A SERIES OF CASES OF PAROTID TUMOUR.

[WITH SPECIAL PLATE.]

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The following cases were reported by me at the meeting on June 20th, 1912, of the Bombay Branch of the British Medical Association, but as there was a full account of one such case reported in the JOURNAL of June 8th from China I think these, with the accompanying photographs, may be considered of sufficient interest to be published in the JOURNAL.

They were all operated on by me at the Jamsetji Jeejeebhoy Hospital, Bombay, and all recovered without any troublesome symptoms. The four operations were all performed under chloroform, and the dragging and weight of the tumour in no way caused difficulty in its administration. During the removal of the tumour very little difficulty was experienced, and afterwards the main trouble was that nearly all the veins required ligature, the walls being too thin to stand torsion, and if only clamped were liable to restart bleeding when sponged. The amount of skin that needed removal was more than one would have expected at first, and owing to only a small piece having been removed in the first case there was some bagging and collection of serous fluid which delayed healing till it could be drained away. The duration and the weight of the tumour had completely destroyed the elasticity of the skin, and the amount of stretching it had undergone is well shown in Fig. 2 by the distance between the pores.

The clinical history was much the same in all; one had existed for forty years, two for ten, one for five. The growth of the tumours had been slow and even, except in No. 3, which had spurted the last year. The tumours were painless, not tender, freely movable, and the skin was only adherent in places where cauterization and then healing had taken place; but the skin in all showed where cauterization as applied by the native Hakims had been tried. One man came from Ratnagiri in the south, one from Poona in the east, one from Surat, and one from Cutch in the north. They were all Hindus and males. They gave their ages as 48, 40, 35, 25. Two, at all events, confessed that the reason they wanted operation was that they were waiting to get married. Their clinical history and description was practically the same, and the naked-eye section did not reveal much difference, some being more nodular both on the surface and on section than the others; very few, and small, cysts were found in all. No glands were found enlarged in any case.

A portion of each growth was sent to the pathologist of the hospital for examination, with the statement that it was part of a parotid tumour. His report, however, showed very considerable difference. No. 1 was stated to be perithelioma; No. 2, endothelioma; No. 3, round-celled sarcoma; No. 4, myxoma—a mixed tumour. No. 1 weighed 7 lb. 3 oz.; No. 2, 5 lb. 4 oz.; No. 3, 6 lb. 8 oz.; No. 4, 2 lb. 12 oz.

This series seems interesting on account of the large size of the growths, and the fact that they should come from north, east, and south within a period of six months.

PROFESSOR BLANCHARD reported recently to the French Academy of Medicine the occurrence of a tapeworm in man previously known as infesting the orang-outang only. It was passed by a girl aged 8 in Mauritius. It belongs to the genus *Bertia* (now *Bertiella*) formed by Professor Blanchard in 1891 to receive two cestodes of the anthropoid apes, *B. studei* of the chimpanzee, and *B. satyri* of the orang-outang. Apart from the interest of the communication due to the addition it makes to the ever-growing list of human parasites, it raises a curious point in zoological distribution. This parasite has now been found on opposite sides of the Indian Ocean, in the ape in Borneo and in man in Mauritius, and so far in these localities only; but Professor Blanchard points out that this is not a solitary instance of the wide distribution of a cestode. *Davainea madagascariensis* (a parasite of man) first identified in the Comoro Islands north-west of Madagascar, has also been found by Leuckart in Siam, and by Daniels in British Guiana.

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CHRONIC ARTHRITIS:

THERAPEUTIC EVIDENCE OF THE INCIDENCE
OF STREPTOCOCCAL INFECTION.

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It is a commonplace that accurate bacteriological diagnosis is essential to the successful treatment of bacterial infections by specific therapy. Yet in many cases this diagnosis is so difficult that it is abandoned, and frankly empirical methods of bacterio-therapeutic treatment are adopted, with necessarily variable results; still, some information of diagnostic value may be gathered from the results obtained in a series of empirically treated cases.

In practice, bacteriological diagnosis for therapeutic purposes is made by direct or indirect methods, or a combination of the two. The direct method consists in the recovery of bacteria of known infective nature, such as the *Bacillus tuberculosis*, from any part of the body, or of bacteria of any kind from sites normally sterile, such as the blood stream or the joints.

The indirect methods consist in the estimation of "reactions," either "immunity reactions" or "constitutional reactions." The "immunity reactions" depend on the power of the tissues to elaborate antibodies to any foreign albuminous substance introduced into them which is capable of solution in the body fluids. The antibodies are produced in excess of the amount required to neutralize the foreign substance, and the residue passes into the blood and can be demonstrated by suitable methods in the drawn blood serum. The bactericidal, bacteriolytic, or agglutination reactions are those most generally available. The opsonic reaction is similar, but presents certain differences.

The "constitutional reactions" depend on the peculiar sensitiveness of a person suffering from certain specific diseases to inoculation with minimal doses of the infecting organism or its products, a rise of temperature and local signs at the site of inoculation occurring in a susceptible person which do not arise in healthy people; this is the basis of the various tuberculin tests.

These two methods are applicable to infections with bacteria of known virulence, and are comparatively straightforward procedures, but much of the difficulty in bacteriological diagnosis is due to the fact that many organisms are only potentially infective, since they are constantly present on the mucous surfaces of quite healthy persons as harmless parasites, and only occasionally give rise to disease. When definite pathogenic bacteria cannot be found, organisms of potential infectivity may be taken from any breach of surface or from one of the mucous membranes, and the immunity reactions of the patient's blood may be investigated. Instructions to carry out these tests so often turn out to be a counsel of perfection, that treatment is frequently invited with a general recommendation to do the best one can.

To do this it is necessary to hazard a bacteriological diagnosis on clinical grounds, and in these circumstances it is as well to give a guarded prognosis, nevertheless the clinical diagnosis of some bacterial infections is made every day with tolerable accuracy. Such a diagnosis, however, can only be made on the strength of numerous previous observations, in which a group of symptoms and physical signs have been demonstrated by recognized bacteriological methods to be constantly associated with a certain infection. Any bacteriological evidence, therefore, which associates a disease of obscure causation with a definite infection is an addition of some value to the knowledge of the etiology of that disease.

In reviewing the indirect methods of bacteriological diagnosis, mention was made of "constitutional reactions," meaning general and local disturbance set up in susceptible subjects by small doses of bacterial substances. Another form of constitutional reaction is complete or partial recovery from a given disease under treatment by specific antibacterial methods, but since diagnosis should precede treatment this method is not available for purely diagnostic purposes. However, the records of results of similar cases treated empirically by the same specific remedy afford

bacteriological evidence which may be of value for clinical diagnosis.

This paper is a contribution to the bacteriological diagnosis of arthritis based on the results of such empirical therapeutic measures. It contains the records of twenty consecutive cases in private practice suffering from arthritis of various types, in all of which a tentative clinical diagnosis of streptococcal infection was made, and which were treated with vaccines of streptococci derived from different sources. They do not go to show that all cases of arthritis are due to streptococcal infection, nor is that the least likely, for the *B. tuberculosis*, gonococcus, and pneumococcus are all well known to infect joints, which indicates that joints are susceptible to a considerable variety of bacterial infection. If, however, therapeutic results can be accepted as a basis of bacteriological diagnosis, these cases indicate that streptococcal infection is frequently concerned in cases of chronic arthritis.

The cases were, in the majority of instances, of long standing, they had resisted general therapeutic measures, and no source of infection was clearly indicated. Effusion into joints was rare, and the fluid when removed by puncture was invariably sterile. Blood cultures were also sterile whenever investigated. For various reasons streptococcal infections were suspected, and the patients were accordingly treated with vaccines made from streptococci obtained either from the mouth, in cases of oral sepsis, from the urine, or from the faeces. The patients have, in most instances, remained in the charge of their own medical men, whose reports are here quoted, so that any prejudice on the part of the writer, and any suggestion to the patient arising out of the employment of a new doctor and a supposedly scientific method of treatment have been, as far as possible, excluded.

CASE 1.

Seen with Dr. Luff, under the care of Dr. Johnson, Richmond. A lady, aged 70. Arthritis of many years' duration; bedridden.

Possible Site of Infection.—Mouth; gums retracted.

Bacteriological Examination.—Blood culture, sterile; urine, sterile; faeces, *B. coli* and *Streptococcus faecalis*; gums, streptococcus, *Micrococcus catarrhalis*. Vaccine of *Streptococcus faecalis* prepared.

Inoculation followed immediately by subjective improvement. Duration of treatment six months. Dr. Johnson reports: When first inoculated, sallow, almost yellow, with the usual toxic stain of skin, and anaemic. Pains in all joints, notably shoulders, elbow, and knee. Finger-joints and knee-joints much swollen. Nights bad, unable to turn herself in bed, appetite nil, bowels constipated. Pulse 90 to 96. Now extremely well in herself, excellent colour, pink and clear. Pulse 70 to 76. Temperature normal. Great abeyance of pain, though every now and then a fair amount in hands (finger-joints) and knees. Anxious to try to walk; appetite excellent, bowels regular. Joints very little swollen, though considerable joint destruction and tendency of fingers to ulnar side.

CASE 2.

A lady of 60, seen with Dr. Luff, under the care of Dr. Christopherson, St. Leonards. Rheumatoid arthritis, duration six years (since menopause). Joints affected—cervical, shoulders, wrists, hands, knees, ankles.

Possible Focus of Infection.—Gums; teeth began to "dissolve" some years before arthritis was felt, many had been extracted, and of the few left the incisors were much worn away at the necks.

Bacteriological Examination.—Blood culture, sterile; urine, sterile; gums, streptococcus, tetrad, *Micrococcus catarrhalis*. Vaccine of streptococcus. Inoculated six months. Dr. Christopherson reported that he was unable to see any improvement. The patient ultimately died of abdominal neoplasm.

CASE 3.

A lady of 50, seen on the recommendation of Dr. Luff, under the care of Dr. Halley, of Fulham. Duration twenty-four years. Joints affected: nearly all joints of limbs, great disorganization of metacarpo-phalangeal joints of hands with forward dislocation.

Suspected Cause.—Septic absorption from intestine. Gums sound; no oral sepsis.

Bacteriological Examination.—Blood culture, sterile; urine, numerous diphtheroid bacilli; faeces, *B. coli* and *Streptococcus faecalis*. Vaccine of streptococcus; after six inoculations Dr. Halley reported she had less pain in joints, and was decidedly stronger, but the improvement was not maintained.

CASE 4.

Seen on the advice of Dr. Williams, Harrow. A lady aged 45. Arthritis affecting many joints, with effusion into wrists, and sometimes other joints. No evidence of bony change. Duration several years. Exciting cause unknown.

Possible Source of Infection.—Teeth, well cared for, but considerable retraction of gums.

Bacteriological Examination.—Fluid from wrist-joint, sterile; urine, coliform bacillus giving reactions of *B. acidilactici*; faeces, coliform bacilli only; gums, *Streptococcus salivarius*. Vaccines: (1) *B. acidilactici*, four inoculations given with little change; (2) after this, mouth streptococcus for about eight weeks; massage was employed at the same time. There was marked subjective improvement both in general health and in the joints, with decrease of pain and increase of power, and considerable decrease in swelling, though the joints were still liable to effusion.

CASE 5.

Seen on the advice of Dr. Luff, under the care of Dr. Fox-Symons, South Kensington. Gentleman, aged about 50. Had an attack of gout, followed by septic conditions of the throat, and some angina. After this had acute pains in various joints, with temperature up to 103°. Joints hot, swollen, and painful.

Bacteriological Examination.—Blood culture, sterile; urine, numerous diphtheroid organisms; faeces, *B. coli* and *Streptococcus faecalis*. Vaccine of latter. Two inoculations were given.

Dr. Fox-Symons reports that the temperature rose to nearly 102°; there was a general lighting up of pains all over the body. After an interval another dose was given; all acute symptoms recurred, and inoculations were discontinued. The patient had had inoculations of the stock vaccine previous to this, and probably an error was made in starting the autogenous vaccine with too large a dose.

CASE 6.

Seen on the recommendation of Dr. Luff; under the care of Dr. Murray, of Hornsey. A lady of about 60. Severe polyarthritis of sudden onset, six months' duration.

Possible Site of Infection.—Gums; much pyorrhoea, lower incisors loose. Patient refused to have efficient treatment for the mouth.

Bacteriological Examination.—Gums: Profuse and nearly pure streptococcus. Vaccine of same. Dr. Murray reports that after four or five injections the patient had derived no benefit, and refused further treatment.

CASE 7.

Under the care of Dr. Earle, Hyde Park. A lady of about 65. Arthritis two and a half years, following prolonged fatigue. Joints affected numerous, especially hands and knees. Much deformity of fingers, shortening of tendons, but no bony changes detected.

Possible Site of Infection.—Mouth; much gingivitis and pyorrhoea, which remained untreated.

Bacteriological Examination.—Mouth, streptococcus; urine, diphtheroid bacillus and streptococcus. Vaccine of streptococcus. Treatment about three months.

Dr. Earle reports that the treatment seemed to give some slight subjective relief at the time; no objective improvement.

CASE 8.

Lady of 30. Tonsillitis for many years, subject to acute attacks; recent acute attack followed by arthritis in knees, ankles, and arm joints.

Bacteriological Examination.—Throat: *Streptococcus brevis*. Vaccine of same. Inoculated six weeks. Made good recovery.

CASE 19.

Seen on the advice of Dr. Luff, under the care of Dr. Cathcart Bruce, Kensington. Lady of 28. Acute illness clinically resembling rheumatic fever several months before treatment began. Many joints involved. Condition had apparently become chronic. No oral sepsis.

Bacteriological Examination.—Blood culture, sterile; urine, sterile; vaginal discharge, diphtheroid bacilli; faeces, *Bacillus coli* and streptococcus. Vaccine of *Streptococcus faecalis*.

Dr. Bruce reports that after fourteen weeks' pain, with temperature ranging high during which many joints were affected enlarged and painful, the vaccine treatment was started. This had an almost immediate effect, and at the end of three months there was no sign left of the trouble, and no recurrence at the end of eighteen months.

CASE 10.

Seen on the recommendation of Dr. Luff, under the care of Dr. Earle, Hyde Park. Lady about 60. Arthritis of about two years' duration. Many joints affected, especially knees. No evidence of bony change. Teeth well cared for. Abscess of one tooth had affected the gums of some of those adjacent.

Bacteriological Examination.—Urine contained streptococcus. Vaccine of same.

Under treatment for several months. Great subjective improvement with occasional slight relapses.

CASE 11.

Lady aged 60. Seen on the advice of Dr. Luff, under the care of Dr. Schacht, Kensington. Arthritis of two or three years' duration following severe mental and physical strain; bedridden. Joints affected: Small joints of fingers, elbows, ankles, and other joints. No fluid, no bony change detected. Gums retracted.

Bacteriological Examination.—Blood culture, sterile; urine, sterile; faeces, *B. coli* only; gums, streptococcus. Vaccine of streptococcus.

Dr. Schacht reports that the patient's general condition gradually improved in the summer and autumn to a marked degree; was able to attend an "at home." Less nervous and irritable, and sleeping well; pain in shoulders and joints less;

wrists and finger-joints smaller and more mobile. Some months later there was a recurrence, and further inoculations were given. It is difficult to estimate the fluctuations, but "There is no doubt she is distinctly better again."

CASE 12.

Under the care of Dr. Earle. Lady aged 50. Chronic rheumatic pains in various joints. No oral sepsis.

Bacteriological Examination.—Urine, numerous diphtheroid organisms; faeces, *B. coli* and *Streptococcus faecalis*. Vaccine of streptococcus. Duration of treatment about six months.

Dr. Earle reports both subjective and objective improvement during and for some time after treatment. There has been a relapse since. On the whole the treatment seemed to do good.

CASE 13.

Seen on the advice of Dr. Luff; under the care of Dr. Wood, Bloomsbury. Lady aged about 50. Arthritis two years. Right knee, left wrist, many finger-joints affected; changes chiefly polyarticular; no evidence of bone affection. Slight gingivitis; no other obvious source of infection.

Bacteriological Examination.—Blood culture, sterile; urine, *B. coli*, staphylococcus; mouth, many organisms, chiefly coliform and *Micrococcus catarrhalis*; faeces, *B. coli* and *Streptococcus faecalis*. Vaccine of *Streptococcus faecalis*.

The patient went abroad and reported after about a month: "The treatment is doing me a lot of good, and I think when I have my teeth seen to I shall soon be able to walk as I used to."

CASE 14.

Seen on the advice of Dr. Luff. Gentleman aged 51. Joints affected: temporo-maxillary, shoulders, elbows, distal joints, three ulnar fingers, hips, knees; feet flat, hammer toes. A little fluid and slight grating in several joints, especially hips. Teeth few and bad; receding gums. Completely crippled. Five years previously had slight injury to a knee, followed by sudden hydrarthrosis. Had bath treatment and massage, which led to an attack of "rheumatic fever." In bed five months; joints began to swell. Progressive arthritis ever since. Distinctly worse after bath treatment. Had gonorrhoea fifteen years before, but no evidence of gonococcal infection could be obtained by autoinoculation experiment.

Bacteriological Examination.—Teeth, diphtheroid bacillus, tetrad; urethral discharge, diphtheroid bacillus; faeces, *B. coli* and streptococcus. Vaccine of gonococcus was tried without result. He has had inoculations of streptococcus vaccine for the last two and a half years. The disease is progressing, but the patient thinks he gets slight relief from the inoculations.

CASE 15.

Under the care of Dr. Tyson, Folkestone. Lady aged about 45. Arthritis, duration several years. Joints affected generally, especially hands. Enlargement of joints, interphalangeal joint left hallux destroyed, with hyperextension. Left temporo-maxillary joint sometimes affected.

Site of Infection.—Lower gums considerable swelling, no definite pyorrhoea.

Bacteriological Examination.—Urine and faeces similar streptococcus; mouth, *Micrococcus catarrhalis*, coliform bacillus. Vaccine of streptococcus.

Dr. Tyson reports: Inoculated two months, but "I cannot say that there were changes subjective or objective noticeable either for better or worse."

CASE 16.

Seen on the advice of Dr. Luff. Lady of about 50. Arthritis twenty years' duration. Sudden onset in left index finger; all joints affected since, varying in degree. Right knee much distended and stiff, hands deformed.

Possible Site of Infection.—Mouth, slight pyorrhoea.

Bacteriological Examination.—Synovial fluid in knee, sterile; gums, streptococcus. Vaccine of streptococcus. Inoculated three months; no improvement.

CASE 17.

Seen in consultation with Dr. Farquhar Buzzard, under the care of Dr. Payne, Torquay. Lady aged about 35. Joints affected, fingers, knees, ankles, and others. Slight limitation of movement. No bony change detected. Duration eighteen months. Teeth and gums sound and well cared for with the exception of an abscess at root of one tooth. Chronic vaginal discharge.

Bacteriological Examination.—Gums, *Streptococcus salivarius*; vaginal discharge, diphtheroid bacilli in pure culture; urine normal; faeces, *B. coli* and streptococcus. Vaccines of *Streptococcus faecalis* and *Streptococcus salivarius*. Under treatment nine months.

Dr. Payne reports the amount of pain very variable; sometimes quite free when at rest, but comes on with movement. Finger-joints smaller, wrists and ankles markedly improved. Knees and neck most troublesome. Still fluid in left knee. Shoulders better; pain chiefly felt in knees and neck. After the first two months in Torquay the *Streptococcus salivarius* vaccine was commenced; up to that time the joints and other symptoms were getting much worse. The chief improvement has taken place since very good Swedish massage was started three months ago.

CASE 18.

Under the care of Dr. Turner, Ryde. Lady aged 33. Duration two years; stated to have followed septic condition of mouth. Joints affected: Right wrist slightly swollen, right knee swollen, left elbow flexed; great loss of power in all limbs. Possible site of infection mouth; slight gingivitis.

Bacteriological Examination.—Synovial fluid from knee, sterile; mouth, *Streptococcus salivarius*; urine, sterile; faeces, *B. coli* and *Streptococcus faecalis*. Vaccine, *Streptococcus faecalis*.

Dr. Turner reports: Duration of treatment six months; during last months of treatment improvement has taken place in pain and swelling, which continued steadily until six months after discontinuance. Both pain and swelling have now disappeared, leaving nothing but ankylosis.

CASE 19.

Lady of about 60. Under the care of Dr. Male, Croydon. Joints affected, fingers; Heberden's nodes on fingers; synovial crackling right knee, thickening of synovial membrane left knee. Possible source of infection, rheumatic fever twenty-seven years before. History of endocarditis. Aching pains on and off ever since in legs and arms. Joints very recently affected.

Bacteriological Examination.—Urine, streptococcus. Vaccine of same.

Dr. Male reports that vaccine was injected for four months. Marked subjective improvement during treatment, but relapsed later towards the end of treatment. On the whole condition now is better than formerly. Does not complain of knee. Temperature has tendency to rise at night. Nervous symptoms predominate. Still has occasional bouts of rheumatism at times.

CASE 20.

A medical man. Seen on the advice of Dr. Luff. Acute arthritis of some months' duration. Double flat feet, especially on the right; severe pain in tarso-metatarsal joint; fusiform swellings of all finger-joints. Mouth sound, slight gingivitis only.

Bacteriological Examination.—Blood culture, sterile; urine, sterile; faeces, *Streptococcus faecalis*. Vaccine of latter. Duration of treatment, three months. Slight improvement, probably not referable to vaccine.

I wish here to record my thanks to the various gentlemen who have assisted me with these reports and for their permission to publish them.

These results may be analysed as follows. One case, No. 9, is cured. Six cases, Nos. 1, 4, 8, 10, 11, 18 are much improved. Six cases, Nos. 3, 7, 12, 13, 17, 19 have shown some improvement. Six cases, Nos. 2, 6, 14, 15, 16, 20 are unchanged. One case, No. 5, was much worse.

From the point of view of bacteriological diagnosis, the cases cured and much better afford strong evidence of streptococcal infection, and No. 5—the case in which there was marked increase in symptoms—points equally in the same direction. The six cases which were quite unchanged are evidence against such infection, and the improvement in the six cases described as slightly improved cannot be separated from accessory treatment such as the massage adopted in Case 17, or from the psychological influence inherent in any form of treatment which is new to the patient. It is, however, a reasonable conclusion from this series of cases that eight out of twenty unselected cases have given strong therapeutic evidence that their arthritis was due to infection by streptococci chiefly derived from some part of the alimentary tract.

THE Governments of Norway and of the Principality of Monaco have given their adhesion as from January 1st, 1913, to the arrangement signed in Rome on December 9th, 1907, by which the international office of public hygiene was created in Paris. The number of countries which now take part in the work is twenty-nine.

At the last meeting of the Roentgen Congress, held at Berlin under the presidency of Dr. Immelmann, it was decided to establish a system of tours for the purpose of seeing radiographers in different places at work and studying their methods. A large number of heads of laboratories have already expressed their willingness to receive the members. The first tour is to take place from September 15th to 20th, when the visit will be made to Vienna. For the second tour the week before Whit-Sunday of next year has been suggested. A round of visits will then be paid to Bremen, Hamburg, Altona, Cologne, Bonn, Frankfurt-on-the-Main, Naueim, Erlangen, and Munich. A special subcommittee has been formed from the committee of the German Roentgen Society, consisting of Drs. Eberlein, Levy-Dorn, and Immelmann. Communications should be addressed to this subcommittee, Lutzowstrasse 72, Berlin.