MINERAL PRODUCTION ON THE EAST COAST OF MALAYA
IN THE NINETEENTH CENTURY

by
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Abstract

The title of the paper I think broadly explains the contents. In it I argue that whilst the economic and political importance of tin production on the West coast of Malaya from the mid-nineteenth century onwards has understandably pre-occupied historians of politics, economics and demography, in fact it has resulted in a distortion of the historical record in that up to about this date it was gold rather than tin that was the main mineral product from the peninsula and that, unlike tin production, gold production was centred on the East Coast and largely produced by the Chinese. As a result assessments about the extent of East coast isolation from world trade and estimates about the size and distribution of the Chinese population before 1850 have to be reviewed. I hope that in justifying these claims I have also filled in certain lacuniae about mining, demography, Malay politics and imperialism in the 19th century.

(1) Introduction*

The origins of much of Malaysia's 20th century prosperity as well as many of its problems (most notably the inter-ethnic conflict between the Malays and the Chinese and the economic imbalance between the East coast and West coast states) spring from the fortuities of geology, but in many ways the history of the peninsula in the 19th and early 20th century only represents a variation of an age old historical theme. From very early times the peninsula's mineral wealth has brought it fame, immigrants and trade, as well as attracting the interest of foreign powers. The first of the many immigrant groups attracted by the peninsula's mineral wealth are believed to have been Bronze Age Yue and Cham miners from Indo-China and although the first recorded traders are Arab tin-merchants in the 9th century, certainly Malaya's gold and tin trade goes back much earlier; in fact, if Wheatley is correct and Ptolemy's "Golden Khersonese" does refer to the Malay Peninsula, back to at least the 2nd century A.D.¹ Indian contacts probably date back to the pre-Christian era and from the 5th to at least the 9th century there were Indian miners in Malaya.² Chinese contacts go back to the

*(i) Footnote entries which are purely bibliographic are indicated by an unadorned number. Where a footnote contains some additional information, it is marked by a number with an asterix. (ii) When an edition of a book other than the original edition has been used, the date of the edition used is enclosed in brackets, e.g. Crawfurd, 1820 (1856).

7th century A.D. and possibly earlier. Chinese records mention gold and tin as minor exports from Pahang and Kelantan in the mid-13th century and tin as a major export from Malacca in 1408. The first Chinese residents appear to have been merchant settlers in Singapore from the 14th century and in Malacca from about the middle of 15th century and although there is no direct evidence of any Chinese settlements on the East coast apart from Hamilton's account of the sizeable Chinese trader communities in Johore and Trengganu in the late 17th and early 18th centuries, it is likely that Chinese merchants took part in the flourishing trade that is believed to have existed on the East coast in the 16th century.\(^3\) Exactly when the Chinese became miners as well as merchants is not known since the evidence is contradictory, but it certainly dates from at least the end of the 18th century.\(^4\)

Throughout the history of Southeast Asia, various empires rose and fell according to their ability to control the sea-borne trade and the pattern after 1500 was no different from the pattern before except that the Portuguese, then the Dutch and the British became contenders. However in one crucial respect the Dutch and the British were different from earlier imperial powers: they attempted to combine trade with direct administration.\(^5\) The extension of British control over Malaya was spasmodic and spread out over a period of over 100 years but each of Britain's forward movements was intimately connected with the mining industry. The initial British footholds of Penang and Singapore, made in 1786 and 1819 respectively, acted as collecting points for trade goods, in particular gold from the East coast which up to about the 1830s overshadowed tin in terms of value. Tin production in the early part of the 19th century has been variously estimated but it was almost certainly no more than 1000 tons p.a., a considerable quantity for the period but minute in comparison to the 42,000 tons p.a. produced by the end of the century.\(^6\) This huge increase in tin production, which made the Peninsula's gold production pall into economic insignificance, was made possible by the discoveries from the 1840's onwards of the enormously rich deposits on the Western side and by the influx of large numbers of Chinese miners whose more effective technology and work-organization enabled them to work the richer but deeper tin deposits. However the same factors that enabled the Peninsula to satisfy the increased demand for tin (brought about by the developing British economy) also threatened production since they brought about a state of chronic conflict between and among the Malays and the Chinese who fought to control the growing tin-revenues. This threat to production and the fear that the conflict might spread to Penang and Singapore led the British

\(^3\) Hamilton, 1727, p. 153; Linehan, 1934, p. 2; Rentse, 1939, pp. 94-5; Purcell, 1951 (1965), pp. 235-8 and pp. 257-8. Medhurst (1830, p. 155), a missionary who visited the East coast in 1828, commented that the Chinese community in Trengganu town appeared to be an old and established one and Cant (1972, p. 21, footnote 23) refers to records that state that there was a Chinese community in Pahang in the early 17th century.


\(^6\) For the source of this and all other figures for the peninsula's tin production in the 19th century, see Table 1.
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in 1874 to annex, under the guise of a Residential system, the major tin producing states of Selangor, Perak and Sungei Ujong.\(^7\)

Undoubtedly of all the non-human factors that have helped to shape the modern history of Malaya, the existence of these huge tin-deposits on the Western side is the most important since from it originate both the economic and demographic predominance of the Chinese and the higher degree of Western style economic and political development on the West coast. Within the century the West coast states (with the exception of Kedah which remained outside direct British control until 1909) changed from being essentially small-scale peasant societies that were relatively homogeneous culturally and dominated by traditional, indigenous leaders to become part of a plural society (or perhaps more accurately characterised by Dobby as a "cellular" society) tied, for good or ill, to a world economy and dominated by a foreign, modernising elite.

The East coast states on the other hand lacked any large-scale mining and so remained, in Emerson's phrase, "in something of a state of nature".\(^8\) But few of them escaped the attention of European adventurers who were anxious to gain mining concessions and it was the successful machinations of one such "concession-hunter" that eventually precipitated the third and final British extension of power over Kelantan, Trengganu and Kedah in 1909. However the hopes that the East coast, and Pahang and Kelantan in particular, contained mineral wealth have never been realised and so, lacking the huge mining revenues that financed the rapid development of the West coast states, the East coast states have kept their essentially Malay and peasant character.

Today tin accounts for almost all of the total value of Malaysia's mineral exports.\(^9\) 93% of the tin is produced by the West coast states, mainly by Perak and Selangor, and only 7% by the East coast states, none of it by Kelantan.\(^10\)

This has meant that the history of mining in Malaysia has been written exclusively in terms of tin and almost wholly in terms of the West Coast\(^11\) and whilst the economic and political importance of tin production on the West Coast from the mid-nineteenth century onwards has understandably preoccupied historians of politics, economics and demography, it has in fact resulted in a distortion of the historical record. The aim of this paper is not theoretical in the sense that it seeks to make generalizations about the relationship between technological levels and social organization or the relative importance of economic or political factors in explaining 19th century imperialism or 20th century economic development;

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\(^7\) Comber, 1956, p. 152.
\(^9\) See the Annual Census of Mining Industries produced by the Department of Statistics, Malaysia. In 1972 tin accounted for over 96% of the value of Malaysia's mineral production. The other minerals produced and listed are copper, gold, manganese ore, wolfram ore, amang ore, xenotine, iron ore and bauxite.
\(^10\) Yip's figures for 1963 (Yip, 1969, p. 27). Johore's contribution of 1.3% of the total has been evenly divided between the East and the West coast states.
\(^11\) For example both the authors of the standard works on the history of tin-mining in Malaysia (Wong, 1964, and Yip, 1969) have restricted themselves to the former FMS territories. In Wong 1964, which deals with the history of tin-mining up to 1914, neither Kelantan nor Trengganu are even indexed. There is no modern study of the history of gold-mining in the Malay Peninsula.
rather it is an attempt, via an examination of the available sources, to show that up to about 1850 it was gold rather than tin that was the peninsula’s main mineral product, that it was the East Coast and not the West Coast that was the centre of Chinese industry and the more important producer of minerals and that, as a result, assessments about East Coast isolation from world trade and the size and distribution of the Chinese population before 1850 have to be revised. I also hope that, apart from covering the more familiar ground as to why the East Coast has kept its essentially Malay identity, certain lacunae have been filled in concerning mining, demography, Malay politics and British imperialism in 19th century Malaya.

(2) Mineral Production on the East Coast up to 1909

Even the barest of details about mineral production on the East Coast before the 20th century — what was produced, where it was produced, how much was produced and by whom — are few and far between, but it is reasonably certain that up to about the 1830s the value of the Peninsula’s gold production, which was almost wholly produced by the East coast states, exceeded that of its tin production; that, unlike today, the East coast states produced, relatively speaking, considerable quantities of tin which, in conjunction with their gold exports, made the East coast and not the West coast the most important centre of mining and that lastly, unlike the West coast, it was the Chinese who were the major producers. However as the West coast tin production boomed from about the 1850s, the Chinese miners left the East coast and East coast mineral production declined into insignificance, leaving only tales of fabulous wealth to excite the cupidity of a variety of European adventurers.

Whilst shallow deposits of tin are found in all the Malay states, for geological reasons the extraction of gold has been restricted to a narrow belt running from Patani in the northeast, down through the small states surrounding Patani and into the interiors of Perak, Kelantan and Pahang and then through Negri-Sembilan into Malacca.12 Very little is known about the early history of gold extraction on the East coast but the ancient remains of gigantic goldworkings can still be found in the interiors of the Patani states, Perak, Kelantan and especially in Pahang where the hills are perforated with deep pits that extend for miles and which must have taken several centuries and thousands of men to produce.13 However geologists in a report to the British government at the end of the last century said that these old workings were “not so much evidence of former great mineral wealth as of an insistent demand that had to be satisfied no matter what the cost to the producer.”14

Chinese records mention gold and tin as minor exports from Kelantan and Pahang in the mid-13th century and in the next three centuries something of a

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12 Wheatley, 1961, p. xxi. (For the political-geographical denotation of the terms “Patani” and “Patani states” as used in this paper, see Table 1, footnote (d)).
13 Maxwell, 1891, p. 45; Denny, 1894, pp. 264–6; McCarthy, 1900, pp. 15–16; Savage, 1925, p. 72; Middlebrook, 1933, p. 152; Linehan, 1936, p. 3.
14 Quoted in Wright and Reid, 1912, p. 264.
trade boom seems to have occurred on the East coast; by the middle of the 14th century Pahang’s gold had made it so famous that "Pahang" came to designate the whole of the Peninsula and in the 16th century it is almost certain that a flourishing trade in gold, tin, ivory, spices and so forth took place on the East coast. 15 Two of the earliest European "factories" (or trade centres) were located in Patani, the first one opened by the Dutch in 1602 and the second one opened by the East Indian Company in 1610 (and closed in 1623) 16, but nothing is known about the context within which this trade took place nor who the miners were at that time.

The next reference to gold production comes from Hsieh’s account of his travels on the East coast in the late 18th century. At that time there were at least four important goldmining areas in the region. Difficulties of transliteration complicate the exact location of these mines, but it would seem that Hsieh was referring to the mines in Ulu (interior) Sai (in the Patani states on the Kelantanese border), to those in the Sokor region (in central Kelantan), at Galas (in the Ulu of Kelantan) and in the Raub area in Ulu Pahang which were a day or two's journey from the Galas mines. 17 It is not known when these mines were started, but local Chinese tradition ascribes the opening of the Galas mines to Kheh Chinese "cut-throats and robbers" under a notorious Hakka robber chief called Chong Pah Chai in the early 18th century. 18 In another version of the same legend, the Kheh were not the first miners, but had driven out an earlier group of Chinese miners who had then retreated into Pahang. 19 There is less information about the mines around the Sokor but in Rentse’s opinion they were even older than those at Galas. 20

Apart from the goldmines around the Galas and Sokor rivers, Hsieh also mentions those in Ulu Sai and in the Raub area. Of all the goldmines in the Patani states, those in Ulu Sai were the most important and gold, according to native sources and reported by Anderson, was the foremost export from the Patani states in the early 19th century. 21 In Pahang gold was worked in several areas but the most important mines were in the Raub area and concentrated around the tributaries to the River Jelai. 22

With gold, as with tin, the difficulties of locating the mining areas are compounded not only by the simple shortage of information but also by the fact that mines would come into being as deposits were discovered and then decline as

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17 *Tweedie, 1953, pp. 218-9; Wang, 1960, p. 35. (Hsieh was an illiterate Hakka Chinese who travelled extensively in the Malay states, including Kelantan, in the late 18th century).
18 Middlebrook, 1933, p. 152; Savage, 1925, p. 72.
19 Information collected by H.D. Noone from the Chinese Headman in the Galas and reported in Linehan, 1936, "Addendum".
20 Rentse, 1934, pp. 46-7.
21 *Anderson, 1824, p. 170; Foster, 1893, p. 167; Louis, 1894, p. 219; Norman, 1895, pp. 566-7; McCarthy, 1900, pp. 15-16; Annandale, 1900, p. 519. (Late 19th century writers refer to the mines in Ulu Sai as "Temoh" (or "Tomo") since that was the major centre of operations, or as "Telubin" (or "Telepin" or "Telobin") since that was the valley in which they were located).
22 Linehan, 1936, p. 61 and Cant, 1964, Fig. 7 "Mining Areas prior to 1889", p. 15.
the deposits were exhausted, so that evidence of goldmining at one place in one decade does not necessarily mean that gold was mined one decade before or one decade after.23* Both Bozzolo, who was sent by Sir Hugh Low in 1888 to spy out Kelantan’s gold potential, and Savage, who carried out a more professional survey in the early 1920’s, reported old goldworkings throughout Kelantan.24* Similarly, McCarthy, a geographer who travelled in the interiors of Perak and Rhaman in 1883, reported evidence of old goldworkings along the main branches of the Upper Perak River and functioning goldmines at Balom (near Temoh) and at Klian Intan.25 Late 19th century reports also mention goldmining at Batang Padang, Chemor, Janka and at Tamengor (Temengor?), Tolsor, Chikus and Bidar, all areas in the interior of Pahang or on the borders of Perak and the Patani states and whose possession fluctuated according to the politics fortunes of each side.26*

A final problem in locating the whereabouts of the goldmines is that the concept of “mining” is a broad one that covers any form of “excavation of valuable mineral materials from the earth’s crust”27 without distinguishing between different methods of extraction. Gold and tin can be mined in a variety of ways, from simple panning, to the greater complexities of alluvial sluicing and open cast lode mining to the sophisticated techniques of deep reef mining and it is not clear from the 19th century reports concerning the locations of goldmines what technique was being used. Simple panning was practised extensively throughout the whole of the “gold-belt” in the 19th century but goldmining in the sense of deep excavation below 15 feet seems to have been confined to Ulu Sai, Balom, Galas, Sokor and Raub. According to Errington de la Croix, all the Perak gold in 1882 came from panning and Lock in 1907 confirmed the fact that there was only alluvial sluicing in Perak (an occupation almost exclusively confined to the Chinese) but no true underground mining.28 Supporting evidence for the lack of deep goldmining in Perak comes from the fact that there were very few Chinese in the state in the early 19th century and only the Chinese had the technology and organization for deep mining.29*

There is no way of estimating with any firm degree of confidence what the annual production of gold in the Malay Peninsula was in the 19th century since no records were kept for any of the states until 1898.30 However Logan estimated

23*The gold and tin mines in Malacca are an example. They produced 1500 troy ounces of gold and 250 tons of tin during their brief existence in the 1840’s but rapidly declined in the 1850’s (Dennys, 1894, p. 210)
24*Maxwell, 1891, p. 45; Savage, 1925, p. 72. Savage lists nine different locations, some of which had become defunct a long time ago, others which had been operated up to 1920.
25 McCarthy, 1900, pp. 15-16.
26*D’Almeida, 1876, p. 379; Errington de la Croix, 1882, pp. 19-20; Maxwell, 1891, p. 26; Cowan, 1951, pp. 49-50. The boundary between Perak and Rhaman was finally “rectified” by the British in 1909 so that the goldmines came under their jurisdiction (see Birch, 1910, p. 138).
28 Errington de la Croix, 1882, pp. 19-20; Lock 1907, p. 60; Encyclopedia Britannica, 1910, Vol. 12, p. 197.
29*See p. 100. (Anderson 1824, p. 187, reports that there were only 400 Chinese in Perak in 1818).
30 Lock, 1907, p. 61.
that in the early part of the 19th century gold production for the whole of the Peninsula was no more than 20,000 ounces p.a. 31 and although this figure is probably a slight underestimate, it fits in terms of order of magnitude with the figures that are available for Singapore's gold imports from the East coast in 1835-6 and 1842-3 respectively. Although the East coast's gold trade was not exclusively with Singapore (large amounts went to Siam as well), Newbold's figures show that out of the total exports from the Malay Peninsula to Singapore in 1835-6, valued at $308,990, gold accounted for about 47 per cent of their value and that 99.9 per cent of the gold came from the East coast. 32* Without knowing the price of gold in Singapore in 1835, it is difficult to translate value in quantity, but taking the price of $17.50 per troy ounce given by MacGregor as the Singapore price in 1843, it means that about 8,200 troy ounces were exported. This quantity approximates to that given by MacGregor for the East coast's gold exports to Singapore in 1842-3; out of the total exports from both the East and West coasts to Singapore valued at $458,166, the East coast exported 12,750 troy ounces of gold valued at $223,193 which accounts for 45 per cent of the Peninsula's exports to Singapore. 33*

Whatever the correct figure is for gold production in the early 19th century, certainly all the Peninsula's exports to Singapore gold was the most important single item and almost all of it came from the East coast, making the East coast one of the largest suppliers of gold to Singapore and one of its most valuable trading partners, incomparably more important than the West coast. 34*

Probably because of Pahang's ancient fame for gold and the fact that today the only goldmines in Malaysia are in Pahang, it is generally assumed that the bulk of the East coast's gold production in the early 19th century came from Pahang, 35* but this is by no means certain. Newbold calculated that Pahang produced about 300 lbs. troy (or 3,600 troy ounces) p.a. in the 1830s 36 which would mean that Pahang's share of the gold production would only be about 1/3-1/6th of the total East coast production, the rest coming from the Patani states, Kelantan and Trengganu. The evidence of another early 19th century

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31 Logan, quoted in Dennys, 1894, pp. 143-4.
32 Newbold, 1839 (1971), Vol. 1, pp. 291-312. In fact the West coast states were net importers of gold (ibid., p. 312-42). (All prices are expressed in local units).
33 MacGregor, 1848, Vol. 4, p. 1029. MacGregor's figure for the East coast's gold exports are quoted in "bunkals" — the unit of weight used for gold and equivalent to 832 grains or the weight of two Spanish dollars (Wilkinson, 1932, p. 151). Skinner (1965, p. 24) also estimates that in the early 19th century the East coast annually exported some 5-6 pikuls of gold (about 10,000-11,000 troy ounces) to Singapore.
34 Cf. Wong, 1960, pp. 79-80 and Skinner, 1965, pp. 24-25. In a petition sent by Singapore merchants to the Governor of Penang in 1833 in which they asked for protection from the pirates that preyed on the East coast trade in gold and other products, they stated that the East coast trade formed "by far the most valuable portion of the trade conducted by native craft amounting in value ... to about one million Spanish dollars per annum" — or about half the official estimate of Singapore's total trade. (Bengal Public Consultations, Range 13, Vol. 3, Aug. 19th, 1833, No. 2).
35 For example Skinner, 1965, p. 24. Hamilton in 1727 spoke about the abundance of gold dust in the Pahang River and that he had seen nuggets of gold of 5-6 ozs. each. He estimated that Pahang exported about 900 lbs. (or 10,800 troy ounces) of gold each year. (Hamilton, 1727, p. 152).
author states that whilst washing for gold and tin were important activities in Pahang, it was not done "to the same extent as in the Malay states of Tringanu and Kelantan". Similarily Earl, who traded on the East coast between 1832-4, wrote that whilst Trengganu was richer than Kelantan, Kelantan produced “considerable quantities” of gold.

Whilst the lack of facts prevents any unequivocal pronouncements, the evidence does suggest that Kelantan’s gold exports were at least as important as any other state’s in the early 19th century and perhaps even greater. A number of circumstantial facts lend support to this view. Firstly, two of the four main mining areas (Galas and Sokor) were located in Kelantan and the third (Ulu Sai) was probably under Kelantan’s control until about the 1840s when the Siamese had to send an expeditionary force to keep the peace between Kelantan and Sai and left behind a small garrison at Klabar in the Telubin valley. Secondly, Kelantan had a very large community of Chinese miners, probably much larger than any other state’s at that time. Thirdly, both the Chinese miners and provisions going to Ulu Sai went via the Kelantan and Pergau rivers rather than through the Patani states (since this shortened the trip) and so were subject to taxation from Kelantan; this was paid in gold which boosted Kelantan’s exports. Fourthly, gold production was greatly influenced by political factors, in particular by the level of taxation which, if too high, would strangle gold production by making it unprofitable (as in Johole according to Newbold) or else encourage the smuggling of gold so that gold produced in one state would become part of another state’s exports (as with Pahang gold in the 1870s which, according to Daly, was smuggled out to Selangor). During the 1830s Kelantan seemed to have operated a more liberal trade system than the other East coast states, so it is probable (given the Peninsula’s history of smuggling) that gold produced in the interior of Pahang made the one or two day’s journey across to the Galas in Kelantan and then was exported under more favourable conditions from Kota Bharu. Lastly, gold production fluctuated according to political stability and the fortuities of gold prospecting, so that within a few years a major producer could become a minor producer and vice versa. Thus, for example, the massacre of the Chinese miners in Kelantan in the early 19th century brought the state’s gold production to a halt for a period, the discovery of goldmines in Malacca 1857-8 made Malacca a gold-exporting state for the few years before the deposits were exhausted, and whilst Pahang’s gold production in 1890 was only 929 ounces, eight years later it produced 17,035 ounces.

38 Earl, 1837, p. 154.
39 See Graham, 1908, p. 20 and Louis, 1894, p. 226.
40 See pp. 102–103.
41 Wang, 1960, pp. 34–5.
42 Newbold, 1839 (1971), Vol. II, p. 144; Daly, 1878, p. 197. In 1885 the Pahang price for gold was $22 per ounce as compared with the Selangor price of $30–40 per ounce (Linehan, 1936, p. 109).
44 Maxwell, 1891, p. 26; Dennys, 1894, p. 210; Lock, 1907, pp. 60–1; Graham, 1908, p. 103. For an explanation of why Pahang’s gold production was so low in 1890, see Cant, 1964, p. 16.
seems reasonable to believe that for some period of time in the early half of the 19th century Kelantan was the leading gold-exporting state but that such a position could be rapidly gained or lost according to political and geological contingencies.

Because the peninsula's tin deposits were so extensive and capable of being mined without using sophisticated techniques, mining and washing for tin have always been important elements in the traditional Malay economy but, as with gold, there are really no reliable or systematic data about the quantities or sources of production until the British assumed control. Such information as there is, is presented in Table 1.

The earliest and most systematic figures for tin production come from Newbold who obtained his information "from Natives under every possible check" and his figures are of considerable interest. Firstly, he estimates that the total tin production for the whole of the Peninsula in 1835-6 was 2059 tons, which represents a fourfold increase on the 500 tons p.a. that Yip estimates to have been the total annual production at the turn of the century. Secondly, from other figures that Newbold gives, this would be worth about $444,000 dollars at Singapore prices, which indicates that by the 1830's tin had become the peninsula's foremost export in terms of value. Thirdly, although the West coast states (and in particular Perak, Sungei Ujong and Selangor) accounted for two-thirds of the peninsula's production, Trengganu's production of tin was only exceeded by that of Perak, and Kelantan's tin production was only exceeded by those of Perak, Selangor, Trengganu and Sungie Ujong (see Table 2).

It is difficult to locate exactly where the tin was produced on the East coast not only because the data is limited but also because miners would move from area to area as deposits were found and then exhausted and because it was

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45 Indeed so important that it is possible that some of the Malay states are named after their mineral resources. Perak is a case in point, though rather confusingly 'perak' in modern Malay means "silver", a mineral which is hardly found at all. Linehan (1936, p. 2) suggests that Pahang owes its name to the Khmer word "pahang" which means "tin". The origin of the name "Kelantan" has been the subject of some wild speculation (see Rentse, 1934, pp. 45-6) but possibly Kelantan too is named after its tin. At least up to the early 17th century tin was called "Calaen" or "Calum" in Malaya, a word derived from an Indian word "Calai", meaning "tin" (Errington de la Croix, 1882, pp. 2-3, footnotes 1 and 5). Since Kelantan has been a tin producing state for centuries and also subject to a great deal of Hindu influence, and since the Kelantanese are well-known for contracting sounds, it is just possible that "Kelantan" is derived from "Calaentana" or "Land of Tin". Middle Eastern sources between 850-1000 A.D. and 1450-1550 A.D. also mention contact with "Pan-hang" and with "Kalah"—both presumed to be on the Malay Peninsula. A great deal of work has gone into trying to locate their whereabouts and if indeed "Pan-hang" does refer to Pahang, then it seems likely that merchants would also visit Kelantan to the north (which presumably had a relatively large population because of its rice-plains and other resources) and so "Kalah" may refer to Kelantan rather than to an area in the vicinity of modern Klang as suggested by Colless (quoted by Dunn, 1975, pp. 104-5). However since merchants in the past often went to great lengths to disguise the sources of their products for fear of competition and since places were often named after their products (and vice-versa), perhaps "Kalah" simply refers to "tin" (there is, I believe, some etymological evidence for this) and not to a single place but rather to any place where tin was traded on the peninsula.


47 In his discussion of the taxation system in the states that make up Negri-Sembilan (Newbold, 1839 (1971), Vol. I, pp. 312-50), Newbold states that 5714 pikuls of tin were worth $73,386 at Singapore prices—or $215.7 per ton.

### Table 1: Tin Production in the Malay Peninsula before 1874 (in long tons p.a.)

<table>
<thead>
<tr>
<th>Year</th>
<th>Malaya</th>
<th>Selangor</th>
<th>Pahang</th>
<th>Johore</th>
<th>Kedah</th>
<th>Kelantan</th>
<th>Trengganu</th>
<th>PNG</th>
<th>Malaya</th>
<th>World</th>
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<tr>
<td>1718</td>
<td>297.51</td>
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<td>50015</td>
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<td>early 1719</td>
<td>476–535</td>
<td>2402</td>
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<td>1818</td>
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<td>1824</td>
<td>47.17</td>
<td>89.38</td>
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<td>1835</td>
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<td>2144</td>
<td>4704</td>
<td>604</td>
<td>364</td>
<td>1794</td>
<td>4147</td>
<td>894</td>
<td>849</td>
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<td>20594</td>
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<td>1847</td>
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<tr>
<td>1848</td>
<td>2507</td>
<td>less than</td>
<td>536</td>
<td>536</td>
<td>480</td>
<td>6558</td>
<td>c.23808</td>
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<tr>
<td>1840's</td>
<td>500–600</td>
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<td>1851–60</td>
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<td></td>
<td></td>
<td>650011</td>
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<tr>
<td>1861–70</td>
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<td>18,00011</td>
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<tr>
<td>early 1870's</td>
<td>2,70012</td>
<td>2,00012</td>
<td>1,00012</td>
<td>2,14213</td>
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**Notes:**

- a: It is impossible to say exactly what territories were denoted by the terms "Malay Peninsula" and "East Coast States" and "West Coast States" as they were used in the 19th century. Wong (1964, p. 30), who studied the contemporary trade returns for the 88's, says that it would seem that the earlier Peninsula "embraced approximately the territory now included under the Federation of Malaya but without Penang. Province Wellesley and Malacca and that, with regard to the importation of tin, in terms meant specifically Perak, Selangor, Sungai Ujong, and Penang". Nor is it clear what states were included under the headings "East Coast Peninsula" and "West Coast Peninsula", though it would seem that Patani was included under West Coast, presumably because tin from the Patani States was exported to Penang via Singapore. How Johore state was classified is not clear (ibid., p. 30).

- b: All the 19th century estimates were given in the local units of weight: "bahara" (also sometimes called or spelt "bahar", "bhar" or "bharra") and "pikul". Neither unit was fully standardised. The "bahara" was commonly 428 lbs. and the "pikul" 133.3 lbs., but "baharas" of 400 and 500 lbs. and "pikules" of 140 lbs. are also found (Anderson, 1824, p. 123, p. 187 and p. 196; Anderson, 1824a, p. 26; Errington de la Croix, 1888, p. 31; Swettenham, 1906 (1948), p. 17; Wright and Reid, 1912, p. 26).

- c: Negri-Sembilan has only existed as a single political unit since 1879. Here it is used to refer to the geographical area which today makes up Negri-Sembilan.

- d: The political-geographical notation of the states and the term "Peninsular" is confusing in that it can refer to the small state centred on the town of Patani or to the consolidation of states that made up the Kingdom of Patani and which covered the whole of the watersheds of the Patani and Telubin rivers, a part of the Upper Perak valley and only part of the north of Kelantan. In 1832 Siam invaded the Kingdom of Patani and broke it up into seven small states called Patani, Nawangchik (or Tojan), Jering, Sai (or Telubin), Jalar (or Yala), Rhaman and Legeh (or Ra-nge or Ranga). In 1902 the seven states were reunited under the name "The Division of the Seven Provinces" (Annandale and Robinson, 1903 (Supplement), pp. xxi–xxii and Skeer and Laydign, 1953, p. 167). In this paper "Patani" refers to the small state centred on the town of the term "Patani states" used to refer to the area that made up the old Kingdom of Patani.

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4Logan, 1848, p. 101. The figure for Selangor includes production from adjacent islands and the figure for the East Coast only refers to production from Kelantan, Trengganu and Pahang and excludes production from the Patani states. Logan adds that Perak's production was down due to the "miserable state of the country".
7Denny, 1894, p. 5–6. The figures refer to production at Larut and Kinta (Perak), Kuala Lumpur (Selangor) and Sungir Ujong (Negri-Sembilan) alone.
8Goddard, 1820 (1856), p. 316.
9Yip, 1969, p. 392. These figures are the average for the Malay world for the decade. But cf. Wong 1964, p. 53 who estimated Malayan tin-producing up to 1874 to be comparatively insignificant at this time of global tin production.
10Gullick, 1965, p. 5–6. The figures refer to production at Larut and Kinta (Perak), Kuala Lumpur (Selangor) and Sungir Ujong (Negri-Sembilan) alone.
11Yip, 1969, p. 53. Who estimated Malayan tin-producing up to 1874 to be comparatively insignificant at this time of global tin production.
12Upland's estimate quoted by Smyth, 1898, p. 316.
13Yip, 1969, p. 392. These figures are the average for the Malay world for the decade. But cf. Wong 1964, p. 53 who estimated Malayan tin-producing up to 1874 to be comparatively insignificant at this time of global tin production.
14Yip, 1969, p. 392. These figures are the average for the Malay world for the decade. But cf. Wong 1964, p. 53 who estimated Malayan tin-producing up to 1874 to be comparatively insignificant at this time of global tin production.
15Anderson's estimate quoted by Smyth, 1898, p. 316.