ntact, while the phalanges have disappeared, or are represented by small atrophic remnants. In this respect they show well the characters described by Tedesco⁴ as present in syringomyelia, and which he regards as constituting a special type of bone affection. These characters are: (1) A general transparency of the bone shadows as a whole; (2) diminution and softening of the cortical layer of the diaphyses; and (3) rarefaction of the spongy bone while its gross structural form is retained, so that the external contour or form of the bone is preserved. When the process of atrophy is far advanced, however, the bone gradually disappears, as the skiagrams show. The increased brittleness which accompanies this process of osteoporosis accounts for the occurrence of fractures. Spontaneous fractures, however, do not occur very frequently in syringomyelia—not so much so as one would expect. At the same time, a certain amount of hypertrophy of bone, with lipping of and outgrowths from the ends of the bones, together with periosteal thickenings, go on side by side with atrophy; and similarly in the cartilages processes of absorption and new formation take place. Effusion of fluid into the joints is frequent; there seems little tendency to ankylosis. According to Kienbock,⁵ the x-ray appearances are against the view which has been brought forward that the bone changes in syringomyelia depend on disappearance of calcium salts.

As to causation, little support is given by these cases to the theory which makes traumatism play an important part in the production of bone and joint lesions in this disease. We are not now speaking of the joint lesions produced by infective processes through perforating, or other deep ulceration of the skin and subcutaneous tissues. In neither case could any history of severe or even repeated

slight injuries be obtained, such as would be likely to directly damage the joints, and the alternative theory which assigns the changes to trophic and vasomotor disturbances seems the more probable one.

In the bone and joint lesions of syringomyelia, the joints most frequently affected are the elbow and shoulder joints. It is possible that the cases under discussion are representative of a distinct but rare group of the disease, in which the sacro-lumbar region of the cord is alone involved, and in which bone lesions are the predominant feature.

Lastly, with regard to the distribution of the disturbance of sensation; in each case this was similar, in that its upper limit passed circularly round the limbs at right angles to their long axis. Catola and Lewandowsky⁶ remark on this point that this form of sensory disturbance is not infrequent in syringomyelia, as well as the customary root arrangement, and they attribute it to a partial interruption of the long tracts in the spinal cord, which they think occurs in this disease, and, as cases of tumour of the cord show, can produce a sensory loss with this distribution.

It is our pleasing duty to express our indebtedness to Mr. J. E. Jones, Skiagraphist to

Fig. 8. Case II—Skiagram of feet

the Bristol General Hospital, for the excellent skiagrams.

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A CASE OF ORAL SEPSIS WITH PECULIAR GENERAL SYMPTOMS.

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In view of the interest which at present attaches to all the complications of oral sepsis, the following case seems worth recording:

Mr. T., aged 35, holding a responsible position in a well-known firm of surgical instrument manufacturers which necessitates a good deal of travelling (never beyond the British Isles), had been in good health except for several attacks of influenza and a nervous breakdown at the age of 16 which caused him to abandon a career as a teacher. No previous history of rheumatism, gout, syphilis, gonorrhoea, or alcoholism could be obtained. On March 27th he had aching in the head, back, and

limbs. Thinking that it was an attack of influenza, he went to bed and applied some domestic remedies. Next morning he was much better, and in a few days was able to return to work. On April 2nd, whilst out on business, he was taken ill with a violent headache, and had some difficulty in getting home. After two days in bed he felt better, and went to the seaside to recuperate, but whilst there on April 9th, 12th, and 15th, he had similar attacks during which he went to bed, being able to get about in the intervals.

He was first seen by one of us on April 16th, and gave a very clear account of the attacks, which, he said, were all alike. The first thing he noticed was the appearance of a red spot on one limb (near a joint) which enlarged till it was about $\frac{1}{2}$ in. in diameter. At first painless, it soon began to burn, and then the neighbouring joint became painful and swollen. In the course of a few hours he felt chilly, and his temperature rose to about 103° F.; with the temperature the headache and pain increased, so that the joint could not be moved. About one hour later perspiration commenced, at first slight, but soon so profuse that the bedclothes were saturated. With the onset of perspiration the pain became less, and vanished in about an hour, whilst the perspiration itself continued for about four hours. After an attack he passed a good night, and felt comparatively well next morning.

On this date he looked quite well. He was a thin but wiry man, of a rather neurotic temperament. The pulse and temperature were normal. Nothing abnormal could be found in the chest or abdomen. The tongue was clean but of a rather brighter red than normal. The bowels were regular, the urine neutral, quite clear, and contained neither albumen nor sugar. On the previous day he had had pain and swelling in the right ankle. The joint now appeared quite natural, but over the right tibia there were a few small red spots not unlike erythema nodosum. There was a slight scattered macular rash over the abdomen. With the exception of some labial herpes there were no sores of any description anywhere on the body. No sign of disease could be found in the ears, nose, or throat. He wore a plate of artificial teeth, but had some of his own, which were carious in places, and round some of them the gums were retracted and spongy. He was thought to be suffering from rheumatism, and was ordered 15-grain doses of sodium salicylate every four hours. Two days later he had a further attack which was quite as violent as its predecessors.

On April 21st he was seen during an attack. There was acute pain in the left knee-joint, but at the time of examination no swelling; the spleen was just palpable; there was no heart murmur. The regularity of the attacks suggested malaria so strongly that he was put upon quinine in increasing doses (up to 5 grains four-hourly).

On April 4th he had another attack, during which he was seen by both of us. The temperature was 103.2°, pulse 120, blood pressure 140 mm. The face was flushed and the remains of the herpes were visible; there was just a suspicion of exophthalmos and some tremor of the lips. There was profuse perspiration, with the onset of which the pain had vanished. There was definite swelling, with fluctuation on each side of the left ligamentum patellae; when seen an hour earlier there was no swelling. On various parts of the body there were patches of erythema, the largest on the left forearm being about the size of a shilling. The only abnormality found in the lungs or heart was a soft systolic murmur accompanying the first sound at the apex, heard only over an area the size of the chest-piece of the stethoscope. The spleen was enlarged, easily palpable, but not tender. There was no other abnormality in the abdomen, and the urine was as before.

Blood smears were examined; there was evidently a leucocytosis and a slight eosinophilia (6 per cent.). A diagnosis of septicaemia was made, and a suspicion roused as to there being some infective endocarditis, but it was suggested that the teeth might be at the root of the matter. Treatment consisted of absolute rest in bed, a liberal diet between the attacks, and sodium sulphocarbonate, 5-grain doses. He was ordered to leave out his denture, and to rinse his mouth with permanganate lotion.

Punctually to time, on April 27th, another but slighter attack supervened, the pain and swelling being in the left heel. There was no systolic murmur in this or any succeeding attack. The attacks then became more frequent, there being ten in sixteen days, but they were slighter. The joint pains were less severe, but the erythema was more marked. On May 3rd one of the lower incisors began to ache; on May 4th there was gingivitis round these teeth, and on May 5th, together with a molar stump, they were extracted. The gums healed very rapidly, but the attacks continued. On May 11th 10 c.cm. of blood were taken from a vein in the hope of obtaining a micro-organism from which a vaccine could be prepared, but the culture fluid remained sterile. On May 27th this was repeated with the same result. The faeces were carefully examined, as the periodicity suggested some protozoal parasite. Nothing was found, nor was there any evidence of intestinal catarrh or ulceration. On May 29th the upper incisors, aching and showing gingivitis, were extracted. There was some pus in one of the sockets, but the gums healed well. There was no further attack for four days. After this there seemed to be some slow improvement. The gums round the remaining teeth became affected, and the latter were removed at intervals. There was pus around the neck of most of the teeth extracted. The root appeared as if covered with a fine velvety pile of a reddish yellow colour. Some of them were loose.

After the extraction of the last tooth he had no further attack, and began to gain ground very rapidly. After ten days he was sent to the seaside, and fourteen days later was able to return to work, and at the time of writing is in good health and attending to business in his usual manner.

The diagnosis of this case gave rise to great difficulty. The quartan periodicity of the attacks make it necessary to exclude malaria. The fact that the patient had never been abroad, the absence of parasites from the blood (after quinine had been withdrawn for a month), and the failure of quinine to prevent the attacks are quite sufficient to exclude malaria. Naturally, infective endocarditis was feared; indeed, a senior consultant, who saw the case, gave a fairly confident diagnosis of this disease and a very bad prognosis. The negative result of the blood cultures and the non-appearance of definite signs of organic cardiac disease rendered this diagnosis impossible. Was the case one of the erythemata nearly allied to Henoch's purpura? There was erythema combined with joint symptoms, but there were never any visceral symptoms and the skin lesions were never purpuric.

When we had failed to obtain a micro-organism from the blood and had excluded all other sources of infection, in what was evidently an infective process, we felt it to be our duty to remove the only source of infection we could find, namely, the teeth. The mouth did not appear to be any more septic than in the case of many more people who have apparently perfect health, but the result of the extraction seems to be very strong evidence that we were dealing with a case of oral sepsis of rather unusual character. We found out subsequently that a few weeks before the commencement of the illness the patient had his denture readjusted, and afterwards found it to be uncomfortably tight, in spite of which he continued to wear it. The quartan occurrence of the attacks cannot be explained. It suggests infection by some protozoon with a definite life-cycle. We much regret that we omitted to have the extracted roots examined with this in view. If it can be accepted that oral sepsis was the cause of the symptoms in this case, then it becomes of great interest in view of the recent attempts to show that various "rheumatic affections" are really the results of oral sepsis,¹ a view which our experience shows has much to support it.

We have to thank Professor Beattie for kind assistance in making one of the blood examinations. We publish this case in considerable detail because the scientific value of all evidence for the case of "oral sepsis" depends largely on the exclusion of all other causes of infection.

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A CASE OF APPARENTLY ACUTE SIMPLE FEBRILE ERYTHEMA

ASSOCIATED WITH THE OCCURRENCE OF TWO
SUBSEQUENT CASES OF SMALL-POX.

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The following case raises several points of considerable practical importance:

On Thursday, March 18th, 1909, S. C., a girl, aged 16, living in domestic service in Bristol, complained of a slight sore throat and some headache; she was well enough to "go out" on Sunday, March 21st, as usual, but apparently got worse later, and Dr. Myles was called in to see her on March 25th. He found that she then had a temperature of 102° F.; the tongue was furred, the throat and palate injected, and she complained of pain in the back. She also presented a profuse, soft, papular rash, distributed somewhat generally over the body, most marked on the front and outer side of the upper arm, and on the thighs, less profuse on the trunk, very few papules on face and forehead, and none on the wrists.

The papules were flat and of a dark copper colour; some quite large patches of slightly raised areas occurred, especially on the upper arm, covering the area of a shilling or half a crown. On palpation the papules and raised areas were softish, and gave the impression of being quite superficial, with the exception of a few on the forearm, which felt more rounded, somewhat deeper in the skin, and more resistant. The eruption on the palate and tonsils was distinctly not papular.

The left arm showed two small scars of primary vaccination.

Although the case presented the appearances of a papular erythema accompanied by fever, and not any characteristic appearances of modified or minimal small-pox, she was admitted, as a precautionary measure, to an isolation ward in the city hospitals on March 26th for observation, under the care of Dr. Pauli. On admission the appearances presented were practically unaltered, though the papules showed no signs of development and had become less prominent; the temperature on March 26th ranged from 100.4° F. at 10 a.m. to 102.6° F. at 6 p.m.

On March 27th Dr. Pauli noted that the patient presented in the situations named a deep-coloured or dusky erythematous rash, but the raised condition of the skin had subsided, and no papules could be distinguished. The tongue presented the dirty brown appearance often associated with gastric disturbance. On this day the temperature fell rapidly and evenly from 101.8° F. at 2 a.m. to 99.6° F. at 10 a.m., and to 99.0° F. at 6 p.m.

Under simple treatment the tongue very quickly cleaned; the temperature fell to normal by the morning of March 28th and continued normal; at no time was there the slightest indication of vesiculation over any of the spots or patches, nor did the most careful examination disclose the presence of a single papule which suggested even the most modified or abortive form of the true small-pox papule; the erythema faded quickly, leaving discoloured patches of skin, over which a slight branny desquamation occurred.