To judge from the larg amount of altars and vases found in Palestine, there ap pears to have been an increase in the trade during th Persian period.

In his study of the Palestinian examples, E. Ster (1973: 187-195) distinguished four different groups Group A is decorated with a geometric border and frieze of human figures, animals or plants, while group I is decorated with a geometric design alone, such as th Tall as-Sa'īdiyya example. The first group has no par allels outside Palestine and is believed to be a local pro duction, but the latter exhibits strong Mesopotamian in

fluence of the Assyrian-Babylonian periods in the sixth-fifth centuries BC. The third group includes altars decorated with a debased design of "reliefs or statuettes" and represents the last phase of decline in the production. The last group is undecorated.

In fact, not all of the incense burners described by Stern are from the Persian period, since similar objects are dated to the Arab Umayyad times in the eighth century AD as proved by L. Y. Rahmani (1980: 116-122). The author published an incense burner decorated with "chip-carved triangles", similar to Stern's specimen 22 (1973: 195), and dated by him to the sixth-eighth centuries AD. This assumption is plausible, when the numerous incense burners of the Umayyad period discovered in Jordan are considered: Some of them, from the 'Ammān Citadel, are in limestone or bronze (Harding 1951: 7-16) (FIG. 2); other censers of decorated bronze were discovered in the Umayyad palace of Umm al-Walīd (Bujard *et al.* 1992: 17-18, FIGS. 12-13) (FIGS. 3, 4; see *infra* for the Islamic period).



2. Umayyad censer from the 'Ammān Citadel.

3. Censer from the Umm al-Walīd Umayyad palace (courtesy of J. Bujard).

In Jordan, a unique bronze censer of the fifth century BC was excavated in a tomb at Umm Udhayna, western 'Ammān, together with attic lekithoi and bronze bowls of the Persian period (FIG. 5). The caryatid female figure — standing on a tripod — is dressed in a long tunic decorated with incisions, which is fastened by a tasseled belt and clings to the breasts. The shoulders are covered by a cape with large sleeves, similar to the Iranian-Achaemenid dress (Moorey 1973: 83-99; Culican 1975: 100-112). The burner consists of a cup, riveted to the triangular hat by a stem and covered by a fenestrated cover (Zayadine 1985: 155-156; Khalil 1986: 103-110).

The reputation of Arabia as the land of valuable aromatics excited the imagination of the Greek authors. To account for the high prices of the Arabian spices, they claimed the trees were protected by flying snakes "and the only way to get rid of them is by smoking them out with storax" (Herodotus, *Hist.* III, 108). In fact, the high prices of the incense is attributed to the long way the caravaneers traverse from South Arabia to Ayla (70 days according to Eratosthenes) and to the large number of territories and tribes who exacted taxes.

The frankincense and myrrh, along with other aromatic gum resins, were stocked in special storage bins called in the local dialect (*shahri*) *moḥr, moḥor* (موحر، محار) (see Al-Shahri 1994: 295). In September, at the end of the monsoon, the harvest was transported to the local ports of Mocha (Muza) or to Rās Fartak (Syagros) and from there to the major harbour of Bīr 'Alī (ancient Qana or Kané). A land track reached Shabwa (Shabwat) where the aromatics were collected and taxes paid. From the capital of Ḥaḍramawt, the caravans headed to Ma'rib (Marsyaba of Strabo) and to the kingdom of Ma'īn (Minaean) and from there to Najrān. The track continued to

4. Censer from the Umm al-Walīd Umayyad palace (courtesy of J. Bujard).

5. The Umm Udhayna Caryatid Censer.

al-Madīna, avoiding Makka and arrived at al-'Ula (Dedan) and al-Ḥijr, the famous Nabataean station (Hegra). From Petra, the desert track reached Gaza (69 to 88 days from Shabwa to Gaza) (Rouaud 1994: 41-43). From the seventh to the end of the second century BC, the Minaeans in the Jawf of Yemen were in control of spice trade and a tribe, 'Amīr, was responsible for the transportation of the precious merchandise (von Wissmann 1964: 152-159). They established commercial colonies at al-'Ula, in Egypt, along the Mediterranean coast from Gaza to Sidon and possessed a base in the Island of Delos.

When Alexander the Great captured Gaza in 331 BC, Plutarch reported in his *Vies Alexander*, 25:6 "he also sent to Leonidas his tutor five hundred talents weight of frankincense and a hundred of myrrh in remembrance of the hope with which that teacher had inspired his boyhood" (*Loeb Classical*). It is explained that when Alexander was a boy and was sacrificing to the gods, he was taking incense with both hands and throwing it on the altar-fire. So precious was the Arabian spice that Leonidas warned him: "Alexander when thou has conquered the spice-bearing regions, thou canst be thus lavish with thine incense, now, however, use sparingly what thou hast" (*Vies*, 25:6). To allow his teacher to be generous with the gods, the Macedonian conqueror dispatched him the equivalent of thirteen tons of spices.

After they settled in South Jordan around the sixth century BC, the Nabataean tribes became the middlemen of the spice trade and after the collapse of the Minaean state at the end of the second century BC, they took over this lucrative enterprise. They used the ports of Gaza and Rhinocolura (al-'Arīsh) to export the merchandise to Europe.

In 311 BC, when Antigonus Monophthalmus mounted a military expedition against the Nabataeans, his general Athenaeus captured their "Rock" about midnight and seized a large quantity of frankincense and myrrh together with five hundred talents of silver (Diodorus, *His. Library* XIX, 94:3). This account confirms the Nabataean involvement in the "spice business" as early as the fourth century BC, and this role is attested in the third century BC by the Zenon Papyri (Edgar 1925: PSI 628; PCZ 590011.51). Strabo (*Geog.* 16,4:18) provides further details on the trade activities in the Red Sea: "Near the Island of (Phoceae) is a promontory, which extends to the Rock of the Nabataean Arabians, as they are called and to the Palestinian country, whether Minaeans and Gerrhaeans and all neighbouring peoples convey their loads of aromatics." This is a clear indication of the role of the Nabataeans as intermediary of the spice trade. But where was the "Rock"? There is no doubt that the account of Strabo concerns the Red Sea and the Gulf of Ayla-'Aqaba, the Isle of Phoceae being probably modern Tīrān and the "promontory" the Isle of Gray, or Jazīrat Far'ūn (see Zayadine 1994: 496). Now the "Rock" described by Diodorus as "exceedingly strong but unwalled" with a "single artificial approach" (XIX, 97:1), according to Hieronymus of Cardia, a general of Antigonus and eyewitness of the expedition, should be somewhere else (*infra*). There is in addition a "Rock", *hasela'* mentioned in the Bible, *2 Kings*, 14:7, in relation with the campaign of King Amaziah of Judah (798-769 BC) in Edom. Following N. Glueck (1939: 25-32), several authors identified the Rock of Diodorus and of King Amaziah with Umm al-Biyāra, in the central basin of Petra. However, in a convincing analysis, J. Starcky (1964: cols. 886-895) demonstrated that the biblical Sela' is to be located to the north. Furthermore, Diodorus, *apud* Hieronymus of Cardia, specifies that the "Rock" of the Nabataeans is distant "three hundred stades from the Dead Sea," that is 34 miles or c. 50 km. This figure conforms with the situation of as-Sala', a huge rock, 10 km south-southwest of aṭ-Ṭafīla, and not with Umm al-Biyāra, about 100 km from the Dead Sea. The recent discovery by Dr. Hamd Qatamine of an Assyrian bas-relief with a long cuneiform inscription, gives credit to the identification of this Rock with the biblical tradition; the presence of Nabataean sherds, of houses and turrets, half cut in the sandstone rock, half built with ashlar blocks may account for the "watchmen who informed the Nabataeans by prearranged fire signals" (Diodorus XIX

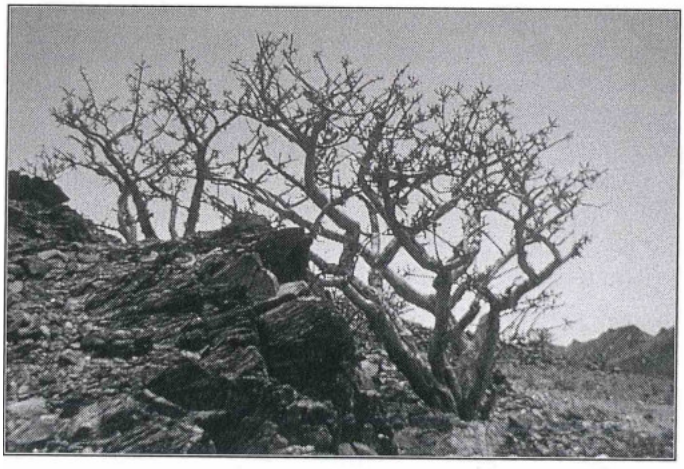
97:1). It is more plausible that the Nabataeans, before they settled in Petra-Reqem, used the naturally fortified rock of as-Sala' near aṭ-Ṭafīla and Bozrah (modern Buṣayra), the capital of the Edomites, to store the aromatics they received from the Gerrhaeans and the Minaeans and distributed them to the Mediterranean markets.

The Aromatic Trees and their Gum Resins

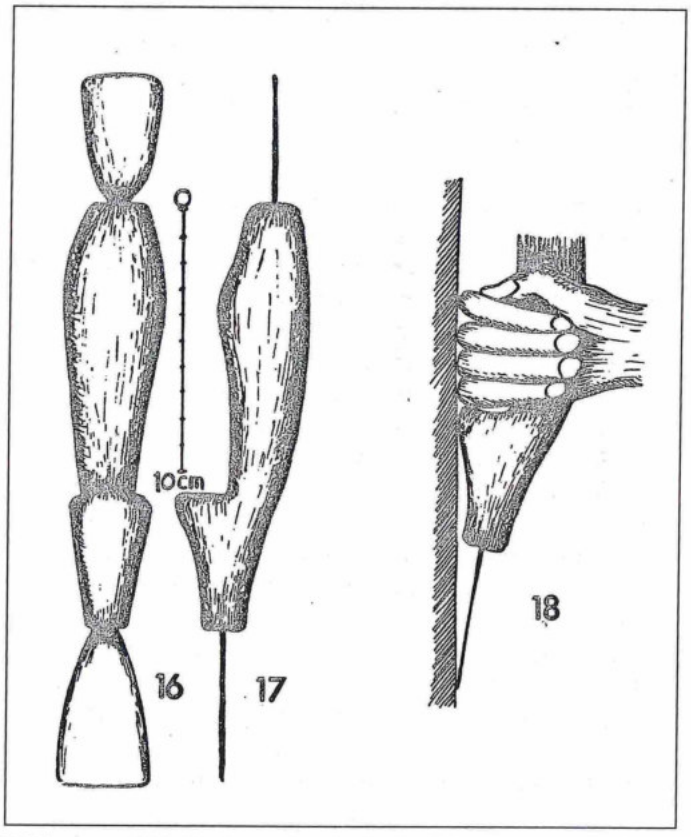
The incense trees examined by T. Monod in his botanical survey of South Yemen (1979: 146-150) belong to two different species: The *Boswellia sacra*, *luban* in Arabic and *maghrayt*, *magar* in *shahri* (مغر-مغيروت), springs from the ground in the form of a shrub or African acacia. The other type, the *Boswellia carteri* (FIG. 6), develops from a central trunk which may average from three to six metres in height; this latter type is however rare. Usually, the trees grow in a calcareous soil or even between the rock fractures, by the sea shore or in mountainous areas at an altitude of more than 2000 m. The myrrh tree, *Commiphora*, *murr* in Arabic and *qafal* in the local dialect, has a central trunk which may average six metres in height and gets covered with foliage after the monsoons, at the end of August or the beginning of September; it blossoms in spring time (Van Beek 1960: 71-73). The west central portion of South Arabia seems to be the only area where the myrrh tree grows. Pliny (*Nat. His.* XII, 35-69) lists seven varieties of myrrh, named after the regions where it grew, from Somalia "cave-dwellings" to Ma'īn, Ḥaḍramawt, Qatabān, Ausan, etc. The Somali land is rich, no doubt, in myrrh gardens, as attested by the exploration of Balsan (1965). But it is doubtful that other areas had important groves of this aromatic tree.

In Ḥaḍramawt, Somali workers are specialized in tapping the trees and collecting the gums, while this technique is practiced by bedouins in Dhufār (Monod 1979: 149). In Antiquity, according to Pliny (XII, 50:54), "there are no more than 3,000 families who retain the right of trading (the frankincense) as a hereditary property, and that consequently the members of these families are called sacred, and are not allowed to be polluted by ever meeting women or funeral processions when they are engaged in making incisions in the trees." Today, the incisions, about 15 cm long, are cut with a special knife, called *mengeb* or *mengeff*, measuring 35 x 45-60 mm and provided with a wooden handle and two blades (FIG. 7). The upper blade, with a rounded edge is used as a scraper to harvest the incense or myrrh resin that exudes in lumps or tears and solidifies in ten to twenty days. Frankincense tears are yellowish translucent when freshly gathered, while myrrh is reddish-brown and becomes greyish opaque when it hardens (FIG. 8).

The crops were much more abundant in ancient times: When Pliny published his *Natural History*, in the first century AD, the frankincense production was evaluated at 2500 to 3000 tons, while myrrh averaged 450-600 tons (Rouaud 1994: 41-42). Two harvests were possible at that time: If the incisions were done in summer, the collection of the gum resins occurred in autumn and if in winter, the harvest was undertaken in spring time. Freya Stark (1936: 10) mentions that the Dhufār coast could also produce two crops a year. She registered 1200 tons of frankincense that were exported from Dhufār and 800



6. *Boswellia carteri* in Dhufār, 'Oman (courtesy of S. Schmidt).



7. The *mengeff*, knife for cutting the bark of the incense trees (after Monod 1979: FIGS. 16-18).

8. The incision of the myrrh tree (courtesy of S. Schmidt).

from Somalia, the Arabian product being of better quality. Two varieties of *luban* can be distinguished: *badawi* or bedouin is used as a fumigant in religious or social ceremonies (*infra*), while the *luban miti* or *mayt*, named after a port in Somalia is a chewing gum. In 1967, Monod (1979: 150) recorded the following quantities in libras which were brought to the market of Mukalla: February: 900; March: 2300; May: 1500; July: 1600; September: 800; November: 2210; a total of 9210 libras for six months, equivalent to 4180 kilograms. In March and November are the highest crops, corresponding to the periods of the harvest. The figures are much reduced, in comparison to 1200 tonnes in 1934. In recent years "just a few tons of frankincense are produced each year in Dhofar" (Abercrombie 1985: 484).

The Economic and Political Impact of the Aromatics

Reference was made above to the monarchs from the Assyrian periods to the conquest of Alexander the Great who coveted the Arabian spices and looted them or imposed tribute on these commodities. The Romans considered the South Arabians as the wealthiest race, because they were producers and distributors of the incense "and buy nothing in return" (Pliny, *Nat Hist.* XII, 32:162). However, this author notes the surprising demand in Arabia for imported scents (XII, 38:78), a tendency still common today. Nevertheless, Pliny complained that "India, China and the Arabian peninsula take from our empire 100 million sesterces every year (equivalent to 85 tons of minted silver) — that is the sum which our luxuries and our women cost us" (XII, 41:84), and half of that sum was spent for Arabian merchandise alone. We now understand why Augustus ordered Aelius Gallus in 25 BC to conquer Arabia Felix, "to win wealthy friends or conquer wealthy enemies" (Strabo, *Geog.* 16, 4:24). The expedition was, as it is known, a failure, because the minister Syllaeus who was appointed by Obodas III, king of Petra, as a guide for the invading army, was aware of the danger the Nabataean trade was going to suffer, if the Roman venture ever succeeded.

The response of Augustus was to divert the spice trade to the Red Sea and to the Egyptian coast. However, the Nabataean cameleers continued the land trade to Gaza and to Egypt through the Sinai as late as the third century AD (Zayadine 1990: 151-152). It is true that the trade in the first century was in full prosperity. In the Gospel, the Magi came from the East and offered the child Jesus "gifts of gold, frankincense and myrrh". The gold is believed to be a variety of frankincense (Rykmans 1951: 372-376). St. Justin, a native of Neapolis (Nāblus) (AD 160), identified the Magi with Arabian princes (*Dialogue*, LXXVII, 9). Bultmann (1963: 291-301) suggests "that the story of the Adoration of the Magi had its origin in the Arabian cult of Dusares," born from a virgin mother. It is plausible that the Magi were Arabian dignitaries, and more precisely Nabataean, since the kings of Petra controlled the aromatic trade in the first century AD. But the belief in the virgin birth of Jesus Christ was probably influenced by the Alexandrine myth of the god Aïon who was born from the virgin Korè, on the sixth of January, the day the Orthodox Church still celebrates Christmas. At any rate, the Nabataean trade was prosperous in the first centuries BC-AD and the demand for frankincense in Palestine was high at that time because the Temple of Jerusalem was reopened to the cult by Herod the Great. In the Copper Scroll of Qumrān, dated to the end of the first century AD, treasures of aromatic spices are listed five times, together with gold and silver (Milik 1960: 137-155; 1962: 201; McCarter 1992: 227-241). The identification of a priestly family, *beth haqqoṣ*, who were treasurers of the Jerusalem Temple before and after the Exile (location 32 of the Copper Scroll), may solve the riddle of the hidden treasures: They might be tithes and donations entrusted to the family Haqqoṣ, who owned a property in Jericho and buried the offerings in different locations, waiting for the reconstruction of the Temple (McCarter 1992: 239-240). The discovery of a first century juglet in a cave near Qumrān with a residue of an aromatic liquid (possibly balsam; Patrich and Arubas 1989), in addition to a large quantity of bottles with tight necks designed for perfumes and a treasure of silver coins, make the hypothesis of McCarter very significant. Jericho was also famous for the balsam groves that were annexed by Cleopatra (Starcky 1964: col. 910).

The creation of the Provincia Arabia by Trajan in AD 106, and the paving of the Via Nova Traiana, "from the border of Syria to the Red Sea", improved the communications and opened new markets to both Nabataeans and Palmyrenes.

The rise of Palmyra in the second century AD and the control by her traders of the caravan routes from the Ara-

bian-Persian Gulf to the North, along the Euphrates, certainly brought them in direct contact with the Nabataean merchants. The Palmyrenes penetrated to Wādī as-Sirḥān (Starcky 1970: 161-162), a vital communication crossroads where the Nabataeans were established long before (Winnett and Reed 1970: 141-160). They were also present in Ḥaḍramawt, at the site called al-'Uqla (Pirenne 1990: 108). There is no apparent competition between Nabataeans and Palmyrenes. Surprisingly, there is no mention of frankincense or myrrh in the famous tariff of Palmyra, but only of perfumed oil in alabastron or in leather bags (Teixidor 1984: 86). In the Palmyrene inscriptions the word *ḥammana* means "incense altar". The offering of incense is represented on the bas-reliefs together with frankincense boxes (Starcky 1964: col. 1099). There is no doubt in this case that the Palmyrenes traded the spices of Arabia. However, the Alexandrine fleet opposed a severe competition to the land caravans since Somalia and the East Coast of Africa produced an abundant supply of aromatics from earlier times up to the first century AD (*Periplus*, 7,10,24 and Casson 1989: 57). In AD 268-270, the troops of Zenobia invaded Egypt in an attempt to counter the Alexandrine commercial hegemony. The Nabataeans were present in the Sinai at that time, as could be deduced from the bulk of graffiti in Wādī Ḥajjāj, Wādī Mukattab and the oasis of Fayrān. Part of Zenobia's troops probably followed the Via Nova Traiana and traversed the Sinai. This military operation may account for the epitaph published by Seyrig (1958: 120-123) that laments the death of many Syrian soldiers, who were abandoned in the desert, without burial. The end of the Palmyrene revolt was tragic! The spice trade from South Arabia declined because there was less demand of aromatics (Crone 1987: 51-54; Fiema 1991: 167-168). There was apparently a revival of the old incense road only in the second half of the sixth century AD (Vasiliev 1950: 362, *apud* Fiema 1991: 180). However, Cosmas Indicopleustes, a merchant-turned-monk, mentions the trade of frankincense and myrrh from the eastern coast of Africa, but there is no indication about South Arabia (Crone 1987: 32). The reason is probably the occupation of Yemen a that time by the Persians until the triumph of Islam in AD 632 (Robin 1991: 53). Thus, a new chapter in the use of aromatics is opened (*infra*).

The Uses of Incense and Myrrh

In Antiquity, the high demand for the aromatics was justified by the varied uses in the funerary rituals, in the worship of the gods but mainly in the preparation of medical prescriptions and perfumes. In Pharaonic Egypt, the Arabian aromatics were used for the embalming procedure. According to Herodotus, the body was emptied of the visceral organs except for the heart and "filled with pure bruised myrrh, cassia and other aromatic substance with the exception of frankincense" (*Hist.* II, 86). In the biblical tradition, the embalming was not practiced, except for Jacob and Joseph (*Gen.* 50:2-3, 26). The operation took forty days. Usually, the corpse was soaked in natron for seventy days (Groom 1981: 20); according to Diodorus (I,7), the embalming process consisted of rubbing myrrh on the eviscerated and cleansed body. Spices were also put in the wrapping sheet of the corpse.

In Rome, the funerary rite was less complicated, except that the incineration required a good amount of aromatics: We learn from Pliny (XII, 41:83) that "Arabia does not produce so large quantity of perfume in a year's output as was burned by Emperor Nero in a day at the obseque of his consort Poppaea" (*Loeb Classical*). The information was probably exaggerated, although the extravagances of this emperor are famous. In any case, the Romans burned a large quantity of incense in religious ceremonies, in the triumphal parades and in banquets. Pliny is quoted above for the high expenses of the Arabian spices.

Because the burning of aromatics was a pagan custom, the early Christian Church refrained from using it in the cult. But when Christianism became the state religion in the fourth century, the incense burners were adopted in all of the liturgies. In Ethiopia for example, vases are set in front of churches to receive offerings of incense (Müller 1976: 129).

For the Hebrews of ancient Palestine, the consumption of aromatics had conflicting usage: Originally, the frankincense was a symbol of the cult of Yahweh and the rite of the memorial consisted in the burning on the altar of a handful of wheaten flour, of oil and incense to appease Yahweh (*Leviticus*, 2:2). The common people continued, however, to offer sacrifices and burn aromatics on the high places for the idols (*I Kings*, 22:44; *II Kings,* 12:4; 14:4; 15:4), despite the severe condemnation of the prophets (*Hosea*, 4:13). After the monarchic period and the destruction of the Temple, incense and myrrh were involved in the daily life of the Hebrews: In the *Song of Songs*, a love poem of the post-exilic Persian period, reference is made in several verses to the Arabian spices: "What is coming from the desert, like a column of smoke, breathing of myrrh and frankincense, and every perfume the merchant knows" (3:6). In another verse, 5:15, "His stature is that of Lebanon", the Ethiopian version translates: "His head is like frankincense", probably in reference to the custom of fumigating the hair with frankincense in South Arabia (*kandar* in the dialect). In the verse 4:11, "and the scent of your garments is like the scent of frankincense" (*luban*) is a better interpretation than the "scent of Lebanon". This is another allusion to the custom of fumigating the garments with frankincense

in South Arabia. In addition, Yemeni Jews were said to burn abundant frankincense for the funerals or to help a woman in labour and after the birth of a child.

The same tradition was observed in the daily life of Yemeni Muslims: Glaser noticed during his journeys between 1882 and 1894, the costume of "recitations from the Qurān and incensing with frankincense at three successive evenings" after a case of death (Müller 1976: 129). To wash the corpse in Islam, water was mixed with salt, lotus leaves and camphor. Before his death, Ibn az-Zubayr drank a large quantity of perfumed water and refrained from eating, to give his corpse a pleasant scent (Wellhausen 1961: 178).

More common was the use of the Arabian aromatics for the preparation of medical prescriptions and perfumes. Before his crucifixion, Jesus Christ was offered wine mixed with myrrh as an analgesic (*Mark*, 15:23). This gum resin is efficient for the treatment of infections of the ears and eyes, blains and chilblains, and relief the liver and side pain (see Groom 1981: 20). The myrrh is usually mixed with frankincense for these prescriptions. A special issue of the 'Omani periodical *Ḥaṣād*, vol. 5 (al-Ghul, ed. 1980) is devoted to popular medical prescriptions and to the healing virtues of plants: Frankincense is described as a good drug "to stimulate the stomach and liver, to revive the strengths, the intelligence and memory. It is digestive, helps the wounds to heal and scar, and is efficient against chest diseases etc." (pp. 123-124). Red myrrh, *Commiphora*, or *qafal* in the 'Omani dialect, is recommended in *Hasad* 5: 129 to cure diabetes, paralysis, migraine, conjunctivitis, rheumatism, etc. It is surprising to learn that a report from the International Institute for Cancer Research demonstrated the efficiency of herbs to cure forms of skin cancer. More than fifty medical references in the history of medicine prove the curative effects of frankincense for skin infections, especially those of cancerous origin (Kessler 1991: 40).

Pliny was certainly not correct when he stated: "Arabia Felix is more indebted to the dead than to the living" (*Nat. Hist*. XII, 27). From the Aromatics of Arabia, perfumes were produced for the joy and comfort of the ladies. The technique was a woman's profession (*muraqqitu* in Akkadian). Seven operations were needed to produce perfumes: The aromatic plants or the gum resins were first selected and cleaned, then cut into pieces or pounded; after this preliminary operation, they were sieved and soaked in hot water for one day. Salt and spices could be added in the evening. The liquid was then filtered and placed in a cooking pot on the fire; oil or grease was added and mixed with a spatula, until a white foam was formed. The oils saturated with perfume floated on the surface and were removed the next day (see Faure 1987: 64-68). The procedure was delicate and complicated and there existed a large variety of perfumes, according to taste and fashion. Pliny offers in Book XIII, 2-4 a list of perfumes known in his time. He even describes (XII, 2:18) the 'royal' unguent, prepared for the kings of Parthia. He is satirical about expensive perfumes used by women: ... "when a woman passes by, her scent may attract the attention even of persons occupied in something else — and their cost is more than 400 denarii, per pound! All that money is paid for a pleasure enjoyed by somebody else" (*Nat. His* XIII, 3:20).

General Conclusion

This contribution focused on the economic and political effects of frankincense and myrrh in Arabia through the ages together with their use in funerary and religious ceremonies. Many other aromatic plants and gum resins existed or were exploited in South Arabia (see Robin 1994: 25-30, who lists thirteen aromatic essences). No doubt that Arabia was one of the richest countries in the East because it traded the less heavy but most valuable merchandise. This wealth was not exploited, however, in productive projects: The South Arabians or the Nabataeans invested their riches in building expensive funerary or religious monuments; they depended mainly on the land trade by caravans and did not care to develop commercial fleets to compete with the Alexandrines or the Phoenicians, although they were bordering on the sea. Like the black oil today, the aromatics did not profit the Arabs but brought them, on the contrary, political domination from the mighty states, the Assyrians and later the Persians and the Romans. Nevertheless, the curative uses of the gum resins alleviated the sufferings of the ancient world.

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