

of note that the death-rate in each of the seven Lancashire towns included in the Registrar-General's list exceeded the mean rate in the twenty-eight towns, and three of them—Preston, Liverpool, and Manchester—stand at the bottom of the list. The rate from the principal zymotic diseases averaged 2.9 per 1000 in the twenty-eight towns, and ranged from 1.0 in Norwich and Halifax, to 4.3 and 4.5 in Preston and Liverpool. Although the zymotic rates do not run in precisely the same order as the rates from all causes, there is a considerable relative agreement between them. For instance, the zymotic rate among the ten towns having the lowest death-rate from all causes, ranged from 1.0 to 2.5; while among the ten towns at the bottom of the list, the zymotic rate ranged from 2.5 to 4.5 per 1000. There can be little doubt that those conditions which produce a high death-rate from all causes also conduce to excessive zymotic mortality, although the former may not always be directly due to the latter. Infant mortality, measured by the deaths under one year of age to births registered, was equal to 156 per 1000 in the twenty-eight towns last year, against 162 in 1882. The lowest rates were 133 in Bristol, 134 in Sunderland, 138 in Portsmouth, 143 in Derby, and 146 in London and Brighton. The highest rates of infant mortality were 171 in Salford and Hull, 173 in Blackburn, 174 in Bolton, 175 in Huddersfield, 177 in Manchester, 185 in Liverpool, 189 in Leicester, and 210 in Preston. Infant mortality is in great measure governed by the fatality of summer diarrhoea, and it is noteworthy that six of the nine towns showing the highest rates of infant mortality in 1883 were Lancashire towns.

## THE SERVICES.

### THE NEW SERVICE DRESS.

The new active service dress of the army has been submitted to Her Majesty the Queen. In shape the new garment is somewhat like that of the present service frock. It is provided with pleats at back and front, so that on service these can be undone, and a loose coat made. Buttons are provided on the arms, so that the wristbands can be made tight or loose at will, and the garment presents a smart and serviceable appearance, and will in all probability become the future dress of the British infantry.

Surgeon-Major F. Odevaine, 29th Punjab Native Infantry, Surgeon-Major J. Kelly, 15th Sudhiana Sikhs, and Brigade Surgeon C. MacDowall, Principal Medical Officer, Quetta, are about to proceed to Europe shortly on sick-leave. Surgeon John C. Lucas, 23rd Bombay Native Infantry, proceeds on furlough to Europe shortly on private affairs.

ARMY MEDICAL DEPARTMENT.—Surgeon-Major Alexander Long is granted retired pay, with the honorary rank of Brigade Surgeon.

INDIA OFFICE.—Deputy Surgeon-General Stephen Chapman Townsend, C.B., of the Bengal Army; Deputy Surgeon-General William Burns Watson, M.D., of the Bengal Army; Brigade Surgeon James Rawlinson Jackson, M.D., of the Bengal Army; and Brigade-Surgeon Alfred Sanderson, M.D., of the Madras Army, have retired from the service.

ADMIRALTY.—Staff Surgeon Thomas Hall Atkinson has been promoted to the rank of Fleet Surgeon in Her Majesty's Fleet; Deputy Inspector-General Gordon Jackson has been appointed to the Chatham Division of Royal Marines, for temporary service, vice Deputy Inspector-General Breen, the appointment of Dr. Fegan being cancelled.

SOCIETY FOR THE RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN.—A quarterly court of the directors of the Society was held on Wednesday, Jan. 9th, at 5 P.M., in the rooms of the Royal Medical and Chirurgical Society, 53, Berners-street; Mr. Charles Hawkins, Vice-President, in the chair. The resignations of two members were accepted, the deaths of two reported, and two new members elected. The treasurer informed the meeting that a Christmas present had been made to the widows and orphans in December last, amounting to £307. Grants to the extent of £1241 were made to fifty-eight widows, five orphans, and three orphans on the Copeland Fund. The expenses of the quarter were £64. One fresh application was received from a widow, and a grant made.

## Correspondence.

"Audi alteram partem."

### WELLINGTON COLLEGE.

To the Editor of THE LANCET.

SIR,—As the accompanying correspondence between the Vice-President of Wellington College and myself may be a subject of interest to your numerous readers and one of public interest, I shall be obliged if you will permit it to appear in the pages of THE LANCET.

Very truly yours,

Wokingham, Jan. 15th, 1884.

J. G. BARFORD.

15, Cromwell-road, South Kensington, May 16th, 1883.

MY DEAR SIR,—Under the existing circumstances at Wellington College I write to say that I should feel obliged to you if you would narrowly watch the position, and that if in your judgment you should see any sign of any impending epidemic you will communicate with Mr. Wickham or myself at once. I am sure this is hardly a necessary precaution for me to take, as you will naturally be watching closely the course of events; but I am very anxious to be able to answer the questions of governors and others in the event of anything occurring.

Believe me, yours very truly,

J. G. Barford, Esq.

W. P. TALBOT.

The Firs, Wellington College, November, 1883.

DEAR SIR,—In your letter of May 16th you asked me to narrowly watch the position, and that if, in my judgment, I should see any sign of illness recurring I should communicate with you at once in order that you might answer any question of the governors. Twelve boys have been affected this term with the same kind of sore throat with which more than 100 boys were affected during the past two terms, making in the year more than a third of the school. The number this term is not in excess of previous terms anterior to the epidemic of this year. Just as then a few or isolated cases indicated some insanitary condition and preceded the larger outbreak, so these cases indicate that, much as the governors have had done to improve the sewerage and water-supply of the College, nevertheless they have not succeeded in removing the evil. One case beginning with the throat affection has assumed a septic form, first affecting the glands of the neck, then the joints, and ultimately causing pericarditis and slight endocarditis. This case resembles in every respect except in degree one of the four fatal cases of blood-poisoning seen at the time by Dr. Garrod of Harley-street. This case has done well, and only a slight trace of the heart mischief remains. Another boy has gone home with a consolidated lung on one side and the remains of pleurisy on the other. This case arose, as far as I can trace, from exposure during two very foggy evenings. The temperature range and enlargement of spleen in this case indicate, like so many other cases, a malarial cause. The boy's mother assured me that he had always previously enjoyed perfect health. In its main features this case resembled the fatal case of acute lung disease in Lord Ormathwaite's son, and had many features in common with Wilson's case. The tendency to acute suppuration (the formation of pus) within the chest in acute inflammation there is very marked at Wellington College.

In the memorandum I forwarded to you and Dr. Harper, through Mr. Wickham, nearly two years ago, for your private information as a committee on medical subjects, I called your attention to the great prevalence of fogs and mists in the valley of Wellington College grounds. If you look at the Ordnance map you will see that the name handed down from time immemorial, and repeated in the map of the last Ordnance survey, is that of "Mirk Bottom," as expressing, I expect, the foggy nature of the locality ("mirk" or "murk" in Berkshire being synonymous with mist or fog; a damp misty day here is spoken of as a murky day). All the other names, except Ambarrow and Edgbarrow, for the two mounds on the estate, have been given within your own and my recollection.

In Wellington College valley there are mists and fogs to be seen morning and evening, when on the higher lands, north-east and west of the College valley, it is quite clear. This fact is one of local notoriety. To these, I feel assured, are to be attributed the redevelopment of throat affections

this term and the preponderance of chest affections here, to which I have from time to time directed attention in my annual reports.

Now that the sewers and water-supply are made efficient they cannot be suspected of causing the present illness except so far as there may be defects at the sewerage outfall from the inefficiency of the A B C process in use there. A Royal Commission on this process states that "it is plain not only that the A B C method falls altogether below irrigation in its powers as a mode of sewage disinfection, but that it altogether fails." But you, as a director of the A B C Process Company, can judge of the value of this statement better than I can.

The engineer in his report appears to me to ignore the evil arising from damp through the subsoil of clay which exists under the superficial layer of sand. Of the extent of this clay on the College estate some idea may be formed from the fact that for thirty years the large brick fields in the College grounds yielded a supply of bricks to the whole neighbourhood, some years turning out from four to five millions of bricks. Yet no one visiting the place would suspect the existence of such a subsoil. This explains to a great extent the mists and fogs, and until it is drained they must prevail. In addition to the clay subsoil over large portions of the grounds the "iron pan," or iron oxide concretion between the clay and the surface, interferes very much with the natural drainage of the rainfall. Till this is broken the surface water cannot percolate except so slowly as not to escape through it between one rainfall and another. In his report the engineer represents that the sewage of the village of Crowthorne trickles along this clay subsoil to the College valley, to the danger of any superficial water-supply. If so, it must impregnate the water of the lakes which are supplied by superficial drainage. A piece of white porcelain dropped into the lakes is lost to sight at about twenty inches below the surface, and you know when the water was seen in bulk in the white tile-lined bath it had the colour of weakened coffee. Such a bulk of impure water used for bathing in summer cannot be wholesome. I believe it was to bathing in this that the two cases of remittent fever (Lord Lathom's son and Vaughan), which gave so much anxiety at the time, were to be attributed. The water in the lakes is an indication of the nature of the subsoil water in the swampy parts of the College grounds. It is charged with organic matter, and must impregnate mists or fogs which arise from it. If a handful of the top surface of decayed organic matter from the damper portion of the College estate is taken up, the under portion has the same musty smell as a damp closed-up cellar. This is quite sufficient, without any sewage impregnation, to give the diphtheritic character to what would otherwise be a simple sore-throat. This character once imparted to a throat no one can tell when any given case may become "septic" or assume the form of blood-poisoning, like the fatal cases of the past three years. Nothing but trenching through the "iron pan" and thorough land drainage to remove surface and subsoil moisture can remedy this. What has been done up till now is a mere pretence at land drainage.

At a school near here of fifty boys of the same class as those at the College, where the fogs and mists prevalent on the damper portions of the College grounds do not reach, and where the ground around is well drained and the playground dry, not a single case of diphtheritic throat has occurred, nor a single case of acute lung disease in the past fourteen years I have attended the school. What, then, makes the difference between these boys and the College boys? Mere accident or chance cannot explain this. One set of boys are exposed to the mists and fogs and the others are not.

When Sir William Gull walked over that portion of the estate called Mirk Bottom, during the driest time of year, after having inspected other portions of the estate, his remark to me was: "I look upon your College as a Romana and your grounds as a Campagna." He was as assured as I was of the malarial nature of the cases of illness here at the time among the boys. Sir William Gull has, I believe, expressed the equivalent of this to you in person, as he explained to Mr. Wickham when here how the evil arose from the ground. Perhaps the more modern name, "telluric poison," would express the condition better than the older malaria. One of the highest authorities on this subject writes that it prevails *in sandy plains containing organic matter, if there is a subsoil of clay or marl*, which exactly describes the soil at Wellington College.

An engineer from Italy was visiting one of the house

masters last term, and in walking from the College to the master's house one evening, he remarked that he felt malaria in the air. Such testimony is noteworthy. That we have had illness here of a distinct malarial type there can be no doubt, and it is displaying the same character in the boys who have been ill this term. Until some efficient system is adopted to get rid of the excessive soil moisture and lessen the mists and fogs the name "Mirk Bottom" of the Ordnance map will express the characteristic features of Wellington College valley, and Sir William Gull's definition of the College as a "Romana" and the grounds around as a "Campagna" will remain a correct one.

Very truly yours,

The Hon. W. P. Talbot.

J. G. BARFORD.

P.S.—With these exceptions the health of the boys at the College is as good as usual. May I ask that this be read at the governor's meeting on Monday next?

Oakington, Harrow, Nov. 13th, 1883.

DEAR SIR,—I beg to acknowledge the due receipt of your letter of the 16th inst.

Yours faithfully,

J. G. Barford, Esq.

W. P. TALBOT.

The Firs, Wellington College, Wokingham, Dec. 19th, 1883.

DEAR SIR,—I wrote to the secretary on the subject of your letter of the 16th inst., and, as I learn there is to be a meeting of the Committee of Governors to-morrow, and the third school term of this year ends to-day, I think you may wish to know what influence the improved sewerage and water-supply of the College has had on the health of the boys. I regret to say there has been no appreciable diminution either in the number or alteration in the character of the throat affections with which the College has been visited each term during the past two years.

I have classed the throat affections under two heads: (1) diphtheritic throat; (2) sore-throat; and the total of these two amounts to 175 in the school year of thirty-six weeks, thus making an average of about five cases a week. The diphtheritic throats in every case have had a well-marked diphtheritic deposit, while the sore-throats have all the ordinary symptoms of the other cases, but with the absence of the diphtheritic deposit, but indicate as clearly as the diphtheritic throats some insanitary cause common to both. The following tabular statement presents the number of each term of the present year:—

	Diphtheritic throats.	Sore throats.	Total.	Days in each term.
Christmas to Easter ...	15	37	82	64
Easter to Midsummer ...	46	20	66	113
Midsummer to Christmas	32	25	57	85
	93	82	175	

Two cases of diphtheritic croup simultaneously with the diphtheritic throats, and two cases of erysipelas, having, I believe, a similar cause as the throat affections, have occurred. Sir William Gull believes there is some close intimacy between these throats and erysipelas, and so our experience at Wellington College indicates, as well as a close intimacy between them and the acute chest diseases, one fatal and the other nearly so, of the present year, to which I referred in my former letter.

From a very careful observation of these 175 cases of throat affection, I can trace in their minor complications a distinct relation to the three fatal cases of blood-poisoning and to previous cases of blood-poisoning. I am quite aware that to arrive at a conclusion of this kind two things are necessary: (1) an opportunity to collect facts to form a judgment (and certainly the illness at Wellington College has afforded me this); and (2) a capacity to form that judgment. Whether I have the latter I will not say. I know you and the head master discredit my judgment in this respect; but the head master refuses to accept even Sir William Gull's judgment of the insanitary surroundings of Wellington College. I cannot, therefore, wonder that mine is discredited; but I believe the conditions which caused these illnesses and deaths are still in existence, and are a danger to the health of the boys and human life.—Yours, very faithfully,

The Hon. W. P. Talbot.

J. G. BARFORD.

15, Cromwell-road, South Kensington, Dec. 20th.

DEAR SIR,—I write a line to say that I only received your letter this morning, which I laid before the committee. I hear that these throats are by no means confined to Wellington College.—Yours faithfully,

W. P. TALBOT.

J. G. Barford, Esq.