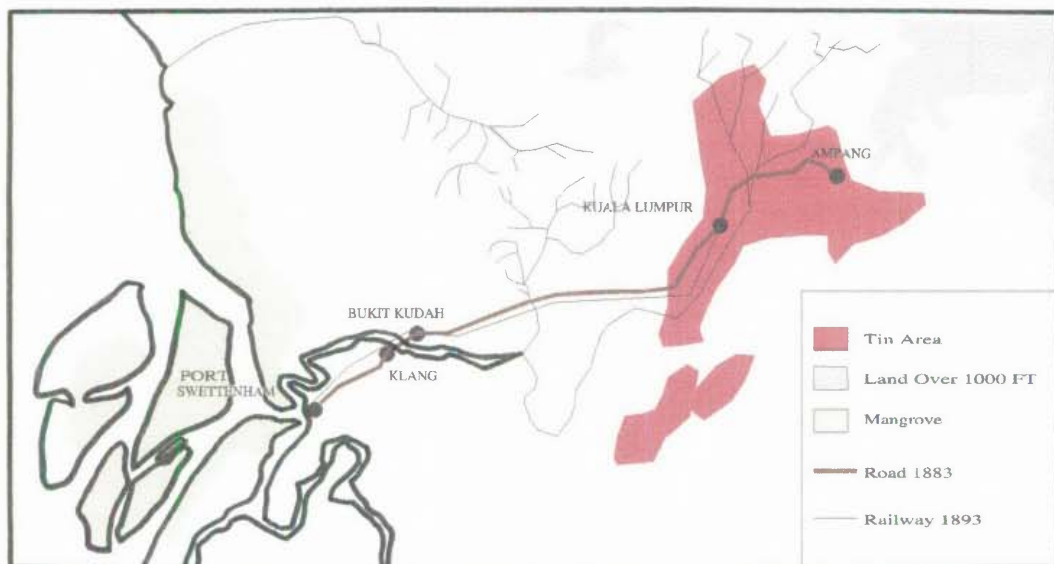


brothers began mining in the Ampang area on a tributary of the Klang River with 87 Chinese labourers transferred from the Lukut mines (Figure 4). Within a month all but 18 of the labourers had died of fever but a further 150 Chinese were immediately recruited from Lukut to continue working the mines. The first stock of tin was exported from the upper Klang Valley in 1859. When, in 1858, it was clear that the Ampang venture was a success, traders moved up from Lukut to deal in supplies in exchange for tin. The first two traders established business at the highest point near the junction of the Klang and Gombak Rivers, a short distance from the tin-fields at Padu and Ampang. This was the beginning of the town of Kuala Lumpur.<sup>48</sup> By 1860 all three areas of mining in Selangor (Lukut, Kanching and Ampang/Kuala Lumpur), were thriving centres of tin production.

Figure 4. The Klang Valley Tin-fields



<sup>48</sup> See J.M.Gullick, "Kuala Lumpur 1880-1895", *Journal of the Malaysian Branch of the Royal Asiatic Society*, Vol.28, 1955.

A fourth mining settlement grew up in Selangor in the course of the 1860s at Bukit Arang in the Ulu Langat district. During this period, however, tin production in all districts of Selangor was interrupted by civil war and the Chinese population in the mines declined considerably. After the conflict a large labour force was required to re-open the mines. In early 1872, 2,000 Chinese miners arrived in Selangor via Klang. A further 600 Chinese came from the Sungei Ujong mines.<sup>49</sup> By 1876 there was estimated to be 6,000 Chinese miners in Selangor compared to the 10,000 miners employed in 1870. Between 1875 and 1878 tin production in Selangor was adversely affected by a trade recession and the population of Kuala Lumpur remained static at approximately 12,000. When the price of tin rose sharply in 1879, mining activity boomed. The population of Kuala Lumpur increased by 30 per cent in twelve months. By 1880 the number of Chinese working the mines around Kuala Lumpur had increased to approximately 23,000.

The outburst of mining activity in the 1840s also occurred in Melaka. By 1842 there was reportedly 1,200 Chinese tin miners in the region. By 1846 production in the Melaka mines amounted to 231 pikuls (about 14 tons), but by 1851 this had risen to 14,000 pikuls (about 835 tons). Thus in the space of five years the productivity of Chinese labour had raised production by slightly more than sixty-fold. In August 1847 the position in the Melaka territory was recorded as follows:

The principal mine is at Kesang, at present worked by about 2,200 Chinese which was lately discovered. The quantity of tin brought from this mine is about 300 to 350 piculs monthly, which is readily sold at the rate of \$ 6 per picul. More mines have been discovered towards Naning, Gapum, Duyong during this month, where they have commenced working... There are about 1,200 men working in the other mines at Durian Tungul, Naning and Ayer Panas.<sup>50</sup>

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<sup>49</sup> Jackson, *Immigrant Labour*, p.35. At this time there was recorded to be approximately 15,000 Chinese in the Sungei Ujong mines. By July 1872 tin output from the Selangor mines was estimated at 3,000 piculs (about 174 tons) per month.

<sup>50</sup> J.B.Westerhaut, "Notes on Malacca", p.172 quoted in *ibid.*, p.34.

Another contemporary estimate of the number of mines and miners in Melaka was:

Number of Mines in Malacca

	<u>Kesang</u>	<u>Ayer Panas</u>	<u>Durian Tungul</u>	<u>Number of Labourers</u>
1848	24	10	13	2,000
1849	15	7	16	3,800
1850	12	5	20	4,000

Source: Jackson, *Immigrant Labour*, p.34.

Mining development in the northern Malay States followed a similar pattern. As early as 1844 Larut, a narrow and practically uninhabited tract of land between the Perak watershed and the sea, was recorded as one of the places from which tin was exported to Penang. In 1848 Che' Long Jaafar, the son of a minor chief who came to settle in the district, accidentally discovered some rich tin deposits at Klian Pauh (later to become Taiping) (Figure 5). Larut developed into an important mining district as Chinese miners flocked into the district from (or through) Penang. A second tin-field was soon discovered 2-3 miles north at Klian Baharu (later known as Kamunting), and a separate Chinese community established itself there.<sup>51</sup> By 1862 there were 19 mines at Kamunting and 8 mines at Taiping with a combined Chinese mining population estimated at between 20,000-25,000.<sup>52</sup> By 1870 this number had increased to between 25,000 and 30,000.<sup>53</sup>

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<sup>51</sup> It has been recorded that the Kamunting deposits were discovered during an attempt to recapture an escaped elephant from the mines at Klian Pauh. When recaptured in the Kamunting jungle the elephant was found to be covered in mud that was rich in tin. See Winstedt & Wilkinson, "A History of Perak", pp.77-79.

<sup>52</sup> Previous to the discovery of tin-bearing land there was estimated to be only 3 Chinese in the whole Larut district. It should also be noted that the numbers 20,000-25,000 refer only to Chinese tin miners and would be much greater if Chinese traders and others indirectly associated with the tin mining industry were included. See Winstedt & Wilkinson, *ibid.*, p.65; Blythe, "Historical Sketch", p.65; Kennedy, *A History of Malaya*, p.137; Doyle, *Tin Mining in Larut*, pp.6-7.

<sup>53</sup> Fernor, *Report Upon the Mining Industry*, p.22; Blythe *ibid.*, p.65; *Report of the Commissioners under the "Perak Engagement"*, 1874, pp.4, 5, 12, 18, 20; *Precis of Perak Affairs, Memorandum on Perak Affairs*, C.J.Irving, June 1872, both in CO 809/1; De la Croix, "Some Account of the Mining Districts of Lower Perak", p.23.

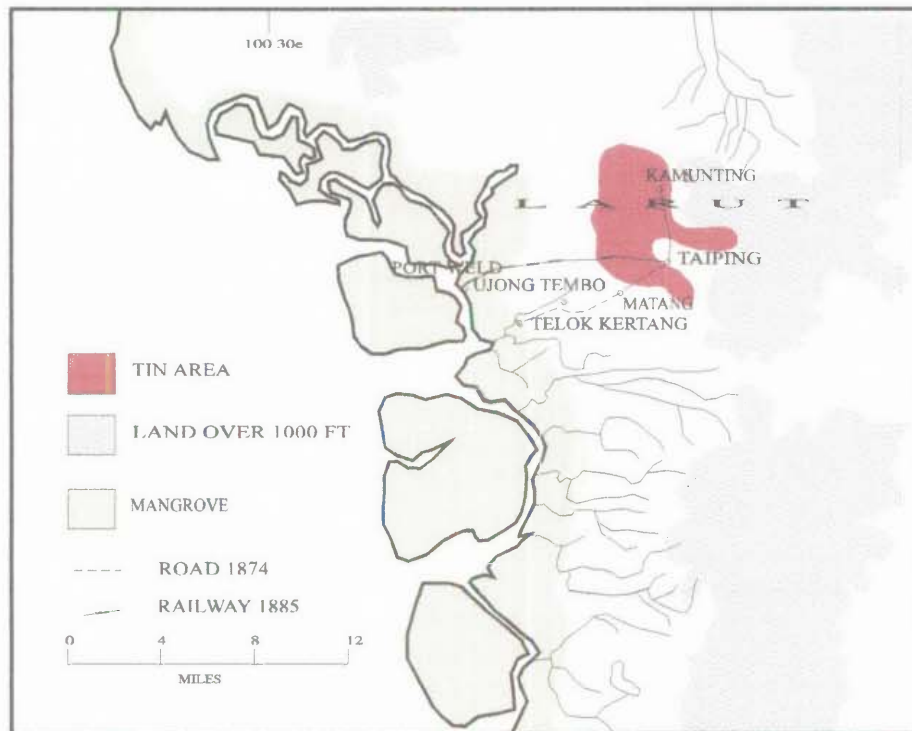


Figure 5. The Larut Tin-fields

By 1874 the Chinese population of Larut had increased to 27,000, "...four-fifths...[of whom]... are miners, and the remainder tradesmen, i.e. blacksmiths, carpenters, gardeners and shopkeepers".<sup>54</sup> Thirty-three mines were being worked and were producing a monthly average of 70 pikuls (about 4 tons) of tin each; ninety new mines had been opened that were expected to average 50 pikuls (about 3 tons) each per month.<sup>55</sup> In 1875 local disturbances and a sharp fall in the price of tin caused the Chinese population to fall - to 15,000 in 1876 and 9,000 by 1877. However, this was short-lived and by 1879, following a recovery in the tin price, the Chinese population in Larut had recovered to 17,000. A contemporary account published in 1879 details tin mining in the area as follows:

At present the extensive mining operations in Larut are carried on entirely by Chinese, which nationality also probably forms nine-tenths of the population...It is exceedingly difficult to determine the number even approximately, scattered as they are, and so irregularly distributed- 14,000 may be taken as the limit, the mines affording occupation for half this number...There are 80 mines in operation in Larut, owned by 40 *kongsis* or firms, with an average of nearly 86 men per mine, distributed as follows:

<sup>54</sup> Quoted in Jackson, *Immigrant Labour*, p.38.

<sup>55</sup> *Ibid.* See also *Precis of Perak Affairs, Memorandum on Perak Affairs*, C.J.Irving, June 1872, in CO 809/1.

	No. of Mines	No. of Men
Assam-Kumbang	33	3,827
Kamunting	30	1,809
Topai	12	1,207

To these might be added 96 "Lampai" workings on the hills, at various elevations, on which 355 men are engaged, either singly or in small gangs, ranging up to but seldom exceeding, six shares.<sup>56</sup>

The Chinese also speculated from the 1840s in the eastern states, particularly in Pahang on the eastern slopes of the Main Range and in the area west of Kuantan (Figure 6). Except for a brief interlude between 1861 and 1863 when a British firm in Singapore obtained a monopolistic concession to work all the minerals found in the Kuantan district, the Chinese had almost the entire field to themselves.<sup>57</sup> Compared to the west coast states, however, Chinese capital and labour tended to by-pass the east coast mainly because the richest and most extensive deposits in the eastern states occurred in lodes. Lode deposits were not only beyond the capacity of Chinese mining methods to handle but were also unnecessary to mine when far richer and more accessible alluvial deposits were open for exploitation in the western states. In July 1875 there was reported to be only 1,000 Chinese mining for tin and gold in Pahang.<sup>58</sup>

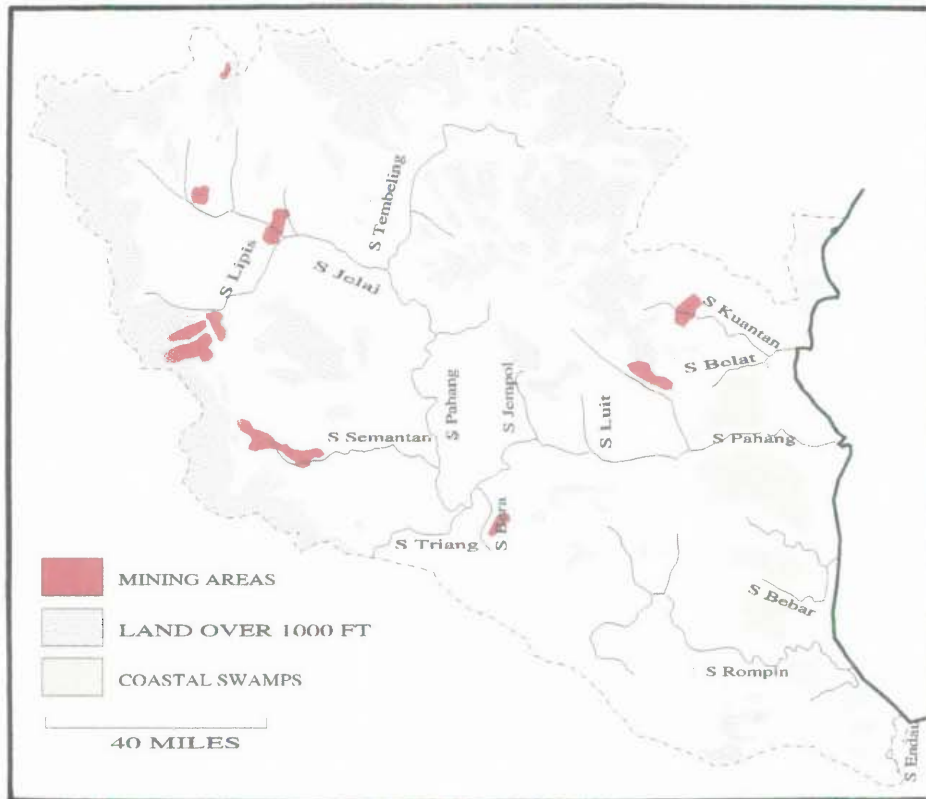
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<sup>56</sup> Doyle, *Tin Mining in Larut*, pp.6-10.

<sup>57</sup> Estimates of the Chinese mining population in Pahang in the early 1840s range between 2,000 and 12,000 miners. Annual production was estimated at 1,000 pikuls. Cant. *An Historical Geography of Pahang*, p.24.

<sup>58</sup> Extract from *Straits Times*, 31 July, 1875.

Figure 6. The Pahang Tin-fields



A second and larger spurt of mining activity occurred in the 1880s as the growing demand for tin and the rising prices this demand engendered encouraged the search for new deposits. The most significant discoveries were made in the western states, especially in the Kinta Valley district of Perak. These discoveries stimulated a second and much larger influx of Chinese into the interior states.

By the 1870's the valleys and foothills drained by the Kinta, Bidor and Batang Padang Rivers were known to be rich in tin; by 1879 there was estimated to be 2,000 Chinese miners in the Kinta Valley, 1,000 miners at Bidor and Batang Padang, 300 in Salak at the foothills of Kuala Kangsar and 800 mines at Gopeng.<sup>59</sup> Then in 1880 large deposits of tin-bearing land

<sup>59</sup> Wong, *The Malayan Tin Industry to 1914*, p.28. See also *Memorandum on the Financial Condition of the Protected Malay States, February 1877*, E. in Gov. to Sec. State, 2nd March, 1880, in CO 273/102; *Notes on Proposed Revenue Farms*, E. in Acting Gov. to Sec. State, 5th August, 1879, in CO 273/99.

were discovered in the Kinta Valley (Figure 7). Located in a district south of Larut the deposits in the Kinta Valley subsequently proved to be the richest and most extensive in the Malay States.<sup>60</sup> Following the discovery of the Kinta fields tin production in Perak increased rapidly. As shown in Table 7 below, production increased more than ten-fold in the period 1874-1893. By 1889 Kinta had superseded Larut as the major centre of tin production in Perak. Outside these two districts tin mining in Perak remained relatively unimportant.

Table 7

Export of Tin from Perak, 1874-1893 (figures in nearest thousand pikuls).

Year	Larut	Kinta <sup>a</sup>	Other		Total	
			Districts <sup>b</sup>	Pikuls	Pikuls	Tons
1874	11,000	-	-	1,000		650
1875	30,000	-	-	30,000		1,790
1876	31,000	-	7,000	38,000		2,260
1877	40,000	-	9,000	49,000		2,920
1878	46,000	-	12,000	58,000		3,450
1879	55,000	-	14,000	69,000		4,110
1880	70,000	15,000	3,000	88,000		5,240
1881	79,000	17,000	4,000	100,000		5,950
1882	95,000	19,000	7,000	121,000		7,200
1883	125,000	25,000	9,000	159,000		9,460
1884	127,000	34,000	11,000	172,000		10,240
1885	104,000	47,000	11,000	162,000		9,640
1886	94,000	63,000	27,000	184,000		10,950
1887	103,000	86,000	27,000	216,000		12,860
1888	102,000	100,000	16,000	218,000		12,980
1889	104,000	119,000	13,000	236,000		14,050
1890	95,000	130,000	12,000	237,000		14,110
1891	86,000	145,000	11,000	242,000		14,400
1892	72,000	193,000	13,000	278,000		16,550
1893	70,000	231,000	15,000	316,000		18,810

Source: *Annual Reports Perak* and Wray, "Some Account of the Tin Mines and Industries of Perak", *Perak Museum Notes*, No.III, 1894 cited in Yip, *Development of the Tin Mining Industry*, Table I- , p.60.

Notes: <sup>a</sup> Tin exports from Kinta for the years 1876-79 were included in "Other Districts".  
<sup>b</sup> "Other Districts" include Kuala Kangsar, Batang Padang, Selama, Kura, Beruas, and Sungei Tinggi.

<sup>60</sup> The Kinta Valley was extraordinarily rich in tin. About 40 miles long, the valley is only 6 miles wide at its northern end. The valley fans out southwards until it reaches, between Pusing and Gopeng, a width of more than 12 miles. In 1897 it was noted that the topsoil in the Kinta Valley carried payable tin ore from the grass roots to a depth of about 15 feet. The deposit could be worked economically in places where water was available throughout the year, or tin could be collected in pits at the top of the workings during the rainy season. Fifteen to twenty feet below the ground lay a stream of stanniferous wash-dirt. Occasionally, a second layer of wash-dirt was found at a deeper level beneath an intermediate layer of barren soil. Therefore, the tin land was workable from the surface downwards. See Owen, "A Review of the Tin Industry of the Malay Peninsula", p.56; Ooi Jin Bee, "Mining Landscapes of Kinta", in T.H.Silcock (ed.), *Readings in Malayan Economics*, Singapore: Donald Moore, 1961, pp.345-349.

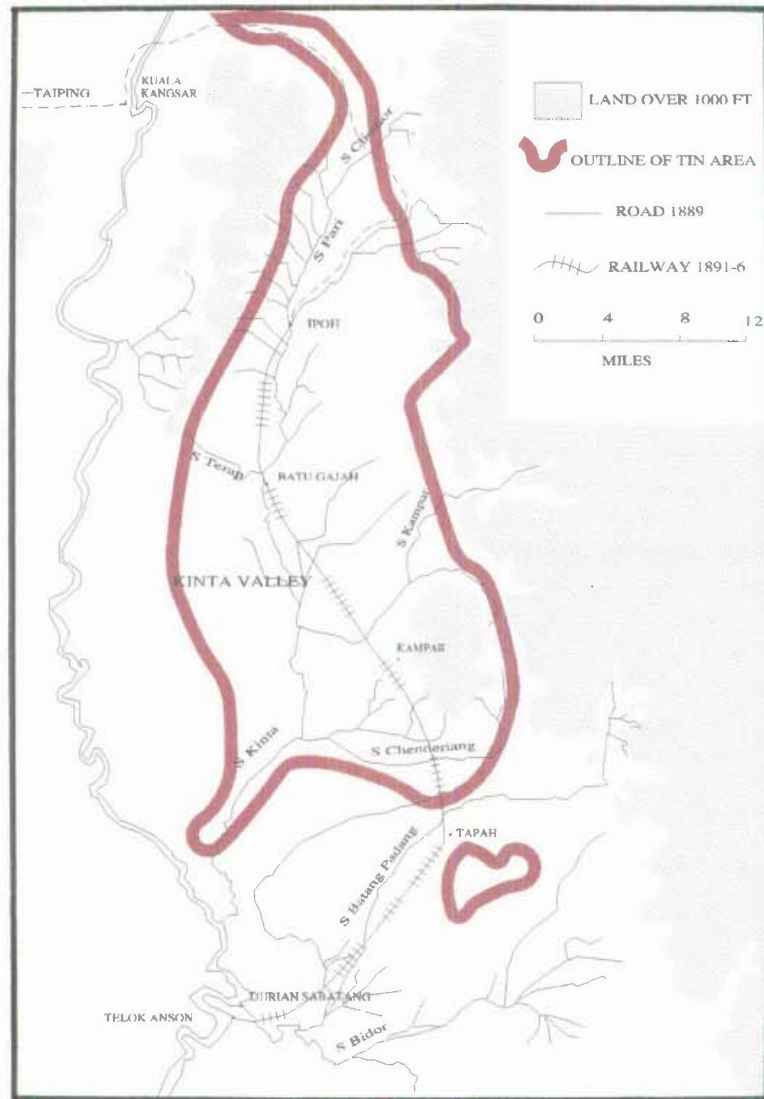


Figure 7. The Kinta Valley Tin-fields

The opening of the Kinta deposits attracted many Chinese miners to the district, some of whom came from Larut.<sup>61</sup> By 1882 Chinese miners had penetrated as far as Ulu Kinta and were working the deposits along the Sungei Pari and Sungei Chemor which focused on the site of Ipoh at the foot of the Senggan Range. By 1885 there were 500 registered mines in the Kinta

<sup>61</sup> A severe drop in tin prices in 1884 (from the peak of £106 15s. 9d. per ton in 1882 to an average of £80 19s. 10d. per ton in 1884), forced many miners in Larut out of business. Consequently, between 1,000 and 3,000 Chinese labourers migrated to the richer tin-fields of the Kinta Valley.



Valley concentrated especially along Sungai Terap, Sungai Kampar and Sungai Chenderiang.<sup>62</sup> Consequently, the Chinese mining population in Kinta increased; from 1,000 in 1880 to nearly 45,000 by 1889. Moreover, this influx continued in subsequent years despite a fall in tin prices. This was primarily because the Kinta mines were so rich as to be worked profitably during a recession. Then, in the period 1889-1895, Kinta experienced a “tin rush”; in 1891 the Chinese population in Kinta was recorded to be 95,277 and by 1895 the total area of land in Kinta alienated by mining amounted to 33,407 acres, about four times that in 1888.<sup>63</sup>

Coinciding with the rapid development of tin mining in Perak in the last two decades of the 19th century was the growth, although to a lesser extent, of mining in the other tin-producing states. The most significant increases in production occurred in Selangor. As shown in Table 8 below, tin production in Selangor had increased to 42,000 pikuls by 1878 and reached 99,000 pikuls in 1886. By 1890 tin production in Selangor had increased to 175,000 pikuls (about 10,400 tons), equivalent to five times that produced in 1871. By the turn of the century production had soared to 255,000 pikuls.

Table 8

Export of Tin from the Malay States of Perak, Selangor, Negri Sembilan and Pahang, 1890-1899. (Figures given in nearest thousand pikuls).

Year	Perak	Selangor	Negri Sembilan	Pahang	Total	
					Pikuls	Tons
1890	327,000	175,000	36,000	6,000	454,000	27,020
1891	242,000	195,000	41,000	6,000	484,000	28,810
1892	278,000	208,000	70,000	7,000	563,000	33,510
1893	316,000	253,000	58,000	7,000	786,000	37,740
1894	396,000	339,000	43,000	8,000	786,000	46,790
1895	400,000	361,000	39,000	9,000	809,000	48,150
1896	383,000	347,000	50,000	11,000	791,000	47,080
1897	352,000	302,000	49,000	9,000	712,000	42,380
1898	331,000	277,000	46,000	11,000	665,000	39,560
1899	319,000	255,000	57,000	13,000	644,000	38,330

Source: *Annual Reports Perak, Selangor, Negri Sembilan and Pahang* cited in Yip, *Development of the Tin Mining Industry*, Table I-2, p.61.

<sup>62</sup> A.Hale, “On Mines and Miners in Kinta, Perak”, cited in Courtenay, *A Geography of Trade and Development*, p.82.

<sup>63</sup> Jackson, *Immigrant Labour*, p.37.

Tin production in Selangor centred around Kuala Lumpur which during this period grew from a village into a flourishing town and commercial capital. The majority of new mining settlements in the district were developed in an outward movement from the centre. By 1887, 103 large mines (each 200-250 feet square and employing some 5,000 miners - some Malays but for the most part Chinese), and innumerable small mines (some as small as 20 feet square and employing some 3,000 workers), were recorded in the district. By 1890 the Chinese population in Selangor had increased to 50,844.<sup>64</sup>

At the same time, however, production in the earlier mining areas of Melaka, Lukut and Sungei Ujong had ceased to be of importance. In Lukut, the most productive tin district in Selangor between 1830 and 1860, production declined rapidly owing to civil war, the incompetent and oppressive rule of Raja Juma'at's successors, and the exhaustion of the easily accessible surface tin deposits.<sup>65</sup> A similar fate befell Sungei Ujong and other areas in Negri Sembilan during the late 1870s and early 1880s. The British Resident, describing the position in Sungei Ujong in 1882, said, "...the Chinese...are contented and industrious but have slightly decreased in numbers, some coolies having gone over to Selangor, where they are more certain of permanent employment than they have here..."<sup>66</sup> In Melaka, where the ore deposits were neither as rich nor as extensive as first envisaged, mining enterprise soon passed its peak. By 1869 it was recorded that the Chinese miners were deserting the mines in Melaka for the "fresh mines in the neighbouring states". Eight years later the mines in Melaka were almost completely abandoned. Melaka ceased to be a mining centre in the course of the latter decades of the 19th century.

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<sup>64</sup> Jackson, *Immigrant Labour*, p.80

<sup>65</sup> In 1875 it was recorded that "Since Raja Juma'at's death in 1869, the place has given up to disorder...The tin diggings which lie close to the village are now almost abandoned. It is said that the old Chinese miners were quite satisfied with Sungei Ujong, where most have found their way, and would never return to these old washed-out water bogged pits." A. Skinner, *Straits Settlements Gazette*, 1875, p.314. The exhaustion of surface tin deposits in the western states in the latter decades of the 19th century will be discussed in greater detail in Chapter 4.

<sup>66</sup> Jackson, *ibid.*, p.79. The tin sands of Sungei Ujong and Jebebu were unworkable at the depressed prices that prevailed in the late 1870s. In 1877 it was estimated that 40 per cent of the Chinese labour force available two years earlier had moved elsewhere. Heavy taxes on imports such as salt, pork and oil added to the burdens of the industry.

Tin production in the east coast states during the 1880s and 1890s was concentrated in Pahang. By 1885 the Chinese population in Pahang had dwindled to between 200 and 300 owing to a period of lawlessness that began with the death of Bendahara Ali in 1857. During this time many Chinese miners were driven out or murdered. By 1891, however, census returns recorded that the Chinese population had increased to 3,241.<sup>67</sup> The bulk of Chinese miners entered Pahang after the extension of British rule in 1888 and the introduction of regular steamship services from Singapore to Kuala Pahang and Kuantan. Many Chinese were found in towns such as Pekan (where there was a Chinese quarter), in trading villages such as Penjom and the mining areas of Ulu Pahang and Ulu Kuantan. During the 1890s concessions were given to encourage Chinese miners to prospect for tin in the state.<sup>68</sup> By late 1897 it was recorded that 700 miners had arrived at Bentong. Large-scale mining was underway in the area by 1898.<sup>69</sup>

Tin production in the Malay States continued to expand during the final years of the 19th century with a new mining boom stimulated by a sharp rise in the price of tin in 1898. By 1900 tin production was recorded at 43,111 tons. The mining boom caused a sharp rise in wages for tin mining labour; daily-rates jumped from 30 cents in 1896 to 45 cents in 1898 and 70-80 cents by 1899. Higher wages stimulated an influx of Chinese labourers into the tin mining states and it is estimated that 100,000 miners arrived in the tin mining states between 1899 and 1900.

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<sup>67</sup> Cant, *An Historical Geography of Pahang*, p 31.

<sup>68</sup> In 1897, for example, negotiations were made for well known miners from Selangor to begin working in the Bentong district. One such miner, Loke Yew, was given three years to select up to 4,000 acres of mining land which would be held under a 21 year lease, free from rent or premium. *Ibid.*

<sup>69</sup> In his report for 1898 Clifford commented that Loke Yew's activities had added 2,000 Chinese to the population of this sparsely settled area. *Ibid.*

### *Growth in Infrastructure*

The third major factor stimulating the rapid increase in tin production during the 19th century was the support afforded by the British colonial government to an expansion of tin mining by private enterprise. Broadly this support was twofold. In the first instance the colonial government established peace, law and order and instituted a modern administrative infrastructure in the tin-producing states. Secondly, an expansion in tin production for export was facilitated by the development of ancillary services, the most important of which was a comprehensive transport and communications network.

Until the early 1870s, official British administration in the Malay peninsula was confined to the colony of the Straits Settlements.<sup>70</sup> Relations between the Straits Settlements and Malay States were limited to commercial ties; traditional policy opposed any active interference either in, or on behalf of, a Malay state.<sup>71</sup> Nevertheless, early development of tin mining in the Malay States was indirectly supported by the colonial government's promotion of free trade in the Straits Settlements.<sup>72</sup> At the same time, the absence of immigration controls into the Straits Settlements, and between the Straits and the Malay States, enabled large numbers of Chinese to migrate to the interior states from the 1840s to work the newly discovered tin deposits.<sup>73</sup>

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<sup>70</sup> The Straits Settlements were governed as a part of India until 1866 when they were transferred to the Colonial Office. The Straits Settlements were constituted as a Crown Colony in 1867. For a detailed study see Mills, *British Malaya*, pp.273-286

<sup>71</sup> In reality a significant amount of intervention did take place. The Low Treaty in 1826, for example, gave under certain conditions the protection of the East India Company to the Sultan of Perak. For details see Mills, *ibid.*, pp.273-286; Kennedy, *A History of Malaya*, pp.107-121; Ryan, *The Making of Modern Malaya*, pp.93-97; Swettenham, *British Malaya*, pp.63-132. See also Mr Sevmor Clarke to Col. Office 18 July, 1873 in CO 273/74.

<sup>72</sup> From the foundation of the free port of Penang to the outbreak of the First World War, the Malayan economy developed within the increasingly free trading British Empire in which few administrative limitations were placed on trade or economic activity. Within this environment the very real physical advantages possessed by the peninsula for the production of commodities such as tin that were subject to a rapidly growing demand were able to strongly mould its economic development. The early importance tin had acquired in the trade of Penang for example was illustrated by the efforts undertaken by the Settlements government in 1818-19 to stimulate supply from the Malay States. At this time, the tin trade had received a setback as a result of Dutch attempts to re-establish their monopoly following post-Napoleonic settlements that returned Melaka to their rule. In order to increase the flow of tin to the British settlement Governor Bannerman sent representatives to negotiate treaties with Perak and Selangor. In 1818 treaties were made with Perak, Selangor and Johor which aimed at obtaining most-favoured nation status for British merchants and forbade the exclusion or inerruption of the trade of British subjects. See C.J.D.Cowan, "Governor Bannerman and the Tin Scheme", *Journal of the Malaysian Branch of the Royal Asiatic Society*, Vol.23, No.1, 1950, pp.52 *et seq.*

<sup>73</sup> Immigration into the Straits Settlements and Malay States remained unrestricted until the early decades of the 20th century. Immigration and government policy will be discussed in greater detail in Chapters 2 and 3.

Following the signing of the Pangkor Engagement in 1874 and Britain's subsequent "forward movement" into the interior states of Perak, Selangor, Sungei Ujong (Negri Sembilan) and Pahang between 1874 and 1888, colonial government support to the development of tin mining became more direct.<sup>74</sup> Realising that the tin mining industry, in a period of increased world demand for tin, would provide the revenue necessary for changing the old order, the British administration sought to encourage the expansion of tin mining in the Malay States by private enterprise. The government's policy centred on inducements for the free entry of the capital and labour necessary for accelerated development.<sup>75</sup>

In the years before British intervention two of the major obstacles to the expansion of tin mining by private enterprise were political instability and the absence of a modern administrative infrastructure. As a result, conditions in several of the Malay States had become unsettled to the point of chaos and private enterprise was discouraged from investing in the mines. With the institution of *Pax Britannica* over the main tin mining states these desiderata were supplied.<sup>76</sup> By the 1880s the incessant disputes over the ownership of property and mining claims had become a thing of the past.<sup>77</sup>

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<sup>74</sup> The Pangkor Treaty, signed on Pangkor Island 20 January 1874, opened the way for eventual colonisation by Britain of the whole of the Malay peninsula. Among the many works dealing with British intervention see David MacIntyre, "Britain's Intervention in Malaya: The Origin of Lord Kimberley's Instructions to Sir Andrew Clarke in 1873", *Journal of Southeast Asian History*, Vol.2, No.3, 1961, pp.47-69; Malcolm Caldwell, "The British Forward Movement, 1874-1914", in M.Amin & M.Caldwell (eds.), *Malaya: The Making of a Neo-Colony*, London, Russell Press Ltd., 1977, pp.13-38; Khoo Kay Kim, "The Origin of British Administration in Malaya", *Journal of the Malaysian Branch of the Royal Asiatic Society*, Vol.34, Pt.1, 1966, pp.52-91; Khoo Kay Kim, *The Western Malay States 1850-1873: The Effects of Commercial Development on Malay Politics*, Kuala Lumpur, Oxford University Press, 1972; Swettenham, *British Malaya*, Chapters VI, VIII, IX; E.Thio, "The British Forward Movement, 1880-1889", in Tregonning (ed.), *Papers on Malayan History*, pp.120-134; Emily Sadka, *The Protected Malay States 1874-1895*, Kuala Lumpur, University of Malaya Press, 1968; Tregonning, *A History of Malaya*, pp.236-261; Ryan, *The Making of Modern Malaya*, pp.110-143.

<sup>75</sup> Swettenham for example wrote, "...[the] government cannot do the mining and the agriculture, but it can make it profitable for others to embark in such speculations by giving them every reasonable facility...". *Annual Report Perak, 1894*, pp.21-22 quoted in Amarjit Kaur, *Bridge and Barrier, Transport and Communications in Colonial Malaya 1870-1957*, Singapore, Oxford University Press, 1985, p.8.

<sup>76</sup> A detailed analysis of the instruments of law and order and the system of dual government that emerged in the Malay States is given in Sadka, *ibid.*, pp.237-323.

<sup>77</sup> Larut, for example, was completely devastated by warfare between two Chinese secret societies in the 1870s: trade had come to a standstill and the population reduced to 4,000. The first step in the reconstitution of tin mining by the British administration involved disarming the two rival factions and the settlement of mining claims. This was achieved by a commission of three British officers and the two leaders of the rival societies appointed under the Pangkor Agreement. Because the claims were conflicting and without supporting evidence, the valley was divided into two halves. The societies, under threat of expulsion from the mines, were forced to accept that portion of the valley they had respectively mined before they had encroached upon each other's domain. With the mining claims settled and the firm establishment of British administration in Larut, the Chinese merchants in Penang advanced the necessary capital to re-open the mines. Thirty mines were in operation by March 1874. By the end of the year there were 70 rehabilitated and 50 new mines in production and tin exports totalled 657 tons. Wong, *The Malayan Tin Industry to 1914*, p.81; L.A.Mills, *British Rule in Eastern Asia, A Study of a Contemporary Government and Economic*

Colonial administration in the Malay States was directed through the Residential-system. Under this system British Residents were appointed to advise the Malay rulers on “all questions other than those touching on Malay Religion and Custom”.<sup>78</sup> In practice, however, Residents took the initiative in many areas important to economic activity including land tenure, transport, immigration and revenue collection.<sup>79</sup> In one way or another virtually all the administrative measures initiated by the Residents assisted in the increased production and export of tin.

One of the most important administrative measures initiated by the government was the introduction of a comprehensive mining lands policy.<sup>80</sup> Under this policy the state obtained proprietary rights to all minerals and mining land thus making a government licence a necessary prerequisite before mining activity could commence. Streams and rivers were also reserved as the property of the state so that a waterway (or part thereof) could not be monopolised by any one miner or group. At the same time, a policy regulating land use was introduced so that only land specifically leased for mining could be worked. This regulation was introduced to prevent random and haphazard mutilation of land, while at the same time permitting the state to maintain control. Other steps taken by the British administration ensured that the states were surveyed accurately so that tin leases could be demarcated with precision. This piecemeal legislation was eventually embodied in the General Land Code that was passed

*Development in British Malaya and Hong Kong*, London, Oxford University Press, 1942, pp.174-75; Gov. Sir Andrew Clarke to Mr Seymour Clarke 26 January, 1874, 6 March, 1874, 15 May, 1874 all in CO 273/114.

<sup>78</sup> As indicated in the previous sections increased tin output came almost wholly from the Western tin states that had accepted British Residents after 1874. Jelebu, the only other important tin area within the Negri Sembilan confederation, had a British revenue collector after June 1885 and accepted a British Resident in 1886. In 1896 the four protected states were “federated”. A Resident-General was appointed as the head of the FMS. Each state Resident was responsible to the Resident-General who was in turn responsible to High Commissioner of the Malay States. A highly centralised administration was created to promote progress in the form of capitalist enterprise. Detailed studies of the Residential-system are given in Sadka, *The Protected Malay States*, pp.38-118; Kennedy, *A History of Malaya*, pp.163-186.

<sup>79</sup> Changes were initiated through State Councils that were composed of a mixed membership of influential Malay chiefs, Chinese community leaders and British officials. The Chinese members seldom opposed the changes unless their economic interests were directly damaged. Indeed, they were usually the immediate beneficiaries. See E.Sadka “The State Councils in Perak and Selangor, 1877-1895,” in K.G.Tregonning (ed.), *Papers on Malayan History*, Singapore, Journal of Southeast Asian History, pp.89-119.

<sup>80</sup> The only available complete series of mining regulations relate to Perak. A detailed discussion of these regulations is given in Wong, *The Malayan Tin Industry to 1914*, pp.53-56. See also Doyle, *Tin Mining in Larut*, pp.8-13.

in Perak on 28 February 1879 and crystallised in the 1895 Mining Code and 1899 Federal Mining Enactment which made mining policy and conditions of tenure uniform throughout the FMS.<sup>81</sup>

The codification of the mutual rights and obligations of both the state and miners had a decisive influence on the development of the industry; it turned mining land into a commodity that could be bought, sold, and used as collateral for loans, but prevented it from being acquired for purely speculative purposes. The Code also gave the miners security of tenure, both in respect of protection against encroachment from the state and rival claimants, and as a basis on which to estimate the cost of land in the production process. At the same time it provided the government with a legal basis for shaping the development of the industry.

A number of fiscal measures introduced by British administrators also encouraged an expansion of tin mining by private enterprise. These measures had the effect of reducing overall production costs and were significant to the maintenance of output in the mines, particularly during times of low tin prices. The majority of fiscal measures occurred on the side of revenue collection. During the period of Malay rule high arbitrary taxation had contributed significantly to mining costs.<sup>82</sup> One of the first acts of the British Residents, therefore, was to assume both the responsibility for levying the tin export duty and the role of revenue collection. Simultaneously, the administration adopted a system of revenue-farming that not only provided a practical way of collecting revenue, but also proved an effective fiscal instrument for opening up new tin mining areas or injecting fresh capital and labour into

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<sup>81</sup> This 1895 Mining Code extended the scope of government control to include the power to “ensure the economic working and proper and effective control of all mining lands and minerals, together with the authority to direct the conduct of all persons occupying or mining the same”. Preamble of *Mining Code, Perak, 20th August, 1895*, cited in Wong, *The Malayan Tin Industry to 1914*, p.55. See also Gov. to Sec. State, 28th September, 1895, in CO 273/206. The control of mining affairs was vested in two officers (known as Wardens of Mines), who had magisterial authority over mining cases.

<sup>82</sup> For example, in 1848 Melaka merchants in Sungei Ujong complained to the British government of the excessive exactions levied by the local chiefs. Again in 1855 it was recorded that whilst some rival chiefs had agreed to levy a duty of only 10 per cent on tin exports and to allow everything else passing up and down the Linggi River to be free of duty, other chiefs not party to the agreement continued to levy high tolls. The result was that the Chinese miners had to pay four sets of duties on their product. By 1856 the exaction had become so excessive as to “put almost an entire stop to the tin trade, to the great detriment of the interest of the Malacca traders”. *Annual Report Straits Settlements, 1856*, p.17 cited in Wong, *The Malayan Tin Industry to 1914*, p.25. In 1873 the Melaka merchants again memorialised the Straits authorities to remove innumerable tolls imposed on the movement of goods and miners up and down the river because these exactions had become so exorbitant as to threaten the continuation of mining in Sungei Ujong.

developed areas. Thus in the early years the introduction of Chinese capital and labour into the interior of Perak was deliberately fostered by allocating revenue farms to the rich Chinese capitalists in Penang, while in the 1880s new sources of capital were introduced into Selangor by distributing revenue farms to capitalists in Penang.<sup>83</sup>

In terms of revenue expenditure, the most important area of direct government inducement to the expansion of tin mining by private enterprise was the development of a comprehensive transport and communications network.<sup>84</sup> In short, transport infrastructure lowered the costs of mining by greatly enhancing both the movement of tin from the inland mining centres to the coastal ports and the transport of labour and general mining supplies from the ports to the mines.

Prior to British intervention the development of tin mining in the Malay States was circumscribed by the physical accessibility of the tin deposits from the two Straits ports of Melaka and Penang.<sup>85</sup> Only when coastal deposits were worked out, at least in terms of the techniques of the times, or when tin prices were particularly favourable, were the more remote fields penetrated and opened. Thus the discovery of new tin deposits in inland areas in the 1840s resulted in an inward shift from the river mouths. Although footpaths linking riverine villages were gradually upgraded to a system of cart tracks, rivers continued to serve as the natural highways upon which tin, labour and supplies were transported between the mining centres and the coast. Land transport was little developed due to geographic and physiographic

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<sup>83</sup> For a detailed analysis of the system of revenue-farming see John Butcher & Howard Dick (eds.), *The Rise and Fall of the Revenue Farming, Business Elites and the Emergence of the Modern State in Southeast Asia*, New York: St. Martin's Press, 1993.

<sup>84</sup> In 1894 Swettenham argued, "...in the administration of a Malay State, revenue and prosperity follow the liberal but prudently directed expenditure of public funds, especially when they were invested in high-class roads, in railways, ... and everything likely to encourage trade and private enterprise..." *Annual Report Perak, 1894*, pp.21-22, quoted in Kaur, *Bridge and Barrier*, p.8.

<sup>85</sup> Historically, the main mode of communication within and between the different states was by water with the seas and rivers forming natural highways. Coastal ships carried the bulk of merchandise that moved from one state to another and to the Straits ports. Coasters penetrated the estuaries to the smaller rivers in Perak, Selangor and Negri Sembilan or the greater ports such as Kuala Trengganu and Kota Bharu. Goods were then transhipped to shallow draught sailing craft or poling boats and taken upriver to smaller villages. These interior villages functioned as local centres of commerce. Footpaths leading from one village to another allowed minor trips to the outer fringes of settlement to collect forest products but these were subsidiary to the rivers, serving to extend the basic transport network rather than existing as a separate entity. Forest paths also served as connecting links between river systems.



barriers including a constantly wet, swampy environment, and a dense tropical forest and mountainous interior.<sup>86</sup>

Following the establishment of political stability and law and order the colonial administration in each state set about improving existing communications systems. Firstly, the rivers and their tributaries were cleared of physical snags such as trees and the already noticeable “industrial” waste from tin tailings. From the rivers roads were built and by the late 1870s a common road construction pattern had emerged. In the mining districts roads were constructed, usually from the northern to the southern boundaries of the region with feeder roads leading either directly to the main town or to some local centre on the trunk road.<sup>87</sup> The main towns themselves were connected by road or river with the principal ports. Funds for road construction were derived from duties levied on tin exports. Consequently, construction concentrated in the western tin-states and an integrated master plan remained undeveloped. Instead, roads were built with more limited objectives in mind, namely, the cheap and easy transmission of tin from the interior mines to the ports and a reverse flow of provisions, mining equipment and labourers to the mines.<sup>88</sup>

Road construction began in the major mining centre of Perak and, by early 1875, Kamunting was in direct road communications with Ujong Tembo by way of Taiping. Subsequently, the road was extended to the northwest through Krian to join a road from Province Wellesley. At the same time, a road was planned to connect Bukit Garang with Kuala

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<sup>86</sup> In Perak, for example, there existed by 1874 only one road approximately 13 miles long from the Chinese mines at Bukit Gantang and Kota Klian (around Larut), to the navigable estuary of the Larut River. This so-called “corduroy” road (formed by building a layer of clay over a foundation of tree trunks and topping this with a layer of sand), was poorly surfaced and under constant repair because of its inability to withstand the tropical climate and heavy cart traffic. In Selangor, a few miles of rough cart track ran from Kuala Lumpur to the mining camps in the vicinity. See Kaur, *Bridge and Barrier*, p.5; Mills, *British Malaya*, p.175.

<sup>87</sup> Initially “bridle roads” (upgraded from tracks) with a maximum gradient of 1 in 20 were constructed. These narrow roads, designed for slow-moving bullock-drawn carts, were very winding since the aim was to avoid steep gradients rather than to run in a straight line. Subsequently, as traffic increased, the roads were widened to twelve-foot cart-roads. In addition, provision was made for a road reserve one chain or more in width on either side as a matter of policy. These cart-roads were installed only when the revenues of the states permitted additional expenditure.

<sup>88</sup> In the northern and east coast states, where tin deposits were smaller and less developed, changes in the natural pattern of communication developed more slowly. New road construction in the western states was accompanied by the introduction of various new types of transport, horses and ponies were imported from Australia and Sumatra and bullock- or oxen-carts were commonly used for the short-distance transportation of goods, carrying freight from the wharves to the towns and mining centres and tin from the mining centres to the wharves. Kaur, *Bridge and Barrier*, p.11.

Kangsar on the other side of the mountain range. By 1880 Taiping was connected by road with Telok Kertang, a more accessible landing station on the Larut River than Ujong Tembo.<sup>89</sup> This intensive road building programme contributed to the “Kinta tin rush” of 1889-95. By 1891 every important mining area in the Kinta Valley was linked by road to the Kinta River, where existing villages or new settlements (such as Batu Gajah) acted as transshipment points. By 1889 a trunk road had been constructed linking the Kinta fields to Taiping (see Figure 7 above).

In Selangor, Kuala Lumpur was connected by road to Damansara, 16 miles away at the head of launch navigation on the Klang River, by 1880. In 1883 a coherent road construction programme was implemented to link the mining districts in the north of the state with those in the south by means of a trunk road. Four years later steps were taken to link the administrative stations along the coast by means of bridle-paths.<sup>90</sup> By 1885 Kuala Lumpur was in direct road communication with Klang by means of an extension to the Damansara road (see Figure 4 above). In Sungei Ujong a cart-road had been constructed from Seremban to Pengkalan Kempas on the Linggi River by 1882 (see Figure 3 above). Subsequently, road communications into the interior Pantai and Setul valleys assisted the expansion of mining from 1886 onwards.

In Pahang the decision had been made in 1888 to construct a cart-track from Kuala Kuab to Ruab. Routes from Kuala Pilah in Negri Sembilan and across the Ginting Bidor from Selangor were to be investigated with a view to building a road that would meet the Pahang River near Temerloh.<sup>91</sup> In 1895 work commenced on the Pahang trunk road from Kuala Kubu to Kuala Lipis. As the road progressed there was an influx of Malays and Chinese into the interior of the state. When, after a slight fall in 1895-96, tin prices began to rise, some Chinese

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<sup>89</sup> See Kaur, *Bridge and Barrier*, p.11. See also *Annual Report Perak, 1879*, in CO 273/11.

<sup>90</sup> Memorandum by Frank Swettenham dated 5 February 1889. Gov. to Col. Office, 26 February 1889, in CO 273/158; *Continuation of the Report on Government Proceedings in the Malay States*, T. Braddell, 18 February, 1874 in CO 809/1.

<sup>91</sup> Cant, *An Historical Geography of Pahang*, p.31.

opened small mines in the hills behind Ruab and Tras. A road was subsequently constructed to link Bentong and Tralum.<sup>92</sup>

Eventually, rapidly expanding tin production necessitated a further improvement in the transport and communications system. On the one hand movement on land was constrained by a lack of suitable beasts of burden.<sup>93</sup> More importantly, heavy cart traffic increased costs of road maintenance to unacceptable levels.<sup>94</sup> The administration was therefore forced to develop a more efficient transport system. In an age of high faith in railway development in Britain, the FMS government turned to railways as an alternative. By the turn of the century significant progress had been made towards the development of a comprehensive rail network that linked not only the tin mining centres to the coastal ports, but the entire Malay peninsula (Figure 8).<sup>95</sup>

Initially, railways were not planned for all-round integrated development; nor were they regarded as a means to facilitate interstate communications. Consequently, rail lines were laid in the western states for the most part latitudinally, each connecting a port with an inland tin-field. Great care was taken to ensure termination at the uppermost point of a river that could be reached by fair-sized steamers where tin-ore could be shipped either to Singapore or Penang for smelting.<sup>96</sup>

The first railway in the FMS was constructed in Perak to serve the profitable tin region of Larut (see Figure 5 above). Initially, plans were made for the construction of a metre-gauge

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<sup>92</sup> In 1898, Clifford noted that "in a single year a township of respectable dimensions [had] sprung up [at the Bentong], mines ...opened up at various localities and roads constructed between each one and the township, the coolies are well housed and cared for, and the road which is being constructed between Bentong and Tras, on the trunk road, with the aid of a government grant of \$68,000 is well-advanced...This fact is calculated to give confidence to other Chinese capitalists." Quoted in Carr, *An Historical Geography of Pahang*, p.49.

<sup>93</sup> The primary means of haulage in the interior were elephants and human porters. But, although an elephant could carry as much as 6 pikuls at one time, the animals were usually the monopoly of the local ruler. In Perak, where tin was usually hauled by bullock-carts, the service was monopolised by Indians and was expensive as well as incapable of coping with emergency when epidemics of cattle diseases broke out, as occurred in 1881-82. The sudden shortage of draught animals would force the costs of cartage to double or even triple the normal rate. De la Croix, "Some Account of the Mining Districts of Lower Perak", p.61.

<sup>94</sup> Built from water-worn granites and quartz pebbles from the mines, the road to the port of Telok Kertang in Perak, for example, disintegrated due to increased traffic at a rate faster than it could be repaired. The road was reduced to mud during the rainy season.

<sup>95</sup> For a detailed study of the development of railways see Kaur, *Bridge and Barrier*, pp.10 *et seq.*; C.A.Fischer, "The Railway Geography of British Malaya", *Scottish Geographical Magazine*, Vol.64, 1948, pp.123-136.

<sup>96</sup> Memorandum by the Government Engineer for Railways: Perak and Selangor, 31 July 1888, in CO 273/154.

railway linking the port of Larut at Teluk Kertang to Taiping, a distance of 8 miles. However, before this line was surveyed, a more easily accessible anchorage was discovered at the mouth of the Sebatang River. Subsequently, a line was carried to Port Weld, a new settlement also a distance of 8 miles from Larut. Construction of the line began in 1882 and was completed in 1885. A government subsidy made possible a regular daily steamer service from Port Weld to Penang. In the following years many new lines built in the rich tin-bearing areas of Perak.<sup>97</sup>

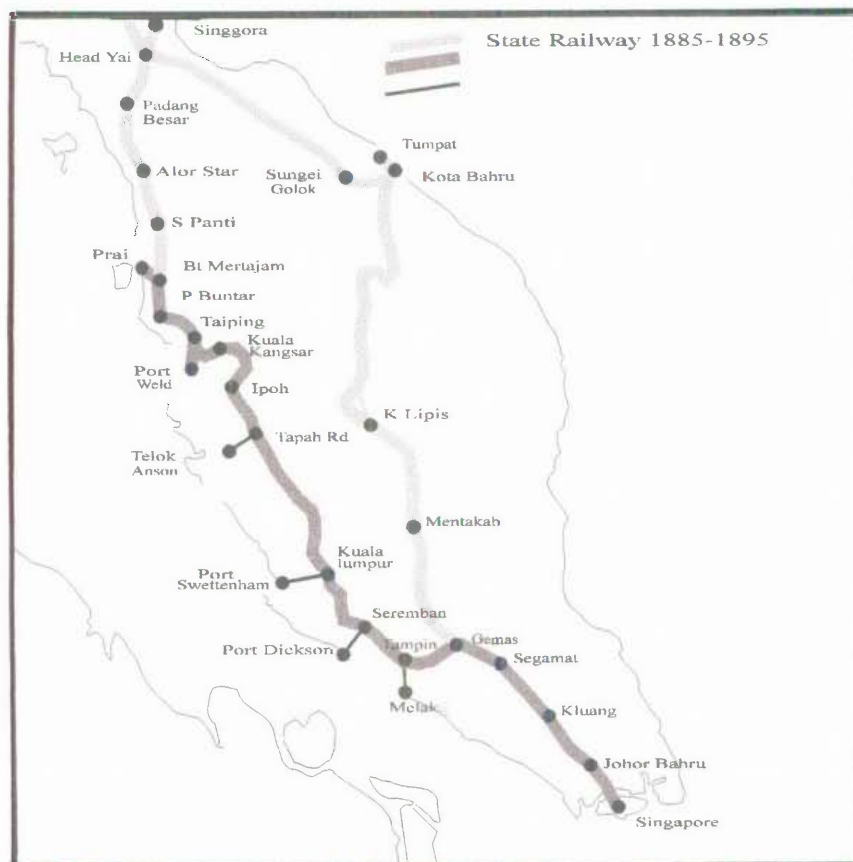


Figure 8. The Development of the Malayan Railway System

<sup>97</sup> These were the Taiping to Kamunting line (1890), the Kamunting to Ulu Sepatang line (1890), the Teluk Anson to Tapah Road line (1893), the Batu Gajah to Ipoh line (1893), the Kampar to Kota Baharu line (1895) and the Tanjong Rambutan to Chemor line (1896). Gov. to Sec. State 28 January, 1889 in CO 273/158.

While the Port Weld line was still under construction, it was generally recognised that economic development in Selangor was also being curtailed by an inadequate transport system.<sup>98</sup> Eventually, in 1882, a railway was constructed from Kuala Lumpur to Bukit Kudah (see Figure 4 above). In 1886 this line was carried over the Klang River by the Connaught Bridge. In 1890 it was connected to the mining centre at Klang.<sup>99</sup> Additional “tin mine lines” were constructed in Selangor from Kuala Lumpur to Rawang (1892), Rawang to Serendah (1893), Serendah to Kuala Kabu (1894) and Padu to Sungei Besi (1895).<sup>100</sup>

Following the formation of the FMS in 1896 the short latitudinal lines in Perak, Selangor and Negri Sembilan were amalgamated into the FMS Railway. A north-south trunk line was constructed through the three states to reach the sea at Prai, opposite Penang (Figure 8). The line was completed in 1901. Subsequently, an ocean port was created at Port Swettenham (Kuala Klang), to which the FMS Railway was extended from Klang in 1901. Meanwhile, in Perak, construction began on a northerly extension of the Kinta Valley line from Ipoh to Tanjong (1896), Sungei Siput (1897) and Enggor (1898). Construction also continued in Province Wellesley and in 1899 the first section of the railway from Prai to Bukit Mertajam was opened.<sup>101</sup> In Selangor, a northerly extension from Kuala Kabu to Tanjong Malim was connected with a southerly extension from Tapah Road in Perak to Tanjong Malim in 1903. Work had also commenced on the southern section of the trunk line to connect Kuala

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<sup>98</sup> With smaller revenues, the Selangor government had been unable to spend as much as the Perak government to improve its transport infrastructure. In 1875 Selangor had been able to devote only 7 per cent of its total expenditure to roads and government buildings. This was equivalent to one-sixth of the amount spent on roads and bridges in Larut alone. Kaur, *Bridge and Barrier*, p.16; Gov. to Colonial Office, 2 March, 1880 in CO 273/102.

<sup>99</sup> The cost of the line was estimated at M\$714,740. Of this amount the Straits Settlements offered to loan M\$300,000 while the remainder was to be provided from state funds. But, owing to financial difficulties, the Straits Settlements government loaned only M\$100,000; the remainder was supplied by the Perak administration. For details see Kaur *ibid.*, p.18. The importance of this line to the Chinese miners in the area was well evidenced by the fact that to accelerate its completion, which had been delayed by labour shortages, the principal Chinese miner in the area supplied 300 labourers from his mines. Fischer, “Railway Geography”, p.127; “Chinese Coolies for Railway Construction” 14 March 1885, in CO 573/46; Gov. to Sec. State 28 January, 1889 in CO 273/ 58.

<sup>100</sup> During this period, although Pahang and Negri Sembilan clamoured for railway developments, funds were not available because these states did not have sizeable revenues. In Negri Sembilan the Straits government granted a concession to a private company to build a line from Seremban to Port Dickson. This line, almost 25 miles long, was opened in 1891.

<sup>101</sup> This was subsequently extended to Nibong Tebal in 1900 and was connected to the Perak line in 1902.

Lumpur with mining areas in the south. In 1896, the line from Pudu to Sungei Besi was extended southwards to Kajang. Construction had also commenced on a line 29 miles long from Kajang to Seremban. Three years later the line was extended south from Seremban to Tampin and a branch built to Melaka.<sup>10</sup>

In summary, it can be shown that the rapid development of the Malayan tin mining industry during the 19th century was closely associated with industrialisation in the West, in particular Europe and the United States, and the rapid increase in the demand for tin consequent upon the expansion of the British tin-plate industry. The rising prices this demand engendered stimulated prospecting in the Malay States. Large deposits of tin-bearing land were discovered, first in the 1840s around Lukut, Kuala Lumpur and Larut and, later in the 1880s, in the Kinta Valley. The development and areal spread of tin mining, particularly in the western states, was greatly encouraged after 1874 by the colonial government's policy of providing the inducements for an expansion of tin production by private enterprise. The development of a comprehensive transport and communications system was high among these inducements. Both labour and mine supplies could be imported more cheaply and speedily, and tin and tin-ore transported to the coastal ports for export with added advantage. However, these factors alone could not have achieved the rapid expansion in production required to transform the Malayan tin mining industry into the world's largest producer without an adequate supply of labour to extract the metal. This labour supply was provided almost wholly by the large influx of Chinese labourers into the western tin mining states from about 1820. The nature and magnitude of this influx had significant implications for the development of the industry. It is to an examination the nature and experience of this labour that the remainder of this study is directed.

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<sup>102</sup> See Fischer. "Railway Geography", p.127. Between 1904 and 1910 the FMS Railway financed and constructed the Johor State Railway linking the FMS trunk line, previously extended south to Gemas, with Johor Bahru. In the period 1910-1931 the provision of railway services was extended into Johor, Kedah, Perlis, Pahang and Kelantan.