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**Bujangga Manik: or, Java in the fifteenth century: an edition and study of Oxford, Bodleian Library, MS. Jav. b. 3 (R)**

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## PART V:

### *Travelling by Sea*

Three ships are described in *Bujangga Manik* as the ascetic travels by sea at various points in his life. These sections are unusual in offering us indigenous accounts of the construction of at least two kinds of seaworthy vessels: *parahu* and *jong*. The former – smaller and less powerful boats – are described in the ethnohistoric texts as similar to fustas or galleys, reliant on sails and oars to power them along. The latter were enormous ocean-going ships with woven rattan sails, comparable in size to the biggest Genoese cogs or European carracks of the sixteenth century. The conclusions derived from these sections of *BM* are supported by the (principally Portuguese) ethnohistoric evidence and to a lesser extent by medieval wrecks excavated in Southeast Asian waters. I will examine the ships' design and construction in section V.1.

In section V.2 I will look in detail at *BM*'s description of the mariners and crew. *BM*'s ships are peopled by gunners, warriors, and mariners; the crews are multi-ethnic; and the vessels seem to have been built locally, although the larger junk may have come from outside Java. When they leave harbour songs are sung, gongs are hammered, and cannons are fired. It is apparent from that the most important cargo on the last ship is Bujangga Manik himself, the sage (*mahapa(n)dita*), even though he only joins the ship for a day. These ships were fascinating *places*; more than just transportation, Javanese junks in particular hosted entire communities of people from birth to death, and the smaller craft described in *BM* are extraordinary for the peoples, languages, and religions that must have mingled on board.



### *V.1 The Ships*

Here I will describe *Bujangga Manik*'s ships – their dimensions, their designations, and the materials from which they were made (summarised in Table 1 in Appendix C). Some of the bamboos and rattans are obscure, found neither in dictionaries nor in the technical literature on the topic (in spite of some elaboration in this regard – see Dransfield and Manokaran 1993; Dransfield and Widjaja 1995). In keeping with its 'encyclopaedic' nature, however, some technical description does occur in *BM*, and the martial/nautical focus of many ethnohistoric sources allows a somewhat coherent image of late-medieval island Southeast Asian shipping to be synthesised.

*Parahu*

The first two ships are known as *parahu*; this word simply means ‘boat’ or ‘ship’ (from PAN \*paraqu [ACD 3836]; cf. Mal *perahu*, OJv *parahu* [OJED 1280:3]). In itself the word provides few indications about the type of ship described, and in BM 1022 *parahu* is also used once in reference to the third ship, a *jong*, so it may have served as the generic word for all boats or ships. (Rigg [1862:380 *sub* Prahū] defines it as ‘a general term for all vessels afloat’). Sixteenth-century European accounts tended to differentiate *p(a)rahus* and *jongs*, however – see, for instance, the illustrations in Willem Lodewycksz’s *De eerste schipvaart der Nederlanders naar Oost-Indië* (1595-1597, in Donkin 2003:146, Fig.18), in which the Javanese *prahu* is distinguished from smaller fishing boats and from the *jong*, which is larger and has two rudders. Lodewycksz’s *prahu* lacks outriggers, and, like a Moluccan *orembai*, has an upward-curved stern and prow. Pigafetta also describes the *parahu* (*Prao*) as a small vessel, but sometimes a beautiful one, in one case ornamented with gold leaf, a white-and-blue flag, and peacock feathers at the prow (Beinecke MS 351, f.57v, f.60v).<sup>A39</sup> Pigafetta compares the *parahu* to the *fuste* (f.58r), a galley powered by both rowers and sails (originally Venetian *fusta*, loaned into languages around the Mediterranean [Kahane and Kahane 1982:145]), fitting well with the descriptions in *BM* and suggesting that the word *parahu* had both specific and general referents.

*The First Parahu*

The first *parahu* has no named captain and the crew seem to be Sundanese. The ship takes Jaya Pakuan from Pemalang, Central Java, to Kalapa, a voyage of about 330 kilometres, and the ship is described as *parahu Malaka* ‘a Melaka ship’ – whether headed to Melaka or built there it is hard to say. Evidently cannons and percussion instruments are present on board, as these are fired and played respectively as the *parahu* leaves the harbour. Work songs (*kawih tarahan* [BM 100] – see below) are sung, presumably by the crew; most are unidentified and we have no music or lyrics for them, although their enigmatic titles survive (BM 102-104). *Kawih* seems to have been a generic term for ‘song’ in OSd, occurring several times in SSKK and in the titles of several palm-leaf texts from Ciburuy, notably the *Kawih Katanian* ‘song of farming’ (Ilham Nurwansah, p.c.). In MSd it has a more restricted usage (Williams 2001:46-47).

This *parahu* is equipped with a lone rudder of South Indian *kamuning* wood. *Kamuning* is *Murraya paniculata* (formerly *M. exotica*), a tree with streaked yellow wood (as in MSd; OJv *kamuniñ* [OJED 787:8]; Malay *kemuning* – from PMP \*kamuniñ [ACD 3097]). *M. paniculata* is grown for its timber, the sapwood of which is yellow (the heartwood being darker).<sup>276</sup> The *parahu* also had a main

<sup>276</sup> *M. paniculata*’s timber is described on the North Carolina State University ‘Inside Wood’ project website ([http://insidewood.lib.ncsu.edu/sub\\_Murraya\\_paniculata](http://insidewood.lib.ncsu.edu/sub_Murraya_paniculata), accessed 18-01-2019) as having dark heartwood and yellow sapwood. Presumably the timber for a rudder would come from trees with large boles and plenty of heartwood; we should probably imagine a broadly yellow rudder streaked with dark heartwood. Noorduyin misread the line, incidentally, interpreting it as *kamudi kamudi Keling* ‘her rudder was an Indian one’.

mast of *laka* wood with rattan rigging (a feature of other Indonesian vessels, as on Moluccan *kora-kora* [Ellen 2003:149]). While the word *laka* is used for many species (some of which were traded out of the archipelago – see Heng 2001), the most likely here is *Myristica iners*, a forest tree with buttresses and stilt roots common in Javan freshwater swamp forest (Rigg 1862:240; Yamada 1997:59-61).<sup>277</sup> This mast is described as ‘glowing with a “writhing fish” (*hi(ng)gul*) pattern’, the translation here based on Mamat Sasmita’s interpretation of *hi(ng)gul* as a pattern depicting a writhing fish (Gunawan 2019:88; cf. the reference to *hihinggulan* in SSKK – Danasasmita et al. 1987:84, 107). A second mast is of *ñowana* bamboo; in spite of the work on Sundanese names for bamboo varietals in Dransfield and Widjaja (1995) and Rigg (1862), among others, this is unidentified. It may mean simply ‘young bamboo’.

### *The Second Parahu*

The second *parahu* is described in much the same way as the first, using many of the same formulae. The description incorporates more detail, however, and the ship has more crew from more disparate locales. Bujangga Manik joins the vessel somewhere on Java’s eastern salient and gets off at Bali – a journey of at most twenty kilometres. From Bali the *parahu* was then headed to Bangka, about 1000 kilometres away off the Sumatran coast. The *parahu* has a captain named Séla Batang<sup>278</sup>, and the ship is made of teak carved in the form of a dragon rising upwards (*jati diukir · ka luhur dinanagaken* – BM 897-898), agreeing with the depiction of the *parahu*’s upward-curving prows in Lodewycksz’s *eerste schipvaart*. Its deck is made of *kawung* or sugar palm (*Arenga pinnata* – aka *aren*) overlain with *séyah* (‘rustling’) bamboo. *Kawung* wood has been used to make bowstaves in the archipelago, implying that it has plenty of tensile strength, and the palm is used for a range of other purposes as well (see Andaya 1993:76). *Séyah* is an onomatopoeia; it is not clear what species this is.<sup>279</sup> The cabin walls are made of *nipah* sprouts (*Nypa fruticans*, another sugar palm common in saltwater swamp).

This *parahu* appears to have a cabin for passengers (*gagarebongan* – OJv *grěboñ* ‘type of closed wagon’ [OJED 543:5]; MSd *gerebong*, an old word for a covered space for passengers [Danadibrata 2006:223; KUBS 142]), a feature also found on the *jong*. The verb used when Bujangga Manik goes aboard is *deuk* ‘sit’ (BM 895, 994) – apparently the international standard on the medieval Indo-Pacific. Elizabeth Lambourn says that in his *Musannaf* the Omani jurist al-Kindi (d.1162) ‘stipulated that passengers should remain seated so as not to annoy others or damage cargo’ (2018:208),

<sup>277</sup> See also the *Flora Malesiana* entry - <http://portal.cybertaxonomy.org/flora-malesiana/node/5974>. The *Plant List* labels *M. iners* ‘unresolved’; the competitor name is *Palala iners*.

<sup>278</sup> ‘God’s rock’? Cf. OJv *śela* ‘mountain, stone’ (OJED 1749:6) and MSd *batang* ‘a nearly obsolete term for a Deity’ (Rigg 1862:43 *sub Batang*). *Batang* could have many meanings depending on whether the word is analysed as OJv, Mal, or Sd, including ‘branch’, ‘a measurement based on the size of a bamboo cylinder’, or even ‘corpse’.

<sup>279</sup> It is clear from Rigg’s lists that the names of bamboos and rattans have changed over the centuries.

further noting that the '[medieval] Persian term for a passenger on a ship, *kashtī nishastan*, meant literally “one who sits on a ship”’.

### *The Jong*

The *jong* captained by Béla Sagara<sup>280</sup> departs from Bali for the eastern salient of Java; it is said to be sailing to Palembang and from there to Pariaman on the west coast of Sumatra, presumably via the Sunda Strait (a journey of almost 3000 kilometres). The route would have taken the *jong* past Krakatau (aka Krakatoa, OSd *Rakata*). The ship is referred to as a *parahu* and at one point as *jong tutup* ‘closed *jong*’; what this means is difficult to say, although it may mean simply that the *jong* was ready for departure (BM 1021). It is also referred to as *jong kapal*, where *kapal*, another word for ‘ship’, is probably present for metrical reasons.<sup>281</sup> *Kapal* derives from Tamil *kappal* (கப்பல்) ‘sailing vessel’; the word does not appear in the earliest Tamil literature but cognates in other Dravidian languages, including Toda *kopol*, make it likely to be of Dravidian origin (Burrow and Emeneau 1984 #1022).

Pierre-Yves Manguin pioneered research on Southeast Asian shipbuilding traditions in the 1980s, concluding that *jongs* built in Java and Pegu were among the biggest and most sophisticated ships in the medieval world, with greater burthens (carrying capacities) than the Portuguese *naus* that arrived in the region in the sixteenth century (1980, 1984; see also Reid 1992). Excavations and ethnohistoric sources tell different stories, though: Manguin had initially written about junks based on the Portuguese sources, which do indeed indicate the existence of Javanese shipyards and locally produced monster trading vessels (Manguin 1980). The Portuguese texts focused on the features of Southeast Asian ships indicative of local genius, including sails made of woven rattan, doubled rudders, and hulls comprising multiple layers of tropical hardwood (particularly teak – *Tectona grandis*) held together by wooden dowels. However, certain features of the ships known archaeologically from wrecks in Southeast Asian waters, including the use of watertight bulkheads in the hold, are clearly Chinese, and nails are much more commonly found at wreck sites than the ethnohistoric record suggests (Manguin 1983, 1984; 1985). *Jongs* identified archaeologically and showing a mix of all these elements are referred to as ‘hybrid’ junks (Flecker 2007).

Descriptions of many wrecked junks can be found in Miksic (2013:198-204); few can be ascribed to ‘pure’ Southeast Asian or Chinese categories, although the use of tropical hardwood in construction is diagnostic of Southeast Asian origin and a lack of dowelling is more consistent with Chinese builds, with true hybridisation only occurring during and after the reign of Yǒnglè (d.1424), the period of the treasure fleets under Zhèng Hé. The Chinese type is exemplified in the Turiang, wrecked off the east coast of the Malay Peninsula in the late fourteenth century and the Southeast Asian

<sup>280</sup> ‘Ocean sacrifice’? Cf. OJv *bela* ‘to lay down one's life’ (OJED 239:9) and *sāgara* ‘ocean’ (OJED 1591:2).

<sup>281</sup> There are comparatively few monosyllabic words in *Bujangga Manik*. *Jong* must have presented the poet with a few metrical headaches.

type in the Longquan, also wrecked in the late fourteenth or early fifteenth century (Miksic 2013:200; Sjostrand and Barnes 2001). European and Middle Eastern descriptions of *jongs* antedate the true ‘hybrid junk’ of the fifteenth century, but the word *jong* probably encompassed all these types.

The *jong*’s dimensions are described in BM 997-998: ‘a *jong* eight [fathoms] wide · its length twenty-five fathoms’. The assumption that a medieval Sundanese fathom (*depa* – MSd *deupa*, ‘a fathom, as much as a man can embrace with two arms extended’ [Rigg 1862:106] – from PAn \**depah* ‘fathom’ [ACD 7748]) was equivalent to an imperial one (6’, or 1.83 metres) is questionable, but if we convert the dimensions into metric on the basis of the modern fathom then *BM*’s *jong* would be about 46 metres long and 15 metres wide.<sup>282</sup> Such a ship would be consistent with ethnohistoric texts but less so with archaeological evidence: Most known hybrid junks are around thirty metres in length and not much more than eight metres wide at their broadest, about the same size as a sixteenth-century carrack or an eleventh-century Byzantine *dromon* (Delgado 2011:190-191) – e.g. the Bukit Jakas (30-32m long, 1400-1460); Longquan (30m x 8m, fifteenth-century); Royal Nanhai (28m x 7m, c.1465). We must thus allow for some exaggeration on the poet’s part.

*Jong* (OJv *joñ*) may be from Chinese 船 (pinyin: *chuán*; MC *zywen*; Old Chinese \*Cə.lon). This etymology is accepted by Jones (2007:137), although some scholars have always been sceptical, in part because the earliest OJv attestation of *joñ* antedates the arrival of the first Chinese fleets (Manguin 1980:266-267; Miksic 2013:100; OJED 748:4; Yule 1903:472). Linguistic reconstructions strengthen the claim but are not conclusive (e.g. the proto-Mĭn reconstruction in Baxter and Sagart [2014:190]). It is not out of the question that *jong* was an early Mĭn/Hokkien Chinese loan and not an indigenous term. Manguin notes that the word *jong* is found in Classical Malay literature, including the *Sulalat al-salāṭīn* and *Undang-undang Melaka*, as well as several OJv works, but that ‘no technical information at all may be gathered from these texts’ (1980:266-267).<sup>283</sup> Either way the word was probably loaned into other Afro-Eurasian languages from Malay. It has always referred to ocean-going four- or five-masted ships carrying hundreds of merchants and sailors and enormous amounts of cargo, and references to such *jong* (‘junks’) or to ships fitting their description can be found in a range of medieval texts.

<sup>282</sup> Clifford and Swettenham’s *Dictionary of the Malay Language* includes as a sample sentence for *dēpa* ‘fathom’ the line *Depa aku tak sampai enam kaki* ‘my *depa* does not equal six feet’ (1894:410). *BM*’s *depa* may have been similarly short.

<sup>283</sup> This was before the initial publication of *Bujangga Manik*, of course.





Figure V.1. A ship with a woven rattan sail depicted on the Catalan Atlas (Paris, BnF, Espagnol 30, f.4r – 1375). Henry Yule believed the word for ‘junk’ in the first word in the second row of the text box, ⟨ínchí⟩, to be an error for *jūchi*, derived from Malay *jong* by way of Arabic.

‘Junk’ (*vel sim*) is reported to first appear in Europe in Odoric’s *Itinerario* (1331) and once, as *junko*, in the disordered recollections of fourteenth-century traveller Giovanni de’ Marignolli (Yule 1903:472). The word does not appear to have been familiar to fourteenth-century readers of Odoric’s text, and in at least one case – Jean de Vignay’s 1351 French version (London, BL, Royal MS 19 D I, f.139v) – the word for ‘junk’ mutated into ⟨coque⟩ (English ‘cog’), a kind of European ship; cogs were also huge, so the confusion is perhaps understandable.<sup>284</sup> Odoric says that seven hundred merchants were travelling on board.<sup>A40</sup> The word also occurs on the Catalan Atlas (1375-1377), as ⟨ínchí⟩, believed by Yule to be a copyist’s error for ⟨jūnchi⟩ (Figure V.1). It appears likewise on the Fra Mauro *mappamundi* (Venice, c.1459) as ⟨çoncho⟩.<sup>A41</sup> Ibn Baṭṭūṭa frequently uses the word *junk* (جُنْك, pl. جُنُوك *junūk* – Lee 1829:172) for such ships and describes the vessels as having woven bamboo sails (presumably rattan – Yule 1903:472). Other medieval accounts describe similar vessels but do not use the word. Niccolò de’ Conti remarks that the ships of ‘India’ (including Java) ‘are much bigger than ours [in Italy], carrying two thousand tons with five sails and as many masts’.<sup>A42</sup> He also notes the use of bulkheads to divide the hull into watertight segments, a feature remarked on as early as the twelfth

<sup>284</sup> Such ships were legendary for their size; the fifteenth-century Italian traveller Cyriac of Ancona wrote a letter to his friend Andreolo comparing a Genoese cog to an enormous whale, for instance (2003[1444]:20-24).



century by the Chinese essayist Zhū Yù (朱彥 – J. Needham 1986:463), as well by Polo, whose description of (pre-hybridisation) Chinese ships says that they had four masts (sometimes six), a single rudder, and some fifty or sixty cabins, each to accommodate a single merchant.<sup>A43</sup>

In early modern works the word ‘junk’ is more common. In Pigafetta’s account *jong* appears consistently as *Iunce* (e.g. Beinecke MS 351, f.61r) and in Portuguese sources they are referred to as *juncos*. The *conquistadores* found it difficult to defeat *jongs* as their own ships were too low to board the *jongs*’ decks and shot could not pierce their multi-layered hulls. Albuquerque’s men resorted to wearing *jongs* down by firing at their masts and rudders. When assaulting Melaka, Albuquerque used a *junco* as a platform for attacking the city’s main bridge because ‘junks are very tall [vessels]’ (Earle and Villiers 1990:74).<sup>A44</sup> François Pyrard de Laval, who saw the wreck of a junk from Sunda (*la Sonde*) in the Maldives in the early seventeenth century, says:

‘They tell me that this was the richest ship that it was possible to see. There were five hundred people aboard – men, women, and children, as the Indians bring the better part of their households onto the sea with them. [...] This ship came from Sunda, loaded with all sorts of spices and other merchandise from China and Sunda; seeing only the mast of this vessel, I judged it the biggest I had ever seen’ (1619:270).<sup>A45</sup>

Southeast Asian junks were claimed to be such large ships that people could live their entire lives on board. Barbosa (1516:362-363), corroborating Pyrard de Laval’s claim and speaking specifically of Javanese vessels, says:

‘And these junks carry a lot of rice and the meat of cows, sheep, and pigs and slaughtered deer in jars, and also many chickens and other victuals [...] They bring their wives and children and property aboard; they have no other home, and there they are born and die.’<sup>A46</sup>

We should not imagine a *jong* as hosting a transient collection of grizzled mariners; these ships were communities, doubtless including women and children. Games must have been played on board, and Barbosa’s mention of chickens may indicate that cockfights also took place; cockfighting was certainly a common pastime in Java in the Middle Ages.<sup>285</sup> Conti describes it thusly (Bracciolini 2004[1448]:116-117):

‘Often [practised] among [the Javanese] is the game in which cocks fight one another. They each bring roosters to the fight, each claiming that their own will be the winner, and those present in turn bet money on the victory of one of the two; whoever bets on the winning rooster takes the money.’<sup>A47</sup>

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<sup>285</sup> Robert Blust (2002:96-98) suggests that the sport was introduced to Southeast Asia from India in prehistory.

Less brutal games of chance must also have been played.<sup>286</sup> Two dice of black wood with bone inserts have been recovered from the thirteenth-century shipwreck at Pulau Buaya in Riau (Miksic 2013:133), and dice games (OJv *dyūta*, from Skt) would probably have been played on board – as perhaps would card games. Over the course of the fifteenth century playing cards became increasingly popular across Afro-Eurasia (Dummett 1976). Packs of cards survive from fifteenth-century Europe (e.g. the Ambraser Hofämterspiel – Vienna, Kunstkammer, inv. nos. 5077-5124) and Egypt (the Mamluk-era set in the Topkapı Sarayı, Istanbul – Dummett and Abu-Deeb 1973), having spread from China. Most were used in trick-taking games. No playing cards have survived from medieval Indo-Malaysia, but *ceki*, a trick-taking game associated with the archipelago’s Chinese community, is mentioned in the c.1492 Chinese-Malay phrasebook (Edwards and Blagden 1931:734 #257). The Malay equivalent of 棋 (*qí*, normally ‘board game’) is given as 竹吉 (pinyin: *zhújí*), the early Míng Guānhuà pronunciation of which was [tʂuʔ kji], close indeed to *ceki* (Coblin 2000:311; 2007:125).



## V.2 Crews and their Tools

Going by the poem’s descriptions, half a dozen languages and religious traditions must have been represented among the crew on the second *parahu*, which featured (probably) Acehnese-speaking Muslims from Pasai in northern Sumatra and heathen warriors from Makassar (*Makasar*) in Sulawesi. *BM* tells us they ‘came from many lands’ (*bibijilan para nusa*), using the same word for ‘land’ or ‘country’, *nusa*, as that found in *BM*’s description of the world (BM 1266-1279 – see section III.2.3). The crews are referred to in two ways: Some are simply as ‘those who (verb)’ (e.g. *nu badayung* ‘those who row’), and all of the crew on the first, smaller, *parahu* are so designated. The second class of crew on the second *parahu* are the *juru* ‘experts’, including the *juru wedil* ‘master gunners’, *juru tulup* ‘blowgun masters’, and *juru batu* ‘plumbline experts’, all from different places in the archipelago (and China, or resident Chinese communities). The use of *juru* to refer to trained seamen is found also found in Malay, from which *BM*’s terms may derive; Wilkinson (1932 #14762) lists several nautical *juru*, some of which appear in *BM*.

The first *parahu* has no named captain and Jaya Pakuan does not request to come aboard: it is simply said that *tuluying nu(m)pang balayar* ‘then I sailed as a passenger’ (BM 95). The simplest vessel, this Melaka-bound boat appears to have had a largely Sundanese-speaking crew from Kalapa and Angké.<sup>287</sup> The second *parahu*, however, has a captain (*juru puhawang* cf. Old Malay, OJv *puhawan*

<sup>286</sup> See the enigmatic games discussed in Creese (2004:57).

<sup>287</sup> Evidently the name *Angké*, now part of Jakarta, is older than the 1740 massacre of the Chinese in Batavia after which it is sometimes claimed to have been named.

[OJED 1432:1]), Séla Batang, who offers the ascetic a seat in the cabin. Bujangga Manik addresses him as *akiing* ‘my grandfather’ and promises him a gift upon arrival in Bali (BM 888-889); this turns out to be a cloth (*kaén*, BM 954-955).<sup>288</sup> The *jong*, the last ship on which Bujangga Manik travels, is captained by one Béla Sagara, who asks for no payment and who respectfully refers to the ascetic as *mahapandita* ‘great sage’ (BM 1011). The conversations with the captains are the most pleasant of the ascetic’s interactions and the poet appears to have respected sea captains, as can be told from the reference to valued goods as ‘elder sea captains’ cargo’ in BM 369.

Here I will introduce the *parahus*’ crew according to their origins – Sumatrans, Sulawesians, and so on – noting their roles on board, their tools, and other relevant features.

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### *Crew Members from Sumatra and Environs*

The *lingua franca* on board was probably Malay. Some of the crewmen in *BM* would have been native speakers, particularly mariners from in and around Sumatra, and we know from other sources that Malay had become the *lingua franca* of the archipelago by the sixteenth century (e.g. the Malay letters sent by the Sultan of Ternate in 1521 and 1522, now Lisbon, Torre do Tombo, Reforma das Gavetas, liv. 30, f.132 and 133 – Gallop 1994:123). No Javanese speakers are listed among the passengers or crew – remarkable on ships sailing from locations in Java – but several from Sumatra and neighbouring islands are, including rowers from Nias, experts in rigging from Pasai, and blowgun masters from southeastern Sumatra (BM 921-932) Chinese, Makassarese, and Sundanese mariners were also present, and in such a multicultural environment a common language of communication must have been essential. Malay filled this niche nicely.

*Marus*, source of the oarsmen (*nu badayung*), is probably Nias or islands near it off the west coast of Sumatra; Pires referred to Nias as *Maruz* or *Maruz Mjnhac* (Cortesão 1944:162), and Ibn Mājid appears to call it *Mārūs* (ماروس – Tibbetts 1981:491). The name does not appear in the *Deśawarṇana*, and there is the slim possibility that it could refer to Maros in South Sulawesi. Bangka (Pires’ *Bamca*) is off the southeastern coast of Sumatra facing Palembang, capital of Śrīvijaya. The Old Malay Kota Kapur inscription stone, now in the Museum Nasional, Jakarta (inv. no. D.80), attests to the presence of Malay speakers on the island since the late seventh century. The people from Bangka are said to be ‘those sailing’ (*nu balayar*); they may have been passengers rather than sailors. The helmsmen (*juru mudi* – cf. *kamudi* ‘rudder’) are said to be from *Jambri*, a place near the Sumatran Malay heartland (discussed in section III.2.3 above).

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<sup>288</sup> Java had a cash economy and Chinese cash was in common use, so this should not necessarily be considered a typical transaction. ‘Javanese’ cash (*caxas de Jaooa*) is included among the Sundanese tribute to Portugal in the 1522 treaty. Cloth was historically used as currency in other parts of the archipelago, however.

*Juru batu* (lit. ‘stone expert’) probably refers to crewmen responsible for plumb lines and sounding the depths; *batu* (‘stone’) refers to the weight on the end of the line (cf. Mal *juru batu* ‘[a seaman] attending to anchoring and sounding’ [Wilkinson 1932 #14762]). Noorduyn and Teeuw (2006:261) translate the term as ‘boatswain’, although in English that name refers to those responsible for the maintenance of equipment. These mariners are *urang Lampung* – from Lampung in Sumatra, just across the Strait of Sunda (discussed in section III.2.3 above).

The *juru kilat*, which Noorduyn and Teeuw translate as ‘boatswain’s mates’ (as in Wilkinson 1932 #14762), are said to have been *urang Pasay* ‘Pasay people’. The term *kilat* here comes from or is otherwise related to OJv *kilat* ‘rigging; or part of it (sheet)?’ (OJED 868:4); these *urang Pasay* may have been responsible for the sails (see Appendix C for identification of the species). *Pasay* or *Pasai* is in what is now Aceh province in northern Sumatra, and it was also known as *Samudra*, whence ‘Sumatra’. *Pasai* was one of the archipelago’s oldest Islamic sultanates, the tomb of Malik al-Ṣāliḥ, dated 1297, attesting to the presence of Muslim rulers in the region since at least the thirteenth century (Miksic 2013:129; Moquette 1913; Thomaz 1993:70). Fourteenth- and fifteenth-century Islamic inscriptions have been found in the area, including the Minye Tujuh inscription containing the oldest-known Malay *syair* (781 AH = 1380 CE – van der Molen 2007). According to the *Sulalat al-salāṭīn* *Pasai* was initially more powerful than *Melaka* and second only to *Majapahit* (Samad Ahmad 1979:93; Wolters 1970:2-3).<sup>A48</sup> It is thus likely that the riggers on the second *parahu* would have been Acehnese- and Malay-speaking Muslims.

Pires knew *Pasai* as *Paçe* (*vel sim*), and it was evidently a multicultural place even before the arrival of the Portuguese, home to ‘*Rumes*,<sup>289</sup> Turks, Arabs, Persians, Gujaratis, Kling, Malays, Javanese, [...] Siamese, [and] Bengalees’ (Cortese 1944:142). It was probably in *Pasai* (*Sciamutera*) that Niccolò de’ Conti ate durian (Bracciolini 2004[1448]:96-97: *durianum*; Fra Mauro *mappamundi* [c.1459]: *duriā*), an experience he seems to have remembered fondly.<sup>290</sup>

### *Malay Blowgun Masters*

A blowgun or blowpipe is a long tube through which a dart, often poisoned, is propelled by the force of the breath. In the fifteenth century they were in use throughout Eurasia as evidenced by manuscript illustrations in Europe and the Middle East (Figure V.2) – but blowguns were probably invented in island Southeast Asia, perhaps in Borneo, by MP-speaking people (Bellwood 1997:150; Jett 1970).

<sup>289</sup> A term related to ‘Roman’ and probably here referring to either Ottoman Turks or Mamluks; the latter is meant by Afonso de Albuquerque in his letters (Earle and Villiers 1990:289), but Pires seems to mean Turks (and Greeks?) from Constantinople.

<sup>290</sup> Putting the two Conti accounts together, I argue that Conti’s durian was a red-fleshed durian, probably *Durio graveolens*, rather than the more common *D. zibethinus*: West, A. J. 2020. Knowledge of the durian. *Medium*. <https://medium.com/@IndoMedieval/knowledge-of-the-durian-39f89a6c871f>. (Accessed 02-08-2020).



Figure V.2. **L:** A relief of a man shooting a blowgun. Borobudur, Central Java, ninth-century. Author's photo, November 2018. **R:** An early illustration of a blowgun from a manuscript of *Livre des prouffitz chamepestres et ruraux* ('treatise on rural economy') by Pietro de Crescenzi, 1470-1475 (Cranstone 1949). Paris, Bibliothèque de l'Arsenal, Ms-5064, f.265r.

Al-Mas'ūdi describes the use of blowguns at sea in Southeast Asia in the tenth century (2007[947]:94) and blowguns appear in reliefs on Borobudur centuries before the first references in Persia and Europe (Figure V.2). A name for the device can be reconstructed to PMP (\*sumpit, ACD 8279). A Malay reflex, *sumpitan*, was something of a medieval Wanderwort, undergoing various contortions to become Malayalam *tūmbitān*, Arabic *zarbaṭānah* (زربطانة), French *sarbacane*, and Italian *cerbottana* (Hoogervorst 2011:95; Hornell 1924:326, 334; White 1960:521-522; Yule 1903:795). By the fifteenth century the name was applied around the Mediterranean to a type of thin-barelled cannon (e.g. Greek ζαπαβοτανε – Chalkokondyles 2016[~1465]:129; Gould 2000:210). When the Portuguese sources describe Malay weaponry they use a word for 'blowgun', *zarabatana*, that had Malay roots (Earle and Villiers 1990:89; White 1960:521-522).

Although *sumpitan* does exist in Sundanese (Rigg 1862:463), in *BM* the word for 'blowgun' is *tulup*, probably from OJv (OJED 2058:1; cf. MSd *tulup*; see also Jákl 2017). Perhaps the use of one or the other was forced by the metre; all the modifiers of *juru* 'expert' are disyllabic, and *pañumpit*, the alternative name for a blowgunner attested in SSKK, would be too long to fit. The *juru tulup* are said to be *urang Malayu*, probably meaning people from Malayu/Jambi in Sumatra. *Malayu* here may have referred to Malays as an ethnic group, as that usage is found in the Portuguese sources, the Malay historical literature, and (perhaps, although this is debatable) the *Deśawarṇana* (13.1 – *kṣoṇī ri Malayu*). Nowadays blowguns are not considered characteristically Malay weapons and are associated more with the Austroasiatic-speaking peoples of the Malay Peninsula (Orang Asli) and the Kubu/Lubu in Sumatra (Baer 2016; Blust 2013:12; Moszkowski 1909; Skeat 1902; Winstedt 1950:7) – but it is clear from Portuguese texts that Malays in Sumatra and the Peninsula used blowguns in war. The blowgun was considered the Malay weapon *par excellence* by the *conquistadores* and dart wounds were considered invariably fatal – with the exception of one Fernão Gomes de Lemos, hit by a dart at Melaka, whose

wound was ‘scalded with salted pork fat as soon as he received it, and that treatment, after God, was his salvation’ (Earle and Villiers 1990:73).<sup>A49</sup>

Southeast Asian dart poisons are sometimes claimed to be the most powerful on Earth, due in part to confusion surrounding *upas*, an OJv word meaning simply ‘(plant) poison’ (Cranbrook 1997:4-6; Hannigan 2018; OJED 2135:5; Yule 1903:952-958). The *upas* legend was already spreading in the Middle Ages, and it can be found in Odoric’s description<sup>291</sup> of the darts used by the inhabitants of Bintan (*Panten*) as bearing ‘the most dangerous poison that there be’.<sup>A50</sup> In fact Southeast Asian dart poisons appear to have drawn on a range of ingredients, not simply the notorious sap of the *upas* tree (*Antiaris toxicaria*) (see Zahorka 2006). Among additives to the *upas* formula applied to modern darts Hall (1928:50) lists ‘the poison fangs of snakes, stings of scorpions, arsenic, [raw] *Pangium edule* (Reinw.) [i.e. *keluwak*] which contains prussic acid [hydrogen cyanide], and various comparatively harmless ingredients such as pepper, tobacco, capsicum, and onion’ (tobacco and capsicum not, of course, being available in the fifteenth century).

### *Fighters from Makassar and Masalembu*

Masalembu (*kab.* Sumenep) is a tiny archipelago north of Madura in the Java Sea. It is difficult to find any information about Masalembu beyond government statistics and few books on the islands have been published. Paul Piollet’s *Salemboe Indah* (1997), a photo essay with a short introduction, is a rare exception, and preserves the name found in *BM*, *Salembu*, in its title. Salted fish has been the mainstay of the islands’ economy; piracy was once common. The current population is largely Madurese, but the *bupati* of Sumenep, interviewed in 1951, claimed that the population had once been Buginese-speaking, oriented more towards Sulawesi than Madura (Piollet 1997:12-13). In *BM* 929 Salembu features as home of the *juru amuk* ‘duellists’. *Amuk* (MSd *amuk* ‘fight furiously’; OJv *amuk*, from *wuk* ‘furious attack’ – OJED 2322:1) is the source of Portuguese *amoco* and English ‘amok’, (Barbosa 2000[1516]:371; Cortesão 1944:418, 494), the name for one who challenges others to duels or who goes on a murderous rampage before being brought down themselves in an act of suicide – similar to Conti’s description of interpersonal violence in Java some decades earlier. It seems likely, anyway, that the Salembu duellists fought hand-to-hand.

These duellists are paired with *pamerang urang Makasar* ‘Makassarese warriors’ (from *perang* ‘war’, cf. OJv *prañ* ‘fight, combat, battle’ [OJED 1398:15]). Makassar is now Indonesia’s fifth largest city. The peninsula on which it sits has long been Sulawesi’s most densely populated region, subject to deforestation and dense human settlement since at least the fourteenth century and located on the route

<sup>291</sup> From Odoric it entered Mandeville’s (hoax) *Travels*, the author of which elaborated on Odoric’s original in various ways. In some Mandeville manuscripts an antisemitic coda was added to this section (see Hannigan 2018). London, BL, Harley MS 3954, f.39r adds that the dart poison is to be feared ‘ffor treacle [i.e. theriac] may not help yu’.



between Maluku and Java (Andaya and Andaya 2015:112; Bougas 2007; Pelras 1999:9-10, 12). Medieval Makassar was only sparsely documented, with brief references in the *Deśawarnana* (14.5) and *BM* forming some of the region's only records before early modernity; writing had probably been introduced to South Sulawesi by the fifteenth century but no manuscripts from this period have survived (Caldwell 1988:11). In the sixteenth century, however, Makassar grew to become one of the archipelago's most important ports (Cribb 2000:102).<sup>292</sup> The Makassarese language is in the South Sulawesi branch of MP and is only distantly related to Sundanese and Malay (Smith 2017b:494). Before the conversion of the region's rulers to Islam in 1605, people in Makassar probably had rather different religious traditions to the Hindu-Buddhist sects of Java and Sunda, with traces surviving in the traditional literature of South Sulawesi (particularly the Buginese *La Galigo* – Koolhof 1999) and perhaps in the practices of more isolated peoples in the Sulawesian uplands like the Sa'dan Toraja (see Cribb 2000:102; Macknight, Paeni, and Hadrawi 2020; Nooy-Palm 1986; Pelras 1996).

Little information about Sulawesian weaponry survives from this period but several sources depict or discuss arms elsewhere in the archipelago, particularly the *Sanghyang Siksakandang Karesian* (L630, f.17r), Brás de Albuquerque's *Commentarios* (1576:382), the OJv *Nawanatya* (Leiden, UBL, Ms. Or. Leyden 5091, f.2v – Pigeaud 1960:I:81-82), and reliefs, like the Sukuh forge relief (Leiden, UBL, OD-7115) (see Rahardjo 2011:140-142 for earlier Javanese weapons). Modern Indo-Malaysian weapons can also be a guide to medieval ones, although there is always the possibility of outside influences on recent designs (see van Zonneveld 2001 for an overview). The Javanese are described in foreign sources as having produced excellent weapons – good enough that when Francis Drake stopped in Java in 1580 he 'bought reasonable store' of steel weapons.<sup>A51</sup> Fèi Xīn says too that Java 'ha[d] substantial military equipment and mechanical arms' (Fei 1996:45).<sup>A52</sup> Java is poor in iron and the raw material for local arms production had to be imported from China, Sulawesi, and elsewhere; iron, including ingots for forging, is frequently found at shipwreck sites. Roughly 340 tonnes were recovered from the Yuán-era Java Sea shipwreck off Lampung, for example (Mathers and Flecker 1997:70; Miksic 2013:135).

The sources mention similar arrays of weaponry, including the well-known *keris*, which appears in BM 396 (and elsewhere) and is depicted in the early-fifteenth-century forge relief from Sukuh, as well as (single-edged?) swords (OSd *pedang*), shorter cutting weapons (like *goloks*, mentioned in SSKK), spears of several kinds (Albuquerque distinguishes a type that he calls *lanças de Iaoa* 'Java lances'), and parrying shields (*tameñs* and *ḍaḍaps*, for which see Maxwell 2019). Ibn Baṭṭūṭa refers to 'a knife like a billhook' being used at the Javanese court (Gibb and Beckingham 1994:883); this was known in OJv as *kuḍi* (OJED 909:2) and in Sundanese as *kujang*. The *kujang* has become an emblem of Sunda – it can be seen in the coats-of-arms of several towns in West Java, including Bogor,

<sup>292</sup> See the books and papers collected by the OXIS Project for the foundations of these developments: The OXIS Group. <https://oxis.org/research/oxis/>. (Accessed 02-08-2020.)



and *kujang*-shaped pendants are sold at tourist shops – but in SSKK it is mentioned as a ‘peasant’s weapon’ (*ganggaman sang wong tani*), and it was clearly used by the Javanese (Figure V.3 – see Munandar 2017:43-51).



Figure V.3. The forge relief from Candi Sukuh, Central Java early/mid fifteenth century. Leiden, UBL, OD-7115. Note the weapons in the background, particularly the *kuḍi* near the front and the non-wavy forms of the *keris*.

Armour is mentioned in some sources but it is seldom depicted in reliefs. Albuquerque says *laudeis de lamina* were captured at Melaka, probably meaning coats of plates and mail similar to the (nineteenth-century?) armour photographed by Isidore van Kinsbergen in Kuningan (UBL, KITLV 87611). This may have been equivalent to OJv *kray* ‘coat of mail’ (OJED 899:4), which is also mentioned in the c.1492 Chinese-Malay phrasebook as the equivalent of 甲 ‘armour’ (吉刺尾 pinyin: *jíláyǐ*, early Míng Guǎnhuà ~[kji-la-i] – Edwards and Blagden 1931:734 #266). Armour nonetheless seems to have been uncommon, and several sources say that Southeast Asian pirates wore amulets under the skin, believing this protected them from iron weapons. Odoric says that ships’ guards took to fighting ‘with spears and arrows without iron, as they know iron cannot harm [the pirates]. And because these people are not well-armoured they wound and often kill them’.<sup>A53</sup> This may have had more to do with the scarcity of iron than with the amulets’ powers, though, and wooden and bone weapons are known from later times in eastern Indonesia (even where forging was practised – e.g. Sumba [R. Needham 1987:32-33]).

Piracy of course answers the question of why ships would need guns and guards – and the people of Makassar were often counted among the archipelago’s pirates (Wolters 1970:11).<sup>293</sup> Pires asserts that:

‘[t]hese [Makassar men] are greater thieves than any in the world, and they are powerful and have many *paraos*. They sail about plundering, from their country up to Pegu, to the Moluccas and Banda, and among all the islands around Java; and they take women to sea. They have fairs where they dispose of the merchandise they steal and sell the slaves they capture’ (Cortêsão 1944:226-227).<sup>A54</sup>

### *Master Gunners from Bali*

The poem refers to ‘guns’ (*wedil*, cf. Malay, MSd *bedil*) three times, each time on board ship. *Wedil* is probably from Tamil வெடில் *veṭil* ‘[e]xplosion of gunpowder, a shock’ (Winslow 1862:399; Burrow and Emeneau 1984 #5473), although the specific referent is not known. Several cannons have been excavated from fifteenth-century shipwrecks in island Southeast Asia, including the Bakau wreck in the Java Sea (1400-1420s) and the Lena Shoal wreck off the coast of Palawan in the Philippines (1480s). Some of these cannons are bronze, others iron, while most of the forms are evidently Chinese, with short barrels and bulbous chambers designed to absorb the shock of ignition. Some were designed to fire arrows rather than bullets (Goddio 2002:41, 239-241; Wade 2016:21).

The ethnohistoric sources add confusing points. Varthema claimed that ‘no artillery of any kind is used [in Java], nor do they know how to make it’.<sup>A55</sup> Pigafetta tells us on the contrary that cannons could be found in Brunei and were fired frequently during the *Victoria*’s time in the port (Beinecke MS 351, f.60r), and Barbosa says that the Javanese were skilled gunsmiths.<sup>A56</sup> Albuquerque (1576:382) says that Melaka’s gun foundries were as good as those of the Germans – renowned gunsmiths at the time.<sup>294</sup> Three thousand artillery pieces were captured after the conquest, including – interestingly – one thousand cannons *da feição dos nossos berços* ‘of the [same] style as our *berços*’.<sup>295</sup> A *berço* was a small-calibre breech-loading swivel gun invented in Europe in the fourteenth century; Portuguese *berços* came in three bore sizes (Gould 2000:209-210). They were certainly unknown in China until the early sixteenth century when they were introduced by the Portuguese (and known as 佛朗機砲 pinyin: *fúlǎng jīpào* ‘Frankish cannon’) (Andrade 2016:142-143). It stretches credulity to suppose that they

<sup>293</sup> Christian Pelras believes claims of Buginese and Makassarese piracy are overblown, however, calling the reputation of the Buginese in this regard ‘entirely without foundation’ (1996:3-4).

<sup>294</sup> See e.g. the comments of Laonikos Chalkokondyles, an Athenian who wrote a world history following the 1453 Ottoman conquest of Constantinople. In Book 5 of his account he claims that it was widely believed that the Germans had invented firearms and that they ‘spread gradually from the Germans to the rest of the world’ (Chalkokondyles 2014[~1465]:383). Pietro Bembo (2007:9, 57), writing in the sixteenth century, makes similar comments.

<sup>295</sup> Earle and Villiers (1990:89) give ‘calibre’ for *feição*, but ‘style’ is more accurate.

were common in Southeast Asia before then, although the design may have been adopted by local gunsmiths between the first Portuguese contact and the conquest in 1511.



Figure V.4. A breech-loading cannon from Java. New York, Metropolitan Museum of Art, inv. no. 1986.503.

A Javanese-made bronze breech-loading cannon with an animal-face motif and a *Surya Majapahit*-like symbol cast over the trunnions in the Metropolitan Museum of Art adds to the confusion (inv. no. 1986.503 – Figure V.4). Based on the symbol the Met implausibly places the cannon in the fourteenth century (when breech-loading cannon were invented in Europe), but the symbol is itself difficult to date and it cannot be diagnostic in this way. Anti-personnel breech-loaders later became popular across Southeast Asia (Manguin 1976; Sint Nicolaas 2007; Wooley 1947); this gun could easily have been made in the sixteenth century or later.<sup>296</sup>

By 1500 the serpentine, an S-shaped iron trigger that lowered a match or hot iron into a handgun's touchhole, was common in Europe, first evidenced in a German manuscript of 1411 (Vienna, ÖNB, Codex 3069, f.38v), and Portuguese sources also refer to handguns/muskets in Southeast Asian contexts (e.g. '*muitas espinguardas*' – Barbosa 2000[1516]:374). The *Sulalat al-salāṭīn*'s claim that guns were unknown among Malays before the arrival of the Portuguese is false, and muskets were certainly used by both sides at Melaka in 1511: António de Abreu, who only months later led the first expedition to Maluku, was shot in the face by a gun, losing part of his tongue and several teeth.<sup>A57</sup> *BM*'s *wedil* probably encompassed both 'cannon' and 'musket' (cf. OJv *bēḍil* 'firearm (old type)' – OJED 232.10) and either way would probably have been anti-personnel weapons with small bores, some perhaps shooting arrows or darts.

The master gunners (*juru wedil*) are said to be Balinese. Interestingly, one of Clifford Geertz's informants from Tabanan, Bali, remarked of pre-colonial Bali that '[t]here were certain specialists (*juru bedil*) who held the few guns there were, and they were placed in the very front of the fight' (Geertz

<sup>296</sup> The breech-loaders may have been made by Europeans and brought to the archipelago. This is not as implausible as it sounds; Varthema (1535[1510]:78v) says that two Italian gunsmiths were employed by the Zamorin of Calicut c.1500, and at least one gun sent by the Zamorin to the Sultan of Melaka was captured by the Portuguese in 1511 ('hum tiro grāde que o Rey de Calicut mandara ao Rey de Malaca' – Albuquerque 1576:382). Conti (Bracciolini 2004[1448], lines 656-662) noted as far back as the 1440s that Europeans were known in Asia for their gunsmithing skills. See also the cannons on the sixteenth-century Xuande wreck (Goddio et al. 2002:239).

1980:254). By late pre-colonial times these guns were probably imported rifles (Geertz 1980:91, 206), but it is interesting that the term *juru bedil* was also used in Bali itself.

### *Chinese Master Archers*

By the fifteenth century Chinese communities had grown to considerable size across western Indo-Malaysia and Chinese people often held important posts in the region's port-cities. When Zhèng Hé arrived in Palembang (舊港 'old port') in 1407 he found that what had been the capital city of a Malay kingdom, Śrīvijaya, had been turned into a pirate republic run by a Chinese man, Chén Zǔyì (陳祖義), who had taken over after the city's previous ruler, Liáng Dàomíng (梁道明), had left for China. Chén was brought to China and executed (Wolters 1970:73-75). The size of the Chinese population meant that post-Chén Palembang could not be considered a wholly foreign country by the Míng; it instead became a 'Pacification Superintendency' (宣慰使司 pinyin: *xuānwèi shǐsī*), equivalent to a state on China's borders (Wade 2016:22). In *BM*, however, the only reference to Chinese people, as opposed to goods, comes in BM 927 – *juru panah urang Cina* 'the master archers were Chinese'.

Chinese archery traditions seem to have been conservative in the Middle Ages. There were reportedly fourteen different schools of archery in the early sixteenth century but specifics of their teachings have not survived, and the most commonly cited manual in the Míng had been written over seven centuries earlier in the Táng dynasty by Wáng Jū (王琚), a contemporary of seventh-century CE Empress Wǔ Zétiān (624-705). Wáng Jū's teachings had been transmitted through a Sòng-dynasty encyclopedia, *The Guided Tour through the Forest of Facts* (事林廣記 *shìlín guǎngjì*) by Chén Yuánliāng (陳元靚), and they formed the basis of all extant archery manuals into the Qīng. Lǐ Chéngfén's (李呈芬) *Archery Classic* (射經 *shèjīng*, written 1646) – which quotes liberally from Wáng's then-millennium-old text – noted that archers were frequently illiterate, so the lack of Míng-era material is perhaps unsurprising (Selby 2000:278).

In Wáng's method (described in Selby 2000:196-210), the bowstring was drawn with the thumb; for infantry shooting, as on a ship, Wáng recommended the 'Chinese method' (中國法 – as opposed to the 'nomad/barbarian method' 胡法), wherein the middle finger secures the thumb with the index finger standing erect along the string. The thumb was normally protected by a thumb-ring, and in the Míng there was a fashion for ornamented stone thumb-rings with raised ridges around the middle (see Selby 2000:xvii for images), although most were leather or horn. Mǎ Huān (76) says that the beak of the 'crane's crest bird' (鶴頂 – *Buceros bicornis*, great hornbill), sourced from Palembang, could be used to make *jǐjī* (擠機), which Mills (1970:101) interprets as archers' thumb rings; *BM*'s *juru panahs*' thumb rings might have been made using such local materials. The string was drawn to below the ear, and the arrow was drawn so that the arrowhead 'mounted the thumb' (上指). In infantry shooting the

bow was held upright and the feet were placed slightly apart.<sup>297</sup> Upon release the bow was allowed to spin forward, finishing parallel to the ground.

The materials of a Chinese bow were described in *The Rites of Zhou* (周禮 *zhōu lǐ*), supposedly written in the Zhōu dynasty but more likely to date to the early Hàn (as an ‘Old Text’ [古文經] – see discussion in Selby 2000:90-91; Nylan 1994). A bow required a wooden core supported on the belly by horn (to resist compression) and on the back by animal sinews (to resist expansion) glued together with isinglass. The nocks were cut into horn or wooden inserts at either end; in English longer non-moving inserts are referred to as ‘siyahs’, although these were less common on early Míng-era bows (Loades 2016:6-8, 20). The whole was bound with silk and coated with lacquer to protect it from the elements, including humidity (cited specifically in *The Rites of Zhou*). Archery with handbows (rather than crossbows) was common on Chinese ships into the nineteenth century: Later Míng woodcuts clearly show bows with elongated siyahs on ocean-going ‘Fujian ships’, and bows are known to have been carried on Sòng-era ships too (see Lam 2002:Fig.27; Miksic 2013:101). Composite bow are significantly more powerful than self-bows, and it is easy to see how an archer with a Chinese bow trained in a Wáng Jū-like system could have been an asset on fifteenth-century Indonesian shipping.



Figure V.5. **L:** A self-bow depicted at Prambanan, Central Java, ninth century – author’s photograph. **R:** a composite bow in a relief depicting part of the *Arjunawiwāha* at Candi Kedaton, Probolinggo, East Java, c.1370 – Leiden, UBL, OD-3402.

The 1292 Mongol invasion (see Bade 2013) may have brought a similar archery tradition to Java, although as composite bows were used throughout Afro-Eurasia they could have come to Java in

<sup>297</sup> Specifically the posture was described as: 此為丁字不成八字不就 ‘almost a “丁” and not quite a “八”.’

any number of ways. Bows from other Indonesian islands are typically wooden or bamboo self-bows shooting long unfletched arrows – e.g. the Tanimbarese weapons in Drabbe (1940:93, plates XII and XXXII) – and they and the Indian-style self-bows depicted in Central Javanese-era reliefs (Figure V.5) were probably less effective than the bows used by Mongol and Mamluk archers. Recurved composite bows are depicted in reliefs throughout the Majapahit period; a relief at Candi Panataran depicting Indrajit as a horse archer<sup>298</sup> (see Gommans 2018) has received particular attention, but similar bows are depicted elsewhere.<sup>299</sup> This could have been mere fashion, but these reliefs suggest that horn-wood-sinew composite bows *were* known in Java in the fifteenth century.

### *Bailing Water*

Bailermen – people who bail water from the boat – are mentioned on both *parahus*. On the first they are identified as coming from Kalapa, but on the second *parahu* they are referred to simply as *nu ni(m)ba* (BM 932, 933 – ‘[those] who bail’, from PMP \*timba ‘vessel for drawing water’ [ACD 10323]). Their bailers (*pani(m)ba*) are said to be *salaka* ‘silver’; such utilitarian items are normally of wood or bamboo. Noorduyt and Teeuw translate BM 932, *nu ni(m)ba jo(m)pong sagala*, to mean that the bailermen were ‘crested’ (as in Coolsma 1913:145 *sub* DJOMPONG, from a word for a horse’s mane). *Jompong* has other meanings in MSd, however, particularly ‘youth’ or ‘pubescent boy’. Rigg (1862:177) also gives ‘servant of nobles’, which is a plausible interpretation; the foreign sources suggest slaves and servants laboured on ships, and Sunda certainly took part in the slave trade. The more usual word for ‘slave’ in OSd is *hulun*, however, as in SA 253 (*réya hulun mo kasuruh* ‘there is no point in commanding many slaves’ – from PMP \*qulun ‘outsiders’ [ACD 4668]). ‘Youth’ is perhaps a better reading.

### *Musicians?*

While several musical instruments are mentioned in both *parahu* descriptions (BM 98-104 and BM 939-946), no musicians appear in the text. All of these musical references come as the first and second *parahus* are leaving their respective harbours, and include a range of percussion and woodwind instruments as well as the human voice. The songs (*kawih tarahan*) seem to have been sung by the crew, although the interpretation is complicated by the enigmatic word *tarahan*. In BM 944 Noorduyt and Teeuw left the term untranslated (‘*tarahan* songs’), although in BM 100 they translated the entire phrase as ‘shanties’. Presumably the origin is *tahan* ‘to endure, to bear’ (Rigg 1862:472) with the *-ar-* plural infix – ‘endurance songs’? Working songs?

The instruments on the ships – many of which have been discussed in a recent article by Ilham Nurwansah (2020a) – comprise *goong* (nipple gongs); *gangsa* (probably flat gongs; N went for

<sup>298</sup> First taken note of by UGM archaeologist Adieyatna Fajri (Jarrah Sastrawan, p.c.).

<sup>299</sup> A particularly clear example can be seen in a relief at Panataran – Leiden, UBL, KITLV 87862.



‘cymbals’); *goong kuning* (‘yellow gongs’, presumably of a brass-like copper alloy, possibly with gold inclusions – Goddio 2002:238); *ge(n)dang* (drums); and *sarunay* (shawms). Additional musical terms occur at the text’s finale while Bujangga Manik is in heaven (BM 1785-1790): *ge(n)ding* (an OJv word that, according to Kunst [1968:5], ‘has no specific meaning’; Danasasmita et al. [1987] translate it as ‘gamelan players’); *caning* (a kind of metallophone known in Javanese as *saron* – Noorduyn and Teeuw 2006:329; van Zanten 1995:525; see also Kunst 1968:78-81); *tatabehan* (‘instrumental music’ – Kunst 1968:3-4); and *pabura(ñ)cahan* (‘place of *burañcah* instruments’, *burañcah* being an OJv word for unknown instruments found in the *Kuñjarakarna* – OJED 275:16).



Figure V.6. A relief at Sukuh (Central Java, mid-fifteenth-century) showing a nipple gong. Leiden, UBL, OD-7133.

‘Gong’ is a colonial-era loanword in English, probably from Malay, and *BM*’s *goongs* (cf. Mal *gong*, OJv *goñ* [OJED 535:14]) were not known in medieval western Afro-Eurasia. These gongs were probably bossed or nipple gongs; the vast majority of gongs recovered from shipwrecks of the fifteenth century are bossed gongs with only small differences in design (Nicolas 2009:62-63; Goddio 2002:237), and gongs of that type appear in reliefs (Figure V.6). These have been recovered in large numbers; 51 bossed gongs were excavated from the fourteenth- or fifteenth-century Phu Quoc wreck, for example (Nicolas 2009:65). *BM*’s *gangsas* (Skt *kañśa*, cf. OJv *gañsa* [OJED 492:6]) may have been simple flat gongs, found at maritime archaeological sites from the ninth century on. No drums (*ge(n)dang*, cf. OJv *kēṇḍaṇ* [OJED 849:3], MJv *kendhang*, Malay *gendang*) have been recovered from wrecks, presumably because they were made of organic materials, but their appearance on reliefs at several Javanese *candi* suggests they would have been similar in style to those in a modern *gamelan* ensemble – asymmetrical drums tuned with cords. Some of these instruments can be seen in several reliefs of musical ensembles on the main temple at Panataran (e.g. Leiden, UBL, KITLV 28255 and KITLV 28254 – see also Kunst 1968:120-123 for a chronological list of instruments depicted in Javanese reliefs).

The ancestor of the modern oboe, the shawm was a popular instrument across medieval Eurasia – probably as far east as Ternate, where by the sixteenth century shawms were played at ceremonies for



the installation of a sultan (L. Andaya 1993:64). The English name derives tortuously from Latin *calamus* ‘reed’, but the Sundanese one, *sarunay* (cf. Malay *serunai*, MJv *sruni* [Robson and Wibisono 2002:700]) is from Middle Persian *sōrnay* (سورنای) compound word referring to reed instruments (سور) used at a feast (نای) (Mackenzie 1971:78 *sub sūr*).<sup>300</sup> Kunst (1968:Fig.9) sees a possible shawm (or end-blown flute) in a relief at Borobudur, and a couple at Panataran and Jago (1968:Figs.50, 55), although he says ‘[w]e cannot be quite sure that the instruments shown are shawms’ (1968:28). Interestingly, given that the *sarunay* in *BM* is played as cannons fire and gongs are hit, in Middle English an alternative name for the shawm was *bumbard*, from *bombard* ‘cannon’.<sup>301</sup> The *sarunay* must either way have been chosen for its commanding sound, able to compete with and complement the din of guns and gongs.<sup>302</sup>

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*Bujangga Manik* shows that life at sea in fifteenth-century Southeast Asia was extremely multicultural. People from some of the tiniest and most poorly documented islands of the archipelago rubbed shoulders with folk from some of Eurasia’s greatest ports, and Chinese-inspired guns and bows could be found alongside Persia-derived shawms and native gongs. Although only briefly glimpsed, these marine communities are some of *BM*’s most fascinating sections. Each ship appears to correspond to Bujangga Manik’s spiritual authority at different points in his life, starting with a humble, slow-moving craft crewed by local Sundanese mariners and ending with the biggest ship of all, a medieval *jong*, a ship larger than almost any other in the world. The grandeur of the ships increases as the ascetic gains greater understanding. After coming to Balungbungan in *BM* 1013, Bujangga Manik heads to Rabut Palah again in order to read the Javanese holy texts. After this he goes back to West Java, ascending the volcano, Papandayan, and has a vision of the entire known world. This is the peak – literal and figurative – of his insight, and it flows directly from his journey from Bali on the *jong*, a physical manifestation of the ascetic’s spiritual accomplishment.

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<sup>300</sup> The shawm seems to have been popular throughout Eurasia, with descendants in Chinese (唢呐 *suǒnà*) and Cuman (*suruna*) as in the thirteenth-century *Codex Cumanicus* (Venice, Biblioteca Marciana, Cod. Mar. Lat. DXLIX), one of the earliest records of a Turkic language in Europe (Kuun 1880:103, 297).

<sup>301</sup> *Middle English Dictionary*. Robert E. Lewis, et al. (eds). Ann Arbor: University of Michigan Press, 1952-2001. Online edition in *Middle English Compendium*. Frances McSparran, et al. (eds). Ann Arbor: University of Michigan Library. 2000-2018. <https://quod.lib.umich.edu/m/middle-english-dictionary/dictionary/MED5471>. (Accessed 23-08-2020.)

<sup>302</sup> A shawm recovered from the Mary Rose appears to have been rather quieter – a ‘still’ shawm with a gentler, less shrill sound (Myers 1983). This says little about instruments in Southeast Asia, but it is a reminder that medieval and early modern instruments may have few parallels in the modern world.