anything other than rose-rash concurrent with scarlet fever. 3. There is no proof that the third and last series of cases of supposed "fourth disease" included anything other than simple scarlet fever. Indeed, the evidence given points to its being so.

It would be rash to deny the possibility of an unrecognised disease existing and closely resembling scarlet fever though distinct from rose-rash; but very much stronger proof must be forthcoming than any yet adduced by Dr. Dukes before it can be admitted that he has discovered and identified such a disease.

I am, Sirs, yours faithfully,

C. KILLICK MILLARD, M.D., D.Sc. Edin.,
Late Medical Superintendent, Birmingham Fever
Hospital.

Town Hall, Burton-on-Trent, Oct. 27th, 1900.

MEDICAL SERVICE IN THE HIGHLANDS AND ISLANDS OF SCOTLAND."

To the Editors of THE LANCET.

SIRS,—Poor-law medical officers in the highlands and islands of Scotland are again greatly indebted to you for your able and outspoken leading article in THE LANCET of Oct. 20th (p. 1144). Could such an exposition find its way to our legislators our condition would probably soon be remedied. Our thanks are none the less due to Dr. William Bruce, than whom none knows our condition better, for his letter in THE LANCET of the same date (p. 1163). He states the remedies clearly and practically, but with all respect to his wide experience and matured judgment I would like to comment on the following points. Regarding his second proposal there are no objections but the difficulty of getting the Government to pass a Bill in our favour, and to endeavour to obtain this is precisely our intention. Of course, parish councils will object, hence the futility of consulting them. One half of them will not admit our grievances and the other half cannot see them, but both sections will immediately unite to prevent us by every means in their power from getting our rights. Poor-law medical officers have not been under the heel of parochial boards and parish councils all these years without fully estimating the latent possibilities of these gentlemen. The other and graver difficulty is the fact that only two or three men amongst us will have the whole fighting to do and have a host of parish councils against us, then the question arises, which will the Government believe?

Dr. Bruce says: "Seeing that the public at large really helps to pay for medical attendance to all and sundry in these parishes it ought to have its say in making and unmaking these appointments." Given an average parish of from 2000 to 3000 inhabitants with a pauper roll of, say, 70 and the payment to the medical officer from the parish funds alone on an average of £20 to £25 (which is only sufficient to keep his horse), ought these to have a say in the making and unmaking of appointments? A medical man receiving such a trifle is practically giving his services to that parish. I admit that he gets the other half of his salary from the medical relief grant and a precarious income from private practice, but with these the public at large (I mean the ratepayers of this said parishes) have nothing whatever to do. Even in private practice in these parishes a humane doctor cannot possibly charge what would remunerate him for his services. That trifling amount from the parish funds, besides partly remunerating him for attendance on paupers, has to cover attendance and medicine to all and sundry non-pauper—poor folk who cannot pay him. He has also to visit the different districts periodically, so that his services may be at the disposal of everyone. The above facts form the basis of our argument for an increased salary.

Regarding the suggestion that the Local Government inspecting officer would see justice done to the parish medical officer, I am afraid that during his summer trip to the highlands and islands he would be unable to settle disputes between parish councils and their medical officer; but how he could be constituted a judge of the professional competence or incompetence of a medical man either before or after his appointment by the parish is a question which, I think, admits of an obvious answer. I again offer my thanks to you and also to Dr. Bruce for your ready sympathy and interest in our cause.—I am, Sirs, yours faithfully,

HENRY PEARSON TAYLOR, M.B., C.M. Aberd.

Reafirth, Mid Yell, Shetland, Oct. 26th, 1900.

"AUTO-INFECTION THROUGH THE MOUTH A POSSIBLE CAUSE OF RELAPSES IN ENTERIC FEVER."

To the Editors of THE LANCET.

SIRS,—I was much interested by Mr. G. W. Ord's letter on this subject in THE LANCET of Oct. 13th (p. 1097). I not only agree with his views in this particular connexion but I am satisfied that physicians may trace many cases of self-poisoning in various infective diseases to the same source. Nay, more, I would go further, and add that I am satisfied, from experience, that an unhealthy state of the mouth is a fertile and very common cause of ill health. We are all agreed upon the importance of wholesome fresh air in contending with tuberculous and other cachexias from the poisonous effect of re-breathed air, sewer-gas, and the like. What, then, are we to anticipate when every breath which a patient draws is infected, more or less, by an unhealthy state of the mouth? Of latter years I have made it a habit to examine the mouths of all patients, and in a large proportion of cases I find quite enough there to account for bad health.

To give a single instance in illustration I will quote the case of a young man who was sent to me last year from the county of Wexford for advice about apprehended phthisis. This youth was in a very low and markedly marasmic state. On examining his chest I failed to detect any morbid change. On bringing him over to the window to examine his mouth I found 14 carious teeth in the upper jaw, exhaling a fearful odour, which he was breathing day and night, and the secretion from which, with accompanying gumboils, he was constantly swallowing. I advised the removal of the teeth for the complete hygienic restoration of the mouth and I was not disappointed by the result which followed. The diseased teeth having been removed—painlessly under ether—the mouth was restored to a healthy condition, a set of artificial teeth replaced the diseased ones, and satisfactory mastication became possible. Within six months this youth was restored to health. This case is one of countless similar ones. Besides bad teeth we find many other morbid conditions of the mouth, the gums, ill-adjusted and non-removeable false teeth, suppurating alveolar abscesses, often painless, unhealthy conditions of the nasal and pharyngeal mucous membranes, a gross neglect of cleanliness, and so on, which mean, in fine, that the patient is breathing an infective atmosphere and swallowing poisonous secretions. If a lack of fresh air and the presence of sewer-gas and foul air in a dwelling-room are sufficient to poison a patient, what shall we say of such a condition as I described above? I am under the strong impression that this source of bad health is not sufficiently attended to in every-day life and often overlooked and therefore I trespass on your valuable space in calling attention to it. I believe all physicians will agree in my views, but I fear we are not sufficiently energetic in urging them on our patients. Others, younger than I am, may, I believe, with great advantage to the public health, work out the problem to which I now briefly allude.

I am, Sirs, yours faithfully,

F. R. CRUISE, M.D. Dub.,
Consulting Physician to the Mater Misericordiae
Hospital, Dublin, and to the National Hos-
pital for Consumption in Ireland.

Dublin, Oct. 24th, 1900.

AN ANOMALOUS SITUATION CREATED BY SECTION 4 OF THE INFECTIOUS DISEASE (PREVENTION) ACT, 1890.

To the Editors of THE LANCET.

SIRS,—I venture to address you on a subject which I think may possess some interest for my brother medical officers of health—viz., the anomalous situation created by Section 4 of the Infectious Disease (Prevention) Act, 1890. This was brought prominently to my notice by an incident which occurred recently in my district. It came to my knowledge that a case of infectious disease (diphtheria) was existent at a dairy just outside the borough boundary. I immediately visited this dairy and upon inquiry I found that milk from it was being supplied in fair quantities to a retail milkseller as well as to private persons resident in this town; in fact, had it not been for my visit

eight gallons of milk and 18 lb. of butter would have been sent into the town within an hour. I also found that the person in charge of the dairy was in direct contact with the sick person. I thus had every reason to suspect this milk as being likely to cause infectious disease within my district.

But by the Infectious Disease (Prevention) Act, although we as medical officers of health are empowered (on the order of a magistrate) to inspect any dairy if we are of opinion that infectious disease is caused, or is likely to be caused, in our district by milk supplied from such dairy, we can take no action, legally, to prevent the sale of this milk until infectious disease is (actually) caused.

Now, Sirs, this is where the anomalous situation is apparent: that we, who are appointed by law medical officers of health for the express purpose of preventing, as far as possible, the occurrence of disease are debarred, forsooth (by this same law) from taking any action until it has actually occurred! Surely this is the most perfect example of "locking the stable door after the horse has been stolen." I say nothing of the cumbersome and tardy method of procedure permitted us under this section, as I feel sure that every medical officer of health has his own system for overcoming this difficulty.

I am, Sirs, yours faithfully,

CHARLES H. RUSSELL,

Great Yarmouth, Oct. 28th, 1900.

Medical Officer of Health.

"THE ANÆMIA OF DYSPEPSIA CONSEQUENT ON DIRT-EATING."

To the Editors of THE LANCET.

SIRS,—Mr. A. J. B. Duprey's remarks on the above subject in THE LANCET of Oct. 27th (p. 1192) are most interesting. Dirt-eating, or geophagy, is a subject which has been mentioned by many travellers, but the dire results of this filthy habit have not been investigated with care by medical men. St. Lager is the only author to my knowledge who has attempted to collect any information on this matter and a short *résumé* of his remarks may be of interest to your readers. First, then, geophagy was observed by Humboldt to be prevalent amongst many Indian tribes, notably the Ottomacos, the women employed in potteries being the chief offenders. Auguste de Saint-Hilaire observed dirt-eaters in the interior of Brazil and also along the coast-line. De Castelnau noticed geophagy in the eastern portion of Bolivia. Cotting saw children eating dirt in the canton of Richmond, between Augusta and Savannah. He goes on to say that "they become pale, sicken, and die."

Geophagy has also been observed in the Antilles, in Jamaica, Hayti, Puerto Rico, St. Thomas, St. Martin, Guadeloupe, Martinique, St. Domingo, Guiana, Peru, Louisiana, Alabama, Georgia, Florida, and South Carolina. In Africa the habit has been observed among the deltas of the Senegal, in the islands of Los Idolos, and at Sierra Leone, and in other parts of the world, in Java, New Caledonia, New Zealand, and Siam. This pernicious habit, according to various observers, has frequently resulted in anæmia, marasmus, and ultimate death. The dirt consumed in most cases seems to be some kind of clay or marl; in several instances the earth forming the habitation of termites has been preferred. The habit became such a passion in certain victims that one observer records seeing muzzled slaves groveling on the ground and attempting to inhale particles of dust. Hindoo and Chinese women have been known to eat meerschaum (*écume de mer*). In Guinea the negroes used to eat a yellow earth called *caouac* and became ill in consequence. In Java a ferruginous clay was sold in the public markets and consumed by purchasers. The clay used in New Zealand was a species of talcous schist in which copper was found. Another substance commonly partaken of in certain localities was native alum (*beurre de roche*); gypsum by others was used as an ingredient of bread—a custom not unknown to the modern baker! Geophagy is interesting also in connexion with endemic goitre. The drinking of certain muddy waters is associated with the incidence of goitre; for instance, Richardson, a companion of the unfortunate Franklin, noticed at Fort Edmonson, on the north branch of the Saskatchewan, that those who drank the muddy water of this river became goitrous. In other instances the drinking of mud-laden waters is not associated with goitre, which

seems to prove that some particular earth or mineral causes goitre. It would be interesting if Mr. Duprey can tell us if goitre is found in any cases of dirt-eating that he has had to deal with.—I am, Sirs, yours faithfully,

LOUIS E. STEVENSON, M.B. Cantab., F.G.S.

Temple Sowerby, Penrith, Oct. 29th, 1900.

"THE ETIOLOGY OF RHEUMATIC FEVER."

To the Editors of THE LANCET.

SIRS,—We have read with care some letters published in THE LANCET of Sept. 29th (p. 970), Oct. 13th (p. 1098), and Oct. 27th (p. 1235), written by Mr. Lennox Browne, Mr. E. F. Grün, and Dr. Alfred Mantle respectively. These three letters dealt with points in our paper upon the Etiology of Rheumatic Fever, which was published in THE LANCET of Sept. 22nd (p. 861) and 29th (p. 932). To the letters of Mr. Lennox Browne and Mr. E. F. Grün we saw no reason to make reply except by private letters. To Dr. Mantle's letter in THE LANCET of Oct. 27th (p. 1235) we are compelled to reply in justice to him and in justice to ourselves. The tenour of each of the letters is the same—we have hardly done due credit to the writer's work upon this subject. In replying to Dr. Mantle we take the opportunity to acknowledge also the letters of Mr. Lennox Browne and Mr. Grün. In the first place it will be wise to state what claims we made for ourselves. They were two—the first, that as a result of an investigation, clinical, pathological, and bacteriological, supported by experiments made for us by Mr. H. G. Plimmer, we demonstrated that certain diplococci were a cause of rheumatic fever; the second, that we were, to the best of our knowledge, the first to demonstrate these diplococci in a rheumatic nodule. We are thus, fortunately, absolved from any errors of commission, though not from those of omission. Further we wrote as follows: "But we have started upon the assumption that it (i.e., rheumatic fever) is an infection, being led to this conclusion by the results of clinical and pathological experience and teaching," implying by these words that English teaching had led us to this assumption.

Mr. Lennox Browne claimed in his letter priority among "the moderns" for his insistence upon the association of rheumatic fever and tonsillitis. We do not intend to enter upon questions of priority, but it is clear from his published writings that he fully recognised the importance of this association. The recognition of this is, in our opinion, an important step in the history of the theory that rheumatic fever is due to an infection of microbic origin. Mr. E. F. Grün claimed that we had corroborated his observations as to the invariable presence of a specific organism in the blood of patients suffering from rheumatic fever. We entirely fail to see the truth of this. Diplococci were present, it is true, in the *cultures* made from the blood of two patients suffering from rheumatic pericarditis and we discovered them growing in chains in the media after incubation. We did not demonstrate them in blood films as Mr. Grün claims that he did. This point is, however, but a small one. Clearly, before we can give Mr. Grün any credit for his observations we must either see his preparations, or ourselves confirm his statements, or see a confirmation of them. One slide he kindly sent us certainly showed numerous diplococci and other organisms. It was, however, a sputum preparation, not a blood film, and therefore has no bearing upon this question.

To Dr. Mantle we owe an apology which we freely give. We were, to our regret, unaware of his researches and we briefly allude to them now. Dr. Mantle in the *British Medical Journal*, June 25th, 1887, wrote a paper upon the Etiology of Rheumatism considered from a bacterial point of view. From seven cases of this disease he obtained, with due precautions, fluid from the knee-joints and obtained growths upon gelatinised meat infusions. He also demonstrated bacteria in the blood in 16 more acute cases, some subacute cases, and 10 cases of rheumatism in childhood. The bacteria were a micrococcus occurring sometimes as a diplococcus and a small bacillus. Dr. Mantle demonstrated these organisms at the time of the reading of the paper and figured them in his paper. They thrived best in an acid medium and their growth on the solid media gave "a pretty reticulated brown appearance." He also obtained each organism in pure culture. No experiments were made with animals, and Dr. Mantle expressly stated that these alone