in their chronic stage, but with no good effect ; and in some apoplectic individuals he has known it produce injurious effects by hurrying the circulation.

In concluding this essay, I must correct an error into which I fell in the beginning, relative to the great uncertainty of frictional electrical machines. I mentioned, as an example, that a large cylinder machine, in my possession, could only be excited to such a degree as to give seven-inch sparks during three days in the course of the summer. I soon after discovered that a bad rubber was the cause of the failure, for on replacing it by a well-constructed one, the case became very different. I can now, even during the heaviest rain, always command from eight to ten-inch sparks ; and when the weather is fine, twelve-inch sparks may easily be obtained.

ART. VIII.—*Some Remarks on the Use of Inoculation in syphilitic Buboës, as a Guide to their Treatment.* By JOHN HAMILTON, M.R.I.A., Surgeon to the Richmond Hospital.

IN Ireland, as far as I am aware, few experiments have been made by inoculating the matter of chancres or other syphilitic sores ; yet, besides being the best way of studying the character and natural course of a syphilitic ulcer, I have thought it might be used as a guide for treatment in some cases of syphilis, and with this view have tried it in the tedious sores sometimes following the opening of buboës ; and the results have been such as to induce me to submit them to the profession.

Though there may have been some exaggeration of the value of this test to distinguish between chancres and the sores that resemble them, it may perhaps be found useful in medico-legal investigations, where a positive opinion is demanded, as, for instance, where sores follow rape ; but in ordinary practice an experienced eye can generally readily distinguish when an ulcer is syphilitic, the characters of which are so well-marked, and when it is not, the signs peculiar to the disease being ab-

sent. Hunter, as is well known, was the first to try inoculation of syphilitic matter, with the object of ascertaining how far it obeyed the laws of other animal poisons, small-pox for instance. B. Bell made experiments, on a more extended scale, to prove the difference between the poisons of syphilis and gonorrhœa. More recently, M. Ricord has published some most interesting facts on the use of inoculation in syphilis; and to this gentleman the very highest praise is due, not only for the ingenuity of his experiments, but for the extreme accuracy of his statements. The facts I have observed in my own trials of inoculation bear out in the minutest particulars the truth of his descriptions. The following case presents a sufficient example of the progress of a syphilitic inoculation.

Syphilis, chancres, and buboës; inoculation with the matter from the latter.—Case taken by Mr. Frazer. Patrick Dunne, a healthy young man, ætat. 19, admitted into Hospital, 18th September, 1846. He contracted the disease the latter end of August: he has phymosis, a chancre on the outside of the prepuce, and two buboës. The day after admission the bubo in the right groin was opened; and, in a few days after, by rest, cleanliness, and the use of the black wash, the inflammation of the prepuce was so reduced that it could be drawn back, when the corona glandis was seen, occupied by many chancres of irregular form, and discharging profusely. The bubo in the left groin was opened; after which another bubo appeared a little above this last, making altogether three, one in the right and two in the left groin: it was also opened.

7th October. The chancres were healed by local treatment, but the buboës shewed no disposition to heal; the wounds made in opening them were enlarged, and had assumed a chancrous character, their surface covered with a yellowish exudation, through which a few granulations appeared, the edges were well defined, raised, and undermined, and had a dull red areola. Ordered five grains of Hyd. c. Creta, three times a day.

13th. Two small punctures were made with a lancet dipped

in the pus of the buboës on the inside of the left thigh close to each other, and a piece of lint steeped in the same matter put over them.

14th. The second day. The punctures surrounded by an areola of a red colour; slightly raised, and, by means of a magnifier, two small vesicles can be seen over the punctures.

15th. Third day. Vesicles very distinct and becoming pustules; redness round them more marked.

16th. Fourth day. They are now decided pustules; the areolæ, being larger and close to each other, have become confluent, and are less perfect in outline.

17th. Fifth day. The larger pustule has burst, and is now a chancreous ulcer.

18th. Sixth day. Both pustules are now open sores, situated on an elevated base of a pink colour; they have a raised border, the centre depressed and covered with a sulphur-coloured exudation, not removeable by wiping.

As they became irritable after this, the saturated solution of the nitrate of copper was applied on a piece of lint, so as to make a slough; this separated in a few days, leaving a healthy granulating sore, which soon healed.

30th. The buboës are healed, and on the next day he was discharged well. He had been kept gently under the influence of mercury for three weeks.

Such is pretty much the course of the inoculation of syphilitic virus. The second or third day a vesicle, the fourth a pustule, which, when broken, discloses a small ulcer, excavated in the substance of the skin, covered with a greyish yellow exudation, having a well-marked raised edge, a red areola, and a hard base, slightly elevated,—in short, with all the characters of a chancre. The ulcer, at first very minute, increases for a time and becomes covered with a scab, but after the real nature is recognized it is best to destroy it while still small, either with the solid nitrate of silver or the saturated solution of the nitrate of copper. Inoculation should never be performed with

matter from a bad sore,—acute or chronic phagedena for example,—as it produces an ulcer precisely similar in character to the one from which the matter was taken. When in Paris, a few years ago, I saw a most intractable chronic phagedenic ulcer in the thigh, the product of inoculation ; and by neglecting this rule I made a very troublesome sore in one of the patients whom I inoculated with the matter from ulcers on the glans and prepuce, of long standing and very rebellious to treatment. M. Ricord gives an instance of a sore on the thigh, inoculated from a chronic phagedenic ulcer, which took the same time to heal as the original ulcer, viz., eight months(a).

In the treatment of syphilitic bubo I fully agree with those surgeons who recommend a bubo, even where suppuration has taken place, to be discussed if possible without opening it: this can be accomplished, and should be tried even where the integuments are thinned and red, and fluctuation very distinct. It can best be effected by the administration of mercury, with the application of a few leeches where the bubo is painful or very tender ; and compression, gentle at first, and gradually increased by means of a compress of lint wet with the *Lotio Acet. Plumbi.*, with one-twelfth part of spirits of wine, and a spica bandage. As the bubo gets pale, and the inflammatory action is on the decline, the strong tincture of iodine painted over the surface tends very much to hasten the absorption. In this way I have put back many buboes in which suppuration was fully formed. The three following cases were the last of the kind admitted into the Hospital :

I. John Hynes, a pale, delicate young man, *ætat.* 18, admitted December 29th, 1846, with an indurated chancre of eight weeks standing on the dorsum of the penis, half an inch behind the corona glandis ; also a pale, pink, fluctuating bubo, of large size and oblong shape, situated on Poupart's ligament, tender, painful, and slightly œdematous. There is a thick mottled rash over the chest, belly, and loins.

(a) *Clinique Iconographique de l'Hopital des Veneriens.*

January 1st, 1847. He was ordered five grains of Hyd. c. Cret., three times a day.

January 15. He has been kept under a gentle salivation for the last eight days. The lead lotion and compress kept over the bubo, and the strong tincture of iodine has been once applied to it. The chancre was quite healed yesterday. The matter in the bubo has been completely absorbed, the place of the bubo being now occupied by one or two enlarged glands. He was dismissed, and desired to take one pill each night at bed-time for some time longer.

II. Michael Keefe, ætat. 17 ; slight figure ; admitted Jan. 5th, 1847. Six weeks previously he contracted a sore on the glans penis, which soon healed, but another formed on the right side of the scrotum, where it joins the penis, in which situation he had torn the skin with his nails, and some of the matter of the other sore falling on it had produced a syphilitic ulcer. A month after, a bubo formed in the right groin, and a few days ago a second had commenced in the left groin. This last merely consists of a few enlarged lymphatic glands, but the bubo in the right groin is painful, tender, of a pale pink colour; fluctuation of matter distinct, though not very much so ; it is prominent, rather hard, but not deep-seated. There was a mottled eruption on the loins, abdomen, and inside of the thighs, but no other secondary symptom.

January 6th. Ordered five grains of Hyd. c. Cretâ, with a quarter of a grain of opium thrice a day.

January 9th. The fluctuation in the right bubo more evident; the left bubo larger. To be painted with the strong tincture of iodine. 15th. Fluctuation less distinct; a compress wet with acetate of lead lotion and spica bandage; little change in the left bubo; chancre healing. 16th. As the mouth is sore, to take a pill only twice a day. 29th. The buboes have disappeared, a few lymphatic glands, scarcely larger than natural, marking their previous position.

III. James Porter, ætat. 25, pale and sickly looking, was

lately in the Hospital with a bubo in the left groin, above Poupert's ligament, very tender, but fluctuation not very distinct; a long, narrow chancre across the dorsum of the penis, about one inch behind the corona glandis. By leeches, the application of the tincture of iodine, and pressure, with calomel and opium administered so as to produce slight salivation, the bubo had nearly disappeared, and the chancre was improving, when he left the Hospital of his own accord to spend Christmas at home. He came back in a fortnight, January 7th, 1847, with the bubo returned and worse than before; large, prominent, seated in a firm, solid, but not deep-seated base; the integuments of a dull red colour, slightly œdematous, and fluctuation very evident: it was very tender, and he had darts of pain through it. The matter in this case was so near the surface, that some of the more advanced pupils who saw the case very fairly doubted the probability of its being put back.

8th. He was ordered frictions of a drachm of the strong mercurial ointment every night.

13th. The bubo has been enlarging, and fluctuation is more distinct. Mouth affected. Omit the frictions: and to have a compress wet with Lot. Acet. Plumb. applied over the bubo, and moderate compression by means of a spica bandage.

16th. Mouth very sore, but the bubo is smaller and paler, and the fluctuation of matter less evident.

23rd. The bubo not half its former size; presence of matter indistinct; integuments over it not discoloured; chancre nearly healed.

29th. Chancre healed; bubo almost disappeared.

He was kept in Hospital a few days longer, taking a blue pill each night, and five grains of the hydriodate of potash, with sarsapilla, twice a day, but chiefly to complete the cure of a very close stricture which he laboured under. When he left Hospital, a little hardness pointed out the place where the bubo had been.

I did not select these cases, but I took them as the three

last examples that occurred of suppurated bubo discussed by treatment, in three weeks or less. Although I by no means deny that such buboes may be put back without the use of mercury, yet, as far as my experience goes, not in so short a time, nor with the same likelihood of success. I would go even farther, and say that, besides being the shortest and surest way, and the most likely to prevent the occurrence of secondary symptoms, it is also the best as regards the general health of the patient. From the very large number of syphilitic cases I have had to treat since my connexion with the Richmond Hospital, I have *invariably* found a mild mercurial course followed by improvement in the general health; pale, sallow, thin persons have gained flesh, become stronger, and healthier in appearance. A gentleman, to whom I proposed mercury for the cure of an indurated chancre, said that his only objection to taking mercury was that it afterwards made him so fat. I have repeatedly observed this in other cases. Great praise is undoubtedly due to those gentlemen (among whom Mr. Carmichael holds so high a position) who first directed attention to the injurious effects arising from the lavish and indiscriminate use of mercury, which was so general some years ago. Their observations not only checked the abuse, but also led to a more careful use of the remedy. But perhaps it is not too much to say, that many of their followers have pushed the doctrines of these reformers too far, and have, no doubt, gone into the other extreme; not possessed of the same extended knowledge of the venereal disease, and filled with vague undefined terrors of mercury, of which they have had little practical experience, they take the symptoms of the disease in bad constitutions for the effects of the medicine, and have applied terms of reprobation to the use which should have been only levelled at the misuse of the remedy. There are constitutions in which the syphilitic poison acts with peculiar virulence; in these, soft nodes, caries of the bones, the worst kind of tubercular eruptions, venereal ulcers,

rupia, the serpiginous ulceration, destructive sore throat, with many other intractable forms of disease, wear out the patient through a long series of years. If mercury has been taken, this train of evils is laid to its charge; and though violent or protracted mercurial courses are in such cases very injurious, yet I really believe in the majority of instances mercury has nothing to say to the production of the symptoms. Very recently, a young woman was under my care in the Richmond Hospital, with tubercular eruption, chiefly on the extremities, and some of the worst secondary venereal ulcers, circular, large, deep, sloughing, and phagedenic, that I have met with,—exactly the case in which the malignancy of the symptoms would have been attributed to the previous mercurial treatment,—but she had never taken any mercury. True mercurial affections are, in my opinion, very rare,—the constitution being more to blame than the medicine. At present there is a young man in the Hospital with strumous sore throat; the whole of the hard palate full of irregular ulcers, the soft palate extensively destroyed, the uvula gone, the back of the pharynx ulcerated, and covered with yellow, slimy matter. It is precisely the throat so often observed with tertiary venereal nodes; and, if mercury had been taken, would have been set down, by some, as a sore throat in a person run down by mercury; yet this young man never had syphilis, nor ever took mercury; but when younger had lupoid ulceration of the right arm, the large, irregular, white cicatrix of which is still visible. How extensively is mercury now administered for diseases of the lungs, eyes, brain, liver, and the fibrous and serous membranes; and yet when do we meet with the sequelæ, the mercurial affections of the bones, throat, eye, &c., so terrible to the imagination of many non-mercurialists? I have, therefore, no hesitation in giving mercury in cases of suppurating bubo, on the score of injuring the constitution, because, I repeat, it is my belief that a carefully conducted mercurial course has the very contrary effect, and that the health is much more likely to suffer from vain, long-continued non-

mercurial efforts, during which a most virulent animal poison is allowed to fix itself in the system. Even if the bubo is not put back by the treatment, but, after the patient has been sufficiently affected by the medicine, still continues full of matter, I think I have yet observed this good effect, that, the specific action in the bubo having been removed, it has become a simple abscess, and when opened healed up rapidly, as a common phlegmonous abscess would do. Sometimes a bubo has been already opened before the case is presented for treatment, or has opened of itself; sometimes the pain is so severe that the necessity of letting out the matter becomes urgent. When obliged to make an opening, I am usually decided in my mode of doing so by the kind of bubo. Suppurated buboes generally present themselves in two forms, either in an oblong tumour over the centre or inner third of Poupart's ligament, superficial and freely fluctuating from one end to the other, the integuments red and thinned nearly equally over the whole swelling, with nothing like well-marked pointing. It is best to open this bubo through its whole length; all matter is at once let out; there is no subsequent lodgment or chance of burrowing; and the wound, though at first large, quickly contracts.

The second form is rather more deep-seated, of a rounder shape, with a hard base, the fluctuation in the centre, and there is more decided pointing. Here I believe that opening with the caustic kali is most beneficial, allowing, when the slough separates, a free exit to the matter, and setting up a change of action in the part which tends to the dissipation of the indurated basis. After a bubo is opened it sometimes heals up in a few days, like an ordinary abscess; this is most common in the superficial variety, but in other cases the most anxious part of the treatment only then begins. I shall not dwell on the tendency which buboes have to burrow and form fistulous trajets under the skin and fascia, which unless at once slit up, naturally protract the healing of the sore: but it often happens that, a few days after the opening the wound

assumes all the characters of a syphilitic ulcer; the surface becomes covered with a yellowish exudation, the edge is red, raised, and distinct, there is a dull red areola, and the discharge is thin. Now it has appeared to me that for the proper treatment of such a sore, it is most important to ascertain decidedly, if possible, whether what *seems* to be a syphilitic ulcer is really so; and this, I think, is best accomplished by the test of inoculation. If the syphilitic nature is proved, mercury should be administered, and the black wash applied locally. As soon as the mouth becomes affected, the sore assumes another aspect, the yellowish exudation is thrown off, and a granular surface replaces it; the edges fall in, and cicatrization is generally rapid;—whereas simple local remedies, nitrate of silver, or ointments, &c., have extremely little effect on such sores, some of which I have seen, at the end of four or five months, rather on the increase, with all the signs of chancreous ulcers, and producing specific ulcers on inoculation.

Large chancrous bubo; inoculation producing a specific sore.—Michael Rock, ætat. 26, admitted October 14th, 1846. He became first infected with a chancre on the prepuce, about the 20th of June; it did not heal for ten weeks. A bubo appeared a month after infection, became of considerable size, suppurated and opened the beginning of September, when he first used mercury, rubbing in five times; his mouth became sore, and he discontinued it; the bubo got worse, but the chancre healed. At present there is a large and irregularly-shaped ulcer occupying the inner half of the left groin, its inferior angle extending a little downwards between the thigh and scrotum; the edge red, raised, uneven, and undermined; the surface very irregular, having a few pale granulations, but generally covered with a yellowish grey exudation. It closely resembles a large chancre, and is three inches long by one and a half inch wide.

18th. He was inoculated in the thigh with the matter from the ulcer.

21st. The two punctures had formed vesicles filled with serous pus. They afterwards became two perfectly formed chancres, and on the 24th, he was ordered Hyd. c. Cret. with opium three times a day.

28th. He was salivated November 2nd. The ulcer was reduced two-thirds of its former size; but after this the healing was protracted by some burrowing at the lower angle, between the thigh and scrotum, and by an attack of erysipelas, at that time prevalent in the Hospital. He was dismissed, cured, and greatly improved in health and general appearance, on the 27th December.

I have applied the same test to other cases of ulcers remaining after the opening of buboes, with a like result, but in none where the sore was of such extent. In one case, the matter taken the day after the opening of the bubo produced no effect, but in the course of a few days, a large gland was seen in the centre of the opening, it became larger, and fluctuation shewed it to contain matter, this was discharged, and inoculation with it produced a specific pustule and ulcer. We might be led to expect this when we consider, that a bubo is formed by the presence of the virus in one of the lymphatic glands causing it to inflame and suppurate; the inflammation spreads to the cellular tissue, external to the gland, where suppuration also takes place. Where there is no communication between the matter within the gland and that external to it, the latter is non-virulent, and consequently gives a negative result on inoculation. M. Ricord has noticed this fact. The following case will shew that reliance cannot and should not be placed on the appearance of the wound alone:

Patrick Whelan, admitted into Hospital, March 10th, 1846, with a bubo in each groin over Poupart's ligament; the left very large, prominent, oval, red, and fluctuating; the right the size

of a small apple, harder, and fluctuation indistinct, but with a pink apex. Two months ago he contracted a sore on the corona glandis, it healed in six weeks, leaving scarcely any cicatrix; the bubo in the left groin appeared a month after infection; and soon afterwards the other presented itself.

13th. The left bubo was opened freely with a bistoury, and that on the right side with the potassa fusa, the slough separated in three days, and discharged a quantity of pus.

21st. In the centre of the wound in left bubo, an enlarged gland appears, the size of a filbert; it has suppurated in the centre, a probe being readily moveable within it. There is a similar gland in the right side, but it is still hard. A compress and spica bandage were ordered. 26th. A little burrowing under the integuments in the right bubo, which was laid open.

April 7th. The wounds of both buboes have assumed a chancreous appearance, and he was inoculated in two places on the thigh, but without result.

17th. The gland in the right bubo was opened, and he was inoculated with the pus contained in it, but without producing a specific pustule or ulcer. Under local treatment alone, the application of the Lot. Acet. Plumbi, and the occasional use of caustics, the buboes healed up as rapidly as could be expected, considering the presence of the enlarged glands, which always render the progress more tedious. He left hospital well six weeks after the opening of the buboes.

This case shews the value of the test of inoculation, for had I been guided by the chancreous appearance of the bubo alone, I should have put this man under a course of mercury unnecessarily; whereas the failure of the inoculation, both from the open bubo on the 11th, and from the interior of the gland on the 17th, proved that I had to deal with a non-virulent bubo, and he got well by simple treatment alone.

A man named Thomas Quinan was admitted on the 1st of January, 1847, with a very large suppurated bubo. He was inoculated with the matter first let out, and subsequently with

that from the centre of a gland which appeared in the middle of the wound, but in both instances without effect. By simple local treatment, the lead lotion and compress, with the occasional application of lunar caustic, but without a particle of medicine, he left Hospital well, on the 29th of January, four weeks after admission.

I shall not trespass on the patience of my readers by adducing further evidence on this subject, but briefly sum up the conclusions to which the observations I have made induce me to arrive.

1. That after the opening of a bubo, the wound, instead of healing, may assume a chancreous appearance.

2. That the best way of ascertaining its real nature, whether it be virulent or non-virulent, is by inoculation.

3. That if inoculation produces a specific pustule and ulcer, the patient, besides careful local means, should be subjected to mercurial treatment, as the most effectual and rapid way of healing the sore, and ridding the constitution of the virus.

4. That if no specific ulcer follows inoculation, the wound of the bubo may be treated by simple local applications.

ART. IX.—*Observations on the Nature and Treatment of various Diseases.* By ROBERT JAMES GRAVES, M. D., Corresponding Member of the American National Institute for the Promotion of Science, Honorary Member of the Grand Duchy of Baden Medical Society, &c., &c.

(Continued from vol. xx. p. 422, of former Series.)

UNUSUAL SEQUELÆ OF SCARLATINA.

THE following case furnishes an instructive example of the difference which exists between an operation performed on a healthy and a diseased joint. In the last Number of this Journal my esteemed friend, Mr. Liston, published some "Remarks upon the Removal of loose Cartilages from the Joints,"