

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

154. Pleuritic Effusion.

F. LOMMEL (*Medizin. Klinik*, No. 4, Jahrgang v) reviews the recent advances made in the study of pleuritic effusion, advances which are partly of theoretical, partly of practical interest. The importance of the diminution of vocal thrill as a sign of pleural effusion has, perhaps, somewhat diminished. Arneth, as a result of the examination of 117 cases of pneumonia, arrived at the conclusion that, as a rule, vocal thrill was absent in the second stage of pneumonia; while Wolter supported Arneth in so far as he found the increased vocal thrill of pneumonia not constant, and observed an increased vocal fremitus in pleuritic exudate. A more recently observed physical sign of value in diagnosis, first described by Grocco, is the presence of a triangular area of diminished resonance on percussion situated on the sound side near the spine, with its apex at about the height of the upper limit of the effusion. Rauchfuss explains the area of dullness on the sound side as due to the fluid-filled recess arching over like a sac in front of the vertebral column; Rathes, on the other hand, looks upon it as due to a weakening of the pleximeter action of the spine from an accumulation of fluid. On the affected side Krönig's recent description would make the three-cornered resonant area smaller than that formed by Garland's S-shaped upper boundary; the anatomical reason for this resonant area on the affected side is the drawing back of the lung still containing air on to its hilus. Illumination by Roentgen rays may clear up the diagnosis in cases of pleural effusion. By means of it the presence of small effusions which only fill up the pleural sinus can be demonstrated, and also effusions situated between the lobes of the lung; the effusion in the latter case being differentiated from abscess in the lung by the absence of elastic fibres in the sputum. Thickenings of the pleurae can be differentiated from effusions by the fact that the shadow due to thickening varies in intensity according to the distance from the screen, and thus, for example, a thickening of the posterior pleura will cast a more distinct shadow if the screen is behind than in front. The upper limit of a pleural effusion as tested by percussion may appear to be different from that obtained by Roentgen-ray illumination; but this does not necessarily show inaccuracy in percussion, because an effusion with a horizontal upper limit may throw a shadow whose upper line rises from within outwards as a result of the increased amount of fluid through which the lateral rays have to pass, and partly also because of the lateral part of the lungs being more readily compressed by fluid than the part near the root. In practice, the great question as to the course of a pleurisy is whether it is or is not tuberculous. The disadvantage of many of the methods of attempting to determine whether or not the fluid is tuberculous in origin by means of culture media or inoculations of animals, is the length of time which must elapse before certainty is arrived at. Thus Vetter uses a peptone glycerine water as culture medium, and finds the method more reliable than that of animal inoculations, but the time needed is from twenty-one to twenty-five days. When guinea-pigs are used and inoculations made into the peritoneal cavity, according to Grober, from three to four weeks is needed. Bloch shortens the time to from ten to fourteen days by injecting fluid into the bend of the groin, and injuring the lymph glands by pressure between the fingers. Weber arrives at much the same result in time by using subcutaneous injections. Nattan-Larrier inoculates a suckling guinea-pig at the base of the lacteal gland, and finds bacilli present in the milk at the end of five days; the only disadvantage of this plan is that, even in the larger institutes, there is not a constant supply of such animals. In a more restricted number of cases cyto-diagnosis is of great value. In general it may be said that an excess of lymphocytes as compared with polymorphonuclear leucocytes in an acute feverish condition denotes with great certainty a tuberculous affection, but the absence of lymphocytes does not exclude the possibility of tubercle. The question as to whether an effusion is essentially pleuritic or of the nature of a transudation does not, as a rule, present much difficulty, except where an inflammatory process is combined with a hydraemic transudation; in this connexion may be mentioned those obstinate right-sided pleural exudates which are not infrequently found in

combination with diseases of the cardiac muscle, and to which attention has been specially called by Gerhardt. Here the absence or insignificance of other pathological collections of fluid, the obstinate course and the tendency to relapse even where good diuresis is maintained, all go against the diagnosis of simple transudation. In considering the question of paracentesis in the case of serous or sero-fibrinous exudates, too narrow a construction is not to be put on the vital indication. Gerhardt has shown how the injurious effect of a pleural exudate upon the lesser circulation is minimized by deepening of the inspirations, so that the intrapleural pressure in cases of recent exudation, where the pleurae are not much thickened, may be even more strongly negative than in health; the powerful muscular action needed to accomplish this may, however, suddenly fail through exhaustion, and thus cases of sudden death may be explained.

155. Diseases associated with Dentition.

HUTINEL in the *Annales de Médecine et Chirurgie* for March discusses the question, Is dentition a cause of infantile disease? The opinion that it is has been held for centuries, but for the last fifty years it has been in dispute. Guersant maintains that the period of dentition is a time when the physical powers of resisting disease is at a low ebb, and he compares it to the menstrual, the puerperium, and the climacteric periods, when disease is easily acquired. He quotes Magitot, Politzer, and especially Dr. Comby, as holding the same view. But he also points out that one cannot by a stroke of the pen destroy the result of observations made by many physicians and maintained by the ancients. The ideas that the ancients had concerning cold have lost nothing of their accuracy, notwithstanding the discovery of the pathological agent of pneumonia; we have found, however, that cold lights up their virulence. Progress in medicine does not take place in one direct line—there are too many difficulties for that; it is by a series of zigzags that the ultimate goal is reached. Teething is accompanied by pain; this is manifested by the cries and the habit of biting in infants. The same can be seen in animals, such as a young dog. Delabarre proved fifty years ago that irritation of the nerves of the gum causes hyperaemia, redness and swelling of the tissues, and prolonged vasomotor trouble. This irritation of the gums is accompanied by increased secretion from the salivary glands, and also increase in the secretions of the whole of the intestinal tract, for the parts are intimately connected. The congestion disappears as soon as the tooth makes its appearance, and the retraction of the mucous membrane enables the tooth to grow rapidly. The turgescence favours infection. An infant just born, and during the first few days of life, is not infected; this comes with time. Hutinel proceeds to quote Drs. Rillet and Barthez as authorities who believe that diseases accompanying dentition are due to infection, and he states that this opinion is supported by Trousseau. Children suffer from diarrhoea because the infection starting at the mouth passes along the whole length of the intestinal tract. But to conclude that dentition apart from infection could, *per se*, cause serious diarrhoea, or infantile cholera, would be absurd. The pathological state has for its commencement a vicious alimentation, dentition further reduces the power of resistance, thus is produced a morbid congestion, which paves the way for bronchopneumonia. The diminution of the resisting powers is shown locally by stomatitis and aphthous patches in the mouth. The local infection is declared at a distance by the enlargement of the glands of the neck. But the first signs of infection may show themselves in the chest. Hutinel has frequently seen congestion and bronchitis both disappear with the first appearance of the teeth. Syphilis is readily contracted at this period of life. It is due to want of care on the part of attendants; it is seen at the anus, where may be found enormous mucous plaques; they may disappear by a few days' treatment. In childhood it is dentition that is the chief means of infection; in the adult it is decay of the teeth. The evolution of the teeth at any period constitutes a period of danger.

156. *Ascaris Lumbricoides* Escaping through Ear.

HOLM (*Ugeskrift for Laeger*, No. 6, 1909) reports the case of an *Ascaris lumbricoides* passing through the Eustachian tube and out of the ear in a child $\frac{3}{4}$ years old. According

to the mother's account, the child whilst playing began suddenly to sneeze and scratch her nose, and after a few moments to scream in agonizing pain, holding her hand to her ear. The mother, thinking that the child, who had for some time been suffering from post-scarlatinal otitis media, was seized with sudden pain, began to syringe out the ear, when she noticed a worm trying to work its way out of the ear. She managed to pull it out, and brought it with her for inspection. The child was found to have a large defect in the tympanic membrane, but otherwise nothing abnormal was detected in the fauces.

SURGERY.

157. The Surgical Treatment of Suppurative Pericarditis.

ELIOT (*Annals of Surgery*, January, 1909), in concluding a review of 22 collected cases of suppurative pericarditis, holds that it cannot be too strongly emphasized that every case of this affection in which the patient is not moribund should be treated by an operation which, when a general anaesthetic cannot be tolerated, may yet be successfully carried out under some local anaesthetic. Puncture alone affords in most cases at the best but temporary relief, and, as a rule, the removal of pus in this way is but partial, and its reaccumulation is rapid. The use of this method should, it is urged, be exclusively restricted to diagnostic purposes. The author objects to the formation of a musculo-cartilaginous flap, including two or more costal cartilages, and also to Allingham's "epigastric" operation, which, though it offers the advantages of a dependent outlet, and of diminished risk of opening the left pleural cavity, is likely in its performance to take up too much time. The simplest and most rapid exposure of the pericardium is accomplished, the author states, by resection of the inner part of either the fifth or the sixth costal cartilage through an oblique incision of the skin made parallel to its long axis. After division of the perichondrium and the triangularis sterni, the pleural angle in the absence of adhesions is pushed outwards without, if possible, any extension of the skin incision. If obliteration of the pleural cavity has taken place, the underlying pericardium may readily be opened without danger of exposing the left lung. The presenting pericardium should be divided by scissors between two pairs of forceps, the opening being of sufficient size to permit the passage of a finger. Irrigation with either a saline or a weak antiseptic solution is thought to be desirable, but it is pointed out that inadequate provision for the free exit of the injected fluid from the interior of the pericardium may determine a fatal issue. The irrigation may be dispensed with if the patient's condition be so bad as to indicate a speedy ending of the operation. The edges of the opening in the pericardium should, whenever it be possible, be sewn to the margins of the wound in the skin. Drainage, which is undoubtedly favoured by the movements of the heart, may be further assisted by the insertion of a rubber tube or of a capillary gauze drain. In a case under the care of the author drainage was kept up for several weeks without causing any trouble, but, as has been pointed out by Riedel, the presence of a rubber tube may excite stormy and irregular action of the heart. In cases of recovery subsequent impairment and irregularity of the heart's action are, the author asserts, marked exceptions, nor is the patient likely to suffer from any future indication of cardiac displacement. Such satisfactory result, however, it is pointed out, cannot always be expected. In 7 of the 22 cases collected by the author full details are wanting in regard either to the nature of the effused fluid or to the definite results of the treatment. In the remaining 15 cases resection of one or more costal cartilages resulted in 9 instances in recovery and in 6 in death. These results may be regarded as satisfactory, as suppurative pericarditis is in a great majority of instances a secondary infective disease. The fact that recovery may occur even when pyopericarditis is part of a general sepsis certainly warrants, the author believes, surgical interference under all circumstances in which the patient is not moribund as the best and, indeed, the only means of averting a fatal issue.

158. Bier's Methods of Surgical Treatment.

DELREZ (*Archiv. Prov. de Chirurg.*, No. 1, 1909) gives the results of his experience of Bier's method of treatment by blood stasis in some branches of surgical work, reserving his views on the application of this method to tuberculous

affections and diseases of bone for a future paper. In order to carry out this treatment properly and efficiently surgeons, it is held, should not trust to printed information but endeavour to acquire direct experience of the complicated technique of the method in Bier's own clinic. Arterial hyperaemia, the author reports, has given good results in the treatment of chilblains and in some cases of articular stiffness, but failed in cases of varicose ulcer and of chronic articular effusion of non-tuberculous origin. Venous hyperaemia, it was found, did not simplify the treatment of boils and whitlow. This latter method by hindering the development of infection exerts a favourable influence on soiled wounds, but it is difficult in such cases to estimate exactly the part played by Bier's method of establishing stasis, as stasis is usually applied under such circumstances by other means. In most cases of gonorrhoeal arthritis, even in its most severe forms, venous stasis will lead to a complete restoration of the function of the affected joint. The main condition of success in the application of the method of such cases is a thorough practical knowledge of its technical details. The most satisfactory results obtained by the author from venous stasis have followed its use in the serious cases of acute purulent arthritis of traumatic origin and due to streptococcal infection. In other cases of acute purulent arthritis no good results have been obtained. It is pointed out that in the treatment of articular affections exact immobilization of the diseased joint is incompatible with the application of stasis in accordance with Bier's principles, and that, consequently, it often happens that in subjecting articular disease to venous stasis with the hope of preserving complete mobility of the affected joint, a very unsatisfactory result is obtained, the articular surfaces being displaced and the patient after the treatment being left with a limb less useful than one in which ankylosis has taken place with the bones in good position. In concluding his paper the author asserts that venous stasis is capable in many cases of modifying rapidly and to a considerable extent the evolution of acute infective lesions, this action being manifested by favourable changes in the nature and amount of the secretion from the wound.

159. Cataract following Electric Shock.

M. TERRIEN, at the Ophthalmological Society of Paris (*Rec. d'Oph.*, November, 1908), described a case in which cataract in one eye came on two months after the patient had received a discharge of 500 volts, having accidentally touched a conductor with his hand. He remained unconscious for two hours, and was badly burnt about the forehead. Such cases are not infrequent, but must be distinguished from fulguration and direct lightning stroke. They have been carefully studied by Gonin (*Annales d'Oculistique*, 1904, T. cxxxi, p. 81). The cataract in Terrien's case was a soft one with moderate swelling of the lens, and matured rapidly. There can be little doubt that it was caused by the electric discharge.

OBSTETRICS.

160. Vaginal Thrombosis in Pregnancy.

FUNCK-BRENTANO (*Comptes Rendus de la Soc. d'Obstét. de Gynéc. et de Pédiat. de Paris*, etc., January, 1909) reports a case where a single woman, aged 22, became pregnant for the first time. Gestation, closely observed in the later months, proceeded normally; but one day very near term the patient felt something coming out of the vulva when she was raising the leg of a heavy table to disengage the corner of a table-cloth. She declared that she had not strained herself before during the pregnancy, and that the last coitus was in the third month. The patient was sent into a lying-in hospital, as it was suspected that the head of the child presented. Funck-Brentano found that an oval pedunculated body, of the size of a hen's egg, projected from the vulva. It somewhat resembled a loop of strangulated intestine, and blood oozed from its surface. The pedicle was short, but very distinct; it consisted of a fold of vaginal mucosa attached over an area $1\frac{1}{2}$ in. in diameter to the posterior column of the vagina, coming down at its lowest point to within $\frac{3}{4}$ in. from the fourchette. When it protruded it made a retrocele, which disappeared when it was reduced. The patient had varices of the labia and both lower extremities. The tumour was removed by division of the pedicle close to its attachment, a small artery was divided and ligatured. Labour set in five days later, and ended spontaneously. The tumour was examined under the microscope, and was reported to be a collection

of blood amidst a varicose plexus of veins in the substance of the vaginal mucosa. Brindeau described in 1903 a case where a pedunculated thrombus of the size of a cherry was detected two days after a normal labour. It was attached to the posterior column of the vagina, and in consistence resembled a testicle. It was not removed, and had most probably developed before labour. In all other recorded cases of vaginal thrombus associated with pregnancy the tumour made its appearance in the later months of pregnancy. In 12 out of 14 cases the patients were primiparae, and in 2 secundiparae; thus this tumour has never been observed in multiparae, and, besides, the patients were nearly all young, only 3 being over 24 years old. In 8 cases, at least, there were adjacent varices, and in only 1 was it specified that this complication was entirely absent. After the reading of Funck-Brentano's report there was some discussion as to whether the term "thrombus" was correct.

161. Glycosuria in Pregnant Women.

WILLIAMS (*Amer. Journ. of Med. Sci.*, January, 1909), in considering the clinical significance of glycosuria in pregnancy, points out the importance of determining whether the sugar in the urine indicates a true diabetes, or a transient, alimentary, or recurrent glycosuria, or merely a lactosuria. If no sugar occurs as lactose it is without clinical significance, and is probably associated with premature activity of the breasts. If a glycosuria of the alimentary type is present its clinical significance is also unimportant. The mere reduction of Fehling's solution is therefore an insufficient guide to the prognosis of any particular case, as it is essential to determine whether the sugar is present in the form of glucose or lactose. Practically this may be ascertained by using the fermentation saccharometer, as glucose ferments readily while lactose does not. If the glycosuria appears late in the pregnancy, does not exceed 2 per cent. in amount, and is not accompanied by symptoms, it is most probably transient and may disappear spontaneously or persist throughout the pregnancy, but in either event its clinical significance is slight, though the patient should be carefully watched. A more serious condition is that in which the sugar appears early in large amounts, as it may not be possible to make a positive diagnosis between glycosuria and a true diabetes until after delivery. Pregnancy occurring in diabetic women and diabetes manifesting itself during pregnancy are serious complications, though the prognosis is not so alarming as is usually stated, for the majority do perfectly well, and in only a smaller proportion is the condition fatal. If the amount of sugar is large and uncontrolled by treatment, the induction of abortion is indicated even in the absence of other serious symptoms.

GYNAECOLOGY.

162. Fibroids and Pregnancy.

BOSSI (*La Ginecolog. Mod.*, January, 1909) publishes some cases illustrating some of the complications and dangers associated with pregnancy and labour in the presence of fibroids. From a consideration of these and other cases he feels justified in the following conclusions. As a general guide to conduct in these cases one ought, as far as possible, to preserve the powers of procreation and their respective organs, not blindly, but with scrupulous and careful consideration of the merits in each individual case. Care should be taken to note whether pregnancy unduly accelerates the growth of the fibroid so as to indicate the necessity of induced labour. If it is decided to let the pregnancy go on, special attention should be paid to the circulatory, urinary, and hepatic systems. The question whether pregnancy should be allowed to go to full term or interrupted at some period short of that, but permitting a living child, must be determined by the judgement of the medical man. The presence of a fibroid need not condemn a woman to sterility either natural or forced, and *caeteris paribus* one ought to encourage rather than disparage fecundation in these cases. In many cases fibroids do not interfere in any way with the normal progress of a pregnancy, in others a viable premature child may be obtained and satisfactorily reared, and further, gestation seems in some cases to indirectly prove useful in the cure of a fibroid, for this shares in the general uterine involution which occurs in the puerperium, and sometimes to such an extent that subsequent pregnancy may occur without danger. On the other hand, sterility undoubtedly favours the development of uterine fibroids.

THERAPEUTICS.

163. Fresh Air in the Treatment of Disease.

EVIDENCE that fresh air is an important factor in the successful treatment of disease continues to accumulate. Dr. Edwin Graham (*Archives of Paediatrics*, February, 1909) relates his experience gained in the wards of the Philadelphia Hospital. Before adopting the open-air method he was puzzled to account for so many deaths among infants in his wards in spite of every care in diet and nursing. In his private practice, the same type of infants were doing well, almost without exception. He finally decided to try the open-air method for his hospital patients; even in the month of January he had the children placed for two hours each day on the fire-escapes. Towels were pinned over the top of each crib to shield the child from wind. The infant mortality began to lessen immediately. Dr. Graham continued this practice for two or three years with the greatest benefits to the children. New wards have since been constructed in the hospital, and for the last five years his patients have had an abundance of fresh air both by night and day. He is no longer a pessimist when in the infants' ward, but an optimist. In the Jefferson Hospital Dr. Graham uses the roof garden all the year round both summer and winter. He now treats all his cases of bronchopneumonia and lobar pneumonia by the fresh-air treatment. The plan has been so much more successful than the older methods of treatment that he has lost more or less his dread of pneumonia as a hospital disease. The same line of treatment he adopts for typhoid patients, and his patients have done so much better that nothing would induce him to revert to the older methods. The special wards have large windows on both sides and an open door at the end; these are always open and the air of the wards is always cool, except once in two or three hours when the windows are closed whilst the children are examined for cleanliness. An effort is made to keep the hands and feet of the infants warm by means of gloves, stockings, and hot-water bottles. Dr. Graham has for the last five years adopted the open-air method of treatment for his private patients. On his first visit he instils into the mind of the mother that fresh air differs as much from stale air as fresh milk differs from impure milk. If the physician is enthusiastic the mother will be easily convinced. He finds rickets, scrofulosis, gastro-intestinal disease, and all conditions, benefited by the fresh-air method of treatment. If possible, the temperature in which a child lies should be "indifferent"—that is to say, 75° F. in summer with summer clothing, and 65° F. in winter with winter clothing. Children stand cold air very well provided their bodies are kept warm. High altitudes are useful in children with incipient tuberculosis or an inherited tendency; there is increase in heat production and an augmented metabolism, proved by the larger amount of carbonic acid given off by the lungs, and as a rule there is an increase in the red blood corpuscles. Seaside air is indicated in children convalescing from severe illnesses, especially gastro-intestinal in type. Dr. Graham exhorts all medical men to unite in preaching fresh air, vote for open squares, endorse roof gardens, and the removal of adenoids and tonsils.

164. Meat Broth for Infants.

W. STOELTZNER (*Medizin. Klinik*, February 7th, 1909) has obtained excellent results, in the case of infants brought to him with gastro-intestinal symptoms due to a diet of flour foods and sugar, by putting them on to a mixture of milk and meat broth. Bretonneau in 1818 first attempted to feed young infants suffering from atrophic chronic gastro-intestinal symptoms on milk mixed with broth instead of with water; since that time the system of infant feeding has never fallen into absolute disuse in France, some doctors recommending it, as did Bretonneau, only for atrophic infants, others for any infants for whom breast feeding was not obtainable. In Austria Mayer in 1850, Monti and v. Huttenbrenner later, have all advocated the dilution of milk by broth, Monti for children with rickets, and v. Huttenbrenner even for newborn children. In Germany A. Steffen recommends a mixture composed of 50 grams of milk, 50 grams of meat broth, 1 teaspoonful of cream, and 3.8 grams of milk sugar, as an infant food, failing human milk. Although from time to time the use of meat broths as a diluent of milk for infants has been recommended, it has never become widely popular. Stoeltzner, in the present article, describes his own experience and finds that meat broth is indicated for cases of "tabes mesenterica," or atrophy, caused by a flour-food diet. He reports on 14 such cases, one of them dating back to 1905, the other 13 belonging to the

years 1907 and 1908. The broth used was made from beef or veal, and was of ordinary medium strength; sugar was never added to the mixture. The relative strength of milk and of broth in the mixture varied according to the case. The average age of the children was five months, with an average weight of 4,055 grams (9 lb. approximately). Seven of the children had never been breast-fed, the other 7 had been breast-fed on an average for 2.7 months. The length of time of feeding on flour food was not less on an average than two and a half months. Eight children during the whole of this time had not been given any milk at all; 6 had received small amounts of milk along with the carbohydrates; to this group belonged 1 child fed on Nestlé's food and 3 on condensed Swiss milk; 8 out of the 14 children suffered at the beginning of treatment from diarrhoea, which in some cases had persisted for weeks and months; 6 children were in an especially serious condition, 2 of them showed pronounced myotonia, 1 obstinately refused food; 1 child at 3 months weighed only 2,970 grams (6½ lb. approximately). Unfortunately, in 9 cases the treatment was only carried out for a short time; but even these cases served to show that diarrhoea, when present, quickly stopped when feeding with the mixture of milk and broth was begun. In 6 out of the 9 cases a gratifying increase in weight became evident; of the remaining 3, 1 child during the time of the diet suffered from an influenza-like feverish attack, a second did not take enough food, a third soon after the beginning of the treatment began to have dry, crumbling stools. The course, in the 5 cases which remained longer under treatment, was very favourable; immediately or soon after the beginning of treatment the weight in each case began to go up, and the further increase left nothing to be desired. Although the whole number of cases is not large and they all belong to the hospital class, yet the results were so clear that the author finds himself justified in considering that the symptoms due to a flour-food diet form an indication for the milk and meat-broth diet. Further information is needed as to how long the diet should be persisted in. Two of the cases appeared to indicate that the milk and broth mixture was only of value for a few days, and that some children could after that return to milk and flour mixtures.

165. Injections of Morphine in Acute Laryngeal Spasm in Infants.

SARGNON, BARLATIER, AND MASTIER (*Ann. de Méd. et Chir.*, February 15th, 1909) quote Lesage and Cléret, who have had favourable results from the following minimum doses in cases of laryngeal spasm where operative interference seemed urgent. Respiratory difficulty vanished at once, and was, as a rule, followed by six or seven hours' peaceful sleep. There were no bad after-effects, and the writers now tend to give larger doses. Those reported are: ¼ c.cm. of 1/10 per cent. solution of morphine hydrochlorate in the first year of life, ½ c.cm. in the second year, and 1 c.cm. in the third. The same treatment has been carried out where intubation had been required, shortening the period during which the instrument was necessary and preventing renewed intubation where removal had been followed by an exacerbation of the symptoms. Trebouillet and G. Bozé publish 13 cases of croup treated by injections varying from ¼ to ½ cg. with the following results: Two deaths in children of 18 and 19 months, where there had been intubations and tracheotomy. One uncertain case; recovery following intubation and injections. Ten successes in children from 21 months to 10 years. Difficulty of breathing vanished in twelve hours at latest. These authors administered as much as ½ cg. in children of 6 months without ill-effects, and obtained good results from the same doses in whooping-cough uncomplicated by bronchopneumonia. They counsel strict attention to diet and frequent examination of the urine. Sargnon, Barlatier, and Mastier publish the following observation of their own after dwelling on the bad results of tracheotomy—from which Ranke gives a mortality of 95 per cent. in children under 1 year and 75 per cent. in those under 2—urging the desirability of trying any safe form of medication tending to do away with the necessity of operative interference; they, however, emphasize the fact that the value of this treatment consists in its application to pure cases of spasm, and that it is contraindicated where there is mechanical obstruction, or where spasm is complicated by bronchopneumonia: A child, aged 14 months, had slight cough; no dyspnoea; temperature 39.9° in the morning, rise of temperature to 40.5° at night; pulse-rate, 108; no other symptoms. Intense difficulty in breathing the following night; rapid respiration-rate; no chest symptoms;

no false membranes. Preparations were made for intubation and tracheotomy, the diagnosis being non-diphtheritic laryngitis. A precautionary dose of serum was administered (10 c.cm.), followed by that of ¼ c.cm. of a 1/10 per cent. solution of morphine. The patient settled in about ten minutes and slept for six hours. Uninterrupted recovery ensued. Cultures revealed staphylococci and streptococci, but no Klebs-Loeffler bacilli.

PATHOLOGY.

166. The Toxicology of Nickel Carbonyl.

H. W. ARMIT (*Journ. of Hygiene*, November, 1908) continues his investigation of nickel carbonyl poisoning by experimentation on rabbits, cats, and other laboratory animals, and arrives at the following conclusions. Nickel carbonyl poisoning is a particular instance of nickel poisoning. The lethal dose of nickel varies according to the method of application. When given subcutaneously the physical condition of the compound influences the rate of absorption, and therefore relatively large quantities may be required; in rabbits the lethal dose is about 7½ mg. per kilo of body weight, and in cats it is about 12½ mg. per kilo. When applied intraperitoneally the absorbing surface is considerably larger, and consequently the minimal fatal dose is smaller, being less than 7 mg. for a rabbit. When applied in the form of nickel carbonyl vapour the conditions are still more favourable for rapid absorption, the fatal dose for rabbits being from 3 to 4 mg. per kilo, and for cats about 8½ mg. Nickel carbonyl is dissociated in the lungs, and a nickel compound, probably the hydrated subcarbonate, is deposited. The nickel is dissolved from the respiratory surface by the tissue fluids, and is then taken up by the blood and enters into complex combination with some constituent of the body. Some of the nickel finds its way directly through the lymphatic channels into the bronchial glands. The brain, the adrenals, and the lungs appear to exercise a selective absorption of the nickel which is brought in contact with them, but the poison only stays for a short time in these organs. The specific pathological changes produced are primarily a degeneration of the endothelial cells of the capillary vessels, and it is possible that some further primary action is exercised on the ganglion cells in the brain and on the parenchyma cells of the adrenals. As the result of fatty degeneration of the vessel walls, hæmorrhages follow, and secondary changes result from the effects of the hæmorrhages. The nickel is excreted by the kidneys and intestines. The method of poisoning with iron carbonyl is similar to that of nickel poisoning, but the amount necessary to kill in the former case is larger. Iron acts in a similar manner to nickel on the walls of capillary vessels, but the author has obtained no evidence of selection by any special tissues. Cobalt has a toxicological action which is identical with that of nickel, but the lethal dose is higher, though smaller than the lethal dose of iron. After the inhalation of a quantity of nickel or iron carbonyl greater than the minimum required to kill, no form of treatment was found to avert death.

167. Catalysis and Oxydasis in Normal and Carcinomatous Liver.

BLUMENTHAL AND BRAÏM (*Med. Klin.*, January 3rd, 1909) take normal human liver, as fresh as possible, and equally fresh carcinomatous liver, and let them undergo autodigestion with chloroform water in an incubator at 37° C. The autodigestion mixtures are pipetted off after a fixed time, and the amount of oxygen set free from hydrogen peroxide—that is, the action of catalysis and oxydasis in the autodigested mixtures is tested quantitatively, as follows: A measured amount of H₂O₂ is added in excess to the autodigested liquid, removed with a pipette, and when the development of gas has quite ceased, the amount of unaltered H₂O₂ is determined by titration with a 1/10 normal solution of K₂Mn₂O₇, dilute H₂SO₄ being added. Fresh carcinoma of the liver sets free a considerable amount of O from H₂O₂, but always decidedly less than normal liver. The amount of O set free decreases rapidly in carcinoma, while in normal liver it remains constant for many weeks. This corresponds with the rapid decrease in oxygen-liberating ferment action in the case of carcinomatous as opposed to healthy liver. Pieces of liver, macroscopically normal, were further examined in this way, and figures obtained which lay between those for normal and carcinomatous liver; this shows the influence of the diseased parts on the healthy by means of the ferment in question.