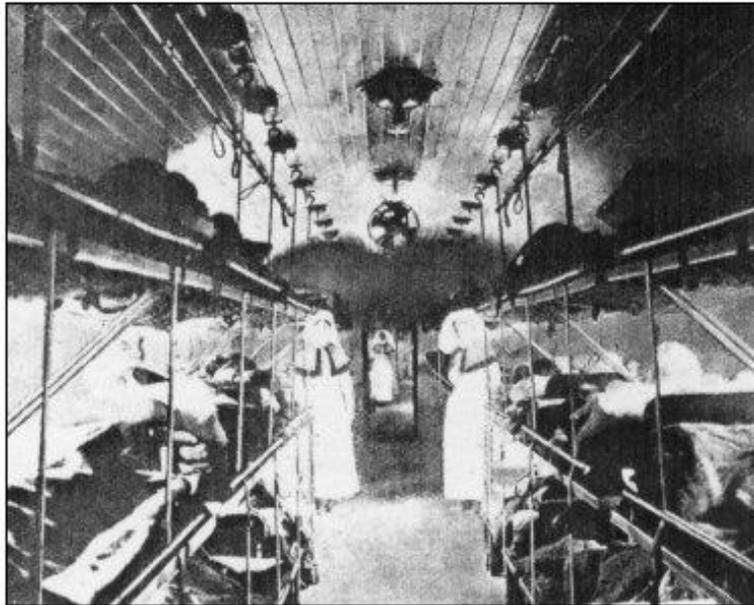


THE MEDICINE OF WAR, by Dr Gillian Sheehan

As Rudyard Kipling knew well, in war it has been, and still is, common for more people to die of disease than from bombs or bullets. Dr Gillian Sheehan recalls and explains some of the many mentions of disease in his stories of war and peace.



A hospital train during the South African War

TYPHOID

Typhoid Fever used to be called Enteric Fever because it was thought to be a disease that infected the intestine alone. “Typhus” means a confused or clouded state of mind. At one time enteric and typhus fevers were regarded as being the same condition. When they were separated enteric fever became known as typhoid, or the typhus-like fever.

In ‘New Brooms’, (1888), *Abaft the Funnel*, Kipling said ‘there was typhus among the women in the zenana....’ The illness appears to have originated from mud ‘scooped from a green and smelly tank’ and was water-borne. Kipling must have been using ‘typhus’ in the old sense of the word, whereas nowadays, in this case, it would be called ‘typhoid’.

There are several varieties of *Salmonella* bacilli capable of causing typhoid. The most important of these is *Salmonella typhosa*. The infection can be spread in water contaminated with sewage or in food or drink infected by the contaminated fingers of a nurse or typhoid carrier. When the bacilli are very fresh it can even be dust-borne.

A typhoid carrier is a person who has recovered from typhoid, but still harbours the salmonella bacilli, usually in the gall-bladder, where they may live for years, being excreted in the stools and sometimes in the urine. When the bacilli are broken down in the blood stream they release a toxin which causes fever, headache, lethargy and a clouding of the mind (typhus means a cloud). There may also be very severe ulceration of the intestine. This may cause haemorrhage or the intestine may perforate leading to peritonitis.ⁱ

John Lockwood Kipling had typhoid in 1876 and missed the visit of the Prince of Wales.

In a letter to Edith Macdonald in April 1884, Kipling was anxious for his mother and Trix, his sister, to go to Dalhousie, the hill-station, as soon as possible because

‘measles, typhoid and smallpox among the natives in April are pretty certain to grow unpleasant in July and August’.ⁱⁱ

In 1891, Kipling’s friend Wolcott Balestier died of typhoid in Dresden.

In ‘By Word of Mouth’, (1887), *Plain Tales from the Hills*, Mrs Dumoise ‘went down’ with typhoid and ‘five days were wasted’ before her husband, the civil surgeon at Meridhi,

‘realised she was burning with something worse than simple fever, and three days more passed before he ventured to call on Mrs Shute the Engineer’s wife and timidly speak about his trouble’.

With an epidemic of typhoid in the Station Dumoise was up to his ears in work and worry, and was in no way to blame for not realising what was wrong with his wife. The onset of typhoid is gradual and the sufferer may initially put up with a feeling of general malaise, aching limbs, headache, loss of appetite and chilliness. After about a week they also develop pyrexia and diarrhoea and have to go to bed. Usually the fever lasts three weeks, but sometimes much longer.

‘Nearly every household in India knows that Doctors are very helpless in typhoid. The battle must be fought out between Death and the Nurses minute by minute and degree by degree.’ⁱⁱⁱ

Kipling was quite right. According to William Boyd,

‘the treatment of typhoid fever is largely a matter of good nursing and it is much more important to have a good nurse than a good doctor.’

The nurse’s duties were to prevent the spread of infection to herself and others, and to care for the patient. This involved cold sponging, cold baths or cold packs to bring the temperature down, prevention of bed-sores, oral hygiene, and recognition of the symptoms of intestinal perforation.^{iv}

In 'The Parting of the Columns', (1903), *The Five Nations*, Kipling wrote

Our blood 'as truly mixed with yours - all down the Red Cross train.
We've bit the same thermometer in Bloeming-typhoidtein.
We've 'ad the same old temp'rature - the same relapses too,
The same old saw-backed fever chart. Good-bye - good luck to you !^v

The fever chart is a record of the temperature of the patient taken at regular intervals. In typhoid the temperature will rise and then fall many times accounting for the 'saw-backed' appearance of the fever chart. Kipling must have gained considerable knowledge and experience of typhoid when he was in South Africa during the Boer War. While he was working on the staff of the *Friend* at Bloemfontein, Lester Ralph, the grown-up son of one of Kipling's co-editors on the *Friend*, went down with fever. The water supply had been cut by the Boers. They managed to bring his temperature down from 103°F to 99°F by sponging him with alcohol, possibly surgical spirit. Then they got him to the hospital which was 'rank with typhoid'. Luckily he was found to be suffering from Veldt Fever^{vi}, and not typhoid. In *Something of Myself*, Kipling estimated that there must have been eight thousand cases of typhoid in Bloemfontein. This was close to the official estimates.

Who recalls the noontide and the funerals through the market,
(Blanket-hidden bodies, flagless, followed by the flies?)
And the footsore firing-party, and the dust and stench and staleness,
And the faces of the Sisters and the glory in their eyes?

[From 'Dirge of Dead Sisters', (1902).]

Conan Doyle, creator of Sherlock Holmes, worked in a hospital at Bloemfontein. This was on a cricket field and the pavilion was their main ward. They also had several tents. When the Boers cut the water supply (20 miles away) the old wells in the town had to be used, resulting in typhoid and the loss of 5000 lives. In his autobiography he wrote:

'The outbreak was a terrible one. It was softened down for public consumption and the press messages were heavily censored, but we lived in the midst of death - and death in its vilest, filthiest form. Our accommodation was for fifty patients, but 120 were precipitated upon us, and the floor was littered between the beds with sick and often dying men. Our linen and utensils were never calculated for such a number, and as the nature of the disease causes constant pollution of the most dangerous character and with the vilest effluvia, one can imagine how dreadful was the situation. The worst surgical ward after a battle would be a clean place compared to that pavilion. At one end was a stage with a scene set for 'HMS Pinafore'. This was turned into latrines for those who could stagger so far. The rest did the best they could, and we did the best we could in turn.....In the very worst of it two nursing sisters appeared among us, and never shall I forget what angels of light they appeared, or how they nursed those poor boys, swaddling them like babies and meeting every want with gentle courage. Thank God, they both came through safe.....

Our hospital was no worse off than the others, and as there were many of them the general condition of the town was very bad. Coffins were out of the question, and the men were lowered in their brown blankets into shallow graves at the average of sixty a day. A sickening smell came from the stricken town. Once when I had ridden out to get an hour or two of change, and was at least six miles from the town the wind changed and the smell was all around me.

You could smell Bloemfontein long before you could see it. Even now if I felt that low deathly smell, compounded of disease and disinfectants my heart would sink within me.’^{vii}

Mary Kingsley volunteered to help and was sent to nurse Boer prisoners at the Palace Barracks Hospital at Simonstown. Kipling met her when she started work there. (He had met her previously). Most of the patients had typhoid. A few had measles and some had been wounded. The death rate was very high. In an attempt to ward off infection, she smoked, even when on duty, and drank wine in the evenings. But just six weeks after starting work there she knew she had typhoid. This caused an intestinal perforation requiring emergency surgery. She survived the operation but died of heart failure two days later. She was 37 years old. Kipling referred to her in ‘The Dirge of Dead Sisters’, *The Five Nations*, (1903), as ‘Her that fell at Simonstown in service on our foes’.^{viii}

After the Boer War, Henry Edward Leigh Canney, who took his MD in London in 1890, campaigned for measures to prevent typhoid in the army. Kipling wrote to him in September 1903 :

‘Some years ago the average length of service among typhoid cases was 1 year 11 months; the majority of the dead being little over 22 years. You, of course, know how the curse of typhoid drops as men get older till one arrives at what is more or less accurately called the ‘practically immune age’. (I fancy I must have reached it, because I drank stuff at Bloemfontein that ought to have poisoned me out of hand.)’^{ix}

In November 1908, in a letter to William Heinemann, Kipling wrote:

‘I would see ever so many people damned before I inoculated myself for enteric. Have you seen men after the treatment ? I’ve watched a whole company of CIVs (City Imperial Volunteers seen in S Africa). Besides you, like me, are over 40 and will not lightly catch disease....’^x

The typhoid vaccine used on the CIVs must have had severe side effects, probably pyrexia, nausea and vomiting. [Almroth](#) Wright had developed the vaccine. At the start of the Boer War he was reluctantly given permission by the War Office to inoculate ‘such men as should voluntarily present themselves’. Only 14,628 volunteered for vaccination out of a total of 328,244. During the three year campaign in S Africa there were nearly 58,000 cases of typhoid fever amongst the British troops, and 9000 deaths.

During the three weeks' voyage from Tilbury to Cape Town, stopping at Queenstown to pick up the Royal Scots Militia, Conan Doyle who was going to work (unpaid) as a doctor in South Africa, availed himself of the 'enteric inoculation'. In his memoirs he wrote:

'The monotony of the three weeks' voyage was broken only by ...an enteric inoculation, which was voluntary but should have been compulsory, for even as it was it saved many lives, and I am not sure that my own was not among them. The Great War has shown for ever how effective this treatment is. We lost more from enteric than from the bullet in South Africa, and it is sad to think that nearly all could have been saved had Almroth Wright's discovery been properly appreciated. His brother was on board, I remember - an officer of Sappers - and took the virus particularly badly, though all of us were quite bad enough, for the right dose had not yet been accurately determined.'^{xi}

In the First World War it was the policy to vaccinate all troops being sent abroad. In 1916 a new typhoid-paratyphoid A+B Vaccine was introduced. As a result deaths from typhoid were only 1 per cent of those during the Boer War.^{xii}

In *The New Army In Training*, (1915), Kipling reported seeing a battalion from Bolton which had been inoculated for typhoid and 'Consequently it wasn't up to what it would be in a little time'.

Kipling's idea of a 'practically immune age', and of not catching disease lightly after the age of forty, may be due to the fact that most people who had not succumbed to the disease by then may have had a sub-clinical infection or been misdiagnosed. There were at least two instances during his life when he could have had typhoid. After the Rawalpindi Durbar in March 1885, Kipling went to Lahore and then to Simla where he had a bout of 'dysentery'. This could have been typhoid contracted while he was reporting on the Durbar. Four years later he had another 'touch of dysentery' while visiting Yellowstone. This could also have been typhoid.

DYSENTERY

Hippocrates described dysentery as diarrhoea characterized by the presence of blood and pus accompanied by straining and tenesmus.^{xiii} Bacillary dysentery is caused by the *Shigella* group of bacteria. Amoebic dysentery is caused by *Entamoeba histolytica*.^{xiv} In 1859 living amoeba were discovered in the stools of infected patients. In 1875 Frederick Losch identified *Entamoeba histolytica*. But it was not identified as the cause of amoebiasis and amoebic dysentery until 1891.^{xv} In 1898 Kiyoshi Shigu first isolated one of the bacteria that causes bacillary dysentery.^{xvi} But, without the aid of a laboratory it must have been extremely difficult to know what had caused the illness. The predisposing factors recorded by William Moore in the 1870s included

A tropical climate; exposure to sudden changes in temperature; imprudent change of clothing, particularly of that worn over the bowels; drinking water containing mineral or vegetable impurities; irregularities in diet; famine and want; lying on the damp ground; residence in ill-ventilated, imperfectly drained, and badly located habitations; and a scorbutic condition of the system from the want of fresh vegetables.^{xvii}

Malaria and pregnancy were also thought to predispose one to dysentery.

Bacillary Dysentery occurs in the tropics and also anywhere men are crowded together under poor hygienic conditions. Infection is acquired by eating contaminated food or water, as in the case of typhoid. It may have been picked up from a patient suffering from the disease or from a carrier. It may be of any grade of severity from symptomless to fatal and it may last a week or so, or may drag on for several months.^{xviii}

Amoebic dysentery is also a disease of the tropics, but can also occur in temperate regions. It is spread from person to person or by flies passing from infected material to food. The stools of chronic carriers contain the cysts of *Entamoeba histolytica*. These cysts can survive outside the body for several weeks in damp shaded areas and may contaminate water supplies. The illness is of gradual onset and may last several months or even years.^{xix}

In 'The Taking of Lungtungpen', (1887), *Plain Tales From The Hills*, Mulvaney was invalided to India (from Burma) with dysentery, shortly after Lungtungpen was taken. If he got the infection during the taking of Lungtungpen, he may have had bacillary rather than amoebic dysentery, as the incubation period for amoebic is 10 to 90 days.

In 'The Drums of the Fore and Aft', (1888), *Wee Willie Winkie*,

the Fore and Aft studied animalculae in water, and developed a few cases of dysentery in their study.

The cysts of *entamoeba histolytica* found in infected water are 5 to 20 microns in diameter. (A micron is one thousandth part of a millimetre.)^{xx} So, to see them the Fore and Aft would have had to use a microscope ! They could have been infected with either type of dysentery from the water. The animalculae they saw in the water, whether or not they used a microscope, are probably just an indication that the water was polluted with several different kinds of filth.

Whatever the cause of the dysentery, Mulvaney and those in the Fore and Aft would have been treated in the same way. Today specific antibiotics are used for each condition when it had been identified by laboratory tests. In the 1880s the early stages of dysentery were treated with fomentations or turpentine stupe^{xxi}, and Dover's powder^{xxii}. The patient had to rest 'in the horizontal posture' and was fed on broths and farinaceous gruels without any solid material. If the condition got worse chlorodyne^{xxiii} and ipecacuanha were given and a mustard poultice applied 'over the pit of the stomach'.

Rectal injections of starch and water were also given. If there were no improvement in the patient's condition after four days of this treatment, pills made of ipecacuanha, opium and blue pill^{xxiv} were given. Laudanum was added to each injection. For those who survived but developed chronic dysentery, many treatments were available depending on the symptoms. Moore advised:

Many cases of dysentery are, however, little benefited by medicines. If a patient with chronic dysentery is living in a malarious country, then probably no treatment will prove of benefit until he is removed from the influence of such an atmosphere.

What the patient really needed was

rest, quiet, well-ventilated sleeping apartments, good sick-cookery and freedom from exposure to vicissitudes of temperature..^{xxv}

In his autobiography *Something of Myself*, (1937), Kipling, recalling his time in South Africa during the Boer War, wrote

To typhoid was added dysentery, the smell of which is even more depressing than the stench of human carrion. One could wind the dysentery tents a mile off. And remember that, till we planted disease, the vast sun-baked land was antiseptic and sterilised - so much so that a clean abdominal Mauser-wound often entailed no more than a week of abstention from solid food. I found this out on a hospital- train, where I had to head off a mob of angry 'abdominals' from regular rations. This was when we were picking up casualties after a small affair called Paardeberg, and the lists - really about two thousand - were carefully minimised to save the English public from 'shock'.^{xxvi}

TYPHUS

Typhus is caused by *Rickettsia prowazekii*. (A rickettsia is an organism having some of the properties of a bacterium and some of a virus). It parasitizes the intestine of the human body louse, *pediculus humanus* and is passed in the louse faeces. These enter the human through scratches and abrasions.

Typhus is thought to have originated in the Near East during the Crusades. It can cause epidemics wherever people are crowded together with little or no hygiene. It has been called 'famine fever', 'gaol fever' and 'ship's fever'. In the past it has wiped out armies in the field and even changed the course of world history. Having reached Moscow in 1812, Napoleon's *grand armee* suffered a major epidemic of typhus which killed thousands. It was responsible for many deaths during the Irish Famine in the 1840s. During the First World War it was especially prevalent in the Balkans. Typhus has an acute onset with headache, high fever and a skin rash.

There may be tracheobronchitis and bronchopneumonia. These are extreme weakness and prostration. Fingers and toes may become gangrenous and very smelly. Delirium and later, stupor may develop.^{xxvii}

In 'Brother Square-Toes', (1910), *Rewards and Fairies*, Pharoah Lee gets 'a dose of ship's fever' and is treated with 'bleeding and pills', but he doesn't 'remember much of any account for the next few weeks'. Formerly enteric and typhus were mistakenly regarded as the same disease. When they were separated enteric was renamed typhoid, or the typhus-like fever.^{xxviii}

In 'The Trouble with Curtis who Lodged in the Basement', 'Early Verse', Kipling says that the woman died from 'a bad case of typhus':

I wonder why she went so fast.
I'm sure she ought to have lived a while,
For the doctor said, with his sawdust smile,
'She's bound to go - but a week she'll last.'

He goes on to describe the body of Lottie, the dead woman:

All so horrible! All so strange!
She can't have altered to this so quickly!
Her colour was always a little sickly,
But what a change! Oh what a change!

The straight, lax lines by the curve of the lips,
The stretched wax skin where no colour lingers,
The blackening tips of her little fingers,
And the hollow under the finger tips.

TRENCH FEVER

'Trench Fever' was the commonest of all the diseases affecting troops in France during the First World War. It is caused by *Rickettsia quintana*. As with typhus it is carried by the body louse and is transmitted to man when scratches and abrasions become contaminated with louse faeces. But, unlike typhus, mortality is so low that very little is known of the lesions caused by the disease in man. It is an acute febrile illness with recurring attacks of fever occurring at five- or six-day intervals. It causes prostration and very severe pains in the muscles and bones (shin-bone fever). There may be a rash.^{xxix}

In 'A Friend of the Family', (1924), *Debits and Credits*, Bevin gets trench fever which he described as:

'that nice taste in the mouth and the nice temperature they call trench fever, an' I had to feel inside my head for the meanin' of every order I gave or was responsible for executin'.

TRENCH FOOT

'Trench Foot' was caused by standing in cold, waterlogged trenches in wet footwear and was a very common problem in the trenches during the Great War.

Very mild trench foot resembles chilblains. When severe it can be as bad as frost-bite. But freezing conditions are not required for it to develop. A day standing in cold wet boots and socks can be sufficient to cause it. Initially the feet become numb. This may be followed by colour changes when they look blue or red. Then swelling develops. If untreated they blister and ulcerate. The ulcers become infected by fungi or bacteria already present in socks and shoes as well as in the water-logged trench. Eventually they may become gangrenous.

The treatment prescribed was to dry the feet and change into dry socks twice a day. Also a grease made from whale oil was rubbed onto the feet in an attempt to protect them from cold and wet. This didn't help much and regular foot inspections by the officers were thought to be of more value. If treated properly the problem could be cleared up completely, but accompanied by severe pain while sensation returned. Feet once affected were always more liable to injury from cold and damp conditions.^{xxx}

During the Great War Elsie and Carrie Kipling both knitted socks for soldiers in the Irish Guards. They also made shirts and Kipling drew a tailor's label for 'C Kipling & Co, Shirtmakers to H.M. Regiment of Irish Guards'. Apparently the socks they made had a double heel, which would have made them last longer, and a 'secret French pattern toe'.^{xxxii}

MENINGITIS

The membranes that cover the brain and spinal cord are called meninges. Meningitis occurs when they become inflamed. Meningitis may be caused by various bacteria, of which the commonest are meningococci, streptococci, pneumococci, and tubercule bacilli. It may also be due to viruses.

In 'The Gardener', (1925), *Debits and Credits*,

Half of Michael's battalion was breeding meningitis through living overcrowdedly in damp tents.

Michael's battalion would have been infected with meningococcal meningitis. When meningitis occurs in an epidemic, this is the responsible bacterium. The infection is spread by carriers who normally have the meningococcus in their noses and throats, but are not made ill by it. The overcrowding in the tents would have aided the spread of the infection.

Meningococcal meningitis is sometimes called cerebro-spinal meningitis although other forms of meningitis also affect the meninges covering the spinal cord. When the meningococci invade the bloodstream, the patient may become gravely ill with high temperature and a widespread rash of tiny spots (petechial) sometimes accompanied by areas of apparent bruising (ecchymosis). For this reason it can be called 'spotted fever'.^{xxxii}

Arthur, Jenny Madehurst's child in 'They', (1904), *Traffics And Discoveries*, has cerebro-spinal meningitis and dies in 2 days.

ANTHRAX

Anthrax was not used as a biological weapon against humans during the Great War. The following are two references to Anthrax in Kipling's works: In 'The Rout of the White Hussars', (1888), *Plain Tales From The Hills*, the horse supposed to be the Drum Horse was buried in the place where the anthrax cases were cremated.

In 'My Lord the Elephant', (1892), *Many Inventions*, Learoyd put his kennel into quarantine 'at the back of the furnace where they cremate the anthrax cases'. Animals that died from anthrax were usually cremated or buried in quicklime because the spores of anthrax can last in the ground for several years. They can also survive in boiling water for 10 minutes.^{xxxiii}

ⁱ Boyd, William, *A Textbook of Pathology*, Lea & Febiger, 8th edition, 1973, p.327-330.

ⁱⁱ Pinney, T, editor, *The Letters of Rudyard Kipling*, Vol.1, p.61.

ⁱⁱⁱ 'By Word of Mouth', (*Plain Tales From The Hills*).

^{iv} Boyd, William, *Introduction to Medical Science*, H Kimpton, 2nd edition, 1941, p.178.

^v *The Definitive Edition of Rudyard Kipling's Verse*, Hodder & Stoughton, April 1982, p.469.

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- vi Veldt Fever was probably bacillary dysentery.
- vii Doyle, Conan, *Memories and Adventures*, Oxford University Press, 1989, p.162.
- viii Frank, Catherine, *A Voyager Out*, Corgi, 1988, p.320- 321.
- ix *Letters*, Vol.3, p.139-140.
- x *Letters*, Vol.3, p.345.
- xi Doyle, Conan, *Memories and Adventures*, p.159.
- xii Coakley, Davis, *Irish Masters of Medicine*, Town House, 1992, p.246. And *A History of Medicine*, CD-ROM, Focus Essential, Flag Tower.
- xiii Boyd, William, *A Textbook of Pathology*, p.829.
- xiv Boyd, William, *A Textbook of Pathology*, p.331.
- xv Stamp, L. Dudley, *The Geography of Life and Death*, Fontana, 1964, p.56-7.
- xvi Curtin, Philip D, *Death By Migration*, Cambridge University Press, 1989, p.149.
- xvii Moore, William, *A Manual of Family Medicine and Hygiene for India*, Sri Satguru Publications, 1989, p.166.
- xviii Boyd, William, *Introduction to Medical Science*, p.179-180.
- xix Boyd, William, *A Textbook of Pathology*, p.829.
- xx Gould, *Medical Dictionary*, Lewis, 4th edition, 1935.
- xxi Fomentations were pieces of flannel soaked in hot water ‘so hot as to be grateful to

the patient' which were applied over the tender part. A turpentine stupe was a piece of lint or flannel saturated with spirits of turpentine and placed over the painful part for an hour or until it became too painful. It caused redness without blistering any but 'a very tender skin'. As 17, p.645 and p.651.

xxii Dover's Powder contains ipecacuanha and opium.

xxiii Chlorodyne was a mixture of chloroform and morphine

xxiv Blue Pill contained 33g Mercury, 14g syrup, 15g liquid glucose, 5g glycerin and 33g powdered liquorice. It was used as a purgative. Martindale, *Extra Pharmacopoeia*, Pharmaceutical Press, twenty-fifth edition, 1967, p.763.

xxv Moore, p.168-171.

xxvi *Something of Myself*, edited by Thomas Pinney, Cambridge University Press, 1990, p.155.

xxvii Boyd, William, *A Textbook of Pathology*, p.395-6, and Porter, Roy, *The Greatest Benefit to Mankind*, Fontana Press, 1999, p.26-7.

xxviii Breen, Gerald. E, *Essentials of Fevers*, E&S Livingstone, 2nd Edition, 1948, p.318-9.

xxix Boyd, William, *A Textbook of Pathology*, p.398.

xxx Andrews, George Clinton, *Diseases of the Skin*, W B Saunders & Co, Philadelphia and London, 1954. Also www.spartacus.schoolnet.co.uk and www.wikipedia.org

xxxi *Letters*, Vol.4, p.266.

xxxii Boyd, William, *A Textbook of Pathology*, p.322 and As 4, p.289-290.

xxxiii Boyd, William, *A Textbook of Pathology*, p.365