adequate justification of a diagnosis of acetonæmia or an acidosis, and proceeded to describe in detail two cases, typical of others, which had come under my notice. These cases presented symptoms of gastric and intestinal catarrh, feverishness, sickness, diarrhoea, and some prostration, accompanied by the presence of aceto-acetic acid in the urine. I argued that the sudden onset of the indisposition, its transitory character, the speedy disappearance of the aceto-acetic acid from the urine, and the restoration of the patient to perfect and enduring health, were not consistent with the hypothesis that grave errors of metabolism provoked the appearance of the morbid constituent in the urine, and I went on to remark—

In these two cases my own conviction is that a perverted metabolism *had* nothing to do with the production of the aceto-acetic acid and its excretion in the urine, but that the seat of its manufacture *was* the intestinal canal, &c.

The attempt to define a limited class of cases in which the seat of origin of the aceto-acetic acid is probably the intestinal canal, has been perverted by Dr. Smith into the expression of an opinion, improperly attributed to me, that the aceto-acetic acid always originates in the intestinal canal, and never has anything to do with a perverted metabolism. Such a doctrine, of course, would be absurd, and is not to be found in my paper.

Dr. Smith was certainly in a hypercritical and captious mood when he took exception to the following passage in my paper as misleading:—

If a sample of urine gives a reaction with nitro-prusside of sodium, acetone bodies are present.

He does not controvert the statement that acetone bodies yield a reaction with nitro-prusside of sodium, in fact he confirms it; the gist of his criticism appears to be that creatinin also reacts to the same reagent, and that therefore the value of the test as a means of recognising acetone bodies is somehow invalidated. Now, if the test be performed as I have suggested, by allowing the strong ammonia to float upon the surface of the urine, to which the reagent has been previously added, the presence of acetone bodies is indicated by a vivid crimson ring at the plane of contact of the two fluids, whereas the creatinin is denoted by a dirty reddish-yellow ring. No one with normal colour vision could possibly confound the two reactions. The discrimination between the several substances is immediate and complete. It is, moreover, quite apparent from the context of my article that by a "reaction" I do not mean any sort of reaction, but the specific and unmistakable reaction indicated by the crimson ring. With all deference, therefore, to my critic I do not think that a careful observance of my directions is likely to seriously mislead the practitioner.

The remaining, and only valid, criticism relates to a point in my article, which occupies a very insignificant place in the argument and to which only the most casual allusion is made. The omission of that allusion would not alter in the slightest degree the value of the article, whatever that may be. In the midst of a brief summary of the reasons why ferric chloride should not be solely relied upon by the busy practitioner in the routine examination of the urine for acetone bodies, I remarked that this reagent does not distinguish between acetone and aceto-acetic acid. I should have phrased the paragraph more correctly thus: That ferric chloride does not give a colour reaction with acetone, but does with aceto-acetic acid, the salicylates, aspirin, phenacetin, antipyrin, &c., produces a copious precipitate of phosphates which

is very troublesome when only small quantities of aceto-acetic acid await detection; and since it does not disclose the presence of acetone, ferric chloride might prove to be a very misleading reagent in the search of acetone bodies, if it should chance that acetone alone were present in the urine.

I am, Sir, yours faithfully,

Bolton-le-Moors, August 25th, 1915.

B. DERHAM.

A "NEW SIGN" IN PULMONARY DIAGNOSIS.

To the Editor of THE LANCET.

SIR,—The paper by Dr. Clive Riviere in THE LANCET of August 21st seems to call for some criticism. My present object, however, is to limit the sphere of criticism to one or two statements of fact. It may not be out of place for me to mention in the first instance that the work of Abrams on the lung reflexes was introduced to the profession in this country in a letter of mine published in THE LANCET of Oct. 17th, 1903, and this, together with the fact that I have used the methods ever since, may be some excuse for referring to Dr. Riviere's careful communication. The first thing I wish to observe is, that the area or areas of dullness depicted by Dr. Riviere correspond exactly to that depicted by Abrams. The credit of the sign (should it be really diagnostic of early or impending pulmonary tuberculosis) seems therefore to rest with Abrams. But here comes a discrepancy between the two observers. Whereas Dr. Riviere affirms that this dullness is not found in healthy subjects, unless it be produced by percussion, Abrams affirms that it may be present in *certain subjects* with normal lungs—i.e., exclusive of percussion. This applies to the dull areas both on the front and back of the chest, all of which have been described by Abrams as existing in the lungs of certain healthy persons. That these areas are increased by percussion blows was also shown by Abrams.

Lately I saw in hospital a compositor who sat all day stooping over his work, and simply crossed the street to get to his home, where he remained without taking any walking exercise. This he did day after day. The patient did not complain of his chest, but in the routine examination the dull areas were highly developed, with in places "atelectactic" crepitations. After the patient had drawn 20 or 30 very deep breaths these areas became resonant, and the crepitations disappeared. This was, perhaps, the most marked case I have observed.

Now if Abrams, who discovered the lung reflexes, asserts that these dull areas may be present in certain normal chests where pulmonary ventilation has been exceptionally deficient, this should be sufficient, quite apart from the similar observations of others, to cause grave questionings before accepting or acting on Dr. Riviere's conclusions. Pulmonary percussion of this sort is far too risky and difficult to be invoked as a reliable sign of disease, and especially of tuberculosis. A diagnosis of early pulmonary tuberculosis must surely rest on more secure foundations.

Dr. Riviere refers to "dilator nerve paths in the human vagus," as a "fact" which "has been more recently confirmed by Dixon and Brodie." This, however, is rather ancient history. The observations of Dixon and Brodie in 1903 on this point have been superseded by the investigations of Dixon and Ransom in 1912¹ in which it was shown that the vagus contains no direct dilator

¹ Journal of Physiology, 1912-13, vol. xlv., p. 413.

fibres to the bronchioles. The broncho-dilator nerves are sympathetic in origin proceeding from the first three dorsal rami, and after connexion with the stellate ganglion, proceed to the lungs with the cardiac accelerators. The vagus nerve contains only constrictor fibres.

I am, Sir, yours faithfully,

Harley-street, W., August 24th, 1915.

A. G. AULD.

A CORRECTION.

To the Editor of THE LANCET.

SIR,—I shall be obliged if you will insert this correction, for the eyes of those interested in the diagnosis of phthisis, of certain unfortunate errors in the reproduction of the diagrams in my paper "A New Sign and its Value in the Diagnosis of Pulmonary Tubercle," which appeared in your issue of August 21st. Figs. 1 and 3 have been interchanged, so that it is Fig. 3 (which should be Fig. 1) that illustrates the upper and lower areas of percussion impairment about which the paper chiefly concerns itself. In addition, Fig. 4 should have contained, as well as a front view, a back view identical with that in Fig. 3.

I am, Sir, yours faithfully,

Queen Anne-street, W., August 23rd, 1915. CLIVE RIVIERE.

THE LATE DR. MARCUS J. EUSTACE.

To the Editor of THE LANCET.

SIR,—I was deeply touched to read the notice in THE LANCET of August 21st of the death of Dr. Marcus John Eustace. May I add my tribute to his memory? Though it is now some 17 years since I last saw him, he was formerly my colleague for six years in Baluchistan, and a very good friend. We worked together in the same hospital and lived together in the same bungalow. He enjoyed a wide popularity which was largely due to his genial manner and constant cheerfulness. Life was full of interest to him, for he had varied talent and was resourceful. As a surgeon he was an enterprising operator. In his leisure time I have known him as a successful fruit-grower, doing his own grafting and budding. The first telephone that I ever used was one made by him to connect our bungalow with our hospital; it was quite useful, though it consisted of absolutely nothing but a couple of empty cigar boxes and a bit of string. He was one of my lieutenants when I commanded the Baluchistan Rifle Volunteers; and as a surgeon he accompanied Sir Henry MacMahon in his mission to Seistan. As I look back to the days of twenty or five-and-twenty years ago there arises still the vision of Irish humour, overflowing geniality, and imperturbable good spirits.

I am, Sir, yours faithfully,

S. W. SUTTON, M.D. Lond.

Bishop's Caundle Rectory, Sherborne, August 23rd, 1915.

SHELL SHOCK.

To the Editor of THE LANCET.

SIR,—I notice there is a good deal of correspondence in the papers about "shell shock." Permit me to mention an incident with reference to the old belief that the wind of a round shot was often fatal to show that it was in former days compression of the air, and doubtless is so now, which kills.

In July, 1882, I was a special service officer on the staff of Admiral Sir Beauchamp Seymour on the *Invincible*, when we were attacking the Mex Forts at Alexandria, distant 1500 yards. I happened to be

in the main top giving the ranges over the smoke of our guns. Several heavy round shot from the great smooth bore guns came pretty close. They did not trouble me, but one heavy projectile came so close, and with a rush like a railway-train passing me, that I staggered back. It was so close that it cut the signal halyards, and therefore must have been within a few feet. I at once came to the conclusion that it must have been a shell from one of the two 18-ton rifled guns which I knew were in the battery, and that I did not feel the wind of it because, being a rifled projectile, it, so to say, bored its way through the air instead of compressing it as round shot were believed to do, with fatal effect to anyone close to.

I have had a good deal of experience of round shot and shell fire, which began in the Crimea and ended near Soissons. I had a special pass then to get information if possible of a nephew wounded and missing; but the only projectile in which I ever took special interest was the big shell in 1882. One of my sons is an invalid from concussion of the brain from a shell bursting just as it cleared his head; but that is another matter.

I am, Sir, yours faithfully,

ALEX. B. TULLOCH,

Major-General, retired.

Glaslyn Court, Abergavenny, August 26th, 1915.

THE NEGLECT OF VACCINATION.

To the Editor of THE LANCET.

SIR,—For some time vaccinations have been steadily decreasing in numbers, owing to the ease with which the so-called conscientious objectors evade the law. Now we public vaccinators are faced with further losses in bonuses. For four years past no Local Government Board inspection has taken place in this district, and no explanation of this neglect can be elicited.

I am, Sir, yours faithfully,

August 27th, 1915.

PUBLIC VACCINATOR.

* * The Local Government Board inspections for purposes of award have been delayed on account of other pressing duties which have devolved upon the Medical Department of the Board, partly in connexion with the war. At present a number of unions are under inspection, and we believe that before long the arrears will to a large extent have been overtaken and the long delayed grants awarded to the public vaccinators whose work is of a sufficiently high class to merit them.—ED. L.

PRESENTATION TO PROFESSOR J. RUTHERFORD MORISON.—On August 18th an interesting ceremony took place in one of the operating theatres of the Royal Infirmary, Newcastle-upon-Tyne. On that occasion as many of Professor Morison's house surgeons as could be present met for the purpose of unveiling a life-size medallion in bronze which had been erected in the theatre where he worked to commemorate his retirement from the acting staff of the infirmary. The medallion bore the inscription:—

Rutherford Morison.
A tribute from his House-surgeons,
1888-1913.

In making the presentation, Mr. G. Grey Turner said that it was with the greatest pleasure that Professor Morison was asked to accept that medallion "as a token of admiration and gratitude for his invaluable teaching, esteem for his worth, and affection for those qualities which had endeared him to all." In accepting the memorial, Professor Morison said it was difficult for him to express his thanks, but he felt that if his house surgeons had learnt as many lessons from him as he had done from them, it might after all be worth while to commemorate their association. On the same occasion Dr. Alfred Parkin asked Professor Morison to accept a group photograph of his house surgeons as a personal memento of their very happy association with their teacher.