When the experimenter finds that his infusions germinate after boiling, the *primâ facie* probability is, that he has either applied the heat insufficiently, or has permitted extraneous infection after boiling; for this is exactly what would occur if he failed in either of these points. But if the infusions remain barren, this is a new and unexpected consequence, and carries with it the weight and cogency of a positive result. The explanation of the fertile flask is thus ready at hand; it is simply a faulty experiment; but what possible explanation can be given of the barren flask, except that supplied by the panspermic theory? When I take up one of the flasks or bulbs which have remained barren in my chamber for three or four years, though supplied with air (filtered through cotton-wool) and suitable heat, my wonder never ceases. Each one is a new experiment, every day repeated, and multiplied indefinitely; day after day I ask myself, Why does it not germinate? I compare it to a field in spring not yet sown, but ready for the reception of the seed: for if I withdraw the plug of cotton-wool and admit the dust of the air, or introduce a drop of water, all is changed; in a few hours the stillness of years gives place to life and activity. I repeat, it is the fertile flask, and not the barren flask, that wears the complexion of a failure and of a negative result.

The reluctance of some evolutionists to give up the spontaneous origin of bacteria is evidently due to the notion that this question is bound up with that of abiogenesis generally. This is a wholly erroneous idea. The question of abiogenesis will still remain after all have acquiesced in Pasteur's views of the origin of bacteria: indeed, to a logical evolutionist there would appear to be a strong *à priori* improbability in the abiogenic origin of bacteria. They were not wanted, and could not exist, on the earth's surface until after other organisms had lived and died before them. Their special function and feeding-ground lie amid the wreck of living things. And if the survival of the fittest hold good in regard to bacteria, they must be the remote progeny of less perfect organisms of the same class. What can be more perfect than their adaptability to their place and use in the order of Nature? They resist, in certain media, for considerable periods the heat of boiling water; they multiply with incredible speed; their germs survive in countless myriads in the dust of the atmosphere; they float in every drop of water on land and sea; they appear to be omnipresent and almost indestructible. Those who are in search of a case of abiogenesis, should seek among the primitive organisms—if there be any such—which can exist and grow amid inorganic elements, in the water of the sea, or the mineralised springs and streams of the land. When Pasteur says that abiogenesis is a chimera, he prudently adds, "in the present state of science"; and even thus qualified, the expression is perhaps too strong. But it is absolutely certain that up to the present time no case of abiogenesis has been presented which has stood the test of accurate investigation; nor can it be doubted that, in so far as the antiseptic treatment of disease rests on the origin of bacteria, the advocates of that treatment stand on unassailable ground.

CASE OF ANEURISM OF THE THORACIC AORTA, WITH A DISTINCT SYPHILITIC HISTORY.

By W. C. MACLEAN, C.B., M.D.,

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A MAN, thirty-seven years of age, of indifferent character and intemperate habits, of medium height (5 feet 7 inches), and very good muscular development, by trade a butcher, had served nearly twenty years, of which he had spent six-and-a-half in India, eight in the Mediterranean, and the remainder at home. In 1863, he suffered, while in India, from ague, and again from it in 1865 at home. In the same year (1865), he was for five weeks under treatment for primary syphilis, and, after an interval of two months, for secondaries. In 1866, he was treated for rheumatism and neuralgia. There are no entries recorded from 1866 to 1872, but in the latter year he was for six weeks under treatment for pneumonia; in 1873 and 1875, for bronchitis; and, without being discharged from hospital, his case was changed to one of asthma, for which he was finally invalided, arriving at Netley on October 29th, 1865. In May and June 1875, he was treated for bronchitis, and in July was taken into hospital for asthma. About the 8th July, he had for the first time hæmoptysis, which recurred from time to time before embarkation and during the voyage. This symptom was noticed after his admission, and most prominently on December 20th.

Apart from hæmoptysis, the patient suffered much on arrival from symptoms of asthma, with profuse frothy expectoration, his condition becoming aggravated or ameliorated by the weather. The hæmoptysis,

dyspnoea, hoarseness, and dorsal pain which appeared in succession, led to a diagnosis of aneurism, which became confirmed as dullness, and finally pulsation, became perceptible to the right of the sterno-clavicular articulation. Dyspnoea latterly became the most prominent, as well as the most distressing, symptom, till the 7th January, when, after a short fit of coughing, there was a gush of blood from the mouth, and death took place instantaneously.

On *post mortem* examination, both lungs were found to be in a state of apoplexy. The trachea was full of dark fluid, which had flowed into it from a small ulcerated opening, about a quarter of an inch in diameter, about two inches above the bifurcation, and slightly to the left of the middle line. The heart was small, and showed a considerable deposit of fat on its surface, and a well marked white spot. Its substance was flaccid, its cavities empty, and the left ventricle thickened. The valves were healthy. At the commencement of the arch of the aorta, just beyond the innominate, was an aneurism as large as an orange, and in its wall was an irregular opening, through which a probe could be passed into the trachea. The edges of the aneurism were firm, rounded, and well defined. The lining surface of the aorta was very irregular, marked with nodular elevations and cicatricial loss of substance in patches. The calvarium was thickened. The glans penis bore the mark of a chancre; and, in the head of each epididymis, was a nodule, partly fibrous and partly cystic.

It will be remembered that a paper was read by my colleague, Mr. Welch, Assistant Professor of Pathology at Netley, on Aortic Aneurism, before the Royal Medical and Chirurgical Society, on the 22nd of November, 1875. In this paper, Mr. Welch insisted much on the part played by syphilis in causing the degeneration of the arterial walls, terminating in aneurism, supporting his opinion by evidence derived from a careful examination of the preparations in the museum here, of the *post mortem* registers of this hospital, and his own large experience in the *post mortem* room here and elsewhere. In the course of the interesting debate which followed, my able friend Mr. Myers, of the Coldstream Guards, disputed the opinion put forward by Mr. Welch, and, as I am informed, quoted me as favouring the view supported by himself as to the exclusive, or almost exclusive, action of a faulty system of dressing and accoutring the soldier, in causing aneurisms of the thoracic and abdominal aorta. Now, it is well known that no one can be more impressed than I am with the great mischief done by the old faulty system; and those who take an interest in this subject are aware that, when it was under discussion, I did my utmost to spread a knowledge of the facts bearing on the point, not only in the medical department, but among the combatant ranks of the army, and even incurred some odium for pressing my opinions with what was regarded as excess of zeal. But if my friend Mr. Myers will refer to what I have written on the subject, he will nowhere find that I ever committed myself to the opinion that syphilis is not a factor in causing the degenerations of the great vessels so well described by Mr. Welch, and which do most certainly prepare the way for the action of the faulty system insisted on by Mr. Myers. So far from this, I read a paper, six years ago, before the Medical Society of Southampton, "On Aneurisms of the Great Vessels as seen in Soldiers", in which I brought forward evidence derived from the same sources as those from which Mr. Welch obtained his; and I quoted the observations and statistics of Dr. Davidson, one of Mr. Welch's predecessors in the pathological department here, and showed a large collection of specimens of aortic aneurisms having syphilitic histories like the case I have given above, which is typical of those usually seen at our *post mortem* examinations here. As to Mr. Myers's argument that London hospital surgeons have not been impressed by the view that syphilis is the primary cause of a certain proportion of cases of aortic aneurisms, I submit that they have not the same means of arriving at an exact opinion on such a point that we have in a great military invaliding hospitals. London hospital surgeons learn just as much or as little of the medical history of their patients as they are pleased to reveal; while in the army, as was, indeed, pointed out in the course of the debate at the Royal Medical and Chirurgical Society, we have the invaluable evidence of the medical history sheet, which tells of every admission into hospital from the date of the soldier's enlistment to that of his death or discharge.

No one knows better than Mr. Myers that soldiers are for the most part celibates by compulsion in the most vigorous years of life, when the sexual passion is most exacting in its demands on their ungoverned minds; and that the result is promiscuous intercourse with the lowest class of prostitutes, followed, where certain much abused but beneficial Acts are not in operation, by a proportionate amount of disease, of which one of the results is a proportion of degenerative disease of the coats of the great vessels, far exceeding what is seen in civil life. I by no means wish to undervalue the action of the rheumatic diathesis in the same direction, or the part played by alcohol in increasing the heart's

action, and throwing an additional strain on the diseased coats of the vessel, aided by the causes so much insisted on by Mr. Myers; but I submit that it is impossible to resist the evidence so carefully analysed by Mr. Welch, that there is, in military life at all events, an intimate association between syphilis and the degeneration of the coats of the great vessels, terminating in aneurism, of which the case given above is a typical example.

CASE OF LYMPHADENOMA IN A BOY AGED SIX YEARS, AFFECTING THE KIDNEYS, LIVER, LUNGS, AND BRAIN.*

By MARTIN G. B. OXLEY,

Physician to the Liverpool Infirmary for Children.

DR. MURCHISON, to whom we are indebted for the best account of lymphadenoma, reports a case in vol. xx of the *Pathological Society's Transactions*, and describes it as a new morbid growth composed of nuclear tissue in the intestines, liver, kidneys, lymphatic glands, and other organs.

I will refer, later on, to the remarks made by Dr. Murchison on his case reported in the twenty-first volume of the above *Transactions*. In these, he gives a very complete summary of what has been written on the subject.

A boy, aged six years, came under my notice on October 26th, 1874. His mother stated that, a year ago, he began to complain of weakness, became very thin, lost his appetite, suffered from pains of a rheumatic character in his limbs, and soon tired, leaning against a wall or sitting down frequently when at play. Previously, he had been a good walker and runner. † Six or eight months ago, he began to grow stouter, and his appetite was enormous. At the same time, he became gradually weaker, wanted to be constantly lying down, and complained of pains in the limbs. The mother and father were apparently healthy, and had two other children, both of whom were in good health. They lost one child after a short illness (probably from enteritis).

The whole body seemed swollen, the face having the appearance of dropsy; the belly was large, and felt solid, evidently from deposit of fat; the body everywhere was covered by a thick layer of adipose tissue. He was able to stand with difficulty; and, when placed on his back, could only just raise himself from the floor. He walked with a waddle and evident pain, constantly falling and hurting himself. The urine was natural, contained no albumen, and was of normal specific gravity. He continued much in this state, only gradually becoming weaker and losing the power of walking, but able to sleep and eat very well, till January 1875, when I noticed, on visiting him, that the right eye was slightly protruded, the pupil widely dilated, and that he was unable to see with it. On February 1st, the eye seemed to be less protruded, and he could see to count my fingers. His mother thought him better; but I could find no improvement in his condition. I saw him on February 19th. He was then quite blind; his conjunctiva was oedematous, protruding through the lids of the right eye. He died of exhaustion on the 25th.

Post Mortem Examination.—Under the scalp, an ecchymosis was observed over the frontal bone, just above the right orbit. On removing the skull-cap, the subarachnoid space was found distended with fluid; and, scattered over the upper surface of the brain, were small white nodules, about the size of pins' heads. At the base of the brain, the same condition of the arachnoid was observed, and also similar miliary bodies, especially in the Sylvian fissure. The floor of the skull at the anterior of the sphenoid, and towards the right orbit, was softer than usual, and could be cut with a knife. On removing the roof of the orbit, a soft white mass was seen extending into the orbit and pressing the eye forward. The optic nerve passed through the centre of this tumour. On cutting through the skin of the chest and abdomen, a layer of fat, at least half an inch to an inch thick, was divided. The mesentery was loaded with fat. There was no enlargement of its glands. The heart was normal. The left lung had soft white nodular infiltration in its posterior border. The right lung was quite healthy. The liver was very large; and throughout its substance, and on its surface, were minute nodules of the appearance found in the lung and brain. The spleen was slightly larger than usual, but appeared quite healthy. Both kidneys were about double the normal size, very pale, with the exception of a few patches, which were depressed, and of natural colour and consistence. On the surface of the pale projecting surface were

ecchymoses. The capsule peeled off readily. On section, only a small portion had the natural appearances; the remainder of the organ being pale, enlarged, and of a somewhat softer consistence than normal kidney-structure. I have under the microscope specimens of the post-orbital tumour, sections of the kidney, liver and lung, in all of which you will be able to see the new formation, consisting of round cells. In the post-orbital tumour, there is seen in one portion of the specimen

Fig. 1.—Post-orbital Tumour. $\times$ about 300.

very much the appearance figured in the diagram; the cells occupy the whole of the field; the round tinted bodies are, of course, nuclei; the cell-wall, being transparent, cannot be seen. In the kidney-specimen, you will see very much the appearances which are represented in this drawing. On the left, we have healthy kidney-structure;

Fig. 2.—Section of Kidney. $\times$ about 300. New Growth to the right; Normal Kidney Structure on the left.

ture; as we pass to the right, we have the tubular interspaces gradually being invaded by the cellular growth, and the tubes narrowed, then closed; and, on the right, we have no kidney-structure, but simply a mass of corpuscles. The growth in the liver and lung shows very much the same characters as that in the kidney. A diagram of the microscopical appearances gives a good idea of the distribution of this new growth. Thus, in the liver, we have the lobules disappearing, and this

Fig. 3.—Section of Liver, showing the New Growth in the centre of the drawing. $\times$ 215.

new cell-growth taking their place. In the lung, also, these round cells can be seen filling up the air-cells and crowding them together.

* Read before the Lancashire and Cheshire Branch.

† He had run in a race at a Sunday-school gathering, and out-ran boys older than himself.