given in full doses, and often requires to be pushed to its physiological limit; improvement seldom sets in until six-minim or eight-minim doses of the liquor arsenicalis are reached, but the dose should be small at first, and gradually increased. Where that has failed—and, like all such remedies, it fails sometimes—I have usually succeeded with tincture of belladonna, also given in unconventional doses, up to thirty minims or more. Dr. Tilbury Fox advocated quinine in two-grain to five-grain doses; and, no doubt, it is useful in some cases—for example, Case vi, in which atropine failed; while cod-liver oil for the broken-down is strongly indicated.

Locally, the object is to relieve the pruritus; for this, the best agent, in my hands, has been a lotion of two drachms of liquor carbonic detergens to eight ounces of water, applied freely whenever the pruritus is troublesome; this has always given temporary relief, and the prevention of scratching is very important. Other antipruritics may be used, such as sanitas diluted with equal parts of water, etc.

ILLUSTRATIONS OF EXCEPTIONAL SYMPTOMS AND EXAMPLES OF RARE FORMS OF DISEASE.

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I PURPOSE, in a series of short papers, to describe, very briefly, certain rare symptoms and conditions of disease. I shall not attempt to observe any order, or to classify, but shall endeavour to make each record as much as possible complete in itself.

I.—ADVANCING HYPERTROPHIC LESIONS, ALMOST CONGENITAL, AND LIMITED TO THE ULNAR REGION OF ONE HAND AND FOREARM.

THE subject of the following narrative was an intelligent young farmer, aged 34. His hand presented a most peculiar condition. At first sight, it might have been thought to be the seat of multiple cartilaginous tumours in the phalanges and metacarpal bones. But on more minute examination, the lumpy swellings (which affected the little and ring fingers, and the ulnar part of the hand) were found to be, in part, hypertrophies of cellular tissue and skin, and in part bony outgrowths. There was also ankylosis of two of the phalangeal joints of the little finger, and of one, the second, of the ring finger. These fingers were, both of them, bent downwards to the palm, and there fixed. They were fixed by the ankylosis of their joints, not as in Dupuytren's disease, by any contraction of their fascia. The hand looked much wider than its fellow, and measured in girth round the knuckles two inches more. There was also an increase in the girth of the wrist, of three-quarters of an inch, as compared with the other side. The bony outgrowths were near to the articular ends of the bones; they were low and sessile. The exact appreciation of their shape was rendered difficult by the hypertrophy of the soft parts over them. There were thick ill-defined pads of hypertrophied subcutaneous tissue, and the skin itself was thick and horny. My patient told me that he had been assured by his mother that nothing was noticed amiss with the hand at birth. It was not until he was three or four years old that the thickenings were observed.

A very remarkable feature in this case, is the restriction of the disease to the ulnar region, and to the little and ring fingers. That this restriction is due to the distribution of the ulnar nerve seems improbable, for there is no defect of sensation, and the whole of the ring finger is affected, not alone its ulnar side. There is even a small pad of hypertrophied cellular tissue in front of the middle finger. The localisation of the changes is, perhaps, due to some cause more analogous to that which induces arrest of development of certain associated parts, as when the radius is wanting together with the thumb and forefinger. The man's belief that the condition was not congenital, is by no means conclusive. It is true that it was first noted at the age of three; but, in all probability, some peculiarity of the parts which led to these strangely progressive changes of growth was present at birth.

On passing the finger up the ulna, at several places, the bone seemed somewhat thickened and enlarged. The olecranon projected much more than its fellow, and seemed to be thicker. I speak cautiously as to there being any real enlargement of bone, because there was a bursa over the olecranon, and the subcutaneous tissues along the course of the ulna presented little masses of ill-defined induration. I believe, however, that the bone was in the general condition of slight hypertrophy, which was more pronounced at some parts than others. The patient had been under the care of different medical men, and had taken a good deal of medicine under the diagnosis of gout, from which his father had suffered. There did not appear to be, however,

any reason for believing that the changes present were in any way directly connected with that disease. They were slowly progressing, and the patient was in great anxiety lest his hand should become more disabled. I suspected that the enlarged bursa under his olecranon was due to some pressure on a table or chair-arm. He assured me that he never sat in an arm-chair, "except on Sunday afternoons," but added, in confirmation of my opinion, that it was on one of these occasions that pressure on the elbow had first caused him pain.

The only case really analogous to this which I have seen, was that of a certain Miss B. In Miss B., the little and ring fingers of one hand have undergone changes almost precisely similar, being made lumpy and distorted by enlargement of the bones, and of the soft parts over them. She also inherits gout, and has a very feeble circulation. The latter feature is so marked, that, when I first saw her hand, I was inclined to attribute the changes to a sort of periosteal chilblain limited to these two fingers, due to some peculiarity of innervation in connection with the ulnar nerve. The investigation of this second case, however, leads me to doubt this hypothesis, and inclines me to refer them both to some more obscure and congenital defect in developmental tendency. They are exceedingly different from Dupuytren's contraction of fascia, not only in that they both began in very early life, but also in their final results. Yet we may perhaps profitably keep in mind that the same fingers are affected in the two affections, and that the disease advances in a not dissimilar manner. Nor must we wholly forget that, in each case, the parents had suffered from gout, although it is very difficult to trace any connection with that diathesis.

[To be continued.]

ON THE AFFECTIONS OF THE JOINTS, WHICH COMPLICATE OR FOLLOW SCARLET FEVER.*

By HENRY ASHBY, M.D., M.R.C.P.,

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It serves an useful purpose at times to take stock, as it were, of some group of allied diseases, and, while refreshing our memories with the collective wisdom of the past, to compare with it whatever personal knowledge or experience we may have to add to the common store.

With this end in view, I propose considering an important group of complications which are apt to be associated with a disease which has much of interest and importance for every practitioner of medicine. Scarlet fever is truly many-sided, and claims our interest, not only in consequence of its infectious and fatal character, but also on account of the many complications which attend it, and the sequelæ which may supervene when the disease itself has spent its force.

It has been known since the beginning of the century that, in some epidemics of scarlet fever, the joints became affected; but it is only in later times, through the writings of Underwood, Betz, Trousseau, Henoch, and others, that we have any definite information concerning these affections, or any attempt to clear up their pathology.

Trousseau, in his clinical lectures, calls especial attention to what he designates "scarlatinal rheumatism," stating that it occurs much more frequently than is generally believed, and he does not appear to doubt its identity, or at least close relationship with acute rheumatism, though he notes some of its most important eccentricities. His description has been largely followed in our own text-books, though the accounts given have been meagre; most writers, like Bristowe, remarking that scarlet fever is at times followed by rheumatism, which does not differ from the ordinary kind, though noting the fact that suppuration occasionally occurs. The opinion that the common form of joint-lesion occurring in scarlet fever is due to the rheumatic diathesis of the patient, rather than to any synovitis produced by the scarlatinal poison, has been commonly held by continental and English writers; and, in a discussion which took place at the annual meeting of the British Medical Association, in Liverpool, in 1883, on "rheumatism in childhood," nearly all the speakers stated their belief that scarlatinal was essentially the same as the ordinary form of rheumatism. In a short paper (see BRITISH MEDICAL JOURNAL, vol. ii, 1883, p. 514), which I read on that occasion, I tabulated some cases which had come under my care, and pointed out that they supported the belief that one form at least of the joint-affection is connected rather with a septicæmic than with a rheumatic condition. A further experience has made it clear to me

* Read at the Manchester Medical Society.

that the difference of opinion which existed on that occasion was due to the fact that the different observers had really been observing different diseases; that, while my cases were all confined to those seen in the fever-ward of a children's hospital, those described by the physicians who took part in the discussion were rather those of adults who had recently recovered from scarlet fever; the former being septicæmic in nature, the latter being true rheumatism.

It may, perhaps, be worth our while to analyse the various forms of joint-affections which may occur in connection with attacks of scarlet fever. They may be divided thus: 1. Synovitis; 2. Acute or chronic pyæmia; 3. Acute or subacute rheumatism; 4. Scrofulous disease of joints.

Synovitis.—Of this form I have notes of twenty cases, that have come under my care in the last few years, in which there was a more or less acute inflammation of the joints, and which subsided in a few days without going on to suppuration. It is not easy to say how frequently it occurs, or what percentage of cases of scarlet fever suffer from it, inasmuch as it is much commoner in some epidemics than others. It not unfrequently happens that two of the same family suffer from it; in four out of my twenty cases, it was followed by nephritis. It is important to notice that it rarely supervenes in mild cases; at least, such is my experience, though true rheumatism does appear often after light attacks. In my own cases, the attacks of fever were certainly severe, the throat-symptoms well marked, and an elevated temperature was maintained beyond the average. In an uncomplicated case of scarlet fever, the temperature goes down towards the end, or at least well within the limits, of the first week, the rash disappearing, and the throat regaining its natural appearance. Among my own cases, in no one of them did the temperature fall to normal, and remain so during the first week, but the fever continued into the second and third weeks, caused in nearly all instances by the severity of the throat-complications. Thus the tonsils were excavated, or sloughy, the mucous membrane of the nose joined in the inflammatory catarrh, the lymphatic glands were swollen, and often surrounded by cellulitis.

In four of the cases, excluding one who died on the ninth day, the temperature fell to normal within a fortnight; in the remaining fifteen, the febrile symptoms did not abate till the third or fourth week. It thus clearly comes out that the synovitis appertains to those cases in which the symptoms are severe, and the fever unduly prolonged by the ulcerative and sloughy condition of the tonsils and soft palate. Of the twenty cases two were fatal, one on the ninth, the other on the twenty-fourth day. The joints which were most commonly attacked were the wrists and finger-joints, the inflammation often involving the synovial membranes of the flexor and extensor tendons in the palm and back of the hands. The knees and ankles were frequently involved, and, with the latter, the soles of the feet. The hips and shoulders were less often attacked. In several cases the joints of the cervical vertebrae were affected; movements of the head and neck caused acute pain. For the most part, the joints were painful on movement and tender, less often red and swollen; in most instances the synovitis was fugitive, lasting only a few days, and rarely or never returning to the same joint.

In some few cases the wrists only, or knees only, were affected. In one case the synovitis became chronic in the knees, the effusion lasting for several weeks (sixtieth day), but eventually the fluid was absorbed, and the girl quite recovered. In two other cases the synovitis remained exceptionally long, in one case lasting from the seventh to the twenty-second day, and in another from the eighth to the seventeenth; in five only did the pain and tenderness last beyond the week; in the remainder, the patients were free from pain in two to five days.

In the majority of cases the synovitis supervened at the end of the first week, or beginning of the second, the earliest commencing on the fourth day of the fever, and the latest on the thirteenth, fifteen out of the twenty beginning from the sixth to the ninth day. This knowledge that synovitis nearly always commences at the end of the first or beginning of the second week may be an important element of diagnosis, inasmuch as true rheumatism, when it supervenes, generally does so during convalescence, or, in some cases, at the very commencement of the attack.

The question of cardiac complication is a very important one as bearing upon the rheumatic origin of the synovitis. In seven cases, out of the twenty, soft *bruits* were heard, or the first sound was "murmurish," in one of these with a well marked *bruit* which ended fatally, but no valvular lesion was found. In the greater number of cases the murmurs disappeared before the children left the hospital. It must be borne in mind that *bruits* are often heard in scarlet fever, both at the apex and left base, which disappear completely during con-

valescence; and I have every reason to believe that those heard in my cases of synovitis were not due to any endocarditis, but were simply hæmic or functional. In one case there was a pericardial friction sound heard, followed by signs of fluid in the pericardial sac, and in another a pleuritic-pericardial rub, as if due to effusion of lymph on the pleura and external surface of the pericardium. In no case, as far as I have been able to ascertain, did chorea follow the attack.

The drug commonly given directly the joints became painful was salicylate of soda. It is difficult to estimate its effects on a disease which is, as a rule, so fugitive as scarlatinal synovitis; and I am inclined to think that, in some cases, where the patient was quickly free from pain, this was only the natural course of events, and was not due to the treatment employed.

It must, I think, be tolerably clear from the foregoing account that there is good reason for classing this joint-affection outside the pale of what is ordinarily termed acute rheumatism. On the other hand, the symptoms point to a condition which may be termed "scarlatinal septicæmia," arising from the absorption of putrid matters from the ulcerative or sloughing process going on in the throat, and resembling the acute or chronic septicæmia in puerperal cases, gonorrhœa, ophthalmia, or diphtheria.

That synovitis differs essentially from rheumatism, may be seen by a consideration of the following points.

1. Synovitis is more common in some epidemics than in others, and occurs more especially in those cases where the febrile stage is prolonged on account of the severity of the throat-affection.

2. The joint-lesions nearly always supervene at a definite stage of the attack, namely, at the end of the first week; a fewer number of joints are affected than in acute rheumatism; the attacks are more fugitive, and rarely recur.

3. Pericarditis and pleurisy are not common, and endocarditis is very rare.

It must appear tolerably certain that, if these attacks were really rheumatic, the scarlatinal poison bringing into activity the latent rheumatism, the frequency of the attacks would not vary with the epidemic, or supervene so constantly at one period, or, above all, would so rarely give rise to peri-endocarditis, as it is well known that an attack of acute or subacute rheumatism during childhood only exceptionally spares the heart.

Acute or Chronic Pyæmia.—I have already spoken of scarlatinal septicæmia resulting from the absorption of septic matters from the throat; but, in addition to this condition, there is unquestionably a further stage in which phlebitis, septic embolism of various organs, abscesses in the joints, and purulent inflammation of various serous membranes, take place. Pyæmia is by no means uncommon in scarlet fever, yet it cannot be said that suppurating joints often occur. I have only seen three such cases. In one case, which was fatal on the nineteenth day, there were *ante mortem* clots in the right internal jugular vein, infarcts in the spleen, minute abscesses in the kidneys, and suppuration in both ankle-joints. In a second case, there was suppuration in the distal joint of the thumb, in a boy who died on the fifteenth day. In a third case, in a boy aged 2½ years, in which recovery took place, there was redness and swelling of the finger-joints on the eleventh day; the next day, pain and tenderness in the knee and ankle; on the fifteenth day, two ounces of pus was let out from the knee; and, on the twentieth day, pus was evacuated from the palmar surface of the hand. On the thirty-seventh day, an abscess was opened over the crico-thyroid joint; on the forty-ninth, pus was evacuated from the hip and also from the popliteal space. The boy finally recovered; and, seven months afterwards, was strong and well. In no one of these cases was there any definite cardiac complication (see BRITISH MEDICAL JOURNAL, *loc. cit.*). Similar cases are related by Hænoch (*Charité Annalen*, Jahrg. vii, p. 645) and Bokai (*Jahrbuch für Kinderheilkunde*, Band xxiii, p. 320).

Acute or Subacute Rheumatism.—Whilst, in children, at least, by far the commonest joint-affection in scarlet fever is the synovitis above described, yet it must be admitted that true rheumatism does sometimes complicate scarlet fever, and is apt to follow during convalescence. What part the effects of the scarlet fever poison plays in producing, or calling latent rheumatism into activity, it is difficult to say; it is possible that the tissue-waste leads to an accumulation of effete materials in the system, which, in those prone to rheumatism, brings about an attack. An attack of scarlet fever certainly does seem at times to stir up an attack, or a recurrence, of joint-pain or peri-endocarditis. Thus, in four cases which have come under my notice, who had previously suffered from endocarditis and rheumatism, and who contracted fever, the attack was quickly followed by joint-pain, pericarditis, or erythema nodosum. In one case (*Abstracts of Cases at Children's Hospital, Manchester*, page 16, 1883), John M., aged 9, who

was admitted on the eighth day of an attack of scarlet fever, a pericardial rub was detected, as well as mitral disease, which latter was evidently old; a few days later, there were joint-pain, and an eruption of erythema circinatum. In another case (*loc. cit.*, page 62, 1884), M. E. J. B., aged 13½, admitted to the general wards for acute rheumatism and endocarditis, during convalescence, when she had been free from pain for two or three weeks, contracted scarlet fever. On the fifth day, there was a recurrence of rheumatism in the joints; and on the ninth day pericarditis occurred.

In another case (*loc. cit.*, page 63, 1884), Eleanor H., aged 5, admitted for mitral disease, having suffered from rheumatism six months before, contracted scarlet fever. There was a pericardial friction-sound heard the same day; and on the fifth day there was an erythematous rash. The association, however, of scarlet fever and acute rheumatism is rather that the latter follows during convalescence, which I am inclined to think it does more commonly in adults than in children. Two cases of this kind, which were under the care of my friend Dr. Massiah, of Didsbury, and which he was good enough to ask me to see, impressed me very much. Two brothers, 8 and 10 years old, suffered from a mild attack of scarlet fever; during the fourth week, when they were up and about in their room, and still desquamating, they began to complain of pain in their joints, which, however, was never severe, and also of pain in the region of the heart, with dyspnoea. Both quickly developed both mitral and aortic bruits, and later on pericarditis; one died within three weeks, and the other within five weeks, of the commencement of the rheumatic attack. Both evidently suffered from acute or malignant endocarditis. Such cases are of great importance, and easily mislead, especially as the joint-pains may be comparatively slight.

Scrofulous Disease of Joints.—Disease of the hip, or of other joints, is not, as far as I have seen, a common sequence of scarlet fever; though it is quite possible it may happen oftener than I think, as the cases occurring would gravitate to the surgical side. Presumably, the weakened condition of health produced by the fever, predisposes to tubercular disease of bone or other organs. There can be little doubt that an attack of scarlet fever, as a rule, greatly aggravates chronic disease of joints which have already become established. Suppuration quickly takes place in a perhaps hitherto quiescent hip-joint, and possibly a condition of septicaemia or pyaemia supervenes. It seems probable that sometimes a joint, which has suffered from scarlatinal synovitis, may become the seat of chronic disease, though I cannot say I have ever been certainly able to trace out such a sequence. Much of the variance of opinion with regard to the rheumatic or septicaemic origin of the joint-lesions in scarlet fever has, no doubt, originated from the fact that observers have been describing the different forms which occur. Personally, I have no doubt that the form which occurs most commonly in children is of septicaemic origin, and rarely leaves behind any damage to the heart; but it is also certain that an attack of scarlet fever will sometimes cause a recrudescence of true rheumatism, or in some way predispose, so that an attack supervenes in the course of the patient's convalescence.

A CASE OF DIAPHRAGMATIC EMPYEMA.

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THE following case illustrates a condition which appears to be sufficiently interesting and uncommon to be recorded. The symptoms, as will be seen from the following account, were such as might possibly have given some clue as to the nature of the affection, that is to say, a localised collection of pus between the under surface of the right lung and the right convex upper surface of the diaphragm, had they not been obscured and masked by those of chronic bronchitis, which existed in considerable severity at the same time.

The account of the case, and of the necropsy, is based upon the very full and accurate notes of Mr. P. M. Earle, who was the resident clinical assistant at the hospital, in charge of the case at the time, and to whom my thanks are due.

Emily B., aged 59 years, residing in Bethnal Green, was admitted into the Victoria Park Hospital, under my care, on October 13th, 1885, as an urgent case. She was a married woman, a silk-weaver by occupation, in poor circumstances. She gave the following history of her illness. Having been for many years subject to winter-cough, she was this year attacked in the autumn, much as usual; but, three weeks before she applied for relief, she was rather suddenly seized with a considerable increase of her usual difficulty of breathing, and with pain in the right side. After this, her cough and dyspnoea

gradually increased, and the pain continued. She denied having had shiverings at any period during her illness; and her sputum, which was white and frothy, was never rusty or blood-stained. So anxious had become her condition by October 13th, that, when she came to the hospital as an out-patient on that day, she was found to be too ill to be sent away, and was at once admitted as an in-patient.

Condition on Admission.—She was ill-nourished; had a sallow complexion; her expression was distressed; lips and tongue bluish; cheeks not at all flushed; extremities cold. She answered questions feebly, and with difficulty. She complained of pain at the lower part of the right chest, increased on deep inspiration, and after cough; respirations 34, costo-ventral. She had frequent short cough, with yellowish-white, frothy expectoration, chiefly mucus; no hæmoptysis. Pulse 114, regular, but small and weak. There was no swelling or oedema of the feet or ankles; no ascites. The tongue was thickly coated on the dorsum, with dirty-white fur. Her appetite was much impaired; the bowels were said to be regular. Temperature 99.4°, evening 102.6°. On physical examination, the signs of severe bronchitis and of emphysema were discovered, and, in addition, slight impairment of percussion at the right base, and slight crackling at both bases, but, perhaps, more on the right side. There was no diminution of vocal fremitus at either base. The heart-sounds were weak, but natural, but the cardiac dullness was absent. The hepatic dullness commenced in the right nipple-line, at the sixth rib above, and extended downwards to just below the costal margin; splenic dullness was not increased; there was some tenderness over the right hypochondrium. She was ordered—milk Oij; beef-tea, eggs, and 4 ounces of brandy; an ether draught every four hours, and a poultice of linseed and mustard.

Course and Termination.—The patient distinctly improved for some days after admission. The breathing became much less embarrassed, and the cough, although very troublesome, became looser. The pulse varied from 120 to 128. The temperature was always high: in the morning about 100.5°, and in the evening 102° to 102.6°. No fresh physical signs were found on careful examination, but it was noted that the liver was tender. The medicine was changed on the 16th, to senega and ammonia three times a day. On October 18th, however, without any apparent cause, the patient became very much worse; her complexion became dusky, and she was delirious, and tried to get out of bed at night.

Her state was too serious to admit of careful examination, and, from that time until her death, which occurred the next night but one, she was in a semi-moribund condition. On superficial examination of the right base, on the day of her death, the clerk's notes state that there was distinct dullness. During the whole period after admission into the hospital, the lips were singularly blue.

Necropsy. sixteen hours after death.—Slight rigor mortis was present. There was no *post mortem* staining. There was about half a pint of serous effusion in the right pleural cavity, apparently quite recent. The lower edge of the right lung was firmly adherent to the ribs and diaphragm; and, below the lung, thus shut off from the rest of the pleural cavity, and between it and the upper convex surface of the diaphragm, was a collection of thick creamy pus, localised by thick walls of fibrinous material. The abscess-cavity thus formed was irregular in shape, and encroached upon the lower lobe of the lung, as it were pressing it upwards. There was no communication between this and the lateral pleural cavity, and it was, as it were, surrounded on all sides by lung-tissue. There were several fibrous bands passing between the lower surface of the lung and the diaphragm, and across the abscess cavity. The fluid was very thick, as above stated, but not offensive. There was a slight excess of fluid in the left pleura. The lungs exhibited signs of emphysema and bronchitis; but were not, in any part, at all consolidated. With the exception of congestion, the other organs were healthy. The heart was normal.

REMARKS.—The diagnosis of a localised diaphragmatic empyema, or of an abscess between the under-surface of the lung and the diaphragm, is not, one would imagine, by any means an easy matter; and in this case, where the symptoms were masked by those of severe bronchitis, it is not wonderful that the affection should have escaped detection during life. At the same time, there were certain symptoms and physical signs which, if rightly interpreted, might have suggested a clue. These may be shortly stated to be as follows. 1. The high temperature, which persisted throughout the time the patient was under observation, with a regular, or almost regular, evening rise, amounting sometimes to about 2° Fahr. High temperature such as this is not likely to arise in uncomplicated emphysema and bronchitis. With the high temperature was coupled more than usual prostration. 2. The complaint of pain in the right side, and tenderness over the liver