the bacillus enteritidis of Gaertner, and although it is doubtful whether any amount of inspection would have prevented it, it emphasises the necessity for regulations and for inspection of premises and of the conditions under which such food is prepared. The water-supply to the parish and premises is limited in amount and not over excellent in quality. It is not such as could be regarded as adequate and suitable for a place of this character. For permission to publish this paper and for much help and advice during its construction I have to express my indebtedness to Dr. Thresh, in whose laboratory the bacteriological work was carried out.

Dartford.

ACUTE PULMONARY ŒDEMA.

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ON Nov. 1st, 1907, a man, aged 50 years, came to the out-patient room of the Metropolitan Hospital to report himself. He had left the hospital a fortnight before, having been an in-patient with aortic regurgitation under the care of Dr. Hugh Thursfield. I examined him on the couch in the side room and found that his heart was enlarged in all directions, that he had a see-saw murmur at the aortic base, tortuous radial arteries, and a systolic blood pressure of 165 millimetres of mercury. There were some very fine moist râles at both pulmonary bases behind. So far from seeming distressed he appeared to be remarkably cheerful and loquacious. Having finished my examination I returned to the main room. Very soon afterwards I heard the patient cry out as if with sudden pain and I immediately went to him. I found him leaning against the side of the couch clutching at his throat; to my inquiry he replied that when he got off the couch he could not "fetch his breath." His face was cyanosed and moist with perspiration; he was very breathless and wore a look of great anxiety. Mr. Kendrew, the junior house physician, then joined me, and we laid the patient on his back and sent for some oxygen. The cyanosis, the dyspnoea, and the anxiety all rapidly increased, but instead of remaining immobile, as in angina pectoris, the patient rolled about, clutched at his throat, shouted out, and shortly became unconscious. A quantity of froth (estimated at rather more than a pint) now began to issue continuously from his mouth and nose. It was not unlike the froth of beer, from which it differed in being finer and thinner. In spite of oxygen inhalation, of strychnine subcutaneously, and artificial respiration he died, well within a quarter of an hour from the commencement of the attack. Death was certainly not due to syncope, for his heart continued to beat strongly after he was apparently suffocated. Owing to difficulties with the relatives the necropsy did not take place until Nov. 4th, that is, three full days after death. The examination revealed no new fact. The heart was enlarged, especially the left ventricle, the aorta, including the aortic valves, was atheromatous, though not very markedly so. The coronary arteries were patent and undegenerated. The lungs, though emphysematous and slightly congested at their bases, were substantially normal. The kidneys were practically unaffected. The brain was normal. What was the cause of death?

For an answer to this question the diligent seeker after truth will appeal to the English text-books in vain. Alone among those which I have consulted, and they are many, Kingston Fowler and Rickman Godlee¹ refer specifically, though briefly, to the subject. Nor are the German writers more helpful. Sticker, the author of an otherwise excellent and exhaustive article in Nothnagel (*Specielle Pathologie und Therapie*, Band xiv.) on the subject of pulmonary Œdema, although he quotes, to condemn it, Cohnheim's saying, "Die Menschen sterben nicht weil sie Lungenödem bekommen, sondern sie bekommen Lungenödem weil sie im Begriffe sind zu sterben," makes no mention of an acute form. It is only the French text-books which throw any light on the question. In vol. i. of the third edition of his "Maladies du Cœur et de l'Aorte," p. 300, Huchard, in a discussion of the matter which extends over several pages,

quotes the following from de la Harpe² as the description of a typical case of hyperacute Œdema of the lungs (*forme suraiguë ou foudroyante*).

Un malade est réveillé en sursaut pendant la nuit. Il saute hors de son lit, traverse la chambre, s'assied sur une chaise, râlant; quelques instants après, il était mort, et une houppie de mousse blanche sortait abondamment de la bouche et des narines.

In the matter of information to be obtained from periodical literature the English reader is more fortunate; for not only is there an excellent lecture by Dr. J. Lindsay Steven of Glasgow, giving the details of two cases, in THE LANCET of Jan. 11th, 1902, p. 73, which evoked an equally interesting and eminently readable paper by Mr. Thomas Lissaman of Bolton-le-Moors in THE LANCET of Feb. 8th of the same year, p. 366, but there is a very instructive article by Dr. H. M. Hewlett in the *Intercolonial Medical Journal* of 1903, and, finally, in the *American Journal of the Medical Sciences* of January, 1907, a most exhaustive review of the whole subject with full bibliography from the pen of Professor David Riesman of Philadelphia. These, however, are not to everyone's hand, and one feels that the gist of the information which they contain ought to be more easily accessible. Having regard to the fact that in France the existence of the condition has been recognised and its meaning discussed, practically since the days of Laennec (1781-1826), and vigorously since Andral wrote on the subject in 1837, it is surely high time that the matter were adequately noticed in the text-books in this country. Of the 44 separate references given by Riesman, 28 are in French, nine are in English, and seven are in German. The silence of our text-books on the subject is remarked upon and deplored by all the English writers, notably by Hewlett, and Riesman pleads strongly in favour of the condition being given a separate place in the standard works.

To return to the case which I have just described. Clinically, there seems to be no doubt that it was a typical example of hyperacute or "foudroyant" pulmonary Œdema. The dramatically sudden onset, the lividity, the dyspnoea, the physical and mental distress, the foam issuing from the mouth and nose, and the appallingly rapid termination suffice to place it unmistakably in the same category as those described by others. It is interesting to note that most of the recorded cases have occurred at night—i.e., when the patient was recumbent, and that mine occurred after the patient had been lying on the couch. This looks as if position might have some connexion with the provoking cause, a suggestion which is borne out by the events which always preceded the attacks in Hewlett's Case 1.³ My patient had aortic disease. The ascending aorta was atheromatous and the cusps were sufficiently involved to produce during life a see-saw murmur which was unmistakable. He also had tortuous radial arteries. That there is some definite relationship between the occurrence of acute pulmonary Œdema and cardio-vascular disorders is a matter upon which most of the writers on the subject are agreed. Huchard goes so far as to say that aortitis and peri-aortitis is the only cause, but from the records of other authors this is evidently far too restricted a view of the matter. Clifford Allbutt⁴ lays stress upon the probable coincident responsibility of general arteriosclerosis, and many have associated the condition with that form of arteriosclerosis which is commonly called granular kidney. Moreover, Kingston Fowler and others describe the seizures as occasionally taking place in acute affections such as typhoid fever, in which the cardio-vascular apparatus may be assumed to have been structurally normal. Nevertheless, it seems desirable to emphasise the point that acute pulmonary Œdema is one of the ways in which people, especially those suffering from cardio-vascular complaints, may meet with sudden death. The condition may indeed in this respect be held to rank in importance, though not in frequency, with angina pectoris. As in angina pectoris, there may be recurrent attacks; and, as in angina pectoris, the first attack may be the last.

A small proportion only of the recorded cases contain an account of post-mortem findings. In the majority of those which do, the lungs were definitely Œdematous, and in some, the trachea and larger tubes were filled with the characteristic froth, which one French writer describes as "une écume d'un blanc pur, semblable à des oeufs battus en mousse"⁵; Huchard says that it may be "de coloration rosée, d'apparence saumonée," and Riesman that "it is often

¹ Diseases of the Lungs, Longmans, 1898, p. 281.

² Revue Médicale de la Suisse Romande, 1881, p. 322.

³ Page 612.

⁴ The Cavendish Lecture, THE LANCET, July 18th, 1903, p. 139.

⁵ Quoted by Huchard.

blood-tinged." In my case, though the froth was abundant during the attack, there was no sign of its presence at the necropsy. This may be due to the relatively long period which elapsed between the patient's death and the post-mortem examination; though it is possible that the fluid which was evacuated represented most of what was secreted, and that it was the sudden gush of a comparatively small quantity rather than the continuous secretion of a large amount which suffocated the patient. The only other case which I can find which seems to resemble mine in this particular is one quoted by Riesman as follows: "Jaccoud⁶ reports a case of typhoid fever terminating fatally within 15 minutes from acute pulmonary oedema, which he designates as 'un véritable coup de sang pulmonaire.' The autopsy revealed nothing to explain the tragic event."

The age and sex incidence in the cases the records of which are readily accessible afford some features of interest. Of Riesman's six cases only one patient was a male; of Hewlett's four cases all were females; Lissaman's patient was a female; Lindsay Steven had one male and one female; so that of the 14 cases, including my own, only three were males. One of these was 72 years of age, another 50 years, and the third 40 years. With one exception all the women were 38 years of age or over, most of them being past 40 years of age. The one exception is Riesman's Case 2 in which the patient was aged 25 years and was asthmatic. High blood pressure was a notable accompaniment in all Hewlett's cases, a fact which points strongly to the existence in all of them, and therefore in most others, of some organic affection of the arteries.

As to the treatment which is proper to cases of acute pulmonary oedema, there is considerable diversity of opinion. Riesman says that the best results are obtained by venesection and quotes with approbation Merklen's⁷ enthusiastic testimony to this line of treatment—"c'est l'unique salut." Hewlett, however, who employed it in one case in which "the cyanosis was intense and the pulse tension high," was disappointed with the result. "It did not relieve the patient at all and she recovered from this attack much more slowly and was weaker than after any of the others." The remedy which he recommends, and in which he expresses great confidence, is the subcutaneous injection of a quarter of a grain of morphine, a measure of which Lindsay Steven disapproves.

Lissaman, who used alcohol, nitro-glycerine, and sedative drugs in vain, was moved to try the effect of the inhalation of small quantities of chloroform. The result was so successful that he discarded all other remedies and both he and his patient learned to place the utmost reliance upon this form of treatment. Against this testimony must be set that of Victor Pedersen⁸ of New York who relates a case in which the symptoms developed immediately after, and seemingly as the result of, chloroform anaesthesia. This author speaks highly of extensive and repeated dry-cupping, an expedient in favour of which Riesman also expresses himself strongly.

My own case was treated, quite ineffectually, by orthodox emergency methods. Had I to deal with it again I should act differently. More than once when I was watching the man's agony the possible utility of venesection crossed my mind but I was deterred from having recourse to it by the existence of the pronounced aortic regurgitation to which I had been listening a few minutes before. From what I have seen of the literature on the subject I am disposed to think that this little operation might have saved the patient's life. To what has already been quoted in its favour let me add the note of confidence which is sounded in the following passage: "L'asphyxie est rapide. Pas une minute n'est à perdre. Il faut pratiquer la saignée. La saignée doit être large: 300 à 400 grammes. Le médecin n'hésitera pas. Sans crainte de la syncope, et malgré l'aspect blafard du malade, il tirera la quantité de sang nécessaire."⁹ Having regard to the fact that acute oedema of the lung is an accident which may befall a patient at any time, even in our consulting rooms, it is well for us to be prepared with a means of treatment which is so well and positively recommended.

York-street, W.

⁶ Clinique de la Pitié, 1883.

⁷ La Médecine Moderne, 1903, vol. xiv., p. 145.

⁸ Acute Oedema of Lungs, Annals of Surgery, vol. xliii., 1906.

⁹ Clinique Thérapeutique, Huchard and Fiessinger (Maloine, 1907), p. 8.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

CARCINOMA OF THE OVARY OCCURRING IN A CHILD AGED SEVEN YEARS.

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THE following case I think is worthy of record owing to the unusual age of the patient. There was nothing of importance in the family history or in the past history of the patient.

About Christmas, 1906, the patient first began to complain to her mother of pain in the abdomen. The mother thought the pain was due to indigestion and therefore did not then bring the child for treatment; but at the beginning of February, 1907, the mother first began to notice an enlargement of the abdomen of the child. This increased rapidly and caused the child to be brought to the Bridgwater Hospital on March 16th. The pain which the child had first complained of at Christmas had continued off and on up to the time of admission but was never severe. During the six weeks before admission the mother said there was distinct wasting to be noticed about the limbs and face. At the time of admission to hospital the abdomen was markedly prominent and more so on the right side than the left. Filling the abdomen to within a finger's breadth below the ribs was a firm hard mass with an irregular surface. The irregularities were rounded and smooth and firmer than the rest of the tumour, and one, situated just above and to the left of the pubes, and of about the size of a hen's egg, seemed to have a short pedicle and was moveable to some extent. The larger mass was not moveable. The fingers could not be pressed down into the pelvis below the tumour. The whole tumour was dull on percussion and no thrill could be obtained. The splenic and the liver dulness were normal. Shifting dulness could be obtained in the left flank but not in the right. Per rectum nothing of the tumour could be felt. On March 17th, the day after admission, the patient had a rise of temperature to 102.4° F., accompanied by pain in the abdomen similar to the attacks she had at home, but the pain was more severe. There were no symptoms excepting the pain and tenderness and there were no changes in any of the physical signs. The pain was relieved by hot applications and the temperature fell gradually until it became normal on the 20th. On the 21st it was decided to perform an exploratory laparotomy. The operation was performed by Dr. G. W. H. Bird, assisted by Mr. R. H. F. Routh, and the anaesthetic was administered by me. The abdomen was opened in the middle line two inches above the pubes. Some clear fluid was thus released from the abdominal cavity and the tumour found to be of right pelvic origin. There were extensive old and recent adhesions of the tumour to the great omentum. These were partly separated and partly ligatured off and divided until the tumour could be delivered out of the abdomen. The right Fallopian tube was ligatured off separately and divided. The peritoneum of the pedicle was then divided circularly and ligatured by two unlocked ligatures of silk, the tumour cut away, and an additional ligature put round the whole stump. The abdominal wall was closed in one layer. The patient stood the operation fairly well and made an uninterrupted recovery. She got up on April 11th and went home on the 17th, able to run about like any other child and looking well.

The tumour on examination was found to be solid but very friable and with numerous nodular outgrowths, on the average of about the size of walnuts. It was covered entirely by peritoneum and had occupied the broad ligaments. No ovarian tissue could be found anywhere, neither on macroscopic nor microscopic examination. On section the interior of the tumour was solid excepting at a few spots where there were little pockets of about the size of peas filled with a straw-coloured fluid. The cut surface was yellowish and friable with islands of firmer white tissue scattered here and there. The weight of the tumour was 2 pounds 1 ounce. A portion of the tumour was sent to the Laboratory of