Syme's rules be adhered to, it ensures a stump to which an artificial foot can be affixed at no great expense, and with the safest prospect of easy progression, without suffering and without perceptible lameness. Mr. Teale's method has chiefly become famous for the rectangular shape of the flaps; but I am disposed to look upon the principle of measurement as the feature which is most decidedly an advance on other plans. A long flap, a perfect square, each side of which is equal to half the circumference of the limb; and a short flap, equal in length to one-fourth of the other, is a concise and intelligible rule, on the basis of which a considerable section of operative surgery admits of execution with nearly mathematical precision.

As a general proposition, all surgeons admit that the modern practice of excision averts many amputations; and of excision of the elbow, in particular, scarcely any one speaks in other terms than of great praise. But a case exhibited at this meeting illustrates our want of more precise information on the matter. The specimen shown was one in which an arm had been amputated to relieve the patient of an useless limb, months after the elbow-joint had been excised; no union, but, on the contrary, diseased action, having been set up between the ends of the bone. The operator was so able a surgeon, that it is quite probable the result was inevitable. He certainly followed a method which very many excellent surgeons would approve, but with two exceptions; that the joint had been excised through one longitudinal incision, made posteriorly; and that the head of the radius had not been removed, because healthy. Excision of the elbow is certainly practicable through a single incision; but the first element to rapid healing is the performance of a clean operation with the least possible laceration and bruising; and, with this view, I think the **H** incision decidedly preferable. The **H** incision affords still greater facility for the resection, but involves unnecessary exposure of surface, length of cicatrix, and risk of insufficient subsequent solidity. The retaining one of the articular surfaces in such an excision, because apparently healthy, is in theory a conservative proceeding; in practice, the reverse. As regards the choice between partial and complete excision, the latter unquestionably deserves the preference; but, on this point, more precise information is wanted.

As applied to the knee-joint, excision has been for many years, and is still, a subject of animated controversy, carried on, for the most part, without regard to the constitutional cause of the local affection, and with insufficient respect for, and adherence to, the fundamental principles of clinical observation and logical reasoning. If surgeons will keep more steadily in view the great aphorism expressed in the title to Abernethy's work on the *Constitutional Origin of Local Diseases*; if they will be as diligent in the treatment of the earlier stages of joint-diseases as they are in the management of wounds after excision and amputation; if poor young people be not asked to go backwards and forwards to out-patient rooms for their big, tender joints, in the early stages of joint-disease, to be looked at by the surgeon, and painted by an assistant; if proper medical treatment be followed, and nourishment provided; above all, if the articulation be set at perfect rest, by embracing the joint above and below the seat of pain, and if the sufferer be placed in condition to breathe abundance of pure air, and have a clean and healthy skin—we shall hear very little more of either amputation or excision for diseased knee-joints. Long before Sir Benjamin Brodie insisted on the necessity of embracing the hip if you wish to fix and rest the knee, Percival Pott had taught that splints are a mischievous absurdity in the endeavour to maintain rest, unless they fix the joint above the part to be kept quiet; but, in this important point of practice, as in that section of his writings wherein, forestalling Paget, he proves that callus is not essential to the union of a fracture, Percival Pott wrote in vain, so far as the majority of surgeons are concerned. The more faulty part of his theory and practice is remembered; his philosophical precepts are unheeded.

In the preceding remarks, I have especially had in view those articular affections associated with, if not directly dependent upon, the scrofulous or tubercular diathesis. No less important class of cases are those in which the constitutional predisposition is gouty or rheumatic. For the diagnosis and successful treatment of these cases, close inquiry is necessary into the constitutional history, and into the functions of digestion and secretion. The liver and kidney are often at fault; and local treatment stands little chance, if the poison be not eliminated and the assimilation improved. Chemical depuration, local douching at alternately high and low temperatures, friction, and electricity, are an assemblage of resources to which the surgeon must have recourse, if he wish to do justice to his patient, to himself, and to his profession.

The necessity of constitutional treatment, and of a thorough knowledge of therapeutics, is illustrated by no subject better than by syphilis. A great deal has been said about the doctrine of duality, which certainly possesses scientific and practical interest; but, for precise evidence

on the action of mercury and iodide of potassium, we are nearly as much in need as we were twenty years ago. Iodide of potassium, as commonly given in five-grain doses, is powerless in many cases of tertiary syphilis, which yield to it as to a charm if given in scruple doses three or four times daily. The combination with the salts of iron, the alternation with a course of the bichloride and bark, the exhibition of the iodides of potassium and iron with cod-liver oil, are resources of the most potent efficacy; but they will only be productive of the good which may be anticipated from them when a number of accurate clinical observations shall have been conducted, after collection of the large body of information already on record in the surgical annals of various countries.

The subject of hernia was one of the earliest to which surgeons devoted themselves. Many excellent memoirs and treatises have been written upon it; and, since the days of Richter, the question of intra- and extra-peritoneal herniotomy has been a favourite theme. It is now denied by few that it is an advantage, if practicable, to avoid opening the sac; but the comparatively little danger of extraperitoneal herniotomy has been productive of mischief, by diverting attention from the means to be adopted to reduce a strangulated hernia without recourse to the knife at all. If proper and early attention be given to the means of reduction, interference with the knife will be required only in cases of great rarity. Above all, attention must be paid to the position of the body, which requires most perfect rest, with the shoulders much below the level of the hips; and the taxis must be scientifically applied, not for a few minutes with a movement of the fingers like a cook's in making a pie-crust; but the pressure on the tumour with one hand must be gentle, uniform, and long continued, while the fingers of the other hand are delicately engaged in manipulating and influencing the direction of the neck. Chloroform and enemata are, of course, important adjuvants; and I do not doubt that, if people who have a hernia be told the symptoms of strangulation, so that they may guard against them, if once these appear, and immediately apply for professional aid; and if physicians and surgeons will closely adhere to the rule of practice of physically examining the abdomen, as every other part, when symptoms point to its functional derangement, we shall hear little of operations for hernia, which will then cease to be necessary, very rare cases excepted.

(To be continued.)

VOMITING OF PREGNANCY TREATED BY HYPODERMIC INJECTION OF MORPHIA.

By JOHN HARRISSON, Esq., Congleton.

ON the 7th of April last, I was requested to undertake the treatment of Mrs. C. She had been under the care of an experienced medical man for a period of six weeks previous to this date, and during that time a host of remedies were tried without success. Vomiting of a severe character had been the prominent symptom throughout the illness. When I first saw her, there was seldom a longer interval than fifteen minutes between the paroxysms of sickness; and, after each of them, the patient fainted. She retained neither food nor medicine. Lime-water and milk, brandy and water, champagne, beef-tea, and many other things, were tried in vain; they were, in common with cold water and medicines, returned immediately after being swallowed. When at the worst, the patient occasionally vomited stercoraceous matters.

The commencement of the illness seemed to be nearly coincident with conception; but the patient and her friends attributed it to partial suppression of the menses, caused by taking a shower-bath. The os uteri was swollen and tense. There was pain in the lower part of the abdomen, severe palpitation, and an intermitting pulse. A consultation was suggested; the physician who saw the patient with me confirmed the diagnosis, and the remedies recommended by him were administered, but without avail. The patient and her friends are Catholics, and they positively refused to permit any attempt to induce miscarriage. Their decision was ratified by the priest; and at this time such a procedure would probably have been extremely imprudent.

On April 13th, after having tried external applications, nutritive and sedative enemata, vaginal injections, and numberless internal medicines, it occurred to me that hypodermic injections might be of service. I began with a solution of one grain of acetate of morphia in six minims of water, and injected one minim three times daily. At once the vomiting abated, and she gradually became stronger. The dose was increased to fourteen minims, but was only given twice in the day. This treatment was continued until July 1st, with occasional intermissions of one or two injections, that other remedies might be tried; but a tendency to re-

lapse invariably occurred. I now determined to try if miscarriage could be induced by drastic purgatives and ergot. These means appeared to succeed. A foetus was expelled, and the patient did well; but the gastric irritation continued, necessitating the continuance of the injections. However, on July 9th, I was able to reduce their strength and the frequency of their administration; and, on the 20th, discontinued them altogether. At this date, the menses returned, and the irritation of the stomach quite subsided. The patient was sent to the seaside, and is now quite well. She was reluctant to discontinue the injections, and was for a day or two depressed and hysterical, though not usually of this habit. She is more than ordinarily fat when well. She lost much flesh during the first part of her illness, but regained it soon after the injections were commenced. Fearing to establish a habit of opium-taking, the character of the injections was hidden from the patient. The skin of the forearms was pierced two hundred and sixty times. There was never any swelling or redness, except after two or three of the earlier operations, when the injection was accidentally endermic, rather than hypodermic. Suppuration never occurred. The bowels were sometimes a little constipated; and a slight disorder of the liver's functions was easily rectified by an aperient. The effect of the morphia was felt very soon after injection, in heightened spirits, toleration of food, and increased energy; but there was no marked drowsiness, contraction of pupils, or subsequent headache.

Towards the close of a previous pregnancy, the patient had suffered from a similar, but less severe attack.

I trust that I am not wrong in believing that there are many points of interest in this case, upon which I shall make no further comment.

ON AMPUTATIONS PERFORMED AT THE RADCLIFFE INFIRMARY, OXFORD.

By JAMES T. HESTER, F.R.C.S., Hastings,
Late Senior Surgeon to that Institution.

THE paper which appeared in the JOURNAL on the 30th of January, from Sir J. Y. Simpson, on the "Effects of Hospitalism upon the Mortality of Limb Amputations, etc.," seems to me to call for reports from provincial and other hospitals and infirmaries; especially from those from which more favourable results than he has given can be reported: and I trust that my example may be followed by others who may be able to say they have been as fortunate as myself.

Sir J. Simpson states the mortality, taking all limb amputations, in metropolitan hospitals, to be 1 in 3; in provincial, 1 in 4; and in rural hospitals, 1 in 5½. Feeling certain that the mortality which had followed my operations was very much less than that which he has given, I wrote to the house-surgeon of the Radcliffe Infirmary, Oxford, who kindly furnished me with the results as recorded in that institution, and I should wish to place before the members of the Association the following table, and a few observations on the cases.

	THIGH.		LEG.		UPPER ARM.		FOREARM.		TOTALS.	
	Cases.	Dths.	Cases.	Dths.	Cases.	Dths.	Cases.	Dths.	Cases.	Dths.
1849...	3	1	...	1	0	...	1	0	...	5
1850...	1	0	...	1	0	...	1	0	...	3
1852...	3	2	...	1	0	...	0	0	...	4
1853...	1	0	...	0	0	...	0	1	...	2
1854...	2	0	...	2	0	...	1	0	...	6
1855...	1	0	...	1	0	...	0	0	...	2
1856...	1	0	...	2	0	...	1	0	...	4
1857...	3	1	...	1	0	...	0	1	...	5
1858...	0	0	...	1	0	...	0	1	...	2
1859...	0	0	...	0	0	...	1	0	...	2
1860...	0	0	...	4	0	...	0	0	...	4
1861...	1	0	...	1	1	...	0	0	...	2
1862...	4	0	...	1	0	...	0	0	...	5
1863...	0	0	...	1	0	...	0	1	...	2
1864...	1	0	...	1	0	...	1	0	...	4
Total 21	4	18	1	6	0	7	1	52	6	

It will be seen that four deaths occurred in the fourteen earliest amputations; 1 in 3½, a trifle over the given average. In the first case, after amputation of the thigh, hæmorrhage occurred on the sixth day after the operation, and the patient sank from exhaustion. The second had purulent infiltration among the muscles of the stump, and the saphena vein was full of pus for about six inches; but there were no purulent deposits elsewhere. The third died from pyæmia. In the

fourth case, one after a primary amputation of the forearm, there was secondary hæmorrhage from the interosseous artery, which was secured with great difficulty on the eighth day, and the patient died from pyæmia.

The thirty-eight cases which followed, afford a much more pleasing picture; two deaths, *i.e.*, 1 in 19, and those under very unfavourable circumstances. In that which occurred in 1857, after amputation of the thigh, the patient (a female of middle age) had been brought to the Infirmary from a distance of fifteen miles, in a cart, having had her leg drawn into a thrashing-machine, and the bones thoroughly comminuted from the toes to above the middle of the thigh. The case was as hopeless as it could be; but, on consultation, it was deemed right to give the shadow of a chance which amputation afforded, and the limb was removed as high up as it well could be without amputating at the hip-joint. She did not rally, and died eight hours after admission; probably six after the operation. The last fatal case, that after amputation of the leg in 1861, was that of a man about 60 years of age, a hard drinker, who was admitted, in a state of intoxication, with a compound (Pott's) dislocation of the ankle. The limb sloughed to a frightful extent; and it was amputated, to the best of my recollection, about ten days or a fortnight after the accident. This case is recorded as fatal from pyæmia. In neither of these cases could the unfavourable results be attributed to hospitalism.

I think I may, without arrogating too much, say that the results which I now record are very good; and I proceed to speak as to the causes to which I am inclined to attribute them. When I was elected to the Infirmary, early in 1849, erysipelas was so rife that we feared to use a knife, or even apply a blister; and many patients who were admitted with accidents or sores, were attacked with it and died. To such a degree did it rage, that I had some patients removed into lodgings in the town to undergo operations, rather than risk them in the Infirmary. Fortunately, a vacancy occurred in the office of matron, and a lady was elected to whom it would be impossible to give too much credit. She immediately set about to have the beds and blankets cleansed and purified, having found them in a most filthy condition, as indeed was every thing else which did not meet the eye. The committee were astonished, and I believe horrified, at the bills for soap; but the effect was that erysipelas disappeared altogether; and I cannot call to mind a single case either amongst my own patients or those of my colleagues in which it followed any operation from that time till the period I resigned my office in 1865.

Great care was always paid to ventilation, which was effected by means of open windows; and I really believe that the sanitary condition of the Infirmary was equal to that of any well-regulated private house. It is well situated, being outside the town, and perfectly isolated.

I must add a few words as to my mode of operating. For the few first years I performed the circular amputation; but for many years I made flaps of integuments, and divided the muscles as in the circular operation, whatever limb was removed; taking care, in amputations of the thigh, to cut the loose posterior muscles much longer than those in the front, to allow for their contracting, as they always do to so much greater a degree. I consider that there ought to be nothing over the end of the bone but integument. The only instance in which I ever included muscles in the flaps in amputation of the thigh was in the case of the patient who died with purulent infiltration among the muscles of the stump. I once left the muscles at the back of the calf, but found them very inconvenient: the patient, however, had a good stump, but it was tardy in healing.

I attribute the immunity of my patients from pyæmia (the great source of danger after amputation) to my having for many years *invariably tied the large veins*, thus preventing pus or disorganised blood from passing into them and mixing with the circulating fluid. There has always existed a great dread of tying veins; but having had occasion to apply ligatures on them a few times to arrest hæmorrhage, and finding no harm follow, I was led to adopt the deligation of them in every case, and the result has proved that the practice was good, and, I think, founded on correct principles.

The practice of tying veins has been always considered a thing to be avoided, but I feel sure that it is perfectly safe; and I hope other surgeons may try it, and be as satisfied as I am on the subject. I happened, two or three years ago, to meet a very eminent surgeon attached to one of the metropolitan hospitals; and, on my talking the matter over with him, he strongly urged me to publish my views and practice. I might, however, never have done so, but that I have felt it a duty to endeavour, to the best of my ability, to vindicate the usefulness of Hospitals generally; and I am certain that whatever may be their defects, they are most valuable institutions.

I cannot be positive as to the results of operations performed by my former colleagues; but my impression is that they would be equally favourable as those which I have recorded.