

# GOVERNMENT INITIATIVE AND PEASANT RESPONSE IN THE SIAMESE SILK INDUSTRY, 1901-1913

by

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Early in the 1900s the Siamese government instituted a programme designed to increase the Kingdom's silk production through the widespread introduction of modern sericulture techniques. Substantial manpower and financial resources were committed to the programme, but the long-term impact on Siam's silk output and on local sericulture methods was negligible. This article attempts to probe the reasons for the failure of the government's silk initiative.

## I

The Siamese government instituted its sericulture programme in the first decade of the 1900s in order to reform the methods and techniques of a craft which had been practised in Siam for over 1,000 years.<sup>1</sup> At that time silk production was almost invariably undertaken in peasant households, each household usually producing sufficient silk simply to meet its own requirements, though there was also a limited internal trade in silk. In addition, from at least the mid-seventeenth century considerable quantities of silk were imported from China, for consumption by the court and the Siamese elite.<sup>2</sup>

The second half of the nineteenth century saw a very substantial increase in the level of silk imports into the Kingdom. The main stimulus to this development was the opening of Siam to unhindered foreign commerce in the 1850s. Towards the end of the century it is possible that Siam's reliance on imported silk had reached the point where there had been an absolute fall in the output of the indigenous producers.<sup>3</sup> According to one source, in the few

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1. J.C. Barnett, *Report of the First Annual Exhibition of Agriculture and Commerce Held in Bangkok, April 1910*, Bangkok, 1910, p. 29.

2. Sarasin Viraphol, *Tribute and Profit: Sino-Siamese Trade 1652-1853*, Cambridge, Massachusetts, 1977, p. 4.

3. Great Britain, *Diplomatic and Consular Reports on Trade and Finance*, No. 771, Siam, 1889, p. 13. Unfortunately it is not possible to be precise on this point for there is no reliable quantitative evidence on the major part of Siamese silk production in this period, i.e. that silk which was consumed by the producers themselves. Indeed it should be noted that the report above with some caution simply states: "the rearing of silk, beyond what is required for local wants, appears to be an occupation of diminishing importance".

years from 1896 to 1900 the value of raw silk and silk cloth imports into Siam rose from 1.40 to 2.08 million baht.<sup>4</sup>

The domestic silk industry was unable to repel imports essentially because the production of silk in Siam was technologically inferior, at all its stages, to that of other producers in Asia. The sericulture experts who investigated the condition of the Siamese industry from 1900 to 1910 produced an almost endless list of defects and inadequacies. For example it was argued that Siamese silkworms were very small and consequently were capable of secreting only small quantities of silk. Many worms were seriously diseased.<sup>5</sup> Relatively little care was taken in rearing the worms. The cocoons were insufficiently firm, contained a high proportion of waste, and frequently had numerous perforations.<sup>6</sup> The methods employed in reeling the silk thread were crude and antiquated.<sup>7</sup> For example little attempt was made to separate out strands of different length and thickness in order to produce a uniformly fine thread,<sup>8</sup> and consequently Siamese silk thread had a coarse, uneven quality that made it suitable for weaving only rough cloth.<sup>9</sup> Weaving itself was carried out with very old equipment which made it difficult to produce a delicate material even with a fine thread.

At the end of the nineteenth century almost all the silk produced in Siam came from the Khorat Plateau, in the northeast region of the Kingdom. It is not possible to calculate accurately the total production at this time because most of the silk, as noted earlier, was consumed by the producing households. In 1903 it was estimated that between 40,000 and 60,000 people in Khorat Province were engaged in rearing silkworms, though their annual production was only about 200 piculs, valued at £1,000 to £2,000.<sup>10</sup> In addition it was reported that each year approximately 1,000 piculs of raw silk were brought into the Khorat silk market from the other provinces of the northeast. In the early 1900s there were 23 merchants in Khorat trading in raw silk.<sup>11</sup> Finally it should be noted that at this time there was a very small

4. Čhaophrayā Wongsānupraphat, *prawat krasuang kasētrāthikān (History of the Ministry of Agriculture)*, Bangkok, 1941, p. 263. These figures should be treated with some caution for there are major difficulties in deducing from the published statistics the true value of Siam's silk imports in this period. Most importantly the figures for imported silk piece goods contain a high but unspecified proportion of re-exports: these consisted of undyed goods, chiefly from China, which were brought to Siam to be treated with an ebony-derived black dye peculiar to the Kingdom. They were then re-exported, principally to Singapore. It can be assumed that some silk imports from China (including Hong Kong) were destined for consumption within Siam, but an increasingly important exporter of silk to the Kingdom at this time, particularly of higher quality silks, was Japan. Late in the 1900s, the value of Japanese silk exports to Siam was in the region of £30,000 per year. The annual import of raw silk was comparatively small — approximately £8,000 late in the 1900s. Most raw silk imports originated in Cochin-China. (Great Britain, *Diplomatic and Consular Reports. Siam. Trade of Bangkok*. No. 2898 for 1901. No. 4176 for 1907-08. No. 4615 for 1909-10. No. 4824 for 1910-11. No. 5034 for 1911-12).

5. Kametaro Toyama (Principal Sericulture Expert) to Čhaophrayā Thēwēt (Minister of Agriculture), 9 April 1902. National Archives, Bangkok (henceforth N.A.), Fifth Reign (r. 5), Ministry of Agriculture (K.S.) 8/1.

6. Prince Phenphatanaphong (Director of the Sericulture Department) to King, 3 January 1903, N. A. r. 5. K.S. 8/1.

7. Čhaophrayā Wongsānupraphat, *op. cit.*, p. 262.

8. Prince Phenphatanaphong to King, 3 January 1903, N. A. r. 5. K. S. 8/1.

9. Čhaophrayā Wongsānupraphat, *op. cit.*, p. 262.

10. Toyama to Čhaophrayā Thēwēt, 8 January 1903, N. A. r. 5. K.S. 8/1. (1 picul = 133  $\frac{1}{2}$  lbs.).

11. *Bangkok Times*, 9 September 1902.

export trade in raw silk, valued in the region of £ 15,000 per year.<sup>12</sup> This represented less than 1 per cent of the value of Siam's principal export, rice.

The government's attention was drawn to the depressed state of the local silk industry late in 1900 by the arrival in the Kingdom of a group of Japanese agricultural experts.<sup>13</sup> The Japanese, who came to Siam not at the request of the Siamese government but of their own volition, investigated several aspects of the Kingdom's agriculture, but paid particular attention to the Khorat silk industry. Their report, entitled "A few suggestions as to the improvement of sericulture in Siam", was sent to the Minister of the Interior, Prince Damrong, and it was on his initiative that in March 1901 the Government decided to engage a Japanese sericulture expert to undertake a detailed examination of the local silk industry. The sericulture expert, Kametaro Toyama, arrived in Bangkok in March 1902.<sup>14</sup>

Toyama's first task was to undertake an inspection tour of the silk-producing areas in Khorat. His preliminary report, submitted to the Minister of Agriculture in April 1902, made clear the technical deficiencies of the local industry and the consequently poor quality of Siamese silk.<sup>15</sup> Toyama took care to emphasize that a marked improvement in the quantity and quality of Siamese silk could be secured by the introduction of a few, relatively simple, technical innovations. Siam possessed a number of features, most notably a climate and soil well suited to the cultivation of mulberry trees and the rearing of silkworms, and a diligent and cheap female labour force, that would greatly assist efforts to expand the Kingdom's silk production.

Encouraged by this report, the government established a Sericulture Department within the Ministry of Agriculture early in 1903.<sup>16</sup> The first Director of the new Department was Prince Phenphatanaphong, then 21 years old, who had just returned from Europe where he had been studying agricultural science.<sup>17</sup> Toyama was retained as Chief Sericulture Adviser.

The first two years of the Department's existence was essentially a period of experimentation.<sup>18</sup> A laboratory and mulberry plantation were established in Bangkok. Under the supervision of Toyama and his Japanese assistants, a series of detailed trials and experiments were undertaken involving almost all aspects of silk production. Perhaps the most important work involved cross-breeding Siamese and Japanese silkworms to produce a strain most suited to Siamese conditions. Particular care was also taken to develop improved methods for the

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12. Great Britain, *Diplomatic and Consular Reports. Siam. Trade of Bangkok*. No. 2898 for 1901. No. 3099 for 1902. No. 3286 for 1903. Virtually all the raw silk was exported to Singapore and thence to India where it was mixed with finer quality Indian silks. Great Britain, *Diplomatic and Consular Reports on Trade and Finance*, No. 771, Siam, 1889, p. 13.

13. Prince Damrong (Minister of the Interior) to King, 12 February 1901, National Archives, Bangkok. Ministry of Agriculture Records. K.S. (Ag.) 13/13.

14. Čhaophrayā Thēwēt to King, 10 March 1902, N. A. r. 5. K. S. 8/1.

15. Toyama to Čhaophrayā Thēwēt, 9 April 1902, N. A. r. 5. K. S. 8/1.

16. Čhaophrayā Wongsānupraphat, *op. cit.*, p. 269.

17. *Bangkok Times*, 12 November 1909. Thailand, Ministry of Agriculture, *prawat krasuang kasēt (History of the Ministry of Agriculture)*, Bangkok, 1957, p. 71.

18. Report of the Sericulture Department, April-July 1904, N. A. r. 5. K.S. 8/2.

cultivation of mulberry leaves, the rearing of silkworms and protection of the worms from disease and insects.<sup>19</sup> During this period the Japanese experts were also concerned with training Siamese in modern sericulture methods. The first group of students, who began work in mid-1903, contained three minor members of the Royal Family and ten girls.<sup>20</sup> A fully constituted Sericulture School was opened in Bangkok in January 1905.<sup>21</sup> Its principal objective was to train Siamese sericulture instructors who eventually would be able to replace the Japanese.

This work did not proceed without its share of difficulties. The cross-breeding programme was seriously delayed early in 1904, when ill-health forced Toyama to take leave.<sup>22</sup> The sericulture instruction was initially hindered by a lack of Siamese textbooks and the near inability of some of the students to read and write.<sup>23</sup> Nevertheless the Japanese officials and their Siamese assistants appeared to be very committed to this work. There is ample evidence for this in the numerous detailed reports that were produced on the sericulture experiments undertaken in this period. In addition, within a year of its establishment the Sericulture Department was compiling Siamese-language textbooks,<sup>24</sup> and early in 1906 began distributing in the silk-making districts a superior strain of silkworm, crossbred in the laboratory in Bangkok.<sup>25</sup> The initial preparatory work undertaken in Bangkok provided the essential sound basis for the Sericulture Department's main programme among the silk producers in the provinces.

The extension of the Sericulture Department's work in the provinces began in 1904 with the establishment of a branch in the provincial capital of Khorat.<sup>26</sup> In the following year a further branch was established at Buri Ram, some 60 miles to the east.<sup>27</sup> Both branches contained a mulberry plantation, a silkworm rearing shed, and facilities for reeling silk. From late 1908 the Khorat branch also had facilities for silk-weaving.<sup>28</sup> It was intended that a relatively few producers from the silk districts around Khorat and Buri Ram would undertake training in modern sericulture techniques at these branches before returning to their communities where, by direct instruction and by their own example, they would disseminate the new sericulture methods among all the silk producers.<sup>29</sup> In most cases the training would last for one year. Each student was to be paid an allowance.

The response of the peasantry to this initiative was relatively poor. Consequently in 1908

19. Čhaophrayā Wongsānupraphat, *op. cit.*, pp. 266-267.

20. Toyama to Phrayā Srisunthon (Ministry of Agriculture), 23 September 1903, N. A. r. 5. K. S. 8/1. *Bangkok Times*, 13 June 1903.

21. Report of the Sericulture Department, R.S. 123 (1904/05), N. A. r. 5. K.S. 8/2.

22. *Ibid.*

23. Toyama to Phrayā Srisunthon, 23 September 1903, N. A. r. 5. K.S. 8/1.

24. Report of the Sericulture Department, April-July 1904, N. A. r. 5. K.S. 8/2.

25. Report of the Sericulture Department, August-November 1905, N. A. r. 5. K.S. 8/2.

26. Čhaophrayā Wongsānupraphat, *op. cit.*, p. 269.

27. *Ibid.*, p. 272.

28. *Ibid.*, p.281.

29. Report of the Sericulture Department, R.S. 123 (1904/05), N. A. r. 5. K.S. 8/2. In 1904 there were 13 students at the Khorat branch.

the Sericulture Department adopted an alternative approach: instructors would be permanently stationed in eight sub-branches located directly in the silk districts,<sup>30</sup> instead of selected silk producers being required to travel to Khorat and Buri Ram for instruction. This increase in the level of resources committed to the silk districts was accompanied by a substantial reduction in the Bangkok establishment. In 1908 the experimental farm and the sericulture school in Bangkok were closed, and their facilities were transferred either to the Khorat branch or to other departments in the capital.<sup>31</sup> In effect the Sericulture Department in Bangkok was reduced to an administrative unit.

This major shift of resources towards the provinces by 1910 also marked the limit of the Sericulture Department's work in this period. Undoubtedly a serious blow to its programme was the death of the Director, Prince Phenphatanaphong, in November 1909 at the age of 27.<sup>32</sup> Despite his suffering from the effects of consumption from 1905 onward, the Prince's energetic and enthusiastic leadership had accounted for much of the Department's success in its early years. His successor, Phrayā Borombāibamrung, who transferred from the Department of Land Registration,<sup>33</sup> appears to have been considerably less forceful. In addition, the number of Japanese attached to the Department was steadily reduced. By 1908, 14 Japanese instructors had been replaced by Siamese graduates from the Sericulture School, leaving only 3 Japanese experts.<sup>34</sup> The last Japanese sericulture expert left Bangkok in July 1912.<sup>35</sup> By this time the work of the Department had been very considerably reduced, and in 1913 the Government decided to abandon the sericulture programme altogether.<sup>36</sup> Some 15 years later, a report on economic conditions in northeast Siam by a European official attached to the Ministry of Commerce and Communications, Reginald Le May, indicated that silk production remained essentially small-scale, technologically backward and orientated towards domestic consumption.<sup>37</sup> There was little to show for the Government's strenuous efforts earlier in the century.

## II

From this brief sketch of the work of the Sericulture Department, it is clear that the Siamese government was indeed serious in its attempt to revive the northeastern silk industry

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30. Čhaophrayā Wongsānupraphat, *op. cit.*, pp. 272-282. Prince Phenphatanaphong to King, February 1909, N. A. r. 5. K.S. 8/2. Prince Damrong to Prince Sommot (King's Secretary), 26 March 1909, N. A. r. 5. K.S. 8/2.

31. Čhaophrayā Wongsānupraphat, *op. cit.*, p. 282. *Bangkok Times*, 27 November 1908.

32. *Bangkok Times*, 12 November 1909.

33. Čhaophrayā Wongsānupraphat, *op. cit.*, p. 283.

34. *Bangkok Times*, 27 November 1908.

35. Correspondence in National Archives, Bangkok. Fifth Reign. General Documents, B. 9/48.

36. *Bangkok Times*, 16 January 1913.

37. Reginald Le May, *The Economic Conditions of North-Eastern Siam*, Bangkok, 1932.

early in the twentieth century.<sup>38</sup> The administration was prepared to bear the considerable cost of engaging sericulture experts and instructors from Japan. The preliminary trials and experiments conducted in Bangkok were undertaken with very great care and thoroughness. Most importantly, the records of the Sericulture Department suggest that the Japanese and Siamese officials brought an uncommonly high degree of enthusiasm and commitment to their work. Some Siamese officials may have even been too vigorous in pursuing their duties, the evidence for which is considered below. The explanation for the failure of the sericulture programme must therefore lie in the quality of the peasants' response, and not in any lack of commitment on the part of the government.

From its earliest years the Sericulture Department had entertained serious doubts over the ability of the silk producers to respond to the government's programme. At various times the view was expressed that the northeastern peasants were rather naive and unsophisticated,<sup>39</sup> that they had limited material wants,<sup>40</sup> that they were lazy. It was also argued that the Siamese were so firmly wedded to their traditional ways that they showed little interest in more productive methods and techniques.<sup>41</sup> A common official view was that peasants had a pronounced tendency to ignore, as far as possible, any advice or instructions given to them by government officials.<sup>42</sup> The prevailing prejudice was that they had a deep suspicion of, and resistance to, government interference.

When Prince Phenphananaphong was organizing the establishment of the first provincial branch at Khorat in 1904, he decided to meet this perceived problem in two ways.<sup>43</sup> First, it was clear that the sericulture programme would almost certainly fail if the Department restricted its activities in the provinces simply to instruction and advice. Therefore it was decided that the Department would undertake to purchase, without limit, surplus cocoons from the silk producers, in the hope that a guaranteed market for cocoons would encourage a substantial increase in production. Higher prices would be paid for fine-quality cocoons in order to encourage improvement in methods. At the same time the Department would distribute to the people more productive strains of silkworm, either free of charge or at a very low cost, again to encourage an improvement in the quantity and quality of cocoons produced. Second, with regard to the sericulture instruction itself, Prince Phenphananaphong feared that attempts to persuade or compel the silk producers to attend instruction and training at the Khorat and Buri Ram branches would almost certainly meet with little success. Consequently, as noted

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38. In this context it is interesting to note that attempts by Europeans to introduce modern sericulture techniques into China from the 1860s were met with indifference, and occasional opposition, from the officials of the Imperial Government. See Shannon R. Brown, "The transfer of technology to China in the nineteenth century: the role of direct foreign investment", *Journal of Economic History*, vol. 39, no. 1, March 1979, pp. 181-197.

39. Deputy Provincial Governor, Khorat, to Sericulture Official, Buri Ram branch, 30 June 1908, N.A.r.5. K.S. 8/2.

40. Report of the Sericulture Department, August-November 1905, N.A.r.5. K.S. 8/2.

41. Report of the Sericulture Department, R.S. 123 (1904/05), N.A.r.5. K.S. 8/2.

42. Sericulture Official, Buri Ram branch to Provincial Governor, Khorat, 16 June 1908, N.A.r.5. K.S. 8/2. Čhaophrayā Wongsānupraphat, *op. cit.*, pp. 270, 274.

43. Report of the Sericulture Department, April-July 1904, N.A.r.5. K.S. 8/2. Report of the Sericulture Department, R.S. 123 (1904/05), N.A.r.5. K.S. 8/2.

earlier, sericulture students attending the provincial schools were to be paid a monthly allowance as an inducement.

Despite these measures, Prince Phenphatanaphong found that relatively few producers were coming forward for instruction some 18 months after the establishment of the Khorat branch, when he inspected the Khorat silk districts in December 1905.<sup>44</sup> To a considerable extent the problem lay with the Japanese instructors who found it difficult to communicate with the local people because they were not fluent in Thai.<sup>45</sup> According to Prince Phenphatanaphong, one result of this was that at first the silk producers failed to understand the true objectives of the sericulture programme, and consequently a number of rather sinister rumours sprang up concerning the government's motivation. For example, it was said that all the silk thread produced by the people had to be handed over to the government as a form of *corvée*. Some villagers came to believe that if they undertook to reel silk then they would become bonded to government service. Others believed that the silk-reelers would be liable for heavy silk duties. Many villagers simply did not trust the Japanese, and feared that they were intent on deceiving the local people.<sup>46</sup> But there were also a number of practical considerations to account for this initial poor response. The poor communications network in the northeast made it difficult for silk producers from the more isolated districts to travel into Khorat and Buri Ram.<sup>47</sup> According to one source, some villagers were too poor to acquire the new sericulture implements and equipment that were essential for the adoption of the new techniques.<sup>48</sup> Finally, it was found that those relatively few producers who had received instruction in the new sericulture techniques at the provincial schools were not always willing to pass on their knowledge to the rest of the community after they had returned to their village. Presumably they saw that there was little personal advantage in sharing their superior skills and expertise.

It was relatively easy to dispel the initial distrust of the government's motives. A few practical demonstrations of the new sericulture methods were usually sufficient to convince the majority of villagers of their value and that the government's programme was indeed designed for their own benefit.<sup>49</sup> Moreover, from 1907 the Japanese provincial instructors could gradually be replaced by Siamese officials as the first graduates emerged from the Sericulture

44. Report of the Sericulture Department, August-November 1905, N.A.r.5. K.S. 8/2.

45. Prince Phenphatanaphong to King, February 1909, N.A.r.5. K.S. 8/2. Čhaophrayā Wongsānupraphat, *op. cit.*, p. 275.

46. Prince Phenphatanaphong to King, February 1909, N.A.r.5. K.S. 8/2.

47. Čhaophrayā Wongsānupraphat, *op. cit.*, p. 273.

48. *Ibid.* Unfortunately it is difficult to provide quantitative evidence that would either substantiate or refute the view that there was a capital restraint on the adoption of the more advanced sericulture techniques. However, it can be noted that a silk reeler, imported from Japan at this time, cost approximately 5 baht, while a complete set of reeling equipment cost 30 baht (Report of the Sericulture Department, R.S. 123 (1904/05), N.A.r.5. K.S. 8/2). No evidence is available for the income of silk producers in the northeast. On the basis of evidence presented by D.H. Feeny ("Technical and institutional change in Thai agriculture, 1880-1940", Ph.D. dissertation, Wisconsin-Madison, 1976, pp. 215-216) suggesting that in the 1900s income for unskilled rural labour was of the order of 20-30 baht per month, it seems unlikely that the acquisition of modern reeling equipment was beyond the income, and more particularly the borrowing capacity, of the peasantry. But the flimsiness of the evidence and the tentative nature of this conclusion require no emphasis.

49. Prince Phenphatanaphong to King, February 1909, N.A.r.5. K.S. 8/2. Sericulture Official, Buri Ram branch to Provincial Governor, Khorat, 16 June 1908, N.A.r.5. K.S. 8/2.

School in Bangkok. With regard to the practical considerations referred to above, the Sericulture Department's principal response was to take its instruction directly into the silk districts with the establishment of the eight sub-branches.<sup>50</sup> One or two trained female silk-reelers were to be stationed permanently in each sub-branch, with the task of persuading and cajoling the local women into adopting the new methods. Reeling equipment would be lent to all those learning the new techniques. Male graduates of the Sericulture School in Bangkok were to be appointed head of each sub-branch and would undertake instruction tours of their districts offering advice and training in the cultivation of mulberry leaves and the rearing of silkworms. The principal objective of this new approach was to make the sericulture officials and the modern silk techniques more easily accessible to all silk producers.

The establishment of the first sub-branches brought to light a further problem, however, which did much to undermine the improved relationship between officials and the local people which those branches were expected to secure. As was perhaps to be expected, the response of the silk producers to the first sub-branch, at Phutthaisong, was initially guarded; but once the local people understood the objectives and value of the sericulture programme, their attendance at the instruction sessions improved markedly.<sup>51</sup> However, when the establishment of the second sub-branch at Rattanaaburi also met with initial suspicion, the patience of the sericulture officials with what they saw as an obstinate and blinkered peasantry finally snapped. In June 1908 the official responsible for the Buri Ram branch wrote to the Provincial Governor at Khorat to complain bitterly about the poor attendance at the Rattanaaburi sub-branch.<sup>52</sup> He suggested that the Governor should issue a notification stating that any villager who failed to attend instruction sessions as stipulated by the Sericulture Department would be sent to the District Officer at Buri Ram who would impress on him most firmly that he was required to attend. In reply the Governor pointed out that it took four days to travel from Rattanaaburi to Buri Ram.<sup>53</sup> Therefore to send recalcitrant villagers to the District Officer implied that they would be severely punished for their non-attendance, rather than simply admonished. The Governor suggested that the sericulture officials should approach the problem by attempting to secure the confidence and trust of the village elders, not by applying coercion. Once the leaders of each community were convinced of the superiority of the new sericulture techniques and of the essentially altruistic nature of the Government's programme, then the involvement of their people would be secured. The experience at Phutthaisong appeared to confirm the efficacy of this approach.

These problems were also considered by Prince Phenphananaphong when he undertook an inspection tour of the northeast early in 1909.<sup>54</sup> In his report to His Majesty the King, he pointed out that one important reason for the generally poor peasant response was that throughout most of the year many of the people were so heavily engaged in other agricultural

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50. Chaophrayā Wongsānupraphat, *op. cit.*, pp. 273-274.

51. Sericulture Official, Buri Ram branch, to Provincial Governor, Khorat, 16 June 1908, N.A.r.5. K.S. 8/2.

52. *Ibid.*

53. Deputy Provincial Governor, Khorat to Sericulture Official, Buri Ram branch, 30 June 1908, N.A. r.5. K.S. 8/2.

54. Prince Phenphananaphong to King, February 1909, N.A.r.5. K.S. 8/2.



and household activities that they were left with little time to attend sericulture instruction. It also appeared that the peasants at Phutthaisong had been discouraged by considerable delays on the part of the Sericulture Department in distributing modern silk-reeling implements.

Prince Phenphanaphong also took care to confirm the view of the Khorat Governor that the provincial officials of the Sericulture Department had had a tendency to be overbearing and dictatorial in their relations with the people. This problem and its effect on the people had earlier been communicated by HM the King to Prince Phenphanaphong.<sup>55</sup>

Government [sericulture] instructors, who take up appointments in the provinces, attempt to administer through force and compulsion. They do not offer guidance to the people as to how to make a living [from sericulture]. They become loud and irritated as a result of the most trivial misunderstanding, as if they were noblemen or senior officials. This does them no good. On the contrary, the people come to hate them, to become fed up with them. As a result, although the people might learn [the new techniques], they have been so antagonized that they stubbornly refuse to put their new knowledge to practical use. The success of advice and guidance such as this depends upon acquiescence and kindness, upon attempting to explain [to the people] the benefits [of the new methods]. It does not depend upon coercion.

The danger was clear. If the provincial officials of the Sericulture Department continually attempted to force the silk producers into learning and adopting the new sericulture techniques, then this would only confirm the peasants' initial wariness and suspicion of the government's programme. Within a short time an almost impenetrable barrier of mistrust would exist between the officials and those people whom they were required to assist. In short, in the eyes of the government the overbearing and unsympathetic attitude adopted by many of its provincial officials was a major reason for the disappointing progress of the sericulture programme after the first decade of the 1900s.

This view can be contrasted with that of a contemporary European observer, W. A. Graham who was employed by the Siamese government in various capacities early in the twentieth century. Graham argued that the failure of the sericulture programme was due essentially to the "apathy and indifference of the people", in the face of which "the earnest endeavours of the Government had not produced the slightest permanent effect".<sup>56</sup> He noted<sup>57</sup> that those who had undergone sericulture training,

on returning to their homes divested themselves as soon as possible of any knowledge they had acquired and, if they went in for silk at all, adopted the ways advocated by their grandmothers; while the new-fangled foreign implements given them on leaving [the sericulture] school were stuck up in the thatch of the paternal cottage, where it was hoped that any foreign magic adhering to them might bring general good luck to the family.

A major criticism of both these approaches is that they consider the failure of the sericulture programme essentially in terms of an inadequacy or perversion of human attitude and behaviour: the officials were autocratic and inflexible, the peasants simply irrational. It can be

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55. King to Prince Phenphanaphong, 27 December 1908, N.A.r. 5. K.S. 8/2.

56. W. A. Graham, *Siam*, London, 1924, vol. 2, p. 88.

57. *Ibid.*, pp. 88-89.

argued that in doing this both explanations ignore a number of rather basic technical and economic considerations.

### III

In one important respect the degree of technical innovation envisaged by the Siamese sericulture programme in the first decade of the 1900s was quite limited. This limitation was implicitly stated by Kametaro Toyama in his initial report to the government in April 1902, in which he argued simply that the innovations he proposed would improve considerably the quality of silk produced in Siam: there was no indication that the quality of Siamese silk would be raised to that of silk produced, for example, in Japan itself.<sup>58</sup> An important practical manifestation of this limitation was that the more modern sericulture implements which the Japanese experts introduced into Siam were, in many cases, rather primitive when compared with those currently employed in their native country. Early in the twentieth century in Japan, for example, the major portion of silk thread was reeled on mechanical reelers,<sup>59</sup> whereas in Siam the newly-introduced reeling implements consisted of relatively unsophisticated hand-operated devices.<sup>60</sup>

The Siamese government appears to have made a conscious decision to adopt this inferior technology. The initial programme drawn up by the Sericulture Department contained a proposal for the government to establish a mechanical reeling station to train Siamese in the use of machine reelers, but by 1905 the proposal had been abandoned.<sup>61</sup> The principal consideration in this respect was that mechanical reelers could be utilized only in relatively large-scale, specialist establishments, whereas hand-operated implements were suitable for use in individual peasant households. In other words it would appear that the Siamese government wished to promote only those technical advances in sericulture which did not involve major structural changes in the organization of the local industry. The existing structure was to be maintained, whereby each silk-producing household undertook virtually all stages of production, from the cultivation of mulberry leaves to the weaving of silk cloth.<sup>62</sup> The Siamese government was not prepared to countenance the major structural reorganization—principally the development of large-scale reeling establishments—that was essential for the full exploitation of the most advanced sericulture techniques.

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58. Toyama to Chaophrayā Thēwēt, 9 April 1902, N.A.r.5. K.S. 8/1. Toyama noted that raw silk exported from Yokohama was valued at \$800 - \$950 per picul. He argued that if his proposals were implemented fully, Siamese silk could fetch \$700 per picul. In 1902 the average price of Siamese silk per picul was \$120.

59. G.C. Allen, *A Short Economic History of Modern Japan*, 3rd ed., London, 1972, pp. 66-67. By 1909-13, 72% of total Japanese output was reeled on mechanized equipment.

60. Prince Phenphananaphong to King, February 1909, N.A.r.5. K.S. 8/2. Even this relatively simple equipment had a tendency to break down frequently unless it was well maintained.

61. Toyama to Chaophrayā Thēwēt, 8 January 1903, N.A.r.5. K.S. 8/1. Report of the Sericulture Department, R.S. 123 (1904/05), N.A.r.5. K.S. 8/2.

62. It should be noted that the provincial instruction provided by the Sericulture Department in the 1900s was intended to train each household in all aspects of sericulture.

While there is no clear documentary evidence to explain why the Siamese government took this view, two considerations undoubtedly were important. First, a major concern of the government in this period was the maintenance of internal social and political stability, which was regarded as essential for the preservation of the Kingdom's independent status in the face of severe pressure from neighbouring imperial powers.<sup>63</sup> In this context the authorities may well have wished to see a strengthening of long-established social and economic structures rather than their disruption. With regard to domestic silk production this would have implied restoring to its former vitality the existing pattern of essentially small-scale, self-contained producers, rather than possibly weakening the economic position of the peasant silk families by, for example, removing the reeling stage to a relatively few large-scale establishments. Second, it was almost inevitable that the establishment and initial operation of large-scale, specialist reeling concerns could have been carried out only by the government. It was certainly the case that during the early stages of the modernization of the Japanese silk industry the authorities had undertaken the direct promotion of such concerns.<sup>64</sup> But early in the twentieth century the Siamese government's very limited financial and administrative resources ruled out a high degree of state initiative and involvement. This consideration is elaborated below.

Since the government decided to promote only those technical innovations not involving substantial structural change in the silk industry, the inevitable implication was that Siamese silk would remain uncompetitive against imported silk, particularly Japanese silk, even were the sericulture programme to be carried through completely. Indeed, as noted earlier, this had been the clear implication of Toyama's initial report in 1902. The continued inability of domestic silk production to repel imports might have been overcome if the Siamese market had been protected by high import duties. Unfortunately this was beyond the power of the Siamese government to effect, for by the series of commercial treaties signed between Siam and the major world powers from 1855 the Kingdom's import duties were limited to 3% *ad valorem*.<sup>65</sup> The sericulture programme of the first 1900s decade could not guarantee eventual production of a quality and at a price comparable to that of other Asian silk production. Consequently the silk producers had little incentive to respond to the government's initiative.

There was a further basic economic consideration to which the Sericulture Department appears to have given relatively little thought in the first decade of the 1900s—whether sericulture should be promoted as the sole occupation of those peasants who engaged in it, or whether it should be regarded simply as providing a supplementary source of income to the peasant household. In Japan the raising of cocoons provided an important secondary income for a large number of farm households,<sup>66</sup> and Toyama appears to have favoured a similar development in Siam. For example, writing to Prince Phenphanataphong in September 1904, he

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63. See Tej Bunnag, *The Provincial Administration of Siam, 1892-1915*, Kuala Lumpur, 1977.

64. G.C. Allen, *op. cit.*, pp. 33, 66.

65. James C. Ingram, *Economic Change in Thailand, 1850-1970*, Stanford, 1971, p. 34. The commercial treaty between Siam and Japan was concluded in 1898.

66. On the eve of the First World War, almost one third of all Japanese farm households derived some supplementary income from sericulture. See William W. Lockwood, *The Economic Development of Japan*, London, 1955, p. 28.

suggested that the rice farmers of the Central Plain should be encouraged to engage in silk production as a supplementary employment during the slack season of the rice cycle.<sup>67</sup> But the Sericulture Department appears to have ignored this suggestion, preferring to concentrate its activities on the northeast where, it was hoped, the local people would become committed almost solely to silk.

Such an approach faced a number of major difficulties.<sup>68</sup> It would have been difficult for the government to persuade the peasants of the northeast to expand a traditionally off-season activity into a full-time, cash-earning activity, no matter what visible incentives the government could offer. First, considering the market forces mentioned above, there was no clear prospect that Siamese producers would be supplying the major part of Siamese domestic demand. Given the continuing technical superiority of Japanese silk producers, in particular, such a prospect remained extremely dim, at least until Siam was free of its treaty obligations. Second, even if it is assumed that the silk producers of the northeast faced a secure and substantial domestic market, it does not necessarily follow that they would have increased production substantially. The poor quality of its soils and the marked inadequacy of water for irrigation make the Khorat plateau the least fertile region of Siam.<sup>69</sup> In addition, early in the twentieth century the communication network was extremely poor.<sup>70</sup> Rough dirt tracks, pitted and potholed during the dry season and reduced to a mire when the rains came, were the only means of communication between the scattered communities of the region. In these circumstances, where the cultivation of food crops was relatively precarious and where there were very considerable difficulties in bringing rice from other districts in the event of a local crop failure, the primary objective of many northeast villages undoubtedly would have been to secure basic food requirements. In this situation, no silk-producing community would allow an attempt to expand silk output to proceed to the point where its ability to cultivate most of its own food was threatened. Only if adequate food supplies could have been ensured for each community, either through increases in local production or supply from surplus districts, could the northeastern villagers have considered specialization in the production of silk.<sup>71</sup>

#### IV

In the context of these basic technical and economic considerations it is important to note two particular features of the Japanese silk industry, as it underwent modernization from the

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67. Toyama to Prince Phenphanataphong, 29 September 1904, N.A.r.5. K.S. 8/2.

68. According to Ministry of Agriculture, *prawat krasuang kasēt (History of the Ministry of Agriculture)*, Bangkok, 1957, pp. 120-121, the failure of the sericulture programme was due in large measure to the government's determination that silk be adopted as the principal occupation of the peasantry, though the argument is not substantiated.

69. Charles A. Fisher, *South East Asia*, 2nd ed., London, 1966, p. 487.

70. H. Warington Smyth, *Five Years in Siam: From 1891 to 1896*, London, 1898. vol. 1, p. 233.

71. It is interesting to note that Michelle Burge McAlpin, in an article in the *Journal of Economic History* ("Railroads, prices, and peasant rationality: India, 1860-1900"; vol. 34 no. 3, September 1974, pp. 662-684), argues that in those areas of India where there was insufficient water for irrigation and where water transport was lacking, the need to store food against recurrent threats of famine constrained the peasantry from expanding non-food production at the expense of food cultivation.

middle of the nineteenth century<sup>72</sup>. First, from an early stage the Japanese authorities recognized a major difficulty facing an industry in which production was undertaken in a very large number of scattered peasant households: production of silk thread of a high and a uniform quality. This was essential if Japanese silk were to compete successfully overseas. It was also recognized that such uniformity could only be achieved through a relatively high degree of state intervention and regulation. Early in the 1870s the government encouraged the development of a separate reeling sector by undertaking the establishment and operation of two mills. The concentration of reeling into a relatively few specialized establishments clearly encouraged the production of a standardized thread, particularly when, towards the end of the century, the mills came to utilize powered machinery. It should also be noted that the introduction of mechanical reelers in turn made it necessary for the peasant silk families to produce cocoons of a more uniform quality. To this end the government not only fostered the use of improved methods in the rearing of worms, but also closely supervised the production of silkworm eggs by a system of official licensing of egg-raisers. Through direct intervention, and perhaps more particularly through regulation and supervision, the Japanese government made a fundamental contribution to the modernization of Japan's silk industry. Second, during the early stages of that modernization, in the 1850s and 1860s, there was a very strong world demand for silk, essentially because silkworm disease in Europe had greatly reduced French and Italian production. Moreover, when the European industry revived, the depreciation of the silver-based yen in the the last quarter of the nineteenth century facilitated increases in exports of Japanese silk.

Early in the twentieth century the silk producers of Siam were not blessed with a similary fortuitous rise in the external demand for their product. Indeed they were witnessing the erosion of their domestic market by imports, including imports from Japan,<sup>73</sup> whose competitive edge was being increased by continuing technical advance and the steady depreciation in the yen against the baht following Siam's abandonment of the silver standard in 1902.<sup>74</sup> But as noted earlier, the Siamese government could do nothing to protect local silk producers while the Kingdom's import duties remained fixed by international treaty.

Neither was it possible for the Siamese government to countenance the high degree of state

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72. The following is based on G.C. Allen, *A Short Economic History of Modern Japan*, 3rd ed., London, 1972.

73. At this point further reference should be made to the difficulty of ascertaining the relative importance of Siam's suppliers of silk piece goods. As noted in footnote 4, the *British Diplomatic and Consular Reports* indicate that there was a substantial import of silk cloth from Japan. At the same time it is virtually impossible to determine what proportion of silk piece-good imports from China into Siam were for domestic consumption. In this context it should be noted that according to one authority, silk production in Cochin-China in this period was declining "in competition with manufacture of finer fabrics made chiefly from Chinese silk" (Charles Robequain, *The Economic Development of French Indo-China*, London, 1944, p. 244). It is possible that despite the technical domination of Japan's silk producers in the East, Japanese silk cloth exports to Siam may well have fallen below those from China, principally because the Japanese would have wished to concentrate on the American market. However, in the present context, the major point is that the Siamese government was unable to protect the local silk market from imports, regardless of country of origin.

74. Having placed the baht on a gold-exchange standard in 1902, the Siamese authorities then gradually revalued the currency against gold until 1908. As the yen had been placed on a gold basis in 1897, this manoeuvre implied a devaluation of the yen against the baht. See Ian Brown, "Siam and the gold standard, 1902-1908", *Journal of Southeast Asian Studies*, vol. 10, no. 2, Sept. 1979.

intervention and regulation that was practised in Japan. The government was striving to undertake a major series of reforms and public works projects early in the twentieth century, placing a severe strain on the Kingdom's limited financial resources. To some extent this scarcity of resources resulted from the freezing of the major part of the Kingdom's tax structure by the international treaties referred to earlier. It also reflected the government's unwillingness, for political reasons, to borrow heavily on the European capital markets.<sup>75</sup> A more severe restraint on government action was the administrative weakness of a bureaucracy that was in the process of major reorganization along Western lines, and which was suffering from an acute shortage of skilled, competent personnel.<sup>76</sup> In the circumstances it is difficult to envisage the Siamese government effectively undertaking, for example, the licensing of silkworm egg production, the operation of large-scale reeling establishments, or, on a wider scale, the development of the economic infrastructure in the Khorat plateau that would provide a secure economic environment enabling the people of that region to specialize in silk production.

This paper has sought to argue that despite the strong commitment of the Siamese government to the modernization of the northeastern Thai silk industry, in practice the authorities could do little to create the conditions under which an indigenous industry would flourish. The sericulture programme foundered not because the northeast peasants were apathetic;<sup>77</sup> nor was it a case of peasant interest being smothered by an overbearing provincial administration. The programme failed because of a number of crucial constraints which were imposed on the authorities. Fear of social dislocation might well have been important in accounting for the government's decision to pursue limited technical change in the local industry. Governmental reforms in other areas implied a severe restriction on the financial and manpower resources which could be devoted to the sericulture programme. And finally Siam's international treaty obligations implied not only a severe limitation on the government's ability to raise revenue but also, of crucial importance, denied Siamese silk producers protection from other silk producers in the East. In the last analysis it was this exposure to the rigours of the international economy that determined the magnitude of silk production in Siam.

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75. These considerations are discussed in Ian Brown, "The Ministry of Finance and the early development of modern financial administration in Siam, 1885-1910", Ph.D. diss., London, 1975.

76. *Ibid.* See also Tej Bunnag, *The Provincial Administration of Siam, 1892-1915*, Kuala Lumpur, 1977; and David K. Wyatt, *The Politics of Reform in Thailand: Education in the Reign of King Chulalongkorn*, New Haven, 1969.

77. It should be added that, despite the experience and views of the Siamese government in the 1900s, there is no reason to suggest that the northeastern peasants were apathetic. There is ample historical evidence that throughout southeast Asia the peasantry were markedly responsive to economic opportunities. (From a large body of literature, see in particular, Michael Adas, *The Burma Delta: Economic Development and Social Change on an Asian Rice Frontier, 1852-1941*. Madison, 1974, chaps. 2, 3; James C. Ingram, *Economic Change in Thailand 1850-1970*, Stanford, 1971, chap. 3; Lim Teck Ghee, *Peasants and their Agricultural Economy in Colonial Malaya, 1874-1941*, Kuala Lumpur, 1977, chap. 3.) The crucial consideration in the Siamese case is that the Government could give the silk producers of the northeast no clear economic opportunity to which they could respond.