

Meccan Trade and the Rise of Islam



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P R E F A C E

This book owes its existence to the fact that lecturers in early Islamic history are supposed to know something about Meccan trade even if it does not happen to interest them much. I should thus like to thank the students of Islamic subjects at Oxford for forcing me to get into the subject, and also for gracefully putting up with an exasperated teacher thereafter. If, much effort notwithstanding, the sense of exasperation still shows through in this book, all I can say is that I would not have written it without it. Further, I should like to thank Adrian Brockett, Michael Cook, Gerald Hawting, Martin Hinds, and Fritz Zimmermann for reading and commenting on drafts in various stages of completion. I am also indebted to Professor A.F.L. Beeston for assistance on south Arabian matters, to Professor J. Baines for speedy and helpful replies to Egyptological queries, to F. N. Hepper of the Royal Botanic Gardens at Kew for his views on a botanical problem, and to Professor M. G. Morony for a reaction to the typescript which gave me ample warning of the potential unpopularity of its contents.

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PART I

THE SPICES OF ARABY

INTRODUCTION

Every first-year student knows that Mecca at the time of the Prophet was the centre of a far-flung trading empire, which plays a role of some importance in all orthodox accounts of the rise of Islam. Indeed, the international trade of the Meccans has achieved such fame that not only first-year students, but also professional Islamicists have come to consider documentation to be quite superfluous. Thus Montgomery Watt, whose well-known interpretation of Muḥammad's life centres on the impact of commercial wealth on the social and moral order in Mecca, devotes less than a page of his two-volume work to a discussion of the commerce from which the wealth in question supposedly derived; and with references he dispenses altogether.¹ But what do we actually know about Meccan trade? The groundwork on the subject was done by Lammens, a notoriously unreliable scholar whose name is rarely mentioned in the secondary literature without some expression of caution or disapproval, but whose conclusions would nonetheless appear to have been accepted by Watt.² More recently, various aspects of the question have been taken up and richly documented by Kister.³ Kister's work is apparently held to corroborate the picture drawn up by Lammens; there is, at least, no appreciable difference between the portraits of Meccan trade presented by Watt on the basis of Lammens, by Shaban on the basis of Kister, and by Donner on the basis of both.⁴ But, in fact, neither

¹ W. M. Watt, *Muhammad at Mecca*, p. 3.

² H. Lammens, *La Mecque à la veille de l'hégire*; *id.*, "La république marchande de la Mecque vers l'an 600 de notre ère"; cf. also *id.*, *La cité arabe de Tâïf à la veille de l'hégire*. That Lammens is the source behind Watt's presentation is clear both from considerations of content and from the fact that he is the only authority mentioned there. Lammens is reproved for having been too sure about the details of financial operations in Mecca, but his conclusion that the operations in question were of considerable complexity is accepted (Watt, *Muhammad at Mecca*, p. 3).

³ See in particular M. J. Kister, "Mecca and Tamīm (Aspects of Their Relations)"; and *id.*, "Some Reports Concerning Mecca from Jāhiliyya to Islam."

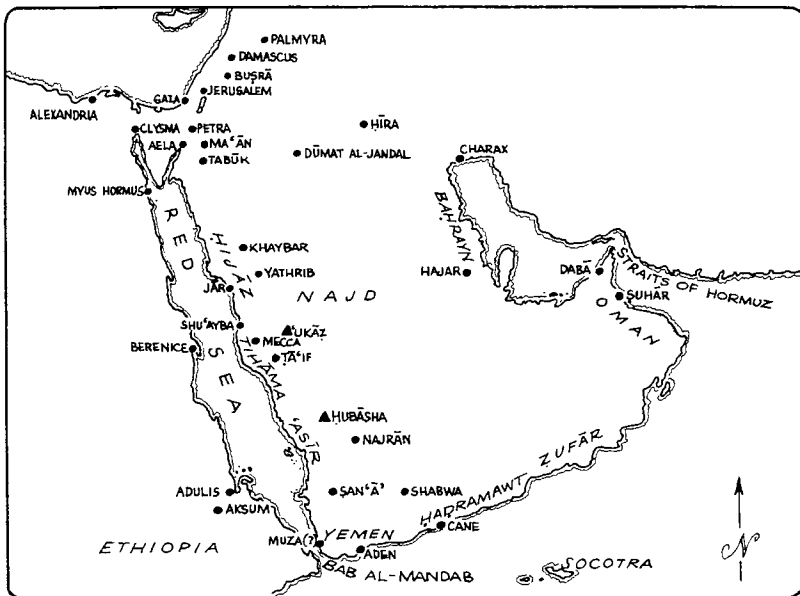
⁴ M. A. Shaban, *Islamic History, A New Interpretation*, pp. 2 ff; that this presentation is based on the work of Kister is stated at p. 2n. F. M. Donner, "Mecca's Food Supplies and

Lammens nor Kister provides support for the conventional account, the former because his work collapses on inspection of his footnotes, the latter because his impeccable footnotes undermine our basic assumptions concerning the nature of the trade. What follows is evidence to the effect that Meccan trade is nothing if not a problem.

The conventional account of Meccan trade begs one simple question: what commodity or commodities enabled the inhabitants of so unpromising a site to engage in commerce on so large a scale? That the trading empire grew up in an unexpected place is clear, if not always clearly brought out. There have, of course, been commercial centres in Arabia that developed in areas of comparable barrenness, notably Aden. But Aden and other coastal cities of south Arabia all owed their existence to the sea, as Muqaddasī noted, whereas Mecca was an inland town.⁵ It did

Muhammad's Boycott"; the reader is referred to the works of Lammens and Kister at p. 250n.

⁵ Muḥammad b. Aḥmad al-Muqaddasī, *Descriptio imperii moslemici*, pp. 85 (Aden), 95 (coastal cities in general). There is something of a parallel to Mecca in pre-Islamic Shabwa, an inland city in a barren environment, which was also a cult centre and a centre of trade



have a little port, Shu'ayba,⁶ and the Koran speaks at length about the miraculous navigability of the sea.⁷ The sources are agreed that the Meccans traded with Ethiopia, and there is even an isolated tradition which asserts that they used to engage in maritime trade with Rūm.⁸ But the Meccans had no timber⁹ and no ships;¹⁰ they made no use of their port when blockaded by Muḥammad,¹¹ and neither Shu'ayba nor the sea receives much attention in the tradition.

Centres of caravan trade, on the other hand, have usually been located

(cf. *EP*, s.v. Ḥaḍramawt [Beeston]). But the rulers of Shabwa had the good fortune to control the frankincense-producing areas of Arabia so that they could decree more or less at will where they wished the frankincense to be collected (a point to which I shall return). There was nothing comparable in the vicinity of, or under the control of, Mecca.

⁶ Not Jār, as Donner says ("Mecca's Food Supplies," p. 254). Jār was the port of Medina, Shu'ayba being that of Mecca until it was replaced by Jedda in the caliphate of 'Uthmān (cf. *EP*, s.vv. Djār, Djudda; cf. also G. R. Hawting, "The Origin of Jedda and the Problem of al-Shu'ayba.")

⁷ Forty times, according to S. Fraenkel, *Die aramäischen Fremdwörter im arabischen*, p. 211. This is odd, as Barthold points out, for there is no record of Muḥammad having travelled by sea, or even of having gone close to it, and the descriptions are very vivid (W. W. Barthold, "Der Koran und das Meer").

⁸ Aḥmad Ibn Ḥanbal, *al-ʿIlal*, I, 244, no. 1,410 (first noted by Kister, "Some Reports," p. 93). Compare the tradition in Sulaymān b. Aḥmad al-Ṭabarānī, *al-Muʿjam al-ṣagbīr*, I, 113, according to which the Companions of the Prophet used to engage in maritime trade with Syria (also first noted by Kister).

⁹ When Quraysh rebuilt the Ka'ba shortly before the *hijra*, the timber for its roof came from a Greek ship which had been wrecked at Shu'ayba (thus Muḥammad b. 'Abdallāh al-Azraqī, *Kitāb akhbār Makka*, pp. 104 f., 107; Muḥammad Ibn Sa'd, *al-Ṭabaqāt al-kubrā*, I, 145; Yāqūt b. 'Abdallāh, *Kitāb Muʿjam al-buldān*, III, 301, s.v. Shu'ayba; Aḥmad b. 'Alī Ibn Ḥajar al-'Asqalānī, *Kitāb al-iṣāba fī tamayīz al-ṣaḥāba*, I, 141, no. 580, s.v. Bāqūm. The parallel version anachronistically has the ship stranded at Jedda ('Abd al-Malik Ibn Hishām, *Das Leben Muhammed's nach Muhammed Ibn Isbāk*, p. 122; Muḥammad b. Jarīr al-Ṭabarī, *Ta'rikh al-rusul wa'l-mulūk*, ser. 1, p. 1,135). A more elaborate version has it that the ship was carrying building material such as wood, marble, and iron for the rebuilding of an Ethiopian church destroyed by the Persians (Ismā'il b. 'Umar Ibn Kathīr, *al-Bidāya wa'l-nihāya*, II, 301, citing the *Maghbāzī* of Sa'id b. Yahyā al-Umawī; similarly 'Alī b. al-Ḥusayn al-Mas'ūdī, *Kitāb murūj al-dabab*, IV, 126 f.) Cf. also [M.] Gaudefroy-Demombynes, *Le pèlerinage à la Mekke*, pp. 33 f.

¹⁰ The *muhājirūn* who went to Ethiopia travelled in ships belonging to some obviously foreign merchants; Quraysh pursued them, but had to stop on reaching the coast (Ṭabarī, *Ta'rikh*, ser. 1, pp. 1,181 f.; Ibn Sa'd, *Ṭabaqāt*, I, 204).

¹¹ "Avoid the coast and take the Iraq route," as a Qurashī advised when the route to Syria was blocked (Muḥammad b. 'Umar al-Wāqidi, *Kitāb al-maghbāzī*, I, 197). This point has been made several times before, first probably by Lammens (*Mecque*, p. 381).

in less hostile environments and within closer proximity to their customers than was Mecca; witness Minaean Dedan, Roman Palmyra, and Ibn Rashīd's Ḥā'il. By way of compensation, Mecca is frequently credited with the advantage of having been located at the crossroads of all the major trade routes in Arabia,¹² or at least with having been a natural halt on the so-called incense route from south Arabia to Syria.¹³ But as Bulliet points out, these claims are quite wrong. Mecca is tucked away at the edge of the peninsula: "only by the most tortured map reading can it be described as a natural crossroads between a north-south route and an east-west one."¹⁴ And the fact that it is more or less equidistant from south Arabia and Syria does not suffice to make it a natural halt on the incense route. In the first place, the caravans which travelled along this route stopped at least sixty-five times on the way; they were under no constraint to stop at Mecca merely because it happened to be located roughly midway. "On a journey of some two months duration the concept of a halfway point as a natural resting place is rather strained."¹⁵ In the second place, barren places do not make natural halts wherever they may be located, and least of all when they are found at a short distance from famously green environments. Why should caravans have made a steep descent to the barren valley of Mecca when they could have stopped at Ṭā'if? Mecca did, of course, have both a well and a sanctu-

¹² This idea goes back to Lammens (*Mecque*, p. 118; "République," pp. 26, 51), and has since been repeated by Watt, *Muhammad at Mecca*, p. 3; Shaban, *Islamic History*, 1, 6; M. Rodinson, *Mohammed*, p. 39; P. K. Hitti, *Capital Cities of Arab Islam*, p. 7; I. Shahid (Kawar), "The Arabs in the Peace Treaty of A.D. 561," p. 192.

¹³ This idea also goes back to Lammens (cf. "République," p. 51, where it is one of the most important halts on this route; *Mecque*, p. 118, where it is probably such a halt). It was cautiously accepted by B. Lewis, *The Arabs in History*, p. 34, and wholeheartedly by Hitti, *Capital Cities*, p. 5.

¹⁴ R. W. Bulliet, *The Camel and the Wheel*, p. 105 and n40 thereto. Lammens adduced Balādhurī's version of the Hudaybiyya agreement in favour of his view. In this agreement, safety is granted to people travelling (from Medina) to Mecca on *hajj* or *'umra*, or on their way to Ṭā'if or the Yemen, as well as to people travelling (from Mecca) to Medina on their way to Syria and the east (Aḥmad b. Yaḥyā al-Balādhurī, *Kitāb futūḥ al-buldān*, p. 36; *id.*, *Ansāb al-asbrāf*, 1, 351. Other versions of the treaty lack such a clause, cf. *EP*, s.v. al-Ḥudaybiyya and the references given there). This certainly suggests that people might go via Mecca to the Yemen; but it is from Medina, not Mecca, that they are envisaged as going to Syria and Iraq. (Lammens frequently adduced information about Medina as valid for Mecca, as well.)

¹⁵ Bulliet, *Camel and the Wheel*, p. 105.

ary, but so did Ṭāʾif, which had food supplies, too. In the third place, it would appear that Mecca was not located on the incense route at all. Going from south Arabia to Syria via Mecca would have meant a detour from the natural route, as both Müller and Groom have pointed out; and Groom estimates that the incense route must have bypassed Mecca by some one-hundred miles.¹⁶ Mecca, in other words, was not just distant and barren; it was off the beaten track, as well. "The only reason for Mecca to grow into a great trading center," according to Bulliet, "was that it was able somehow to force the trade under its control."¹⁷ It is certainly hard to think of any other. But what trade? What commodity was available in Arabia that could be transported at such a distance, through such an inhospitable environment, and still be sold at a profit large enough to support the growth of a city in a peripheral site bereft of natural resources? In Diocletian's Rome it was cheaper to ship wheat from Alexandria to Rome at a distance of some 1,250 miles than to transport it fifty miles by land.¹⁸ The distance from Najrān to Gaza was roughly 1,250 miles, not counting the detour to Mecca.¹⁹ "A caravan takes a month to go to Syria and a month to return," as the Meccans objected when Muḥammad claimed to have visited Jerusalem by night.²⁰ Whatever the Meccans sold, their goods must have been rare, much coveted, reasonably light, and exceedingly expensive.

One can read a great many accounts of Meccan trade without being initiated into the secret of what the Meccans traded in, but most Islamicists clearly envisage them as selling incense, spices, and other exotic goods. "By the end of the sixth century A.D. they had gained control of most of the trade from the Yemen to Syria—an important route by which the West got Indian luxury goods as well as South Arabian frankincense," as Watt informs us.²¹ Mecca was "a transfer-point in the long-

¹⁶ W. W. Müller, *Weibrauch*, col. 723; N. Groom, *Frankincense and Myrrh*, p. 193. In W. C. Brice, ed., *An Historical Atlas of Islam*, pp. 14 f., 19, the incense route still goes via Mecca.

¹⁷ Bulliet, *Camel and the Wheel*, p. 105.

¹⁸ A.H.M. Jones, "The Economic Life of the Towns of the Roman Empire," p. 164; compare N. Steensgaard, *Carracks, Caravans and Companies*, p. 40.

¹⁹ See the helpful list of distances, in both miles and days' journey, in Groom, *Frankincense*, p. 213.

²⁰ Ibn Hishām, *Leben*, p. 264.

²¹ Watt, *Muhammad at Mecca*, p. 3; similarly *id.*, *Muhammad, Prophet and Statesman*, p. 1; *id.*, "Ḳuraysh" in *EF*.

distance trade network between India, Africa and the Mediterranean,” as we are told in the more recent statement by Donner. Similar statements are commonplace in the secondary literature.²² Incense, spices, slaves, silk, and so forth would indeed fit the bill. The source for all this, however, is Lammens, and on turning to Kister one finds the Meccans engaged in a trade of a considerably humbler kind. The international trade of the Meccans here rests on articles such as leather and clothing, which the Meccans, moreover, advertise as being *cheap*. There is no incense, nor any other spices, in the work of Kister, and the same is true of that of Sprenger, who likewise identified the chief article of export as leather.²³ Clearly, something is amiss. Did the Meccans really trade in incense, spices, and other luxury goods? If not, could they have founded a commercial empire of international dimensions on the basis of leather goods and clothing? The answer to both questions would appear to be no, and it is for this reason that Meccan trade is a problem.

Why do Islamicists find it so easy to believe that the Meccans traded in incense, spices, and the like? Presumably because Arabia is indelibly associated with this kind of goods in the mind of every educated person. Besides, what other significant articles were available in Arabia for the Meccans to export? Because the classical spice trade of Arabia is so famous, practically every account of Meccan trade tends to be cast in its image; or in other words, Meccan trade tends to be described on the basis of stereotypes. The stereotypes in question may be summarized as follows.

Already in the third millennium B.C. the south Arabians traded in incense, later also in foreign goods; indeed, the very earliest commercial and cultural contacts between the Mediterranean and the lands around

²² Donner, “Mecca’s Food Supplies,” p. 250. See, for example, H.A.R. Gibb, *Islam*, pp. 17, 26; B. Aswad, “Social and Ecological Aspects in the Origin of the Islamic State,” p. 426; Hitti, *Capital Cities*, p. 7; Shahid, “Arabs in the Peace Treaty,” pp. 190 ff.; cf. *id.*, “Two Qur’anic Sūras: *al-Fil* and *Qurayṣ*,” p. 436 (I am grateful to Dr. G. M. Hinds for drawing my attention to this article); I. M. Lapidus, “The Arab Conquests and the Formation of Islamic Society,” p. 60; Groom, *Frankincense*, p. 162.

²³ Kister, “Mecca and Tamīm,” p. 116. A. Sprenger, *Das Leben und die Lehre des Mohāmad*, III, 94 f.

the Indian ocean were established via the overland incense route.²⁴ In any case, there is no doubt that the trade was fully developed by about 900 B. C., when the Queen of Sheba visited Solomon and when the Arabs assuredly controlled the sea route to India;²⁵ and they certainly supplied Egypt with Indian spices, fabrics, and precious stones about this time.²⁶ They also supplied ancient Iraq, for Assyrian policy vis-à-vis Arabia was dictated by concern for the security of the incense route,²⁷ though some are of the opinion that the trade between Babylonia and India only fell into Arab hands on the Achaemenid conquest of Iraq.²⁸ At all events, they soon offered their customers all the products of India, the Far East, and tropical Africa from Abyssinia to Madagascar.²⁹ They were a curious people in that they sailed to Africa and India, but transported their goods by caravan on reaching their native shores: this was because their boats, though adequate for long-distance journeys, were too primitive for navigation in the Red Sea and, apparently, also the Persian Gulf.³⁰ But they were perfectly capable of keeping the Indians out of the Red Sea, and it is because they guarded their commercial monop-

²⁴ C. Rathjens, "Die alten Welthandelstrassen und die Offenbarungsreligionen," pp. 115, 122.

²⁵ H. von Wissmann, *Die Mauer der Sabäerhauptstadt Maryab*, p. 1; R. Le Baron Bowen, "Ancient Trade Routes in South Arabia," p. 35. A similar view seems to be implied in G. L. Harding, *Archaeology in the Aden Protectorates*, p. 5. It is not clear whether the spices which the Queen of Sheba throws at the feet of Solomon in Rathjens, "Welthandelstrassen," p. 122, are envisaged as both Arabian and Indian. Müller certainly does not commit himself to such a view, though he cautiously accepts her as evidence of the existence of the south Arabian incense trade (*Weibrauch*, col. 745).

²⁶ W. H. Schoff, tr., *The Periplus of the Erythraean Sea*, p. 3. (References by translator and page are to Schoff's comments, those by title and paragraph to the translation.)

²⁷ T. W. Rosmarin, "Aribi und Arabien in den babylonisch-assyrischen Quellen," pp. 2, 7, 22; A. van den Branden, *Histoire de Thamoud*, p. 6.

²⁸ Thus J. Kennedy, "The Early Commerce of Babylon with India," p. 271.

²⁹ Rathjens, "Welthandelstrassen," p. 122.

³⁰ Thus B. Doe, *Southern Arabia*, p. 50; Rathjens, "Welthandelstrassen," p. 115, both with reference to the Red Sea only. Kennedy, "Early Commerce," pp. 248 f., implies that they were equally incapable of navigation in the Persian Gulf. But Doe assumes that the primitive boats of the Gerrheans were good enough for navigation in the Persian Gulf (*Southern Arabia*, p. 50), and Schoff assumes that those of the south Arabians were good enough for navigation in the Red Sea, too (Schoff, *Periplus*, p. 3), which makes the use of the overland route even odder.

oly with such jealousy that we are so ill-informed about this early trade.³¹ We can, however, rest assured that all the bustling commerce described by Pliny (d. 79 A.D.) and the *Periplus* (probably about 50 A.D.) was part of the normal scene in ancient Saba some nine hundred years before.³² We can also rest assured that it was part of the normal scene some five hundred years later. The south Arabian hold on the India trade somehow survived the establishment of direct commercial contact between India and the Greco-Roman world, so that when in due course south Arabia declined, the Meccans took over the task of satisfying the enormous Roman demand for luxury goods.³³ The Meccans used the same overland route; indeed, it was on their control of the old incense route that their commercial predominance in Arabia rested.³⁴ And they exported the same goods: Arabian frankincense, East African ivory and gold, Indian spices, Chinese silk, and the like.³⁵ It was only on the Arab conquest of the Middle East that this venerable trade came to an end, after a lifespan of some fifteen hundred or twenty-five hundred years.

All this, of course, is somewhat incredible; in what follows I shall devote myself to a demonstration that it is also quite untrue. The south Arabian trade in incense and spices is not nearly as old as is commonly assumed, and the goods in question were not invariably sent north by caravan: the last allusion to the overland route dates from the first (or, as some would have it, early second) century A.D., and the transit trade would appear to have been maritime from the start. Neither the incense

³¹ Schoff, *Periplus*, pp. 88 f.; E. H. Warmington, *The Commerce between the Roman Empire and India*, pp. 11, 13. Cf. below, Ch. 2 n105.

³² On the date of the *Periplus*, see now M. G. Raschke, "New Studies in Roman Commerce with the East," pp. 663 ff. with full references to the huge literature on the question. For Saba, see G. W. van Beek, "The Land of Sheba," p. 48; cf. also *id.*, "Frankincense and Myrrh in Ancient South Arabia," p. 146.

³³ Schoff, *Periplus*, p. 6; H. Hasan, *A History of Persian Navigation*, p. 48; Donner, "Mecca's Food Supplies," p. 250.

³⁴ Watt, *Muhammad at Mecca*, p. 3; Shahid, "Two Qur'ānic Sūras," p. 436. Similarly R. Paret, "Les villes de Syrie du sud et les routes commerciales d'Arabie à la fin du vi^e siècle," pp. 441 f.; R. Simon, "Hums et ilāf, ou commerce sans guerre," p. 222 (though Simon's work is in other respects a refreshing attempt to go beyond hackneyed truths).

³⁵ Detailed documentation will be given in Chapter 3; but compare for example Doe, *Southern Arabia*, p. 52 (with reference to the sixth and fifth centuries B.C.) and Donner, "Mecca's Food Supplies," pp. 250, 254 (with reference to the sixth and early seventh centuries A.D.).

INTRODUCTION

trade nor the transit trade survived long enough for the Meccans to inherit them, and there was no such thing as a Meccan trade in incense, spices, and foreign luxury goods. At least, the Islamic tradition is quite unaware that the Meccans are supposed to have handled this type of goods, and the Greeks to whom they are supposed to have sold them had never even heard of Mecca. Meccan trade there was, if we trust the Islamic tradition. But the trade described in this tradition bears little resemblance to that known from Lammens, Watt, or their various followers.

THE CLASSICAL SPICE TRADE

The purpose of this chapter is to correct various misconceptions about the classical spice trade that have influenced the standard account of Meccan trade; and two of its findings (the collapse of the incense trade, the foreign penetration of Arabia) are of direct relevance to the subject of this book. The reader without interest in the classical background can go straight to part II, provided that he or she is willing to refer back to the pages singled out as relevant in the notes to parts II and III.

THE INCENSE TRADE

The spices of Araby were spices in the classical sense of the word—that is, they composed a much wider category than they do today. They included incense, or substances that gave off a nice smell on being burnt; perfumes, ointments, and other sweet-smelling substances with which one dabbed, smeared, or sprinkled oneself or one's clothes; things that one put into food or drink to improve their taste, prolong their life, or to endow them with medicinal or magical properties; and they also included antidotes.¹ It is thanks to this usage that the spices of the Meccans turn out to be incense in Rodinson, but perfume in Margoliouth, whereas Watt's "Indian luxury goods" presumably mean condiments.² In what follows I shall likewise use "spices" without qualifications to mean any one or all three of these categories, distinguishing where necessary. We may begin by considering the trade in "spices" native to Arabia.

The spices of Arabia were primarily incense products, and the two most important ones were frankincense and myrrh.³ Frankincense (Greek *li-*

¹ J. I. Miller, *The Spice Trade of the Roman Empire*, p. 2.

² M. Rodinson, *Islam et capitalisme*, p. 46 and the note thereto. D. S. Margoliouth, *Mohammed and the Rise of Islam*, p. 49; cf. Ṭabarī, *Ta'rikh*, ser. 1, p. 1, 162 ('itr). Watt, *Muhammad at Mecca*, p. 3.

³ What follows is based on Müller, *Weibrauch*; Groom, *Frankincense*. Cf. also van Beek,

banos, *libanōtos*; Latin *t(h)us*; Arabic *lubān*) is a gum resin, or more precisely an oleo-gum-resin, exuded by various species of the genus *Boswellia* Roxb., of the family of Burseraceae, on incision of the bark.⁴ The genus is native to Arabia, Socotra, East Africa, and India. Only two species of the genus, however, produce "true frankincense," the commodity so highly esteemed in the ancient world. These two species are *B. carteri* Birdw. and *B. sacra* Flück (previously lumped together under the former designation),⁵ and these are native only to south Arabia and East Africa. It was thus the products of south Arabian and East African trees that were coveted by Egyptians, Jews, Greeks, Romans, and Persians alike; in due course they came to be coveted even by the Indians and the Chinese. Frankincense was burnt in honour of the gods, at funerals, and in private homes. It was also used as a medicine, a spice (in our sense of the word), and, on a small scale, as an ingredient in perfume.

Myrrh (Greek *myrrha*, *smyrna*lē; Latin *myrr(h)a*; Arabic *murr*) is also an oleo-gum-resin. It is exuded by various species of *Commiphora* Jacq. (= *Balsamodendron* Kunth.), Burseraceae, the same family as that to which frankincense belongs. The common myrrh tree is *C. myrrha* (Nees) Engl., but there are also other species in Arabia, where their habitat is considerably wider than that of frankincense, and many more in Somalia. Other species are found in India, where they yield a substance known as bdellium, to which I shall come back. Myrrh was used as an incense, or as an ingredient therein, but its most important role was in the manufacture of ointments, perfumes, and medicines. It was also used in embalming.

When did the trade in south Arabian incense and myrrh begin? This question can be disposed of briefly here, since it has recently been dealt with by Groom, whose conclusions may be accepted with slight modi-

"Frankincense and Myrrh in Ancient South Arabia"; *id.*, "Frankincense and Myrrh"; H. Ogino, "Frankincense and Myrrh of Ancient South Arabia."

⁴ Gums are distinguished from resins by their ability to dissolve in or absorb water. Resins are soluble in alcohol, ether, and other solvents, but not in water. Gum-resins are a mixture of the two. Oleo-gum-resins contain an essential oil, as well (F. N. Howes, *Vegetable Gums and Resins*, pp. 3, 85, 89, 149).

⁵ Cf. F. N. Hepper, "Arabian and African Frankincense Trees," pp. 67 f.; Groom, *Frankincense*, ch. 6.

fications.⁶ The answer would seem to be not earlier than the seventh century B.C., for reasons that may be summarized as follows.

It may well be that the ancient Egyptians imported myrrh and frankincense from Punt as early as the third millennium B.C., and Punt may well have been the name of not only the African, but also the Arabian side of the Red Sea.⁷ It is, however, most unlikely that the ancient Egyptians sailed beyond Bāb al-Mandab, let alone all the way to Zūfār, the only or major frankincense-producing region of Arabia;⁸ and the association of Punt with ivory, ebony, giraffes, grass huts, and the like certainly suggests that the Egyptians obtained their aromatics in East Africa. From an Arabian point of view, the ancient Egyptian evidence can thus be dismissed.

Thereafter there is no evidence until the Queen of Sheba, who presented Solomon with spices of an unidentified kind about 900 B.C. This queen does not, however, prove that a trade in South Arabian spices already existed, because she is most plausibly seen as a north Arabian ruler.⁹ In the first place, the Sabaeans are a north Arabian people in the Assyrian records, as well as in some Biblical and classical accounts; and the traditional explanation that these Sabaeans were a trading colony from the south is implausible in view of the fact that they appear as a warlike people in the Assyrian records and as raiders who carry off Job's flocks in the Bible.¹⁰ In the second place, queens are well attested for north Arabian tribes in the Assyrian records,¹¹ whereas none is attested for south Arabia at any time; indeed, there is no independent evidence for monarchic institutions at all in south Arabia as early as 900 B.C. In the third place, the unidentified spices that the Queen of Sheba presented to Solomon could just as well have come from north Arabia as

⁶ Groom dates the beginning of the trade to the sixth century B.C., which must be about a century too late (*Frankincense*, ch. 2).

⁷ Cf. Müller, *Weibrauch*, cols. 739 ff.

⁸ Cf. C. A. Nallino, "L'Égypte avait elle des relations directes avec l'Arabie méridionale avant l'âge des Ptolémées?"; Müller, *Weibrauch*, cols. 740 f.

⁹ The first to argue this was Philby, though his work was not published till long after his death (H. St. John Philby, *The Queen of Sheba*, ch. 1). The same conclusion was reached by A. K. Irvine, "The Arabs and Ethiopians," p. 299, and, independently of Irvine, by Groom, *Frankincense*, ch. 3 (the most detailed discussion).

¹⁰ Rosmarin, "Aribi und Arabien," pp. 9 f., 14; Job 1:14 f.; Strabo, *Geography*, xvi, 4:21.

¹¹ Cf. Rosmarin, "Aribi und Arabien," pp. 29 ff., s.vv. Adia, Bāz/šlu, Japa', Samsi, Telchunu, and Zabibê.

from the south. Numerous incense products and other aromatics were available in north Arabia, Palestine, and elsewhere. It was such local products, not south Arabian imports, which the Ishmaelites of Gilead sold in Egypt, and there is nothing in the Biblical account to suggest that those with which the Queen of Sheba regaled her host came from any further afield.¹² The Biblical record thus takes us no further back than the seventh century B.C., the date generally accepted by Biblical scholars for the Israelite adoption of the use of frankincense and other incense products in the cult.¹³

As regards the Assyrian records, they frequently mention spices among the commodities paid by various Arabian rulers as tribute to the Assyrian kings in the eighth and seventh centuries B.C.¹⁴ But these would again appear to have been north Arabian products, for frankincense is not attested in Mesopotamia until several centuries later and the commonly mentioned *murru* was a local plant, not an imported resin.¹⁵ There is nothing in the Assyrian evidence to suggest a date earlier than the seventh century B.C. for the beginning of the trade.

¹² For the spices of the Ishmaelites of Gilead, see Genesis 37:25, and below, ch. 3, no. 4 (on *lōt*, mistranslated as "myrrh" in the authorized version) and no. 10 (on *šrî*, "balm"). Apart from these two commodities they carried *ḥk'ōt*, "spicery," which has been identified as the gum of *Astragalus gummifer* Labill., a Palestinian shrub (cf. H. N. Moldenke and A. L. Moldenke, *Plants of the Bible*, pp. 51 f.). Just as the Queen of Sheba presents Solomon with spices in the Bible, so a king of Sheba, clearly a northerner, pays tribute in spices (and precious stones) in the Assyrian records (cf. Rosmarin, "Aribi und Arabien," p. 14). Bullet's proposed link between the spread of camel domestication and the incense trade is weakened by his assumption that spices sold by Arabs necessarily came from the south (*Camel and the Wheel*, pp. 67, 78).

¹³ Cf. M. Haran, "The Uses of Incense in the Ancient Israelite Ritual," pp. 118 ff.

¹⁴ The relevant passages are translated by Rosmarin, "Aribi und Arabien," pp. 8 ff., 14 ff.

¹⁵ Frankincense is first mentioned in a medical recipe dating from the late Babylonian period, that is, not long before the Persian conquest, and Herodotus is the first to mention its use as an incense there (Müller, *Weibrauch*, col. 742). *Murru* is frequently mentioned, but not in connection with the tribute payments of the Arabs. Its physical appearance was well known; it had seeds and was used, among other things, in tanning. In principle the "myrrh-scented oil" known to the Assyrians could have been a south Arabian product, but since it figures among the gifts sent by Tushratta of Mitanni (and never in an Arabian context), this is in fact most unlikely to have been the case: "myrrh-scented" is a misleading translation (cf. *The Assyrian Dictionary of the Oriental Institute*, s.v. *murru*. Judging from this dictionary, the spices mentioned by name in connection with the tribute payments of the Arabs have not been identified).

That leaves us with the archaeological evidence. Of such there is not much, and what there is does not suggest an earlier date, either. The south Arabian clay stamp found at Bethel certainly does not prove that the trade already existed by the ninth century B.C., partly because there is a case for the view that it only came to Bethel in modern times,¹⁶ and partly because, even if this is not the case, the stamp itself is completely undatable.¹⁷ The south Arabian potsherds that have been found at 'Aqaba are now said to date from the sixth century B.C.;¹⁸ the south Arabian

¹⁶ Cf. G. W. van Beek and A. Jamme, "An Inscribed South Arabian Clay Stamp from Bethel"; A. Jamme and G. W. van Beek, "The South Arabian Clay Stamp from Bethel Again." In the first article the authors announced the discovery of a south Arabian clay stamp at Bethel; in the second they informed their readers that they had found an exact replica of this stamp in the form of a squeeze in the Glaser collection. They concluded that they had found two stamps made by the same workman: this, in their view, would suffice to explain why the two stamps had even been broken in the same place. Yadin, however, concluded that the stamp from which the squeeze in the Glaser collection had been made (and which had since disappeared) was the very stamp that had turned up at Bethel (Y. Yadin, "An Inscribed South-Arabian Clay Stamp from Bethel?"). Two rejoinders were written (G. W. van Beek and A. Jamme, "The Authenticity of the Bethel Stamp Seal"; J. L. Kelso, "A Reply to Yadin's Article on the Finding of the Bethel Stamp"), and there has been one attempt to prove that the two stamps, though similar, are not completely identical (P. Boneschi, "L'antique inscription sud-arabe d'un supposé cachet provenant de Beytîn (Béthel).") But it must be conceded that the coincidence is odd, and a hypothesis has since been proposed concerning how the Glaser stamp could have come to be buried at Bethel (R. L. Cleveland, "More on the South Arabian Clay Stamp Found at Beitîn.")

¹⁷ It was found in undatable debris outside the city wall; or more precisely, the debris ranged from the iron age to the Byzantine period (Jamme and van Beek, "Clay Stamp from Bethel Again," p. 16). It was dated to the ninth century B.C. on the ground that it must have been connected with the incense trade, which in turn must have been connected with the temple at Bethel; this temple only existed from 922 to 722 B.C., and it is conjectured that it imported most of its frankincense in the earlier part of this period (the authors take no account of the fact that the Israelites are not supposed to have made ritual use of incense at this stage). The date of the stamp thus rests on the assumption that the incense trade already existed in the ninth century B.C., a fact that does not prevent the authors from adducing the stamp as proof of this assumption (cf. van Beek and Jamme, "Clay Stamp from Bethel," p. 16). Palaeography is also invoked in favour of this date, but not convincingly (cf. Boneschi, "L'antique inscription," pp. 162 f., and the following note).

¹⁸ Cf. N. Glueck, "The First Campaign at Tell el-Kheleifeh," p. 16 (discovery *in situ* of a large broken jar inscribed with two letters of a south Arabian script, dated to the eighth century B.C. on the basis of stratigraphy); G. Ryckmans, "Un fragment de jarre avec caractères minéens de Tell El-Kheleifeh" (date accepted, script identified as Minaean); N. Glueck, "Tell el-Kheleifeh Inscriptions," pp. 236 f. (Ryckmans reported to have

tripod that may have been found in Iraq only dates from the sixth to fourth centuries B.C.;¹⁹ and the same is true of other finds suggestive of trade between south Arabia and Mesopotamia. In short, the belief that the incense trade between south Arabia and the Fertile Crescent is of immense antiquity does not have much evidence in its favour.

By the seventh century B.C., however, the trade must have begun. This is clear partly from the Biblical record and partly from the fact that both frankincense and myrrh were known under their Semitic names even in distant Greece by about 600 B.C., when they are attested in the poetry of Sappho.²⁰ The archaeological evidence sets in about the sixth century B.C., as has been seen, and the trade becomes increasingly attested thereafter.²¹ The trade may thus be said to be of a venerable age even if it is not as old as civilisation itself.

How were the incense products transported? It is a plausible contention that the earliest trade was by land. But leaving aside the obvious point that maritime expeditions to Punt on the part of the ancient Egyptians do not testify to the existence of an overland route, as has in all seriousness been argued,²² the fact that the earliest trade was by land in no way

changed the date to the sixth century B.C.; another ostrakon, possibly Minaean, dating from the seventh or sixth century B.C. discovered); *id.*, *The Other Side of the Jordan*, pp. 128, 132 (sixth-century date accepted, though the script resembles that of inscriptions dated to the fourth century B.C.); W. F. Albright, "The Chaldaean Inscription in Proto-Arabic Script," pp. 43 f. (Glueck's eighth-century date not queried, but the script possibly proto-Dedanite, under no circumstances Minaean); Müller, *Weibrauch*, col. 745 (it is probably Sabaeen). Cf. also P. Boneschi, "Les monogrammes sud-arabes de la grande jarre de *Tell El-Heleyfeh* (Ezion-Geber)" (where the jar still dates from the eighth or seventh century B.C.).

¹⁹ Cf. T. C. Mitchell, "A South Arabian Tripod Offering Saucer Said To Be from Ur," p. 113.

²⁰ See the passages adduced by Müller, *Weibrauch*, col. 708.

²¹ The Biblical passages mentioning frankincense are listed by Moldenke and Moldenke, *Plants of the Bible*, pp. 56 f.; it is common in the Prophets, from about 600 B.C. onward. In the fifth century B.C. it was used by the Jews of Elephantine (A. Cowley, ed. and tr., *Aramaic Papyri of the Fifth Century B.C.*, nos. 30:25; 31:21; 33:11). On the Greek side it is attested in the poetry of Pindar (fl. c. 490 B.C.) and Melanippides (fl. c. 450?), and of course in Herodotus (fl. c. 450) (cf. H. G. Liddell and R. Scott, *A Greek-English Lexicon*, s.v. libanos).

²² Rathjens, "Welthandelstrassen," p. 122 and the note thereto.

means that all Arabian aromatics continued to be transported largely or wholly in this fashion until the very end of the trade;²³ as will be seen, the evidence suggests the contrary.

We do not hear anything about the overland route until the Hellenistic period. According to Hieronymus of Cardia (historian of the period 323-272 B.C.), who is cited by Diodorus Siculus, a fair number of Nabataeans were "accustomed to bring down to the sea [the Mediterranean] frankincense and myrrh and the most valuable kinds of spices, which they procure from those who convey them from what is called Arabia Eudaemon." Given the date of this statement, the goods in question were presumably conveyed to the Nabataeans by the overland route, though the text does not explicitly say so.²⁴ A more explicit account is given by Eratosthenes (c. 275-194 B.C.), who is cited by Strabo. According to him, frankincense, myrrh, and other Arabian aromatics from the Ḥaḍramawt and Qatabān were bartered to merchants who took seventy days to get from Ailana (that is, Ayla) to Minaia, whereas the Gabaioi, whoever they may have been,²⁵ got to the Ḥaḍramawt in forty days.²⁶ The overland route is alluded to again by Artemidorus (about 100 B.C.), who is also cited by Strabo and who, after an account of the lazy and easygoing life of the (southern) Sabaeans, tells us that "those who live close to one another receive in continuous succession the loads of aromatics and deliver them to their neighbours, as far as Syria and Mesopotamia"; in the course of so doing they are supposed to have become so drowsy, thanks to the sweet odours, that they had to inhale various other substances in order to stay awake.²⁷ A more matter-of-fact account is given by Juba (c. 50 B.C.-19 A.D.), who is cited by Pliny. All frankincense, according to him, had to go to Sobota, that is, Shabwa, the Ḥaḍramī capital: "the king has made it a capital offense for camels so laden

²³ Pace Le Baron Bowen, "Ancient Trade Routes," p. 35; Groom, *Frankincense*, p. 153.

²⁴ Diodorus Siculus, *Bibliotheca Historica*, xix, 94: 5. On his source, see J. Hornblower, *Hieronymus of Cardia*. If this had been a statement by Diodorus himself, one would have taken it to mean that the Nabataeans received their goods at the northern end of the Red Sea and conveyed them from there to the Mediterranean.

²⁵ For an attractive solution to this problem, see A.F.L. Beeston, "Some Observations on Greek and Latin Data Relating to South Arabia," pp. 7 f.; cf. *id.*, "Pliny's Gebbanitae."

²⁶ Strabo, *Geography*, xvi, 4:4.

²⁷ *Ibid.*, xvi, 4:19. As noted by Groom, *Frankincense*, p. 243 n29, this does not appear to go back to Agatharchides.

to turn aside from the high road." From Shabwa it could only be sent on by the Gebbanitae, whose capital was Thomna, that is, the site known inscriptionally as *Tmn*²⁸, the capital of Qatabān.²⁸ From here the caravans proceeded to Gaza, the journey being divided into sixty-five stages with halts for camels. Taxes were paid to the Ḥaḍramī kings in Shabwa and to the Qatabānī kings in Thomna, but a host of priests, secretaries, guards, and attendants also had to have their cut, so that the expenses reached 688 denarii per camel even before Roman import duties were paid.²⁹ Pliny alludes to the overland route again in a passage on inland towns to which the south Arabians "bring down their perfumes for export," and he also knew that frankincense was transported through Minae territory "along one narrow track."³⁰ In the *Periplus*, too, we are informed that "all the frankincense produced in the country [the Ḥaḍramawt] is brought by camels to that place [Shabwa] to be stored," presumably for transport overland.³¹ But this is the sum total of our literary evidence on the overland route.

The evidence is noteworthy in two respects. First, it mentions only Arabian goods, primarily Ḥaḍramī frankincense: no Indian spices, Chinese silk, or East African ivory are being transported by caravan to Syria here (unless one wishes to read them into Hieronymus' unidentified spices). Second, there is no mention of the overland route after Pliny and/or the *Periplus* (depending on one's views on the date of the latter). The overland route, in short, would appear to have been of restricted use in terms of both products carried and period of time.

I shall come back to the absence of foreign imports from the overland route in the next section. As regards the Arabian goods carried, Eratosthenes identifies them as coming from the Ḥaḍramawt and Qatabān (Khatramōtis, Kittabania). They similarly come from the Ḥaḍramawt and Qatabān (Sobbotha, Thomna) in Juba. The *Periplus* only mentions the Ḥaḍramawt, possibly because this state had by then absorbed its Qatabānī neighbour.³² At all events, the Sabaeans (here and in what fol-

²⁸ Cf. *EF*², s.v. Katabān (Beeston). The Gebbanitae are unlikely to have been Qatabānīs (cf. Beeston, "Pliny's Gebbanitae"), but Pliny, or his source, clearly took them to be rulers of the Qatabānī capital.

²⁹ Pliny, *Natural History*, XII, 63 ff.

³⁰ *Ibid.*, VI, 154; XII, 54.

³¹ *Periplus*, §27.

³² Cf. W. F. Albright, "The Chronology of Ancient South Arabia in the Light of the

lows those of the southern kind) are only mentioned in connection with Artemidorus' drowsy caravaneers and Pliny's list of inland towns to which aromatics were sent for export. Further, the goods carried are frankincense, myrrh, and other aromatics in Hieronymus and Eratosthenes, but only frankincense in Pliny and the *Periplus*; and the latter two sources explicitly inform us that the route via Shabwa was fixed by the Ḥaḍramī kings. What this suggests is that the overland route was always associated particularly with the Ḥaḍramawt (with or without its Qatabānī neighbour), not with the Sabaeans; and this makes sense, given that the Ḥaḍramawt was the only source of Arabian frankincense, or at least the only one of any importance, thanks to its control of Zūfār.³³ The Ḥaḍramī kings were free to favour any route they wished, and by the time of Pliny and the *Periplus* it would seem that Ḥaḍramī frankincense (and apparently Ḥaḍramī frankincense alone) came north by caravan for the simple reason that the rulers of the Ḥaḍramawt decreed that this be so.³⁴

First Campaign of Excavation in Qataban," pp. 9 f. (Qatabān fell about 50 B.C.); Müller, *Weibrauch*, col. 726 (about A.D. 25). A much later date is proposed by J. Pirenne, *Le royaume sud-arabe de Qatabān et sa datation* (A.D. 250); and according to Beeston, all one can say for sure is that Qatabān ceases to be mentioned in the inscriptional material by the fourth century A.D. (*EP*, s.v. Qatabān).

³³ For the view that the frankincense-bearing area of ancient Arabia was the same as today, that is, Zūfār, see van Beek, "Frankincense and Myrrh," p. 72; *id.*, "Frankincense and Myrrh in Ancient South Arabia," pp. 141 f.; *id.*, "Ancient Frankincense-Producing Areas." According to Groom, *Frankincense*, pp. 112 ff., and J. Pirenne, "The Incense Port of Moscha (Khor Rori) in Dhofar," pp. 91 ff., it grew considerably further to the west in the past than it does today, and both have a good case. But Groom leaves the preeminence of Zūfār unshaken, and neither claims that it grew extensively to the west of the Ḥaḍramawt.

³⁴ *Pace* Müller and Groom. Müller conjectures that it was the Minaeans who kept the overland route going, the destruction of their kingdom in the first century B.C. being the cause of its decline (*Weibrauch*, col. 725). But this explanation does not account for the strong interest displayed in it by the Ḥaḍramī kings, or for the continued use of the route into the first century A.D. (although this can be queried, as will be seen). Groom, on the other hand, suggests that the overland route survived because the harvest cycle was such that the incense trade and the India trade could not be combined (*Frankincense*, pp. 143 ff.). That they could not be combined may well be true; but on the one hand, one would have expected the incense trade to have become maritime even before the Greeks began to sail to India; and on the other hand, the Greeks were quite willing to sail to south Arabia for the purchase of incense alone after the India trade had got going (cf. below, n49). This explanation is thus also unsatisfactory.

Why should they have favoured the overland route? As will be seen, the south Arabians were already capable of sailing in the Red Sea in the second century B.C., and for purposes of taxation the Ḥaḍramī kings could just as well have decreed that all frankincense must go through coastal Cane: later sultans of the area were to rule that all frankincense must go through coastal Zūfār.³⁵ The sea route may well have been hazardous, but then the overland trek from south Arabia to Syria was not easy, either. Caravan journeys in Arabia were arduous undertakings even in much later times, as every pilgrim knew, and the pirates with which the Red Sea was frequently infested always had their terrestrial counterparts.³⁶ Sailing from Cane (*Qn'*, the Ḥaḍramī port) to Berenice took only thirty days,³⁷ whereas it took the caravaneers sixty-five, seventy, or, according to an alternative interpretation, 120 to 130 days to get from Shabwa to Syria.³⁸ And the heart of every merchant must have bled at the expenditure of 688 denarii per camel on travel costs alone. In short, the overland route would seem to have owed its survival to the interests of kings rather than those of merchants. And if the Ḥaḍramī rulers enforced the use of the overland route, it was presumably because they were inland rulers allied to inland tribes, and because they did not want their goods to pass through straits controlled by their Sabaeen rivals.

But the point is that by the second century B.C. their Sabaeen rivals had discovered a rival source of frankincense. According to Agathar-

³⁵ Cf. Yāqūt, *Buldān*, III, 577, s.v. Zafār: "they gather it and carry it to Zafār, where the ruler takes his share. They cannot carry it elsewhere under any circumstances, and if he hears of someone who has carried it to some other town, he kills him."

³⁶ "And strangely to say, of these innumerable tribes an equal part are engaged in trade or live by brigandage" (Pliny, *Natural History*, VI, 162). It is not impossible that the overland route was sometimes safer than the sea route; but in view of the duration and cost of the overland route, it seems unlikely that merchants would choose whichever happened to be the more secure at the time (as suggested by Van Beek, "Frankincense and Myrrh in Ancient South Arabia," p. 148). The existence of pirates in the Red Sea is attested in both Pliny (*Natural History*, VI, 101) and the *Periplus* (§ 20), but both passages also show that pirates did not dissuade merchants from sailing, though they did make them take the precaution of manning their ships with archers, as described in Pliny.

³⁷ Pliny, *Natural History*, VI, 104. *Qn'* is modern Ḥiṣn al-Ghurāb, or more precisely a site on the isthmus connecting Ḥiṣn al-Ghurāb with the mainland (cf. A.F.L. Beeston, review of W. B. Huntingford, p. 356).

³⁸ Cf. Beeston, "Some Observations," pp. 8 f.

chides (c. 130 B.C.), the Sabaeans made use of rafts and leather boats for the transport of their goods;³⁹ and though he does not say from where to where, Artemidorus (c. 100 B.C.) took him to mean "from Ethiopia to Arabia." In Ethiopia (both in the modern sense and that of East Africa in general) large quantities of frankincense and myrrh were to be found, as the ancient Egyptians would appear to have discovered; and Artemidorus thus also knew the Sabaeans to be trading in aromatics of "both the local kind and that from Ethiopia."⁴⁰ By the first century A.D., African frankincense was as least as important as the Arabian variety, while African myrrh had already acquired priority.⁴¹ By the sixth century, African frankincense was the only variety a merchant such as Cosmas saw fit to mention. It still dominates the market today.⁴² In short, the Sabaean discovery drastically undermined the monopoly of the Ḥadramī suppliers.

The Sabaeans did not, of course, hand over their frankincense to the Ḥadramīs for transport overland via Shabwa.⁴³ The question is whether they sent it by land at all. Artemidorus' drowsy caravaneers certainly suggest that they did, as does Pliny's list of inland towns to which aromatics were sent, if less conclusively;⁴⁴ and Agatharchides' statement

³⁹ Agatharchides, § 101, in Photius, *Bibliothèque*, vii (previously edited with a Latin translation by C. Müller, *Geographi Graeci Minores*, i). For an annotated German translation, see D. Woelk, *Agatharchides von Knidos über das Rote Meer*. There is an alternative French translation of §§ 97-103 in Pirenne, *Qatabân*, pp. 82 ff., an English translation of §§ 86-103 by J. S. Hutchinson in Groom, *Frankincense*, pp. 68 ff., and an English translation of passages relating to the East African coast in G.W.B. Huntingford, tr., *The Periplus of the Erythraean Sea*, pp. 177 ff.

⁴⁰ Artemidorus in Strabo, *Geography*, xvi, 4, 19.

⁴¹ *Periplus*, §§8-12 (also translated in Groom, *Frankincense*, pp. 138 ff.); Dioscorides, *De Materia Medica*, i, 64 = J. Goodyer, tr., *The Greek Herbal of Dioscorides*, ed. R. T. Gunther, i, 77.

⁴² Cosmas Indicopleustes, *Topographie chrétienne*, ii, 49; cf. ii, 64. Groom, *Frankincense*, p. 135 (roughly two-thirds of the frankincense handled by Aden in 1875 came from Somali ports); Müller, *Weibrauch*, col. 730 (in 1972 about three-fifths of the world demand was met by Ethiopia).

⁴³ As Groom unthinkingly assumes (*Frankincense*, p. 147).

⁴⁴ Cf. above, nn27, 30. Artemidorus' caravaneers are mentioned in the middle of an account of the Sabaeans. Pliny is talking of the south Arabians at large, but he also says that it is the Sabaeans who are the best known of all Arabian tribes "because of their frankincense." B. Doe suggests that "Saba did not officially participate in the aromatics trade" ("The WD'B Formula and the Incense Trade," p. 41), but the Sabaeans are associated

that they made use of rafts and leather boats presumably means no more than what Artemidorus took it to mean, that is, between Africa and Arabia.⁴⁵ But Agatharchides also tells us that the Minaeans, Gerrheans, and others would unload their cargoes at an island opposite the Nabataean coast; or at least, this is what he appears to be saying.⁴⁶ In other words, Agatharchides suggests that though the Sabaeans themselves may have confined their maritime activities to crossings of the Red Sea, their distributors in the north had already taken to maritime transport by the second century B.C.⁴⁷ By the first century B.C., at any rate, there is no

with the incense trade time and again in the classical sources (cf. Müller, *Weibrauch*, cols. 711, 725); conceivably, the absence of the *wd'b* formula could be invoked in favour of the view that they did not trade much by land.

⁴⁵ Artemidorus in Strabo, *Geography*, xvi, 4:19. Cf. also *ibid.*, xvi, 4:4, where Eratosthenes mentions islands in the Red Sea that were used for the transport of merchandise "from one continent to the other."

⁴⁶ Agatharchides, § 87; also cited by Diodorus Siculus, *Bibliotheca*, iii, 42:5; and by Artemidorus in Strabo, *Geography*, xvi, 4:18. We are told that near the island of Phocae (corrupted to "a place called Nēssa" in Photius' excerpt) there is a promontory that extends to Petra and Palestine, and that the Minaeans, Gerrheans, and others bring down their cargoes to this (island or Palestine). The most natural reading of *eis gar tautēn* (in Diodorus; *eis bēn* in Photius and Artemidorus) is that it refers to the island, partly because it is the island, not Palestine, that Agatharchides wishes to give information about, and partly because he is not sure that his information is correct; he would hardly have found it necessary to add "as they say" (*bōs logos*, in both Photius and Diodorus) if he had been talking about the arrival of caravans in Palestine. Moreover, both *phortion* (load, especially that of a ship) and *katagō* (to go down, especially to the coast, from sea to land, or to bring a ship into harbour) suggest that the transport was maritime. In Woelk's translation this interpretation is explicit, and Müller reads the passage similarly (*Weibrauch*, col. 730; but the cargoes are here unloaded at the promontory, which is grammatically impossible, the promontory being neuter). The island in question was probably Tiran (Woelk, *Agatharchides*, p. 212).

⁴⁷ As distributors of Ḥaḍramī frankincense, the Gerrheans had to some extent taken to maritime transport in the Persian Gulf, too, about this time. They probably collected their frankincense by land (whatever route they may have taken), but on their return to Gerrha they would transport it by raft to Babylon and sail up the Euphrates (Aristobulus in Strabo, *Geography*, xvi, 3:3, where the apparent contradiction is easily resolved along these lines). As regards the Minaeans, Rhodokanakis would have it that a Minaean who shipped myrrh and calamus to Egypt is attested in the Gizeh inscription of 264 B.C. (N. Rhodokanakis, "Die Sarkophaginschrift von Gizeh"). But as Beeston points out, Rhodokanakis' rendering of the inscription makes a most implausible text for a sarcophagus. The linen cloth of the crucial line was either "of his *ky*," that is, of his mummy wrapping, or else "for his *sy*," that is, for his ship in the sense of funerary barge: either way the inscription fails to mention a ship on which the deceased transported his aromatics to Egypt (A.F.L.