3 in Leith. The deaths from scarlet fever, which had been 17 and 11 in the previous two weeks, rose again last week to 12, of which 7 occurred in Dundee and 4 in Glasgow. The 11 deaths referred to "fever" corresponded with the number in the previous week; and included 5 in Glasgow, 2 in Dundee, and 2 in Leith. Of the 6 deaths from diphtheria, an increase of one upon the number in the previous week, 3 were returned in Glasgow. The deaths referred to acute diseases of the respiratory organs in the eight towns, which had been 77 and 62 in the preceding two weeks, rose last week to 83, and exceeded by 16 the number returned in the corresponding week of last year. The causes of 54, or more than 12 per cent., of the deaths registered in the eight towns during the week were not certified.

HEALTH OF DUBLIN.

The rate of mortality in Dublin, which had been 34.3 and 30.6 per 1000 in the preceding two weeks, was 30.9 in the week ending October 1st. During the thirteen weeks ending the 1st inst. the death-rate in the city averaged 31.0 per 1000, the mean rate during the same period being but 19.6 in London and 18.2 in Edinburgh. The 209 deaths in Dublin last week showed an increase of 2 upon the number in the previous week; they included 19 which were referred to diarrhoea, 13 to measles, 3 to whooping-cough, 1 to "fever" (typhus, enteric, or simple), 1 to scarlet fever, and not one either to small-pox or diphtheria. Thus the deaths resulting from these principal zymotic diseases, which had been 52 in each of the preceding two weeks, declined last week to 37; they were equal to an annual rate of 5.5 per 1000, the rate from the same diseases being but 2.1 in London and 1.4 in Edinburgh. The fatal cases of diarrhoea, which had been 35 and 37 in the previous two weeks, declined last week to 19, but were still considerably above the average for the season. The 13 deaths from measles exceeded the numbers in recent weeks, whereas those from scarlet fever showed a decline. The deaths of infants exceeded by 16, while those of elderly persons were fewer by 6 than the numbers in the previous week. Five inquest cases and 2 deaths from violence were registered; and 65, or nearly a third, of the deaths occurred in public institutions. The causes of 34, or more than 16 per cent. of the deaths registered during the week were not certified.

SMALL-POX MORTALITY IN THE GERMAN EMPIRE IN 1886.

A report on the mortality of small-pox in the German Empire in 1886 has recently been issued in Berlin, bearing the name of Dr. Rahts. It is shown that among the more than forty-seven millions of the population of the German Empire only 155 deaths from small-pox were registered during last year, being equal to a death-rate of 3.3 per million. In England and Wales, with a population of rather less than twenty-eight millions, the small-pox deaths last year were 275, equal to a rate of 9.9 per million. Of the 155 deaths from small-pox in the German Empire, 61 were of infants under one year of age, 14 of children aged between one year and five years, 16 of young persons aged between five and twenty years, and 64 were of adults aged upwards of twenty years. A table in the report gives an interesting comparison of the death-rates from small-pox in 1886 in the largest towns of several European States. In 193 towns of the German Empire the death-rate from small-pox last year was 4 per million living; in twenty-eight English towns it was 8 per million (not 77, as misprinted in the report); in seventy-one Belgian towns it was 194; in fifteen Swiss towns it was 218; in forty-nine Austrian towns it was 325; and in twelve Hungarian towns it was 2428 per million. There is good ground for believing that these small-pox rates bear a very definite relation to the efficiency of the regulations for securing general infant vaccination in the different countries. During 1886 no death from small-pox was recorded in Breslau, Dresden, Cologne, or Frankfort, and only one in Berlin; while the highest rates in the large German cities were 33 and 36 per million in Königsburg and Hamburg. Among the principal European cities outside the German Empire the small-pox rate per million ranged from 6 in London, 49 in Liverpool, and 90 in Paris, to 1213 in Rheims, 1343 in Rome, 1538 in Geneva, 3687 in Buda-Pesth, and 5453 in Marseilles. It is evident that both England and Germany enjoyed in 1886 a comparative immunity from fatal small-pox, which affords a striking contrast to the mortality from the disease in France, Austria, and Italy.

Correspondence.

"Audi alteram partem."

"PROTECTIVE POWER OF VACCINATION."

To the Editors of THE LANCET.

SIRS,—In the letter you honoured me by publishing in your last week's journal (p. 681) I had written that men "require a theory as an aid in further work or as a goal or object for it"—instead of "first." Overleaf, in the fifth line, a note of interrogation, followed by a capital, cuts a sentence into two parts where only a comma was intended. May I ask for space to correct these points, and again to repeat that M. Pasteur's new theory needs for its confirmation the experiments suggested by Mr. Vincent Richards. This inquiry could not be entrusted to better hands than those of the accomplished secretary to the Hydrophobia Commission. When he returns from his well-merited and happy holiday, we may hope he will be induced to undertake it.

I am, Sirs, yours very truly,

Oct. 1st, 1887.

WILLIAM SQUIRE, M.D.

To the Editors of THE LANCET.

SIRS,—Will you kindly allow me to correct an erroneous statement in Dr. Squire's letter, in your impression of the 1st inst., with regard to my predecessor Mr. Marson's practice as to the vaccination of the nurses and servants at this hospital. His usual custom was to vaccinate the nurses as soon as possible after their arrival at the institution, and preferably from arm to arm, either at the vaccination station here or at Blackfriars, and they were then sent on duty. The same practice has been continued at this hospital since Mr. Marson's resignation ten years ago, with equally good results. The disasters which occurred occasionally in the early days of the Asylums Board hospitals were, I venture to think, due to the use of lymph of a more or less inert character. When the medical officer of a small-pox hospital has any doubt as to the protective power of the vaccine lymph he is using, then certainly it is desirable that he should wait and ascertain the results of his vaccination before exposing his *employés* to the risk of infection.

I am, Sirs, yours faithfully,

HERBERT GOUDE, M.D.

Small-pox and Vaccination Hospital, Holloway, N., Oct. 5th, 1887.

To the Editors of THE LANCET.

SIRS,—Dr. Squire is mistaken in supposing that I questioned the experience that he referred to in regard to the protective power of vaccination after the infection of small-pox. I merely wrote for information, and gladly welcome any facts bearing upon the subject. I have not been able as yet to lay my hands on the London Asylums Board's Hospital Reports, but if the cases mentioned by Dr. Squire are all that are to be found there, few will think them sufficient to upset the whole former views, or to warrant the conclusion that vaccination under the circumstances is wholly useless. I do not suppose anyone says that vaccination will infallibly prevent small-pox if practised however early after infection, and it must be accounted rash to expose a person only just vaccinated to the infection of small-pox. But of its power to modify small-pox if practised early after infection, the facts are so numerous in its favour that it would take a great many adverse cases to subvert our faith in it. Much, I have no doubt, must depend upon the manner in which the vaccination is done, and the quality and quantity of the vaccine inserted.

I am, Sirs, yours faithfully,

Glasgow, Oct. 4th.

HUGH THOMSON, M.D.

To the Editors of THE LANCET.

SIRS,—Permit me to comment upon Dr. Squire's letter on the above subject, which appears in this week's LANCET. Dr. Squire is correct in saying that the late Mr. Marson never received anyone for duty in the wards of the Small-pox Hospital "immediately upon vaccination, but waited for the result to be evident"; and, further, that he favoured

"the practice of vaccinating all in any house or room where small-pox happened." Dr. Squire, however, is, I believe, mistaken in supposing that Mr. Marson held that this latter operation secured complete immunity from the disease. I was an intimate friend and pupil of Mr. Marson, and know that from conviction he taught that vaccination would not procure immunity if the poison of small-pox had already gained admission to the system; he held that it might modify the intensity of the attack, but would not prevent it. This has always occurred to me as a difficulty in accepting Pasteur's plan of inoculation after a patient has been bitten by a rabid animal; and I cannot but think that Marson's experience of vaccination in small-pox militates against the adoption of Pasteur's views on the efficacy of inoculation after the introduction of the poison.

I remain, Sirs, your obedient servant,
Parkhurst-road, N., Oct. 1st, 1887. W. HENRY KESTIVEN.

SCARLET FEVER: PROPHYLAXIS AND TREATMENT.

To the Editors of THE LANCET.

SIRS,—The present epidemic of scarlet fever, which seems to be spreading over the country, induces me to ask you to allow me to bring before the profession generally a method of treatment which, in my hands, has proved an unqualified success, not only in overcoming the disease and in preventing those numerous sequelæ which are often more disastrous in their results than the disease itself, but, when applied to those who have not "incubated" the disease, acts as a remarkable prophylactic.

It is now some years since I first commenced to treat scarlet fever with carbolic acid. At first it did not appear to have any specially beneficent action, and my patients dying in about the same ratio as before, I gave up the use of it, returning to the old methods of treatment. After some little time, however, I returned to it, bringing more thought to bear upon the matter, being also more enlightened concerning the life of bacteria in general when placed under conditions which, if not inimical to life itself, at any rate had the effect of checking propagation and accepting as a foundation for treatment that the poison of scarlet fever was but the presence within the system of some, as yet unknown, species of bacteria, its severity being due to circumstances especially favouring development. I therefore commenced anew the administration of carbolic acid, with this difference, that the dose was considerably increased and its frequency doubled. The result, since I arrived at definite conclusions concerning the dose and its frequency, has been that even during severe epidemics I have never lost a patient, though I have treated now nearly 300 cases. Out of this number I have had but three cases of albuminuria, one of glandular suppuration; but no aurial or nasal complications, no secondary fever or cardiac disease, and a rapid recovery from even severe cases that I have never before witnessed. I use liquid carbolic acid, specially prepared for internal use, and rendered liquid by the addition of 10 per cent. of water. In children from two to six years of age I order three minims in syrup of orange-peel and water, together about an ounce, and this must be given every two hours night and day for the first three days, longer if necessary, but if the patient is doing well, every three hours until the fourth or fifth day, then every four hours until all danger has past, and finally three times a day until perfectly convalescent. In older patients the dose should be four minims, and in adults even five or six. I have found eight minims (equal to over seven grains of pure carbolic acid) the maximum dose. Beyond that I should hesitate to push it, as at that dose nausea, griping, and diarrhœa result. Naturally, with an increased dose the menstruum must be proportionately increased, so as to do away with the rather hot acrid taste of the acid. It is, however, a matter of the utmost necessity that in the early stages the dose should be every two hours night and day, and the patient, if asleep, awakened to take it. It is in the frequency as well as in the dose that safety is found. Carbolic acid when introduced into the system is extremely "fugitive," entering into combination with wellnigh everything that it comes into contact with; hence the absolute necessity for its persistent frequent administration. An almost infallible test as to

whether the dose and its frequency have been duly observed is to be found in the urine; in fact, I might also add whether the dose is sufficient. In the course of from twenty-four to thirty-six hours the urine begins to present a smoky hue, somewhat similar to that observed at the commencement of hæmaturia, and in time becomes almost black. The absence of this hue invariably indicates either that the frequency of administration has been curtailed or that the dose is not sufficiently large. I have never known it absent if even the dose has only been two minims, provided it has been administered every two hours. I never consider my patient safe until this peculiar hue is present, the deeper the better. That this peculiarity of the urinary secretion is not due to the blood I have practically demonstrated. It is, I am of opinion, the result of some peculiar combination of the carbolic acid with the products of renal excretion; for the urine is sometimes passed quite clear, but in the course of a short time assumes the characteristic hue. I consider this colour of the urine of the utmost importance, as only upon its appearance can we assume that the drug is thoroughly saturating the whole system; for so rapid is its excretion that when the carbolic acid is ordered to be given only every four hours, the tint disappears.

This, then, is the treatment that has proved so successful in my hands. But to be effective it must be commenced *ab initio*. It will not do to begin on the second or third day, and if failure ensue credit it to the treatment, though possibly even then it may prove better than the old system. I do not interfere with the ulcerated tonsils, which, so far as my experience goes, are invariably affected in scarlet fever. I look upon the extent of the ulceration as an indication of the severity of the attack, and increase the dose of the acid. Once only have I applied nitrate of silver solution, and this was in a strumous child where the whole of the fauces was coated in twenty-four hours with a diphtheritic exudation. The child recovered, but had glandular suppuration on both sides of the neck: the only case I have had. With reference to the three cases of albuminuria, all were clearly traceable to distinct causes. One patient ran out into the garden without a cap chasing a cat which had escaped from the nursery, a keen east wind prevailing at the time. A second sat before a broken window; whilst the third was similarly circumstanced. All these were sufficiently well to sit up, and in each case albuminuria occurred before the tenth day. All recovered.

Desquamation, as a rule, is neither so prolonged or so acute. I have had no occasion to again resort to cold baths to check excessive temperature, the highest record being 104.5°. Only twice have I had serious nervous disturbance, which was speedily subdued by large doses of bromide of potassium.

With reference to the administration of carbolic acid as a prophylactic, I have used it with the happiest results. I give to all the other inmates of the house who have never had scarlet fever, irrespective of age, one minim of the liquid carbolic acid three times a day, and I do not prohibit intercourse with the sick. The result has been that in a few instances—I think four—the disease has been taken but very slightly, whilst the large majority have escaped. That this immunity was due to the acid may be inferred because subsequently those exposed have been attacked severely but have recovered. In one case a second child was attacked five weeks after the first was well. The house had been disinfected by the municipal authorities. It was taken ill on a Friday with diarrhœa and vomiting, but being subject to bilious attacks little notice was taken of it; on Saturday it was dull and listless; it was seen at 7 o'clock on Sunday morning, and found in a state of collapse, and died five hours after from suppressed scarlet fever. Nevertheless, during the illness of the first child it was an inmate of the sick-room after the fourth day, but was preserved from attack by the daily doses of carbolic acid.

These few outlines I have hastily put together, and neither time nor space can be found to give details of the cases treated, interesting as they are. I would conclude therefore with these few words. Each case must be treated on its own merits. The treatment should be commenced the same hour that the case is diagnosed. The severer the case at its outset, the larger the dose. Well diluted and flavoured with tincture of orange-peel, the taste is not unpleasant. Extreme nervous excitement should be calmed with bromide of potassium, and extreme nervous depression with brandy and the usual adjuncts. Dismiss the idea that any harm can ensue from these doses of carbolic acid, but, when possible, patients should be seen at least twice a