Very careful precautions were taken in examining microscopically and bacteriologically the pus from every source above described, as well as the sputum.

In all cases the apparently same organism the pneumococcus of Fraenkel was found in pure culture. The man made a good recovery and is well to this day. I have no doubt that in this case prompt surgical interference saved his life.

CASE II.—T. A., aged 52, was admitted on January 5th, 1900, with severe pain in right side of chest and profuse dark expectoration. He had also pain and swelling of right ankle and swelling with great tenderness over the right sternoclavicular joint. Next day he was found to have definite pneumonia at the right apex, with effusion at the base.

The joints seem to have swollen before the onset of his pneumonia and he had suffered from rheumatism on several occasions. As soon as pus was found in the joints they were freely incised and drained, both articulations being found roughened and bare. The pneumonia ran an ordinary course and his temperature fell, but later he developed an empyema which was also opened and drained. This man had a most severe general infection by pneumococci, and although repeated cultures were made from the pus and sputum no other pathogenic organisms were found except diplococci. After a long illness he made an excellent recovery, his chest quite healed, as also the sterno-clavicular joint; the ankle healed up but the joint remained stiff. I am greatly indebted to my senior assistant, Dr. John Hay, for the great care he bestowed in the treatment of this case.

CASE III.—K. F., aged 49, charwoman, admitted June 11th, 1900, with severe pain in right chest and abdomen, with all the symptoms of acute pneumonia. She was an alcoholic, and had a severe struggle until the crisis, which occurred on the seventh day. Two days after this a swelling appeared under the right deltoid muscle, with great pain on movement. A needle was inserted into the joint and pus withdrawn. I freely incised the joint, and let out 18 ounces of curdy, sweet-smelling pus. I noticed at the operation there was considerable infiltration between the muscles around the joint. Her temperature dropped and she appeared to be doing well for twelve days, when she developed empyema of the right side. This was opened and drained; then a large abscess developed in the abdominal wall, which was drained, but the patient sank into a condition of general pyæmia, and died on the twenty-eighth day. Pneumococci in pure culture were obtained in all the samples of pus and sputum.

CASE IV.—A man, aged 23, was admitted with an ordinary attack of acute lobar pneumonia of the right lung. His crisis occurred on the seventh day. Two days afterwards he developed a painless swelling of the right knee, with a temperature of 100°; a needle drew off clear serous fluid. Under the microscope, however, pneumococci were found in abundance. The joint was aspirated of 7 ounces of fluid and firmly strapped. After a slow and tedious convalescence he eventually recovered and walked out with a useful joint.

CASE V.—A man, aged 43, a confirmed alcoholic, was admitted in a collapsed condition with acute lobar pneumonia of the right lung. Two days after admission, being the sixth day of the disease, he developed a painless swelling of both knees. A needle showed sero-fibrinous effusion which on cultivation and examination was found to be a pure culture of

pneumococci. He died on the following day, and at the post-mortem examination he was found to have a most severe pneumonia with inflammation of both knee-joints. The organisms recovered from the lung and the knee-joints appeared to be identical.

CASE VI.—A man, aged 58, also a drunkard, was admitted on April 13th, 1900, with acute pneumonia of the right lung. He had his crisis on the seventh day, and appeared to be comfortable, when he was seized with great pain in the right knee and rapid distension of the joint. A needle showed sero-pus, which on being stained revealed pneumococci with well-defined capsules. Dr. Pitt-Taylor opened and drained the joint, which continued to discharge pus for two weeks and eventually healed, leaving the man a very useful joint. He was discharged recovered, but his knee was fairly stiff, although not in any way ankylosed.

CASE VII.—F. D., aged 42, tram driver, was admitted on July 12th, 1901, with acute pneumonia of the right lung. On admission he complained of great pain in his right shoulder, which was dusky-red and inflamed, but without any definite fluctuation. He died before any operation could be performed, and careful examinations of the fluid from the shoulder showed pure culture of pneumococci. In this case also an extensive intramuscular infiltration was found around the shoulder-joint.

CONCLUSIONS.

From an observation of a large number of cases of pneumonia I am convinced that the pneumococcus is capable of producing very serious lesions in other parts of the body than the lungs. It will be seen that arthritis as a complication occurred in 7 patients out of 817 cases of pneumonia—equal to about 1 per cent. Of these 7 cases 4 have recovered and 3 died. Curiously enough, my cases correspond almost exactly with those recorded by Continental observers, in that 6 were males and 1 female. In all 7 cases the pneumonia was right-sided, and the joints affected were all on the right side. This, I should say, was only a coincidence, although the fact is striking.

I have observed also in some cases of pneumonia a slight redness and pain in the shoulder-joint of the side affected which has subsided with the crisis. The joint affection may either precede the lung symptoms or follow the crisis, or develop intercurrently. In Liverpool alcohol seems to decide in a great measure the severity of the attack and the prospect of recovery, and I feel sure that one at least of the above cases would have recovered had he not been a confirmed drunkard.

The only treatment to my mind is early evacuation of the pus if it can be reached. It is just possible that many isolated cases of synovitis and arthritis occurring either during or after an attack of pneumonia—or even independent altogether of pneumonia—may be due to this organism, and I would suggest that the name, "Fraenkel's diplococcus," would be more suitable than "pneumococcus." Appended is a table of the above cases.

Table of Cases of Pneumococcus Arthritis.

No.	Date.	Sex.	Age.	Relation to Pneumonia.	Seat of Arthritis.	Nature.	Complications and Remarks.	Treatment.	Result.
1	1898	M.	28	Pneumonia 3 days before	Right sterno-clavicular joint	Suppurative	Right otitis media, abscess of thigh	Free incision and drainage	Recovered.
2	1899	M.	52	Pneumonia 2 days after	Right ankle, right sterno-clavicular	Suppurative	Right empyema, joint stiff	Free incision, arthrotomy	Recovered.
3	1900	F.	49	Pneumonia 2 days before	Right shoulder joint	Suppurative	Right empyema, extensive cellulitis of shoulder	Incision, drainage, arthrotomy, septicæmia	Died.
4	1897	M.	23	Pneumonia 2 days before	Right knee	Serous	None	Aspiration	Recovered.
5	1898	M.	51	Pneumonia 2 days before	Both knees	Serous	A very severe infection, toxæmia, alcoholism	General	Died.
6	1900	M.	58	Pneumonia 3 days before	Right knee	Suppurative	Stiff though fairly useful joint	Free incision and drainage	Recovered.
7	1901	M.	42	Pneumonia about same time	Right shoulder	Suppurative	Severe general infection, with extensive cellulitis of shoulder	General	Died.

CASE OF ANTHRAX IN WHICH THE INFECTION AROSE FROM A HITHERTO UNDESCRIBED SOURCE.

By J. CONNAL WILSON, L.R.C.P., L.R.C.S. EDIN.,
Haworth, Keighley, Yorkshire.

THE following case is, I think, of sufficient interest to have it placed on record.

J. W. W., aged 26, "picker" maker, consulted me in the surgery on the evening of July 1st, 1901, his chief complaint being directed towards a spot on his left cheek, slightly lower than the angle of the mouth. As there appeared more swell-

ing and induration than were consistent with such an apparently trivial cause, his temperature was taken and ascertained to be 101.8° F. He was ordered home to bed, placed upon Listerine internally, and when seen next morning had a slightly higher temperature, a greater amount of swelling involving all the glands of the head and neck, and extending down to the clavicles and top of the sternum. At my request he was seen by Dr. Bell of Bradford, who agreed with me that the case was one of malignant pustule, and advised speedy removal of the infected area, which was perhaps not markedly characteristic, but from which were obtained capillary tubes of serum, these being proved to contain the bacillus of anthrax when examined microscopically the same evening. The operation was performed in the course of a

few hours at the Keighley District Hospital, and the patient passed through an uneventful course, being discharged on July 13th. When seen on July 16th the wound presented a healthy granulating surface, and the swelling had largely subsided.

The greater interest in the matter, however, is the fact that the source of infection in this particular case has hitherto not been described as one from which anthrax has been communicated to man. It will, perhaps, be necessary to state that a "picker" is that part of a weaving loom which, having a hole pierced in it, receives into that hole the metal point of the shuttle at the end of its flight across the loom, and from that hole the shuttle is thrown to the other side on its return journey. For the purpose of preserving the shuttle-point from injury, the material of which the "picker" is constructed requires to be not only resilient, but tough, and very strong, seeing that in a fast loom the shuttle-point will be thrown with immense force into the hole of the "picker" upwards of 100 times per minute. It has been found that untanned hide is the substance which combines in the highest degree the qualities necessary, and it was in the manufacture of these pickers that the patient contracted anthrax.

From information which the man's employer gave me it appears that the hides used in the process are mainly of two descriptions: (1) Heavier hides, being the whole skins of buffaloes which are shipped at Singapore; and (2) lighter hides, chiefly used for equalising thicknesses, being known as "heads," and shipped at Buenos Aires. The hides with the hair on are delivered at both Bristol and Warrington, and in the neighbourhood of these places are put through the first process of preparation, which consists in allowing them to lie in lime for about three months in order that the hair may be stripped from them. After being dried and having had the surplus lime removed they are delivered to the "picker" manufacturer. On inspection there the hides have a semi-translucent grey appearance and are covered with a bloom of lime dust. As required, the hides are next soaked in water for about three hours—the water in this particular case was rain water—and then allowed to dry for perhaps a day. Afterwards they are cut into suitable pieces, and while still fairly soft folded into the primary shape by hand prior to being moulded by machinery into the required form. It was as a folder that the patient had been working for nearly ten years when he contracted the disease, the first case which has occurred in the particular manufactory referred to. The man's master stated that no record was to be found in the business of any previous attack during the 160 years for which it had been established. As it is quite a common habit for the workers to chew small pieces of the hide—chiefly on the same principle that a sailor chews tobacco or a Yankee chews gum—it is probable that the presence of the anthrax bacillus is an accidental occurrence; indeed, the industry has always been regarded as not an unhealthy one, most of the workers living to an advanced age. The "scrap" and cuttings are used in a neighbouring paper factory for sizing purposes, and it is darkly hinted that "pickers" which have served their purposes in the weaving sheds finally find their way into the confectioners' hands, there to be transformed into throat pastilles, jujubes, calves' feet jelly, and other toothsome delicacies for invalids!

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, ETC.

TRIONAL IN CHOREA.

THE remark of Mr. Meade in his interesting note on the above subject,¹ that he was not aware that it had been mentioned before, induces me to send you the following.

Moncorvo's cases, reported to the Paris Academy of Medicine in 1897 and confirmed by Claus and others (as referred to in Bayer's *Clinical Excerpts* for October and December of that year), led me to try the drug in some cases marked by extreme restlessness, and with successful results, which I may

illustrate by the brief record of one case, which is in other respects an interesting clinical study.

T. G., now aged 17, came first under my care as a very obstinate case of general chorea (following on a kick in the back), with mitral complication, six or seven years ago at the Sussex County Hospital. On that occasion, after trial of many remedies he ultimately got most good from full doses of conium.

In November, 1899, having relapsed several times during the interval, he was again admitted with chorea and concurrent acute rheumatism, pain and swelling with effusion into knees and ankles, pyrexia, etc. By this time he was earning his living as an errand boy, exposed to weather, etc. He was treated by salophen, alternating with iron and arsenic, and in February, 1900, he went out well, remained so till shortly before readmission, on August 1st, 1900, with very severe chorea, without marked rheumatism. He was again treated with conium, and also iron and arsenic in increasing doses up to August 20th, when antipyrin was substituted for conium. This often does good, but by August 29th there was not much improvement, and restlessness day and night was extreme and distressing; this was partly due to disturbing cases near him. On that date trional (5 grs.) with glycerine, spirit, and camphor water was ordered thrice daily. A sedative effect was soon evident, and by September 10th he was sleeping most of his time, and the movements were much less when awake. He was ordered trional only night and morning, and on September 16th he went out much better, and continuing with one dose nightly.

Six weeks later (October 26th) he was readmitted with severe chorea, mostly of the left side; the heart was as before, but larger, and he was anæmic. At first he got iron and arsenic, but on October 29th trional was given at night, and he continued both drugs in suitable doses. On November 5th he was distinctly better, on November 26th up, and on November 29th, out.

On October 4th, 1901, he was readmitted for acute rheumatism of a month's duration, having been, and being, quite free from chorea since the attack of last year. The hands, knees, and feet were swollen and painful; the heart dulness extended to the third rib. The temperature was 103°. He was treated by two blisters (small) and by full doses of aspirin (30 grs. and then 20 grs.) every three or four hours for two days, when the temperature was subnormal, and he was much better in every way. On October 9th he was free from pain anywhere, and smaller doses were continued night and morning. Hæmatogen was given for the anæmia with advantage, and he went out last week practically well.

It may not be generally known that Dr. Weir Mitchell has recorded his experience of trional in epilepsy, and finds it a useful substitute sometimes for bromides.² I can corroborate this observation.

Since the above was written, a very severe chorea gravis in a youth of 17, has been much relieved by the same sedative, though hyoscine was also required and cacodylate injections. Trional can only be considered an adjuvant, but it is a good one.

Brighton.

EDWARD MACKEY, M.D.

LATENT NASAL POLYPI.

Miss B., aged 41, consulted me some years ago for nasal polypi. When I first saw her she had both sides of the nose filled with polypi, and I removed from 12 to 15. The case gave me a good deal of trouble, and there was still a small recurrence on one side when, four years ago, she went out as a sister to a hospital in the Far East. She nursed through a plague epidemic, and also went further north to help nurse the wounded of the Naval Brigade. She states that the whole time she was away the nose was perfectly well. When she arrived at Marseilles, on the road home, the dock strike was in full swing, and consequently she was kept there some five days in the damp and cold. She at once began to feel her nose uncomfortable, and on arriving in London she came to me. I found a good deal of redness, but no sign of growth. She then went to the South of England for three or four months, and at the end of that time came to me again, when I found

¹ BRITISH MEDICAL JOURNAL, November 2nd, p. 1339.

² *Univ. Med. Mag.*, March, 1896.