NOTE ON THE CHANGES IN THE RED CELL PRODUCED BY THE MALIGNANT TERTIAN PARASITE.

BY

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THE "stippling" of the red cell produced by the simple tertian parasite is well known. The appearance is that known as Schüffner's dots, and is seen most characteristically in specimens stained by the Romanowsky method.

In the case of the malignant tertian parasite a change in the red cell is also known, observable in the fresh specimen, and described by the Italians as "*globuli rossiattonati*," or "brassy corpuscles." We do not think, however, that it is at all generally recognized that characteristic changes in the red cell may be seen in stained films in the case of the malignant tertian parasite. As far as we are aware, we ourselves first pointed out this change when working in Central Africa in 1899. We wrote: "The corpuscles containing these developed parasites (malignant tertian) themselves show alteration in staining properties. They present minute clefts or spots, scattered over the cell, staining slightly with haematein." We from time to time observed the same change, more strikingly shown, however, when staining with Romanowsky, in West Africa and India; and lately in cases of malignant tertian in England we have met with marked examples of this change.

The appearance of the stippling in the case of malignant tertian is quite distinct from, though probably of similar character to, that seen in simple tertian.

Malignant tertian "stippling," if we may so call it, is characterized by the fact that—

1. The staining dots are few in number—2 to 6.
2. They are coarse in size and irregular in outline. The appearance, stained by Romanowsky, is so characteristic that it cannot be confused with the fine and abundant stippling of the simple tertian infected cell. In addition, the red cell as a whole may stain a peculiar deep yellowish-red colour, in striking contrast to non-infected cells.

The stippling is well shown by staining with Romanowsky (Leishman's method) for an hour, and washing well with water, or rapidly with equal parts of spirit and water to take the blue stain out of the red corpuscles. Most striking and characteristic specimens can also be obtained by fixing in chloroform, then staining with Romanowsky. The stippling shows beautifully in every cell containing a parasite, possibly from the fact that much of the haemoglobin has been dissolved out of the film by the watery stain.

We think Ruge, we regret we cannot recall where, has lately drawn attention to this malignant tertian form of stippling. The fact that it has been overlooked hitherto we think may depend to some extent upon its requiring a somewhat long staining for its best demonstration.

If the stippling of the red cell in a case of malaria is used as a diagnostic sign, errors may arise unless it is realized that a form of stippling is to be seen in cases of malignant tertian. It is important also to note that the malignant tertian coarse stippling is as characteristic of this parasite as the fine and abundant stippling is of the simple tertian parasite.

A CASE OF THE FORM OF CHRONIC JOINT DISEASE IN CHILDREN DESCRIBED BY STILL.

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THE patient, A. S., who was shown at the Medical Society in April, 1902,¹ was then a typical example of the articular affection in children, described by Dr. G. F. Still in 1896.² The disease seems to have commenced acutely at the end of the year 1900. In November, 1901, there was a definite attack of endocarditis, and the mitral valve was affected. In April, 1902, the knee-joints and elbow-joints were somewhat enlarged; but the most striking features of the case were the symmetrical swellings about the articulations of the hands and feet, and the stiffness in the cervical region of the spinal column. The spleen and liver extended considerably below the ribs, and

the lymphatic glands in the neck, axillae, and groins were enlarged, but not greatly so. The cardiac apex beat was felt 1 in. outside the nipple line, and a systolic murmur was heard at the apex.

Since that time to the present the boy has been kept under observation. In May, 1902, there was a slight attack of catarrhal jaundice, and occasionally in May, June, July, and August the temperature was slightly raised. In September the general condition and the articular affection were improved, but there were crackling and signs of fluid in both knee-joints. There was no fever from the middle of August to the middle of December; the child continued to improve, and in December neither the liver nor spleen were felt. Unfortunately, the boy then got enteric fever, and from December 16th, 1902, to January 18th, 1903, there was more or less pyrexia, and later on again, between January 30th and February 19th, there were occasional elevations of temperature to about 100° F. During the attack of enteric fever the boy became emaciated, and his spleen was considerably swollen, but lately he has been putting on flesh and gaining rapidly in health and strength, and has had no fever since February 19th. Now (March 16th, 1903) he appears happy and active. His joints are almost normal, with the exception of crackling in the knees and slight spindle-shaped enlargement about the finger-joints. He can move his head freely, and the rigidity of the upper spinal column, which was such a marked feature of the case a year ago, has practically disappeared. The spleen is slightly enlarged, but the lymphatic glands cannot be felt, except the inguinal ones, which even in healthy persons are very often slightly enlarged. The heart is still somewhat enlarged (apex beat in fifth space, $\frac{3}{4}$ in. outside nipple line), and a very soft apical systolic murmur can still be detected. The urine shows nothing abnormal, and the blood (haemoglobin 90 per cent. of the normal) contains 4,060,000 red cells, and 14,064 white cells in the cubic millimetre (the white corpuscles in January, 1902, were 31,000). Lately the boy has been given cod-liver oil and malt and a little Easton's syrup, and he has had a tepid bath in the mornings with a cool douche over the back.

This case appears to show that the rheumatoid articular affection in children described by Still is sometimes practically recovered from. But the damage to the mitral valve of the heart has left its mark, and the crackling in the knees seems to show that in these joints a change has supervened, resembling that in chronic rheumatoid arthritis of adults. The original affection in the present case seems to me to have been, or at all events to have been complicated with, a form of true rheumatism, as far as such an expression may be used at all in the present state of our knowledge. Probably the most important part of the treatment has consisted in the child being kept away from the unsatisfactory conditions of its own home since May, 1901, care in regard to diet, etc.

NOTE AND REFERENCE.

- ¹ I termed the condition "an infantile form of articular rheumatism." The child was shown a second time at the Medical Society, March 23rd, 1903.
² A Form of Chronic Joint Disease in Children, *Med.-Chir. Trans.*, vol. lxxx, p. 47.

MEMORANDA: MEDICAL, SURGICAL, OBSTETRICAL, THERA- PEUTICAL, PATHOLOGICAL, Etc.

VOLKMANN'S CONTRACTURE.

ACCORDING to your interesting report of the meeting of the Clinical Society of London,¹ under the presidency of Mr. Howard Marsh, several patients exhibiting Volkmann's contracture were shown by Dr. Dudgeon. In each there had been serious injury to the humerus, and splints had been used, in one case for four days, in another for only twenty-four hours, before the symptoms of contracture were manifest.

Is it necessary, I would ask, to incriminate the use of the splints in all such cases? Is not the limitation by the skin of the exudation following the injury sufficient to cause a pressure paralysis and contracture?

I saw last year a boy, aged 10, with what appeared to be a simple dislocation backwards of the elbow, which was easily reduced under chloroform. No splints were applied, the arm being simply flexed, enveloped in cotton wool and a soft bandage. In less than twenty-four hours there was complete