

CHAPTER 6

Pepper in the Hills: Upland-Lowland Exchange and the Intensification of the Spice Trade

Kathleen Morrison

There is a longstanding history in South Asia of relations of exchange and interdependence between agriculturalists and peoples involved in the hunting of wild animals and the gathering of wild plants. These relationships, far from being an historically fixed and immutable, were instead marked by a high degree of variability and flexibility with specific groups of people altering their strategies in relation to ecological, demographic, and political imperatives. These points are not controversial—many scholars have described such relationships and have contributed significantly to our understanding of the tremendous diversity of South Asian prehistoric and historic subsistence strategies.

I would like to build from this literature in two ways. First of all, I would suggest that the strategies of contemporary forager-trader groups in South Asia are best viewed as the outcome of historically contingent processes, not merely as cultural-evolutionary throwbacks. Second, and more specifically, I will be concerned here to trace some of the changes and possible changes in the organization of foraging/trading groups in southwestern India coincident with the expansion¹ of the coastal spice trade and the increasing integration of this region into a world economy in the immediate precolonial and early colonial periods; that is, between about AD 1400 and 1700. Although the participation of South Indian “hill tribes” in regional and even international economies began much earlier than this (see introduction, above), I focus here on the early colonial and precolonial organization of foraging and trading and some of the relationships of foragers with larger-scale political entities. In so doing, I hope to illustrate the

dynamic nature of these marginalized groups and the long term evidence for economic integration and interdependence between foragers, peasant agriculturalists, states, and empires, in this part of the world.

Beyond the intrinsic historic interest of this long-term history, however, I highlight this evidence for the larger points it may illustrate about the operation of political and social power and the consequent creation of social and economic specialization. Inasmuch as such specialization may be a widespread outcome of both political and economic expansion and intensification, the creation of specialist economic and cultural forms concerns all social scientists and not solely specialists in the study of hunter-gatherers (Morrison 2001). Certainly the forager-traders discussed here developed their complex and changing life strategies under particular, contingent historical and environmental conditions, conditions which were in some sense unique but which were also sufficiently responsive to similar political and economic processes that we can draw some strong parallels between both process and outcome in southwest India and the Malay Peninsula. If gathering and hunting, and the people who practice these strategies, are not “out of” either history or cultural process, then anthropologists and others who study humans and their history will have to begin to integrate understandings of these strategies with more “mainstream” interests in political economy, agricultural ecology, exchange, and other approaches not usually associated with the study of foragers.

Finally, I briefly introduce the comparative case of fifteenth and sixteenth century Melaka, on the Malay Peninsula, a situation that shows certain structural parallels with that of western coastal India. Not only were both areas directly linked through networks of exchange and later through a common experience of Portuguese colonialism, but they also both developed relationships of interdependence and inequality between upland collectors of forest produce,

lowland agriculturalists, and coastal trade entrepôt. My description of Melaka is necessarily less well developed than my discussion of southwest India, given both limits of space and my own expertise. Nevertheless, this comparison is meant to point to similarities in both organization and in historical experience that may be of some value in integrating the diverse case studies in this volume.

Southwest coastal India

The southwest coast of India is set apart from much of the rest of the peninsula by both physiography and climate (Figure 6.1). Bounded by the Indian ocean on one side and the Sahaydris or Western Ghat mountains on the other, this region consists of montane evergreen and semi-evergreen tropical forests dissected by well-watered alluvial valleys edged by coastal swamps and occasional mangrove forests. The Ghats not only act as a rain shadow during the summer monsoon, ensuring a fairly high rainfall along their western slopes, but they also send down numerous small but navigable rivers to the coast. The Malabar coast, the primary (but not sole, cf. Subrahmanyam 1990) locus of spice production in India, is largely contained within the modern state of Kerala, where “backwater” transport by boat is still very important for integrating the relatively dispersed population (Stein 1982:120). Of the spices involved in expanding trade networks, the most important was pepper (*Piper nigrum*), indigenous to the region.

Further north, the Kanara and Konkan coasts boast a somewhat broader expanse of flat land between the coast and the mountains; this region is among the most productive rice-growing regions in India (Subrahmanyam 1984:437). These coasts are now divided between the

modern states of Karnataka, Goa, and Kerala. Natural harbors are relatively rare all along the western coast, and most port cities were actually located slightly inland, along rivers. The Ghats, relatively steep on the western approach but more gently sloping on the east, are traversed by a number of natural passes, themselves called ghats, which rather strictly circumscribe routes of movement from the coast across to the drier South Indian plateaus.

Forest dwellers and exchange: the Western Ghats

In India today, a number of “hill peoples” or “tribes”² subsist in the Malabar Ghats and the associated Nilgiri Hills (Hockings, ed. 1989, 1997) by hunting and collecting forest products for external markets, trading of those products, and sometimes also by wage labor. These groups include the Kadar, Paliyan, Karumba, and the Hill Pandaram (spellings and even names vary; these are from Morris 1982b; see papers in Lee and Daly, eds. 1999 for more ethnographic detail). Groups practicing swidden agriculture, forest collecting, trading, and even some wet rice agriculture include the Nayadi, Kannikar, Muthuvan, and Urali Ulladan (Morris 1982b:16 - 17), among others. In Sri Lanka, the well-known Veddas (Brow 1978; Seligman and Seligman 1911) also consist of a number of different groups more or less integrated into the dominant Sinhalese and Tamil agricultural economy. Anthropologists and archaeologists in South Asia have had to contend with a tradition of research in which “tribals” have been viewed as either cultural-evolutionary “fossils” or, similarly, as ideal types in the construction of hunter-gatherer models (cf. R.G. Fox 1969:139-40). More recently, anthropologists (e.g. Hockings 1985; Bird 1983; Bird-David 1992a; Stiles 1993; Zagarell 1997, Morrison this volume) have begun to stress the lack of physical isolation of “tribal” groups from caste society and the time depth of their integration with lowland agriculturalists. Many forest groups depend on lowland products, notably food grains, textiles, and iron, for their basic subsistence. Thus, exchange relations are not simply incidental, providing staple food items as well as technology.

It is probably fruitless to speculate on the precise origins of specific named ethnic groups of forager-traders known historically and ethnographically. Although the orthodox perception seems to be that contemporary foragers are descendants of an unbroken tradition dating back as

far as the Mesolithic, some scholars have suggested alternate routes by which groups could have moved into specialized collecting and trading. Hockings, for example, considers the case of refugees from caste society—marginalized groups who move into the forests to take up new opportunities and/or to escape intolerable situations in their homeland (1980, 1985). Such movements are not unknown, and Hockings (1985) suggests more specifically that the Roman³ market for pepper and cardamom may have opened up opportunities for marginal lowland groups. If this is correct, however, such groups may have also come into contact and perhaps competition with existing upland peoples.

Even if some upland groups represent refugees from the intensively cultivated lowlands, it is likely that other specialized forager-traders reliant on imported foodstuffs began as more generalized foragers and/or as swidden agriculturalists. I suggest here that several key periods can be identified in the move toward specialized foraging. The first of these is the Early Historic, when as-yet rather sketchy evidence points to significant changes in the occupation history of the uplands including the beginnings of large-scale modification of the vegetation, changes associated with good evidence for active networks of long-distance exchange. The second period, and the one on which I focus here, is the sixteenth and early seventeenth century, a period in which the options open to hill peoples became greatly reduced. In this latter period, the transition toward specialized foraging may have been responsive to two factors. The first relates to the demands of the spice trade and other, politically-based demands for forest produce. The second factor is more indirect but no less important, and this relates to the pressure on the forests from below created by expanding agriculture. Both the land use “push” and the political “pull” or demand for produce from below forced foragers and forager/agriculturalists into an

increasingly specialized and increasingly marginalized position as participants in a world market.

Long-Term occupational history of the Western Ghats

From very early on, certainly by the last few centuries BC, an extensive network of exchange stretched across the Indian Ocean, connecting, albeit indirectly, the Mediterranean with East Asia (Morrison 1997). In the corpus of Tamil Sangam poetry, dating to the first three or four centuries AD, there is mention of a coastal intra-Indian trade in pepper and honey, both forest products (Nilakanta Sastri 1975:110; Morris 1982b: 15). Indo-Roman trade also included such forest products as sandalwood, ivory, pepper, ginger, cardamom, and myrobalan (*Terminalia chebula* and *T. bellirica*) (Morris 1982b: 15), as well as other woods, aromatics, and dyes (Ray 1986:114). Finds of Roman coins are reported from both coastal and inland sites in southwest India (Nilakanta Sastri 1975:135; and see Begley and DePuma 1991; Cimino 1994; Morrison 1997). Thus, there is no doubt that pepper and other forest products had long been items of trade. While some of these forest products may have been collected by lowland traders or agriculturalists, the degree of specialized knowledge involved and the dispersion and seasonal availability of such products suggest instead that they were collected by upland groups at least partially specialized toward gathering and trading of forest produce.

Survey of the longer-term occupational history of the Ghats suggests that intensive human use of these mountains may have begun quite late. In a review of archaeological data from the Nilgiris, Noble (1989) concludes that these hills were not occupied prior to the first century AD. The earliest identifiable archaeological remains consist of megaliths of various

sorts, most containing iron. Zagarell (1997) describes these megaliths in some detail, concluding that their forms and distributions show evidence of extensive, long-term relationships with surrounding polities and societies (and see Zagarell 1994). Although dating of these features is uncertain, he generally accepts Leshnik's (1974) dates of the fourth through sixth century AD (Zagarell 1997:29) for the majority of these burial/memorial features.

Another form of information on human use of the Ghat forests is provided by paleoenvironmental analyses that track, among other things, human impact on vegetation, soils, and landforms. Among the most important of these for this purposes of this paper are analyses of pollen data conducted by Caratini et al. (1990-91). These data derive from a pollen core taken from a buried sediment profile near Vazhavatta, in the Wayanad District of northern Kerala, at about 760 meters (2493 feet) elevation. This profile contains information on forest composition between about AD 200 and 700 (Caratini et al. 1990-91:126). Although the climax vegetation of this area is wet evergreen forest, the landscape surrounding Caratini et al.'s Wayanad site is now under permanent cultivation of wet rice along with plantations of coffee and *Hevea*. Pollen data indicate that between the third and eighth centuries AD there was no significant compositional change in the forest, nor was there any indication of a regime of intensive agriculture. However, some pressure on the forest was noted in that Pteridophyte diversity declined steady, a pattern they attribute to "a reduction in the forest on which the majority of ferns are dependent" (Caratini et al. 1990-91:137). Further, taxa specific to forest openings or margins were common in the core, suggesting that clearing of the forest for cultivation had already been established.

A second paleoenvironmental study from the Ghat forests (540-600 m above msl) near Bhatkal (Mariotti and Peterschmitt 1994), although limited in spatial scale, also provides powerful evidence for anthropogenic vegetation change by the first century AD. In this study,

stable carbon isotope ratios on soil organic matter indicate destruction of the evergreen forest margins and creation of an anthropic savanna around the first few centuries BC/AD. While this finding is in broad agreement with other studies reporting a near-universal pattern of savanna formation following earlier forest communities (see, especially Archer 1990), unfortunately the limited spatial scope of this study (only a 350 m long transect across the ecotone was analyzed, Marriotti and Peterschmitt 1994:475) makes it difficult to draw broad conclusions about the overall history of the Ghat forests.

Thus, there is good evidence to suggest at least small-scale occupation of the Ghat forests of a nature sufficient to induce modest vegetation change by the first few centuries AD and limited though striking evidence for total destruction of the forest margins and the creation of an upland savanna, a more open vegetation form that may have been entirely artifactual. This limited evidence does not, of course, mean that the Ghats were not used prior to the first century nor does it necessarily indicate that these hills did not support small groups of mobile foragers prior to this time. Much more archaeological research, in particular, needs to be carried out in this area before we can say that the lack of earlier archaeological remains in the uplands represents definitive evidence for late colonization of the Ghats.

Thus, while it is not possible at present to precisely describe the mix of subsistence strategies employed by Ghat peoples before about AD 1800, there is sufficient evidence to indicate that swidden agriculture was practiced by many groups from about the first few centuries AD. At about that same time, textual sources indicate that Ghat forest products were involved in long distance trade networks. I suggest here that relations of interdependence that were probably in place by the first half of the first millennium AD formed the basis for the increased pressures on forest dwellers in the later precolonial and early colonial periods.

Understanding this later period requires consideration of political, ecological, and economic conditions in southern India; these are very briefly sketched below.

Coastal entrepotes and Indian Ocean trade: Malabar and Kanara

When the Portuguese first arrived on the southwest coast of India in AD 1498, the Malabar port city of Calicut was one of the most important trade centers in the region, largely as the result of its (not uncontested) political predominance over neighboring coastal polities. As the “first among equals,” however, the ruler of Calicut, the Zamorin, was neither the ruler of an extensive territory nor was he able to control his coastal neighbors that included the independent states of Cochin to the south and Cannanore to the north (Bouchon 1988). Indeed, the extent of Calicut’s direct political control did not include much of its forested, mountainous hinterland (Dale 1980:15). Permanent settlement in the interior was sparse, and restricted largely to riverine areas. Building on a long tradition of local self-government in South India (Stein 1982; Frykenberg 1979), “chiefs” or other local leaders were often held accountable to larger-scale political entities for tribute, taxes, and control within their area of influence.

With the arrival of the Portuguese and the establishment of their trading empire along the coast (Bouchon 1988; Pearson 1981; Subrahmanyam 1993, in press), Calicut’s importance as a node in the regional exchange system was eclipsed by that of Goa (the seat of Portuguese power and one of their few territorial possessions) and, to a lesser extent, of Cochin. The position of Goa *vis-à-vis* the export and food producing hinterlands of the west coast was, if anything, even more precarious than that of Calicut, underlining the importance of cheap coastal transportation in maintaining this network of interdependence in foodstuffs and export items. As noted, the

Malabar coast was the primary locus of pepper gathering and production, as well as of many other forest products including ginger, cardamom, honey and wax, various gums and resins, dyes and scented woods, and medicinal and poisonous plants (Morris 1982b).

Further north, the wider Kanara coast provided a large portion of the rice consumed further south in the Malabar region; much of the Kanara coast was under the control of the territorially extensive inland Vijayanagara empire. Goa lies even further north, on the Konkan coast, and not only imported Kanara rice (Mathew 1983; Subrahmanyam 1990) but also had to bring in pepper and other Malabar products up the coast for exchange. Thus, Goa can be seen as a classical port of trade (cf. Polanyi et al. 1957), albeit one controlled by a colonial power. Similarly, other coastal cities such as Cannanore, Calicut, and Cochin, also prospered commercially by the bulk storage and marketing of products neither manufactured on site nor procured in the immediate locality. Even discounting the important role such ports played in the redistribution of goods from further east and west, the local products such as pepper they helped distribute came, not from urban hinterlands by and large, but from the Ghat uplands.

Understanding the role of the coastal entrepôt cities as both centers of consumption and as pivots in the larger sphere of exchange is important, inasmuch as increased demand for forest products in the late precolonial and early colonial periods cannot be dissociated from economic reorganization in the coastal lowlands. Lowland politics and economics ramified into the uplands, as discussed in more detail below. Most directly, the demand for pepper and other forest products and upland crops was accelerated by direct Portuguese purchases and forcible extractions as well as by ongoing extra-Portuguese trade. However, the pressure on the forests also had ramifications for lowland agriculturalists, ramifications involving changes in the organization of production and distribution of food grains in the lowlands, most notably of rice.

Combined with increased exports of rice to coastal cities, changes in the organization of production must have been widespread in both uplands and lowlands.

Portuguese involvement in the movement of rice took three forms. The first was the demand for tribute, in order to supply Portuguese forts and settlements. These demands fell almost exclusively on the kingdoms of the Kanara coast,⁴ particularly Honawar, Bhatkal, and Basrur (Subrahmanyam 1984:445; Desai, et al. 1981). The amount of rice involved was considerable; convoys of several hundred small ships, often under Portuguese guard (Pearson 1981:77) sailed up the coast to Goa. In the 1570s and 1580s three to four convoys per year to Goa alone are reported (Pearson 1981:77). The second form of Portuguese involvement stemmed from the *cartaz*, or pass system, for local as well as long distance trade, so that no ocean transport whatsoever could officially take place without Portuguese approval and taxation. The third form of involvement in the rice trade may be seen as something of an unintended consequence to other forms of exchange and extraction, this being the escalation in demand for rice and other staples created by Portuguese extractions of pepper and similar products from the foothills and mountains of the Ghats. As discussed below, the shipment of staples to the forested interior was ultimately necessary to support the foragers and cultivators of spices, among others.

One striking effect of Portuguese involvement in southern India was the shift in the area around Goa from a grain surplus to a grain deficit. Before the arrival of the Portuguese and their efforts to shift the focus of trade from Calicut to Goa, rice was imported from the Goan hinterland and from “Vijayanagara” (Mathew 1983:20, presumably this refers to the Konkan coast regions under Vijayanagara suzerainty) to Malabar cities. After the establishment of Portuguese Goa, the city became almost entirely dependent upon imported foodstuffs. The difference may not relate entirely to increased population in the cities, but rather to the severance

of relations in the Portuguese period with its rural hinterland (Pearson 1981:76-8).⁵ Numerous references to Goa's inability to feed itself exist in the literature (Subrahmanyam 1984:434; Pearson 1981:77), as indeed to the similar import of rice by precolonial Calicut (Danvers 1966:85; Digby 1982:147). Not all of Goa and the Malabar coast's foodstuffs came from the Kanara coast; a large portion also arrived from Bengal (Pearson 1981) and Orissa (Foster 1968:26, 44) on the east coast of India. As I discuss below, the expansion and intensification of lowland agriculture had a significant contributing effect on changes in the opportunities of upland peoples.

Expansion and intensification: upland-lowland links

While it appears, then, that frameworks for exchange and economic interdependence were in place long before European involvement in South (and Southeast) Asia, it is certainly the case that the scale of exchange underwent a rapid expansion in the early colonial period.

Historians of both Europe and South Asia are in broad agreement that the volume of pepper, as well of other products⁶ such as ginger and cardamom increased significantly in the sixteenth century. European pepper consumption doubled during the 1500s (Diffie and Winius 1977:318; Boxer 1969:59); Braudel (1972:550) estimates that between 1554 and 1564 the flow of spices into the Mediterranean through the Red Sea route alone was on the order of 100 to 200,000 kilograms per year, most of it pepper. This quantity approximates that of the pre-Portuguese period, but does not include any of the spices brought around the Cape by the Portuguese at the height of their control. From the Indian perspective, Mathew (1983:212-3) estimates that pepper production jumped 200 to 275 percent between 1515 and 1607. Wallerstein's contention (1974), then, that the impact of the increased pepper demand on Asia was "minimal" seems unrealistic at best, based perhaps on a notion of the importance of pepper to the average European rather than to foragers or to swidden cultivators (and see Chaudhuri 1985; A. Reid 1993a).

Luxury goods—items of relatively small size and high value, including most spices—moved from one end of the network to the other, while the movement of bulkier and more perishable goods formed smaller but sometimes still impressively large circuits within the larger system (Mathew 1983:19). Although historical attention has traditionally been focused on the "small but trifling" (Wallerstein 1974) trade in high-value items, there has been an increasing awareness of the important role of more "utilitarian" trade goods such as rice (Subrahmanyam

1984, 1990) and coarse cotton textiles (Ramaswamy 1985; Digby 1982). On the one hand, these two categories of trade good create distinct organizational problems and prospects for political control. European colonial powers such as the Portuguese in India adopted a program of regulation and taxation of the existing “country trade” (cf. J.H. Parry 1963), or local trade in utilitarian goods, in order to finance their costly involvement in the long distance exchange of spices and other “luxury” goods. The colonial administration of the latter was organized quite differently—in the case of the Portuguese, the spice trade was considered to be the exclusive right of a centralized crown monopoly (Boxer 1969; Danvers 1966; Subrahmanyam 1993)—although certainly this represented more an ideal than a reality.

From the perspective of indigenous producers, however, distinctions between “luxuries” and “utilitarian” commodities and between the structure of international and interregional trade in each were largely academic. The productive demands placed on peasant agriculturalists, gatherers of forest products, and export-oriented swidden cultivators were all structured through networks of local power and authority. The expansion and restructuring of such demands promoted changes in the opportunities and strategies of different collectors and producers and fostered relationships of economic interdependence that survive, in altered form, into the present. The structure of intensive wet rice agriculture was predicated on the existence of markets for surplus; the basic subsistence needs of specialized foragers and possibly swidden spice cultivators were met through the mobilization of this surplus. The implications of this accelerated demand for spices in India and beyond probably also meant an accelerated demand for rice and other subsistence goods that would have been felt by intensive agriculturalists as far afield as Java and Bengal.

If demands for forest products were on the rise in the sixteenth century, it is also the case that areas under forests were declining. Throughout the south, both inscriptional and archaeological evidence from at least the tenth century AD has as a constant theme the expansion of agriculture at the expense of forests (e.g. Stein 1980, 1982). What limited palaeoenvironmental data exist (Morrison 1994a) tends to confirm this pattern. In the Nilgiris, pressure on land was not simply the result of lowland agriculturalists clearing forests in the foothills. There, Hockings has documented the expansion of the Badagas (or “northerners,” Hockings 1980, see Zagarell this volume) a refugee group supposedly fleeing the destruction of the Vijayanagara empire in the late sixteenth century. The Badagas were accommodated by various hill groups and, according to the soil evidence (von Lengerke and Blasco 1989:44) established permanent fields about three or four hundred years ago. Thus, forest dwellers have come under increasing pressure as the result of local agricultural land use practices as well as from demands for forest produce.

Pressure on forests was not entirely a by-product of expanding agriculture, however. Vijayanagara kings as well as other rulers sometimes adopted specific policies of forest clearance for the express purpose of diminishing the potential threat forest-dwellers posed to agriculture. In the *Amuktamalyada*, a sixteenth-century compilation of political maxims attributed to the expansionist Vijayanagara king Krishna Deva Raya, the clearance of forests is presented as the only way to control the activities of robbers (S. Guha 1999:49). The text advises kings (Saraswati 1926:65), "Increase the forests that are near your frontier fortresses (Gadi desa) and destroy those all those which are in the middle of your territory. Then alone you will not have trouble from robbers!" Deliberate forest removal, also advocated by later rulers including the British (S. Guha 199), probably rarely involved state-sponsored deforestation that

would have been extremely expensive and time-consuming, even if aided by fire. Instead, forests could be cleared and land claimed for agriculture through the labor of agriculturalists; from at least the tenth century inscriptions note the existence of tax incentives for the clearance of forests and the establishment of new fields and new irrigation facilities such as reservoirs (e.g. Heitzman 1999). Land-clearance incentives are extremely common in the Vijayanagara period, accelerating in the sixteenth century (Morrison 1995).

The trade in forest products: structures of political authority beyond the coast

Throughout the massive expansion of the spice trade, connections between primary producers and collectors and colonial or indigenous governments benefiting from forest produce were generally indirect. Intermediate brokers or “secondary traders” (cf. Dunn 1975:99) forged relations of dominance and indebtedness with forest peoples; these brokers then dealt with more proximate political authorities. The contractual system depended on keeping foragers constantly in debt and personally dependent on the broker, who also acted as the supplier of subsistence goods. Brokers were either independent entrepreneurs, or more often, it seems, agents or contractors of governments. Many precolonial South Indian polities used tax “farmers” as collectors rather than directly employing government functionaries (Sinopoli and Morrison 1996). These tax farmers bid for the privilege of collecting revenue and then had to recoup the cost of the bid through direct collections. Middleman broker positions may have been similarly contracted.

Describing the system somewhat later was Francis Buchanan, who in 1800 set out on a trip throughout southern India for the express purpose of describing the agriculture of the

country, including the cultivation and preparation of the “valuable commodities” pepper, sandalwood, cardamom, and cotton (Buchanan 1988 [1806]: ix-x) described a contractual system in place between the Kadar and local authorities in the Anamalai Hills (southern Nilgiris).

Buchanan explains (1988 [1806]: 334, italics in the original):

Here is a person called the *Malaya-pudy*, or *hill-village man*. He rents the exclusive privilege of collecting drugs in the hills south from *Ani-malaya*. These are collected for him by a hill people named *Cadar*, of who, among the hills two day’s journey hence, there is a village of 13 houses. The renter has there a small house, to which he occasionally goes to receive the drugs the Cadar have collected and he brings them home on oxen. The men only work for him, and each daily receives in advance four *Puddies* of rice...

These “Cadar,” Buchanan continued (1988 [1806]: 338), “are a rude tribe inhabiting the hills in this neighborhood, and speaking dialect that differs only in accent from the *Tamul*....They rear no domestic animals, nor cultivate anything whatever; but their clothing is as good as that of the neighboring peasantry.” The renter obtained his concession from Tipu Sultan’s government. Among the products collected were wild ginger and turmeric, honey and wax, several dyes and resins, and ivory. The wild pepper was said to be of bad quality. The renter was also noted to trade with several other groups, who provide cardamom, which is not cultivated. These other groups were said to practice (swidden) agriculture (1988 [1806]:336-7).

The Portuguese, too, used this system of intermediaries for obtaining forest products. Pepper, ginger, cardamom, and cinnamon (in Sri Lanka) were all procured via “native intermediaries of the *Sudra* caste” (Diffie and Winius 1977:319). This label does not clearly identify the intermediaries, except to suggest that they were probably not “tribal” peoples, often

considered outcastes. Goods were purchased by the Portuguese on fixed-price contracts with a go-between, much as they are today. The Portuguese did prefer, however, to induce local rulers to supply them with spices at an agreed-upon price (Bouchon 1988; Danvers 1966; Mathew 1983). Presumably, then, these rulers employed intermediaries. Pearson (1981:28) notes that the Portuguese had no direct control over pepper-producing areas and thus were dependent upon coastal rajas and local merchants for their supplies. As an empirical pattern, then, we see with increasing scope of political authority an increasing physical distance from the source of the product, an increased concentration in stored goods, an increase in settlement nucleation, and an increase in the status of landholding groups. Along parts of Kanara coastal strip, for example, Brahmins were the major landowners in the sixteenth and seventeenth centuries. Further inland, landholding was largely in the hands of the *Bant*, a “clean” *Sudra* caste (Subrahmanyam 1984:439). Still further inland were the tribal swidden farmers and hunter-gatherers. This social ordering corresponded well with the pyramidal structure of power relations stretching from the forests to the inland riverine towns and to the coastal cities.

If this picture seems to be one of the exploitation of timid forest-dwellers by outsiders—a picture not altogether inaccurate for some contemporary contexts—a closer historical look at political relations shows a more complex situation. As far back as we can trace, forest peoples have always been integrated in some way into larger political structures. Kings of the South Indian Chola empire, between the ninth and thirteenth centuries AD, demanded tribute in forest products from *nadus*, or territorial units located in the Ghats (Hockings 1985:115; see also Stein 1982). R.G. Fox (1969:144) cites early reports that the Kadar of Kerala made periodic visits to Tripura to carry tribute and to exchange “gathered” items such as tame elephants, wild honey, cardamom, and other forest products for rice, iron, chilies, and opium.

Tribute could also be exacted through local leaders, rather than directly from producers or collectors, a method also used to collect taxes from agriculturalists. Morris (1982b:23) describes a copper plate inscription describing a contract between the local king of Attingal and the Hill Pandaram, appointing the latter as “tenants” of the forest, in return for which the *muppan*, or chief, should bring certain forest products to the capital every year. At these visits, cloth and other “gifts” would be given. In this case the local king was subject in turn to the Raja of Travancore, to whom he had to pay tribute. As noted in the introduction to South Asia, above, both Murthy's (1994) historical work on the Chenchus and S. Guha's (1999) study of the Kolis and Bhils of western India reveal not only potential independent bases of power of these groups, but also the intermittent establishment of independent polities, and the ongoing engagement of "tribal" leaders and warriors with lowland polities.

Although I outline here an account of the oppression and immiseration of some Ghat residents, and their creation as specialized forager-traders, it is also the case that other upland peoples referred to as tribes were able to create for themselves positions of power and domination, especially as bandits preying on settled agriculturalists, the *dacoits* and "criminal tribes" of the British documents. Tribal kingdoms, if that is not a contradiction in terms, flourished in the interstices of Vijayanagara and, later, British, Mysore, and Maratha rule.

What, then were the effects of the expansion of the spice trade in and after the sixteenth century on “hill peoples” of the Ghats? Clearly, the effects were variable, but while it is clear that some "tribals" were able to restyle themselves as "Rajputs" and establish kingdoms or at least elicit fear from lowlanders, many others became, in Sumit Guha's (1999) characterization, a landless proletariat. In trying to outline the processes by which this took place, it may be helpful

to contextual political and economic dynamics with some ecological consideration of Ghat forest products.

Ecological contexts: pepper and cardamom

Although the existence of a pepper trade is well established by at least the first century AD, pepper cultivation seems to have been rare until about the sixteenth century⁷. Here I briefly discuss the growing conditions of pepper and cardamom, two of the most important of the Ghat forest products. Black pepper (*Piper nigrum*) is a perennial climbing plant cultivated in India today in monocrop plantations and in mixed areca nut palm/pepper associations. Pepper also still grows wild in the Ghat forests. It has a very limited natural distribution, being confined to the Malabar region (Aiyer 1980:269). It prospers in partly shaded locations from sea level to 1200 meters (4000 feet), and in areas with 152 cm (60 inches) or more of rain a year. Pepper does not do well in sandy or alluvial soils of the sort favored by coconut palms (Aiyer 1980:270). Because pepper is a climbing vine, it requires standards to climb on; thus it is often intercropped with trees or trained onto poles. It begins to bear four years after planting (Aiyer 1980:275).

Cultivation of pepper in mid-elevation, mixed-crop swidden field seems to be most appropriate for the requirements of the plant. Its drainage needs often result in its growth on hill slopes (Aiyer 1980:269). In modern varieties, the harvest time falls between February and March (Aiyer 1980:276), January to March in Sumatra (Hill 1969:37), but wild strains usually have fruit at all stages of maturity on the vine at any given time. Thus, harvesting (or collecting) is an ongoing process. Harvesting involves cutting off branches of the plant bearing ripe fruit,

threshing the fruit from the vine, and about six days of sun-drying (Aiyer 1980:277). Today pepper harvesting is done with the aid of ladders (as Buchanan also notes for the early seventeenth century; 1988 [1806]). The dangers of collecting are thus evocative of the dangers involved in honey collection among contemporary foraging groups such as the Hill Pandaram (Morris 1982b; see also Demmer 1997).

The scheduling demands of pepper cultivation and particularly, of pepper collection, are of particular interest. According to Buchanan (1988 [1806]:334), dry rice in the Anamalai region would have been harvested at about the same time as cultivated pepper. Thus there would have been conflict in scheduling and labor demands involved in these different activities. Subrahmanyam (1990:66) notes that in later sixteenth-century Portuguese Cochin, “an important point on the annual calendar was the arrival in March of the first pepper-laden boats from the ‘Serra,’” or mountains. Thus, demands of labor and demands of scheduling for grain production and pepper production (and even more for pepper collection) had to be balanced.

Cardamom (*Elettaria cardomom*) has a more limited range than pepper, occurring between 760 and 1525 meters (2500-5000 feet) in elevation (J.W. Parry 1962). Cardamom does not produce well in the lower, more deciduous Ghat forests, where leaf-fall has the effect of shortening the flowering season (Sahadevan 1965:9). Cardamom prefers a slightly higher rainfall and cooler temperature range than pepper, as reflected in its occurrence at higher elevations. In addition, cardamom prefers a relatively deep shade (Aiyer 1980:296), and while the depth of the soil is apparently not very important, the plants require “a well-developed vegetable mulch” (Sahadevan 1965:10) like that found in the forest floor. Cardamom is today grown as a plantation crop, in mixed associations with areca and coffee, although Sahadevan (1965:21) asserts that the actual cultivation of cardamom is not more than two hundred years

old. Swidden plots containing cardamom are not unknown (Sahadevan 1965:21); these may be placed along watercourses and in other damp situations. Wild stands are subject to varying degree of management, as described by Aiyer (1980:297):

...in this the natural growth of cardamoms as an undergrowth in the favorable forest zones is aided in varying degrees by actual cultivation; the latter ranges from conditions where cardamom is wholly a forest product and practically grows under wild conditions, up to conditions where it approximates closely to systematic cultivation, except for the fact that it is a temporary and shifting one. Areas are abandoned and then allowed to revert to jungle after a few years of bearing and then a new area is taken up for similar cultivation.

Cardamom bears four to five years after sowing, and its harvest characteristics are similar to those of pepper. The picking of cardamom, is, however, an even more skilled task, since the joint must stay attached to the pod and the latter must be a precise stage of maturity (Aiyer 1980:302). If the pods are picked too green, they will shrivel upon drying, if too ripe, they will shatter. Aiyer notes that the clumps of plants need to be visited every week to ten days in order to gather the ripe pods (1980:302). Because the harvest season is more or less continuous, specialized indoor drying facilities are often necessary in order to properly dry the material during the rainy season (Aiyer 1980:303; Sahadevan 1965:18). Competition from elephants, birds, squirrels, and rats is also a problem (Aiyer 1980:308).

Changing patterns: economic strategies and relations of power

While reconstruction of subsistence is still far from clear, it seems that by the beginning of the sixteenth century there existed in upland southwest India a complex mosaic of practices which included swidden agriculture, gathering of forest products for trade with lowland groups, and no doubt gathering and hunting for subsistence as well. There are hints of the presence of specialized foragers in inscriptions predating European documents, but certainly by the time documentary sources become abundant from the sixteenth century onwards, there are clear indications of the presence of named groups engaged in specialized collection of forest products for exchange, as well as subsistence activities that included agriculture, gathering, and hunting.

Both the expansion of the spice trade and increasing pressure on forests from the sixteenth century on (accelerating thereafter) led to transformations in upland economies and political ecologies. Several different options may have been available to upland groups faced with pressures on land and demands for produce. One such option was, evidently, to begin producing rather than simply collecting pepper. Pepper growers, then, concentrated on their agricultural plots and the scheduling demands of those plots almost certainly limited the spatial scale of their gathering and hunting. Morris (1982b:63) notes in this regard that the more sedentary Hill Pandaram who have made a commitment to their swidden fields can make only daily rather than overnight foraging trips. It would be helpful to know how much of the pepper that made its way to the coast was cultivated and how much was simply collected; it seems reasonable to assume that both wild and cultivated pepper were in circulation, implying a variety of strategies for its procurement.

An alternative strategy available to groups with knowledge of forest resources would be to abandon cultivation as a major subsistence component and become specialized forager-traders, collecting forest products of the higher elevations, such cardamom with its rather stringent scheduling demands for harvesting.⁸ These groups would have had to abandon cultivation as a primary subsistence activity, becoming highly specialized forager-traders, collecting ginger, cardamom, and other forest products. Although this paper has concentrated on political and economic contexts and I have not been able here to consider larger questions of the cultural integration of forager-traders with others (e.g. Bird 1983; Bird-David 1992a, 1992b; Gardner 1985, 1991, 1993; papers in Lee and Daly, eds. 1999 and Hockings, ed. 1989, 1992), ethnographic descriptions of some South Indian foragers emphasize other kinds of specialist roles taken by upland hunter-gatherers, including sorcery and wage labor. It is difficult to say to what extent competition for land at lower elevations (where swidden plots of pepper were presumably appearing) would provide the “push” for the adoption of this strategy, and to what extent scheduling consideration would have come into play.

The Malay Peninsula: Melaka and its hinterland

It is possible to isolate some geographic similarities between southwest India and parts of Southeast Asia, including the Malay Peninsula. Not only are broad ecological parameters (rainfall, vegetation) similar,⁹ being subject in both cases to the same monsoonal circulation system, but patterns of transportation via coastal water routes and inland rivers can also be compared, constrained as they are by a broadly similar topography. Distributions of human settlement along these water routes also show some parallels (Ooi 1963; Bronson 1977). Like the Malabar coast, the west coast of the Malay Peninsula is fringed with mangrove forests and swamps; coastal fishing settlements have been located in both places for a long time, although neither are archaeologically well studied. Further inland are extensive tropical forests of limited suitability for intensive wet rice agriculture (Glover 1979:172; Peacock 1979:200), but possessing a number of valued forest products. Large settlements, as a rule, are restricted to coastal and near-coastal situations.

The Malay Peninsula hangs down from the Southeast Asian mainland, roughly paralleling the long, northwest-southeast oriented island of Sumatra. This alignment creates the narrow strait of Melaka, a marine passage providing one route of access to the South China Sea (Figure 7.1). The city of Melaka, discussed below, was established along these straits; its position in the Indian Ocean trade of the fifteenth to seventeenth centuries as well as its relation to its hinterland, including upland forager-traders, can be broadly compared to coastal southwest India at about the same time.

Coastal entrepôts and Indian Ocean Trade: Melaka

The position of the coastal city of Melaka is in many ways similar to that of Goa or Calicut, even to its conquest by the Portuguese in the early sixteenth century. Originally a small fishing village on the west coast of the Malay Peninsula, by the fifteenth century Melaka grew to become an important trade emporium and the capital of a principality controlling both sides of the straits of Melaka (Ryan 1976). While the Portuguese conquest of Melaka in 1511 did provide the impetus for the dissolution of the Sultanate of Melaka into smaller successor states (Ryan 1976; Subrahmanyam 1993), as in India it is not clear that this political conquest significantly altered power relations in the interior.

The importance of Melaka in Asian long distance trade networks may be related as much to its strategic location on the narrow straits as to its political strivings. Well known as the “place where the monsoons meet,” Melaka was in an excellent position to serve as a port of transshipment and a center of warehousing (Ryan 1976:2):

Ships sailing from China would travel southward on the northeast monsoon while from India ships would come east with the southwest winds. When the monsoon changed, the ship would then be able to make the southern journey. Thus the Malay peninsula and the northwest coast of Borneo were in advantageous positions to provide landing places for those who were either making the complete journey from India to China and who were waiting for the monsoon to change, or those who were... meeting fellow traders at this ‘half-way house.’

Besides the seasonal constraints on travel, many of the products traded in South and Southeast Asia were only available at certain times of year, these not necessary congruent with

shipping schedules. In addition, different routes favored different types of ships, particularly in the Red Sea and Persian Gulf, creating a pattern of large-scale storage and of transshipment around certain ports. Thus, the bulking of trade goods was one of the chief functions of these coastal entrepôts (Boxer 1969:40-43).

Like Goa, Melaka was reliant upon imported foodstuffs, chiefly from Java (Anderson and Vorster 1983:439-40; Reid 1993; Schrieke 1955; Subrahmanyam 1993), but also from Siam (Anderson and Vorster 1983:440), Sumatra (Ryan 1976:17), Pegu (Wheatley 1961:316), and elsewhere. Unlike Goa, however, the agricultural possibilities of the Melakan hinterland appear to have been quite limited. Wheatley (1961:311-12) suggests that the alluvial soil near the city was too saline for rice paddies, noting that sago was the staple food. The infertility of the soil near Melaka was noted by the Chinese traveler Ma-Huan in 1451 (cited in Wheatley 1961:321). Anderson and Vorster (1983:442, 454) make a convincing case for the re-export of much of the imported food to the hinterland of Melaka in order to support groups carrying out specialized extractive activities there. A similar impression arises from comparison of the volume of rice that was flowing into Goa and Portuguese-controlled Cochin with the population sizes of those cities (Pearson 1981).

The Malay Peninsula is not, however, without marketable resources. The suite of tropical products often termed 'minor forest products' (that is, excluding most bulk woods, Morris 1982b; Dunn 1975) represented valuable commodities in the world market. These collected products include rattans and canes, bamboo, palms for food and thatch, incense woods, ebony, tanning and dyeing plants and woods, various gums, oils, and resins, medicinal and poisonous plants, spices, animal products, and such minerals as tin and gold (Dunn 1975:87-90, and see Junker, this volume). Unlike the pepper of Malabar, it is difficult to point to a single

product as being of overwhelming importance, but the specialized knowledge of particular sets of resources and possession of strategies and skills for their effective exploitation certainly are common to both South and Southeast Asian foragers.

In a more structural sense, the conflicts between gathering for export and the collection and/or production of food, as well as the specific structures of political power, seem to have encouraged a situation of dependence for traded staples, at least among some upland groups, in both instances, as discussed below. Just as some of the diverse ethnic and linguistic groups classed under the collective label of “hill tribes” (von Furer-Haimendorf 1985) filled the role of specialized forager-traders in the Malabar hinterland, so too did various groups known as *Orang Asli* in the forests of the Malay peninsula (Anderson and Vorster 1983:447-9; Dunn 1975; Schebesta 1973; Junker, Fix, this volume). This collective term refers to a variety of upland peoples who appear to have had quite flexible subsistence economies that included swidden cultivation, gathering, hunting, and trade. The term *Orang Laut* was used to refer to coastal collectors, who also served as “cultural-ecological specialists” (Anderson and Vorster 1983) in this complex political economy.

Land behind Melaka

While the specific demand for pepper was not a major factor on the Malay Peninsula (pepper production was adopted in Sumatra and several other places by the end of the sixteenth century), other forest products may have played similar roles. It has been suggested in the literature (Ooi 1963:103) that some contemporary Malay foragers were “pushed” into the forest by advancing agriculture, although Fix (this volume) outlines the compelling argument against this view. In general, Orang Asli groups evince the same broad and diverse range of economic strategies and variations in the degree of integration into the dominant economy that South Asian foragers do. These strategies include gathering for subsistence and export, fishing, hunting, farming, and wage labor (Dunn 1975:42, 80; Fix, this volume). Like South Asian “hill tribes,” specialized forager-traders of the Malay Peninsula are largely dependant upon external exchange and the demands of foreign markets (Schebesta 1973). Many Orang Asli groups now cultivate upland rice, and there is every reason to believe that economic strategies in the past were equally flexible. However, periods of high demand for forest products may have necessitated the reorganization of subsistence; as Anderson and Vorster (1983:448) point out, “...when demand was high for forest products, collection activities must have reduced the attention given to subsistence activities.” Spatial separation between swidden plots and gathering locales would have created scheduling conflicts, as in southern India. Again, some of the specific resources of the Malay Peninsula, such as tin, would have been of value to its collectors only as objects for exchange. Dunn (1975:101, and see Junker, this volume) also notes that the extraordinary degree of species diversity and the patchy species distribution in the tropical forest, and thus the specificity of local environmental knowledge required, locks a group into a particular area,

greatly reducing their mobility and thus their subsistence options. One could just as easily conceive of such specialized knowledge as locking others out of an easy transition to specialized gathering.

The apparent inability of current South Asian forager to exist as “pure” hunter-gatherers (R.G. Fox 1969:142) may be echoed in the wartime experiences of the Orang Asli (but see Junker, this volume). During the Japanese occupation, some of these groups dispersed into the forest. Dunn (1975:85) writes, “Subsistence in the forests without the benefit of extensive *ladang* [swidden] cultivation (and without access to barterable or purchasable foodstuffs) was tenuous for the Temuan of that period.” This situation was certainly not due to lack of information about the resources of the forest, but was more likely due to the presence of larger populations than could be comfortably accommodated by forest subsistence and, perhaps also to the unsettled political conditions.

Without reviewing the historical background of Orang Asli exchange relationships (see Fix, this volume), it seems that, like the hill peoples of India, their roles (among others) as specialized foragers and traders of forest products seems to have been well established by the sixteenth century (Dunn 1975). Anderson and Vorster (1983) describe the pyramidal structure of political authority linking the port city of Melaka with its hinterland, and suggest that a particular group of west Sumatran immigrants, the *Minangkabau*, acted as intermediaries, or brokers in the movement of forest products to the capital (and see Whitmore 1977:149; Bronson 1977; Kahn 1993). Interestingly, the site of Jambi in Sumatra, which was of importance as a collection center for Sumatran pepper, also seems to be associated with the Minangkabau. An early nineteenth century observer noted (cited in Schrieke 1955:55):

The pepper grows on the mountain lying in the middle of the land of Sumatra where a certain people lives called the Minangkabauers, the which bring their products down various rivers and trade them to the foreigners for cloth, salt, and all necessities.

Whether this citation implies that the Minangkabau were primary collectors or intermediaries is of course unclear; no doubt there existed a variety of arrangements.¹⁰

Finally, the contemporary contractual system described by Dunn (1975:99) retains exactly the three-tier structure of exchange, authority, and transport (coastal overlords, intermediate agents, inland gatherers) suggested to obtain during the colonial period in southwest India, and perhaps also parts of the Malay peninsula. Of these levels of organization and of authority, it is in fact, the topmost level that appears to be the most ephemeral of all. The Portuguese, then the Dutch, the English, and finally the government of Malaysia replaced the Sultan of Melaka, but the Orang Asli have remained.

Discussion

Despite the limited information now available on late precolonial and early colonial period transformations of upland economic and social practices in southern India and on the Malay Peninsula, it is possible to make some suggestions about the parameters of change. The picture that emerges seems to one of increasing subsistence specialization and decreasing diversity of options available to particular people, although the overall level of both economic and social/political diversity certainly increased. Levels of interdependence between groups are high and power relations markedly unequal. It would be useful to be able to discuss patterns of ethnic, linguistic, and cultural differentiation or amalgamation, but I have not been able to marshal much convincing information on these important topics.

Perhaps the most important conclusion to be drawn from the empirical evidence presented here has to do with the historically constructed nature of forager-trader lifestyles. Far from being simple, timeless denizens of the forest, South Indian and forager-traders of the Malay Peninsula emerge as active, strategic agents working in the context of complex political worlds. The economic and political roles of South and Southeast Asian foragers are, and have been, both variable and flexible. Within this range of strategies, specialized foraging for exchange, what Woodburn (1980) calls commercial foraging and R.G. Fox (1969) the role of “professional primitives,” is, however, a precarious one, ultimately dependent on long distance rather than local exchange links, and on volatile world markets. In South India, the relations of domination and the precarious nature of forager-trader economies point to the marginality of their position, a problem that continues into the present (e.g. Baviskar 1995). This marginality is not, however, eternal. It has been created by a complex set of historical and ecological circumstances, only a

few of which I have been able to sketch here. The marginality of southwestern Indian forager-traders is historically constructed, not given, and a great deal more research—particularly archaeological research—remains to be carried out that will more fully and accurately explicate the nature of that construction.

Endnotes

1. Throughout this paper I use the terms expansion (in demand for pepper, for example) and intensification (in rice and pepper production, for example) rather loosely. It worth noting, however, that this discussion is meant to help lay an empirical groundwork for a more explicitly theoretical consideration of the process of intensification that includes foraging and trading as strategies of intensification and that takes into account power dynamics, including possible implications of the loss of diversity in subsistence options (cf. Morrison 1994b, 1995, 1996).
2. The difficulties with such classifications as “tribe,” “caste,” and alternatives such as *adivasi* (a Hindi term for original dweller or indigenous person, cf. Baviskar 1995) are well discussed by B eteille (1998; see also Hardiman 1987b:11-16).
3. Recent research on the Early Historic period in southern India, while continuing to emphasize the importance of regional and inter-regional exchange, would tend to de-emphasize the primary role of the Roman empire, stressing instead the great variety of trade connections at his time (e.g. Ray 1994).

4. With the fall of the capital city of the Vijayanagara empire in AD 1565, the empire was reorganized and reduced in size; these coastal areas seem to have shrugged off the sometimes

5. Jose Nicolau da Fonseca, writing in 1878 about Portuguese Goa observed (1986[1878]:26):

For upwards of two centuries and a half since the conquest of Goa by the Portuguese, agriculture met with little or no encouragement from government...As the lands subjected to culture were...limited in number, the production of rice was always found to be insufficient for the maintenance of the entire population of the country which was, besides, now and then visited by a famine. To supply this deficiency...The government, though remiss in matters relating to agriculture, evinced its concern for the comfort of the people by importing large quantities of grain from the neighboring places.

6. These products would include cinnamon from Sri Lanka, cloves and other spices from the Moluccas, and many more. A more thoroughgoing analysis of the larger system of exchange from the points of view of collectors, extractors, and producers rather than solely traders and governments would certainly be desirable.

7. That pepper was indeed cultivated in the sixteenth century is clear. Although Marco Polo mentions the cultivation of both pepper and ginger in the Eli kingdom (the precursor to Cannanore) during the thirteenth century (Bouchon 1988:3), it is doubtful that he actually witnessed it. The English traveler Ralph Fitch visited Cochin in 1589 where he noticed a group of people who seemed different from other Malabaritis, having bushy hair and holding long bows and arrows (Foster 1968:46). Of Cochin, Fisk (Foster 1968:45-6) wrote:

Heere groweth the pepper; and it springeth up by a tree or a pole, and is like our ivy berry... The pepper groweth in many parts of India, especially about Cochin; and much of it doth grow in the fields among the bushes without any labour, and when it is ripe they go and gather it. The shrubbe is like unto our ivy tree; and if it did not run about some tree or pole it wold fall down and rot. When they first gather it, it is greene; and then they lay it in the sun, and it becometh blacke.

The unfamiliar appearance of a swidden field might well have seemed unplanned and unplanted to a European; this confusion may lie at the base of the persistent Portuguese notion that pepper cultivation required no labor.

8. The Hill Pandaram today, for example, collect dammar, inja bark, honey, wax, and cardamom for export as well as hunting various game animals (Morris 1982b:80). These activities are, however, difficult for those with swidden plots to participate in.

9. Rainfall levels are somewhat higher on the Malay Peninsula, however.

10. The expansion of Southeast Asian pepper production is discussed by A. Reid (1993a:7-10), who notes that pepper was grown in northern Sumatra as early as 1500 and, by 1600, its cultivation had spread from there down the west coast of Sumatra “into its Minagkabau heartland” (1993:9). By 1680, pepper cultivation had spread across that island to the Malay Peninsula.