

of leukaemia, but a similar syndrome may arise in suprarrenal sarcoma. The green colour may be found in the marrow, etc., of cases of leukaemia which have no skull lesions, and may be absent in the skull lesions of other undoubted cases of leukaemia. Hence the syndrome is unduly limited in one direction and unduly enlarged in another if we make the green colour an integral part of it. Hence the suggestion of the name "nodular leukaemia" for this and some other manifestations, in order that the existence of tumours might be apparent, while the connexion with leukaemia was at the same time not overlooked.

The second syndrome is that above mentioned as the "mycosis fungoides" syndrome. It lacks any other name, and hence is properly included as nodular leukaemia if a multiplication of names that subsequent research may render quite valueless is to be avoided. In these cases there are a number of nodules either just under the epidermis or in the deeper subcutaneous tissue, and these are very commonly more or less symmetrical in distribution. They may come and go with great rapidity, but this is by no means always the case. A similar syndrome may occur in cases of sarcoma, but the leukaemic nodule very rarely, if ever, ulcerates through the skin, whereas the sarcomatous nodule may easily do so.

The third syndrome is often described under the name of Mikulicz's disease. It is characterized by swelling of the lacrymal, parotid, and submaxillary glands. The swelling is usually chronic and painless, and does not tend to suppurate. As a matter of fact this "symmetrical glandular syndrome" is not infrequently of greater extent than would appear, for, besides the glands mentioned, the mammae or ovaries or testes may be affected. The swellings are always symmetrical, and microscopically show an infiltration of the gland substance with cells similar to those seen in the blood. I would include examples of mammary swellings in the syndrome whether the salivary glands were infected or not, since there seems to be no reason to suppose that the problem of their involvement is in any way different from that of the other glands. This syndrome is met with in mumps, and in some other conditions, but rarely.

The fourth syndrome is that of persistent priapism. This of course may be met with in other conditions, but the most common single cause of persistent priapism has been shown by Warthin to be leukaemia. This, like the others, is of the nature of an infiltration, although some of the infiltrating cells may multiply *in situ* and give rise to more or less distinct nodules standing out from the surrounding infiltration. If the infiltration itself is too slight to be appreciated clinically the nodules will appear to be the sole lesions. But even in the case of skull nodules this is not, as a matter of fact, the case; there is always infiltration as well as nodule.

What, then, is leukaemia, if it can be associated with all these different syndromes, not as a result but as a primary and determining factor? In the first place, we are entitled to say that it is one of a definite group of diseases—that is, the generalized affections of blood-forming tissues. In this group are also Hodgkin's disease and the Gaucher type of splenomegaly. It is possible, but not yet proved, that multiple myeloma should be included. In all of these there is something acting which calls into activity the cells of all blood-forming tissues, marrow, glands, spleen, and often thymus and liver. In each of these places autopsy may reveal foci of active growth identical in all places but not of the nature of metastasis nor replacing the original tissue of the part except by passive pressure. All these foci are, in fact, proliferations of cells pre-existing in those positions. In Hodgkin's disease and in Gaucher splenomegaly there is a considerable body of opinion that the endothelial cells are the ones to be stirred up in this way to new and abnormal growth. These endothelial cells are almost certainly those of the lymphatic spaces and channels. In leukaemia we are not so sure what cell is affected first, although we know that a great variety of cells results—just as in Hodgkin's disease the abnormal cells are not all of the same type. But whatever cell it be it is very closely associated with the lymphatic channels, so closely that one cannot avoid the conclusion that it is the carrying off of these cells by these channels which produces the sudden changes in size of spleens, etc. This change is

even more marked in the case of skin tumours or nodules. Whence do these come? Probably from lymphatic cells in association with lymphatic channels, for the only parts of the body in which these nodules may not be met with are precisely those in which lymphatic channels are not found—namely, the nerve tissues and cartilage. They may be found in the choroid plexus or on the periosteum, but no nearer. There is no particular difficulty in understanding that whatever calls forth such undue activity in normal blood-forming tissue may also call into existence blood-forming tissue in any part of the body where lymphatic cells and channels are found—in fact, it is clinically certain that this is the case.

It will be noted that this class of case is sharply separated from malignant growths—"cancers." These eat into surrounding tissues, they consume even bone. Leukaemic nodules infiltrate, but do not destroy, and they never touch bone. Other growths cause a reaction in the surrounding tissue—there is no reaction to leukaemic nodules. Sarcoma cells may eat their way through a vessel, and thus a very few fragments of tissue may escape into the blood stream, or they may grow as a solid cord through the length of a vessel, but the cells of leukaemia have natural access to vessels without destroying the walls—hence they are found in the blood stream in enormous numbers, but never as fragments of tissue, always as single cells. There is not on record any case of undoubted sarcoma in which the cells were found in the blood stream during an ordinary blood examination, there are no cases of any sort in which it was alleged that cells of any but a small round-celled sarcoma reached the blood stream, and these latter on investigation are found to be of no value when subjected to criticism. These statements are, of course, not made from a perusal of the literature of the whole world, but yet after considerable attention to the matter.

Leukaemia, as one of the generalized affections of blood-forming tissues, is distinguished by the type of cell involved. It differs plainly from that met with in Hodgkin's disease or in Gaucher splenomegaly. Nevertheless, although constantly different from these, it is not constantly the same. This is because the most specialized cells proliferate first. The stimulus may act on a primitive cell, but at first it is able to send out its children in the clothing to which the world is accustomed. But later the hurry begins to tell, and the daughter cells are less specialized; later still, the primitive cell itself comes forth, and then, as a rule, the patient dies.

The difference between the two types of leukaemia is more difficult to lay down, and, even if an individual view could be stated, it would not be accepted. Fortunately the treatment is the same, so that such a statement would be of theoretical rather than practical interest at the moment.

REFERENCE.

¹ BRITISH MEDICAL JOURNAL, June 21st, 1913.

A CASE OF ECTOPIA CORDIS.

By WILLIAM ROLLAND, M.D.,

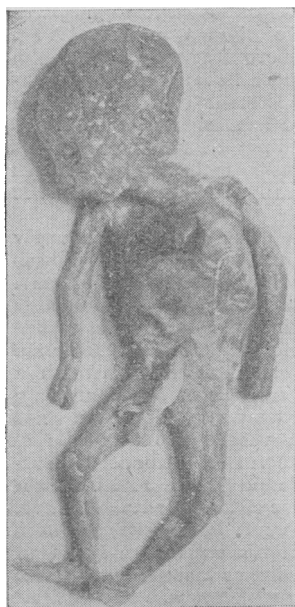
HONORARY ASSISTANT SURGEON, BOLTON INFIRMARY.

As these cases are of such rarity that they may be looked upon as teratological curiosities, it seems desirable that a recent example of the condition, which occurred in the practice of the writer, should be put on record.

The child was one of twins born on January 25th, 1912. As nearly as could be determined the pregnancy had only lasted six and a half months. The mother was a primipara, aged 38, under-sized, anaemic, and with a generally contracted pelvis. She was attended in her confinement by a midwife, and I was called in later to deal with a very adherent placenta, which had to be removed under chloroform. No history of congenital abnormality could be obtained on either side of the family. One of the twins (female) survived about six hours, its death being due to prematurity. It presented no abnormal condition. The other (male) was born dead, but death had evidently occurred only a short time before, probably owing to the pressure to which the heart must have been subjected during delivery.

Description of the Specimen.

The child has the ordinary size and appearance of a 6½ months fetus. (The shrivelled appearance in the



photograph is due to prolonged immersion of the specimen in a preserving fluid.) The sternum is fissured longitudinally, the upper ends being about 1 inch apart; the lower ends are united by a transverse cartilaginous band. The costal cartilages unite with each half of the fissured sternum in the ordinary way. The heart is completely extrathoracic, lying in front of the gap in the sternum and held in place by the main vessels, which enter and leave the thorax through the fissure at about the level of the middle third of the sternum. The parietal pericardium is absent except for a small portion of its posterior wall, measuring 2 cm. in length and 1.5 cm. in breadth, which lies over the centre of the gap in the sternum, and is perforated by the

main vessels. This portion of pericardium unites at its edges with the skin of the thorax, the two completely filling up the gap which is left between the separated halves of the sternum.

The heart itself has the normal appearance of that of a 6½ months fetus. There is no adhesion of the amnion to the visceral pericardium. No other abnormality could be detected in the specimen.

Remarks.

The cases of ectopia cordis which have been reported in this country are very few. Barnardo¹ records a case, closely resembling the present one, in which the child lived for six hours. Another case is noted by Owen and Williams.² The subject is very fully discussed by Ballantyne,³ who gives numerous references to the literature of the subject. Besides referring to cases accompanied by sternal fissure (of which the present one is an example), he points out that there are two other chief varieties—ectopia suprathoracica, in which the heart is displaced upwards into the neck, and ectopia subthoracica, where there is displacement downwards through the diaphragm into the abdominal cavity or the sac of an exomphalos. A case of the latter variety is recorded by Holt.⁴

There seems to be some doubt as to the factors which tend to produce this deformity. Ballantyne suggests arrested development of the thoracic walls as the most likely explanation, and this view is supported by the fact that in some cases amniotic bands have been found attached to the heart and tending to pull it forward out of the thorax.

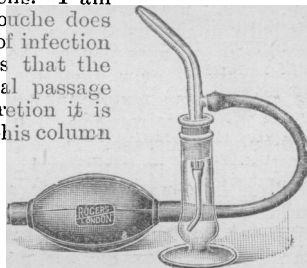
REFERENCES.

¹ BRITISH MEDICAL JOURNAL, 1896, ii, p. 1639. ² *Lancet*, 1903, ii, 599. ³ *Antenatal Pathology and Hygiene*, p. 489. ⁴ *Med. News*, N.Y., 1897, lxxi, 769.

MESSRS. W. H. BEYNON AND CO., fine art publishers, Cheltenham, have issued a set of three drawings by Hanslip Fletcher, of King's College Hospital, which will be of interest to old students of that institution. They show the front entrance facing on to the back of the College of Surgeons, the main staircase, and the interior of the chapel. All three are excellent, and possess the charm which distinguished the Guy's Hospital set by the same artist, which we noticed some months ago. They are well reproduced in photogravure; the subscription for artist's signed proofs printed on indian paper with plate paper mounts is one guinea. The publishers offer to supply the prints complete in oak frames at an extra charge of 13s. 6d. the set. In view of the pending removal of the hospital to Denmark Hill, these drawings will form an interesting memorial of the old building.

Memoranda:**MEDICAL, SURGICAL, OBSTETRICAL.****A COARSE NASAL SPRAY TO AVOID THE DANGERS OF THE NASAL DOUCHE.**

THAT there is always some risk attending the use of a nasal douche has long been recognized, and various devices to avoid these risks have been introduced from time to time. First, there is the danger of the fluid mass of watery lotion entering the Eustachian tube and, by carrying in the diluted solution of muco-pus and organisms from the nasal passages, causing infection of the middle ear; this danger is so well known that it is sufficient to mention it. Secondly, there is the less recognized danger of spreading the infection from the nasal passages, or from, say, infected ethmoidal cells, to other still healthy sinuses, particularly other ethmoidal cells. I am convinced that the nasal douche does sometimes cause spreading of infection in this way. It is obvious that the lotion injected into a nasal passage forms a solution of the secretion it is intended to wash away, and this column



of lotion may find its way into ethmoidal cells, or even into a frontal sinus. The danger is certainly lessened by the patient sniffing up the lotion instead of injecting it, but in cases in which it is not essential to have a mass of fluid flushing the nasal passages, these risks can be entirely avoided by using the far more comfortable coarse spray. As I could find no suitable spray for the purpose in the market, inasmuch as hitherto the fineness of a spray has been its special recommendation, I devised a very coarse nasal spray which Mr. Frank Rogers, of London, made for me, and which for the last two years I have found in every way satisfactory for all cases except those—for example, an antral empyema—in which a douche is essential; even in such cases it is often desirable for the cleansing of the nose apart from the sinus that must be lavaged. Rogers's coarse crystal spray being made of glass throughout, except for the cork and bellows, can always be boiled before using.

The principle of using a coarse spray for lavage instead of the very widely used douche is in my opinion a matter of very considerable importance.

Clifton.

P. WATSON-WILLIAMS, M.D.Lond.

ADRENALIN IN WHOOPING-COUGH.

DURING a recent epidemic of whooping-cough in this neighbourhood, I found that the usual remedies completely failed in one instance—that of a delicate child of 7 years, whose case was complicated by attacks of bronchitis. She had been ill for about six weeks, the paroxysms still continuing to occur, on the average, every three or four hours, and the attacks of bronchitis becoming more and more serious, when I happened to read Dr. G. V. Fletcher's account of his adrenalin treatment of whooping-cough in the BRITISH MEDICAL JOURNAL for December 28th, 1912, and determined to try it.

I began with 3 minims of the 1 in 1,000 solution by the mouth every four hours, and almost immediately noticed a marked diminution in the severity and frequency of the paroxysms. I was soon able to limit the administration of the adrenalin to three times a day, and continued it thus for three weeks, at the end of which time the child had completely recovered from the cough and the bronchial symptoms, and had steadily improved in every other way, there being a total disappearance of the anaemia and wasting which had been produced by the persistent vomiting.

As this case occurred towards the end of the epidemic, I have had no opportunity of trying the treatment in any others, but this one instance seems to me to be so significant as to be worthy of mention.

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