

## ACCEPTANCE AND REJECTION

### The First Inoculation and Vaccination Campaigns in Thailand\*

By the beginning of the nineteenth century the Thais already had hundreds of years experience with the smallpox virus. La Loubère, who visited Ayutthaya in 1687-8, describes it as the worst of Siam's contagious diseases, and he was also 'exceedingly' surprised to learn that the Thais waited three years before burning the corpses of those who had died of it, because they had 'experimented, that this Contagion breaks out afresh, if they dig them up sooner'.<sup>1</sup> Various short accounts of costly smallpox epidemics can be found in pre-nineteenth century Thai and European sources.<sup>2</sup>

In the early nineteenth century smallpox was still a matter of major concern. In 1825 Henry Burney reported that it was the real plague of Siam, and apparently it did not even spare those in the most privileged positions. *Phraya* Chula had recently lost a daughter, and just then a young prince and also one of the Phra'khlung's daughters were suffering from it.<sup>3</sup> More information comes from Dr. Bradley's personal diary, in the entry for December 1838:

It is almost impossible to find a family of some years standing here that has not been severely visited with the small pox with the loss of some two or three or more lives. A very large majority of the inhabitants are very thickly pitted shewing that they were once sick of the small pox.

He also noted that the sickness returned every year, and recorded a seasonal pattern: it commenced at the end of the wet season and lasted throughout three months of the dry season. Transposed to the European calendar, this meant that the annual scourge occurred between November and the end of February. This description contrasts with that described for the early twentieth century, when an epidemic is noted to occur every three or four years.<sup>4</sup>

There is some interesting information in early nineteenth century published sources concerning smallpox. Thus for example, there are two accounts of the conversation which took place on April 13, 1822, between John Crawford, George Finlayson and Prince Chetsadabodin, the prince who two years later succeeded to the Thai throne. It was Chetsadabodin who initiated the topic of smallpox, asking whether it were true that the English had found an antidote. His European visitors

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took considerable pains in explaining the discovery of the cow-pox and its value.<sup>5</sup> The prince then wished to know whether the Governor-General of India would, if requested, send a skilful person to Siam to instruct the Siamese in the use of this antidote.<sup>6</sup> In his account of this conversation, Dr. Finlayson adds: 'On being told that such a person might be procured by his writing to the Governor General on the subject, he took no further notice of the matter.'<sup>7</sup> Finlayson makes it sound as if this were nothing but a frivolous inquiry on Chetsadabodin's part. Subsequent events, discussed below, prove that the prince was genuinely interested in taking advantage of the European invention, and it is likely that Crawford and Finlayson missed an opportunity to create goodwill between the nations by not offering to write on the prince's behalf.

It is a feature of European nineteenth-century imperialism to regard most Asians as steeped in ignorance, and to describe the blessings of measures such as smallpox vaccination and inoculation as directly attributable to a European or an American agent. This is the case in the few detailed accounts of the first inoculation and vaccination in Thailand. Based as they are upon a series of published excerpts from Dan Beach Bradley's diaries,<sup>8</sup> even the best Thai sources depict Dr. Bradley as the person who had the vision and perseverance to teach the principles of inoculation and to procure the vaccine.<sup>9</sup> Usually the earliest date for this is given as 1837, but some place it later.<sup>10</sup> It will be argued in this article not only that the dates are based on inadequate sources and demonstrably wrong, but also that the role of the Westerners, and that of Bradley in particular, was much less prominent and efficient than usually presented.

In order to present a historically more accurate picture of the story of inoculation and vaccination in Thailand it is necessary to examine both published and unpublished contemporary sources in some detail. The first point to emerge from a perusal of the *Burney Papers* is that inoculation, the deliberate infection of a healthy individual in order to protect him from future epidemics, was not at all a European or American initiative, as some "Eurocentric" sources would have it. Various Asian peoples had used smallpox inoculation before the Europeans learned about this technique. In 1825 Henry Burney reports that the Indian community in Bangkok sometimes inoculated against smallpox.<sup>11</sup> This is a decade prior to Bradley's arrival there. Probably even more important, because of the much larger number of people involved, is the fact that the Chinese also had a form of inoculation. They inserted smallpox matter in the nasal passage so that the nasal membrane served as the body's point of entry. This was an old technique, widespread in China as early as the second half of the sixteenth century.<sup>12</sup> It was a practice also among the Chinese of Bangkok during the Third Reign.<sup>13</sup>

A look through the unpublished letters of John Taylor Jones reveals that both vaccination and inoculation must have been practised also by Europeans before Bradley arrived on the scene. As early as April 1833 he writes that vaccination had not

yet been found to take effect in Bangkok, implying that attempts to introduce cow-pox had been made. Unlike inoculation, for which the pus or scabs were locally available, the vaccine had to be imported by sailing ship under conditions often not suited to keeping a sample viable. The first recorded *inoculation* of Europeans in Bangkok is in late March 1833 in Jones's household, almost immediately after his arrival there.<sup>14</sup> Another inoculation, not long after, is that which Jones performed upon himself with matter taken from his daughter's scabs. Although Jones had been twice vaccinated already, both vaccines must have been useless, because he now contracted a very severe case of smallpox. For five weeks he was incapacitated, and for several days partially deranged. For a whole month he was unable to wear his usual clothing, and after the disease had left him he still felt extremely feeble.<sup>15</sup>

This, and other examples of attempting this form of preventative medicine must have been seen and discussed by many Thais, because resident Europeans were rare and much in the public eye, undoubtedly a source of much entertainment and speculation. It ought not to surprise us that the Thais were not particularly attracted to following Jones's example. Not only did he almost lose his life by inoculating himself, but also the method of doing so may have seemed a little distasteful to them. The Thais would be interested, but not overly impressed, when confronted with European-style inoculation. Prior to 1838, the Thais were content to let Europeans practise their particular form of healing, just as the Chinese and Indians had theirs. The Thais had their own methods for treating smallpox, which seemed to have included the taking of cold baths.<sup>16</sup>

The first account of a *vaccine* arriving in Bangkok (though not necessarily the first time it actually arrived, as indicated above), is that recorded in Bradley's unpublished diaries for 1836. He does not indicate who took the initiative in this matter, whether it was upon his request or sent to him without his having asked for it. In an entry written more than two years later when he received a batch of vaccine from Canton, there is a remark concerning a certain Dr. Parker, who 'seemed determined to persevere in his efforts to introduce this great boon unto Siam,'<sup>17</sup> an indication that vaccination of the Thais might not have been as important to Bradley as commonly supposed.

However this may be, in late 1836, having received some vaccine from the United States in a packet which was only superficially protected, Bradley began a vaccination experiment. Before doing so he went to Dit Bunnak, the Phra'khlung (the Minister in charge of foreign trade), to discuss the arrival of the vaccine and its potential value. The Phra'khlung reacted in a positive manner and showed interest in the experiment;<sup>18</sup> if it were successful, no boon would be equal to the vaccine. He added, apparently in a joking manner, that Bradley might charge a *baht* for every person vaccinated and thus fill as many iron chests as he pleased. The Phra'khlung thought that he himself 'would like much to have such a revenue'.<sup>19</sup> This banter may

well have been a sign of the Phra'khlung's scepticism concerning the new antidote, and he personally might not have been very surprised when Bradley's vaccination of fourteen or fifteen children turned out to be in vain. The vaccine was 'good for nothing'. During 1837 Bradley made at least two more unsuccessful attempts to introduce vaccination, once from a batch received probably directly from the United States, and once from a sample which came to him via Penang. None of the children vaccinated developed the hoped-for pustule and the experiment was, for the time being, abandoned.<sup>20</sup>

### The Inoculation Campaign of 1838-39

As an example of the 'imperialist' style of history writing we may take the chapter 'Smallpox' in William Bradley's book *Siam Then*. In that chapter he provides a summary account of the beginning of the inoculation campaign, written in a style strongly reminiscent of his famous great-grandfather's personal diary:

The perfect success with which it had recently pleased the Lord to follow the inoculation of the missionary children and several of the native children who were living in their families, seemed an encouraging earnest of the success of general inoculation in Siam, provided the native physicians and people could be properly instructed on the subject and would use the same precautions that we took in the case of our children. Hence it occurred to me that it might be a good plan to write a treatise on the art of inoculation, inasmuch as the King and several noblemen had manifested a desire to be instructed on the subject.<sup>21</sup>

This account, according to which D.B. Bradley appears to be the planner and organiser of the campaign, is not what Bradley actually wrote in his journal. His first mention of events which turned out to be the beginning of the campaign is as follows:

The King has quite recently sent several of the Royal Physicians to visit me for the purpose of having me teach them how to inoculate. It seems he had been informed of the ... (one word illegible) inoculation of the children of the missionaries and several Siamese and had thus had his hopes excited that inoculation might afford some important relief from the small pox than which there is no other disease so destructive of life among the Siamese.<sup>22</sup>

Thus, contrary to what the fictitious summary of William Bradley tells us, the plan to educate local doctors did not originate from the American, but these indigenous medical specialists were sent to Bradley on the initiative of the Thai monarch. The king's action was at first modest in scope, and may best be regarded as an experiment on the Thais' part. Again, the unpublished diary reveals what actually happened, incidentally giving an indication of the king's attitude to *farang* medicine:

'The King sent several slaves with his physicians for the purpose of having me inoculate them for an ocular proof of the benefit of the plan'.<sup>23</sup> Apparently the experiment proved satisfactory because a week later Bradley was visited by 'six or eight of his majesty's physicians' who made enquiries concerning inoculations.<sup>24</sup>

While William Bradley wants us to believe that the missionary planned to write a treatise on the art of inoculation before he began his instruction, this treatise is actually mentioned for the first time only in the unpublished diary on the day after the second visit of the royal physicians. This indicates that the order of events is exactly opposite to that suggested in *Siam Then*: the missionary did not first write a treatise in order to persuade local doctors to get interested in inoculation. Instead, the doctors were already under instruction before the text was written. Only after the first stage of the experiment had been concluded in a satisfactory manner, and more doctors were sent, is there any mention of written instructions. It seems plausible that the treatise was written as the result of a request either by the local doctors or by the Thai king.

Further initiatives also come from the Thai quarter. Two days after the presentation of the written instructions to the Phra'khlung to be handed on to the king five royal physicians spent nearly the whole morning at Bradley's, bringing with them more lads from the king for him to inoculate. Bradley notes that His Majesty appeared 'much encouraged by the success of inoculation' upon those on whom the experiment had been made.<sup>25</sup>

In an article made up of a hundred clusters of 'headlines' for each of the years between 1782 and 1982, recently published in both a Thai and an English version, there is a most curious entry among those for 1838. The authors state that in that year a team of Thai medical men were sent to the Philippines, to be trained in making smallpox vaccine. They add: 'This kind of vaccine has been produced locally then'.<sup>26</sup> If this information were true, the history of vaccination, in both Thailand and the Philippines would need to be rewritten. There is, however, no evidence supporting this 'headline' for 1838. No Thai medical specialist travelled to the Philippines just then. In detailed accounts of the history of vaccination, a journey to Manila is mentioned, but the first cooperation between the two countries in the matter of vaccine preparation took place in 1901, more than six decades later.<sup>27</sup> The mistake in placing it in the Third Reign may have arisen from a misreading of a summary account of vaccination prepared for the same volume in which the 'headlines' appeared.<sup>28</sup>

By the end of December 1838 the experimental stage of the campaign appears to have been over and the Thais had begun inoculating, at first among the princes and senior administrators. There is mainly circumstantial evidence for this early stage of the inoculation campaign, drawn from remarks in Bradley's unpublished diaries. Bradley was not in charge of the campaign, and he was only involved when personal acquaintances ask him to come and inspect if an inoculation had 'taken', or to perform the minor operation himself. Prior to January 1839, the only Thai of rank who had

approached the missionary about having his own child inoculated had been Chuang Bunnak, the Phra'khlāng's eldest son, who stood out among the Thais as an innovator who was in the vanguard of those acquainted with Western technology. During the first two weeks of January however, Bradley was asked to inoculate some of the Phra'khlāng's wives, children and grandchildren, also in the family of *Phraya* Siphiphat (the Phra'khlāng's brother), to supervise a royal physician's inoculating of the family of *Phraya* Phiphat (the 'second' Phra'khlāng), and to perform this small operation himself at one of the palaces—an unprecedented spate of activity in this field.

If Bradley was more than ever before occupied with measures to protect Thais against smallpox, others spent even more energy on this. On January 13, Bradley reports that 'physicians came in great numbers to obtain the small pox treatise', and from the entry of the day before we learn that 500 copies of that tract had been printed. On January 14, not only did the missionary receive another 'fifteen or twenty' applications for the inoculation instructions, but also he instructed a Thai doctor who had been sent by the Phra'khlāng for the purpose of learning how to inoculate so that he could be sent to the town of Bangplasoi, one of the coastal towns directly under the Phra'khlāng's supervision.<sup>29</sup> This is the first indication that the campaign had spread not only among ordinary Bangkok Thais, but also outside the capital. On January 16 and 17, Bradley had the honour of being visited by Prince Wongsasanit, one of the king's younger half-brothers, who made the practice of medicine his chief hobby. Probably even more gratifying was the information that the royal physicians had already inoculated more than a thousand members of the Thai elite, and that ordinary doctors had performed 'innumerable' inoculations of the common people. That the campaign was well under way is clear from the entry for January 19:

Inoculation is now the all engrossing topic of conversation in Bangkok from the king on the throne to the beggar on the dunghill. Several thousands have been inoculated with perfect success. As yet not one death has been heard of from inoculation while small pox in the natural way is very prevalent and very morbid...

Neither this campaign, nor the thousands of inoculations was the American missionary's work, being organised by Thais; and the driving force is revealed further on in the entry for the same day:

I am informed that the king in order to encourage the work, is giving a bounty of 20 ticals (\$12,00) for a small quill of small pox virus sufficient to inoculate 20 or 30 persons and to the poor who are not able to procure medications he gives from 2 salungs to a tical to help them through.

For twentieth-century readers the information regarding the king's bounty might not seem particularly noteworthy, a *baht* or *tical* being a coin of little value and a *salu'ng*, or one-fourth of a *baht*, becoming obsolete in the 1980s. In the 1830s.

however, a *salu'ng* could, in a year when rice was cheap, buy a ton of rice,<sup>30</sup> and Bradley paid each of his leprosy sufferers ten *salu'ng* or two-and-a-half *baht* per month which was at that time 'ample to purchase their food'.<sup>31</sup> Seen in this light, the king's bounty of twenty *baht* for a quill of serum was a spectacularly high one. It was a clear sign of how much value the king placed on inoculation, and it may well help explain the alacrity and eagerness with which Thai doctors sought Bradley's treatise on inoculation. On the other hand, the king's willingness to assist the poor with a sum of between two and four *salu'ng* must also have greatly encouraged the people to subject themselves to this new form of preventative medicine. It is clear that not only were the preliminary experiments undertaken because of the Thai king's expressed orders, but also the whole campaign took off efficiently because of the king's decision to provide lavish funding.

In late January and early February 1839 Bradley provided an interesting diversion. On January 23, while the inoculation campaign was continuing in full swing, Bradley received another package of vaccine, this time from Canton. The batch differed from all previous ones in that it was 'only' six weeks old. It was an awkward time to attempt a new vaccination experiment. The missionary remarked in his diary that inoculation had been so widespread around him that he could not think where he would find any subjects to experiment upon. He felt it his duty to attempt vaccination and, 'although it must needs cost me much time and great trials of patience in a quite hopeless work',<sup>32</sup> he visited the Phra'khlung the day after receiving the vaccine. The Phra'khlung promptly turned down Bradley's request for assistance in finding people to vaccinate. 'He no doubt thought that inoculation was good enough', commented Bradley, who then proceeded to contact one of the other leading pro-Western members of the Thai elite, Prince Chuthamani. The latter did not fail him and gave permission for Bradley to vaccinate some of the prince's servants' children. Bradley, assisted in his task by Dr. S. Tracy, duly began vaccination the following day.<sup>33</sup>

While the Phra'khlung had not been willing to assist, there was another party among the Thai elite who showed a keen interest. On January 25, only two days after the vaccine had arrived, and a day after the experiment had begun, the king sent his physician to inquire about it, and this emissary insisted upon taking a specimen of the new vaccine to the king. The very same evening *Phraya Chula*, the king's personal adviser on foreign affairs, went to Bradley's house with a series of questions on the matter of vaccinating. By the end of January, Bradley and Tracy had hopes that the vaccine had taken in three of the children upon whom they had experimented, and the former spent almost the whole of the first day of February in vaccinating, 'going from house to house' where he was invited. The vaccination experiment continued for more than a week, but with growing doubts as to the nature of the vaccine, because the pustules that were raised look more and more spurious. The matter was solved on February 9, when children who had been vaccinated were inoculated and all found to

have taken the disease, thus proving that the batch from Canton had been useless.

The inoculation campaign meanwhile must have continued, but since Bradley was not involved in its organisation we hear no more of it in the diaries. Naturally, the king's heavy subsidy could not continue for a long time. Moreover, if Bradley was right in noting that smallpox always disappeared by the end of February, we may assume that at the end of the smallpox season the inoculation campaign was stopped. This is confirmed by the fact that on 27 March 1839 Bradley was pleasantly surprised to receive a sum of money from the king as a token of thanks for his services to the Thai people. It was a sum of three *chang*, or 240 *baht* of silver, a generous amount indeed. It is relevant to note that the American was not the only person to be so rewarded. The king also gave similar amounts to indigenous doctors.

From the evidence hitherto brought forward it can be stated with confidence that in late 1838 and early 1839 a massive inoculation campaign did indeed take place and that it was organised by the Thais. There must have been court documents with instructions about the nature of inoculation, about financial assistance and about the decision to award a sum of money to Bradley, whose assistance had been frequently sought in the earlier stage of the campaign. While some such documents may have survived, and may eventually be found among the many unpublished documents of the Third Reign, to the best of my knowledge, none has yet been discovered.

It is somewhat curious that the standard published sources on the Third Reign remain silent on the 1838-39 inoculation campaign. The Dynastic Chronicles mention a variety of events for the year Chulasakarat 1200, during which the campaign must have taken place. There are descriptions of some cremations of members of the Thai elite, there is mention of the building of certain fortifications, and a great amount of space is devoted to the visit, via an overland route, of Dr D. Richardson.<sup>34</sup> When *Chaophraya* Thiphakorawong wrote the Chronicles in the late 1860s, it was almost thirty years after the campaign had been held, but the author must have been 25 years of age in late 1838, and should have been able to remember it personally.

Also curious is the fact that the two published Records of the Court Astrologers do not mention the campaign. These Records often, albeit in a somewhat erratic fashion, mention events of interest to the general public. For the year Chulasakarat 1200, the *chamu'n* Kongsinlapa version mentions only the execution of nine persons of rank,<sup>35</sup> The *Phraya* Pramunthanarak version has more to say. It reports several important cremations, a mishap to a royal elephant, an astronomical observation, a remark on the fortification of the Cambodian town of Siemrat, and finally an indication that opium suppression took place in that year.<sup>36</sup> There are other published Thai contemporary sources, such as the documentation on the war with Cambodia and Vietnam,<sup>37</sup> and the letters of *Luang* Udomsombat,<sup>38</sup> but these have a provincial focus and smallpox is not a subject that appears to concern them.

This leaves us with an apparent paradox: on the one hand, it is clear from

Bradley's unpublished diary that the inoculation campaign was inspired and conducted by Thais, and involved the spending of large sums of money and affected thousands of people; on the other hand the Thai sources available remain silent on it. The solution of this apparent paradox may well lie in the fact that this campaign was to a remarkable degree inspired by the king himself, and it was this king who, during the later part of his reign, seems to have lost support of an important faction of the executives. There can be no doubt that the initiative to start the experiment seems to have come from the king himself: the inoculation first took place in the palaces, and it was the king's money that provided the incentive. The idea of large-scale measures to combat disease by this preventative method was certainly entertained by the king, but it appears to have left even such informed men as the Phra'khlung lukewarm. A good example of this difference in approach are the respective reactions of the Phra'khlung and the king on the attempt to introduce vaccination while the inoculation was continuing. The Phra'khlung simply did not wish to be burdened by yet another method of fighting smallpox, while the king was immediately interested and encouraging.

The inoculation campaign of 1838-39 seems to be a clear case of one person's attempt to reform and impose his vision upon the surrounding society. The Thai monarch was in a privileged position to do this. His wishes had to be obeyed. Even the most senior administrators risked losing all by appearing not to be happy with a project endorsed by the king. Moreover, in the late 1830s the Thai monarch could devote large sums of money in whatever direction he wished. At the same time, while the king could ordain a general measure, he was apparently unable to inspire others with the ideas behind it. As emerges from Bradley's diaries, the subsequent attempts to introduce vaccination tend to confirm both the king's interest and the rather apathetic attitude of the general public.

The reason why the contemporary court astrologers did not mention the campaign may well reflect this apathy. This may also underly the omission in the *Dynastic Chronicles*, although since they were written during the Fourth Reign, and their author knew that King Mongkut himself would read and edit the manuscript, there also may have been a tendency to avoid mentioning initiatives which placed Rama III in a favourable light.

### **The vaccination campaigns of the 1840s**

On 23 January 1840, Bradley went once more to the Phra'khlung and prevailed upon him to try out a new batch of vaccine, received from Dr. S.V.G. Smith of Boston. The Phra'khlung allowed Bradley to vaccinate ten of his children, as well as sixty-five Malay captives who had recently been brought to Bangkok. More than half of the vaccinated Malays were adults whose faces bore no trace of smallpox. Bradley also injected another American missionary's child with some of the vaccine.<sup>39</sup> A week later he was delighted to find that five persons who had been given the American vaccine

apparently had 'taken': one of the Malay children, the missionary child, and three adult Malay women showed the desired reaction. All of them had been vaccinated by introducing matter from a scab which had been moistened with rain water by means of the point of a lancet. Bradley immediately vaccinated from the fresh pustules among the Malays; and from the missionary child he revaccinated his own infant daughter, a little schoolgirl and an adult American resident, Miss Pierce.

On February 6, 1840, five of the American missionaries, including Miss Pierce, visited the Phra'khlung in order to show the successful vaccination on Miss Pierce's arm and to persuade him to lend his full support to a general vaccination campaign in the whole country. The Phra'khlung was very pleased with the sight and agreed to let those children whose vaccination had not taken be revaccinated. Just at that moment a messenger arrived and reported that some of the vaccinated Malays were sick of the smallpox: one had died and others were very sick. Immediately the Phra'khlung withdrew permission to experiment further in his family. Bradley investigated personally most of the Malays whom he had vaccinated, and found that none of those whom he considered had taken the vaccine had smallpox. He reported this to the Phra'khlung, who thereupon agreed to let the experiment proceed. Five of the Phra'khlung's children were vaccinated at Bradley's house, from Miss Pierce. In addition, Prince Mongkut sent five persons to be vaccinated, and Prince Chuthamani let one of his little daughters be vaccinated, a sign that this measure was readily accepted among those most familiar with the West.

However, eight days later Bradley was much alarmed to notice that two or three of the Malays whom he had assumed successfully vaccinated, were sick of smallpox. He hoped that their cases could be regarded as spurious because of their many other skin diseases, and hoped that the vaccination strain from the little missionary child and Miss Pierce was the genuine vaccine. By late February Bradley was quite convinced that he had the first successful smallpox vaccination started in Siam. He persuaded the Phra'khlung to allow him to revaccinate three of the latter's young babies, and commented that in general he found it quite difficult to procure children in whom to propagate the virus. 'The people have no confidence in it as yet and they are exceedingly fearful that it will produce something very mischievous'.<sup>40</sup>

This reluctance to accept vaccination contrasts markedly with the inoculation campaign of a year earlier. In our opinion, this is the result of two factors. The first one is that it was a *farang* (Westerner) who was going around proclaiming the benefits, and that just then there was a recurrence of the general fear concerning the *farangs'* real intentions, especially in 1840 when the English were engaged in full-scale aggression in China. The second factor, it is here suggested, is that, notwithstanding the campaign of the previous year, the whole concept of smallpox prevention in the European manner was not yet accepted in the public eye as efficacious.

On February 29, Bradley again spent most of his time on efforts to propagate

the vaccine. He visited the Phra'khlung and found that the three infants he vaccinated had all taken it beautifully. The father expressed his gratitude, but when Bradley asked him to use his powerful influence in spreading vaccination among the general public, so that the vaccine would be passed on from week to week, the Phra'khlung did not respond as heartily as Bradley could wish. How ineffectually Bradley's vaccination campaign was conducted is clear from the diary:

With much effort I have found 6 or 8 persons that I could vaccinate. I am obliged in almost every instance to entreat much for the privilege. The people do not at all realize what a blessing is brought to their doors and offered to them without money and without price and without the least possible danger. I calculate that I shall be obliged to pursue these benevolent efforts against wind and tide and the most stupid unbelief yet a long time. The Phra'khlung even will want the small pox to come close about his children that have been successfully vaccinated and thus put them to a thorough test ere he will fully believe.<sup>41</sup>

It is thus quite clear that Bradley, not with standing his most strenuous efforts, and even understating the possible dangers of his methods, was not finding a positive response among the people. This blatantly contradicts Dr. Highet's view that the Thais had always readily accepted this form of medicine.<sup>42</sup>

On March 7, 1840, Bradley's efforts again received assistance from the king. That morning the king's physician came to Bradley's home to make inquiries concerning the cow-pox vaccine and to request him to vaccinate at Prince Wongsasani's palace. Just as in 1838 when inoculation was the intent, the king's emissary had brought a slave's child to experiment upon. Bradley performed the vaccinations and took 'unwearied pains to put the physician in possession of all the information on the subject that (he) could.'<sup>43</sup> He also vaccinated at two palaces, and all vaccinations appear to have taken well. It remained, however, very difficult for Bradley to find people willing to let themselves be vaccinated. On March 21 he found four descendants of the Portuguese who were all that he could persuade with much effort. The missionary noted that the funeral ceremonies for the king's son prevented the monarch from taking proper note just then of the experiments that he had ordered his physicians to make.

Meanwhile the Phra'khlung's doctor, *mo* Suk, on his own accord attempted vaccinating and reported to Bradley that, although he had been at first quite incredulous, he had vaccinated about forty persons successfully, and that despite many of them living among people who had the smallpox, none had caught it. Here was at least one local specialist convinced of the efficacy of vaccination. The prejudice among the ordinary people remained too strong for Bradley, however, and the hoped-for royal

support did not eventuate, and by May 1840 the vaccine had finally run out, having passed through about fifteen successive persons in Bangkok.<sup>44</sup>

The king's neglect in this matter is rather out of character. It is possible that he was, as Bradley thought, preoccupied with other matters, or that some of the experiments with vaccination had been less encouraging. The king, however, had not lost interest in the subject. This was proven in December 1840, when he let Bradley know, via the Phra'khleng, that he had read Bradley's treatise on vaccination with much pleasure. The Phra'khleng also let it be known that the king wished Bradley to experiment with making cow-pox in Bangkok and would provide the facilities for this. On December 11 a cowherd presented himself to the missionary, asking whether Bradley wished to go over to see the herd, or did he wish cows to be brought across the river to his residence ?

Bradley gladly began the experiment, and in January 1841 he managed with considerable difficulty to dip a few quills into the pustule of a young sufferer of smallpox. The fact that the American had to travel all the way to the town of Paklat, several miles down the Chaophraya River, may be an indication that it was not easy to find smallpox sufferers in Bangkok itself, and that the widespread inoculation campaign two years earlier had been quite effective in suppressing the disease. Bradley spent much time in mid-and late January attempting to inoculate cows with smallpox from humans, but he did not succeed in obtaining a noticeable reaction in any of the animals. Apparently the smallpox season came to an end, and the diary does not mention the experiment again until the beginning of the smallpox season in late 1842. At that time, when Bradley visited the king's cowherd, he was pleasantly surprised to find that no objections were made to the resumption of the experiments. The man found it burdensome, but said that it was His Majesty's command and he could not but grant all Bradley's wishes. For almost a month, from 19 November 1842 onwards, Bradley made valiant attempts to obtain his own vaccine. Every one of his attempts failed, and he had to resort once more to inoculation to protect his patients in the Protestant missions.<sup>45</sup>

In July 1844 yet another batch of vaccine arrived, on the schooner 'Venus' from Singapore. By August 6, Bradley was certain that the vaccine had taken and was determined that he would leave nothing undone to establish it permanently in Siam. His campaign can be followed through the diary entries for the next half year. Some of the elite families allowed him to insert the vaccine, notably the Phra'khleng, Chuthamani, and this time also the head of the *krom* Na (the Ministry of Lands), *Phraya* Phonlathep. Early in this campaign Bradley decided to write yet another treatise on vaccination for his Siamese public, and by September 14 this was ready for distribution. Again there is ample evidence in the diaries concerning the Thais' reluctance to have their children vaccinated: '...the work will not move at all but

with the most diligent application to it and preserving impertuity (imperturbability ?) with parents and guardians.<sup>46</sup> A few days later he writes: 'The indifference of the people to the blessing brought to their door is astonishing. They are even beginning to hate us for our great importunity for their children and they will tell a thousand lies to be clear of us...'.<sup>47</sup> Bradley's assistant in this campaign, the Reverend J. Goddard, had to stop vaccinating because by October 5, 1844, he had run out of subjects from whom he could vaccinate. This was also the day on which Bradley yet again sent a memorandum to the king concerning vaccination and midwifery, but this time there was no royal encouragement, in line with the general anti-Western position taken by the king after the Opium War in China and the confrontation with the British merchant Robert Hunter.

The vaccine strain was maintained with considerable difficulty in October and November of 1844, but in December there appeared to be a breakthrough. Suddenly Bradley wrote that there was but little difficulty in finding people willing to be vaccinated, a remark completely contrary to all earlier entries on the subject. The reason for the greater acceptance may be found later in the same entry when he reveals that he has shifted the burden of vaccinating to his Thai assistant Nak, 'who appears to be getting himself a great name among the people'.<sup>48</sup> Here is indirect proof of the idea that it was the *farang* himself who was the chief obstacle to spreading this new type of preventative medicine. When a Thai, cognizant of the Thai medicinal system and medical preconceptions, was the vehicle for the innovation, the resistance against the measure melted away.

There are only a few more items of information in Bradley's diary on vaccination during the Third Reign. In January 1845 he printed a second edition of his treatise on vaccination, with a total of 1000 copies, and on February 1 of that same year he remarked that the 'work of vaccination is going on from conquering to conquering among those who have been its defamers and opposers'.<sup>49</sup> Unfortunately, diarists such as Bradley tend to dwell more upon flatterers than upon defamers, and no other details are given. It has not been possible to find out from published or unpublished sources what exactly happened after Bradley stopped vaccinating. Possibly interest in prophylaxis lessened with the seasonal waning of the disease, and vaccination lapsed. We know for certain that by the end of the Third Reign there was no vaccine available in Bangkok.<sup>50</sup> New attempts to introduce vaccination by Drs. S.R. House and Bradley took place at the beginning of the Fourth Reign, but the details fall outside the scope of this work.

### **The Wider Context**

Several hitherto unsuspected facts emerge when the details of inoculation and vaccination campaigns are considered. It should now be clear that the 1838-39

inoculation campaign was quite different from all other campaigns. It was apparently well-organised, hundreds of indigenous medical practitioners were actively engaged in it, and there was widespread acceptance of the practice. In contrast, the vaccination campaigns attracted few Thai doctors and failed through widespread resistance on the part of the ordinary people.

It has already been pointed out that the king's support was a crucial factor in the successful inoculation campaign. A lavish amount of money appears to have been spent on it, while none of the failed attempts attracted financial support. Similarly, it may be pointed out that from 1840 onward anti-Western feeling grew, and the king himself became increasingly suspicious of European intentions towards his country. It would be shallow thinking to imagine that widespread campaigns were made or unmade simply because of the prevailing attitude of the king. The king's expressed wishes may activate a great many administrators, but if they themselves are not in agreement they can easily prevent a royal order from having effect. Even more important is that although many people may be attracted by a decree saying that money will be given to those who need it for medical supplies, few would blindly follow the king's wishes if they felt they were thereby jeopardizing their children's lives.

Therefore, no consideration of the success or failure of inoculation and vaccination campaigns is complete if an attempt is not made to take the medical notions and preconceptions of the people into account. The American missionaries who had been trained in medicine had little but disdain for indigenous notions of health and disease. While there was a great admiration among the Thais for some of their medical work, such as the operations for cataracts which became one of Bradley's specialities, he himself failed to appreciate that many of the European medical practices alarmed the Thais. The freedom with which the American doctors made human blood flow by leeching, bleeding, surgery and tooth extraction must have appeared very threatening to the vast majority of Thais, because the act of making blood flow out of the body was seen as antipathetic to attempting to produce a cure.<sup>51</sup>

Vaccination and inoculation were not among the most threatening of the techniques proposed by the missionaries. Admittedly, the technique often involved lancing the skin of the upper arm, but it may be supposed that the cut would be very shallow and that very little blood would be lost. We have seen that Indians and Chinese practised their own form of inoculation, but it should also be understood that in traditional Thai folk practices these are some techniques which appear quite similar to vaccination and inoculation. These are the insertion of small sacral metal balls under the skin, and the practice of tattooing magic symbols upon various parts of the body, including the upper arm. These practices are traditionally restricted to adult men, and they are widely believed to confer invulnerability against arrows, spears, clubs and bullets. It is not such a large step from inserting tattooing ink, or a metal object, to injecting a bit of liquid from a quill. Similarly, there is an apparent comparability in

conferring invulnerability against bullets and making a person immune against smallpox. It is this essential compatibility of techniques and ideas which may help explain the apparent success of the 1838-39 campaign.

There is another factor related to medical notions which may have played a role in both the successful campaign and in the failures. Both inoculation and vaccination involve the transfer of some material from one person to another. The Western doctor of the 1830s took for granted that it had to be done and that his patients would allow him to do this. He was incapable of having empathy with some of the fundamental qualms felt by the Thais. In the first place there was the belief among at least some Thais that the different races of mankind might not all possess the same internal body structure, and medicine that might make a *farang* feel better might not necessarily have the same beneficial effect upon a Thai.<sup>52</sup> Inoculation which was effective upon a missionary child might not have a good result when a pustule's content was transferred to a Thai. This misgiving may have played a role during the first experiments upon royal slaves in 1838.

Probably even more important, and, because of the Western prejudices, unobserved by the missionaries, was the Thai concept of hierarchy when inoculating or vaccinating. The 1838-39 campaign, organized by the Thais themselves, was performed in different quarters by different doctors. The royal physicians inoculated in the palaces and among the administrative elite, while commoners were inoculated by ordinary doctors. This was in marked contrast to the technique of Bradley, who was just as eager to create a vaccine in a Malay slave as in one of his own children; he collected pustules from the lowliest Thais and offered it to the Thai leaders. Little wonder that the Thai elite, while often intellectually persuaded of the benefits of Bradley's schemes, could not be enthusiastic about his manner of conducting his own campaigns.

Finally, there is the factor of the 'bedside manner', so important in the delivery of medicine. The missionary was in principle vehemently against anything that smacked of superstition. Bradley refused to let patients light incense and candles; to him that was an abhorrent act which reminded him of the worst heretical activities of the Catholics. He thereby failed to take note of the fact that incense and candles were essential to many Thais as the tools with which to establish contact with the invisible, and thus highly appropriate during a healing ritual. Similarly, Bradley would not make the right gestures, he would not blow forcefully over that part of the arm where he would make his cut, and he would not utter sacred spells at the crucial moment of lancing the skin. From this perspective it is not surprising that Bradley met with great resistance in his efforts to convince people that they should have their children vaccinated. On the other hand, the success of Nak, Bradley's Thai assistant, among the people as an eminent vaccinator may well be due to his greater awareness of his patients' expectations.

There is evidence that the Thais were quite willing to accept the *farang's* medical administrations when they appeared to make sense according to traditional Thai medical practices. Thus, in a letter dated 1829, Mgr Bruguière notes that there was not the slightest difficulty in baptising sick children who were on the verge of dying, because the parents were convinced that the Catholic missionaries by pouring sacred water over a child's head while uttering the appropriate Latin words, were administering a powerful remedy.<sup>53</sup>

It is therefore not very difficult to account for the repeated failure of Bradley's attempts to maintain a strain of vaccine among the Thais. Apart from the reasons enumerated above, there were probably some suspicions regarding the man himself. He seems to have had a tendency, at least while jotting down his diary, to exaggerate the efficacy of these preventative measures. If he put his case equally strongly to the Thais, he must have put his whole campaign in jeopardy. It needed only a few fatalities to discredit him.

The most surprising fact to emerge from this study of inoculation and vaccination during the Third Reign is the apparent success of the 1838-39 campaign. It has been established that, contrary to what is usually thought, this early widespread inoculation was not Dr. Bradley's personal success; it was organized by the Thais themselves. In light of the subsequent failures there is ground for the assertion that if Bradley had been in charge, the 1838-39 inoculation campaign might have failed like all his attempts to establish vaccination. The new measures of massive campaigns are doomed to fail when the chief organizer's motivation is suspect, when he deliberately belittles local ideas concerning healing and when his actions inspire no confidence. Bradley, with his strong prejudices and uncompromising stance, was a most unsuitable person to act as an agent of change.

Much more suitable agents, it has been shown in a few tantalizing glimpses, were the local doctors. Even their successes were bound to fail in the face of the practical difficulties of maintaining a vaccine virus. There were no laboratories, no facilities to test the virus, no further government support, and apparently not sufficient alarm among the general populace to sustain that which had been introduced via the American missionaries. It would take another five decades before the circumstances were ripe, and more effective and enduring measures could be taken to suppress smallpox.

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**ENDNOTES:**

1. S. de la Loubère, *The Kingdom of Siam*, Kuala Lumpur: Oxford University Press, 1969 (reprint of the 1693 edition), p.39.
2. Reference to early outbreaks of smallpox in Siam can be found in B.J. Terwiel, 'Asiatic Cholera in Siam: Its First Occurrence and the 1820 Epidemic' in N.G. Owen (ed), *Death and Disease in Southeast Asia*, Singapore: Oxford University Press, pp.146-8. A Thai version of this chapter appeared as: 'Kanrabat Yai Mu'a Pi 1820', in *Sinlapa Wathanatham*, 1984, Vol.5, No.6, pp.20-32.
3. *The Burney Papers*, Vol.I, Part I, p.74.
4. H. Campbell Highet, 'Small Pox, Vaccination and the New Vaccination Law in Siam,' *Journal of the Siam Society*, Vol.11, Part 1, 1914, p.14.
5. It was Edward Jenner's propagation of cowpox lymph in combating smallpox that the Thai prince wished to discuss, rather than inoculation, forms of which were already known in Bangkok, as will be shown below.
6. J. Crawford, *Journal of an Embassy to the Courts of Siam and Cochin China*, Kuala Lumpur: Oxford University Press, 1967 (Reprint of the 1828 edition), p.125
7. G. Finlayson, *The Mission to Siam and Hue, the Capital of Cochin China, in the Years 1821-2*, London: John Murray, 1826, p.197.
8. *Prachumphongsawadan* (hereafter PP) Vol.18, Part 31, Bangkok: Khurusapha, B.E. 2508 (1965).
9. Sanguan Ankhong, *Sing Reak nai Mu'ang Thai*, Bangkok: Phraephithaya, B.E. 2516 (1973), pp.388-98; Chai Ru'angsinlapa, *Prawatisat Thai samai Ph.S. 2352-2453, dan Sethakit*, Bangkok: Munlanithi Khronkan Tamra Sangkhomsat lae Manutsayasad, B.E. 2522 (1979), pp.327-8.
10. Thus *Siam; General and Medical Features*, Bangkok: Bangkok Times Press, 1930, p.281, tells that Bradley introduced vaccination in 1840.
11. *The Burney Papers*, Vol.1, Part 1, p.74.
12. J. Needham, *China and the Origins of Immunology*, Hong Kong: Centre of Asian Studies, University of Hong Kong, 1980, pp.15-6. I thank Dr. I de Rachewiltz of the Australian National University for kindly drawing my attention to this source.
13. Journal of Dan Beach Bradley (hereafter JDBB), November 29, 1842.
14. Jones arrived in Bangkok on 20 March 1833 and reported on April 13 of that year that his little daughter was just recovering from the smallpox which she had by inoculation. For readers unfamiliar with the distinction between inoculation and vaccination, it may be useful to note that *inoculation* consists of the introduction of smallpox virus into the body, hopefully resulting in a mild case of smallpox, thereby protecting the patient against the naturally spreading disease. *Vaccination* is the introduction of the cowpox or vaccine virus into the body, resulting in only a mild local lesion, but providing good protection against smallpox.
15. ABFMS correspondence, J.T. Jones, April 13 and May 30, 1833.
16. *The Burney Papers*, Vol.1, Part 1, p.74.
17. JDBB, January 23, 1839. Most probably this was the Rev. Peter Parker, M.D., whose medical report from Canton was published in the *Chinese Repository*, Vol.8, April 1840, pp.624-39. I thank Miss M. Hutchinson of the Australian National University for bringing this source to my attention.
18. JDBB, December 2, 1836.
19. *Ibid.*
20. *Ibid.*, December 6, 1836.
21. W.L. Bradley, *Siam Then; the Foreign Colony in Bangkok Before and After Anna*, Pasadena: William Carey Library, 1981, pp.57-8.

22. JDBB, December 10, 1838.
23. *Ibid.*
24. *Ibid.*, December 17.
25. *Ibid.*, December 20.
26. Sidhidech Chantarasiri, Amphunsee Siriyakornnurug and Tongbao Chittamongkol, 'Headlines of the Two Centuries' in The Documentary Compilation Sub-committee for the Rattanakosin Bicentennial Celebration, *Rattanakosin Bicentennial; Life and People*, Bangkok: Nonsuch, 1982, p.72.
27. Sanguan Ankhong, *Sing Raek*, Vol.3, p.396.
28. Sood Sangvichien, 'Modern Medicine during the Rattanakosin Period' in *Rattanakosin Bicentennial*, pp.256-64.
29. Bangplasoï is the old name for the town now known as Chonburi, on the coast southeast of Bangkok. In September 1838 it was described as having a population of some 5,000, two-thirds Chinese, one-third Thais. JDBB, September 3, 1838.
30. ABFMS correspondence, J.H. Chandler, 26 March 1844.
31. JDBB, 28 April, 1836.
32. *Ibid.*, January 23, 1839.
33. *Ibid.*, January 24.
34. *Chaophraya Thiphakornwong, Phrarachaphongsawadan Krungratanakosin, Rachakan thi Sam*, Vol.1, Bangkok: Khurusapha, B.E. 2504 (1961), pp.188-99.
35. PP., Part 8, Vol.8, p.138.
36. *Chotmai het Hon, Chabap Phraya Pramunthanarak*, Bangkok: Cremation Volume for Nang Choi Chuto, B.E. 2464 (1921), p.53.
37. PP, Part 67, Vols.41 and 42.
38. *Chotmai Luang Udomsombat*, Bangkok: Cremation Volume for Khuning Bunkoe Benchakan, B.E. 2515 (1972).
39. JDBB, January 23, 1840.
40. *Ibid.*, February 15.
41. *Ibid.*, February 29.
42. Highet, "Small Pox", pp.16-7,
43. JDBB, March 7.
44. *Ibid.*, May 2.
45. Fenner, an authority on the history of smallpox eradication, upon reading of Bradley's attempts noted that it is not surprising that Bradley failed. Cowpox viruses are different species of virus from smallpox virus and cannot be transformed into the other simply by injecting smallpox into cows. Professor F. Fenner, personal communication, 7 March, 1986.
46. JDBB, September 28, 1844.
47. *Ibid.*, October 5.
48. *Mo Nak*, together with *mo Suk*, mentioned above, may be regarded as forerunners of the class of medical practitioners known as 'injection doctors' or *mo chit ya*. These proliferated after the introduction of antibiotics. See C.E. Cunningham, 'Thai "Injection Doctors"; Antibiotic Mediators', *Social Science and Medicine*, Vol.4, No.1, July 1970, pp.1-24.
49. JDBB, February 1, 1845.
50. *Ibid.*, November 1, 1850: 'I sent to Singapore for the vaccine virus to be sent me thence'.
51. *Ibid.*, November 18, 1837, September 1, 1838 and especially March 28, 1845. Note also the reluctance to let Dr. George McFarland take a blood sample from the ear, reported in the discussion on Dr. C. Beyer's paper 'About Siamese Medicine' given to the Siam Society. See *Journal of the Siam Society*, Vol.IV, 1907 (Kraus Reprint, 1969), p.13. I thank Mr.S. Bamber of the Australian National University for

## Journal of The Siam Society

drawing my attention to this report.

52. JDBB, March 24, 1839: '...the thought that Siamese, these eastern natives, are somehow radically different in internal structure from Englishmen and Americans and the fear that they consequently cannot be treated in diseases like them...'
53. For further details, see *Annales de l'Association de la Propagation de la Foi*, Vol.5, 1831, pp.136-7.