months, when I hope to be able to apply with success support of a simpler character.

Mr. Tamplin has at the present time a case under his care, in which the patient is above thirty years of age, and he has had others much older. I have related in a preceding number the particulars of a case, aged thirty-three.

There are many who, on the perusal of these cases, will exclaim: we acknowledge the disease is progressive; but you, by your instrumental support, may afford, it is true, temporary relief, yet when that support is removed, the disease will be worse than ever. You weaken instead of strengthening the vertebral column. I deny the accuracy of this reasoning in my own name and that of my colleagues at the Orthopædic Hospital. It is opposed to our daily experience. The relief afforded by instrumental support is *not* temporary: and as a witness, to whose unwearied industry no professional man can refuse a just tribute, I quote a case related by Mr. Stanley.

"Weakness of constitution, whether connected with rickets or not, is, in most cases, the source to which we look for explanation of distortion of the spine. Such an exception to the general rule did occur in the following case. In a female, sixteen years of age, of feeble health and slim person, a single lateral curve of considerable depth, with its convexity to the right, and including the whole length of the spine, had formed in the course of a few weeks. That the yielding of the spine was owing to the weakness of the structures, which should firmly bind together its component pieces, was evident by the effect of such moderate extension of the column as could be made by gently elevating the head and shoulders, for then the curvature wholly disappeared. An apparatus was applied for the object of keeping the vertebræ in their proper place; and when this had been continuously worn for nine months, it was removed without the recurrence of the distortion; and, besides, it was ascertained that the stature of the body now exceeded by two inches that which it was ascertained to be at the time of the first application of the apparatus." (Stanley, *On Diseases of the Bones*, p. 221.)

This case forms no exception to the general rule. It is an illustration, confirmed by high surgical authority, of the value of instrumental support and mechanical treatment in deformities of the spine. Can we, I ask, ignore such evidence, in justice to the profession we are called upon to practise?

[*To be continued.*]

ON SECONDARY AFFECTIONS OF THE JOINTS IN PUERPERAL WOMEN.

By William Coulson, Esq., Surgeon to, and Lecturer on Surgery at, St. Mary's Hospital; and Consulting Surgeon to the City of London Lying-in Hospital.

Puerperal women are occasionally attacked by a severe form of disease attended by low fever, with effusion of pus into the joints, and almost always terminating in death. Various opinions are entertained respecting the nature and causes of this disease. My object in the following remarks is to show that it is connected with pyæmia.

The local affection occurs under two circumstances; viz., after delivery, at the full period of gestation; or after abortion in the earlier months. It is important to include the latter kind of cases, which have not been sufficiently noticed, as they throw great light on the true nature of the disease, and dispose of the theory which would attribute the secondary affections to child-bed fever. The articular disease, as I shall presently show, is merely one of the effects of pyæmia; but it receives certain modifications from the puerperal condition with which it is associated. Even in puerperal women these secondary joint affections may occur under several states which may be distinguished from each other. They are most commonly developed during the course of puerperal fever, from the third to the sixth day of the complaint. In other cases, they occur after convalescence from an attack of puerperal fever. Lastly, in some other cases they set in after parturition, without the patient having presented any symptoms of puerperal fever.

Although the articular affections are essentially the same under these different circumstances, it is useful to distinguish these circumstances, as they modify the general conditions which precede or accompany the local disease. Thus, when the symptoms of purulent infection of the blood are mixed up with those of true puerperal fever, we have a complex malady which has puzzled some of our best accoucheurs, and which, indeed, it would be impossible to understand, if the same affection did not sometimes occur in puerperal women without puerperal fever.

When the articular affection occurs during the course of puerperal fever, the following train of events is generally observed. For the first three or four days, the ordinary signs of puerperal fever are alone recognised; then some symptoms of phlebitis may present themselves; or these symptoms may be so slight as to be overlooked. They are soon followed by a change in the condition of the patient. Severe rigors often usher in this change; the fever increases; the countenance is anxious and sallow; the respiration becomes hurried; there is irregular delirium; and the patient sinks.

In these cases, there are two dangerous maladies; viz., puerperal fever and purulent infection, running their course at the same time; and it is not to be wondered at, if the general condition of the patient presents an anomalous appearance, or if it be rendered obscure by the predominance of one set of symptoms over the other.

In another set of cases, this obscurity does not exist. The patient has completely recovered from an attack of puerperal fever, or has not had any attack of that complaint; all the dangers of the puerperal state having apparently passed over. She goes on well for the first week or two; there is no fever; no abdominal pain; no apparent danger of any kind. Suddenly, a severe rigor sets in; this is followed by febrile symptoms, small quick pulse, etc.; or the attack may commence with local symptoms, the general disturbance being scarcely perceptible. These latter cases are very remarkable, and not long ago were mistaken for rheumatism.

The disease, with its local effects and constitutional symptoms, may occur after abortion in the early months. Here there are no symptoms of puerperal fever, properly so called; but there may be some slight symptoms of uterine phlebitis. These are often chronic and obscure cases; yet they proceed and terminate like the former series.

The secondary joint-affections are the same under all these different circumstances. They may be either purulent or non-purulent; articular or periarticular; acute or chronic. These different conditions are found to exist in various cases; but the most common form of attack is acute, of a purulent nature, and occupies the interior of the joint. At other times, though extremely acute, the attack is non-purulent, and confined to the exterior of the joint; while, in several cases, there is pus in the cavity of the joint, without any lesion of the articular tissues.

It is also worthy of remark, that in several cases some of the joints are attacked by purulent inflammation, while other joints in the same subject suffer from simple inflammation with effusion of serum.

The period at which the articular affection sets in is various. In a few cases, it has commenced on the second day after delivery; in many other cases, it does not appear until a few days before death, viz., from the twenty-third to the twenty-fifth day. Generally, however, the joints are attacked between the third and fourteenth days. The knee-joint is most frequently the seat of disease. I have found that it is attacked in one-third of the cases in which the joints have suffered; next comes the wrist-joint; then the ankle, the shoulder, elbow, hip; and, lastly, the smaller joints. In a few cases, the purulent effusion has been confined to the symphysis pubis; but I am inclined to think, from the history of these rare cases, that the suppuration of the pubic joint was primary, not secondary—the inflammatory action having extended from the cellular tissue of the pelvis.

The duration of the joint-disease necessarily depends on the duration of the primary affection with which it is connected as an effect. It is not often prolonged beyond a week, but it may last from one to three weeks. In chronic cases the duration may extend to three months. I have published a remarkable case, where death took place on the sixty-fifth day after delivery, and on the fifty-fifth after the attack. Mr. Arnott also mentions a case, which was prolonged for forty-four days; but no *post-mortem* appearances are given.

The local articular symptoms, and the changes discovered after death, present several varieties. In some cases there are no local signs of articular disease; even pain about the joint is absent. After death the cavity contains some pus; the articular tissues are quite healthy. These are exceptional cases. It is very rare not to find some one joint visibly affected, although the rest may have been the seat of passive suppuration.

The local disease commonly appears with the signs of synovial inflammation. The attack is always of an acute nature, commencing with pain more or less severe, which is quickly followed by swelling. The colour of the skin remains unchanged; and the swelling is evidently caused by effusion of fluid within or round the joint. When the articular disease sets in, as is often the case, only a few days before death, it may continue with little change to the end; in other cases, the pain and tumefaction disappear altogether before death; or they may leave one joint to attack another.

It is, however, important to remark that, although the pain and swelling may somewhat subside, the disease never passes suddenly from one joint to another, as occurs in true rheumatism. Several large joints may suffer in succession; but, after death, we always find some lesions in or around the joint first attacked. In other cases some change in the colour of the skin is found, superadded to the pain and swelling. The skin may be hot and red; it is often of a dusky red colour, especially about the knuckles and wrists. In many of these cases the affection is probably confined to the periarticular tissues; whereas, in ordinary diseases of the joints, the matter which surrounds the joint is derived from its cavity; in secondary diseases the pus hardly ever comes from the interior of the joint. I am acquainted with two cases only in which perforation of the cavity of the joint had taken place. These periarticular effusions, then, may be of two kinds. Sometimes the effusion is serous, and subsides to a considerable degree before death; or pus has been effused into the cellular tissue outside the joint, either with or without symptoms of local inflammation.

I am quite unable to determine the circumstances which give rise to these differences, or to explain why the effusion is purulent in some cases, serous in others; why it takes place now *in* the joint, at another time *outside* it. Moreover, the kind and seat of the effusion bear no relation to the gravity of the case, or to the intensity of the local symptoms.

The joint-affections are frequently accompanied by abscesses in the muscles of the legs and arms, preceded by pain and attended by doughy swellings. When these occur in puerperal women they should always excite attention, for they are too often the forerunner of purulent infection of the blood. The changes discovered after death are purulent effusion into the articular cavity without any alteration of tissue; frequently signs of synovial inflammation with erosion and ulceration of the cartilages; more frequently still purulent or serous infiltrations outside the joints, with abscesses in the neighbouring muscles. In no case have the bones been found diseased; in no case, likewise, are the lesions confined to the joints; yet in a few cases the joints and intermuscular tissue have only been affected.

The other lesions are those of purulent infection; viz., secondary deposits in the lungs, liver, etc. The brain has not been found affected, as far as I am aware. Pus is always found either in the veins or lymphatics of the uterus; or there is primary abscess in the walls of the uterus, in the cellular tissue of the pelvis, in the symphysis pubis or elsewhere.

Practitioners are now agreed that the puerperal disease of the joints depends on blood-poisoning. The only question on which difference of opinion exists is, as to the nature of the poison. Is it pus? Is it some morbid secretion or putrid element introduced into the blood? My own opinion is that these secondary joint-affections, as well as many others, are caused by purulent poisoning of the blood.

1. In the large majority of cases, purulent phlebitis of the parts originally affected has been observed after death. This holds good especially for cases which occur in connection with puerperal fever. The careful observations of M. Tonellé, at the Lying-in-Hospital in Paris, place the fact beyond doubt, and show that, although these secondary joint-affections and the general symptoms which accompany them never take place without having been preceded by primary suppuration, purulent phlebitis and primary suppuration of the cellular tissue do not necessarily give rise to them. The pus-poisoning and secondary deposits are an occasional, but not a constant effect of the phlebitis and primary abscesses. Thus, in two hundred and twenty-two *post mortem* examinations of patients who died from puerperal fever, M. Tonellé found suppuration of the veins or lymphatics of the uterus in one hundred and thirty-four cases; yet of these, ten cases only furnished examples of secondary articular disease.

2. In many cases where pus has not been found in the uterine veins or lymphatics, it has been found in other tissues; and the very few cases related where no pus was found show either that the *post mortem* examinations were imperfectly conducted, or that the temporary secretion of pus might have been fairly inferred from the symptoms during life.

3. The presence of vitiated and putrid secretions in the uterus does not account for the disease. It is not produced by retention of the placenta after abortion. It does not occur (unless phlebitis exists) in the form of puerperal fever, which is characterised by putrescence and softening of the uterus. It is not produced by the ingestion of putrid animal substances into the stomach.

4. The disease occasionally occurs in females without any of the accompanying circumstances of the puerperal state. Yet in its course, symptoms, and termination, it does not differ from the form which occasionally accompanies puerperal fever, the only modifications being those which arise from the presence or absence of the puerperal fever itself.

I do not deny the pernicious influence of vitiated secretions; but I maintain that all observation and analogy establish the doctrine that, unless these secretions excite purulent phlebitis, or give rise to primary deposits of pus in some of the tissues, they are not followed by the train of symptoms known under the name of pyæmia.

Transactions of Branches.

BIRMINGHAM AND MIDLAND COUNTIES BRANCH.

SPASMODIC CROUP OCCURRING IN SIX OUT OF SEVEN CHILDREN OF THE SAME FAMILY: FATAL TO TWO.

By James Russell, M.D.

[*Read February 11th*, 1858.]

The following cases occurred under my observation, chiefly at the Birmingham Dispensary.

Mrs. T. is a healthy, but a very nervous, excitable woman, of anxious disposition; her family healthy; her husband is also perfectly healthy, though of nervous temperament; his family healthy. During the early part of her second, third and fourth pregnancies, Mrs. T. suffered from constant bloody discharge, which lasted till quickening had taken place, and on each occasion she continued to suckle, after she had conceived. In her fifth pregnancy, there was no discharge, nor did she suckle during any portion of it. I may as well state, once for all, that I am convinced the dietetic and other management of the children was conducted throughout, most strictly, in accordance with my instructions: the family lived in a tolerably healthy street, on high ground, and in a dry situation; they were unable to try the effect of change of residence from peculiar circumstances.

The first child, born May 14th, 1843, a girl, began to suffer from spasmodic croup when about six months old; the attacks were sometimes at the rate of twelve or twenty in the day; at the end of about three months, they ceased altogether. The child cut her teeth easily, but as she grew up was very backward and thin, and at eight years old could not articulate distinctly.

The second child, born August 7th, 1844, a boy, died suddenly of the same disease, and an inquest was held. The malady first appeared when he was five months old; he was a year and five months old at death. His mother describes him as having had a large overhanging belly, as being very fat in the face, arms, and chest, and very narrow across the hips. He had none of the usual infantile diseases.

The third child, born November 13th, 1845, well made and healthy, died at ten months of epidemic diarrhœa: she never showed any sign of croup.

The fourth child, born August 29th, 1847, a boy, was long under my care for spasmodic croup: the first attack occurred at about five months after birth; he died of the disease, quite suddenly, aged a year and four months. He was very imperfectly developed, very thin; the cranial bones were not fully formed, and the fontanelles were very large: there was, however, no sign of disease about him. The chief treatment employed was occasional alteratives, and the tincture of sesquichloride of iron, suited the child very well.

The fifth child, at the time of my commencing these notes, August 13th, 1850, was six months old; a fine, well made, plump little boy, very cheerful and apparently good tempered;