and 13.1 in Leith to 18.6 in Perth and 20.1 in Dundee and in Aberdeen. The 550 deaths in these towns included 44 which were referred to diarrhoea, nine to whooping-cough, eight to diphtheria, seven to "fever," five to measles, and four to scarlet fever, but not one from small-pox. In all, 77 deaths resulted from these principal infectious diseases last week, against 88, 77, and 51 in the three preceding weeks. These 77 deaths were equal to an annual rate of 2.4 per 1000, which was 0.2 per 1000 below the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of diarrhoea, which had been 58, 52, and 19 in the three preceding weeks, rose again last week to 44 of which 22 occurred in Glasgow, six in Aberdeen, four in Dundee, four in Paisley, three in Edinburgh, two in Leith, and two in Greenock. The deaths from whooping-cough, which had been nine, nine, and 10 in the three preceding weeks, declined again to nine last week, and included seven in Glasgow. The fatal cases of diphtheria, which had been four, two, and six in the three preceding weeks, further rose last week to eight, of which four were registered in Glasgow and two in Edinburgh. The seven deaths from "fever" were two in excess of the number in the preceding week and were all recorded in Glasgow. The fatal cases of measles, which had been four, six, and eight in the three preceding weeks, declined again last week to five, of which four occurred in Glasgow, where also two of the four deaths from scarlet fever were registered. The deaths referred to diseases of the respiratory organs in these towns, which had been 54, 52, and 71 in the three preceding weeks, further rose last week to 84, but were slightly below the number in the corresponding period of last year. The causes of 18, or more than 3 per cent., of the deaths registered in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 15.4, 18.7, and 19.5 per 1000 in the three preceding weeks, further rose to 27.1 per 1000 during the week ending Sept. 26th. During the past four weeks the death-rate has averaged 18.8 per 1000, the rates during the same period being 15.1 in London and 15.3 in Edinburgh. The 158 deaths of persons belonging to Dublin registered during the week under notice were 16 in excess of the number in the preceding week and included 16 which were referred to the principal infectious diseases, against 16, 10, and 17 in the three preceding weeks; of these, 14 resulted from diarrhoea, one from diphtheria, and one from "fever," but not one from small-pox, measles, scarlet fever, or whooping-cough. These 16 deaths were equal to an annual rate of 2.2 per 1000, the death-rates last week from the principal infectious diseases being 2.1 in London and 1.1 in Edinburgh. The fatal cases of diarrhoea, which had been 10, seven, and five in the three preceding weeks, rose again to 14 last week. The 158 deaths in Dublin last week included 43 of children under one year of age and 45 of persons aged 60 years and upwards; the deaths both of infants and of elderly persons were considerably in excess of the numbers in the preceding week. One death from violence and five inquest cases were registered, and 47, or more than a third, of the deaths occurred in public institutions. The causes of five, or more than 3 per cent., of the deaths registered in Dublin last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

The following appointment is announced:—Fleet Surgeon H. W. Macnamara to the *Sans Pareil*.

ROYAL ARMY MEDICAL CORPS.

Surgeon-General W. S. M. Price, on vacating his appointment as principal medical officer of Bombay and Surgeon-General T. O'Farrell have arrived home from India. Lieutenant-Colonel R. Porter has left Woolwich.

Lieutenant-Colonel George Deane Bourke, now serving as principal medical officer of the Peshawur District, India, has been appointed in a similar capacity to Devonport in place of Colonel R. Exham, C.M.G., retired.

VOLUNTEER CORPS.

Rifle: 9th Volunteer Battalion (Highlanders) the Royal

Scots (Lothian Regiment): The undermentioned Surgeon-Lieutenants to be Surgeon-Captains:—K. MacK. Douglas (dated August 14th, 1903), J. Mowat (dated August 31st, 1903), and J. Cumming (dated August 31st, 1903). 2nd Volunteer Battalion the Oxfordshire Light Infantry: Surgeon-Captain J. O. Sankey to be Surgeon-Major (dated Sept. 26th, 1903). 1st Dumfriesshire: Farquhar Gracie to be Surgeon-Lieutenant (dated Sept. 26th, 1903). 19th Middlesex (Bloomsbury): Surgeon-Captain J. G. Fraser to remain Supernumerary whilst in command of the 5th London Volunteer Infantry Brigade Bearer Company (dated July 25th, 1903).

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

The Manchester Companies: Lieutenant R. W. Beesley to be Captain (dated Sept. 9th, 1903).

VOLUNTEER INFANTRY BRIGADE BEARER COMPANIES.

5th London: Supernumerary Lieutenant J. G. Fraser (Surgeon-Captain, 19th Middlesex Volunteer Rifle Corps) to be Captain and to command under paragraph 55A Volunteer Regulations (dated July 25th, 1902).

DEATHS IN THE SERVICES.

Fleet Surgeon Albert Charles Queely, R.N. (retired), on Sept. 23rd, aged 55 years. He was appointed surgeon in 1872, was promoted to staff surgeon in 1884, fleet surgeon in 1893, and retired a year later. For his services during the Chilean and Peruvian war of 1879-81 at the hospitals at Lima he received the approval of the Admiralty and the thanks of the Provisional Government of Peru.

Lieutenant George Frederick Humphreys, I.M.S., at Poona, India, on Sept. 26th in his twenty-fourth year.

Correspondence.

"Audi alteram partem."

NOTIFICATION OF ADULTERATED MILK.

To the Editors of THE LANCET.

SIRS,—The fraudulent and pernicious practice of adulterating milk is as rife as ever and is likely to continue so until some more effective and constant method is employed to bring the culprits within the four corners of the law which as at present administered is by far too lenient to deter the offenders from pursuing their nefarious practice. Therefore there cannot be two opinions as to the necessity of propounding a scheme by which the practice can be lessened, if not absolutely wiped out. As matters now stand the duty of detecting the offenders is practically in the hands of the police who have unsurmountable difficulties to contend with and it might be interesting to point out a few of them. For instance, a town of 10,000 inhabitants is officered by a staff of ten policemen who are responsible for the good government of the place both day and night. The number of milk-vendors hailing from the surrounding farms can be computed at 40; they distribute their milk twice daily, making a total of 80 distributions which embody the produce of 80 milkings; therefore to insure the detection of the adulteration of any one of the milkings would necessitate the analysing of 80 samples daily, or 29,200 in the year, figures which far exceed the possibility of being dealt with by the five out of the ten policemen who are on day duty. Another prohibitive barrier would be the enormous expense, which for analysis alone at 10s. 6d. per sample would amount to the respectable sum of £15,330 per annum, without taking into consideration the expense of engaging the services of an extra number of police, the present force being able to deal only with an infinitesimal proportion of the samples of milk delivered by the vendors. For instance, taking a town of 10,000 inhabitants, with 80 milkings delivered daily, not more than 50 samples would be submitted for analysis during the year, of which an average of 15 per cent. would be found adulterated. Taking this average as a basis it shows that out of 29,200 milkings delivered during the year there would be 4434 defective samples, of which seven or eight only would be detected. This, I think, is sufficient to prove the futility of the working of the Act under the present system. As to the amount

of adulteration this depends entirely on the elasticity of the vendor's conscience which is governed by fear, not principle. I have known milk to be impoverished to the extent of 32 per cent. of added water together with a large abstraction of fat, which practically amounts to robbing the milk of one-third of its natural constituents.

How to combat this condition of things seems to me possible by enlisting the services of medical men to act in conjunction with the police. The man of medicine has to order milk diet oftener than any other article of food, and to him it is all-important in the conduct of his practice to see that those stricken with disease as well as the helpless infant are supplied with milk of absolute purity. However it is to be feared that the medical attendant too often rests satisfied with ordering his patient milk diet and with instructing the child's nurse to feed her little charge on half milk and half water, little thinking that his instructions are calculated to supply the child with a mixture of two of milk and three parts of water, with the result that the should-be-growing child makes little if any progress and too often wastes into a shadow, a condition to be followed by far-reaching and lasting ill-effects. The very foundation of the child's life is thus undermined when spared from extinction. Then taking for granted that the added water used in carrying out the adulteration is pure, the effects of impoverishing milk without rendering it impure are sufficiently serious to demand greater attention than it has hitherto received; how much more serious is the adulteration with water of doubtful quality and too often of a filthy character, taken, it may be, from a ditch or some such impure source.

In order to deal effectually with this vital question I venture to suggest that every medical man should provide himself with a lactometer and graduated glass vessel, the use of which would enable him to form a fairly accurate opinion as to the quality of the milk supplied to his patients. The ingenuity of the instrument-maker could certainly be depended upon to produce the necessary instruments of dimensions which would not be of the slightest encumbrance or inconvenience to the practitioner who should consider the lactometer as essential in the pursuit of his profession as the stethoscope or the thermometer is at present. In addition to the medical men, the services of nurses should also be enlisted. They could readily learn the use of the lactometer and would be in a position to make frequent tests of the milk supplied to their patients, and upon finding any defective supply should report the same to the medical attendant, who would communicate with the police, giving the address of the people supplied, together with the name of the milkman and the usual time of his delivering the milk. Having done so the further conduct of the case would be left to the police who should take the necessary steps to intercept the vendor on his next round and to procure samples. And in connexion with that part of the procedure I would advocate the taking of four samples, one each for the vendor, the analyst, and the police, the fourth to be roughly tested at the police station in the presence of an authorised person, and if found wanting the analyst should be supplied with a sample, but if found not to be adulterated the matter would end there and the expense of full analysis would be avoided, which is a serious item under the present system. It works out thus: 100 samples analysed at 10s. 6d. per sample amounts to 50 guineas, resulting in finding an average of 15 adulterated samples which lead to conviction and the infliction of a fine of 30s. at an average, including costs, per sample, or a total of £22 10s. for the 15 adulterated samples, leaving a deficit of £30 against the cost of analysis. These items alone, irrespectively of other expenditures in connexion with the detection of adulterated milk, are sufficient to prove that the present system is too expensive to be effective.

Whilst advocating the services of nurses in this matter I overlooked the exceptional opportunities which district nurses would have of rendering help, whose duty it is to look after the poor, these latter suffering more than any other class from the fraudulent milk vendor who feels secure in exercising his illegal devices on the little messenger who is sent for a pennyworth of milk. So great are the possibilities of assistance rendered by nurses in such cases that the use of the lactometer should be a part of their training and in cases where their knowledge leads to the detection and conviction of milk adulterators they should be entitled to a notification fee which should be enforced as part of the costs and borne by the convicted person. I feel convinced that the above

system of notification, supplemented in case of conviction by a minimum fine of £2 with all costs for the first offence, £5 for the second, with imprisonment without option for the third and subsequent offences, would have a deterrent effect and in the near future bring about a wholesome condition of things.

I am, Sirs, yours faithfully,

T. D. HARRIES, F.R.C.S. Eng., M.R.C.P. Lond.

Aberystwyth, Sept. 20th, 1903.

** In regard to Mr. Harries's estimate as to the cost of analysis against the amount of fines secured, we may point out that although 10s. 6d. is often paid for milk analysis under the Sale of Food and Drugs Act it is by no means the rule. Some public analysts agree to examine at least 1000 mixed samples per annum, for which they receive £250 remuneration. Again, milk is often made the exception to the 10s. 6d. scale, 5s. being charged instead. This fact materially affects the figures quoted by Mr. Harries, for at the 5s. rate per sample there would be practically no deficit in regard to fines in the example he gives as against the cost of analysis.—ED. L.

THE CAUSATION OF THE PULMONARY SYSTOLIC MURMUR.

To the Editors of THE LANCET.

SIRS,—Dr. W. L. Ascherson in THE LANCET of Sept. 26th, p. 874, has given an interesting and valuable summary of several of the views held as to the causation of the pulmonary systolic murmur, but he has omitted reference to one that always seems to me to be amongst the most worthy of notice. I refer to the theory of Dr. Foxwell which attributes the pulmonary systolic murmur to dilatation of the right ventricle, mainly in the upward direction, and to the changes in position and shape of the pulmonary artery which follow this dilatation of the ventricle. With this explanation of the presence of a pulmonary systolic murmur in one's mind it is interesting to observe that the large heart present in Dr. Ascherson's case gave rise to "dulness in the first and second spaces," and cardiac dulness in this region, it is scarcely necessary to remark, is due to upward dilatation of the right ventricle. The not infrequent presence of a pulmonary systolic murmur in cases in which there is no anæmia has perhaps hardly attracted the attention which it deserves. Amongst the few who comment upon it Sir William H. Broadbent has noticed a pulmonary systolic murmur in healthy young men some weeks after return to England from Alpine climbing, and in this connexion it may be mentioned that I have known of a case where a medical man was so distressed by the persistence of the same murmur after having fatigued himself on a cycling tour that he consulted a London physician upon the condition of his heart. Dr. Graham Steell remarks on the frequency of a pulmonary systolic murmur in the cardiac failure of chronic alcoholism and, it is interesting to note, adds that "a systolic murmur, generally a slight one, may be present over the aortic area."¹ "A systolic murmur in all areas" is an expression frequently used by Dr. Steell when describing the abnormal sounds heard over the dilated hearts of the subjects of chronic alcoholism. It is possible, however, that the murmur heard over the aortic area in some of these cases may be considered to have been a conducted pulmonary murmur. Not long ago I listened to the heart of the patient of a medical friend where dyspnoea of rapid onset had followed soon after an operation. A basic systolic murmur thought to be due to disease of the aortic valve had been heard, but after listening to the heart I thought the point of greatest intensity was over the pulmonary area and suggested that the dyspnoea might be due to strain upon the right side of the heart associated with thrombosis of the smaller divisions of the pulmonary artery. This may appear to have been rather an improbable diagnosis, but thrombosis of many of the smaller divisions of the pulmonary artery within the lung occurs not so very uncommonly and a day later a post-mortem examination enabled us to prove the presence of thrombi of this nature. All the valves of the heart, as well as the aorta, were healthy and there was nothing to account for the loud basic systolic murmur which had been present but dilatation of the right side of the heart. At least one other similarly

¹ Medical Chronicle, vol. xviii., p. 11.