accompanied these attacks. The child died six weeks afterwards.

At the post-mortem examination, the heart was found considerably dilated and hypertrophied, especially the right ventricle. At the base of the septum ventriculorum was an opening the size of a hazel-nut, and immediately over it arose a single vessel of an inch in diameter. The valves of this aorto-pulmonary vessel were somewhat thickened, and the mitral and tricuspid valves were nodulated from old inflammation. No mechanical cause was found to account for the attacks of palpitation and of dyspnoea, nor for the absence of murmur during their occurrence. The foramen ovale was oblique, and just permitted a surgeon's probe to pass through it.

The third case is that of a gentleman aged fifty-nine, who, but for attacks of palpitation, enjoys good health, and is not the subject of gout or other disease. He has had occasional attacks of palpitation for some years, but recently they have assumed especial severity, and recur every two, three, or four weeks. They commence without premonitory symptoms, except perhaps a trifling sensation at the præcordia, the patient having felt particularly well for a day or two previously. Suddenly the heart begins to throb with some violence and with remarkable frequency, and continues to do so perhaps for some hours, when, as the sufferer himself informs me, the action becomes irregular and intermittent, and, in time, again rapid and abrupt as at the commencement. A feeling of sickness and faintness is present, but vomiting is rare, though it shortens the attack, and has on this account been induced by mustard-and-water. Syncope has now and then occurred. When the attack has lasted some hours, a feeling of soreness is experienced over the heart, and in time is attended with marked tenderness. Sleep is almost abolished. After thus continuing for three or four days and nights, the palpitation suddenly ceases, its termination being announced by a sensation at the episternal notch. Physical examination of the heart in its period of calm reveals some enlargement of the organ, but murmurs and irregularity of action are entirely absent, except reduplication of the first sound. The pulse has a frequency of 56; its sphygmographic tracing is that of health. During an access of palpitation, the heart's contractions are so rapid as to render the pulse uncountable; no murmur has been present, but the impulse has been rather violent, abrupt, and remarkably frequent, but quite regular, forcibly reminding me of the beating of a dog's heart after division of the pneumogastric nerves.

The association of acute pericarditis and anginal symptoms is peculiar; but a case in some respects similar is related by Andral ("Clin. Méd.," vol. iii., p. 19). Attacks of palpitation and dyspnoea occurring in cyanosis are described by Dr. Walshe; but I have not met with a case recorded resembling that last described.

TREATMENT.—The removal of the immediate cause, when this can be ascertained, is the first indication. If strong tea or tobacco-smoking is at fault, this should be prohibited. If acidity of the stomach is the cause, a few grains of bicarbonate of soda, with a little magnesia, will give relief.

Hygiene and Diet.—An endeavour should be made to reduce the nervous susceptibility so frequently present, especially in women, by inculcating habits of self-control; and, to this end, change of scene and of society, as well as some occupation, are valuable aids. Over-work, of the brain especially, and of the body should be avoided, and the encouragement of the depressing passions should be firmly discountenanced.

The diet should be adapted to the digestive powers; this is most essential in middle and advanced life, and the irritative dyspepsia often present should be treated. The bicarbonate of soda, with ammonio-citrate of iron, shortly before meals, is very useful for the purpose. Regular and moderate exercise in the open air is desirable.

Reconstituent remedies of all kinds are of great service, especially iron, not only in marked cases of anæmia, but whenever the general health and tone of the system are impaired; the solution of the sesquichloride of iron is a convenient form, in doses of from fifteen to thirty minims. In those chronic cases in which the health improves under such treatment, whilst the palpitation persists, I have found the liquor arsenicalis, in doses of three minims and upwards, give relief in two or three days' time. Cod-liver oil may often be given with advantage.

The diffusible stimulants and anodynes are all useful, particularly during attacks of palpitation. They relieve the faint, sick feeling, and the pain; and sometimes lessen the irregular action of the heart, and promote sleep. The most valuable of them for the latter purpose is chloral, in doses of ten to thirty grains, once or twice during the night; since sleep follows its use in a few minutes, and nausea and constipation are not experienced the next day, and very rarely headache. Its continued use does not appear to be attended with inconvenience. Opium is useful, but is not so well borne; it is best associated with ammonia and spirit of chloroform. Digitalis, except in the obviously weakened and dilated heart, has no marked effect; but in such cases the infusion, in doses of two drachms and upwards, is most valuable. Of all remedies, I have found the subcutaneous injection of morphia to be the most trustworthy; it nearly always alleviates, and very frequently cures, the complaint after a few repetitions. One-twelfth to one-tenth of a grain is a sufficient dose to begin with, and there is little occasion to exceed this quantity. The injection should be repeated every third or fourth day. Though the arm is the most convenient place to insert the needle, the injection is sometimes more effectual at the præcordia. When morphia fails, or is not tolerated, atropine may be substituted; but is not, I think, so useful. If the prick is objected to, the morphia may be applied to the derma denuded by a small blister raised with ammonia, as Trousseau recommends. The hypodermic application of morphia has the additional advantage of relieving pain.

Local applications are of great service. Belladonna and its preparations stand in the first rank of these. The ordinary belladonna plaster, of good size and renewed every week or ten days, is very convenient and effective. It presents three special advantages: it protects the chest walls, which are tender, from the pressure of the clothes, and seems to deaden the painful impulse of the heart; besides this, it impedes slightly the free movement of the parts, and thus obviates the muscular pain often present. Another good application is a mixture of equal parts of liniment of belladonna and of liniment of chloroform, sprinkled on cotton wool. Hot linseed and mustard poultices are soothing, and are easily obtained.

Two methods of direct medication of the pneumogastric and sympathetic nerves have been proposed, which are steps in the direction of scientific therapeutics, and well deserve study. Dr. Althaus has advocated the application of the galvanic current to these nerves in their course ("Medical Electricity"), and Dr. Augustus Waller their compression in the neck by the thumbs (*Practitioner*).

Harley-street, W., Jan. 1871.

PRACTICAL OBSERVATIONS ON VACCINATION.

By JOHN CARTER, M.R.C.S., L.S.A.,

LATE SENIOR RESIDENT SURGEON TO THE BIRMINGHAM GENERAL DISPENSARY.

FROM the great prevalence of small-pox, I am induced to make some remarks upon vaccination, and also as to its power in preventing or modifying small-pox.

For more than twenty years it was my duty to conduct the vaccination of a large public institution. During that time I had numerous opportunities of seeing the power that vaccination possesses over small-pox. After having vaccinated a child, in a few days I have been asked to visit it on account of its showing signs of small-pox; and I have generally found that when the cow-pox has reached its fourth or fifth day (and the vesicle appeared unchecked), if the small-pox eruption then showed itself it was kept in check by the cow-pox, the two running on together; the small-pox eruption being more or less modified according to the number of days it was behind the cow-pox. If variola had set in earlier than the fourth or fifth day, it would, as a rule, check the cow-pox, causing it to look pale and sickly, the former keeping the upper hand; but I have never

known the patient to appear as if placed in any increased danger by that condition of the two eruptions. The tendency of the small-pox eruption, when following the cow-pox, is to hurry on its course, and on the ninth day of the cow-pox to put on the appearance of its ninth day's eruption; the former still maintaining its modifying power.

I was summoned to visit a child with small-pox. In the same house there were five other children unvaccinated. I immediately vaccinated them. In a few days, four of them began to show signs of small-pox, but they varied as to the time of the eruption making its appearance; and according as the cow-pox was in advance, so much the more was the small-pox modified. The four children were able to go about the house. The cow-pox in the youngest child (an infant in arms) ran its full course. It did not have the small-pox; yet I saw it being nursed by one of the patients.

Many years ago I visited the child of an Irishman. It was suffering from small-pox; and in the house was a boy, about ten or eleven years old, who had not been vaccinated. I at once vaccinated him. The vesicle went on unchecked into the eighth day. On that day he was seized with the premonitory fever of small-pox, which confined him to bed for three days, but no eruption appeared. I have never known the small-pox eruption to appear after the vaccine vesicle had arrived *unchecked* into the eighth day. So, from that day, I now look upon a child as safe.

Another child I attended with small-pox; a very severe case, in which about two-thirds of its tongue sloughed off. The patient had a hard struggle in recovering. In the same house were two other children unvaccinated. The mother objected, saying, if the children had the two together it would be sure to kill them—a foolish notion which I overruled. The ages of the children were about seven and nine. The youngest soon began to show signs of premonitory fever, and was confined to bed with it for three days; then the small-pox eruption came out. The feverish condition passed off; the patient left her bed, and went about the house during the rest of her illness, the disease being very much modified. The vaccine vesicle, before the eruption came out, was looking very pale; but after it began to appear, there was a decided show of activity in it, giving the idea that it would keep the upper hand, as in fact it did. On the ninth day of the cow-pox the small-pox eruption had hurried on and arrived at (put on the appearance of) its ninth day. During this time I was anxiously watching the other child, in whom the vaccine vesicle was going on actively, and continued doing so through the eighth day. But, on the ninth, she also was confined to bed with the premonitory fever of variola, which lasted three days; but no eruption came out, and the patient felt comparatively well. Now, the lymph that I used in vaccinating these two children was procured from the cow sixteen years before, and I had been using it in weekly vaccinations during the whole of that period, so that it had passed through about eight hundred children when used on the above occasion; therefore, I doubt the necessity of the frequent renewal of lymph from the cow.

I think it very necessary that care be taken in the selection of vesicles to take lymph from. I prefer it when there is a little activity shown, but before the areola forms.

From the above remarks it will be seen how desirable it is that vaccination should be done, even though the child may have the small-pox infection in its system.

I consider second vaccination very advisable. I have seen instances where the second has gone through all its stages as perfectly as at first, showing that the effect of the previous vaccination had completely left the system; and I have seen others where the third or fourth vaccination has taken pretty fully. So that occasional revaccination may be advisable.

Here is a proof how small a quantity of vaccine lymph in the system will produce a degree of protective power. A child, in a week after vaccination, has shown no local signs of the vaccination. Has then been revaccinated, and it has taken effect; and on the eighth day the vesicle has put on the appearance of the system having been influenced by the previous insertion of the small quantity of lymph, by pushing forward the stage of the vesicle; and when two attempts have failed, and the third has succeeded, the appearance has been still more marked. Three punctures were made in each case.

February, 1871.

A Mirror OF THE PRACTICE OF MEDICINE AND SURGERY IN THE HOSPITALS OF LONDON.

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. Proœmium.

FEMALE LOCK HOSPITAL.

CLINICAL RECORDS OF THE THERAPEUTIC VALUE OF IODINE IN THE TREATMENT OF SYPHILIS.

(From the Practice of Mr. JAMES R. LANE.)

THE following is the first of a series of four clinical records on the above subject which we propose to publish in successive numbers of THE LANCET. The contribution for next week, by Mr. Berkeley Hill, will represent the views he has formed from his practice at the Male Lock Hospital. For the treatment of syphilitic diseases of the eye, and of those of the nervous system, we shall refer to the practice of Mr. Bowater Vernon and of Dr. Buzzard respectively.

The preparations of iodine, in Mr. Lane's opinion, have no therapeutic value whatever in primary syphilitic ulcerations, whether attended with induration or not. He believes them to be equally useless in the class of symptoms usually termed "secondary," at all events in their earlier stages, when mercury, under proper management, has so eminently beneficial an effect.

The preparations of iodine have their special application in the treatment of the class of symptoms usually denominated "tertiary." These are skin affections tending to ulcerate—such as tubercle and rupia, destructive ulcerations of the throat and palate, affections of the periosteum and bones, gummatous tumours of the cellular and muscular tissues, and affections of similar character in internal organs; some forms of orchitis and also of iritis might be included in the list. In Mr. Lane's opinion, nothing is more certain than that, as a rule, mercury is injurious in this class of affections; they show themselves at a period when the direct influence of the syphilitic poison appears to have passed away, and to have left behind it a cachexia, which manifests itself in the destructive conditions above enumerated. These are essentially asthenic in their origin, and the remedies required are those which will repair the failure of nutrition and restore the debilitated powers. Good diet and stimulants, with pure air and other favourable hygienic influences, are essential; but, in addition to these, we have in the salts of iodine a remedy the value of which it is impossible to exaggerate. Amongst them the iodide of potassium holds deservedly the highest repute. Under its influence, rupial ulcerations heal in the most remarkable manner, periosteal swellings disappear, the gummatous tumours known as soft nodes are rapidly absorbed, and the strength and weight of the patient are increased. It is true that he is not at once permanently cured; it is not to be expected that so serious a diathesis can be changed in a few weeks, although its outward manifestations have been removed and destructive action has been arrested. The symptoms will return again and again, and the remedy must be again and again resorted to, with the result, in the great majority of cases, of a cessation of all outward symptoms and the ultimate permanent restoration to health of the patient. It is a mistake to suppose that a recurrence of symptoms is an indication of the failure of the remedy; it is, on the contrary, a reason for its repetition; and even the appearance of fresh symptoms during its use should be regarded as an additional motive to persevere and to augment the quantity given.

The iodide of potassium should be commenced in doses of three grains, to be gradually increased to fifteen or twenty grains, thrice daily. It agrees best, and its efficiency is in-