

**Some account of the introduction of vaccination among the inhabitants of the interior of Ceylon, and of an epidemic small-pox which prevailed in the Kandyan Provinces in 1819 / by Henry Marshall.**

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# SOME ACCOUNT

OF THE

## INTRODUCTION OF VACCINATION AMONG THE INHABITANTS OF THE INTERIOR OF CEYLON,

AND OF

## AN EPIDEMIC SMALL-POX WHICH PREVAILED IN THE KANDYAN PROVINCES IN 1819.

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BY HENRY MARSHALL, SURGEON TO THE FORCES.

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**V**ACCINATION was attempted to be introduced among the Kandyans in the year 1816. This measure was greatly disliked both by the chiefs and the inferior classes of the people. At that period they were unfriendly towards us from various causes, and little disposed to promote the views of Government, however much these might tend eventually to their advantage. To obviate the prejudices of the lower classes against vaccination, every means which promised to be useful was attempted; and particular care was taken to conciliate the good will of the chiefs, for the purpose of gaining their assistance to promote its dissemination. The courtly manners of the upper ranks of the Kandyans prevented them from evincing an active hostility to the measure; indeed they rarely disapprove, in an



open manner, of the conduct or plans of their respective superiors. In consequence of this apparent acquiescence, we were sometimes deceived into a hope that they intended to give their assistance to extend vaccination. Experience proved that our expectations were not well founded. Kappitapole, a principal leader in the insurrection of 1817 and 1818, was the only chief of consequence who submitted to vaccination himself, and had all his children vaccinated. The people of influence were either indifferent or hostile to our endeavours in this respect.

In regard to the lower classes, many of them expressed their disapproval of the innovation in very decided terms. Still, however, some progress was made in extending the advantages of the Jennerian discovery.

The senior medical officer in the Kandyan provinces was appointed by government to superintend the extension of vaccination among the inhabitants. Under him were placed vaccinators, who were generally half-caste people, who could speak the Singhalese language. As none of the Kandyans applied to be vaccinated, or with that view came to the military stations, they were visited by the vaccinators, who perambulated the country for that purpose.

Many of the objections made to vaccination by the people appeared to be extremely frivolous and absurd. Their influence was, however, very strong. A great portion of the diseases with which mankind are occasionally afflicted, the Kandyans ascribe to the influence of malignant spirits. Small-pox are, however, supposed to have a Divine origin. This disease they believe to be caused by the goddess *Patina* (*Deyane Karia*), whose province they profess to be extremely unwilling to invade. Being anxious to court the favour of the goddess, the people speak of small-pox patients in terms of great respect. Her influence is seen in every thing which regards the prevention or prevalence, the harmlessness or comparative danger, of small-pox.

To submit to vaccination was by some considered in the light of an oath of allegiance to the English Government, and as a mark of having abandoned all attachment to the old order of things. By many, vaccination was considered as practised for the purpose of producing a permanent cicatrix on the arm, and that by this mark the officers of Government would call out individuals for personal service. Impressed with this belief, the Kandyans endeavoured, by various means, to evade the imaginary evil consequences of vaccination. For this purpose, they frequently gave a false name to the person who vaccinated them, thereby often misleading and confounding the vaccinators.



With the view of inducing the people to submit to vaccination, a petty officer of government occasionally accompanied the vaccinators. This measure was adopted partly for the purpose of protecting them from insult, and partly to show to the people that the extension of vaccination was sanctioned and promoted by Government. Through these means some of the inhabitants were occasionally prevailed upon to submit to vaccination. Long accustomed to the oppression of arbitrary control, the Kandyans often acquiesce with the expressed will of Government, without evincing much reluctance. Submission is, however, no proof that the measure has their approbation. To elude the influence of the chiefs, and to evade the imposts and orders of Government, is the habitual study of almost all classes of the Singhalese.

After having quietly submitted to the operation, it was not uncommon for individuals to take an early opportunity of bathing, seemingly for the purpose of preventing the insertion of the lymph from being effectual. At other times they were detected rubbing *chuman* (quicklime), or the juice of limes, upon the spot where the lymph had recently been inserted, no doubt with a similar intention.

The Kandyans very unwillingly permit the approach of any stranger near to their dwellings. In this, and in almost every other respect, their prejudices have always met with due consideration. However cautiously the vaccinators may conduct themselves, they are frequently exposed to much abuse from the inhabitants. It has not therefore been deemed prudent to attempt to vaccinate the people at any considerable distance from a military post. On account of the unaccommodating disposition of the inhabitants, and the dislike they have to vaccination, it is very frequently impossible for the vaccinators to obtain an opportunity of watching the issue of the insertion of the lymph. Instead of coming at regular intervals to the vaccinators for inspection, they generally endeavour to elude their search.

Other difficulties of a very important nature occur to prevent a satisfactory and secure vaccination of the people, namely, the frequency with which they disturb or destroy the vaccine vesicle, thereby occasioning an ulcerative inflammation, which is supposed to be inconsistent with the certain influence of the prophylactic. This is often done voluntarily, for the purpose, as individuals state, to relieve them from the pain and tension of the skin near to the vesicle. Perhaps, however, the vesicle is more frequently ruptured by accident during sleep. In general, the Kandyans sleep upon a coarse mat, without any



personal covering, which might prevent the vesicle from injury. A habit of scratching, wherever the skin itches, is another frequent cause of the rupture of the vesicle. Perhaps this habit arises from the great liability of the Kandyans to scabies. The vaccinators have always been particularly directed to discriminate carefully between an unexceptionable vesicle, and a pustular elevation of the cuticle, the frequent consequence of abrasion, and other mechanical sources of injury.

Vaccination is therefore, in the interior of Ceylon, liable to sources of failure and uncertainty, little known in more enlightened communities. In consequence of the heat of the climate, and the inveterate aversion the inhabitants have to present themselves at fixed stations for the purpose of being vaccinated by a medical officer, and regularly seen by him during the course of the disease, the operative part of the duty must devolve upon an uneducated class of people, famed neither for intelligence nor veracity.

During the month of July 1819, small-pox appeared at Colombo. The disease was imported from the peninsula of India. Shortly after the appearance of small-pox at Colombo, the epidemic extended to the Kandyan provinces, where the disease had not been known for a period of about seventeen years. There were therefore a great proportion of the inhabitants obnoxious to small-pox. Under the native Government, a very strong measure used to be adopted to arrest the dissemination of the disease when it occurred. Every family was placed in a kind of quarantine, and all intercourse among the people interdicted, until the source of contagion had apparently become extinct.

Upon the appearance of small-pox in Kandy, an hospital was established for the reception of the inhabitants who became affected with that disease. By this means it was attempted to check the extension of the epidemic, but our views in this respect completely failed. Notwithstanding every endeavour to separate the sick from the healthy, the disease extended rapidly, the hospital became crowded, and inadequate for the accommodation of all the candidates for admission. Under these circumstances, it was necessary to confine the admissions to the more indigent and destitute of the afflicted. Indeed, a large portion of the patients latterly received into hospital were individuals whose relations had completely deserted them. Thus abandoned by every one, they were often found lying in the streets in a very advanced stage of the disease. People were appointed to convey cases of this kind to the hospital,



where, although in many instances little could be done for them in regard to the exhibition of medicine, they received that attention which their condition required.

The disease, as it appeared in the Kandyan provinces, did not differ materially from the description given of small-pox by the systematic writers. Authors have in general divided small-pox into two classes, namely, distinct and confluent, which is a very arbitrary arrangement. In that degree of the disease which may be called the distinct species, the eruption was preceded by fever, which sometimes lasted for three or four days. Nausea, retching, vomiting, and a distressing sense of pain in the back, were common symptoms. Towards the second or third day of the eruption, the fever, in a number of cases, became less ardent, and the general sense of uneasiness less distressing. Many cases however occurred where the febrile symptoms abated little during the whole course of the disease. Among the many painful sensations attendant upon small-pox, none seemed to be more distressing than an ardent heat of the skin, particularly of the skin of the face. For some days the eruption was papular; it then became vesicular, each vesicle having a depressed point in the centre. During the early stage of the vesicles, they contained pure lymph; subsequently they became less pellucid, and assumed a whitish colour. When they had attained their full size, they contained a whey-coloured fluid. In no instance that came under my observation, did the contents of the vesicle assume a yellow colour and thick consistence, as is stated to occur in small-pox in Europe.

The cicatrices or pits that followed small-pox were less profound, as also less permanent, than in Europe. A pock-pitted face is very rarely seen among the Kandyans; and it may be added, that loss of sight is a very unusual occurrence from this disease.

In the confluent or severer cases of small-pox, the precursory fever was extremely ardent. Along with the symptoms which commonly accompany a distinct eruption in this disease, coma and delirium were frequently present; the face became greatly swelled; the voice hoarse, with painful deglutition; difficult respiration, particularly by the nostrils; and profuse salivation.

There were a few cases where the skin assumed a measly appearance. Under this description of the disease the surface of the body resembled wet brown or blotting paper. The fever continued without abatement; and frequently little or no eruption appeared. I am not aware that a single case of this kind recovered.



Several patients were admitted into hospital, who, by their own account, had, on a former occasion, passed through small-pox. In general, however, the relics of the disease were not so well marked as to put the matter beyond doubt. One woman was admitted on the books on account of an eruption resembling small-pox, although she had marks on her face which were deemed a satisfactory proof that she had previously passed through the disease. Presuming upon her security, she had hired herself as a nurse in the small-pox hospital. The eruption appeared after a mild fever of about two days. Many of the vesicles attained a state of maturity by the fourth or fifth day. When the eruption was on the decline, the woman was again attacked with fever, to which succeeded a second crop of vesicles. The latter eruption exactly resembled the former.

A double eruption occurred in the following two cases. On the 16th September, Kirihamy, a woman, was admitted into hospital, on account of an eruption which was denominated varicella on the return. By her own statement, she was attacked with fever on the 12th, and the eruption appeared on the 13th. The vesicles soon desquamated, and she was discharged on the 25th. She was again admitted on the 2d October, with an eruption resembling distinct small-pox. It appeared that she had been attacked with fever the day she left the hospital, and that the eruption came out on the 28th September. The eruption, although distinct, was numerous; and it did not decline before the ordinary period of small-pox.

Kiry-ettena, a female, was admitted into hospital on the 30th September, in consequence of an eruption which appeared on the 28th. The eruption was considered to answer to the descriptions given of varicella. By the fourth or fifth day the vesicles had acquired a state of maturity; and on the 5th October she was discharged. On the 13th of the same month she was again admitted on account of an eruption, which, after several days of severe fever, had appeared on the 10th; the eruption was confluent. On the 15th, comatose symptoms supervened, to which death soon succeeded.

Another class of cases with an anomalous eruption, was admitted into hospital. In all these cases, the eruption appeared after two or three days fever, which was occasionally pretty severe. The eruption came out first on the face; and, in a number of cases, it was nearly confined to the upper part of the body. In general, it was remarkably uniform, and consisted of elevated hard pimples, each of which had a vesicle at the apex that contained pure lymph. By the 4th, 5th, or 6th day, the vesicles reached their full size. Desquamation soon followed.



For some days, however, the tubercular base of the pimple remained prominent, with very frequently a slight depression on the top. After a short period, these elevations were absorbed, in a few instances leaving temporary pits. The number of pimples which appeared on the face was very various; sometimes there were not more than one or two; at other times there were as many as thirty. This class of cases had all undergone vaccination; and, from the appearance of the cicatrix, it was presumed the operation had taken effect.

In one case, an eruption exactly resembling varicella appeared during the desquamation of a numerous eruption of small-pox.

While the epidemic prevailed, a number of cases of small-pox appeared among individuals, who stated that they had submitted to the operation of vaccination, some of whom had marks resembling the cicatrices that follow a successful insertion of vaccine lymph. Unfortunately there is nothing sufficiently specific in the appearance of the cicatrix to determine with certainty that the insertion of the lymph had excited a vesicle of a satisfactory character. The uncertainty which attends a diagnosis, in this respect, is perhaps greater in the skin of blacks than in whites; and the difficulty in question is increased by the prevalence of pocky itch among the natives of Ceylon. This latter disease sometimes leaves cicatrices which cannot be distinguished from the marks that succeed successful vaccination.

With the view of obviating some of the sources of failure in vaccination, Dr Farrell, Deputy-inspector of Hospitals, and Superintendent-General of the Vaccine Establishment in Ceylon, has issued some excellent regulations. Vaccinators are now directed to furnish each individual who passes satisfactorily through vaccination with a certificate to that purpose. By fixing the responsibility upon the person who performs the operation and signs the certificate, a greater degree of care and attention on the part of the vaccinator is insured. He has likewise circulated some admirably well-suited memoranda for the guidance of vaccinators, regarding the means of communicating the vaccine disease.

*Return of the number of Native Inhabitants admitted into the Hospital in Kandy on account of Small-pox, and eruptions resembling that disease, during the prevalence of the epidemic which commenced in July 1819.*

	Admitted	Died.	Discharged.
Under the head Variola	- 931	525	406
— — Varicella	- 9	—	9

*Edinburgh, 19th September, 1822.*



For some days however the tubercular base of the glands remained prominent, with very frequently a slight depression on the top. After a short period, these elevations were absorbed, in a few instances leaving temporary pits. The number of pustules which appeared on the face was very various; sometimes there were not more than one or two; in other cases there were as many as thirty. The case of case had all undergone vaccination and from the appearance of the case, it was presumed the operation had taken effect.

In one case an eruption exactly resembling varioloid appeared during the development of a pustular eruption of small-pox.

While the epidemic prevailed a number of cases of small-pox appeared among individuals who stated that they had submitted to the operation of vaccination, some of whom had made themselves the carriers that follow a very slight reaction of vaccine virus. Unmistakably however, the eruption which occurred in the appearance of the characteristic tubercles with certainty that the insertion of the virus had excited a variety of satisfactory character. The reaction which attended a vaccination in this respect is the same as that in the skin of blacks than in whites; and the difficulty in question is increased by the prevalence of rocky fever among the natives of Ceylon. This latter disease sometimes leaves stigmas which cannot be distinguished from the marks that succeed successful vaccination.

With the view of obtaining some of the sources of failure in vaccination, Dr. Verrill, Deputy Inspector of Hospitals, and Superintendent-General of the Vaccine Establishment in Ceylon, has issued some excellent regulations. Vaccinators are now directed to furnish each individual who passes satisfactorily through vaccination with a certificate to that purpose. By fixing the responsibility upon the person who performs the operation and upon the certificate, a greater degree of care and attention on the part of the vaccinator is ensured. It is also wise circulated some admirable well edited memoranda for the guidance of vaccinators; regarding the means of communicating the vaccine disease.

As a number of Native Inhabitants admitted into the Hospital in Kandy on account of small-pox, and continued spreading that disease, during the prevalence of the epidemic which commenced in July 1819.

Under the head Variola	Actual	Total
1819	254	210
1820	9	9
1821	0	0
1822	0	0
1823	0	0
1824	0	0
1825	0	0
1826	0	0
1827	0	0
1828	0	0
1829	0	0
1830	0	0
1831	0	0
1832	0	0
1833	0	0
1834	0	0
1835	0	0
1836	0	0
1837	0	0
1838	0	0
1839	0	0
1840	0	0

Colombo, 15th September 1840.







