

Microsporum Aulouini inasmuch as it can be successfully inoculated into guinea-pigs. In the examination of the affected hairs he prefers a strong to a weak solution of caustic potash, and after washing he mounts in glycerin. An alternative method is by using formic acid as a clearing substance, and subsequent mounting in balsam. In this way the hairs are not rendered so transparent, while the fungous elements appear smaller. The microsporum primarily attacks the epidermis and secondarily insinuates itself into the follicle, where it finds in the débris filling up the follicular funnel-shaped opening, abundant material for growth. The mass of parasitic vegetation in the follicular ostium has no analogue in the series of mycosic diseases except the favus scutulum. It is composed of giant filaments made up of enormous rectangular cells, set end to end, and mixed with these, forming islands between them, are many oval sporular particles, not much smaller. The hair at this level is healthy. The direction of the mycelial threads is always downwards. The point where the mycelium penetrates into the interior of the hair is about the middle of the radicular portion, and it raises up the imbricated scales of the cuticle at ten or twenty different spots. Within the hair there also exists a system of descending mycelium of finer character, becoming more and more plentiful the nearer the hair root. Some of the filaments terminate under the sheath of spores which invest the hair. Others end in a vertical or terminal bundle of threads, known as the fringe of Adamson, from its first describer. A peculiar characteristic of the microsporums is the formation of a dense grey sheath, composed of masses of spores kept in place by an envelope of the follicular epidermis, which is torn away when the hair is forcibly extracted. The mode of production of this immense mass of covering spores has not, so far, been thoroughly explained. There are several theories to account for it. No doubt many of these spores are produced by the fission of the descending external mycelium. Others, according to Sabouraud, are derived from the intrapilar mycelium which reaches the surface of the hair, and there breaks up. But the growth of the hair, though diseased, is uninterrupted. May it not very well be that the accumulation is, in some measure at least, due to there being a residuum constantly left behind and so increasing as the hair ascends; for outside the follicle, especially in old-standing cases, the sheath of spores is less in its thickness, and becomes very scanty but a short distance above the level of the scalp?

DISEASES OF CHILDREN.

UNDER THE CHARGE OF

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ANÆMIA INFANTUM PSEUDO-LEUKÆMIA (VON JAKSCH).

KOPLIK, in this interesting and exhaustive paper, commences by reviewing the literature of the subject. He points out in the first place that the disease, as originally described by von Jaksch in 1889, was thought to

be a primary blood disease peculiar to young children, in which there was oligocythæmia, oligochromemia, a high degree of leucocytosis, a tumour of the spleen, swelling of the lymph nodes, and moderate swelling of the liver.

Monti, Tessier, J. S. Fowler, and others adhered to the original idea of von Jaksch that they had to deal with a primary specific condition or disease of the blood. The idea of von Jaksch that there must be a leucocytosis in all of these cases has now been generally abandoned, for undoubted cases have been published corresponding in all particulars to the disease described by von Jaksch, which at certain periods did not show leucocytosis.

Fischl and Wentworth support the author's belief that the disease is a secondary anæmia due to disturbance of nutrition, acting on the blood-forming organs, the spleen, and the liver, causing changes in the blood owing to a disturbance in the function of these organs, but in no sense to be interpreted as a primary disease of the spleen or bone-marrow. The third hypothesis, which is supported by Luzet, Weil, and Lehndorf, is that von Jaksch's anæmia is nothing more nor less than a type of myelocytic leukæmia in children, and is modified in its pathology and blood picture by the complicating conditions of this period of life, namely, syphilis and rickets. The author points out that there has been no known case presenting the symptom complex of von Jaksch's pseudo-leukæmia developing into a true leukæmia.

He gives the following detailed account of the blood examination of nine personal cases. The hæmoglobin ranged from 28 to 65 per cent. The red blood corpuscles in some cases fell as low as 1,400,000, and in others as high as 4,448,000. The leucocytes ranged from 5200 in one case to 80,000 in another. In all these were nucleated red blood cells, normoblasts, megaloblasts, from a number in each field to 7 or 15 per cent. of the red cells counted. In some cases, at various times, the white blood corpuscles varied in number from 11,000 to 80,000 in the cubic millimetre, with a red blood count of 2,600,000 to 3,700,000. It is necessary to have repeated counts to form a correct idea of the white and red blood cells.

The polynuclear leucocytes formed in some cases 80 per cent. of the white blood cells, and in others fell as low as 15 per cent., and sometimes in the same case within a few days they would vary from 45 to 15 per cent. Myelocytes were present in all cases, varying from $\frac{1}{2}$ to 7 per cent., and eosinophiles were present in normal percentages in all cases.

The study of the blood picture tends to confirm the belief that there is not a definite pathological picture in this disease of anything but severe anæmia in subjects on whom any disturbance of the blood-forming organs causes a retrograde to the foetal type.—*Trans. Am. Pediat. Soc., Phila., vol. xviii. p. 100.*

SCARLATINAL NEPHRITIS.

FROM a study of a hundred cases of scarlatinal nephritis and an examination of sections from a hundred kidneys, half of which were observed during life, Eric Wilkins (University Research Fellow in

Medicine) comes to the following conclusions:—Nephritis is present in about 6 per cent. of all cases of scarlatina, and of this 6 per cent. hæmaturia is present in 3 per cent. It is more common in males, and especially between 5 and 9 years. Beyond the fact that scarlatinal nephritis is probably due to a combination of toxic absorption and of decreased excretion, little is known of its etiology. There is no evidence to show that chill has anything to do with its causation.

Two hundred cases were kept in bed for three weeks, and another 200 were allowed up when the temperature became normal, and, as a matter of fact, nephritis was less frequent in the latter. Excessive desquamation plays a very slight part in the causation of nephritis. The question of infectivity of nephritis is of importance, as there is no doubt of the frequency of epidemics in the wards making it advisable to isolate all cases of nephritis. It is the neglect of this principle that makes the ordinary home a safer place for a scarlatinal patient than a fever hospital.

There is no doubt in the author's mind that oral sepsis is the chief operative factor in the production of nephritis. The most hopeful line of prevention is the isolation of septic or nephritic cases; the treatment of oral and faucial sepsis, and by the injection of the anti-streptococcus serum in toxic cases. The early recognition of the disease is important, as few conditions are more amenable to treatment.—*Med. Chron.*, Manchester, 1907, October.

THE RELATIVE VALUE OF THE OPSONIC INDEX AND TUBERCULIN IN THE DIAGNOSIS AND TREATMENT OF TUBERCULOSIS IN CHILDREN.

As greater interest is aroused in the question of tuberculosis, the demand for making an early diagnosis grows more urgent, especially as at the present day early diagnosis frequently means cure of the disease. The present is a brief abstract of a paper by Morgan Rotch and Floyd (*Journ. Am. Med. Ass.*, Chicago) treating of forty children who lived in tuberculous families, in twenty-five of whom definite signs of consolidation at one apex were found. With the exception of two of the cases, all the children seemed perfectly well and free from symptoms. By recognising tuberculosis at this early stage, before tubercle bacilli are thrown out in the sputum, an endeavour to prevent the dissemination of the disease is greatly aided.

The two means at present at our disposal for the early detection of tuberculous infection are the tuberculin test and the opsonic index. Tuberculin is a powerful agent, and, on account of its ability to do harm in inexperienced hands, should only be used with the greatest care by trained observers. The writers use the following method. The solution for using the test is prepared by taking 1 c.c. of Koch's old tuberculin and adding to 999 c.c. of boiled distilled water; 1 c.c. of this solution equals 1 mgrm.

The dose of the solution for an infant is from 2 to 5 mgrms., according to age, which should be injected with antiseptic precautions. If the child is not tuberculous, no symptom will be noticed, but if it is tuberculous the temperature will rise in eight to twenty-four hours after the injection, and will fall again within twenty-

four hours. During the period of reaction there is generally some malaise, but there seems to be no danger of any serious results. A positive reaction will be obtained in about 95 per cent. of cases of tuberculosis. A negative reaction, although it does not exclude tubercle, is very strong evidence against it. If before the tuberculin is injected the child has had a swinging temperature, the test is not found to be of much value.

It is still a disputed point whether it is better to begin by giving small doses, gradually leading up to the dose which will produce reaction, or to give a reacting dose at once. Although in favour of the former method, it is to be remembered that too large doses are as dangerous as too large doses of any other dangerous drug which may prove fatal. Usually $\frac{1}{10}$ mgrm. is given as the initial dose, followed in three days, if there has been no reaction, by 1 mgrm., and in other three days by 3 or even 5 mgrms., according to the age of the child. A positive reaction consists not only in a rise of 1 or more degrees of temperature above the previous level, but when also within twenty-four hours the patient complains of headache, nausea, vomiting, diarrhoea, pains at the site of injection, and especially in the appearance of harsh or cog-wheel breathing at the suspected area, without a rise of temperature. Some cases give all these symptoms, others very few, but an examination of the chest immediately following an injection is of great importance.

The opsonic index may be a great aid in diagnosing cases when, on account of extreme prostration or of a high irregular temperature, tuberculin cannot be given. If we follow the index in a case of pulmonary tuberculosis, we find it runs in three different ways, low, high, and fluctuating, and they are of importance from a diagnostic point of view in the order given. A low index may mean tubercle or a lowered general resistance to the tubercle bacillus.

When the index is constantly high, tuberculosis is practically always present. The fluctuating index is still of greater value, in that it indicates overdosage of the system with products from a tuberculous focus, and we therefore get a series of positive and negative phases. Of still more importance is the treated serum reaction. This test is made in the same way as the ordinary opsonic index, except that both the normal and pathologic sera are treated for ten minutes at 60° F. in water before using. In the treatment, minute doses, steadily increasing and extending over several months, should be given, seeking, if possible, to avoid reaction. This will increase the patient's resistance, improve the general condition, and aid in healing the process. The authors having used small increasing doses over a long period of time, have had many favourable results. Reactions were very few, and they feel encouraged to continue their observations.—*Journ. Am. Med. Ass.*, Chicago, 1907, August 24.