building, with the exception of the roof, might be made of glass and iron framework, the portions substituted for masonry being of such colour as would prevent the admission of too much light.

I trust I have now said enough to show that my aim has been to prevent patients who are living under one roof becoming a source of injury and annoyance to each other, to benefit and please each individual, and to render the building itself as little a pest-house as possible.

In conclusion, I would beg to express the great pleasure it has afforded me in addressing the meeting now assembled, and presided over by a gentleman so distinguished for his labours in the department of public medicine.

A CASE OF MALIGNANT SMALL-POX: THE DIAGNOSIS MASKED BY REPORTED INJURY.

By G. G. GASCOYEN, F.R.C.S.,

Surgeon to St. Mary's and to the Lock Hospitals, etc.

THE following case is one of great interest. The symptoms presented by the patient are not only instructive as being those of malignant small-pox; but with the history of an accident to the loins from which the first urgent symptom dated, and which might possibly have accounted for at least some of the prominent symptoms which developed themselves, the case was rendered of rare interest from the further difficulty of diagnosis.

J. M., aged 23, a bricklayer's labourer, was admitted into St. Mary's Hospital, on Tuesday, April 9th. On the previous Saturday, whilst carrying a heavy bag of cement down some steps, he slipped, and was suddenly seized with severe pain in the loins, which compelled him to discontinue work. In the afternoon, however, he had recovered sufficiently to travel by railway to Harrow station, whence he walked to the town, a distance of one and a half miles. The next day he felt very unwell, and still had pain in the back, which was much increased by movement. On the 8th, being too ill to return to his work, he was brought to London in a cab. After reaching his home at Notting Hill, he experienced difficulty in passing urine, and noticed that it was scanty and coloured with blood; he passed a restless night, having a good deal of pain, and on Tuesday afternoon came to the hospital, walking part of the way. On admission, his chief complaint was of a very severe aching across the loins, and of pain over the lower part of the abdomen; but, except that he flinched on pressure, examination failed to detect anything abnormal in these regions. His aspect was anxious and expressive of suffering; his tongue was rather furred, and his pulse somewhat accelerated; his bowels had acted on the previous day, but he had not passed urine since the previous night. A catheter was introduced without difficulty, but no urine was found in the bladder. He was sent to bed, and hot fomentations applied to the loins. During the evening, he walked the length of the ward to the water-closet without assistance; he thought he passed a little urine there, but was not sure.

April 10th.—Although he did not sleep much, he had a quiet night, being nearly free from pain so long as he lay still, but the least movement brought it on again. He complained of pain when pressure was made over the loins. A catheter drew off a few drops of urine, which were tinged with blood. Pulse 82; temperature 101.4; tongue rather white. He took food fairly, eating some mutton for dinner. As the fomentations appeared to afford relief, they were continued; and a purge was ordered but not given, as the bowels acted four or five times violently in the evening.

April 11th.—During the early part of the night, he was uneasy and rather delirious, but became quieter towards the morning, although he slept little. His eyes were red and watery, his aspect heavy, and he seemed drowsy, but was easily roused. On examination, a number of small petechial spots were seen over the chest and abdomen; the forehead also presented signs of a coming eruption. About ten o'clock, blood suddenly spurted from his nose, and a severe attack of epistaxis lasted for half an hour or more, when it subsided into an oozing from the nostrils, and he continued to spit blood from the mouth. Temperature 101.6; pulse 94, feeble and small. In the afternoon, the patient was seen by me; and, finding him in a moribund condition from some very active disease unconnected with his asserted injury, I called in the assistance of Dr. Cheadle. At this time (2 P.M.), there was an eruption of minute red puncta on the forehead, which could just be felt with the finger; the eyelids were drooping, and the conjunctivæ suffused; the expression was dull and lethargic. Blood

was flowing slowly from the nostrils, and he was constantly spitting out the blood which evidently trickled backwards from the nose into the pharynx. There was no cough or vomiting. Pulse 94, very small and weak; temperature 101.6. Over the chest and abdomen were a number of small dark-red spots, distinctly purpuric in character, not raised above the level of the skin; a few were scattered also over the forearms and legs. On the left arm was one fair vaccination-mark of the size of a threepenny-piece—distinct, but not very perfectly marked—of old date. He was throwing his right arm about, and frequently rolling his head from side to side, muttering to himself; but, when spoken to, he became quiet and answered questions connectedly, giving an accurate account of his supposed injury and of what had occurred since; he soon tired, however, and began to wander, but after a little rest he again talked coherently. Although he had not passed urine since the night of the 8th, the bladder could not be felt, and the catheter brought away three or four drops only of blood-stained urine. He did not complain of pain in the back, and he had no vomiting or shivering. The stomach was distended with gas, but the abdomen was soft and compressible; he flinched a little when pressed between the umbilicus and pubes, but nothing abnormal could be detected here or elsewhere in the abdomen by hand or ear. There was a distinct mitral systolic *bruit*; the breath-sounds were marked by the gurgling of air through the blood in the pharynx, but they appeared to be natural. Dr. Cheadle expressed his opinion that the case was one of malignant specific fever, either hæmorrhagic small-pox or typhus, but most probably the former. As the patient was too ill to be removed from the hospital, he was placed in a separate room far away from the other wards. He was ordered ice to suck, brandy, and full doses of tincture of iron, if he could take them; but he was unable to swallow anything, and very rapidly became worse.

April 12th.—Insensibility set in during the early part of the evening, and he lost the use of his left side completely, but there was no paralysis of the facial muscles; he passed several bloody stools beneath him during the night. The bleeding from the nose and mouth had continued, though less copiously; and a small wound over the dorsum of the left great toe had been bleeding rather freely. The spots on the face had become hæmorrhagic, but were very small—not larger than a pin's head—and could only just be discerned with the finger. Those on the body were distinctly purpuric, and slightly larger, but not elevated. The pulse was very rapid, and scarcely to be felt; the extremities were cold. No change occurred in the symptoms; he remained in a comatose condition, and died at five in the afternoon.

To-day, it was ascertained from his mother that, although the man lived at Notting Hill, he was working at Limehouse, where small-pox was very prevalent; that he complained of aching in his back and did not seem well on April 4th, but that he took his breakfast and appeared to be better on April 6th, the day on which he believed he injured his back. He had not been vaccinated since infancy. None of his family, and, so far as she knew, none of the neighbours at Notting Hill, had had small-pox recently. He had always been a temperate man.

POST-MORTEM EXAMINATION, sixteen hours after death.—Rigor mortis was well established. The face was thickly studded with minute hæmorrhagic spots, which were less plentiful over the body, arms, and legs. When the body was opened, thin dark blood flowed freely, resembling bloody serum rather than blood; it also bubbled in quantity from the nose and mouth when the body was moved. Under the microscope, a careful examination of three specimens of the blood failed to discover a single white corpuscle; but the red did not seem to be altered, except that they were perhaps more transparent and less numerous than usual. Beneath both the visceral and parietal layers of the pleura, pericardium, and peritoneum, numerous small petechial patches were scattered. The heart contained thin, dark, fluid blood, but in each ventricle was a small white fibrinous clot. The mitral valve was thickened and contracted, as were the chordæ tendineæ and aortic valves; on the anterior flap of the mitral was an ulceration about the size of a threepenny piece, evidently of old standing, though still showing signs of increase, and perforated by two or three small holes. There was a considerable extravasation of blood in the posterior interventricular sulcus, beneath the pericardium. Over the lower part of both lungs were old pleuritic adhesions. The right lower lobe was in a state of consolidation, breaking down under firm digital pressure; the left was also solidified, but to a less extent; both upper lobes were much congested, though crepitant. The liver weighed four pounds and seven ounces; there was a thin film of recent lymph on the surface, in which were small specks of blood; its structure was paler and softer than usual, breaking down when firmly pressed by the fingers. The spleen contained large patches of blood, which rendered its substance so soft as to be indefinable. The kidneys were very large, weighing

twelve ounces each; they were swollen and literally black from congestion; beneath their capsules and around their pelves were numerous extravasations of blood; each organ was so softened as nearly to have lost its tubular character, and to resemble a section of spleen rather than of kidney. In the substance of the right kidney was a large fibrinous mass—apparently an embolism of old date. Microscopic examination showed complete disorganisation of the secreting structure; nothing could be seen but small masses of opaque epithelium, blood-corpuscles, and granular debris; no perfect tubes could be distinguished. The stomach contained about half a pint of bloody fluid; its mucous surface was very dark. The intestines were empty, and the large bowel contracted. Numerous specks of blood were scattered over their surfaces. The bladder was empty and firmly contracted with large hæmorrhagic patches beneath its mucous coat, especially at the base.

REMARKS.—The chief features of interest in this case are the history given by the patient of an injury to the back, to which he attributed all his symptoms; and the very insidious manner in which this fatal form of the disease manifested itself. The characteristic pain in the loins certainly was present, but so mitigated as to be readily accounted for by the wrench in the back which the man said he had received; and he throughout asserted that the pain set in after this, although his mother stated that he had complained of aching two days previously. The mildness of the premonitory symptoms was very marked; there was no shivering, no vomiting, and an almost complete absence of fever. The appearance of the eruption was very late—contrary to the rule that the longer the eruption is delayed the less serious is the disease. None was observed until a week after the first evidence of ill-health; and it commenced in a petechial form on the body and limbs, instead of in a papular form in the usual situation—the forehead. This agrees with what is usually observed in cases of small-pox accompanied by purpuric eruption, when it appears first on the trunk and limbs, and is followed by a crop of papules upon the face; but, in the present instance, the latter were never developed beyond the form of minute punctate elevations, limited to the forehead. The absence of the scarlet or violet-coloured suffusion of the skin which usually marks the advent of malignant small-pox, and the small size of the purpuric spots, caused the eruption to simulate very closely that of typhus—from which it could only be distinguished later by the larger ecchymoses found after death, and the slightly elevated eruption upon the face. The low temperature, and ultimately the history of probable contagion, completed the evidence as to its real nature. It seems not improbable, however, that many cases which have been recorded as instances of hæmorrhagic typhus, have been in reality cases of malignant small-pox, in which the papular eruption has been slight or altogether undeveloped. The absence of white corpuscles in the blood, shown by the microscope, is worthy of note, and may possess considerable significance. Three specimens were carefully examined, and compared with others taken from the body of a healthy man accidentally killed on the same day, in which the white cells were found to be present in the proper proportion. The absence of these corpuscles was not due, therefore, to ordinary *post mortem* changes, but would seem to show that, in cases of extreme malignancy, cell-growth is in abeyance some time before death. If this be so, it would perhaps afford an explanation of the abortion of the normal small-pox eruption, in which the abundant formation of cells subsequently developed into pus is a principal feature. The early suppression of urine was an unusual symptom, dependent, no doubt, upon the complete disorganisation of the kidneys; and their extreme congestion, far beyond that of the other viscera, would account for much of the pain and tenderness on pressure over the lumbar region. It further suggests the idea that the ordinary symptom of pain in the back, so characteristic of small-pox, may sometimes be dependent upon a similar condition of these organs, and not, as has been supposed, on affection of the lumbar portion of the spinal cord. The great and rapid nervous prostration which so suddenly set in is well known in this terrible form of the disease; but the large loss of blood from the nose and mouth, amounting to a pint or a pint and a half in little more than twenty-four hours, is a novel complication, or one met with only in the rarest and most intense forms. This extreme hæmorrhagic tendency was further shown by the petechiæ, which were universal, and by the loss of blood from the bowels on the night preceding his death. The embolic clot in the right kidney could be at once assigned to the ulceration on the mitral valve; and the organised condition of the clot gave evidence that the valvular mischief was of some considerable duration. In conclusion, the case shows well how very mild symptoms of invasion may, in exceptional instances, mark the advent of the disease in its most malignant form; and how it may be masked by a reputed history of accident, until the sudden collapsed condition of the patient and an anomalous eruption reveals its real nature.

THORACENTESIS WITH ADMISSION OF AIR.

By W. H. AXFORD, M.B., Southsea.

THE accompanying case, which occurred in my practice at Bridgewater, is an instance of rapid recovery after the free admission of air to the pleural sac.

In the spring of 1871, I was called to see a boy, four years of age, said to have an abscess forming in his side. I found him lying prostrate, gasping for breath, suffering from constant cough; the pulse was so rapid that it could scarcely be counted. On examination, a red prominent swelling was seen over the seventh intercostal space on the left side. Percussion and auscultation showed the left pleura to be distended with fluid, which was pointing at the before-mentioned swelling. The symptoms of cough, pain on the left side, etc., were said to have existed about a fortnight.

The state of the patient was so urgent, that I at once made a free incision with a Syme's knife into the swelling and evacuated a vast quantity of pus. Air at the time was freely pumped in and out by the movements of the chest. I passed a piece of wet lint into the wound, applied a warm linseed-poultice, and ordered the free administration of nourishment and stimulants. The breathing was at once relieved; all went well from this moment; pus continued to be discharged for eight or nine days, when it ceased and the wound closed. On examining the boy some months afterwards, I found the lung expanded, acting well, and the pleura free from fluid.

THORACENTESIS IN EMPYEMA.

By W. S. PLAYFAIR, M.D., Professor of Midwifery in King's College.

IN the JOURNAL of April 27th, Mr. Berkeley Hill discusses the plan of continuous subaqueous drainage in empyema advocated by me, which he pronounces to be futile, because he conceives it to be impossible to prevent the access of air. This, however, is a question that can hardly be decided by theoretical arguments. I maintain that it is possible to prevent the access of air, and still effectually to drain the pleural cavity; and, in proof of my assertion, I do not bring forward theories, but I appeal to my published cases. I claim for this treatment that it enables us to bring cases of empyema to a satisfactory termination in a much shorter space of time than when air is freely admitted, and with much less subsequent deformity.

In the paper to which Mr. Hill alludes, I said of the three consecutive cases treated in the manner I recommend, "One was perfectly convalescent, with a completely expanded lung, in seven days; the other two, in thirteen and twenty-eight days respectively; and in none of them was there any subsequent deformity of the chest." I then also said, "It would be satisfactory to know what was the average time Dr. Fuller's patients were under treatment after the admission of air into the pleural cavity." On this point Dr. Fuller, in his reply, gives no information; but, as a question of this sort is far more satisfactorily settled by an appeal to results than by any amount of theorising, I am still in hopes that either he or Mr. Hill will take any three consecutive cases in their practice in which air was freely admitted, and let us know how long they were under treatment from the first performance of the operation until complete closure of the wound and convalescence, and also what was the amount of chest-deformity remaining. If the results be superior to mine, I will willingly confess myself to be in error. In any case, I hope they will be better than in the case narrated by Mr. Cowell in his paper immediately following Mr. Hill's, as an example of the harmlessness of admitting air, in which the patient is somewhat vaguely said to have recovered "in a few months".

THERAPEUTIC MEMORANDA.

GUARANA AGAINST SICK-HEADACHE.

INDUCED by the favourable testimony of Grisolle (*Pathologie Interne*, 5th edition, 1852, vol. ii, p. 581), I prescribed the *pulvis paulinicus sorbilis* in 1859, for a friend, who had for many years been the subject of severe hemicrania, apparently inherited from his father. The drug was obtained from one of the foremost druggists of Paris. In all, half an ounce of the powder was taken, divided in doses varying from ten to twenty grains. It proved almost entirely inefficacious. However, Grisolle himself describes the medicament only as "frequently but not always" useful. Bouchardat, in the fifth edition of his *Formulaire*, published in 1854, ranks it with the astringents, and only refers to its use in dyspepsia, chronic diarrhoea, and dysentery.

A. SAMELSON, M.D., Manchester.