only "some of the bacilli" show metachromatism. This is erroneous, for after having worked with diphtheria bacilli daily for almost two years I can assure him that this striking reaction may be got with the Klebs-Löffler bacilli grown on and in media containing not a trace of glycerine. In 1889 already Babes¹ described metachromatism in diphtheria bacilli, and showed that it occurs in numerous other organisms, and this has been well known since then. Metachromatism apparently depends on what Fischer² calls "plasmolysis," and may be produced in many ways, and no doubt glycerine is strongly plasmolytic; salt and sugar solutions, however, will produce the same effect. But does Dr. Gossage really wish to persuade us that this reaction with methylene blue is so characteristic as to enable the merest tyro to distinguish the Klebs-Löffler bacillus from those that resemble it? This is a dangerous statement, and being incorrect cannot be allowed to pass without contradiction. Having described the metachromatism in diphtheria bacilli Babes mentions the same phenomenon as occurring with Ernst's xerosis bacillus, Fick's bacillus of the normal conjunctiva, and his own trachoma bacillus, all bacilli morphologically closely resembling the Klebs-Löffler organism. And this was in 1889. His pictures can be seen in the *Zeitschrift für Hygiene* for that year, and in 1895 he once more alludes to and pictures metachromatism in both true and false diphtheria bacilli.³ Other observers have also described it often enough in many forms of organisms resembling the diphtheria bacillus, and it can be constantly observed and easily produced. If the addition of glycerine in large quantities is likely to render the recognition of the Klebs-Löffler bacillus more speedy and more certain let the tyro not pin his faith on metachromatism. I have never used any other medium than serum or the Kanthack-Stephens medium—which, by the way, has not yet disappointed me—and continually observe metachromatism, sometimes in almost every bacillus on the cover-glass, sometimes in a few in each field, in false diphtheria bacilli as much and as little as in true ones. After some experience and after passing through the stage of dogmatism I have now reached the stage of scepticism, and do not allow that there is a single morphological or biological character, a single chemical or staining reaction of absolute and specific value, which will enable us to say with certainty that a bacillus resembling the Klebs-Löffler bacillus is or is not the true bacillus, that is, assuming that we are not biased by the clinical knowledge of the cases. Such being my belief, I have ventured to protect the tyro from a misconception, warning him against a test which depends on a phenomenon which may be produced with almost any organism in the presence of simple chemical substances. However characteristic metachromatism is—and, indeed, it is striking—it is not characteristic of the true diphtheria bacillus as compared with the false one; hence as a diagnostic test it is valueless.

St. Bartholomew's Hospital.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

DEAF-MUTISM AND GOITRE.

By VAUGHAN PENDRED, M.R.C.S. ENG., L.R.C.P. LOND.,
LATE HOUSE SURGEON TO GUY'S HOSPITAL.

THE curious association of deaf-mutism and goitre occurring in two members of a large family has induced me to record these cases. Why this association? Perhaps some readers of THE LANCET may be able to throw some light on the cause of this combination of diseases: Absence of thyroid—cretinism; overgrowth of thyroid—deaf-mutism. I append the family history as recounted to me by the mother. The family is an Irish one, and the parents have been upwards of forty years resident in Durham. The father, aged sixty-six

years, and the mother, aged sixty-seven years, are alive and healthy. They have had ten children, five sons and five daughters. In an epidemic of small-pox twenty-five years ago the whole family was attacked with the exception of the younger of the deaf-mutes, and four males and one female died, although all had been vaccinated, and that recently, as they were children. The remaining son and two of the daughters are healthy and vigorous. The first goitre case is the first-born of the family—a spare woman now aged thirty-eight years. She is deaf and can only mumble indistinctly; little care has been taken to educate her and so she is imbecile. The goitre is a large multilobular hard tumour, the greater part on the right side of the neck; from time to time she suffers from dyspnoeic attacks. The growth was first observed after the small-pox—i.e., at thirteen years of age. The second surviving girl is now aged twenty-eight years, and is the fifth of the family; she is a small, spare, intelligent woman, her expression being in marked contrast to her sister's. She is not absolutely deaf and can mumble incoherently; her education has been attended to with so much success that she has been "in service." The tumour is larger than in the other case, but is of the same character; it has been growing for about fifteen years, and during the last year has caused both dyspnoea and dysphagia, which have become so urgent that I have sent her to-day to Newcastle Infirmary for operation.

Durham.

TEMPORARY ARREST IN THE GROWTH OF FINGER NAILS FOLLOWING COLLES' FRACTURE.

By T. H. DAVISON, M.B., C.M. EDIN., D.P.H. CAMB.

ON Feb. 13th a fireman whilst at drill fell a distance of ten feet and fractured the end of his left radius. I treated the fracture with a pistol splint, the result being most satisfactory. Six weeks after the accident the patient noticed a transverse groove across the nails of the fingers only, that of the thumb being quite natural. The grooves have now nearly grown out with the growth of the nails. Why should the nail of the thumb have escaped? I have seen a considerable number of Colles' fractures, but have never observed a similar condition of things.

Brondesbury-road. N.W.

A Mirror

OF

HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Prooemium.

LONDON HOSPITAL.

TWO CASES OF PULMONARY ABSCESS TREATED BY OPERATION; REMARKS.

(Under the care of Dr. FREDERICK J. SMITH and Mr. FREDERICK TREVES.)

PULMONARY surgery has developed considerably during the last few years, along with other branches of special surgical procedures, but it has not yet become so common or so successful that the publication of individual cases has ceased to be of interest, and the following examples are therefore brought forward and are deserving of particular attention. Without the aid of the surgeon there can be little doubt but that these patients would have ultimately died, but there can be no doubt also that but for the careful and accurate diagnosis made beforehand such assistance would not have been rendered. From the small size of the cavities the physical signs were but slight, yet they were correctly localised. The operation in each was facilitated by the presence of adhesions of the pleura over the area of lung affected. Fenger and Hollister reported 6 cases, 1 of which recovered. Runeberg collected 11 cases of abscess of the lung for which the operation of pneumotomy was performed; 2 recovered, and in 3 the diagnosis was doubtful.

¹ *Zeitschrift für Hygiene*, 1889, vol. v., pp. 177-181 (see also drawings).

² *Untersuchungen über Bakterien: Jahrbücher für Wissenschaftliche Botanik*, Band xxvii., i.

³ *Zeitschrift für Hygiene*, 1895, vol. xx., p. 412 (see also drawings).

In the 3 fatal cases death could not be attributed to the operation. M. Poirier collected the following statistics: of 25 cases of incision of tuberculous cavities, with resection of ribs, improvement took place in 15, cure resulted in 4, in 9 the result was negative, and in 1 it was unknown. In 19 of the cases the disease was situated in the apex.

CASE 1.—A man aged about fifty years was admitted to the hospital, under the care of Dr. F. J. Smith, with the following history. Up to October, 1895, he was perfectly well—in fact, he boasted of never having had a day's illness in his life; on Oct. 12th while at work and in his usual health he was suddenly seized with a severe pain in the right chest—he was cleaning a window and noticed that his right arm seemed at the same time to get weak. He went home and rested, and some three or four days later he perceived that his breath had become very offensive and a cough developed at the same time with very foetid expectoration; the very foul smell made him feel sick, but otherwise either then or since has he complained of nothing in the way of special symptoms. Dr. Lawrence of Custom House sent him up to Dr. Smith at this time to see what could be done for him. On examination of his chest in the out-patient department Dr. Smith was very much puzzled as to the cause of his trouble; inspection, palpation, and auscultation revealed absolutely no pathological sign anywhere, and on percussion it was difficult to believe that the slight dulness of note opposite the middle of the right scapula was really of any import. Dr. Smith accordingly ordered the inhalation of a few drops of the following mixture several times a day—viz., one drachm of creasote, two drachms of carbolic acid, three drachms of tincture of iodine, and rectified spirit of wine to one ounce. The fœtor improved at first and the patient experienced considerable relief, but in two or three weeks it was as bad as ever and he began to feel ill with the horrible smell. Dr. Smith saw him again and admitted him on Dec. 12th and repeatedly examined the chest. The following were the physical signs revealed by a systematic examination. By inspection the result was *nil*. On palpation, by persistent digging in of the finger, Dr. Smith was able to find a spot about the size of half a crown between the border of the right scapula and the vertebral spines opposite the middle of the scapula where pressure caused slight pain, or at least a different sensation from that experienced when a similar manoeuvre was practised on the other side. This spot was that at which he had originally complained of pain passing from the front of the chest. On percussion slight dulness was detected over the same areas, but this was appreciable only on repeated trials. On auscultation there were heard distant breath-sounds, which were less audible and yet more distinct than on the other side; the voice sounds were similarly affected, but nothing was noted that could be called bronchophony or pectoriloquy, and there were no adventitious sounds; in fact, the chief point was a comparative absence of natural sounds. On Dec. 16th the house physician passed in a grooved needle, but failed to reach either pus or foetid material. The patient was quite willing to undergo any operation that offered a chance of relief from his most unpleasant symptoms, and accordingly Mr. Treves was asked to cut down on the spot and let out the pus. Dr. Smith's diagnosis was exactly verified at the operation; a very localised pleuritic adhesion was found at the spot indicated, with a small abscess cavity beneath it about the size of a walnut containing most offensive pus. The patient did remarkably well for some months, the fœtor disappearing and the patient feeling well. A return of the trouble necessitated, however, a second operation at the old site, and since then the patient has made an uninterrupted recovery and is now back at his old work. The surgical procedure and treatment are dealt with in the remarks by Mr. Treves and also the second operation which took place in February, 1896.

CASE 2.—A man aged forty-five years was admitted to hospital under the care of Dr. Smith on May 14th, 1896. He was sent up by Dr. Walker of Leytonstone. His history was as follows. About three weeks after Christmas, 1895, he had what seemed to be rheumatism and in a short time noticed that he had lost his taste, while his wife complained of the foul smell of his breath. He had a slight cough, but otherwise complained of nothing; there was no pain or tenderness, and only slight shortness of breath; he lost flesh, however, rather rapidly. From then till his admission he seemed steadily to lose ground from the fœtor and consequent malaise, and it was

feared that malignant disease was at the bottom of the trouble. On admission Dr. Smith observed the following physical signs in the chest. Inspection revealed nothing; on palpation there was diminished tactile vocal fremitus all over; on percussion there were noted slight comparative dulness and increased resistance to the finger in the right axilla and posteriorly about the inferior angle of the right scapula (Dr. Smith termed it a "wooden note" over this area); the left side seemed to be natural in note. Auscultation revealed that throughout the right lung behind the breath sounds were harsher than on the left side and more clearly conducted to the ear, but nowhere distinctly tubular; at the lower part of the scapular region and just below its angle these harsh sounds were associated with rather fine moist crepitations, which were not heard on the left side, and expiration became almost tubular in character. In front a similar distinction was to be made out between the two lungs, but it seemed as though the right abnormal sounds were transmitted through healthy lung, indicating that the mischief lay posteriorly. With the experience of Case 1 fresh in Dr. Smith's mind no time was wasted with useless drugs, but Mr. Treves was immediately asked to operate. The operation is described below. The patient has regained the flesh he had lost and his breath is free from odour; he is now, August, 1896, out of hospital and quite well.

Remarks by Mr. TREVES.—The surgical procedure adopted in the above-mentioned cases was the following: A large triangular-shaped flap, with the base uppermost, was fashioned from the soft parts over the site of the lesion in the lung. The exposed portions of the ribs laid bare were removed subperiosteally and the intercostal tissues and the pleura were divided. In Case 1 the parietal and visceral layers of the pleura were adherent; an incision was made directly into the lung beneath and exceedingly offensive pus at once let out. The incision into the lung was enlarged until the abscess cavity was well exposed. Its walls were then scraped and dried and the whole infected space stuffed with iodoform gauze. An opening was made in the centre of the integumentary flap and through this the end of the gauze plug was drawn. The pleural cavity below was made evident during the operation; the bleeding was trifling and very easily controlled. The flap was fixed in position by sutures and the abscess cavity, irrigated daily, was dried out and then stuffed with gauze through the hole made in the flap. The after-treatment presented no difficulty of any kind and healing was speedy and uninterrupted. There was some return of the pulmonary symptoms, and at Dr. Smith's request I again exposed the affected part of the lung. I discovered the old abscess cavity to be entirely obliterated. The healing was sound and there was no trace of either pus or granulation tissue. In Case 2 I exposed the pleura by turning up a like flap of the soft parts. As in both instances the operation was carried out in the gap between the scapula and the spine the flaps in these cases were very substantial. In the present instance I found the pleura much thickened, but I then plugged it at the margin of the wound with a tampon of iodoform gauze in such a way that a circular patch only of the lung was left exposed. It was freely divided. I introduced a trocar into the exposed lung thus isolated as to its surface. No pus escaped. I then proceeded to incise the lung, and although the incision was ultimately carried for more than one inch in depth through apparently healthy lung tissue the bleeding was comparatively insignificant. I finally reached the abscess cavity, which was the size of a cricket ball. A free opening was made down to it through the lung and the actual section of lung tissue made when the operation was completed was quite considerable. The abscess cavity was scraped, dried, and very firmly stuffed with iodoform gauze. There was no trouble from bleeding, which was at once arrested by the plug. The tampon was removed from the pleural cavity and the flap adjusted as before. No attempt was made to shut off the pleural cavity by sutures. With efficient gauze drainage of the suppurating area such exclusion is unnecessary. The lung cavity was plugged daily. The original plug was left undisturbed for four days. This case healed even more readily than the first. It is evident that lung abscesses, or rather certain lung abscesses, can be treated in precisely the same manner as are suppurative collections in more accessible parts, and that an extensive incision can be made in the periphery of the lung without trouble from hæmorrhage.

Remarks by Dr. SMITH.—For the eminently satisfactory

termination of these two cases I feel I am deeply indebted to Mr. Treves, who loyally accepted my diagnosis and operated promptly on the strength of my opinion. The grounds on which I based my diagnosis are worthy of some little discussion. Both the cases presented the same fundamental symptom—namely, excessive fœtor of breath, from which and its consequences they urgently desired relief. This symptom may be caused, firstly, by disease in the alimentary tract, but neither patient gave us any grounds to suspect this source; and, secondly, by trouble in the lungs and air passages, and it was evident in both cases that the mischief lay here. The conditions of the respiratory organs likely to cause it may be enumerated as: (1) malignant ulceration of the larynx; (2) spreading gangrene of the lungs; (3) stinking empyema which has burst into a bronchus; (4) bronchiectasis; and (5) local necrosis with suppuration or abscess of the lung. (1) There was no evidence of this; (2) this could be excluded by the comparatively healthy appearance of the patients taken in conjunction with the duration of illness, which was far too long not to have produced much more profound cachexia had spreading gangrene been present; (3) I excluded by the absence of the ordinary signs of pleuritic effusion as well as of those of pneumo-thorax; (4) bronchiectasis is, I suppose, the commonest cause of fœtid expectoration, but to get that there must, I think, be a history of some previous disease of the lung, possibly pneumonia, but of course far more, probably chronic bronchitis; now all such indications were conspicuous by their absence and I was thus easily led to believe that I had a single source of fœtor to deal with, and not multiple bronchiectases. Once this conclusion was reached by sound argument the only remaining factor is to get a surgeon who will operate, for I do not think that any drug is capable of bringing about the closure of a stinking cavity which, by its situation and circumstances, breaks through the golden rule of surgical principles based on ascertained fact—viz., to secure the healing of a foul abscess free drainage is a *sine quâ non*.

DEVON AND EXETER HOSPITAL.

TWO UNUSUAL CASES OF GALL-STONES, WITH CHOLECYSTOTOMY.

(Under the care of Mr. A. C. ROPER.)

THE following cases are examples of unusual conditions associated with gall-stones. The first case, in which the symptoms resembled intussusception, will attract most attention, but the second case is of interest. The more important points of each are shown by Mr. Roper in his remarks.

CASE 1.—A woman aged forty-seven years was admitted into the Devon and Exeter Hospital on May 16th, 1895. She was a married hard-working woman who had had thirteen children, but no previous serious illness or similar attack. The patient had been suffering great pain in her abdomen, accompanied by vomiting for three days, and had taken various aperients resulting in one action of the bowels the previous morning, which, however, did not give her any relief. An enema of seven pints administered on the night preceding her admission to hospital was returned unstained. Her temperature was 99° F. and the pulse was 100. The patient vomited green bile and mucus. Examination of the abdomen showed a visible swelling, which was freely movable, somewhat tender, elastic, and distinctly resonant to percussion, and situated down the right side of the abdomen, extending from just below and two inches to the right of the umbilicus up to the margin of the ninth costal cartilage, from which, point resistance extended across the abdomen along the line of the transverse colon. The swelling appeared to be like a large sausage in shape. A diagnosis of intussusception was arrived at, and under chloroform Mr. Roper made an incision in the middle line, and on opening the peritoneum found a red, inflamed, sausage-shaped tumour, which proved to be the gall-bladder greatly distended and elongated and adherent on its posterior surface to the intestines. Excepting collapse of the large intestine on the distal side of the tumour nothing abnormal was discovered in the intestines. The gall-bladder was very tense and no stones could be felt in it. It was stitched to the wound and drained through a large trocar of a quantity of

thick dark-green bile. On the third day the trocar was exchanged for a rubber drainage-tube and then, as well as at the time of operation, a probe passed well in failed to detect gallstones. Bile continued to escape by the drainage-tube for about a week, when the tube was withdrawn and the wound apparently closed. On the 25th the bowels had acted regularly since the operation, but the patient had cystitis from catheterism. On the 30th about an ounce of pus escaped apparently from an abscess in the abdominal wall. On June 4th the small sinus was still discharging, but had it not been for the cystitis the patient could have got up. Mr. Roper went for his holiday and on his return on July 1st the house surgeon (Mr. H. Andrew) reported that after the patient had been up he had detected gallstones with a probe. The patient being anæsthetised the wound was re-opened and an ounce of mucus unstained by bile evacuated with seventeen gall-stones, weighing in all seven drachms. Three large ones weighed over 100 grains each. A large one was with difficulty removed from the gall-duct and its removal was followed by a rush of yellow bile, the first which had been seen, from the wound. The wound healed rapidly and the patient was soon discharged recovered and has since remained in good health.

CASE 2.—A woman aged thirty-six years was admitted on Nov. 7th, 1895, under the care of Dr. Blomfield, with a history of several attacks of gall-stone colic. On the 13th she had an attack, accompanied by sickness and jaundice, and gall-stones had at various times been found in the motions. On the 27th the patient was placed under chloroform and Mr. Roper made an incision three inches long down from the ninth costal cartilage. The liver was found to be enlarged and extended nearly to the umbilicus, but on turning it up the gall-bladder was easily found, not much distended, but containing many stones. The wound was packed with sponges and the gall-bladder was opened. Viscid mucus was first evacuated, then twenty-three small stones, and when the duct was cleared of stones yellow bile came away. The peritoneum and skin were sutured together, the gall-bladder was attached to them and the upper and lower parts of the wound were closed, a drainage tube being left in the gall-bladder. The patient suffered a good deal of pain for forty-eight hours after the operation. On Dec. 1st the drainage-tube was removed and the probe detected no stones. On the 2nd five gall-stones were found in a motion; on the 4th two were found; on the 6th nine more; on the 7th twenty-three; on the 10th one; and on the 19th three gall-stones were found in the motions. On the 21st one stone was passed through the wound, and on the 23rd two stones and on the 27th two more were found in the motions. On the 28th the opening into the gall-bladder was dilated with a laminaria tent as a stone was felt with the probe, but the use of the forceps and syringing failed to remove it. On the 29th a stone was passed and on Jan. 8th, 1896, another, both through the wound. All the stones were small. The sinus speedily healed after this and the patient was discharged as cured. The patient has been seen since, when she said she was in excellent health.

Remarks by Mr. ROPER.—The interesting feature of Case 1 is the striking resemblance which it bore to intussusception. I had no doubt that this condition obtained, and several of my colleagues who saw the case confirmed my diagnosis, which seemed, indeed, to be perfectly obvious. There is no doubt that the distended gall-bladder adherent to the colon kinked it and caused the obstruction. The tympanic note produced by percussion over the tumour is only another instance of the unreliableness of this physical sign in abdominal cases. In the latter case the passage of forty-seven gall-stones by the rectum after the operation is curious. The unusual amount of pain for several hours after the operation may have been caused by my pushing one or two stones into the duct when I emptied the gall-bladder, although the patient did not recognise the pain as that of the gall-stone colic, of which she had such ample experience. The stones may have been evacuated from the liver, or have been lying in the intestine, or may have been lying in a dilated common bile-duct. There seems to be no adequate reason for accepting the first hypothesis, and it is improbable that so many as twenty-three stones would have passed at one time and painlessly. The second is improbable, as the patient had been for three weeks in hospital under the care of Dr. Blomfield and her bowels had been kept rather freely opened. I am inclined therefore to consider the last the probable explanation. Both