APPENDIX

TO
Quarantine in the British West Indies
AND THE
Smallpox Controversy of 1902-04.

GEORGE H. MASSON, M. D.
EPIDEMIC VARIOLOID VARICELLA.

Dr. Bridger's Report on, and Correspondence connected with.

Laid before the Legislative Council on the 23rd March, 1903.

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Dr. Bridger's Report on, and Correspondence connected with.

Council Paper No. 25 of 1903.

Dr. Masson to the Acting Governor.

BRIDGETOWN CLUB, BARBADOS,
17th December, 1902.

Sir,

I beg to acquaint you that in consequence of the doubt which existed in my mind regarding the accuracy of the diagnosis made by the acting Surgeon-General and the Assistant Medical Officer of Health in the Duncan Street cases, I left Trinidad on the 5th instant, and came to this Colony with the view of studying the cases now lying at the Pelican Station.

As a result of careful observation and comparison, I have come to the same conclusion which I had formed from the beginning, viz., that the disease which I reported to you is small-pox, and not "the simple and common cutaneous eruption known as glass-pox."

It is evident that the Medical Officers who reversed my diagnosis do not have a sufficiently practical knowledge of the signs and symptoms of small-pox to be able to recognise the disease in any other than the classical types laid down in text-books; for, not only were they hopelessly wrong in the objections which they took to my decision, but they failed to appreciate the real significance of prominent symptoms which, from my previous experience of small-pox, I pointed out to them, and which were such as are regarded by the Officer in charge of the Pelican Station, and other experienced Medical men here, as distinctive of the disease.

As the acting Surgeon-General is reported to have openly stated to several gentlemen at the Victoria Institute (one of whom is my informant) and, not improbably also, to Your Excellency, that my diagnosis was absurd, the disease being plainly glass-pox, because of the convexity of the vesicles, and further that Dr. Lota had agreed with him the moment he (Dr. Lota) saw the patients, I must take this opportunity of correcting any wrong impression which Your Excellency may have formed.

So far as the shape of the vesicles is of any diagnostic value, it is just as well to state that, as a matter of fact, there were as many concave vesicles present as convex ones.

The point however is this, that far from agreeing with the officials, Dr. Lota clearly stated that, in his opinion, the disease was small-pox, though after a lengthy discussion he made a compromise by declaring that at any rate if the eruption was not small-pox neither was it glass-pox. As Dr. Knox has thought fit to make a contrary statement, I do not ask Your Excellency to take my unsupported word in the matter, but I would beg to refer you to Dr. Lota whom I believe to have enough of the courage of his opinion to repeat what he said at the consultation.

Reviewing all the circumstances of the case there can be no doubt that the medical authorities failed to realise the grave danger which I pointed out, and, in deciding not to isolate the Duncan Street cases of small-pox, they seriously jeopardised the Public Health, and lightly undertook a terrible responsibility which no economic side issues could possibly justify.

Although none of the cases so far have proved fatal, I was informed on the day of my departure from Trinidad by one of the patients that she had received news from Rio Caribe (near Carupano) the place to which the infection was traced, that many persons were then dying of a similar disease though at the commencement of the epidemic there had been no deaths.

Having made this report for which I accept the full responsibility I think it would be only fair to all concerned that the Medical Officers connected with the cases should come to this Colony and visit the Pelican Station, so that they might have an opportunity of verifying my observations and as a result either uphold their own opinions or give way to mine.

In conclusion I beg to assure Your Excellency that my visit to Barbados has been actuated by no other motive than a desire to find out the truth.

Before leaving Trinidad I applied for and obtained permission from the Governor to study the cases at the Pelican Station.

Immediately on my arrival here, Sir Frederick Hodgson invited me to meet him and Dr. Chandler, the Colonial Secretary at Government House, but neither to His Excellency nor to anyone else have I disclosed the true nature of the Duncan Street epidemic.

I have also kept secret the conclusions which I drew from my observations at the Pelican Island.

I have no wish to embarrass the Government or the trade of my country. All I desire is to show Your Excellency and all concerned that in spite of any distorted versions which may have
reached you, my decision regarding the Duncan street cases was not arrived at in a hasty or irresponsible manner, but after careful observation the result of years of serious work, and that having once given my opinion I have left no stone unturned to prove it to be right, and to have it respected, and not snubbed at in public places by official heads of Departments.

I have, &c.,

GEORGE H. MASSON,
M.D., B.S.C., M.R.C.P., E.

Dr. De Wolf to the Colonial Secretary.

HON. ACTING COLONIAL SECRETARY,

I beg to forward a report from Drs. Knox and Dickson with reference to the cases of eruptive fever referred to by Dr. Masson as having occurred in Duncan street, Port-of-Spain, and which he asserts were cases of small-pox. I also attach a letter from Dr. L. Lota in reply to Dr. Masson’s statements as to his (Dr. Lota’s) attitude with respect to these cases, and his expressed opinion with regard to the nature of the disease. It will be seen that he claims that Dr. Masson has incorrectly reported him, and distinctly states that the disease in question was not small-pox.

As Drs. Knox and Dickson have both had practical experience of small-pox in England, I do not think that Dr. Masson was justified in depreciating their qualifications to form a correct judgment on the premises and comparing them unfavourably with his own.

From all the information that I have been able to gather with regard to the cases in question and from my observation of the two similar cases which have since occurred, I am entirely satisfied that the cases which form the subject of Dr. Masson’s letter were not small-pox, although the eruption in some respects closely resembled the eruption of that disease.

Whether the eruptive disease which has been prevailing for so many months in Barbados is the same as that from which the patients forming the subject of this controversy were suffering is a question upon which I am unable to express an opinion.

JAS. DE WOLF,
Surgeon-General.

2nd January, 1903.

Supposed case of Small-pox in Duncan Street reported by Dr. Masson.

Drs. Knox and Dickson to the Surgeon-General.

THE HON. THE SURGEON-GENERAL,

Considering that the Duncan Street cases were reported to Dr. Dickson and myself on the 9th of November the 8th day of the disease and that no case of a similar nature occurred in that yard or elsewhere this alone would be sufficient to confirm our diagnosis, yet it may be as well to state our reasons for arriving at the conclusion that the Duncan Street cases were not small-pox but only an aggravated form of chicken-pox.

1. Of the five cases in the place three were unmistakably cases of chicken-pox, one the wife of the worst case.

2. The absence of serious constitutional disturbance, the behaviour of the eruption, viz., the invasion of the surface of the body by successive crops of vesicles.

3. It so happened that all these five cases occurred in vaccinated subjects while those unvaccinated living in the same yard were unaffected.

The patients lived in a crowded barrack yard and had been in constant communication with the other inmates of that yard for seven days before they were discovered and yet the only case which followed was one of chicken-pox in a recently successfully vaccinated child. The cases were kept under observation for one month and it was evident from the course of the disease that it was not small-pox.

We should like to state emphatically that Dr. Masson so agreed with us that the disease was not small-pox that he abandoned all idea of disinfection and continued to visit these cases while engaged in his ordinary every day practice without any apparent precautions and on two occasions took a photographer to photograph the cases.

We attach a statement from Dr. Lota which confirms the verbal opinion expressed to us.

It may be as well to mention that not only did none of the cases terminate fatally but they all made a speedy and successful recovery.

CHARLES F. KNOX,
Acting D.M.O. Port-of-Spain, North.

J. R. DICKSON,
Acting D.M.O. Port-of-Spain, South.
CHER DOCTEUR KNOX,

- Je vous remercie sincèrement de la communication que vous avez bien voulu me faire de la lettre du Dr. Masson à Son Excellence le Gouverneur de la Trinidad, lettre datée de la Barbade le 17 Décembre, 1902.

Mises en cause directement et nominativement dans certains paragraphes de cette lettre, je dois répondre, et ma réponse la voici.

Tout d'abord, je suis absolument surpris que le Dr. Masson se soit permis de se servir, en parlant de moi, dans sa lettre à Son Excellence, des termes suivants "to have enough of the courage of his opinion to repeat what he said at the consultation." Quand après réflexion je me suis fait une opinion, je m'y tiens, et je ne sache pas que j'aie jamais demandé au Dr. Masson aide ou conseil dans les décisions que j'avais à prendre.

Vous m'avez fait l'honneur de m'appeler en consultation durant le temps que vous remplaciez le Surgeon-General, pour des cas douteux de fièvres éruptives survenues dans la rue Duncan.

à la première consultation, nous étions deux : vous et moi.

Les trois premiers cas qui se présentèrent à notre examen - deux enfants et une femme - étaient indiscutablement des cas de varicelle (glass-pox). L'examen terminé, et la diagnostic posé, vous me dites : "in cana venenum ; voyons les autres."

En effet, le cas No. 4, une femme, présentait des symptômes cutanés qui donnaient à réfléchir.

Au milieu de petites bulles caractéristiques de la varicelle, l'on constatait des vesicopustules remplies d'un liquide jaunâtre, ressemblant tout-à-fait à des pustules d'Echyma. L'association des bulles caractéristique de la varicelle avec les pustules d'Echyma pouvait faire rentrer ce cas dans le cadre du "swine-pox" de Willau.

Le cas No. 5, adulte homme, était réellement inquietant. Il fut le sujet d'un examen prolongé au moment de notre consultation, il était au 10ème jour de sa maladie, et au 5ème son éruption, en pleine suppuration. Vesicopustules hémisphériques, distendues par un liquide jaunâtre abondantes sur le tronc, les cuisses, plusieurs d'entre elles nettement ombiliquées à la région mammaire gauche et à la région dorsale du même côté.

Sur les jambes, les pieds, les avant-bras et les mains, l'éruption était plus discrète. Sur la face dorsale des mains, l'on remarquait des vésicules bien hémisphériques gonflées, ressemblant à de larges gouttes de cire vierge.

À la face, l'éruption était discrète, tandis que sur le tronc elle était confluente: le nez, les régions sous-orbitaires et temporelles, les oreilles étaient affectés.

Pas de Fièvre : pas d'abattement pas de salivation abondante. Le malade allait et venait, ne se plaignant d'aucun malaise, se portant sans gêne et sans fatigue à notre examen.

Certes, le cas était douteux. Dans le même jour, je vous révis et vous demandai l'autorisation de voir à nouveau le malade No. 5, avec vous le lendemain ce qui fut fait. A cette seconde consultation assistaient: les Dr. Dickson, Masson, vous et moi. L'examen porta particulièrement sur le cas No. 5. Je fis remarquer du bout du doigt les gouttes de cire vierge de la région dorsale du poignet, les vésicules ombiliquées de l'oreille gauche de la région mammaire gauche et de la région dorsale, en ajoutant "a première vue, ce sont des boutons de variole." En continuant l'examen, nous trouvâmes en différentes régions du corps, et en particulier sur les paumes des mains, des éléments jeunes qui la veille n'existiaient pas et qui se présentaient d'embêle sous forme de bulles, larges, plates, remplies d'un liquide clair.

Donc, nous nous trouvions en présence du cas suivant: éruption douteuse, vesico-pustuleuse dans son ensemble, conflueante sur le trou, presque discrète sur la face, arrivée au 9ème jour de son évolution (11ème jour de la maladie), et présentant ceci de particulier que l'on trouvait en même temps et à côté les uns de autres éléments en voie de dessication, d'autres plus nombreux en pleine suppuration, d'autres enfin tout jeunes, venant d'apparaître et apparaissant sous forme de bulles remplies d'un liquide clair.

Donc cette éruption n'a pas eu lieu d'une seule venue elle a procédé par étages successives, débutant, au moins d'après les éléments jeunes que j'ai pu voir, par des bulles. Les différentes étages de l'éruption ont eu lieu sans fièvre. Malgré l'abondante distribution, sur tout le corps, de vésicules en pleine suppuration, la fièvre de suppuration n'a pas existé un seul instant.

De l'analyse de tout ces symptômes, après mère réflexion et non pas "by a compromise," j'ai conclu que, malgré la présence de vésicules ombiliquées et de vesico-pustules en forme de gouttes de cire vierge que, pour ma part, j'ai toujours rencontrées sans des cas indéniables de variole, le cas du malade No. 5 n'est pas un cas de variole.

Avec assurance, etc.

Dr. L. LOTJA.
Dear Dr. Knox,

I thank you very sincerely for having forwarded to me Dr. Masson's letter to the Governor of Trinidad, dated at Barbados 17th December, 1902.

My name having been mentioned in certain paragraphs of this letter, I must answer, and my answer is as follows:

Firstly, I am altogether surprised that Dr. Masson should permit himself, in speaking of me in his letter to His Excellency, to use the following terms:— "To have enough of the courage of his opinion to repeat what I said at the consultation." When after reflection I form an opinion I keep it, and I am not aware that I have ever asked Dr. Masson's help or advice in the decision I had to take.

You did me the honour of calling me in consultation while you were acting as Surgeon-General regarding some doubtful cases of an eruptive Fever, occurring in Duncan Street. As the first consultation we were alone.

The first three cases which presented themselves for our examination—two children and a woman—were indisputably cases of varicella (glass-vox). The examination over and the diagnosis given you said to me “in Cauda Venenum”: “Let us see the others.” In fact case No. 4—a woman presenting cutaneous symptoms made one reflect. In the centre of small blebs characteristic of varicella were vesico-pustules filled with a yellowish liquid resembling altogether pustules of erythema.

The association of these characteristic blebs of varicella with pustules of erythema might place this case in the nosological table of "swine-vox" of Willan.

The case No. 5, an adult male, was really disquieting. He was the subject of a prolonged examination.

The time of our consultation was the 10th day of the disease and the 5th of the eruption in full process of suppuration, hemispherical vesico-pustules distended by a yellowish liquid which was abundant on the trunk and thighs, several being umbilicated about the left breast and on the back of the left side. On the legs, feet and fore-arms and hands the eruption was more discrete. On the backs of the hands vesicles quite round and distended were noticeable, resembling large drops of yellow wax. On the face the eruption was discrete, while on the trunk it was confluent; the nose, the suborbital and temporal regions and the ears were also affected. No temperature, no prostration, no abundant salivation. The patient walked about freely complained of no malaise, lending himself to our examination without any discomfort or fatigue. Certainly the case was a doubtful one.

In the course of the same day I saw you again and asked your permission to see case No. 5 again with you on the following day. At this 2nd consultation Drs. Dickson, Masson, you and myself were present. The examination was confined chiefly to case No. 5. I pointed out these drops of yellow wax on the back of the wrist, the umbilicated vesicles on the left ear, the left breast and the back, adding "As first sight these are pusules of varicola." Continuing the examination we found on different parts of the body, and particularly on the palms of the hands, fresh vesicles which on the previous day did not exist, and which presented themselves at first sight under the form of blebs, large and flat filled with a clear liquid. Hence we found ourselves in the presence of the following case:—

A doubtful eruption—vesico-pustular as a whole, confluent on the trunk, almost discrete on the face, on the 9th day of the course (11th of the disease), and presenting this particular feature viz.—that one found at the same time and side by side of each other crops in the process of drying, others more numerous in full suppuration, others in fact quite recent, having just appeared and taking the form of blebs filled with a clear liquid. Hence the eruption did not take place at the same time, but proceeded by successive stages beginning (at least from the fresh crops that I could see) by blebs.

The different stages of the eruption were not accompanied by fever. In spite of the abundant distribution, all over the body, of vesicles in full suppuration there was not one moment of suppurrative fever.

From the analysis of all these symptoms, after serious reflection, and not "by compromise," I came to the conclusion that in spite of the presence of umbilicated vesicles and vesico-pustules resembling drops of yellow wax, which I have always met in indisputable cases of varicola, the case of No. 5 patient was not one of varicola.

With, &c.,

Dr. L. LOTTA.

Dr. Bridger's Report, received 8th March, 1903.

Report on the cases of Eruptive Fever existing in Port-of-Spain.

Before discussing in detail this disease it may be as well to define it in the simplest terms possible. It is a febrile disease, infectious in nature, and characterised by a cutaneous eruption. There are many diseases known that this simple definition would stand equally well for.

As I do not think, however, that any suggestion has been offered that the disease in question may be typhus or scarlet fever, measles, German measles, &c., I shall not enter into the differential diagnosis of these diseases and the one prevalent here.

I think that it is universally admitted that in investigating this disease, three, and three only possibilities present themselves for examination. In short the disease is either:—

1. A disease 'svi genera.'
2. Chicken-vox or Varicella.
3. Small-vox or Varicola.

To state that the disease is one "svi genera," is to declare the discovery of a new malady, or rather to proclaim the actual creation of a disease of which neither record nor account exists. One hesitates before discussing the possibility of so fearful a dispensation of nature: for fearful it is when one has seen a sufferer from it, loathsome as he is to the eye, and in severe cases emitting an odour equally objectionable to the sense of smell; and to feel as one must feel if it be a new disease, that here he is face to face with a malady about which absolutely nothing
is known, of the possibilities as well as the prevention of which one is equally ignorant. What an unique opportunity for original research!

But I take it that if we carefully investigate this disease and find that it approximates closely to, so closely in fact as to be identical with, either of the known diseases, chicken-pox or small-pox, it will be but reasonable to call it chicken-pox or small-pox as the case may be.

The disease may best be studied by considering it under different headings seriatim.

1.—The incubation period of the disease.

The determination of this is naturally surrounded with difficulty. The patients are not able to give one any definite information as to when they became infected, other than that there was a case in the same yard or the same house, and often not even that.

There was one case, however, which I saw in which the incubation period could be accurately estimated. This is the case of Ethel Straughan, age 24, a nurse at the Colonial Hospital. She was appointed as special nurse to a bad case of the disease. In the presence of Dr. Doyle, Senior Resident at the Hospital and of Dr. Lassalle, Junior Resident, this nurse stated (and none of her statements were questioned by these gentlemen) that she had nursed her patient for two days only. Ten days after she had given up the case she had fever and pains in the lower part of the back. These symptoms lasted for three days. On the third day a rash appeared on her face.

From this case, therefore, the disease shews an incubation period of twelve days.

I shall return to this particular case later on, as this young woman is the nurse referred to by the Surgeon-General at the meeting of the Board of Health held on the 3rd instant, as having attended “the worst case that came from Yrapa, and certainly a very startling one.” The question of the incubation period is not very helpful in the diagnosis of chicken-pox from small-pox, as that of the former is usually accepted as from ten to fifteen days, while that of the latter is from eight to fifteen days. The above case is merely quoted to show that the disease has an incubation period.

2.—Age.

What is the age incidence of the disease? The following shews it in 40 cases:

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<tr>
<th>Age Group</th>
<th>Count</th>
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<tbody>
<tr>
<td>0 to 5 years</td>
<td>nil</td>
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<tr>
<td>5 to 10</td>
<td>1</td>
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<tr>
<td>10 to 15</td>
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<td>15 to 20</td>
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<td>20 to 25</td>
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<tr>
<td>35 to 40</td>
<td>1</td>
</tr>
<tr>
<td>40 to 50</td>
<td>3</td>
</tr>
<tr>
<td>50 to 60</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>40</td>
</tr>
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</table>

The ages given in this table were taken by me from the hospital case papers in 37 of the cases, the remaining three gave in their ages in the presence of Dr. Dickson, who took me to see them. It will be seen that the greatest age incidence is between 20 and 25. Further that the incidence between 20 and 35 is greater that all the rest put together.

Osler in his text book on Medicine, a book recognised as a standard work in all English-speaking countries and now in its fourth edition, speaking of chicken pox, says: “It is a disease of childhood; a majority of the cases occur between the 2nd and 6th years. It is rarely seen in adults.” On the other hand small-pox is a disease that affects unprotected children equally with unprotected adults. It is certainly, therefore, instructive to know that the law in Trinidad requires that every infant be vaccinated before reaching the age of three months; that re-vaccination is not compulsory.

3.—The Symptoms of Invasion.

Of the cases seen, all have had fever and headache: the majority pain in the back: and in more than half vomiting. These symptoms have lasted usually four days; sometimes three, when the rash appears. This last in all cases on the face first. The temperature has then fallen, usually to normal. It will be of interest to learn whether during this invasion period the patient has felt really ill.

Take for instance the case of Carlos Ditzen, aged 18, a Venezuelan. What follows is taken word for word from his case paper, and was written by the Medical officer in charge of the ward:

“Admitted on Feb. 9th, suffering from fever and delirium.”

“Condition on admission. Well-nourished and muscular man. Skin dry and hot. Tongue furred, and inclined to be dry. Urine albuminous and bilious.”

“Heart and lungs, nil—delirious—hypod of quinine given. Temperature 3.30 p.m. 103·6. Temperature night, 101·8.”
"Delirium during first part of night. Bowels acted twice. February 10th. Conscious this morning. There are a few papules on forehead, chin, and cheeks; arms and forearms, in thighs and legs abdomen and chest." Temperature on February the 10th, a.m., 99.2; p.m., 99; night, 99.4.

Without a single exception all these patients declare that, during this invasion period, they were too ill to do their work, but felt better when the rash came out.

Now how do these symptoms agree with those of chicken-pox and small-pox respectively?

In typical chicken-pox the rash appears on the trunk within twenty-four hours of the commencement of symptoms, which are usually chill, moderate fever, and, perhaps, headache. In small-pox the rash appears on the forehead, and face on the third or fourth day of the symptoms. These are fever, headache, pain in back and vomiting.

I think that there can be no doubt but the initial symptoms of this eruptive fever approximate more closely to those of small-pox than to those of chicken-pox.

Distribution of the Rash.

This is of immense importance in the differential diagnosis of variola and varicella.

Wanklyn, who is small-pox Referee and Medical Superintendent of the River Ambulance Service of the Metropolitan Asylums Board of London, says, referring to this matter:—"This is a point of cardinal importance. In the revision of the diagnosis of some 7,000 cases examined here during the present epidemic (that of 1901 to 1902 of London) no one criterion has proved "more useful or reliable." (British Medical Journal of July 1902). Quoting again from the same source speaking of small-pox he says: "Suffice it to recall its well-known character, viz., "the abundance on the face, wrist and hand, and often on the feet, whereas in comparison it is "light upon the trunk." Continuing he says: "It is a matter of common knowledge that the "site of election for the rash of varicella is upon the trunk and that the forearms and hands are "lighty affected. What is not so generally known is the constancy and reliability of this pheno-

menon. The more distal the rash is on the extremities, the scantier and smaller it is found to "be, and in some cases when the lesions are numbered in the face by hundreds the skin of the "hand is free from any blemish whatever. Such a patient sitting up in bed stripped to the waist, "with hands crossed, backs outwards, forms a striking picture, and a correct diagnosis may be "made readily on inspection without further examination." Now in the light of these statements of an expert, (I do not think anyone will deny Wanklyn's claim to this title), let us see what this eruptive disease presents in the way of distribution.

I can only say that in all the cases seen by me, both mild and severe, the relative distribution of the rash was as unlike that of chicken-pox, and as closely resembling small-pox as it could possibly be (vide photos). Let me draw attention to another point, in connection with the distribution of the eruption, that is very striking in these cases. It is this, that without exception, among the cases I have seen the eruption has been found on the palms of the hands. In some cases, but a few, when the disease is mild and the eruptive units in other parts scantier.

In other cases more severe the palm is crowded with the pox. The rarity of this in chicken-
pox is well known, but its occurrence is a marked feature of small-pox Again as regards the site for the commencement of the eruption. The statements of the patients themselves, and in those cases in which the rash first appeared in hospital, the written observations of the medical officer in charge are all to the effect that the rash appeared first on the face; in some cases the forehead is more particularly mentioned.

This information is certainly helpful in enabling us to come to a right conclusion, seeing that the face is the ordinary site of commencement of small-pox, whereas in chicken-pox it is the exception to find the rash first on the face.

The Character of the Rash.

The fundamental difference between the rash of small-pox and that of chicken-pox is this. In small-pox the individual lesion lies at a greater depth in the skin than the lesion of chicken-
pox. Are the lesions in this eruptive disease superficial?

It was stated, at the meeting of the Board of Health, held on February the 3rd, by the Surgeon-General that: "the vesicles dried up early." This is exactly what we should expect in the superficial lesions of chicken-pox: for from their very superficiality they would peel quickly and the patient, in a matter of days, present a clean surface of skin. But is this a fair statement of the facts by the Surgeon-General?

It is evidently taken for granted, both officially and otherwise, that the date of discharge from hospital of a patient suffering from this eruptive fever marks the end of the disease. This accounts for the erroneous idea that the average duration of the disease is ten days or a fortnight as has been generally stated. It is of the utmost importance that this erroneous idea be exploded for it has been put forward as a reason why the disease could not be small-pox, as, in the latter, patients have to be kept in hospital six or more weeks.
It will not be out of place in view of the above to make the following remarks:

"I can assert without fear of contradiction that in ordinary mild discrete small-pox (not modified by vaccination) that some time between the 8th and 12th day of the appearance of the rash convalescence has begun and the pustules on the face "rupture—producing crusts."

What then is it that causes this delay of six or more weeks before the patient is discharged from a small-pox hospital as cured?

Simply this: the Medical Officer in charge of a small-pox hospital has to consider not only the wishes of his patients who may be in a hurry to get out, but the welfare of the public as well.

He therefore keeps in his small-pox patient until desquamation all over the body is complete, and the skin perfectly free of fringes of scabs at margin of pox, and the soles of feet and the palms of the hands perfectly clean. Until the patient is in this condition he is infectious, and a danger to the community. This process of getting clean is always a long and tiresome business, and in most cases the patient resents the confinement. Now as regards the duration of this disease prevalent locally.

Every case that I have seen discharged from the Colonial Hospital has been, at the time of his discharge, still desquamating.

Take a specific instance which I have had the opportunity of seeing five days after the discharge occurred. This patient is a woman, Carmelita Gamaldo by name, aged 31. She was admitted to the Colonial Hospital on February 7th. She took ill on February 2nd, with usual symptoms of headache, fever, vomiting and pain in back. Rash appeared February 5th. She was discharged on February 22nd and was seen by me on that day.

I saw her again on Friday, February 27th, in Frederick street, Port-of-Spain, (on the pavement). On this day there were fringes of scabs at edges of pox on backs and fronts of forearms.

Pustules were existent on palms of hands containing brown inspissated matter still unruptured. I did not examine her body, or lower extremities.

This case shows that twenty-two days after the appearance of rash, Carmelita Gamaldo was still suffering from the disease.

I think the fact of the persistence of the scabs and length of time the eruption units take to desquamate on the hands and feet points most unmistakably to the conclusion that the lesions are not superficial.

So also do the marks on the skin left at the site of the lesions.

These marks as seen in black or coloured persons show a central circular area corresponding to the site of the pock, much lighter in colour than the complexion. Immediately surrounding this area is a ring of pigmentation darker than the surrounding skin. I take it that the pathology of these marks is as follows:

The central circular area, lighter in pigment, sometimes quite white, shows that the specific lesion or pock has caused necrosis, or death, of "some or all of the pigment cells in this area."

The ring of darker colour around this area corresponds to the site of the hyperemia area. In this circular region of hyperemia there is increased blood flow, and so the pigment cells there situated are stimulated and proliferation of these takes place, with the resultant effect of increased pigmentation. As regards the length of the duration of this discolouration, the only evidence that I am in a position to offer is that approved by three of the now historic Duncan Street cases.

These three cases, a man, his sister, and her child, all still show marks of discoloration about the body. I saw the man and woman on February 26th, and the child on February 28th.

The disease had occurred on their persons early in November, 1902. This increased pigmentation is analogous to that occurring at the margin of scabs in the dark races.

It is of importance to note also, in reference to the superficial nature attributed to the lesions of the disease, that the lesions in question, in the vesicular stage, shew none of the characteristic fineness and thinness of varicella.

It has been stated that the absence of pitting shews the superficial nature of the disease, and proves it not to be small-pox, but

(1.) Has pitting never occurred in these cases? and

(2.) Is pitting, so far as small-pox is concerned, a sine qua non?

With regard to (1):

Photos 9 and 10 are those of two of the original Duncan Street cases referred to before as occurring early in November, 1902.

I saw these persons on February 26th and in both the pitting on the face was evident; that on the man being the more marked. I had this photo taken the same day.

Fortunately a photo of the man had been taken at the time of the disease (No. 8), and comparing this with No. 9, it is most noticeable how closely on the cheeks and chin the pits reproduce the arrangement of the original lesions.
As regards (2) let me quote from an authority: “Whether pitting takes place depends a good deal upon the severity of the disease.” Sydenham also states: “It is very rarely the case that “the distinct small-pox leaves its mark.”

Now the majority of the cases of the eruptive disease existing in Trinidad are markedly discrete and of a mild type, so that these will be the very cases in which, if small-pox, we should expect to find no pitting.

With regard to the elevated wart-like marks on the face, found at the site of the cutaneous lesion after it has dried up, seen in many of the cases, these are certainly interesting. Whether in course of time they so to speak “shell out,” leaving depressions or pits, I am not in a position to say. They do not appear to recur in any other situation but the face, and they bear no relation seemingly to the severer or milder forms of the disease. Again they do not occur in every case.

Manner in which the Eruption shows itself.

Does the eruption in this eruptive fever come out in successive crops?

It has been stated by the Surgeon-General, at the Board of Health meeting of February 3rd, that “successive crops of vesicles were observed in every case, which were no more marked in “some than in others.”

This was mentioned as a point distinguishing the eruptive disease from small-pox. Before discussing this it is important to realise what is meant by coming out in “successive crops.” I cannot do better than quote the following, by a writer, who speaking of chicken-pox, in which this behaviour is characteristic, says: “Alongside of vesicles which have dried down with the formation of a black or dark scab, we find small, tender vesicles just appearing, which are torn “by a slight touch of the finger nail.”—Doty, “Medical Record,” May 1901.

In the eruptive fever under discussion we find that invariably the rash first appears on the face in the form of distinct papules, which are firm to the touch. Similar papules then appear on wrists, forearms, &c., the temperature falls, and the patient feels better.

Now, from my observations what happens after these papules come out is this. Some of them become vesicular as early as the second day after the rash appears (this more particularly in the milder cases of the disease). Others appear to delay this change, and do not become vesicular until later. Still more interesting is what happens sometimes to vesicles that have formed. In the majority of cases the vesicle, after formation from the papule, slowly enlarges until the pustular stage is reached, but there are a few which do not continue to enlarge but remain stationary; and so to the casual observer, seeing the case for the first time they give the appearance of being of later development, because he observes a small vesicle close to a large one. The fact of the eruption beginning to crust and desquamate in the order of its appearance, and the persistence of the dried pustules on the palms and soles when everywhere else is clean also point to the conclusion that the eruption does not come out in successive crops.

This vesiculation in small-pox as early as the second day has already been observed. In fact it was noticed in the recent epidemic in London, for Wanklyn, writing of this epidemic and referring to the erroneous conclusions that are apt to be drawn in evacuating vesicles by a needle for the purpose of differential diagnosis between variola and varicella, says: “Evacuation equally complete has been noted in several of the cases of variola under “consideration in which the lesions when two days old have been frankly vesicular.”

The question of Secondary Fever.

Now as to the absence of secondary fever in most of the cases, the Surgeon-General mentioned this as a point against small-pox at the Board of Health meeting in February.

Now the type of the disease is in the majority of cases so mild that, as in small-pox modified by vaccination, we might reasonably expect to get no secondary fever. Besides, small-pox without secondary fever is not a thing unknown. It has been described, and its clinical symptoms accurately depicted by writers in the latter part of the 18th and the earlier part of the 19th centuries.

Van Houten’s and Sydenham’s names may be mentioned as observers and describers of this mild form of the disease in the latter part of the 18th century. Copeland, writing about 1830, says: “This form is so mild that the secondary fever is not manifested, and consequently is “wanting, convalescence commencing on the 8th day of the eruption.” This mild type of discrete small-pox bore in those days various qualifying adjectives descriptive of certain features of it, as variola, vermeosa, variola cornua, variola discreta siliquosa, &c.

In all these varieties the symptoms were described as generally mild and the eruption generally slight or moderate, and the secondary fever either wanting or mild; the duration of the disease being rarely prolonged, but often somewhat shortened.

We even find history repeating itself, for in 1789 an outbreak of eruptive disease, spoken of as “swine-pox” at the time, but which was really a mild type of small-pox, (Jenner in fact experimented with this form to see whether inoculation with it promised less chances of fatal results than with the ordinary form, but the results did not seem to promise anything obviously milder than sometimes followed in ordinary small-pox inoculation. It may be added that these
experiments were antecedent to his cow-pox experiments), occurred in Gloucestershire and as my authority for this (the "British Medical Journal") puts it "greatly puzzled the medical men there."

The Minutes of the old Gloucestershire Society indicate that there was some intention of collective investigation and publication of results of inoculation and experiments with "swine-pox," but the publication was never made. It is to be hoped that the opportunities the Trinidad "swine-pox," (not my appellation but that of the Surgeon-General be it noted), offers will not similarly be neglected.

But one has not to rely on past ages for examples of mild small-pox without secondary fever; as recently as 1901 an epidemic of this type existed in the United States of America and Canada. The name "variola ambulans" has been suggested for it.

Of this last I shall have more to say later when speaking of mortality rate.

On the other hand should there occur in this eruptive fever cases of a severe semi-confluent or confluent type, secondary fever ought certainly to manifest itself if the disease is variola. Has this occurred?

From among cases seen at the Colonial Hospital let me narrate the particulars of this one:—

Mary Green, age 48, a Barbadian, never vaccinated, address, 19, Basilon street.

Photos Nos. 5, 6 and 7 were taken of this case.

Nos 5 and 6 were taken on the seventh day of the appearance of the rash. Photo No. 7 was taken on the ninth day. She was admitted to Hospital on February 20th. Took ill on February 13th, with fever and vomiting. Rash commenced to appear on February 17th on face.

Condition on February 21st when seen for first time.

Whole body thickly set with rash in early vesicular stage. Majority umbilicated; flattened, Distinct red areola around each pock. Thickly set on palms of hands; also present on soles of feet in large numbers.

It is interesting to learn that from the same house, with this woman, came her boarder to hospital, and that left at home was this woman’s husband Joshua Green and their three children, all suffering from the disease, and all not vaccinated. But the chief feature of this case is that, as one would expect, secondary fever did appear. Here is the temperature record taken from the hospital temperature book:

<table>
<thead>
<tr>
<th>Date</th>
<th>7 o'clock a.m.</th>
<th>3 o'clock p.m.</th>
<th>8 o'clock night</th>
</tr>
</thead>
<tbody>
<tr>
<td>February 21</td>
<td>96°</td>
<td>99°</td>
<td>99-4</td>
</tr>
<tr>
<td></td>
<td>96°</td>
<td>100°</td>
<td>101-4</td>
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<tr>
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<td>98-8</td>
<td>100°</td>
<td>101°</td>
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<td>99°</td>
<td>103-8</td>
<td>102°</td>
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<td>100°</td>
<td>108-6</td>
<td>103-6</td>
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<td></td>
<td>100-8</td>
<td>102-4</td>
<td>101°</td>
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<tr>
<td></td>
<td>100°</td>
<td>104-6</td>
<td>99°</td>
</tr>
<tr>
<td></td>
<td>102-2</td>
<td>(Rigor lasting 6 min.; phenaecitin given).</td>
<td></td>
</tr>
</tbody>
</table>

The following notes were made by me on the dates mentioned:—

Feb. 24th.—Rash distinctly pustular.

Feb. 25th.—Seen at 10.40 a.m. She lies helpless breathing rapid. Complains of great soreness in throat and thirst. Voice hoarse. Nostrils appear blocked with eruption. "One pustule on dorsum of tongue."

Feb. 26th.—Seen at 10 a.m. Still very hoarse and throat painful, but takes liquid nourishment fairly well, although there is difficulty in swallowing. Face just beginning to show signs of crusting. Offensive odour commencing to be apparent. "Photo No. 9 taken this day, patient’s hand had to be supported. Evidently very ill."

Now as regards Complications.

In a third of the cases seen at the Hospital, the patients during the convalescent stage have suffered from boils. I have seen also several cases of conjunctivitis, and one case of corneal ulcer in a man named Albert Peer, aged 30, a Barbadian.

There have also been cases where diarrhoea has occurred. The interest of these lies in the fact that they are precisely what one gets in the convalescence of small-pox.

The Mortality Rates.

This, up to date at the time of writing this report, has been nil. At least it has been so publicly stated in the Press and no official statement of any deaths was made at the meeting of the Board of Health on February 3rd.

It has been said that the eruptive disease existent in Trinidad cannot be small-pox because there has been no mortality. Reference is made to the epidemic of 1870-72 in Trinidad, when the death-rate was 30 per cent. to bear this out.
As mentioned before mild types of epidemic small-pox are not unknown, in which, from the very mildness of the disease, the death-rate is naturally very small.

Reference has been made by me to an epidemic existent in the United States of America and Canada in 1901. Let me mention further particulars about this outbreak, as it bears a very close relationship to that existent in Trinidad.

Dr. Montizambert, Director-General of Public Health, Ottawa, describes it in the "British Medical Journal" of May 11th, 1901, under the heading "Notes on a mild type of small-pox (variolata ambulans)."

In the monthly Bulletin for July, 1901 of the Health Department of Chicago, the same subject is treated of by Dr. Herman Spalding, Chief Medical Inspector, under the title of "Diagnosis of Mild and Irregular Small-pox as found in the present outbreak in the United States."

Dr. Montizambert says in the above article: "Now extensive is the spread of the disease in "the United States may be judged by the fact that the Public Health Reports, published officially by the Government at Washington, give a total of 11,964 cases as reported present in that country "during the period of three months between December 28th, 1900, and March 29th, 1901."

He goes on now to refer to the death-rate in the following words: "How mild the type is "may be judged by the fact that in these 11,964 cases only 157 fatal cases are reported to have "occurred." This would only be 1.31 per cent.

Further the number 11,964 may, "for reasons given above," (these reasons are Dr. Montizambert states that: "Many cases of it were diagnosed as chicken-pox, many as "German measles, many more were not reported to or seen by any medical man at all,") be taken as very much under the actual number of cases that have occurred; whilst the fatal cases were doubtless all reported. The proportion of deaths to cases was, therefore, in all probability considerably less than this 1.31 per cent. Continuing, and writing from a public health stand point Dr. Montizambert says: "The extreme mildness of the present disease has defied from time to time our efforts to prevent its entrance; "has rendered it immensely difficult to handle, control and stamp out. Severe cases of small pox "are as a rule too ill to leave their bed and are eager to obtain Medical attendance. This leads "to notification, isolation, and disinfection, and the vaccination of those who have been exposed "to the infection. And so we have a reasonable expectation of limiting the outbreak. But this "type offers more difficulties to the Public Health Authorities. There is as a rule but little initial "fever, a very sparsely discrete eruption, and no secondary fever. The patient is not usually "confined to bed, or even to the house, and no medical man is called in. In the country parts it "is very generally regarded and spoken of as chicken-pox or German measles. In many of the "lumber camps it goes by the name of "cedar itch." Those affected by it go to their work "or their business, travel in public conveyances, go from one part of the country to another, not "only in the period of incubation but also often in the early part of the eruption, and thus "spread the disease generously and widely. We have had outbreaks of it in several of our "provinces and territories from the Yukon to Nova Scotia. It is present in 11 out of the "14 states of the United States, which from Alaska to Maine inclusive border on Canada, "with an aggregation in them alone of 41,438 cases reported existing. It is present amongst us "in several localities at this time."

I have quoted from Dr. Montizambert's article rather extensively. Its importance and bearing on the subject of my Report are sufficiently obvious.

The "British Medical Journal" in a leader discusses this mild epidemic above referred to under the heading "A Sport of Small-pox." In this leader attention is drawn to the last words of Dr. Spalding's bulletin, which are to this effect: "the disease follows the rule of small-pox in attacking "exclusively those not protected by vaccination. The protection referred to here of course is "relative to the sufficiency and recency of the vaccination."

The Eruptive Disease in relation to Vaccination.

Being aware of the immense importance of getting data in connection with this point, more particularly as the Surgeon-General at the Meeting of the Board of Health on February 3rd stated "Vaccination appeared to have no effect in warding off or modifying this disease; it seemed to occur indifferently in both Vaccinated and unvaccinated," I determined to make a series of experiments after this manner—To take a tube of vaccine lymph and vaccinate on the same day, with this same lymph, persons suffering from the disease in the convalescent stage, and also well persons who had never before been vaccinated. These last would act as a control to the experiment, and prevent after statements with reference to quality of lymph being doubtful, &c., &c.

On the day after my arrival in the Colony, that is on February 18th last, I saw Dr. Doyle, the Senior Surgeon of the Hospital, and got his permission to carry out these experiments on patients, and he was kind enough to promise to supply the vaccine lymph. The following day, February 19th, I began the experiment. Having been given two tubes of lymph, prepared at the Jenner Institute, London, I made two series of experiments. I got Dr. Lasselle, who is one of the Junior Resident Surgeons, to vaccinate from tube No. 1.

He vaccinated two persons with the lymph from this tube on February 19th.

(1) Alexander Guthier, a big, healthy, muscular man, who was in hospital suffering from a fracture, and who had never before been vaccinated.
(2.) Frajo Careno, a boy aged 14. This boy was convalescing from the eruptive disease. Scars observable on face, upper and lower extremities, and body. Just a few still have fringes. In palms of hands and soles of feet, amphilinum blackish brown in appearance, and not yet ruptured. Was admitted to the Colonial Hospital on February 4th with disease. Had just arrived from Venezuela.

This boy was vaccinated by Dr. Lassalle, with five inoculations.

On February 20th:

(1.) Alexander Guthier; slight inflammation at sight of inoculation.
(2.) Frajo Careno; much the same appearance.

On February 21st:

(1.) Alexander Guthier. Inflammation now marked. Tendency to thickening at inoculation sites.
(2.) Frajo Careno. Inflammation less than yesterday. All that can be noticed now is the dried, serous exudation along the line of the scratches. (Vaccination done with a needle).

On February 22nd:

(1.) Alexander Guthier. Vaccination sites are painful. Says he feels feverish. Temperature is slightly raised. Enlarged glands under armpit. Sites of inoculation raised and angry-looking, showing distinct papules.
(2.) Frajo Careno. Everything clean. Vaccination shows no signs of taking at any of the five sites of inoculation.

On February 23rd:

(1.) Alexander Guthier. Papules to-day much more marked at all five sites of vaccination inoculation. Inflammatory oedema of surrounding skin. The case is a good one of successful vaccination.
(2.) Frajo Careno.—I am informed to-day that this boy has been discharged about an hour before my arrival. On my expressing marked surprise at this action, which I could not help doing as the same sort of thing had happened the day before, an ambulance was sent out to look for him, but returned empty, the search being unsuccessful.

Alexander Guthier's vaccination proceeded in typical fashion. I take it that this experiment, incomplete as in a sense it was, still shows sufficiently as to be a certainty that this disease has some and in fact a very marked effect on vaccination. Here was a boy on the 22nd February shewing no reaction to five vaccine inoculations, whilst a healthy man, vaccinated on the same day within ten minutes of the same time, from the same tube of lymph shews, at his five sites of inoculation, distinct papules in an inflammatory setting.

The second series of experiments made with lymph taken from the same tube was also commenced on February 19th.

In this series six persons were made the subject of experiment; three were nurses who were vaccinated by me in each other's presence, and three were patients whom I also vaccinated, Dr. Lassalle assisting. Of the three nurses one had suffered from the eruptive disease. Of the six, four including the nurse, were experimental cases, the other two being the controls.

(1.) Beatrice Hall, nurse at Hospital. Has never been vaccinated, (control).
(2.) Nurse Wooding. Never has been vaccinated, (control).
(3.) Ethel Sraugan. Nurse. She suffered from disease mildly. Still shows typical discolouration marks on fore-arms. As this is the case of the nurse referred to by the Surgeon-General, as "one of our nurses who attended him," (him being a bad case of eruptive fever from Yrapa—vide official statement in Royal Gazette of Surgeon-General at February meeting of Board of Health) developed unmistakable "symptoms of chicken-pox," it will be excusable if I give here her account of her illness, made in the presence of Dr. Doyle and Dr. Lassalle.

She has never been vaccinated.

She nursed patient for two days. Ten days afterwards she had fever and pains in her back. Three days later an eruption came out on her face, hands, and fore-arms. None on her chest. A few on her back. None on her thighs and legs. She says they were like pimples and then afterwards contained pus. (This is her own word; being a nurse she ought to know.)

These ruptured and dried up and scabbed off completely. There was a red areole around each pimple.

Present Condition.—When I saw her desquamation was complete. A few of the usual circular stains visible on fore-arms. I don't think after hearing her history, and seeing the characteristic stains that there can be any doubt that this young woman suffered from the prevailing eruptive fever, which she acquired by infection from her patient, but which, fortunately for her good looks, she had in a very mild form.
That the history is that of one with "unmistakable symptoms of chicken-pox," I can without fear deny.

The remaining three experimental cases were:

(4.) Carlos Ditzen.
(5.) Frederick Eastman.
(6.) Carmelita Gamaldo.

Of these six persons I may briefly say that in Nurse Wooding and Nurse Hall, the two controls, vaccination was typical and successful. They took well and in the case of Wooding the area became so painful and inflamed that she had to give up duty for some days.

Nurse Stranaghan has not "taken" in even the slightest degree.

Now as regards Nos. 4, 5 and 6.

No. 4; on my visiting his ward on February 20th, I found that he had been discharged.

On February 21st, Eastman and Gamaldo showed no signs of taking.

On February 22nd, (a Sunday), I visited the Hospital between 10 and 11 o'clock in the morning. The Superintendent of Nurses was just expressing to me her surprise, I think at my not resting on the Sabbath, when Gamaldo and Eastman appeared, dressed in their own clothes to go out. They came to report to the Matron before doing so.

Dr. Doyle, Senior Medical Officer, coming up at the time informed me that they had been discharged that morning. I expressed regret at this being done. I arranged, however, with them to come up the following day (the 23rd). Gamaldo came on this day, but not Eastman.

Dr. Doyle and Dr. Lassalle viewed the sites of inoculation, and agreed that no sign of reaction was visible. She promised to return on the 26th. On the 26th I am informed that she came to the Hospital again as arranged, but I did not see her, as I arrived after she had left. However, on the following day, February 27th, I saw her as before related. This was the twenty-third day of the eruption. I had vaccinated her on the front of the forearm. One had had to pick out here and there spaces of skin free from rash as the sites for inoculation. On the day she was vaccinated, (Feb. 19th), the eruption had been out fifteen days. The majority of the pox in her forearm were still unruptured, although the contents were more or less drying. On the 27th February, when I saw her last, eight days after vaccination, at the site of all five inoculations there was a mulberry-like excrescence, fiery red in colour, hard to the touch, but with no inflammatory areole. On the largest of these five excrescences, there was at one point a greyish white appearance, which on pricking exuded a drop of clear, watery, fluid. This therefore was evidently a small vesicle.

There was nothing typical of vaccination in the appearance presented, and I certainly would not, in such a case, have signed a certificate of successful vaccination.

In regard to this case I think it must be acknowledged that the vaccination was modified considerably by the disease, seeing that typical vaccination resulted from inoculating the same lymph in the cases of Nurse Wooding and Nurse Hall, the former being made ill by it. Nurse Stranaghan too, who had been convalescent and had desquammed, also vaccinated in four places with the same lymph but who showed no reaction of any kind. Here one sees vaccination producing absolutely no effect in a person "protected" by the eruptive disease.

I feel that I cannot leave the discussion of these experimental cases, without saying how much I regret the action of the Hospital Authorities in discharging these experimental cases. My experiments were not being carried out in any hole and corner fashion. The Senior Surgeon supplied the lymph; was cognisant of the scientific object with which the experiments were made. He was an evidently interested observer of it, for, that he regularly inspected the arms of these persons, I was informed by the nurses.

Dr. Lassalle who assisted me in these experiments vaccinating for me in Series I; was equally interested with me in watching developments, and I am sure felt equal scientific regret as myself. I do not doubt that, had he not been sent on duty into the country at the time these persons were discharged, he would have made some effort to retain them.

I made an effort to find Carlos Ditzen and Frederick Eastman by getting their addresses from their case papers. The only result was a couple of hours wasted in a cab, for on calling at these addresses no such persons were known there.

As regards the incidence of this eruptive disease amongst vaccinated and unvaccinated persons, it is useless in an inquiry of this sort to divide the cases into two groups of "vaccinated" and "unvaccinated" without reference to the interval between vaccination, and the occurrence of the disease, as some are inclined to do. I think that it will be best to draw out a table according to the following headings, viz.:

1.—Never vaccinated.
2.—Vaccinated in infancy.
3.—Vaccinated any time between infancy and over 7 years of occurrence of disease.
4.—Vaccinated within 7 years of disease.
5.—Vaccinated during the incubation period of the disease.
When one has learnt the incidence under the above separate headings, and noticed whether any modification has occurred in the disease, one will be in a position to give an opinion on the influence of vaccination or the reverse on the disease. It is important to note that in the above headings I mean by vaccination successful vaccination.

Vaccination Statistics.

<table>
<thead>
<tr>
<th>Never Vaccinated</th>
<th>Vaccinated in Infancy</th>
<th>Vaccinated between infancy and 7 years of disease</th>
<th>Vaccination within 7 years of the disease</th>
<th>Vaccination in Incubation Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>26</td>
<td>5</td>
<td>3</td>
<td>Nil</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Amongst these was (1) a woman the ward maid of the ward where these cases are.</td>
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<tr>
<td>(2) A man, a hospital servant, who weeded the grass in front of the ward and acted as porter in lifting the beds, etc., in this ward.</td>
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</tbody>
</table>
| From the table facing this page one sees that in a total of 37 cases, 26 had never been vaccinated. This I may say is not the real incidence of the disease, for I was taken specially to see three cases in group 2, and all three cases in group 5 by Dr. Dickson. Excluding, therefore, those 6 cases the remaining 31 cases, to which must be added the two vaccinated after the rash came out, are 33 consecutive cases seen at the Colonial Hospital. As the two cases vaccinated after rash appeared, and which did not take, had never been vaccinated before, they must be added to the unvaccinated number. This proportion therefore is 28 never vaccinated in a total of 33 cases. Of the five vaccinated in infancy, two are at the Colonial Hospital. There were no marks visible, and there was no apparent modification of the disease. The remaining three in the group Dr. Dickson took me to see. They were:

(1.) George Walters, aged 28. Four scars; two on each arm, level with the surface of the skin. Disease extremely mild, and eruption very sparse.

(2.) Archibald Edwards, aged 7½ years. Mother says child was vaccinated in infancy, and Dr. Dickson says that in both this, and the following case, particulars given by mother as regards locality of vaccination station and vaccinator at the time are accurate. I take it, therefore, that this child was vaccinated, although there are no marks to show. Not more than 40 pocks.

(3.) Edith Edwards, aged 11. Vaccinated in infancy. One slight mark shewing. Disease very mild. Eruption sparse. To use Dr. Dickson's words: "They seem to come out and then abate."

I may add that Dr. Dickson, the Health Officer, took me to see these cases to prove that the disease occurred in vaccinated as well as unvaccinated persons. In my opinion these shewed most markedly the modification of the disease by vaccination, most particularly in the cases of the two children, who, from the account given, were never really ill.

Of the three cases vaccinated between infancy and 7 years of disease:

(1.) Alfred Peer, a Barbadian, aged 30, says he was vaccinated in St. George's parish, Barbados, by Dr. Walton in the year after the yellow fever at the Garrison. He has two marks shewing, but only faintly. The disease in this case is discrete in type, but fairly plentiful over body. No apparent modification.

(2.) Robert Cobham; aged 27. Barbados. Says he was vaccinated as a child. Something that might be a scar visible on arm. Could not swear that it was one. Disease not apparently modified.

(3.) Joe Molloy, Trinidadian, aged 21. One scar well-marked. Disease exceedingly mild in type. Now as regards the three cases vaccinated during the incubation period. These three cases were all referred to by the Surgeon-General at the Board of Health meeting on March 3rd.

Dr. Dickson took me to see Nos. 1 and 2 at the request of the Surgeon-General on February 28th.

No. 1, Delta Active, living in Charlotte street. Vaccinated on February 18th. She developed fever on February 19th, and the rash appeared on February 22nd. As stated I saw her on the 28th February, and she presented typical vaccination, and the eruptive disease was moderately severe, although eruption was discrete, and was then in the pustular stage. There was no modification of the disease whatever. In other words, taking the incubation period of the disease to be 12 days, (this is what Dr. Dickson, Assistant Medical Officer of Health states it to be; vide report.
in *Royal Gazette* for February 19th, 1903) we find that this Delta Active got infected on the 7th of February and was vaccinated on the 18th or *eleven days after infection*, and the symptoms of invasion began the day after, the 19th. The rash came out on the 22nd of February.

Case 2.—Frances Pantin (shown me by Dr. Dickson). The woman was vaccinated on the 14th February, the rash appeared on the 21st, the first symptoms on the 18th that is she was vaccinated four days before the commencement of the invasion symptoms, and eight days after infection. This woman had a very mild attack of the disease, and the vaccination had been quite successful.

Case 3.—That of Nurse Ross, who was vaccinated one day and the fever commenced the following. As regards Nurse Ross’s case the Surgeon-General did not mention that this unfortunate young woman and another were both on duty in the eruptive disease ward at the Hospital. Ross who had never been vaccinated in her life until too late, develops the disease, the other, vaccinated as a girl, escapes.

To mention these three cases at a meeting of a Board of Health as evidence that this eruptive disease attacked vaccinated and unvaccinated alike, (vide minutes of Board of Health meeting of March 3rd, 1903), and so inferring that it could not be small-pox, was evidently to impress the lay public with that idea.

To expect an unbiased medical man to accept these cases as negativing small-pox would be futile, and I am sure the Surgeon-General knows that as well as I do.

It is a well-known and admitted fact in medicine, that vaccination after infection with small-pox cannot prevent the development of the disease; the most it can do is to modify its severity somewhat, and to do this vaccination must be performed not later than the 4th day of the incubation period.

The Surgeon-General at the same meeting refers to an investigation that is being made by the Department as to whether vaccination had any influence in modifying or preventing the disease. It is to be hoped that the statistics when gathered will show the incidence not only in the two classes vaccinated and unvaccinated, as at present is being done, but that the vaccinated class will be subdivided into, firstly, those that took successfully and those that did not, and also that reference will be made as to whether the vaccination was recent or remote. Unless such distinctions are made, the statistics will be valueless from a scientific point of view.

A few pertinent questions as regards this question of vaccination and its influence on this eruptive disease are the following:

1. Why within the last two or three weeks have the authorities at the Hospital been vaccinating and re-vaccinating the nurses, porters and servants?
2. Why, of those coming in contact with the patients at the Hospital, have the vaccinated been the only ones to acquire this disease?
3. Why are the District Medical Officers in Port-of-Spain vaccinating all unvaccinated persons in barrack yards when a new case or cases of this disease break out?
4. Why are private medical practitioners given vaccine lymph by the Department for the mere asking?
5. Why has this disease carefully avoided the coolie population, who by the way have to shew vaccination scars, or else be subjected to re-vaccination at the Coolie Depot before they are sent to their destinations?

In conclusion I may say briefly that the weight of the evidence points to this eruptive disease being none other than small-pox, of a very mild type it is true in most cases, but still small-pox.

My reasons, therefore, as discussed in preceding pages for coming to the conclusion that this disease is not the common cutaneous eruption known as glass-pox (chicken-pox syn.) are:

1. The prodromal symptoms of the disease and their duration before the appearance of the rash, together with the fall of temperature on its appearance.
2. The majority of the cases being in adults.
3. The constant appearance of the rash; first on the face.
4. The distribution of the rash is typical of small-pox.
5. The fact that the palms of the hands and soles of the feet being always the last to become clean.
6. The fact that the lesions are not superficial.
7. The evidence of vaccination influence.

**GENERAL REMARKS.**

No system of Isolation or disinfection has been carried out with regard to this disease. Patients were allowed at the Hospital to have their friends come and see them. The disease has developed and spread markedly during the last fortnight. On my arrival in the Colony, one detached building was being devoted to cases.
Soon they began to come in such numbers that the wards became fearfully overcrowded, and beds had to be put on the floor. Many patients were at this time refused admission owing to lack of room. Many more cases were being treated in their own homes. Another building was soon converted to the uses of these cases, and this at the present time is also fully occupied.

The type of the disease seems to be showing a tendency to become more severe.

The discharge of patients from Hospital, while still desquamating and infectious will tend to carry infection far and wide.

These persons are commonly met in the streets, and the following extract from the Pioneer of February 28th, indicates the extent of possibilities of infection:—"All over town people may be seen just recovering, and all the stores have several of their assistants down with it."

One cannot but conclude, with these facts before them, that the disease will be wide-spread and lasting.

Finally, I must acknowledge that I have been the recipient of every courtesy and help that lay in the power of His Excellency the Governor and the Hon. Dr. de Wolf in respect of my mission.

Dr. Dickson I must thank for shewing me some cases in town of much interest from the stand point of vaccination.

To Dr. Lussille more particularly I must tender my sincere acknowledgments of his many courtesies, for, as Medical Officer in charge of these eruptive cases in hospital, I was associated with him daily, and he was always ready to help in every way possible my investigations into this disease, often placing himself at my disposal at times inconvenient to himself.

BARBADOS. Government House,
Miscellaneous.—No. 36.

SIR,

I have the honour to convey to Your Excellency the thanks of this Government for the general facilities which were afforded to Dr. Bridger in his work of examining the nature of the eruptive disease which has for some time past been prevalent in Port-of-Spain. Dr. Bridger informs me that in accordance with his instructions he furnished Your Excellency with a copy of his report before quitting the Colony.

2. Since his arrival at Bridgetown Dr. Bridger has made a supplementary report and I have the honour to transmit a copy of it.

His Excellency
Sir C. A. Moloney, K.C.M.G.,
&c., &c., &c.

F. M. HODGSON.

Appendix to Report on Eruptive Fever prevalent in Port-of-Spain and relative to two cases of unreported deaths from the disease.

I was informed from a private source of the death of a child in Port-of-Spain from the prevailing eruptive fever. In view of the reiterated assurances of the Press, uncontradicted by the Surgeon-General's Department, I felt that I could place reliance in the report that there had been a death unreported.

When, however, my informant placed in my hands a copy of the death certificate of this child, and I saw that one of the causes of death was Varicella, I felt that it was necessary to make some enquiry into the matter.

I therefore wrote on March 2nd the following letter to the Surgeon-General:—

Port-of-Spain,

The Hon. Dr. de Wolf,
Surgeon-General.

SIR,

I have seen statements in the Press of this Colony to the effect that there have been no deaths amongst persons suffering from the prevailing eruptive fever. Similar statements have also been made to me by irresponsible persons.

For the purposes of my report on the disease in question, it is important that I should have an authoritative and official statement on this point.

I shall be glad, therefore, if you will be good enough to favour me with one at your earliest convenience.

I am, Dear Sir,

Your most obedient Servant,

J. F. E. BRIDGER.

On March 3rd a meeting of the Board of Health took place. At this meeting the Surgeon-General said:—"With regard to the mortality, it was nil up to the present moment. He thought he was justified in saying it had been nil. There had been two deaths registered with the Registrar-General where the word "varicella" was used on the death certificate. One of these, registered on December 2nd, was attended by Dr. Gomez and it was an infant prematurely born and extremely feeble; it died at the age of five weeks; it had chicken-pox previous
to its death, but the body was seen by Dr. Dickson, the assistant Medical Officer of Health, after death and he found the rash, quite dry and the child very puny and premature. The other death was registered on the 28th of January, and that case was treated at the Health Office by Dr. Knox. The death certificate stated the child died of the age of three months, and that it had enteritis, bronchitis and varicella.

Dr. Knox said the mother had been a long attendant at the Health Office, but had not come for some time, and when she turned up the child was miserable, with barely any flesh on its bones and developed a rash. A few days after she turned up again to say that the child had died and she got a certificate. The child had been suffering from bowel complaint before.

The Surgeon-General: I understand you to say that varicella was incidental.

Dr. Knox: Yes.

On the following day, March 4th, I received an answer from the Surgeon-General giving practically the same information as was announced at the Board meeting, and enclosing copies of the two death certificates for my perusal and return.

---

**SURGEON-GENERAL'S OFFICE,**

**3rd March, 1903.**

**Sir,**

On receipt of your letter to-day asking to be furnished with an official statement as to whether there had been any deaths amongst persons suffering from the prevailing eruptive fever, I applied to the Registrar-General for the desired information; and the following is Mr. Stone's reply:

"I enclose the only two certificates I have been able to find. The death returns from the country for the current quarter have not yet reached me."

I enclose for your perusal the certificates referred to by the Registrar-General in his Minute quoted, and shall feel obliged by your returning them to me at your first convenience.

I have the honour to be, Sir,

Your obedient Servant

JAS. DE WOLF,

Surgeon-General.

P.S.—I learn from Dr. Dickson, who viewed the body of Juan Baptista Reis, that this was a premature and puny infant who would probably not have survived in any case.

The other child was a case of malnutrition, who was treated for some weeks at the Health Office by Dr. Knox for Enteritis and Bronchitis before developing Varicella, which disease he considered was merely incidental.

J. DE W.

Dr. J. F. E. BRIDGER,
Queen's Park Hotel.

With regard to this letter from the Surgeon-General I should like to draw your Excellency's attention to the following extract from it:—"I applied to the Registrar-General for the desired information, and the following is Mr. Stone's reply."

From this it is evident I take it, that the Surgeon-General was officially unaware of the occurrence of these deaths, until he obtained the particulars from the Registrar-General in reply to my enquiry. He was then able to officially announce them at the March meeting of the Board of Health.

This is all the more curious and inexplicable when one notices that in one case Dr. Knox, late acting Surgeon-General, was the Medical Officer who signed the death certificate; and in the other case that Dr. Dickson, Assistant Health Officer, viewed the body after death.

On Thursday morning, the 4th of March, I returned personally the death certificates to the Registrar-General as requested, but I asked him to give me copies. These he most willingly supplied.

B 299

**Certificate of Cause of Death.**

**Name:** DORIS (Collins) SKITTLE. Aged—3 months last birthday, was attended by me, and died on the 27th day of January, 1903.

<table>
<thead>
<tr>
<th>Primary Disease</th>
<th>Cause of Death</th>
<th>Duration of Disease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enteritis</td>
<td>Enteritis</td>
<td>18 months</td>
</tr>
</tbody>
</table>

No. 59 Duke street.

(Signature) CHARLES F. KNOX, D.M.O.

8830

**Certificate of Cause of Death.**

**Name:** JUAN BAPTISTA (Simon) REIS. Aged—5 weeks last birthday, was attended by me, and died on the 2nd day of December, 1902.

<table>
<thead>
<tr>
<th>Primary Disease</th>
<th>Cause of Death</th>
<th>Duration of Disease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chicken-pox</td>
<td></td>
<td>Seven days</td>
</tr>
</tbody>
</table>

No. 40 Queen street.

(Signature) P. M. GOMEZ, M.D.
TRINIDAD.

I, Harry Lucius O'Brien, Superintendent Registrar of Births and Deaths for the Town of Port-of-Spain, do hereby certify that the subjoined Extract is a true and correct copy of the Entry No. 399, in the Register Book of Births for the Year 1902.

In testimony whereof, I have hereunto set my hand at Port-of-Spain this Fifth day of March, in the Year of Our Lord One Thousand Nine Hundred and Three.

H. L. O'BRIEN,
Superintendent Registrar.

1902.—BIRTH IN THE CENTRAL DISTRICT OF PORT-OF-Spain.

<table>
<thead>
<tr>
<th>No.</th>
<th>When born.</th>
<th>Name (if any).</th>
<th>Sex</th>
<th>Name and Surname of Father.</th>
<th>Name and Maiden name of Mother.</th>
<th>Rank or Profession of Father.</th>
<th>Signature, Residence and Residence of Informant.</th>
<th>When Registered.</th>
<th>Signature of Registrar.</th>
<th>Baptismal Name, if added after Registration of Birth.</th>
<th>No. of house or locality where born.</th>
</tr>
</thead>
</table>

TRINIDAD.

I, Harry Lucius O'Brien, Superintendent Registrar of Births and Deaths for the Town of Port-of-Spain, do hereby certify that the subjoined Extract is a true and correct copy of the Entry No. 488, in the Register Book of Births for the Year 1902.

In testimony whereof, I have hereunto set my hand at Port-of-Spain, this Fifth day of March, in the Year of Our Lord One Thousand Nine Hundred and Three.

H. L. O'BRIEN,
Superintendent Registrar.

1902.—BIRTH IN THE SOUTH-EASTERN DISTRICT OF THE TOWN OF PORT-OF-Spain.

<table>
<thead>
<tr>
<th>No.</th>
<th>When born.</th>
<th>Name (if any).</th>
<th>Sex</th>
<th>Name and Surname of Father.</th>
<th>Name and Maiden name of Mother.</th>
<th>Rank or Profession of Father.</th>
<th>Signature, Residence and Residence of Informant.</th>
<th>When Registered.</th>
<th>Signature of Registrar.</th>
<th>Baptismal Name, if added after Registration of Birth.</th>
<th>No. of house or locality where born.</th>
</tr>
</thead>
<tbody>
<tr>
<td>488</td>
<td>28 Oct., 1902</td>
<td>Simon Reyes (Illegitimate.) Boy</td>
<td>—</td>
<td>Henrietta Reyes</td>
<td>—</td>
<td>his Chas. x Sanavaria Mark Ucelle—Carpenter St, Queen Street</td>
<td>31 Oct., 1902</td>
<td>J. Wilkinson, Registrar.</td>
<td>—</td>
<td>62, Queen Street.</td>
<td></td>
</tr>
</tbody>
</table>

I further requested him to furnish me with copies of the birth certificates of these two children. These I obtained, but was astonished to find that Doris Collins (or Skeete) although in her death certificate stated to be 3 months old, was yet according to her birth certificate born on July 9th, 1902. Her real age was therefore 6 months and 18 days.

The statement made by Dr. Knox at the Board of Health meeting on March 3rd, when in reply to the direct question put by the Surgeon-General, "I understand you to say that varicella was incidental," the answer "yes" was given; as well as the fact that on the death certificate enteritis, bronchitis, varicella were given as the causes of death in the case of the child Doris Collins (or Skeete). I thought it advisable to get more particulars about this case.

I, therefore, on the same day, March 5th, went from the Registrar-General's Office to that of the Surgeon-General. I had an interview with him, told him that I was not satisfied in my own mind about the cause of death in the case of Doris Collins (or Skeete), and that therefore I intended interviewing the mother of the child and getting a statement from her, and that in view of the importance that I attached to the child I asked him to allow Dr. Dickson to accompany me. He agreed. Dr. Dickson, however, did not, but in his place the Surgeon-General deputed another Government Medical officer, Dr. Lassalle.

We went the same afternoon (March 9th), and saw the mother of Doris Collins (or Skeete). Dr. Lassalle came armed with a note-book in which he wrote the answers to the questions I put to the mother and to two other persons who lived in the same house and helped to nurse the child in its last illness. We also visited the home of the other child.

On my return to the hotel I found another communication from the Surgeon-General relative to the case of Doris Collins (or Skeete).

There was an enclosure of the pauper certificates relative to this case, giving particulars of treatment.

**Surgeon-General's Office,**

**5th March, 1903.**

Sir,

I beg to forward herewith for your perusal, a Health Office pauper certificate regarding the child Doris Collins whose death was registered as "bronchitis, enteritis and varicella." She was treated at the Health office, as the enclosed papers will show by Drs. Perez and Knox from the 10th September until the 2nd January.

I am, Sir,

Your obedient Servant,

JAMES DE WOLF,

Surgeon-General.
The Health Office pauper certificate referred to in this letter, shows that the child was taken to the Health Office on January 24th when she received  
Quin. Sulph. gr. ½  
t. d. s.  
And again on January 26th when she received  
Ung. Zinct. li ozs.  
and  
Tr. Camph. Co. m. vii  
Syr. Tolu drm.  
Ag. a drm.  
every 4 hours.

Note in red ink across face of certificate, “Died 27th January, 1903.”

On Friday, March 6th, I was the recipient of still another communication from the Surgeon-General referring to the same case of Doris Collins (or Skeete). This communication contained two enclosures; one being a minute on the case by Dr. Knox and the other being the statement of the mother and the two persons referred to above, taken down by Dr. Lasalle, as I questioned these persons on the subject of the death of the child.

SIR,

With a view to facilitating your enquiry regarding the case of Doris Collins who died on the 28th January, I beg to forward for your perusal the enclosed further papers on the subject.

I am, Sir,  
Your obedient Servant,  
JAMES De WOLF,  
Surgeon-General.

Dr. J. F. E. BRIDGER,  
Queen’s Park Hotel.

Dr. C. F. KNOX.  
D.M.O., Port-of-Spain, N.

Attached statement regarding the history of the illness of Doris Collins, as given by the mother of deceased, forwarded for your information.

March 6th, 1903.

J. R. DICKSON,  
Assistant M.O.H.

The Health Office pauper certificates having been found, the disease from which this child was suffering can easily be verified.

The very fact that vaccination could never be performed shows the state of health almost from birth. This was the reason given to me by the mother for not having the child vaccinated.

The condition of emaciation was such when I saw the child with the rash at the Health Office that I remonstrated with the mother for not bringing her infant regularly for treatment.

March 6th, 1903.

I tried to get this child into hospital, but the mother refused to take it there.

CHARLES F. KNOX,  
D.M.O., Port-of-Spain, N.

Doris Collins (or Skeete).

Age 6 months and 18 days.  
Date of Death 28th January, 1903.

History of Illness.

Child used to have fever and cold in the head, developed strong fever on the 18th January. On the 19th strong fever continued. On the 20th (late) small things like measles appeared on the skin; first on the face, then the chest and all over the body.

On the 24th the rash became large like small blisters all over the body. On this date child taken to Health Office and seen by Dr. “Cox” (Koeh) who gave her medicine and oil of cinnamon. The contents of the blisters were like water. The doctor at the Health Office did not prick the blisters.

On the 25th, which was a Sunday, the condition remained about the same.

On the 26th (Monday) child taken to Health Office again, and seen by Dr. Knox who gave a mixture every four hours (Mother still has bottle) and Zinc Ointment.

The blisters were at first very small, then became larger.

The eruption was present on the gums, tongue and throat and the child could take very little nourishment.

On the 27th child was very ill—the eruption appeared as usual.

On the 28th child died in the morning. None of the blisters where dry at the time. The child had no diarrhea; had a slight cough during its last illness; mother thinks the cough was due to the rash in the throat; did not have a cough before the rash appeared; child suffered very much pain during last illness.

Dr. Dickson has not been here.

Dr. Masson has been here recently.

The child was swollen all over and red even after death and there were black patches on the arms. There was never any bad smell. The child was never vaccinated, because she was ill off and on and weak. She was attended at the Health Office for cold in the head and puffiness in the bowels.
Mother says she was vaccinated as a child and has three good marks on her left arm (which she would not show); she attended to the child throughout its illness, she has not caught the disease.

Another woman, living in the same room, says—the fluid in the blisters was not as thick as matter from an abscess but was thicker than water; the blisters all ran together especially in the lower parts; she also was vaccinated when a child, and has not caught the disease.

Another woman, also living in the same room, says she was vaccinated long ago; had small-pox; and has not caught this disease from the child. No one in this house has caught it, but several persons in the yard have.

J. LASSALLE, G.M.O.

After your Excellency has read the mother’s statement, and that of the two persons living in the house I think you will agree with me that “Varicella" was the cause of death and not merely incidental. In parenthesis I may say that the Surgeon General and Dr. Knox do not dispute the point that the term “Varicella" used above was used in this case to indicate the prevailing eruptive disease.

Again Dr. Knox was hardly in a position to make any statement at all as to the cause of death, not having seen the child after death and only once on January 26th during its last illness. On January 24th when it went to the Health Office it was seen by Dr. "Cox" (the name commonly applied by lower classes to Dr. Koch). This last named officer is now on his way to Hong Kong.

Other interesting points brought out in mother’s statement, and that of the other persons in house are to the effect, that these three persons protected by vaccination did not get the disease from child, but that several persons in the yard have caught it. (The usual barrack yard of Port-of-Spain is meant here).

I further beg to draw your Excellency’s attention to the enclosed Trinidad Royal Gazette for February 19th containing an official statement as to the total number of cases from October to January 31st, and the distribution of these cases.

Summary of Mortality in Port-of-Spain for the Month of December, 1902.

<table>
<thead>
<tr>
<th></th>
<th>M.</th>
<th>F.</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Deaths of Residents</td>
<td>98</td>
<td>96</td>
<td>194</td>
</tr>
<tr>
<td>No. of Births of same period</td>
<td>63</td>
<td>80</td>
<td>143</td>
</tr>
<tr>
<td>Death Rate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Death Rate, December, 1901</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Principal Causes of Death.

<table>
<thead>
<tr>
<th>Disease</th>
<th>No.</th>
<th>Rate per 1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Tubercular Diseases</td>
<td>29</td>
<td>52</td>
</tr>
<tr>
<td>Pthials Pulmonalis</td>
<td>25</td>
<td>58</td>
</tr>
<tr>
<td>Lung Diseases (Non-tubercular)</td>
<td>12</td>
<td>26</td>
</tr>
<tr>
<td>Acute Diarrhcal Diseases</td>
<td>10</td>
<td>21</td>
</tr>
<tr>
<td>Malarial Fever</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>Typhoid Fever</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Cardiac Disease</td>
<td>10</td>
<td>21</td>
</tr>
<tr>
<td>Chronic Nephritis</td>
<td>12</td>
<td>24</td>
</tr>
<tr>
<td>Congenital Syphilis</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Carcinoma of Stomach</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Tetanus Neutatorium</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Still Birth</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>Communicable Diseases</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Yield Fever                   | 2   |               |

Ages at Death.

<table>
<thead>
<tr>
<th></th>
<th>Under 1 year</th>
<th>1—5 years</th>
<th>5—20 years</th>
<th>20—50 years</th>
<th>Over 60 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deaths</td>
<td>52</td>
<td>18</td>
<td>16</td>
<td>72</td>
<td>18</td>
</tr>
</tbody>
</table>

Among Children—the principal causes of death were:

<table>
<thead>
<tr>
<th>Disease</th>
<th>1—5 years</th>
<th>5—20 years</th>
<th>20—50 years</th>
<th>Over 60 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diarrhcal Diseases—under 1 year</td>
<td>10 deaths</td>
<td>3</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Acute Lung Diseases—under 1 year</td>
<td>2</td>
<td>1</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>General Tuberculosis—1—5 years</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Tetanus Neutatorium—under 1 year</td>
<td>3</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

J. R. DICKSON,
Assistant Medical Officer of Health.

Distribution of cases:

QUEEN STREET—12 cases:
No. 40.—1 in October, 2 in November, 4 in December.
No. 48.—3 in January.
No. 12.—1 in November.
No. 6.—1 in November, 1 in January.

DUNCAN STREET—16 cases:
No. 45.—6 cases in November, 1 in January.
No. 51.—6 cases: 1 in November, 5 in January.
No. 49.—1 in January.
No. 51.—2 in January.

Total No. of Cases from October to January 31st—119.
Total No. of Cases from October to January 31st—119—Continued.

Duke Street—15 cases:
No. 93.—4 in December, 1 in January.
No. 48.—8 in December, 3 in January.
No. 69.—1 in January.
No. 01.—1 in January.
No. 76.—1 in January.

Charlotte Street—8 cases:
Nos. 7, 36, 69, 92, 54, one each in January.

Prescott Alley, East Dry River—5 cases:
No. 25.—4 cases; 1 in December, 3 in January.

Belmont—Cadiz Road—6 cases:
No. 19.—6 cases.
No. 15.—2 cases.
No. 12.—1 case.

Belmont Circular Road—2 cases.

Belmont Valley Road—2 cases.

Dundonald Street—10 cases:
No. 26.—8 cases.
No. 29.—2 cases.

See Spot Maps.

Incubation period 12 days about.

At present there are in hospital (Colonial Hospital) 20 cases, and 4 cases being treated at the Health Office. It will be noticed that although Duke Street is mentioned, yet No. 69, the place where this child Doris Collins lived, is not. It will also be noticed in the mortality statement for December, published in the same issue of the Gazette, that no mention is made of Varicella being a cause of any death in that month, although the death certificate of the infant Juan Baptiste Reis, signed by Dr. Gomez, gives Varicella as the primary cause of death.

This child (vide certificate) died on December 2nd.

One would have thought too that this official statement ought to have contained some mention of the death of the infant in December, when a well known unofficial medical man states in the death certificate that “Varicella” is the primary cause of death, and where the body was seen by the Health Officer.

I may state that, as regards this infant Juan Baptiste Reis, Dr. Lassalle and myself after leaving Doris Collins’s mother’s house, went to No. 40, Queen Street, where this infant died. Another barrack yard it proved to be. Almost every one living there seemed to have suffered from the eruptive disease. We saw the mother. She was badly marked and Dr. Lassalle elicited (she was a Venezuelan and only spoke Spanish,) that the mother came from Venezuela with the disease, and that her infant caught it from her. Other English speaking persons living in the yard corroborated this and said that they had caught the disease from this woman and child. The evidence above given, I regret to say, appears to me to indicate definite concealment of facts known officially.

How many other deaths have been so concealed? Before I left Trinidad rumours reached my ear of another death; this time in an adult. But I was unable to get at the facts in this case. The matter dropped.

J. F. E. BRIDGER.

Pelican Island, Barbados,
10th March, 1903.

Report of Dr. Knox on his visit to Jamaica.

PORT-OF-Spain, Mol.
3rd February, 1903.

Sir,

In accordance with the instructions issued by His Excellency the Governor, I proceeded to Jamaica on the 17th February by the R.M.S. Trent, with a view of comparing the cases of Eruptive Fever which have broken out in that Colony, with those now existing in Trinidad.

2. I called on the Honourable the Colonial Secretary shortly after my arrival, then on His Excellency the Governor at King’s House, at his request.

I was introduced to Dr. Moss, the Superintendent Medical Officer, by Major Roxborough, the Assistant Colonial Secretary and was informed by these gentlemen that every facility would be afforded me of visiting the seat of the outbreak at Duan Vale in the parish of Trelawney.

3. I was very kindly furnished with a free pass on the Railway, and I left Kingston the following morning and reached Duan Vale the next day at noon.

I was there met by Dr. Dewar the Medical Officer of the District and shown most of the cases isolated in their own homes. I then proceeded to the temporary hospital where I saw about fifty other cases under the care of Dr. Johnstone.

4. I ascertained that there had been altogether about one hundred cases under treatment in hospital and isolated at their homes in Trelawny, and that the disease had spread to the neighbouring parish of St. Ann’s. Most of those in hospital were children and had to be called in from the adjoining fields, where they were engaged in a game of cricket, to be inspected by me.

5. I was pointed out a child of about eight years of age who had developed the disease more severely than most of the others, after having been vaccinated seven days before and in whom vaccination, and the disease ran their usual course, concurrently. The medical men were doubtful as to the benefits of vaccination, and brought to my notice several children who had been successfully vaccinated a few years previously, and these had developed the disease as severely as those who were unvaccinated.
6. The only severe case I saw was that of an infant thirteen days old who developed the disease two days before my visit. I was informed by the Superintendent Medical Officer that there had been two cases of genuine small-pox among these, but that they had died two months before my arrival.

7. There is a diversity of opinion among the medical men I met as to the real nature of the disease, some considering it a mild form of small-pox, while the majority believe it to be some aggravated form of varicella or other eruptive fever not generally met with. After carefully examining all the cases, I had no hesitation in coming to the conclusion that they were of a similar nature to those in Trinidad.

8. I wish to express my thanks to His Excellency Sir Augustus Henning and the other Officials, for their courtesy in connection with my visit to Jamaica, without which I should not have been able to accomplish the object of my mission in so short a time and at so little expense.

I have, &c.,

CHARLES F. KNOX,
D.M.O. Port-of-Spain, N.

Report of Drs. Lota and Prada on their visit to Yrapa and Guiria.

PORT-OF-SPAIN,
February 16th, 1903.

Sir,

On your recommendation His Excellency the Governor was pleased to do us the honour of appointing us a Commission to proceed to Yrapa, on the adjoining Venezuelan coast, to investigate the nature and effects of an eruptive fever, reported to be prevalent there, to ascertain the rate of mortality due to the disease, and to decide definitely whether the malady was true variola or not.

We beg to report on our mission as follows:—

We left Port-of-Spain at 10 p.m., on Saturday, 7th instant, by the Gulf Steamer "Paria," under the personal command of Captain J. B. Saunders, Harbour Master. Mr. Warder, Lieutenant of Marines of H. M. S. Ariadne, went on special service, and we were fortunate in being accompanied by Mr. Jean Giuseppi, whose intimate knowledge of Yrapa and its people was of great service to us.

We arrived at Yrapa at 7 a.m., on Sunday 8th, and were very well received by the Commander of the place, General J. B. Corsega. On being informed of our errand he placed his services at our disposal and did everything in his power to facilitate our work. To the physician of the place, Dr. Lopez Lares, our thanks are also due. He gave us valuable information on the epidemic to which we will refer later.

Immediately on landing we could see in the crowd that came to greet us on the beach, well-marked evidences of how prevalent the disease was, and had been, in Yrapa. Young and old presented marks of varying character:—Whitish stains flattened and superficial, on hands, arms, and feet; pigmented spots like real tattoo marks appearing black on the bronze skins; raised spots making the skin on cheek and forehead rough, and very much like the remnants of healing years. We also saw around us,—and this proved the mildness of the affection,—persons in the full eruptive stage; vesicles, bullae and pustules were seen, in some on the leg only, in others on the arms and legs, and in a few on the face. They seemed not to be at all inconvenienced by their eruption, and submitted to our examination without demur.

Accompanied by the General and Dr. Lopez Lares we made an inspection of the cases in the different houses. Our companions procured us easy access, and the Doctor supplied us with information about the different cases. Of all the sick only one had been seriously affected, but was now on the high road to recovery. He was about 20 years old, and while suffering from the full effects of syphilis was attacked by the prevailing epidemic; we could see, especially about his articulations, pustules of ephyma, both discrete and confluent in the midst of the vesico-bullae which are characteristic of the prevailing disease.

From the doctor we obtained the following information on the disease. It had existed in Yrapa for nearly a year and had not varied in character, that is, had always been a mild affection. He had had under his care between five and six hundred cases without a single death. Two deaths had occurred in the country around; one was that of a chronic alcoholic who could scarcely be attributed to the disease, the other persons who died lived alone in the woods, and probably died more from privation and neglect than anything else.

Vaccination does not protect. One of the cases we saw, (a young woman of 16), had been successfully vaccinated a year before, yet the eruption had developed in all its fullness.

Dr. Lopez informed us that at least two persons who had had serious attacks of small-pox in 1872 had not been spared by this disease.

We visited Messrs. Fornelli and Cottin, both Frenchmen long established in Venezuela. Their households had not been attacked and they were under the impression that Europeans were spared. Mr. Fornelli stated that in Carupano, where there was a large European community and where this disease had been very prevalent, no European had been attacked. These gentlemen informed us that no alarm was even felt at Yrapa about the sickness, that they called it "lechina" (chicken-
pox. As a proof of the mildness of the disease they referred to the attack of Guiria by the revolutionary force from Yrapa, when many of the troopers, though covered over with the eruption, carried their Mausers cheerfully to battle.

This concluded our mission to Yrapa, where through the courtesy of General Corsega, the assistance of Dr. Lopez, and the good nature of the people, we were able to carry through our investigation easily.

Although a visit to Guiria was not included in our instructions we considered it our duty to proceed to that port, as we were informed that the same disease was prevalent there. General Corsega telegraphed instructions for our reception to his Lieutenant in Guiria, General Ternis.

We left Yrapa at about 11 a.m. and arrived at Guiria at about 2 p.m. and were met by Mr. M. Sifontes, Collector of Customs. We found this formerly thriving town in a deplorable condition, the devastation and ruin caused by civil war being evident on all sides. There was no medical attendant in the place, but Mr. Sifontes, who had an amateur's knowledge of medicine, attended to the medical wants. Accompanied by him we proceeded to inspect the few cases, four or five, that then were in the town and found them to be of the same nature as those in Yrapa.

We left Guiria at about 4 p.m. and after some rough sea at the Bocas, which served to prove the sea-going capabilities of the Paria, we arrived at Port-of-Spain at 9.30 p.m. To sum up:—

We saw very many cases of an eruptive fever which though apparently severe in some cases was really always mild in its effects, and were of exactly the same nature as the cases which occurred in Duncan street, in November last.

The history in almost every case is the same—fever for one to three days with or without backache and headache, then a bullous eruption without special predilection for any part of the body, appearing on some of the limbs only, and on others being abundant on the face. In some there are only a few scattered vesicles while others are covered from head to foot.

In Trinidad we have been searching for the origin of the eruptive fever which has been prevalent in Port-of-Spain for the last two or three months. There is no doubt that it comes from Yrapa with which we are in daily communication and where the disease has been in full swing for the last ten months.

In conclusion we may state that the epidemic which is prevalent in Guiria and Yrapa is not small-pox, and that in our opinion there is no need of precautionary measures against the Venezuelan ports in the Gulf of Paria.

We left with our colleague in Yrapa, Dr. Lopez, the tubes of vaccine lymph which we had taken with us. He promised to use them without delay and to vaccinate some of the convalescents from the disease and to inform us of the results.

We beg to thank you for the high mark of your appreciation in recommending us for the mission, which we hope we have carried through to your satisfaction.

We are,

Your obedient Servants,

DR. L. LOTA.

E. PRADA.

THE HON. SURGEON-GENERAL.
Surgeon-General's Office
27th April, 1903

Sir,

I beg to forward the enclosed Handbill of advice to the public with regard to the prevailing epidemic of "Pox" for your information. Should it meet with your approval I shall be glad if you would append your signature as an endorsement.

I have the honour.

Sir,

[Handwritten signature]

[Handwritten name]
The Prevailing Epidemic.

HOW TO PREVENT IT SPREADING.

The disease is not in the air as is generally supposed. It is catching, and usually shows itself about fourteen days after exposure to a source of infection.

It spreads from person to person, but there is little risk of getting it if the following rules are observed:

1. The nursing of the sick should be in the charge of one, or at most two persons, who should wear a special dress, or a large apron, of some washing material, and should change it before going out of the house, as the disease may be carried by a person coming from a sick room. It is also very desirable that they should wash their hands, preferably in a weak disinfecting solution, each time after attending to the sick.

Friends and visitors should keep out of the sick room.

2. The bedding and clothes used by a patient should be kept apart from other clothing, and should be boiled, or soaked in a disinfecting solution, before being washed.

Disinfectants can be obtained free of cost, on application, at the Health Office in Port-of-Spain, as the Offices of the Wardens and District Medical Offices in the country districts. Full instructions for using them will also be supplied.

3. The disease is catching until the spots are dry, and until all the dead skin has fallen off.

4. For this reason persons suffering from the disease, even in a mild form, should, for the welfare of others, confine themselves to their rooms and yards during this period, which generally speaking, is about three weeks, and in order to avoid spreading the infection should refrain from engaging in any occupation or trade, such as tailoring, dress making, baking, cake selling, selling in shops and markets, and generally in any work in which goods or articles handled by them are sold or distributed to other people.

5. Children suffering from the disease, or coming from a house affected by it, should remain away from school until they have fully recovered from it. Managers or Teachers of schools should explain the object of this circular to children.

6. All healthy persons should avoid coming into close contact with persons suffering from the disease.

7. It has been found from experience that persons who have been recently vaccinated (that is, within about two years) as a rule escape the disease, or get it in a mild form only. All persons not thus protected are strongly recommended to be vaccinated. Anyone applying at the Central Health Office in Port-of-Spain, or at any Vaccination Station will be vaccinated with pure Calf Lymph, free of charge.

8. Every case of the Pox, and every suspected case, should be at once reported at the Health Office, Port-of-Spain, to the District Medical Officer in the country districts, or to a Private Physician, and medical aid obtained without delay.

9. Any patient unable to pay for medical attendance and medicines will be provided with the same free on application.

JAS. A. De WOLF,
Medical Officer of Health.
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JAS. A. DE WOLF,
Medical Officer of Health.

N.B.—The above recommendations have been submitted to the Medical Practitioners, and have been generally approved of by them.

J. A. DE W.
VARILOID VARICELLA IN TRINIDAD.

Observations on its nature, origin and mode of spread based on the observation of 4,029 cases.

This disease which was at first considered to be Varicella, is characterized by the following main features.

In general terms it is a febrile disease contagious in nature, with definite stages of incubation, invasion, and the appearance of a cutaneous eruption.

It will be convenient in describing its clinical features to follow these stages.

PERIOD OF INCUBATION.

The exact determination of the duration of this period is attended with difficulty, as the history obtainable from the class of people most frequently affected, i.e., the unskilled labouring class, is vague and indefinite. The duration, however, may be approximately fixed from the following cases, in which the dates of exposure to infection and the invasion of the disease are definitely known.

Case I.—E. S. nursed a case of the disease for two days, viz., December 24–25, 1902:—ten days after fever and general muscular pains lasting three days developed. On January 7th, 1903, a rash appeared on her face.

Case II.—M. P. came to Port-of-Spain from Arima on February 23rd, 1903, and stayed in a house in which there were two cases of this disease. She returned to the country on February 26th and developed fever and general pains on March 8th. The rash appeared on March 10th.

Case III.—N. W. admitted with a suspicious rash to the Eruptive Fever Wards on February 3rd, was discharged on February 7th on disappearance of this rash; he developed the disease on February 17th.

Generally the history obtained indicated a lapse of about a fortnight after exposure to infection before the appearance of symptoms.

The duration of the Incubation Period of the disease may therefore be taken to be from ten to fifteen days.

SYMPTOMS OF INVASION.

The usual history obtained was one of fever and headache for three days, followed by the appearance of a rash.

General muscular pains, fever, and headache, were present in most cases.

Of muscular pains, backache was most frequently specified as a special symptom. Vomiting occurred in about one-fourth of the cases.

These symptoms varied from slight pyrexia and headache to high fever with delirium, and it was observed that when they were severe the subsequent attack was usually mild.

Frequently there was a feeling of malaise for one or two days, and it was only on the appearance of the rash that this symptom was recognized as the invasion of the disease.

The duration of this period was usually three days, but in many cases it extended to five to seven days while in others, it was as short as one day.

During this period the patient felt ill and kept to bed. As a rule the temperature fell to normal on the appearance of the rash and the patient felt better, but not infrequently the pyrexia continued for several days.

No initial rash of any kind was observed during this period.

THE ERUPTION.

The rash usually appeared on the fourth day of the illness as papules, and generally speaking went through successive stages of vesiculation, suppuration, desiccation and desquamation. These stages were not characterized by any regular or typical sequence, and in cases seen after the full establishment of the rash, the most prominent feature was a polymorphous eruption of vesicles, pustules, drying pustules and crusts, of various sizes side by side.
The rash invaded the body in successive crops. From cases kept under close observation, it was evident that they were distinct and definite crops and not an appearance due to retarded development of certain of the elements.

The rash usually appeared first on the face, forearms and front of trunk and generally simultaneously.

In cases observed in the general wards of the Colonial Hospital from the first onset of Fever, the rash frequently appeared first on the forearms and hands, or on the legs.

The Papules were readily seen and rarely presented any special firmness on pressure.

Vesiculation occurred early and with rare exceptions within three days of the appearance of the rash.

In a large number of cases it was complete within 48 hours, and in many cases numerous well-formed vesicles were seen on the first day of the rash.

As a rule the vesicles gradually increased in size and the contents, at first clear serum became turbid, sero-purulent and purulent on the 8th or tenth day. At this time these elements had generally developed into large distended unilocular bullae, measuring 5 to 10 millimetres in diameter, and on being pricked exuded a sero-purulent fluid and collapsed.

Frequently however the contents were either entirely clear serous fluid, or serous fluid and more solid mucoid material.

These bullae were more especially constant on the extremities.

Frequently well-formed bullae developed without passing through a preliminary papule stage. Similarly in many cases, vesicles with thin translucent glassy envelopes occurred without a previous papule stage. These vesicles dried without becoming pustular. True umbilication of vesicles was rarely observed. Apparent or pseudo-umbilication, due to the commencement of the process of drying at the central prominent part which caused a shallow depression, was a common feature.

In other instances the type of the element was what would be best described as a vesico-papule i.e., a raised papule surmounted by a shallow vesicle, the papule having only undergone vesication in its central and most prominent part. These vesico-papules occurred in vaccinated as well as in unvaccinated people.

There was no regular and definite stage of Pustulation. It was irregular in extent, and as regards the different elements. The bullae more especially became pustules, but the development was gradual and generally tardy.

It was frequently observed both in vaccinated and unvaccinated persons, that numerous vesicles dried up and crusted without becoming pustules.

The vesico-papules became sero-purulent, or purulent, in their upper portions only, and then dried as a whole.

The Mode of Desication varied according to the type and site.

On the face, as a rule this occurred early i.e. from the 3rd to the 6th day.

The drying process began at the apex as a yellowish brown scab. Rupture of the wall occurred at this point. The contents dried as they escaped and gave rise to light yellowish crusts. These were easily detached and were seen to have been imposed on a firm raised base, the surface of which was dry. These excrescences were a constant feature. They were slowly absorbed and in about two weeks were replaced by macules varying in hue, but usually pink or black according to the colour of the patient.

In the majority of cases the macules were at the surface level of the skin, but frequently further contraction and absorption occurred resulting in the formation of shallow pits.

The elements on the trunk dried early, frequently earlier than on the face.

The bullous elements ruptured easily their contents escaped and the cuticle collapsing on to the base assumed the appearance of a piece of thin wrinkled parchment. The surface underlying this was flat and dry.

The Vesico-papules usually scabbed. On the palms of the hands and soles of the feet, the elements, whether vesicles or pustules, usually dried without rupturing, their contents becoming inspissated and absorbed.

After desication was complete the resulting surfaces were generally flat, circular in shape, with a dark pigmented periphery surrounding a light coloured centre. Frequently they were surrounded by a fringe of separated cuticle which was gradually shed. Occasionally these spots presented an irregular mottled appearance.

Gradually the surfaces became uniformly dark. The stains faded and even in cases in which they had been very numerous, had very largely or entirely disappeared in from three to four months. In some cases this occurred earlier, whereas in others some of the macules persisted and were distinguishable about nine months after.

Distribution of the Rash.—As a rule the extremities face and back of trunk were the parts most affected, the palms of the hands and soles of the feet were frequently affected, the severer the case the more constant the appearance of rash on these sites. The severer the case the more copious relatively was the rash on the trunk, and the elements showed a greater tendency to be confluent on the forearms and flanks than on any other part of the body.
GENERAL SYMPTOMS.

In the large majority of cases there was marked absence of constitutional symptoms and it was difficult to persuade patients to remain indoors.

Even in cases plentifully covered with the rash, the constitutional symptoms were slight as compared with the amount of eruption.

When the eruption was fairly copious, discomfort due to burning and "tight feeling" of the skin more especially of the hands and feet, was all that was complained of.

In addition to this, the symptoms, when present, were one or more of the following, viz.:—

Pyrexia.—In upwards of 95 per cent. of cases, there was no rise of temperature after the period of invasion.

In many cases the temperature usually of an intermittent type continued raised for two or three days after the appearance of the rash.

Pyrexia during the further course of the disease, viz., from the 8th to the 12th day occurred in a very small percentage of cases only. Out of 406 cases treated in the Isolation Wards of the Colonial Hospital secondary fever occurred in 13 only.

General Depression rarely occurred in any marked degree and was more especially observed in those who were debilitated from privation or old age, or were the subjects of chronic disease.

In the Isolation Wards of the Colonial Hospital where the severer cases were treated a relatively small number only kept to their beds, and to any one visiting these wards the cheerful countenances and general bearing of not being seriously ill were striking features.

After the stage of invasion the appetite was, except in a few cases, excellent and the ordinary full hospital diet for convalescent patients was insufficient.

Malaise and achings pains varied with the amount of eruption and were rarely urgent.

Sore-throat was a fairly frequent symptom, and varied from slight congestion of the Pharynx and faucets without eruption to marked congestion with the occurrence of a greater or less amount of vesicular eruption. In many cases in which the skin was abundantly covered with rash there was no throat affection.

COMPLICATIONS.

Excepting in the severer cases complications were either absent or of a mild nature.

In order of frequency these were:—

Eye.—Catarhal conjunctivitis occurred very frequently. Corneal Ulcer was an occasional complication.

Digestive System.—Diarrhoea occurred early and was mild. At a later stage it was usually severe.

Nervous System.—In children, occasionally convulsions. In one case in which the attack was mild, convulsions suddenly supervened and caused death.

The Urine was as a rule normal. Of 406 consecutive cases treated at the Colonial Hospital, in the Isolation Wards, in 347 the urine was free of albumen; in 39 cases albumen was present generally as a trace which disappeared during convalescence.

As a rule the disease occurring in pregnant women ran its course, without producing abortion. Premature birth of the fetus occurred one or two weeks after the recovery of the mother in several cases. In others the course of gestation was uninterrupted.

In the premature births the fetus presented signs of the disease, and it was evident from the stage of the eruption that the fetus had contracted the disease about one or two weeks after its appearance in the mother.

SEQUELAE.

Boils and abscesses were the only sequelae and occurred in about one-third of the severer cases.

Microscopic examination of the contents of the elements showed:—

First to fifth day—Lymphocytes and Polymorphonuclear neutrophiles in increasing numbers.
Sixth to Seventh day—Cloudy swelling and commencing disintegration of the cells.
Seventh to ninth day—More complete disintegration—after this the contents were purulent.

Cultures on Agar-agar from vesicles 6th to 8th day showed typical growths of streptococcus Pyogenes.

RECURRENCES OR SECOND ATTACKS.

Twelve cases of second attacks—occurring one to seven months after complete recovery from the first attack—have come under notice.

These cases were all reported by medical practitioners and seven of them were seen by both of us.
The symptoms of invasion, the character of the eruption, and the resulting maculae were similar in both attacks, and of the same nature as those of other cases of the disease.

**DURATION OF THE DISEASE.**

This varied with the severity of the attack being very short in mild cases and on an average did not extend beyond three weeks.

The duration of stay in hospital may be taken as a criterion of the duration of the disease. An analysis of 406 cases treated in hospital shows an average stay in hospital of 16-8 days. These cases were as a rule all discharged and after desquamation was complete.

**AGE INCIDENCE.**

This is shown as a percentage, based on an analysis of 4,029 cases, in the following table:

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Under 1 year</td>
<td>2%</td>
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<tr>
<td>1 to 5 years</td>
<td>3%</td>
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<td>5 to 10</td>
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<td>10 to 20</td>
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<td>20 to 30</td>
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<td>30 to 40</td>
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<td>40 to 50</td>
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<td>50 to 60</td>
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<td>60 and upwards</td>
<td>5%</td>
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**ORIGIN AND HISTORY OF THE EPIDEMIC.**

The first case of which there is a record was that of an inmate of the Lunatic Asylum St. Ann's. The asylum is situated in an isolated position beyond the limits of the town.

This patient had been an inmate of the asylum for some years and developed the disease on April 16th, 1902. The case was isolated on the appearance of the rash, but other cases appeared during May, June, July and August until 19 inmates and attendants, all adults, were affected. The source of infection could not be traced, and must have been either a visitor or attendant who had a mild attack and escaped notice. The cases were returned as Variella, but the Medical Superintendent has since reported that they were similar to the cases of Eruptive Fever now occurring, and in one instance, that of an attendant, who had the disease, in August 1902, a few pigmented marks, identical in appearance with the maculae already described, were visible up to about a month ago. It is of interest that of the nineteen cases, ten were in vaccinated and six in unvaccinated persons, and in three the evidence of vaccination was doubtful. The most severely attacked were an inmate, vaccinated in infancy, and an attendant re-vaccinated in 1898, and showing three good marks of successful vaccination.

On May 2nd, 1902, a similar case in an adult was reported from Woodbrook, a suburb to the West of Port-of-Spain.

Cases next occurred in Dundonald Street, in the North-west of the town, in September. Early in October a woman who lived in a barrack yard in the South-east of the town, developed the disease within a fortnight of her arrival from Yrapa in Venezuela. About the third week of October a case, that of a trader who had recently come from Guiria in Venezuela, occurred in Duke Street, about the middle of the town.

Both of these cases lived in largely tenanted barrack-yards, did not seek medical aid, and were not reported at the time.

Other inmates of these yards were subsequently attacked, but this fact was discovered only in the early part of December, and after they had recovered. During November eleven cases occurred in the middle and South-east of the town, and though in all probability the two cases above quoted were the sources of infection, yet there is ground for believing that in three of these cases, the contagion was derived from other sources. Five of the cases occurred in one yard in Duncan Street in the first week of November, and of these, the two, who showed most distinct vaccination marks, were most severely attacked.

During December, eight cases were reported from the Eastern, South-eastern and middle portions of the town. Of these, one was a vagrant who developed the disease within a week of his arrival from Yrapa.

In January 1903, a house to house inspection was instituted, other cases were discovered in various parts of the town, and the disease began to assume epidemic proportions.

At first the majority of persons affected were hucksters, sailors, and quay labourers, that is, were of that class of the population which would earliest be exposed to contact with an imported disease.

Reports of the prevalence of a similar disease in the adjoining coastal villages of Venezuela had for some time been circulated, and early in February information was received that several deaths had occurred, and that the disease was now stated to be Variola.

With the view of obtaining accurate information, a commission of two medical practitioners, one of whom had had extensive experience of small-pox, were sent to Venezuela to investigate and report on the nature of the Eruptive Fever prevalent there. The Commissioners visited Yrapa and Guiria.
The following extracts are taken from their report:—“The disease had existed in Yrapa for nearly a year, and had not varied in character, i.e., has always been a mild affection.

“Two deaths had occurred in the country around. One was that of a chronic alcoholic, the other probably died more from privation and neglect than anything else. We visited Messrs. Fournelli and Cottin, both Frenchmen long established in Venezuela. There households had not been attacked and they were under the impression that Europeans were spared. Mr. Fournelli stated that in Carupano, where there was a large European community and where this disease had been very prevalent, no European had been attacked. These gentlemen informed us that no alarm was even felt at Yrapa about the sickness, that they called it “Lechina,” (Spanish for Chicken-pox). As a proof of the mildness of the disease, they referred to the attack of Guiria by the revolutionary force from Yrapa, when many of the troopers though covered with the eruption carried their Mausers cheerfully to battle.”

The Commissioner came to the conclusion that the disease was exactly the same nature as that occurring in Port-of-Spain and was not Small-pox. They expressed the opinion that the disease was imported into Trinidad from Yrapa.

There is a large daily passenger and trade traffic between Port-of-Spain and the villages on the adjoining Venezuelan Coast and the voyage does not occupy more than one day. Under these circumstances, and in view of the instances above quoted, there seems to be little doubt that the disease was introduced into Trinidad from Venezuela.

**MODE OF SPREAD.**

The disease is contagious rather than infectious using these terms in a strict sense. In the majority of cases, direct evidence of contact with a previous case could be obtained. There was no evidence of aerial convection as a factor in the spread of the disease. The Isolation Wards of the Colonial Hospital accommodating about 100 patients, are situated at a distance of 99 feet from two of the general wards and have been occupied by cases of the disease since January, 1903. No cases of the disease have occurred in either of these wards. All the cases in Port-of-Spain in October, November and December, 1902, occurred in “barrack-yards.”

These barrack-yard houses are rows of single or double rooms, separated by wooden partitions. Each single or double room is rented as a separate apartment, with yard, kitchen and sanitary arrangements common to all the tenants. These “yards” are tenanted by unskilled labourers of a common type, a class possessing, as a rule, primitive ideas regarding sanitation.

These conditions of life are ideal for the rapid spread of a communicable disease. Contrary to what would be expected, however, the disease spread slowly in these yards, and a period extending over several weeks elapsed before any number of the tenants contracted the disease. To illustrate this fact a few details, not specially selected and applying generally, may be given.

(i.) **QUEEN STREET.**—The first case in No. 40 a barrack-yard occurred early in October. The next case developed in the first week of November and between this latter date and the first week in January only six other cases occurred. Cases next occurred in No. 55 on the opposite side of the street on November 28th, February 3rd and February 12th and were traceable to No. 40. No cases occurred in the adjacent premises Nos. 38 and 42.

(ii.) **NELSON STREET.**—The first case occurred at No. 16 on November 22nd, subsequent cases appearing at

<table>
<thead>
<tr>
<th>No. 40</th>
<th>No. 38</th>
<th>No. 36</th>
<th>No. 35</th>
<th>No. 34</th>
<th>No. 33</th>
<th>No. 32</th>
<th>No. 31</th>
<th>No. 30</th>
</tr>
</thead>
<tbody>
<tr>
<td>....</td>
<td>....</td>
<td>....</td>
<td>....</td>
<td>....</td>
<td>....</td>
<td>....</td>
<td>....</td>
<td>....</td>
</tr>
</tbody>
</table>

It may be noted that there was an interval of about three months between the first and second cases on premises No. 16.

(iii.) **GEORGE STREET.**

<table>
<thead>
<tr>
<th>No. 56</th>
<th>No. 55</th>
<th>No. 54</th>
</tr>
</thead>
<tbody>
<tr>
<td>....</td>
<td>....</td>
<td>....</td>
</tr>
</tbody>
</table>

(iv.) **NELSON STREET No. 26.**

<table>
<thead>
<tr>
<th>No. 56</th>
<th>No. 55</th>
<th>No. 54</th>
</tr>
</thead>
<tbody>
<tr>
<td>....</td>
<td>....</td>
<td>....</td>
</tr>
</tbody>
</table>

(v.) **CHARLOTTE STREET No. 54.**

<table>
<thead>
<tr>
<th>No. 56</th>
<th>No. 55</th>
<th>No. 54</th>
</tr>
</thead>
<tbody>
<tr>
<td>....</td>
<td>....</td>
<td>....</td>
</tr>
</tbody>
</table>

In several instances in barrack-yards persons in close association with those affected by the disease did not contract it, and subsequently reacted to vaccination.
Examples:—No. 93 Duke Street.—Cases of the disease occurred in this barrack-yard during November, December and January. Three young adults who lived in adjoining rooms and frequently visited these patients escaped the disease. Vaccination of these contacts was successfully performed in February.

Under similar conditions at No. 8 Charles Street two unvaccinated contacts, one a girl nine years of age, did not contract the disease in January and February and were successfully vaccinated at the end of February.

At No. 29 Duncan Street several members of one family living in a one-roomed house suffered from the disease in January and February, 1903. A girl 8 years of age who lived there during the whole of this period did not contract the disease and was successfully vaccinated in March.

SPREAD IN COUNTRY DISTRICTS.

In further illustration of the slow method of spread, the behaviour of the disease in the country districts may be instanced.

In January cases derived from Port-of-Spain occurred in two widely separated districts, on the 8th and 29th respectively. The next cases in these districts occurred on the 12th and 5th February respectively. No further cases occurred until April 3rd and May 1st.

Similarly in another district a case developed on about February 4th; two other cases occurred about February 28th and no further case occurred until May 22nd, 1903.

During the month of January six cases were reported from two country districts.

During February 25 cases from ... ... 7 districts.
During March 47 " ... ... 9 "
During April 135 " ... ... 19 "
During May 159 " ... ... 19 "

The country districts only became affected to any extent in March 1903, a development attributable to the large influx of country visitors to Port-of-Spain during the Carnival Festival on the 23rd and 24th February.

In some districts the disease has altogether failed to secure a footing and though continuing to occur in other districts, the numbers reported have not been large in any district, and generally, even in the larger centres of population, there is no evidence of its assuming serious epidemic proportions.

VACCINATION:—

The relation of vaccination to the disease is of especial interest and would be most conveniently considered under the following heads:—

(i.) Incidence on vaccinated and unvaccinated persons.
(ii.) Incidence on recently vaccinated persons.
(iii.) Vaccination during period of incubation.
(iv.) Vaccination during convalescence and on complete recovery.

1. The incidence on vaccinated and unvaccinated would be most clearly shown in tabular form:—

(A.)

<table>
<thead>
<tr>
<th>Age Period</th>
<th>1 Mark</th>
<th>2 Marks</th>
<th>3 Marks</th>
<th>4 Marks</th>
<th>5 Marks</th>
<th>Total cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 1 year</td>
<td>1</td>
<td>...</td>
<td>...</td>
<td>1</td>
<td>...</td>
<td>2</td>
</tr>
<tr>
<td>1 to 5 years</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>...</td>
<td>9</td>
</tr>
<tr>
<td>5 to 10</td>
<td>5</td>
<td>5</td>
<td>2</td>
<td>7</td>
<td>...</td>
<td>19</td>
</tr>
<tr>
<td>10 to 20</td>
<td>18</td>
<td>22</td>
<td>17</td>
<td>11</td>
<td>2</td>
<td>70</td>
</tr>
<tr>
<td>20 to 30</td>
<td>34</td>
<td>38</td>
<td>34</td>
<td>24</td>
<td>...</td>
<td>130</td>
</tr>
<tr>
<td>30 to 40</td>
<td>21</td>
<td>26</td>
<td>11</td>
<td>4</td>
<td>...</td>
<td>62</td>
</tr>
<tr>
<td>40 to 50</td>
<td>5</td>
<td>6</td>
<td>2</td>
<td>1</td>
<td>...</td>
<td>14</td>
</tr>
<tr>
<td>50 to 60</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>...</td>
<td>...</td>
<td>4</td>
</tr>
<tr>
<td>60 and over</td>
<td>1</td>
<td>1</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>2</td>
</tr>
<tr>
<td>A</td>
<td>99</td>
<td>100</td>
<td>70</td>
<td>50</td>
<td>2</td>
<td>312</td>
</tr>
</tbody>
</table>
UNVACCINATED.

<table>
<thead>
<tr>
<th>Age Periods</th>
<th>Nos. Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unvaccinated, i.e., all cases in whom no marks were seen</td>
<td></td>
</tr>
<tr>
<td>Under 1 year</td>
<td>18</td>
</tr>
<tr>
<td>1 to 5 years</td>
<td>21</td>
</tr>
<tr>
<td>5 to 10</td>
<td>38</td>
</tr>
<tr>
<td>10 to 20</td>
<td>190</td>
</tr>
<tr>
<td>20 to 30</td>
<td>330</td>
</tr>
<tr>
<td>30 to 40</td>
<td>147</td>
</tr>
<tr>
<td>40 to 50</td>
<td>57</td>
</tr>
<tr>
<td>50 to 60</td>
<td>9</td>
</tr>
<tr>
<td>60 and over</td>
<td>3</td>
</tr>
</tbody>
</table>

| Vaccinated | 312 |
| Unvaccinated | 813 |

Total ... ... ... 1,125 Consecutive cases.

In table A, only those were taken as vaccinated in whom characteristic vaccination marks were plainly visible.

In table B, are included many who stated that they were vaccinated in infancy, but were classed as unvaccinated as marks were either absent or doubtful.

A short summary of table A shows:

Under 1 year ... ... ... ... ... 2 cases
1 to 10 years ... ... ... ... ... 28 "
10 to 20 " ... ... ... ... ... 70 "
20 to 30 " ... ... ... ... ... 130 "
30 and upwards ... ... ... ... ... 82 "

Similarly, table B shows:

under 1 year ... ... ... ... ... 18 cases
1 to 10 years ... ... ... ... ... 59 "
10 to 20 " ... ... ... ... ... 190 "
20 to 30 " ... ... ... ... ... 330 "
30 and upwards ... ... ... ... ... 216 "

From these tables it would appear that the susceptibility both in vaccinated and unvaccinated persons increases from early age and attains its maximum at the 20-30 age period. After this it diminishes with each subsequent period.

It was commonly observed that a large proportion of mild cases occurred in unvaccinated people, and that many of the severer cases occurred in people who were vaccinated and showed good marks. The subjoined tables of three series of unselected cases showing the incidence of mild and severe attacks on the vaccinated and unvaccinated, bear out this statement.

SERIES I.—419 consecutive cases treated in Hospital:

<table>
<thead>
<tr>
<th></th>
<th>Vaccinated</th>
<th>Unvaccinated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Severe</td>
<td>53</td>
<td>88</td>
</tr>
<tr>
<td>Mild</td>
<td>112</td>
<td>169</td>
</tr>
<tr>
<td>Total</td>
<td>165</td>
<td>254</td>
</tr>
</tbody>
</table>
Series II.—65 cases of children of one of the Primary Schools of Port-of-Spain:

<table>
<thead>
<tr>
<th></th>
<th>Vaccinated</th>
<th>Unvaccinated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Severe</td>
<td>18</td>
<td>20</td>
</tr>
<tr>
<td>Mild</td>
<td>16</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>34</td>
<td>31</td>
</tr>
</tbody>
</table>

Series III.—756 cases treated at their homes:

<table>
<thead>
<tr>
<th></th>
<th>Vaccinated</th>
<th>Unvaccinated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Severe</td>
<td>63</td>
<td>68</td>
</tr>
<tr>
<td>Mild</td>
<td>316</td>
<td>309</td>
</tr>
<tr>
<td></td>
<td>379</td>
<td>377</td>
</tr>
</tbody>
</table>

(ii.) Incidence on recently vaccinated persons.—Of the 312 cases in Table A, 28 were among recently vaccinated and re-vaccinated persons, and the following table shows the number of marks and the interval between vaccination and attack:

List of Persons recently Vaccinated who have contracted Eruptive Fever.

<table>
<thead>
<tr>
<th>Name</th>
<th>Age</th>
<th>Number of Marks</th>
<th>Interval since Vaccination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Claude Brinnette</td>
<td>18 yrs</td>
<td>3</td>
<td>1 month</td>
</tr>
<tr>
<td>Henrietta Williams</td>
<td>5 months</td>
<td>1</td>
<td>2 yrs.</td>
</tr>
<tr>
<td>Alice Woods</td>
<td>61</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Lionel Goring</td>
<td></td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Rachel Robinson</td>
<td>18</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Margaret Richards</td>
<td>25 yrs</td>
<td>2</td>
<td>2 yrs. Re-vaccinated.</td>
</tr>
<tr>
<td>Nevile Harding</td>
<td>21</td>
<td>3</td>
<td>2 yrs. &amp; 1 month.</td>
</tr>
<tr>
<td>Stanley Geaves</td>
<td>3</td>
<td>1</td>
<td>2 yrs.</td>
</tr>
<tr>
<td>O'Kenna Yorke</td>
<td>3</td>
<td>2</td>
<td>2 yrs.</td>
</tr>
<tr>
<td>Coniscia Manning</td>
<td>3</td>
<td>1</td>
<td>2 yrs.</td>
</tr>
<tr>
<td>Charles Chase</td>
<td>3</td>
<td>2</td>
<td>2 yrs.</td>
</tr>
<tr>
<td>Edith Hutchinson</td>
<td>12</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>J. E.</td>
<td>39</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Felix Savary</td>
<td>20</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Pelham Savary</td>
<td>18</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>George Perkival</td>
<td>13</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Emmanuel Martin</td>
<td>4</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Albert Smart</td>
<td>6</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Alexander Green</td>
<td>8</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Martin Fernandez</td>
<td>7</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>J. Sydney Frederick</td>
<td>7</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Joseph McDonald</td>
<td>8</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Theresa Williams</td>
<td>7</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Alfredo Cesar</td>
<td>4</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Joseph Allayne</td>
<td>7</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Evelina Singueseau</td>
<td>8</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Nora Bocage</td>
<td>8</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>solaia Murray</td>
<td>8</td>
<td>4</td>
<td>2</td>
</tr>
</tbody>
</table>

Four cases occurred within one year of vaccination; eight within three years; four within four years; eleven from four to eight years.

It would appear, however, although the above table represents a fair number of exceptions, recent vaccination and re-vaccination protect from the disease.

(iii.) Vaccination during the incubation period.—Vaccination within the first five days of the incubation period appeared to modify the attack. Several persons were vaccinated at the end of the incubation period, i.e., a day before the occurrence of the symptoms of invasion, and vaccinia and the disease ran concurrently without apparently modifying one another in any way.

(iv.) Vaccination during convalescence and on complete recovery.—In a series of 185 cases the following results were obtained:—

145 were unsuccessful.

28 gave a modified reaction, a vesico-papule formed which crusted over quickly, a firm raised purple fibroid growth resulting.
In 15 cases vaccination was successful. It is worthy of note that in three of these cases vaccination performed immediately on recovery from the disease was unsuccessful, but gave good vesicles four to five weeks later.

Three persons (a primary vaccination and two re-vaccinations) were vaccinated with lymph from one of these cases and typical vesicles were obtained.

MORTALITY.

The fatality of the disease is very low. Of 4,029 cases occurring up to 30th May, 1903, there were eighteen deaths, giving a case-mortality of 0.44 per cent.

An analysis of these deaths shows the following incidence as regards:

(i.)—Sex

<table>
<thead>
<tr>
<th></th>
<th>13 Males.</th>
<th>5 Females.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(ii.)—Occupation

<table>
<thead>
<tr>
<th></th>
<th>Labourers</th>
<th>Seamen</th>
<th>Laundress</th>
<th>Skilled Artisan</th>
<th>House Servants</th>
<th>Nil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(iii.)—Age

<table>
<thead>
<tr>
<th></th>
<th>Under 1 year</th>
<th>1 to 5 years</th>
<th>5 to 10</th>
<th>10 to 20</th>
<th>20 to 30</th>
<th>30 to 40</th>
<th>40 to 50</th>
<th>50 to 60</th>
<th>60 and upwards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>4</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Female</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

(iv.)—Vaccinated and unvaccinated.

<table>
<thead>
<tr>
<th>Vaccinated</th>
<th>Unvaccinated</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Females</td>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In this connection it is of interest to note the fact that in the years 1871–1872 when undoubted small-pox was epidemic in this island there were 12,531 cases with 2,449 deaths, giving a mortality of 19.5 per cent. This bears out the experience that small-pox in the tropics and among dark races is a severe affection and attended with a high fatality.

PROPHYLAXIS.

On account of the mild nature of the disease, and the slight attendant discomfort, preventive measures in a strict sense are impracticable. Even a house to house inspection failed to discover all cases as many of those affected, continued to pursue their out-door occupations.

Vaccination, revaccination, and isolation, are the measures which experience has shown to be the most useful in dealing with the disease, but in the absence of special provisions in existing legislation for the enforcing of them, and a strong public feeling against compulsory vaccination and revaccination, these measures could not be efficiently and generally carried out.

GENERAL REMARKS.

The outstanding feature of the disease is its atypical character.

In some respects it is analogous to the epidemic in America of what has been termed irregular or Atypical Small-pox by Dr. Heman Spalding of Chicago and some other American writers, but presents marked differences in the following particulars.

1. The occurrence of second attacks in persons who have recently recovered from the disease.

2. The successful vaccination of persons recently recovered from the disease.

3. Attacks on the recently vaccinated.
ANNUAL REPORT
OF THE
SUPERINTENDING MEDICAL OFFICER,
Together with the Reports on the following Departments of the Medical Service of the Island, viz

THE PUBLIC HOSPITAL | THE LUNATIC ASYLUM
THE LYING-IN HOSPITAL | THE LEPERS' HOME

FOR
THE YEAR ENDED 31ST MARCH, 1903.

Ordered by His Excellency the Governor to be Printed.
The total number treated 9,131 classified as under, deaths 275, Mortality rate 3·02:—

<table>
<thead>
<tr>
<th>Class</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constables</td>
<td>...</td>
</tr>
<tr>
<td>Poor Persons</td>
<td>...</td>
</tr>
<tr>
<td>Paupers</td>
<td>...</td>
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<tr>
<td>Immigrants</td>
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<tr>
<td>Paying Patients</td>
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<tr>
<td>Prisoners</td>
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</table>

The figures represent the work of the Public General Hospitals for the period under review. It has not been feasible to permit the Hospitals to resume full working strength, the Medical Officers have consequently been obliged at times to refuse applicants for admission, last the regulated numbers should be exceeded, in extreme or serious cases however the Medical Officer is authorised to exceed the specified number. A death rate of 275 in 9131 cases is a very creditable record, equivalent to 3·02 per cent. Operations 1,771 with 25 deaths equal to 1·4 per cent. denotes the presence in these Institutions of a careful nursing staff. The general results secured are very satisfactory and reflect much credit on the Medical Officers. The absence of Hospital disease denotes the high sanitary standard maintained in these Institutions during the twelve months.

The diseases which were most prevalent during the period embraced in this report appear under the respective heads of Malarial fever, Rheumatism, Syphilis, affections of Respiratory Organs, the Digestive System, Skin diseases, and affections of the Generative and Urinary System.

**Malarial Fever** was responsible for 2,783 admissions, 1,767 less than previous year. Climatic conditions influenced by a small rainfall account for the comparatively small number. Whilst last year the Remittent type of fever was most in evidence, in the returns under consideration the Intermittent type predominates; there were only 48 deaths = to a death rate 1·55 per cent.

**The Digestive System** next in order of frequency furnishes 485 and 29 deaths, the death rate 6·98. The sufferers from this complex affection are usually persons advanced in life whose constitutions have been more or less impaired by exposure and irregular living. Medical aid is rarely sought before the disease has become thoroughly established.

**Diseases of the Generative and Urinary Systems** not infrequently associated with Specific Disease are usually very intractable by reason of the fact that hospital aid is seldom secured before permanent injury to the soft parts has arisen and the general health has become seriously impaired; the progress is generally unfavourable.

**Rheumatism** invariably furnishes a long list of admissions. The favourable meteorological features of the year favoured a lower sick rate than usual under this head, and influenced the stay in hospital appreciably. The exposure to which labourers are subjected in their fields, and their carelessness when exposed at night to severe and sudden alterations of temperature, account for many admissions for this affection.

There were 315 admissions and 31 deaths, a death rate of 9·84 per cent., for which disease of the respiratory system was responsible; these figures, however, do not proportionately represent the total dealt with under the above head. Many of the consumptives when they realise their hopeless condition remain at their homes and pass away without any official relief. The death rate compares favourably with previous annual record of 14·05. The remarks made in previous years apply now with equal force. The insanitary surroundings of the humbler classes, insufficiency of light and ventilation, promiscuous overcrowding of the sick with the well, absence of segregation in public institutions, all combine as potent factors to promote these affections.

**Syphilis.**—Although very grave cases have been treated in hospital, their numbers have been decidedly less than previous records; and not only were the cases treated fewer, but their condition was less severe on admission. It is, I think, correct to assume a slight improvement on last year’s records; it is questionable, however, if this will be maintained, as no means exist for controlling the spread of this loathsome disease.

**Skin Affections** were represented by 1,927 cases with five deaths or a death rate of 0·48 o/o. The conditions which promote this class of disease are met with chiefly in field labour, when small wounds occasioned by the careless use of rude implements are treated empirically, until foul, sloughing ulcers are produced. Superficial eruptions induced by some irritable weed or bush are responsible for many cases; encouraged to spread and aggravated by neglect and quick treatment, they eventually reach the Hospital, when most of them, in consequence of neglect and maltreatment, become chronic, necessitating very drastic measures and culminating frequently in the removal of a portion of the extremity affected.

**Enteric Fever** was responsible for sixty-six cases and eleven deaths, equal to a death rate of 16·66 o/o. Sporadic cases of this disease are met with through the Island year by year, in two localities successive cases were accounted for by a zone of infection promoted by inattention to the requisite sanitary measures on the part of the friends of those affected. Although a few more cases were registered than last year the death rate was lower. The impure water supply in many districts was responsible for many cases of the disease.

**The Vomiting sickness, Gastro-enteritis** which proved a cause of some anxiety in previous years is represented by only a few cases and no deaths.

As usual the indentured immigrants constituted a large proportion of the Hospital admissions. Newly arrived coolies before they are acclimatized, figure largely in the Hospital returns. Of late many cases of Ankylostomiasis have been encountered, the coolies thus affected, unless submitted to
active and early treatment, rapidly deteriorate in health and become unequal to agricultural labour. It has been made clear that the disease has been introduced from India and when the ova are deposited under favourable conditions, the soil becomes infected and some difficulty must be experienced in ridding the infected area of the parasite.

The record of the work of the Public General Hospitals would be incomplete without reference to the services rendered in the out-patient departments. The following Statement shows the classification and the numbers dealt with as out-patients:

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<th>Class</th>
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<tr>
<td>Prisoners</td>
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<td>Paupers</td>
<td>16,460</td>
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<tr>
<td>Indentured Immigrants</td>
<td>1,691</td>
</tr>
<tr>
<td>Parochial Midwifery cases</td>
<td>98</td>
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<tr>
<td><strong>Total</strong></td>
<td>21,496</td>
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</table>

**GENERAL STATISTICS.**

The estimated population on which the birth and death rates are based is 778,198. There were 30,700 births during the year, the birth-rate per 1,000 (estimated) mean population was 39.4, in the previous year there were 31,268 births the rate of increase being 19.0%. The number of deaths registered was 15,405 and the death-rate was 19.8 compared with 16,706 for previous year and a death-rate of 21.9. The death-rate for year under review may be considered a very favourable record, especially if we bear in mind that the high figures for which Kingston is responsible are included in the above rate. When the Kingston figures reach a lower level, as I think they should in the near future, under the influence of extended sanitary measures, the general mortality rate may then compare not unfavourably with Great Britain.

The Medical Officers have not reported any special prevalence of disease at any particular season, with the exception of a slight increase in malarial affections after rains. The diseases encountered were as a rule of a mild type. The meteorological conditions were favourable to a small sick rate, malarial fevers were less prevalent and benign in character. Notwithstanding the existence of drought during a considerable portion of the year, the diseases—chiefly bowel affections—usually associated with a long dry season were not so pronounced as in former years under similar conditions. As noted in previous reports the sick rate was largely promoted by the improvident habits of the humber classes, who in the matter of food, clothing and housing exhibit but little regard for the hygienic laws which should appeal to the humblest individual, thrifty and wholesome habits encourage a high sick rate in spite of favourable climatic conditions. It may, I think, be anticipated that under the new taxation which has relieved the small tenements, a substantial improvement will arise in the huts of the poor, if more room space and better ventilation result, incalculable benefits will have been conferred incidentally on the labouring population.

Although there was no general epidemic disease during the period under review, there was an epidemic in one of the out-lying districts of Trelawny. The affection which assumed considerable proportions gave rise to some controversy, as a similar disease was prevalent and, I believe, still persists at Trinidad, whence it spread to other West India Islands and to Demerara. Here the disease was diagnosed as modified small pox of the ambulant variety, a form of the disease which was recognised in the United States and Canada, also in London, during recent epidemics. Several cases of chicken pox were recognised at the same time and place. Some of the medical authorities in Trinidad pronounced it a disease "sui generis" or "eruptive fever" and neither small-pox nor chicken-pox. In January of the present year the disease appeared at Duane Vale in Trelawny. Fortunately the district was comparatively isolated and distance from the sea board and free from direct communication with any populous centres, the segregation of all cases was thoroughly carried out both at an Isolation Hospital which was admirably suited for the purpose and in some of the native huts where the disease first appeared; so thorough and effective did the isolation prove the disease was confined to its original site and was finally stamped out by 31st March.

Out of a total 81 cases, 58 were returned as small-pox—Variola discrete, and 25 chicken-pox with three deaths amongst the former. At Trinidad and other Islands it would seem as if Quaranine was in some way associated with the controversy. The Government of Trinidad deputed a medical gentleman—Dr. Knox—the Health Officer for Port of Spain, I believe, to visit this Island; he reported the disease then prevalent here neither small-pox nor chicken-pox, but an "Eruptive Fever" or a disease "sui generis," the same as they had in Trinidad. The subsequent history of the epidemic at Port of Spain—which in the absence of isolation attained large proportions—has clearly demonstrated the presence of small-pox there as well as at Demerara, whence the "eruptive fever" was reported. The birth of a new disease or the bald term, "Eruptive fever" cannot, I think, be seriously entertained. Dr. Bridger's—Barbados—very able report on the "Eruptive fever" (?) of Trinidad is, I think, conclusive; moreover the spread of the diseases to Demerara where small-pox now prevails, find the defection of some of the Trinidad medical men who now pronounce the disease small-pox which at first they regarded as "Eruptive fever" only. As seen here the disease was infectious, the eruptions in many cases profuse and semi-confluent. The small mortality which was one of the chief arguments advanced against the small-pox theory was commented upon in the States as characteristic of the Ambulant variety. In this connection Dr. Bridger appears to have thought it possible that a disease occurring during the course of the disease which has been registered under some Secondary head. During recent epidemic in Panama a small mortality was recorded.
Cases convalescent from the disease resisted vaccination and in persons successfully vaccinated within a comparatively recent period the disease was modified. Although in many cases all the typical symptoms of small-pox were not present, sufficient were observed to justify the conclusion that the disease was modified small-pox and nothing else. In an adjoining parish there was a mild endemic of chicken-pox, no deaths.

It is distressing having to chronicle from year to year the continued excessive mortality during Infantile life and under five years. The agencies hitherto recognised as causative of this painful blot in the Vital Statistics of the Colony are still active, their lethal influence can only be modified by such an advance in those moral standards, which should govern the home life of the poor as will effect a thorough reformation in their physical surroundings. The impression not infrequently arises that the hapless infant especially when illegitimate is regarded as a burden to be rid of as quickly and easily as possible. Such conditions midst climatic surroundings often depressing are not calculated to conserve infantile life. It would be unprofitable to repeat the remarks on this subject advanced in previous reports, suffice it to add that in presence of the statistics under review I am unable to modify them.

Influenza prevailed to some extent in a few districts, freedom from serious complications and favourable climatic conditions promoted early recovery. There were no deaths.

The illegitimacy question now "sub judice" of a Government Commission continues very much in evidence, no improvement is noticeable in the high rates of former years. The general improvement throughout the Island is due not so much to any advance in the sanitary standard of the several parishes as to the favourable climatic conditions which prevailed throughout the year. In some districts a slight advance in hygienic conditions has been noted, there still remains however, room for much advance in sanitary well-being of many parishes. An extended water supply is much needed, and a recognition on the part of the peasantry of the value of simple hygienic laws is much to be desired.

Measures for the relief of yaws have been pursued, with at times, only partial success, so difficult has it been found to overcome the crass ignorance and superstitious ideas of the poorer classes.

Separate reports are furnished by the Senior Medical officer of the Public Hospital, the Medical Superintendent of the Lunatic Asylum and the Medical Officers in charge of the Victoria Jubilee Hospital and Lepers' Home, all of which contain interesting particulars of the working of those Institutions for 1902-1903.

Chas. B. Mosse, S.M.O.
## Monthly return of Diseases and Deaths in 1902-1903, at the Public General Hospitals at Morant Bay, Port Mar, Black River, Mandeville, Chapelton, Dry

### General Diseases

<table>
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<tr>
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**Total** | 371 | 11 | 28 | 7 | 314 | 6 | 362 | 3 | 340 | 11 |        |        |

### Local Diseases

#### Diseases of the Nervous System

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<tr>
<th>Sub-Section I.—Neuritis</th>
<th>Causes</th>
<th>Deaths</th>
<th>Causes</th>
<th>Deaths</th>
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#### Functional Nervous Disorders

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#### Mental Diseases

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#### Diseases of the Eye

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**Total** | 426 | 23 | 333 | 7 | 278 | 15 | 362 | 12 | 295 | 11 |        |        |

#### General Injuries

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#### Local Injuries

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#### Malformations

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#### Poisons

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#### Parasites

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