2. Mookta, female, aged 60, Brahmin, died March 13th, 1899. Pneumonia began March 7th, 1899.

3. Bassuntia, female, aged 11, Bindee, became ill morning of March 9th, 1899, and died 1 A.M. March 10th, 1899.

4. Agnassia, female, aged 55, Brahmin, got ill on March 10th, 1899; found with pneumonia March 13th; surreptitiously removed and died in a day or two.

5. Bindsoo, male, aged 15, Kahar, became ill on March 14th, 1899, and died on March 17th, 1899, with right femoral bubo in the Medical College Hospital.

6. Soomaria, sister of Agnassia, had nursed her, and became ill on March 16th, 1899, and was sent to the Campbell Hospital, but could not be traced.

7. Name not known, male, aged 9, Sankar, was attacked on March 16th, 1899, at noon, and died at 9 P.M. the same day.

8. Kanai, above described (Case IV).

9. Dukhee, father of Kanai, was found with pneumonia and incipient right axillary bubo on March 20th, 1899; he died in Ward Plague Hospital on March 22nd, 1899.

10. Jogoo, male, aged 8, Tantee, grandson of Dukhee; he developed pneumonia on April 14th, 1899, and died on April 19th, 1899.

CASE V.—Chumroo, male, aged 40, Kurmi.

History.—The hut is one in which two plague deaths had occurred shortly before. Hari Lal G. died with a left inguinal bubo on March 27th, 1899. Chumroo, who was a coolie in a grain shop, became ill on March 24th, 1899.

Condition on March 31st, 1899.—He was fairly nourished, but presented leucoderma on the scalp, upper and lower extremities, and several patches on the chest. He talked freely, speech not being at all affected. He could move about and sit up with ease. The tongue was dry and coated, the temperature 102.5°, the pulse 140, and the respirations 52. The eyes were not injected.

Chest.—Bronchial breathing, with increased vocal resonance, was found over both bases behind. No moist sounds were heard at bases, except one or two doubtful rales on the right side. Two inches below the point of the left scapula was a patch about 2 inches in diameter, of distinct dullness on percussion, with fine crepitant rales. Dullness was fairly marked over bases.

Raisin-like glands could be felt in both groins; these were not tender; probably they were of old standing. He was being nursed by his son in a room about 4 feet by 6 feet by 7 feet. He died quite suddenly the same night.

THE SERUM DIAGNOSIS OF MEDITERRANEAN FEVER.*

By T. ZAMMIT, M.D.,
Government Analytical Chemist.

THE object I have in discussing the bacteriology of the Mediterranean fever, is mainly to bring once more to the front the importance of having a clear and definite idea of the fever and its cause.

Knowledge of the etiology of this disease is far from being complete. Major David Bruce in 1886 discovered the micro-organism of the fever, and described its principal characters—morphological and biological. The micrococcus described by him was invariably taken from the spleen. Captain Hughes repeated the researches of Major Bruce, and added observations on the growth of the micrococcus. In his book on *Mediterranean, Malta, or Undulant Fever*, published in 1897, he gathered together all that was known about the fever. This was a step in the right direction, but the bacteriological facts were of little aid in the practical question of the causation and treatment of the fever. The micrococcus could only be discovered on the *post-mortem* table unless the spleen had been punctured during life, an operation not free from danger.

If bacteriology is to aid us in diagnosis it is imperative that we should find out a method by which the specific micro-organism can be demonstrated as soon as the patient is attacked by the fever. Everyone knows how difficult it is to give an opinion as to the nature of a fever when the patient is in the first week of his illness, and every practitioner understands the importance of a rapid diagnosis with a view of establishing a proper treatment.

Happily a practical method of diagnosis has been suggested based upon the well-known agglutination of specific micro-organisms in a solution of the blood serum from the corresponding disease. After Widal's discovery of the reaction of the typhoid bacillus when in contact with the blood serum of enteric fever patients, the method was applied to a number of diseases, among others to Mediterranean fever. In the annual report of the Public Health Department for 1898. I have endeavoured to give a summary of our attempts to use the serum reaction as a help to practitioners to come to an

* Read before the Malta and Mediterranean Branch of the British Medical Association.

early diagnosis in doubtful cases of enteric and Mediterranean fever. Our experiments were quite successful in so far as the technique was concerned, for we were able to obtain the reaction in a very short time after the sample of blood had reached us, but I am sorry to say that our enthusiasm was by no means shared by our medical colleagues, and very few of them responded to our appeal. Although this first attempt was discouraging, still the question is of such importance that I venture to repeat the appeal.

During the year 1898 the cases of fever reported to the Public Health Department were as follows:

Enteric fever	...	...	162
Mediterranean fever	...	...	510
Febricula	...	...	125

Total ... 797

Is it probable, I venture to ask, that these numbers would be the same under each heading if a bacteriological examination had been resorted to in each case? I must confess that I have grave doubts about it.

If the bacteriology of the Mediterranean fever has not been advanced further than this, I think we have at least something to work upon. Of course, not every practitioner has the time to apply himself to bacteriological researches, but everybody is able to help in his own way. Malta fever is not peculiar to our island, but the number of cases throughout the year is, most unfortunately, more than is desirable. If an effort were made by the medical community with a definite aim and purpose, I am confident that important facts would be gathered which would be of great service to us and to our patients. Knowledge of the pathology of the fever is not complete, its morbid anatomy is merely outlined, its treatment uncertain, its bacteriology in its very infancy. It is difficult, if not impossible, for a single student to grapple with these different questions, but our united efforts are bound to triumph.

In every case of fever the method of serum reaction should be used in diagnosis. It is a simple operation, easily made in the most modest laboratory. Cases with distinct reaction should then be followed closely, and some definite treatment carefully applied and recorded. In fatal cases, bacteriological and anatomical-pathological researches should be made whenever possible.

In my efforts to contribute my share to the knowledge of the fever, I submit the following facts which I have gathered during the past year:

1. The micrococcus of Bruce can be grown successfully from a culture seven months old.

2. Cultures of the micrococcus 2 years old give a clear serum reaction.

3. The micrococcus does not grow on sea water solidified with agar, not even when the sea water was taken from a sewage outfall, and was of a distinct brown colour.

4. The micrococcus grows on an aged solution of normal human faeces.

Having no connection with a hospital, I could not obtain suitable materials for further researches, but I am quite willing to help any colleague who is in a position to obtain material at *post-mortem* examinations.

A CASE OF VESICAL CALCULUS IN SIERRA LEONE: LITHOTOMY.

By W. RENNER, M.D.,

Assistant Colonial Surgeon, and Medical Officer of the Royal Colonial Hospital.

I WAS called to see Mr. P., aged 63, in May, 1899. He had recently arrived in the colony from Accra in the Gold Coast Colony, where he had been the resident keeper of the gaol for twenty-four years.

History.—His son, a druggist, informed me that his father had been suffering from hypertrophy of the prostate for some years, and that he was suffering from severe pain in the penis, and after micturition, which was very frequent both day and night, and that at times retention of urine took place suddenly. He had been passing a gum elastic catheter to relieve retention and also to wash the bladder.

Condition when First Seen.—I examined the old man *per rectum*, and found that the pelvis was occupied by a large indurated mass. On passing a large silver prostatic catheter I experienced a slight difficulty on entering into the bladder, and felt that my instrument was grazing on some hard and rough mass immediately behind the prostate, which was also en-

larged. With a sound I could only make out a thud instead of the sharp click of a hard calculus. I also made out that the stone was very large and must be phosphatic, and the bladder was contracted owing to the long cystitis from which he had been suffering. The urine drawn was very offensive, and about an ounce or two was passed very frequently, with severe pains in the penis and bladder, which lasted an hour or two after each micturition, which was always dreaded. Examination of the urine recently passed showed the presence of albumen, due to the existence of large quantity of pus which it always contained. He had slight fullness of the face, but no oedema of the legs.

Diagnosis.—I informed the son of my discovery of stone, and the necessity of immediate operation to relieve the patient. To this both father and son gave half consent, and thought that, owing to his age, an operation of any kind might probably end in serious consequences. I informed them that this was true, but that operative treatment was the only means likely to be of any good. I did not see the case again until November, when, owing to the son having failed to dissolve the stone by medicinal treatment, and as his father was going from bad to worse, they consented that I should operate, no matter with what result.

Operation.—In the colony there was not a single lithotomy or lithotrite instrument to be obtained in any of the hospitals—Royal Colonial, Military, and Princess Christian. I therefore had to import the necessary instruments from Messrs. Down, Bros., of London, which were promptly sent out in about five weeks, and on December 12th I performed the operation of lithotomy with the assistance of Dr. Easmon and my friend, Mr. R. May. On cutting into the bladder I found a large stone occupying it and the bladder wall contracted on it. On passing the forceps to grasp it a portion of the stone got broken, and I found that I had to remove the entire stone piecemeal. This I did carefully, and the whole operation lasted two hours. Bleeding was general but not profuse. I placed a Buckston Brown's dilatable tampon in position and all hemorrhage was arrested. Digital examination of the wall of the bladder showed it to be rough, and that the calculus had occupied nearly the entire cavity. The patient was placed in bed, and the usual after-treatment was carried out. The temperature recorded on the day of operation and subsequently ranged between 99° and 101° F. The total weight of the broken pieces of calculus was 1,120 gr. On January 3rd, 1900, patient passed urine naturally, and he has been doing well up to the present.

This case is of interest from the fact of the rare occurrence in this colony of a case of stone in the bladder. So rare, that even in the military hospital attached to the garrison, over 1,000 men strong, no instrument for the operation of lithotomy or lithotrity could be obtained, nor in the two other public institutions.

The water supply of this colony is from the mountain iron-rock, and it is absolutely free from all saline or organic impurities. This, however, could not be said of some of the waters obtained in certain districts of the Protectorate, and yet it is remarkable how free as a whole the people are from gravel and stone in the bladder.

This patient, residing as he did in various stations in the Gold Coast, probably laid the foundation of the calculus there; and yet the official class and principal inhabitants of the Gold Coast obtain their drinking water from tanks into which the rain water has been collected during the rainy season.

One fact is apparent, and that is the immunity to a large extent of the coloured race in the West Coast of Africa from gravel or stones in the bladder when compared with the dark races of certain parts of India.

An interesting fact in the case was the presence of hypertrophy of the prostate. This condition is occasionally met with only in the very aged in Sierra Leone, and such cases are very few as compared with the number encountered in England.

A CASE OF "BEEF WORM" (DERMATOBIA NOXIALIS) IN THE ORBIT.

By FREDERICK T. KEYT, M.B., C.M.ABERD.,
Assistant Colonial Surgeon, British Honduras.

P. C., an Indian, aged 10, was admitted to the Orange Walk Hospital, British Honduras, on December 24th, 1899, suffering from what appeared at a cursory glance to be epiphora of the right eye, due to occlusion of the nasal duct and inflammation of the lachrymal sac. There was conjunctivitis, and the eye-lashes were gummed to the lids, which were reddened and inflamed.

On more careful examination the eyeball tension was found much increased, and the ball projecting more than its fellow and displaced externally; the lachrymal sac was bulging forward, the upper and lower ducts showing plainly under the skin. A small orifice was found in the caruncle (Fig. 1), and within the orifice a small opalescent body the size of a pin's head, protruding sometimes and then disappearing. The symptoms, combined with the intense intermitting boring

pain of which the boy complained, led me to believe that the parasite locally known as the "beef worm" was deposited and lay concealed in its sac at the inner angle of the eye.

Fig. 1.—Right eye; a, position of worm; the lachrymal ducts and sac are shown in dotted outline.

As the slightest pressure caused intense pain I administered an anæsthetic, and opened the orifice inwards as far as the angle of the two upper and lower nasal ducts, and seizing the head of the worm extracted it with ordinary dressing forceps. The recurved hooklets arranged

in zones around the worm (Fig. 2) rendering this proceeding tedious, as there was some danger of leaving a portion of the worm within the sac.

The "beef-worm" is the larval form of the dermatobia noxialis described by Dr. Manson in his work on *Tropical Diseases*.¹ The Indian name is *Cormollote*, and the name of the fly *Anal coshol*. The chief point of interest in this case is the unusual locality of the parasite, and the danger of suppuration affecting the eyeball, if timely treatment had not been resorted to.

Fig. 2.—"Beef worm." Larva of dermatobia noxialis, actual size.

The "beef-worm" is commonly met with in British Honduras and Central America generally in dogs and cattle, and very frequently in human beings. The usual mode of treatment adopted by the natives is the application of tobacco leaf over the swelling and occluding the orifice; the worm is narcotised or killed, and its expulsion is easily effected by squeezing. Occasionally, however, it gives rise to serious and extensive inflammation of the subcutaneous tissues, demanding prompt surgical treatment, liberal incisions, and free drainage.

REFERENCE.

¹ Art. "Ver Macaque," p. 591, where the adult fly also is figured.

MEMORANDA: MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

CINNAMON IN THE TREATMENT OF TROPICAL DIARRHŒA.

In the Section of Tropical Diseases held at Portsmouth, Dr. Henderson of Shanghai in his address on Sprue or Psilosis mentions cinnamon as a remedial agent and also that he has found it useful for chronic diarrhœa; but I and also Dr. Myers of Takow, South Formosa, who first mentioned it to me, go further and use it in the powdered form systematically in all cases ranging from ordinary diarrhœa to severe cases of dysentery. But it must be recognised that at any rate in Formosa diarrhœa is a concomitant or perhaps a symptom of true malarial fever, and in severe cases of dysentery with the regular dysenteric stools there is also high fever, and I have found the plasmodium malarie in the blood of all. I always take quinine when I have slight looseness of the bowels, and I consider it a premonitory symptom of the disease, the diarrhœa stopping immediately after a few doses.

The first severe case of diarrhœa was in a lady seven months pregnant, which later became true dysentery. She was first treated with the ordinary astringent remedies and quinine, when the stools became so frequent and dysenteric, accompanied with tenesmus, that it gave rise to grave fear of premature birth, and the treatment was changed to ipecacuanha with the preparatory opium. Full term was safely reached, but four to five days later the old trouble recurred with fever. Large doses of quinine (30 grs. in the day) and ipecacuanha were again tried, but failure resulted; then cinnamon in teaspoonful doses was given, mixed with a little milk to mould it into the shape of a bolus, and chewed night and morning. A mixture of quinine sulphate, potassium bromide, and antifebrin was also given three times a day, combined with starch enemata containing opium and chloral. In a few days the patient was