

but for safety I made some fresh smears of the blood for him to take to Sir John McFadyean. Later I received word of confirmation from Dr. Vevers, who said he had heard of the fact from Professor Wooldridge. The following morning the cultures showed unmistakably the nature of the infection, and confirmed still further my suspicions of the smears. To be brief, the tissues, which have now been cut and stained, show the condition very clearly.

To finish with the question of the elephants first. In neither case did the intestine show any inflammation at all, and the probability of their having been infected by mouth was slight; sections of the liver, moreover, show clearly that the portal veins contain practically no bacilli, whereas the branches of the hepatic artery are crowded with them. This, I think, can only be explained by the fact that the systemic vessels carried the infection from the skin or the lungs, and not that the infection gained entrance through the alimentary tract.

In spite of the absence of signs of intestinal infection, Dr. Vevers suggested that the oilcake supplied to the elephants should be examined bacterially. It was quite possible that, if infected, the oilcake might be trodden upon and crushed, and any surface wound become infected by the animals lying on it. In neither case was there any sore found on the feet, which were carefully examined. Several cultures were put up from the oilcake and from the box in which the cake was kept, but with negative results.

On January 1st cultures were made from fissures in the skin of the remaining five elephants, on the slender chance of finding a local infection in any of them, but all proved negative, and all are well at present. The next suggestion, for which also I am indebted to Dr. Vevers, was that the "pig-oil" with which the elephants are rubbed from time to time (and they had in fact been rubbed on December 18th) might be contaminated. Cultures were therefore put up from the few drops remaining in the tin which had been used, and also cultures from a fresh tin opened for this purpose. The second proved to be quite sterile, and from the first no harmful organisms were grown, merely such as might gain entrance from exposure to the air. There were no anthrax colonies. Another culture, put up later, merely confirmed these findings.

So much for the elephant side of the question. By December 31st all we could state definitely was that the second elephant, "Sundermalah," had died from anthrax; the case against the first being the same was possible, but not proven.

Turning now to the human aspect. On December 30th, in view of the results of the examination of the smears from "Sundermalah," and of the cultures, all those who had been in contact with either of the cases were examined for cuts, sores, etc. P., B., and L. were found to have small cuts or fissures on their hands, and W. a spot (? acne) on the face. Smears and cultures were put up from these. From P. there grew colonies of *Staphylococcus albus* and *Staph. aureus*; from B. and L. colonies of *Staph. albus* only; from W. colonies of *Staph. albus*, *aureus*, and *citreus*.

On January 3rd, 1927, B. returned with a sore on the wrist (having started, it appears, in a hair follicle). This was a papule becoming vesicular with a haemorrhagic periphery, the whole rather smaller than a threepenny piece. A culture was taken from this and also a smear made. The latter showed anthrax bacilli on staining. He was sent to hospital, and the culture, which had grown abundantly by the following day, was sent, on the instructions of Colonel Monckton Copeman, F.R.S.,<sup>1</sup> to Dr. Arthur Eastwood, the bacteriologist of the Ministry of Health, who later wrote to me confirming the fact of its being the suspected *B. anthracis*.

B. had not come into contact in any way with the second elephant, only with the first—"Indiarani"—thus affording proof that the first case had been one of anthrax and replacing our suspicion by certainty. He had first noticed the spot on December 30th or 31st, thus giving the incubation period of six to seven days.

On January 5th Mr. W. Lawrence, my assistant, who had a great deal to do with the second autopsy (December 29th), called attention to a small red spot on his arm which he had noticed the previous evening (January 4th). There was a second similar spot about three inches above this; both were hair-follicle lesions. Serum from these was examined by smear, which revealed the *B. anthracis*, and cultures put up showed abundant growth the following morning. He also was sent to hospital, and a subculture having been taken, the original was sent to Dr. Eastwood, who again confirmed our work. The incubation period from the date of the second autopsy was again six days.

On the same day (January 5th) G., the boy who came to

<sup>1</sup> After the diagnosis of anthrax had been confirmed the case was reported to the Ministry of Health, who delegated Colonel Monckton Copeman to take charge from the point of view of public health. [Secretary, Zoological Society of London.]

cart away the remains of the bodies, presented himself with a sore on his arm which had appeared on the previous day. When seen by me it was very small, hardly larger than a hempseed, and had a slight ring of oedema (whether this was part of the actual lesion itself one cannot say; he said that he had been "squeezing the place that morning"). Smears from it showed bacilli in considerable numbers, giving the characteristic picture by McFadyean's method of staining, and the boy was sent to hospital; the culture confirmed the smear the next morning.

On January 6th Mr. F., who works for Mr. G., came up complaining of a "boil" on his right forearm which he had had for the previous "two or three days." There was a definite lymphangitis extending from this up the arm, and the site of the inflammation was painful (the "spots" in the other three were, so the patients said, quite painless). Smears taken from the serous discharge at the edge of the cellulitis showed only staphylococci and streptococci, but for safety a culture was put up and he was given an injection of anti-anthrax serum. The following morning there was a growth of staphylococci and streptococci, and *B. anthracis*, and this patient also was sent to hospital.

There have been no further cases, to my knowledge, either among the human contacts or among the animals.

#### CONCLUSIONS.

The investigation is of particular interest as showing:

1. That infection may so readily occur via a hair follicle, when all care has been taken to seal cuts, fissures, or more open wounds. (In this connexion I may mention that the second assistant, C., gave himself a fairly deep cut on the occasion of the second autopsy, but this was treated at once, and he has shown no signs of any infection.)

2. That the incubation period is six days, as evidenced by two of the cases definitely, while G.'s arose six days after contact with the second elephant. In F.'s case nothing can be inferred; he was working at Mr. G.'s, and might have become infected at any time after the death of the first elephant.

3. That the initial sore is quite painless, and in the earlier days might easily be overlooked.

There still remains the mystery as to the source whence the elephants themselves became infected.

## Roba et Vetera.

### DR. JOHN LEYDEN, ORIENTALIST.

ONE of the accusations brought against the old East India Company was that it sometimes put square pegs into round holes and not infrequently showed favouritism. One instance that has sometimes been quoted is that of the Orientalist, John Leyden, and even his biographer, Thomas Brown, seems to admit the truth of the accusation.<sup>1</sup> It is true that Leyden had never seriously studied medicine, but he had attended some classes during the three years previous to his appointment to India, with a vague notion of taking up medicine if both the Church and literature failed him.

John Leyden, who was born in 1775, entered Edinburgh University at the age of 15, and after completing his arts course joined the divinity classes in 1793, went to St. Andrews in 1797, and was ordained licentiate of the Church of Scotland in 1798. He met with no great success as a preacher, but was more successful in literature; he collaborated with Scott in the production of *Border Minstrelsy*, and did much other miscellaneous literary work, including the compilation of a history of the exploration of Africa, published in 1799. Reading accounts of the travels of Mungo Park (an ex-surgeon of the East India Company), he was fired by the desire to imitate him, and applied to the Sierra Leone Company. His friends, however, persuaded him that he would find greater scope for his linguistic talents in the East, and made interest with

<sup>1</sup> We take the particulars on which this note is founded from Thomas Brown's *Memoir* prefixed to Leyden's poems (Nimmo, London and Edinburgh, 1875) and from official records.

Henry Dundas, President of the Board of Control (created Lord Melville in 1802), for an appointment in the Company's service. The only appointment for the year remaining unallotted was one as assistant surgeon in Madras, and the nomination to this was promised to Leyden if he could succeed in qualifying within six months. After six months' hard study he got the diploma of L.R.C.S. Edin., and obtained also the degree of M.D. from the University of St. Andrews. Leyden had already shown his capabilities as a linguist, and nowadays if he went to India would probably have been provided for in the Educational Service; but a century ago the only way in which the Company could employ a candidate was by giving him either an appointment in its covenanted civil service or a commission in the army, and the latter included the medical department.

Leyden's commission was dated by the Court as of season 1801, but he only received orders to start for India in January, 1803. He was to have sailed in the *Hindustan*, but was taken ill in London and missed his passage, fortunately for himself, for the ship was wrecked a few days after starting, with considerable loss of life. Leyden finally left England in April, 1803, and reached Madras in August, 1803. He was posted to the Presidency General Hospital, to which all assistant surgeons were sent on arrival, and the period there spent was one rather of pupillage for the study of tropical disease and of the vernacular than of practice. In 1804 he was appointed surgeon and naturalist to the commission deputed to survey Mysore and Travancore. Falling seriously ill with fever and liver disease while so employed, Sir John Malcolm, the Resident of Mysore, kept him for some time in his house, till he was strong enough to be sent down to Madras, whence he went for a sea voyage to Achin and Penang for the recovery of his health. After some months at Penang he was sent, early in 1806, to Calcutta, where he spent more than a year engaged solely in language study. In 1807 he was appointed professor of Hindustani in the College of Fort William, where the newly arrived civilians were then instructed in Indian languages, law, etc. In 1808 he was appointed judge of the 24 Parganas, the metropolitan district surrounding Calcutta. This post, however, appears to have been of an executive rather than a judicial nature, for he wrote of himself as employed at this time chiefly in hunting down robbers. In the following year he was appointed one of the Commissioners of the Court of Requests in Calcutta, and in 1810 became Assay Master of the Calcutta Mint, where he had as his assistant one destined to surpass even his own fame as an Orientalist, H. H. Wilson, who subsequently succeeded him as Assay Master.

It seemed as though Leyden's genius for languages was now to have full scope. But when an expedition was sent to reduce the Dutch settlements in Java, Lord Minto, the Governor-General, took Leyden with him as interpreter. They sailed from Calcutta on March 9th, 1811, and landed in Java on August 4th. Batavia surrendered on August 7th. Leyden, while examining manuscripts in a damp unventilated room, contracted fever, of which he died on August 27th, a few days before completing his 36th year.

While at Penang in 1805 Leyden compiled a "Dissertation of the languages and literature of the Indo-Chinese nations," which was published in *Asiatic Researches*, vol. x (1810). He also translated *Malay Annals*, published in 1821, ten years after his death; and for the British and Foreign Bible Society made translations of the Gospels into Pushtu, Baluchi, Macassar, Maldivian, and Bugis. His most important work, however, was the translation from Turki of the *Memoirs of Babar*, the first of the great Mogul emperors; this work he did not live to finish, and it was completed by William Erskine. Doubtless, if he had been spared for further usefulness, he would have accomplished far more philological work. As it is, he left but little behind him in comparison with his great powers and high reputation. He is now almost forgotten. His fame, such as it is, rests chiefly upon his earlier poetical work, written before he left Scotland, his chief poems being the series called *Scenes of Infancy*.

### THE FOUNDLING HOSPITAL SITE.

WE are informed by Dr. W. M. Fairlie (9, Mecklenburgh Square, W.C.1) that the following letter has been addressed to the Ministry of Health by a number of medical practitioners resident in the area affected by the proposal to transfer Covent Garden market to the site of the Foundling Hospital. In addition to the gardens of the hospital the estate contains several squares, which afford very welcome air spaces in that part of London. As we pointed out some months ago, evidence that the problems of Covent Garden have yet been sufficiently analysed by the appropriate persons is wanting. No doubt the trade has outgrown the present market, but the places from which the produce sold there come have not been considered adequately in relation to the best possible site. It is probably true that much of it is brought from the counties west of London, but this should be definitely ascertained. Nor is the public fully informed as to the railway depots in London to which produce from abroad is consigned. In any case it must reach Covent Garden by wagon or lorry. This makes it all the more important that in fixing the new site consideration should be given to the demand for lessening the congestion of traffic generally in London.

9, Mecklenburgh Square,  
London, W.C.1.  
5th February, 1927.

TO THE RIGHT HONOURABLE NEVILLE CHAMBERLAIN, M.P.,  
Minister of Health.

Dear Sir,

We, the undersigned medical men and women residing on the Foundling Hospital Estate, view with grave concern the growing tendency to build over the open spaces in the centre of London.

Endsleigh Gardens and Mornington Crescent have already been sold for building purposes, and a bill is to be introduced in Parliament in the ensuing session with the object of obtaining power to erect a market on the grounds of the Foundling Hospital and the adjoining squares.

This site is largely surrounded by thickly populated areas, and in its immediate vicinity are no less than seven important hospitals. Any diminution of the open spaces in this neighbourhood is bound to have an adverse effect on the health of the community.

Open spaces, by acting as natural ventilators of the surrounding streets, diminish the incidence of infectious disease. In London they have undoubtedly exercised a considerable influence in producing a low death rate and a general high standard of health. In this connexion it is worthy of note that the children of the Foundling Hospital have been, over many years, extraordinarily free from tuberculosis, no definite case having occurred during the past decade.

We would respectfully urge your consideration of the matter, and venture to suggest that the permanent preservation of the squares of the Foundling Hospital Estate would be a measure in the best interests of public health, and one which we earnestly hope may receive the sympathetic consideration of the Government.

We remain, Sir,

Your obedient servants,

C. T. BISHOP, M.B.	WM. MACLEOD, M.B.
J. CHRISTIE-ANDERSON, M.B., Ch.B., L.D.S.	E. MILLER, M.R.C.S.
D. CONSTANTIN, M.R.C.S., L.R.C.P.	C. J. O'BRIEN, M.B.
M. DIA, M.B., B.S.	J. J. O'DONNELL, L.R.C.P.I.
WM. M. FAIRLIE, M.D.	OLIVE RENDEL, M.D., M.R.C.P.
JAMES HAROLD, L.R.C.P. and S.I.	MAUDE M. RICHARDS, M.B., B.S.
A. O'DWYER KENNEDY, M.R.C.S.	J. V. REES ROBERTS, M.D., D.Sc.
D. A. D. KENNEDY, M.C., M.B., Ch.B.	ELEANOR C. THISTLETHWAITE, M.B., Ch.B.
JAMES KERR, M.D.	A. F. WHYTE, M.B., Ch.B.
EDWARD KNIGHT, M.R.C.S.	G. C. NELSON YOUNGER, M.R.C.S.
W. B. KNOBEL, M.R.C.P.	

## Scotland.

### MATERNITY AFFAIRS IN SCOTLAND.

AT the annual Committee of the Convention of Royal Burghs in Edinburgh on January 26th, it was reported that a deputation which waited on the Scottish Board of Health had been informed that the Royal Commission had contemplated the maternity services being administered by the local authorities along with other medical services, and that the Government was still considering the matter. Sir Henry Keith said that many of the women treated in homes under the control of local authorities had given a mandate to the authority to recover from the approved society the expenses of treatment up to the amount of