The same treatment was continued through the next day; but he gradually sank, and died on the 30th. There was no expectoration throughout.

AUTOPSY, twenty-one hours after death. The sternal end of the clavicle was found to rest entirely on the upper bone of the sternum, the interarticular cartilage being carried with it. The left pleural cavity contained a pint or more of bloody fluid. The lung was collapsed, and almost black. On its posterior surface were two lacerations, neither of them large. The third, fourth, fifth, sixth, and seventh ribs on this side were broken near their angles, projecting sharply and roughly into the pleural cavity. The sixth rib was also separated from its cartilage. The fourth and fifth ribs on the right side were broken about midway between the sternum and their angles. The pleura on this side was not injured, and the lung itself was healthy. Both condyles of the humerus were broken off; but there was no other injury, the radius and ulna being intact and in proper position.

Original Communications.

ON THE TREATMENT OF THE LOCAL IRRITATION CAUSED BY CONTACT WITH CERTAIN SPECIES OF ACALEPHÆ.

By EDWARD HEADLAM GREENHOW, M.D.

THE perusal of Dr. Barker's paper, in the BRITISH MEDICAL JOURNAL of December 22nd, 1860, on the production of urticaria by handling the larvæ of some kind of insect, suggests to me the publication of an almost forgotten bit of experience, which, perhaps, throws some additional light upon the subject he has so well inaugurated, and may not be unacceptable to some of our maritime associates. It also, I think, definitively negatives the supposition that the troublesome affection of the skin caused by touching some kinds of acalephæ is altogether attributable to mechanical irritation.

Having formerly passed some years on the sea-coast, it used to happen that I was sometimes consulted by persons who had been stung whilst bathing by some of the acalephæ with which the ocean abounds at certain seasons. The immediate effect produced by touching the filaments of one of these creatures is a sensation of stinging, which extends up the affected limb for some distance from the point of contact. Presently the part becomes red, swollen and tender; and occasionally, especially in young females and children, the entire limb in the course of an hour or two becomes much swollen, red, and exceedingly painful. The redness and swelling sometimes terminate in a well defined border resembling that of a wheal, but in other respects the ailment does not bear any resemblance to urticaria. These symptoms usually subside spontaneously, if allowed to do so, in the course of three or four days, but meanwhile they often cause considerable suffering, render the affected limb more or less useless, and as they have a formidable appearance, often produce needless anxiety, especially to persons unacquainted with the nature of the injury. Having previously found spirits of hartshorn, when applied early, a very effectual application for preventing the irritation caused by musquito bites, I was led to try an alkaline and stimulating lotion, consisting of a solution of bicarbonate of potass, sesquicarbonate of ammonia, and spirit of hartshorn, in these cases, with a most satisfactory result. I do not recollect the exact form of the lotion, but believe it consisted of one drachm of each of the salts, and half an ounce of spirits of hartshorn to six ounces of camphor mixture. This application, if freely used soon after the injury, affords almost immediate relief; and although the benefit is more tardy if it be not applied until the effect of the injury has been thoroughly developed, yet even then its use rarely fails speedily to mitigate the suffering and swelling, and to remove them almost entirely in the course of a few hours.

London, December 22nd, 1860.

FOREIGN BODIES IN THE AIR-PASSAGES.

By GEORGE PADLEY, Esq., Surgeon, Swansea.

THE following two cases of the above-named accidents occurred to me in 1855. As the subject appears to have attracted more attention of late than formerly, and as the cases themselves contain, I think, some points of practical interest worth recording, I now forward them for publication. I have abstained from doing so at an earlier period, in order that I might watch the progress and result of one of them, and report, after a long interval of time, the effect, if any, of the accident, and of the serious consequences which followed it, upon the future health of the patient.

CASE I. I was sent for April 6th, 1855, to attend Master J. P. M., a delicate boy, about 8 years of age. He was suffering from active febrile disturbance, pain in the posterior part of the chest, cough, and dyspnœa. There were unmistakable auscultatory signs of pneumonia below the inferior angle of the right scapula. The fever assumed a remittent form, the patient being better in the morning, the paroxysms returning each day about noon, and continuing the rest of the day. Copious perspirations broke out, especially at night. He became extremely weak and emaciated; and he had, in short, the general characters of acute phthisis, with hectic fever. During the progress of these symptoms there were clear indications of the formation of an abscess in the lung, in the situation above-named—dulness on percussion over the seat of pain, gurgling, with purulent loquy and mucopuriform expectoration. The apices of the lungs were quite free, and there was no evidence of pulmonary affection in any other part. The period comprised in this description extended from April 6th to the third week in May.

During this period, at first antimony, with salines, dry cupping, and subsequently blisters over the affected part, formed the treatment, under which the more acute inflammatory symptoms subsided; afterwards, cod liver oil, chiefly by frictions, as the stomach would not bear it together with steel tonics and counter-irritation. The boy improved somewhat under this treatment; and in about a month was taken out in a chair, or for a gentle walk. The hectic and other symptoms, however, continued, and his case was looked on as extremely precarious.

The age and spare condition of the patient were favourable to stethoscopic examination; and the physical characters were well marked, and quite corresponded with the symptoms, so that the diagnosis—circumscribed abscess of the lung—was not difficult, and was pronounced before the following unlooked-for event confirmed its accuracy, and sufficiently explained the cause of the disease, and the imminent danger to which it had reduced the patient.

Early in June a severe paroxysm of coughing occurred, followed by free puriform expectoration. This in a short time subsided. Two hours afterwards he was taken to see a day exhibition of a panorama; and, while somewhat excited by the scenes displayed, was seized with a violent choking cough, and filled, as I was informed, four or five pocket-handkerchiefs with the abundant expectoration that followed. He was taken home much exhausted, but shortly recovered. The same evening, while laughing at the gambols of some children, he suddenly sprang up with a feeling of suffocation, grasped his throat, and appeared for the moment on the point of choking. Immediately afterwards he brought up a

substance, with some matter and a little blood, exclaiming, "There's what I swallowed." This was followed by an abundant puriform discharge, described as equal to a large cup-full. Making every allowance for an exaggerated estimate, I should think, from the account given, that he must have brought up about a pint of matter that day, during the three periods mentioned. The substance ejected proved to be portion, an inch and a quarter long, of a japanned metallic penholder, which had passed into the air-passages the previous February, but which he and his parents, to whom he mentioned it at the time, supposed he had swallowed. After giving him a little medicine, nothing more was thought of the circumstance, in the belief that the substance had been carried away; and there being no idea that it was in any way connected with the symptoms which afterwards appeared, it was not mentioned to me.

I was now informed that about the middle of February he was biting the penholder, when the end broke off and slipped down his throat. He was immediately seized with a violent paroxysm of coughing. After this subsided he had occasional fits of cough, increased on lying down in bed, and in the morning, with but little expectoration. It so continued for a few days, gradually getting less troublesome. At the same time there was an uneasy sensation about the right mammary region, more evident during laughing, etc., and some difficulty of breathing. He continued in this way, but little interrupted in his usual pursuits, or affected in his health, until April, about seven weeks after the occurrence of the accident, when he was attacked by the febrile and other symptoms I have described; the pain in the chest being not only increased in severity, but situated lower down and more posteriorly than it had been.

After the expulsion of the substance he progressed most favourably; the cough and expectoration diminished, and his health rapidly improved.

Near the end of July, after some exposure, he had a return of symptoms—pain in the same part, dyspnœa, puriform offensive expectoration, from which he did not recover for about five weeks. He had a second relapse, with similar symptoms, but to a less degree, about one year afterwards; and again, but still more slightly, the beginning of 1859, *i.e.*, after an interval of more than two years, the pain being each time at the same spot. He has been free since that time from any return, beyond a slight pain in the part after "taking cold." I examined his chest a few months ago. The percussion sound at the affected part was not quite so clear as on the opposite side, and there seemed a little roughness in the breathing, especially during deep inspiration. He now (November 1860) takes active exercise, there does not appear any shortness of breath, and his general health continues good.

CASE II. Dennis Keefe, while holding a shilling and a sixpence in his mouth, accidentally let the latter fall back, and it was drawn by a sudden inspiration into the trachea. After the first efforts of coughing he became more quiet; but, feeling the sixpence still in the throat, he came to me about midnight in great alarm. By forcible expiration the coin was driven upwards and excited cough; he could feel it moving in the trachea, and afterwards passing down into the right bronchus; the sound of its movement could, at the same time, be heard through the stethoscope. There was but little distress in the breathing. I prepared the patient's mind for tracheotomy, but thought I would first try inversion of his body. For this purpose, placing the legs of one end of a long stout kitchen-bench upon the sofa, I directed the patient to lie back upon the inclined plane thus formed, supported by his knees, which were flexed over the upper end, the body being thus in the *supine* position. No sooner had he done so than he felt the sixpence pass through the glottis into his mouth. He immediately rose up, chiefly by his own effort, the knees acting as a fulcrum, and dropped the coin into his hand.

REMARKS. This form of accident appears, as I have stated, to have attracted more notice lately than in former years. This arises probably, not from its greater frequency, but from its more ready recognition in cases the symptoms of which were formerly ascribed to other causes. It was stated by Mr. Porter that "many children were carried off by this accident who have been supposed to die of croup"; and even now, as Dr. Watson observes in relation to the subject, "it is more than probable that fatal cases happen, the nature of which escapes detection." The first of the cases here given forcibly illustrates the latter observation. If it had proved fatal without the expulsion of the foreign body, and no *post mortem* examination had been allowed; or, if the substance had been lost sight of in the copious expectoration, and the patient had died, as most have done, from the disease it had set up—it would have been recorded as a case of pulmonary abscess, the result of lobular pneumonia—how or why induced there would have been no means of ascertaining. There is little doubt that other cases have occurred in which the origin of disease thus induced has been involved in mystery, which might have been cleared up if this possible cause had occurred to the mind. Such a case, for example, is that related by Dr. Duncan (*Lancet* 1845), in which a gentleman suffered from troublesome chest-symptoms, varying in intensity, for four years. The source of all the mischief was a piece of bone which had passed into the trachea during dinner. It had produced the usual paroxysm of coughing at the time, with pain below the clavicle, and expectoration of a little bloody mucus. These having subsided, the occurrence was forgotten. The patient, after nearly four years suffering, went to Edinburgh for advice, and was treated for a bronchitic affection without relief. Not long afterwards, during a violent fit of coughing, two pieces of bone were brought up, and the obstinacy of the case was explained. The symptoms were relieved, and the patient recovered. Some of the symptoms here might have excited suspicion in a mind alive to the chance of such an accident, and one question would probably have revealed their true cause. It may be well, therefore, to bear this in mind in cases presenting such symptoms, obstinate in character and obscure in origin, especially in children, and to direct our inquiries accordingly.

Since the article by Dr. Stokes (*Dis. of Lungs*, 1837—about the first systematic account of the accident), many cases have been recorded, extended statistics gathered and tabulated, and an elaborate monograph of above 400 pages published. Among all these, the instances are but rare in which recovery has taken place after phthisical symptoms with pulmonary abscess have supervened, even though the offending substance may have been expelled. Cases of this usually fatal consequence of the accident have become still more rare, now that the importance and success of early relief by tracheotomy have been generally recognised. By far the largest number of cases of the accident recorded of late are those in which this operation has been performed, and the mortality thus reduced to a comparatively small proportion. In one or two recent instances, however, the treacherous mildness of the symptoms, or the long periods of repose following an occasional paroxysm, or the alleviation of acute symptoms by treatment, have lulled the apprehensions of patient and practitioner, and encouraged the adoption of a most unsafe expectancy. It is worthy of notice how short a period may sometimes suffice to set up slow yet fatal disease, as in a case mentioned in Cooper's *Dictionary*, in which the foreign body (a pebble) was expelled through an opening in the trachea three weeks after its admission, yet the patient (a child) died phthisical *eight months* afterwards.

A case was published in the BRITISH MEDICAL JOURNAL, Dec. 12th, 1857, somewhat similar to the first I have

described, in which a piece of smooth glass, after producing bronchopneumonia of the right, and afterwards of the left lung, with phthisical symptoms, was coughed up after four months and a half. At the above date the issue was doubtful, as the lung was said to be very seriously damaged; and a fear was expressed of a termination in consumption. It would be interesting to know, three years having elapsed, whether this fear has been realised.

In most cases, the intruded substance appears not to have advanced beyond a primary division of the bronchus. In the one I have described it either made its way far into the lung, if we may judge by the change of place and ultimate site of the pain, etc., viz., between the seventh and ninth ribs, and there produced inflammation and abscess in the pulmonary tissue by which it was surrounded; or it may have excited these processes by irritation extending downwards from the bronchus, as in a case by Dr. Gilroy.

Hasse (*Pathol. Anal.*) quotes a case in which the foreign body had penetrated to a position corresponding very nearly with the one I have named, and was there discovered after death. It is that of a girl, aged 5 years, who died twelve months after an iron nail had fallen into the trachea. "The nail was found impacted in the fourth or fifth division of the right bronchus, the lung containing several deposits of pus communicating with the bronchial tubes." This is the only instance I have met with in which the precise situation of the body within the substance of the lung has been indicated. While in the primary divisions of the bronchus it may remain a very long time without producing serious symptoms of pulmonary disease; as in a case related by Dr. Wood, in which a piece of nutshell was coughed up after four years, the local symptoms having been at no time severe, although the general health at one time suffered much. The child recovered. The shell was presumed to have been fixed in the right bronchus. This result does not always follow. Dr. Houston gives an instance in which the right lung was hepatised from a tooth in the bronchus, where it was found after death, which took place in eleven days; and the case by Dr. Gilroy, to which I have referred, is another instance of pulmonic inflammation and abscess thus induced. Much will, of course, depend upon the form and nature of the intruded substance. During the time my patient continued his ordinary pursuits, a period of more than six weeks, the piece of penholder was probably lodged in the bronchus, or one of its primary divisions, as indicated by the uneasiness in the mammary region. It was only when the pain was felt lower down in the infrascapular region that pulmonic symptoms were developed. The case may be considered encouraging, when we reflect upon the extent of disease which must have existed; and with the restorative powers of the cod-liver oil, it is to be hoped that, where abscess from this cause occurs, a more fortunate issue may be expected than has happened in the majority of cases hitherto.

It is remarkable how little appears to have been known respecting these cases so lately as the early part of the present century. It was believed, even by men of eminence, that such an occurrence could not take place and the patient recover. A case is related by Mr. Howship, in his *Practical Observations in Surgery, etc.* (1816), in which a nail slipped into the windpipe of a man (it was distinctly felt by him to do so), and remained in the air-tubes more than four months, producing "incessant irritation, pain, and cough, spitting up of blood and mucous phlegm," until the man was "worn away to a skeleton." Spitting of blood recurred at intervals. He could cover the exact spot of pain with his hand, which was over the lobe of the right lung. In spite of this history, and the symptoms which marked the case, all the faculty who were consulted, among whom were Dr. Pitcairn and Mr. Cruikshank, assured the patient that the nail which "had disappeared from his mouth, must have gone down into the stomach, and passed off through the bowels," feeling convinced (so it was reported of them) that had such an occurrence (its admission into the air-tubes) taken place, it must quickly have proved fatal. They also said that "what he experienced arose from the irritation it produced when in the stomach, but that it was not in the lungs, as he imagined or suspected." Those who were consulted "pronounced the case hopeless"—"he was consigned to certain death." At the end of four months, after copious spitting of blood, the nail was coughed up. This occurred in 1804. In 1815 the man enjoyed pretty good health, with occasional cough, slight spitting of blood, and a painful sensation precisely in the old spot. I have stated some of the particulars of this case somewhat in detail, to show how much in the dark our predecessors appear to have been as to the capabilities of the air-passages to sustain the irritation of foreign bodies, as to the effects of these, and consequently as to the means to be adopted for their removal.

The chief point of interest in Case II is the success which attended the simple proceeding adopted for relief; but it more especially deserves consideration as involving a question of practice which it would be well to have more decisively settled. Mr. Erichsen in his excellent and comprehensive *Science and Art of Surgery*, observes that "no means short of operation can be trusted. Emetics, sternutations, inversion, and succussion of the body, are all either useless or dangerous, unless the air-passages have previously been opened." This opinion is shared in by Dr. Gross, who speaks of "inversion and succussion of the body as generally hazardous proceedings, unless preceded by an opening in the windpipe"; and the late Mr. B. Cooper has stated that "this mode of proceeding appeared to be extremely dangerous unless an opening were first made in the trachea." Now, there are several instances on record, in which the manœuvre, without previous tracheotomy, has succeeded in causing the expulsion of the offending body, and without giving rise to any untoward symptoms. It becomes, therefore, an important and anxious question, with this weight of authority against the practice, whether, notwithstanding such instances of success, a surgeon would be justified in attempting the same means, and incurring the risks against which such warnings are pronounced. If an opening into the trachea could be safely avoided in any case, it would certainly be a desideratum. The point to be ascertained is, whether, in the case of a coin, for example, or any body whose shape and nature would render it most likely to become impacted in the larynx, the attempt may not with comparative safety be made, the surgeon being prepared to restore the patient to an upright position the instant the expulsive effort has been made, whether successfully or otherwise. The excited spasm would be but momentary. The chief risk would be that of the foreign body remaining in the larynx. Would the degree of such risk be sufficient in any future case to prohibit the trial? In the above case I acted upon the negative of this question, and prepared for tracheotomy if the attempt should have proved unsuccessful, and the effects of it such as to preclude its repetition. The practice also is not without the sanction of eminent names. Mr. Fergusson says "these two examples (referring to cases by Sir B. Brodie and Dr. Duncan) clearly indicate the propriety of trying the effect of change of attitude in such cases." Previous tracheotomy seems not to be implied here; as in one of these cases (Dr. Duncan's) it was not performed. Mr. Liston adopted the plan successfully where a small bullet had passed into the trachea. In some remarks prefixed to a case of Mr. Hilton's (*Medical Times and Gazette*, 1854), after referring to Mr. Liston's case, the following occurs —"It may be concluded then, that in all cases in which the size of the body swallowed is not so large as to pre-

clude the probability of its expulsion, the *first* measure tried should be the shaking of the patient's body with the head in a depending position."

In the statistics compiled by Dr. Gross, inversion of the body alone is said to have been successful in five cases, and it is the only item against which no death is recorded. My patient adds one to the number. It does not appear whether or not the plan was tried in any of the other cases prior to the performance of an operation. It would be interesting, as bearing upon the question, to know this; also, in how many cases the proceeding has not succeeded, and if any fatal result, or impaction in the larynx, has ever followed as a consequence of its momentary adoption. I say momentary; as, unless the plan succeed at once, it would be but little likely to do so after laryngeal spasm has been set up by contact of the foreign body; and to prolong the trial after this would be a hurtful, and perhaps dangerous, proceeding. It is not, therefore, meant in this inquiry to imply a prolonged continuance or frequent repetition of fruitless efforts of this kind, or the adoption of the practice in all cases indiscriminately. With dyspnœa urgent, and the spasmodic cough severe and frequent, an opening in the larynx or trachea should at once be made. The amount of success which has attended these operations should remove all hesitancy or undue procrastination in their performance when the symptoms appear to require it, or when in cases admitting it (assuming it to be admissible in any) inversion has failed after a reasonable trial. The latter would be unadvisable when the substance is known to be of light weight and irregular outline. Such would not be likely by its weight to fall readily through the chink of the glottis, and would by its form be more liable to get entangled in the larynx. Metallic substances are certainly most favourable for inversion; and I should not hesitate to adopt it if a case of the kind again presented itself. Its propriety is more questionable in young children, in whom the aperture of the glottis is smaller, and its disposition to spasm even greater than in older persons. In Sir B. Brodie's case the plan failed. The violent symptoms during the last attempt compelled its discontinuance. On this occasion a platform with a hinge was used, the patient being placed in a *prone* position (the one also spoken of by Mr. B. Cooper as recommended) and secured by a strap across the shoulders. It has occurred to me, on considering the structure and action of the larynx at the rima glottidis, that this (the prone) is not so favourable for the exit of the intruder as the *supine* position. When the rima is relaxed and open—and it is only by taking it suddenly in this state that we can generally hope for success—the base or widest part of the aperture is behind, and it is towards this part that the coin or other substance would tend in the *supine* inverted position of the patient. It would, therefore, when it reached the glottis, be thus more favourably situated for expulsion than in the prone position, in which it would gravitate towards the narrow apex of the triangular outlet. Although, by adopting the supine position, the substance is not so favourably situated for exit through the mouth after passing the glottis, it would be generally found, as in my case, to be readily thrown forward when once expelled from the windpipe. In a case related by Mr. H. Lee (*Med.-Chir. Rev.*, 1856), a boy, into whose trachea a fourpenny piece had passed, was placed upon a counter, and the upper part of his body allowed to fall over the side, while his legs lay across it. Here the *prone* position was that evidently assumed. The experiment was unsuccessful. It produced "such violent coughing, with lividity of countenance," that it was given up. "It was repeated on different subsequent occasions, but always with the same result." The coin was afterwards discharged during a fit of coughing and sickness.

Another advantage of the supine position is that the patient can raise himself by his own effort, which his natural instinct would impel him to do the instant laryngeal spasm was produced.

Dr. Watson mentions two cases (Drs. Duncan and Halford's) in which inversion answered (without tracheotomy); but the position, prone or supine, is not stated. In both it was a shilling that entered. After tracheotomy, prone inversion would, perhaps, be best, so as to favour expulsion through the wound, if the substance should fail to pass the glottis. If, however, the easier operation of laryngotomy be performed, as recommended by Mr. Lee, in order, not so much to allow of the exit of the substance through the wound, as to prevent spasmodic closure of the glottis, and thereby enable it to pass through the natural opening when the body is inverted—then, if the view here taken be correct, the supine position would be the one most likely to attain that end.

In some cases of doubtful diagnosis, this proceeding would probably assist to clear up the doubt. Such an instance, I think, was that already quoted from the BRITISH MEDICAL JOURNAL, in connection with Case I, in which, from the comparative quiescence of the patient, a doubt existed in the mind of the surgeon as to whether a foreign body was in the air-passages or not.

In explaining the much more frequent entrance of foreign bodies into the right than into the left bronchus, Dr. Stokes, while properly attributing the chief influence to the position of the septum between them, also mentions "another explanation, founded on the different directions of the two tubes, the *right* being *more vertical* than the left," and the statement is repeated in the *Lectures* of Dr. Watson. This does not seem correct anatomy. The right bronchus, passing off directly into the lung, takes a nearly transverse course. The left, having to descend beneath the arch of the aorta, has to take a more vertical direction in order to reach its destination. The point is, perhaps, of but little moment, yet worth correcting, especially when endorsed by such eminent names. Mr. Bryant, in the last number of *Guy's Hospital Reports*, says that when a foreign body has passed into the bronchi, the *left* is its most common seat. This is not, I believe, in accordance with general experience.

TEN YEARS OF OPERATIVE SURGERY IN THE PROVINCES.

By AUGUSTIN PRICHARD, Esq., Surgeon, Clifton, Bristol.

[*Continued from p. 993 of volume for* 1860.]

V.—OPERATIONS ON THE EYE.

I HAVE arranged the operations on the eyes under the fifth general division of my operative cases; but, upon looking over them for the purpose of further classification, I find that they are so numerous that any particular account of each case is quite out of the question. They are probably more in number than all my other operations put together; and since, according to my own experience, the tabular form does not give a reader any inducement to persevere in his studies, I have avoided it, and have written most of them out *seriatim*, as briefly as possible, merely indicating the sex by the letters M and F. Many of the cases may appear trivial to my experienced readers; but they shall be very short, and are comparatively few; for the greater number of the minor ones have escaped any accessible record. I have in these papers been anxious to give a true idea of our surgical proceedings in connexion with a provincial hospital, and have therefore included slight as well as severe, and unsuccessful as well as successful cases.

It is necessary to subdivide my ophthalmic cases into ten groups; and, even with this classification, it has been requisite to omit all the little tumours of the lids, serous cysts, operations for pterygia, and fistula lacrymalis. The groups are, the Extraction of Cataract (in one eye and in two—first the successful, and then the un-