In each case, a speedy and permanent cure rapidly followed, with the reproduction of a perfectly healthy nail. Dr. Vanzetti's antecedent experience had been somewhat similar to my own; he had exhausted, without satisfaction, all sorts of remedies, and relied on excision for a cure—a means which, on account of its severity, he very reluctantly employed.

The credit of the discovery is due to Dr. Moerloose, physician to the hospital for children in Ghent, who read a communication to the Medical Society of that town in 1864, commending the marvellous powers of this application, and stating that he had used it with uniform success for several years previously. The communication was subsequently published in the *Abeille Médicale*. He there states that the simple application of powdered nitrate of lead to the whole of the ulcerated surface will procure the rapid healing of the usually intractable ulcer. Often, he says, patients have been brought to the hospital for the purpose of having the affected part amputated. Usually, in eight to ten days, in from three to four weeks at the outside, Dr. Moerloose has, without exception, been able to cure the most severe cases. Very shortly after the first application, all pain ceases; the swelling soon begins to diminish; also the suppuration, which loses its fœtor; and it is not rare, at the end of five or six days, to see a perfectly healthy healing sore.

Professor Vanzetti was much impressed with these statements, and determined to give the remedy a trial at the earliest opportunity. After a time, a boy of seven presented himself in his *clinique* with onychia of the middle finger of one year's duration. The pain was so excessive as to cause a species of convulsion every night. No form of treatment had produced the slightest benefit. The last phalanx was double its natural size, livid red in colour, ulcerated along the sides and upper edge of the nail. The loose portion of nail was removed by scissors, so that the powder might be freely applied to every part of the diseased surface. Considerable pain was complained of until evening, but then the child slept soundly all night. On removing the hard crust which formed over it, the ulcer was seen, two days afterwards, to be looking well. Three applications in all were made, and in eleven days the sore completely healed up. A year afterwards, the little patient was seen by Dr. Vanzetti, who found that a new and perfectly well formed healthy nail had grown, only differing from that on the opposite hand in being a trifle larger.

All Dr. Vanzetti's cases save one were on the fingers. The age varied from six to twenty-four years, and the duration of the disease from three months to four years. In the remaining eleven cases, one application of the nitrate of lead sufficed to ensure complete recovery, with perfect reproduction of the nail. In every instance, the author was able to verify the fact after the interval of a year or two. After the nitrate of lead had been applied a few hours, the pain previously complained of completely subsided in all the cases. Eleven chromolithographic plates illustrate the work; they show the appearance of the disease, and the results obtained by the nitrate of lead treatment.

Being accustomed to the disheartening obstinacy of this painful complaint, and averse from what appears to me the severe remedy of complete excision of the matrix, I was naturally anxious to verify these conclusions for myself. Unluckily, no case presented itself, nor have I seen a single one amongst the out-patients at St. Thomas's. I am, therefore, indebted to a friend and former pupil, now Surgeon to the Skin Hospital in Belfast, for trying the plan for me. Dr. Johnstone Scott has employed the nitrate of lead in powder in fifteen cases. I need not trouble the meeting with details, but merely report his conclusions. "The effects," he says, "are most wonderful. From fourteen days to a month is the time required for a complete cure. All pain ceases from one to three days after the first application, and the swollen irritable margins of the greenish-black ulcer gradually disappear; and, at the end of a week, we find a clean granulating sore with healthy edges. No cutting of the nail or matrix is required. The nitrate of lead may be relied on implicitly."

These conclusions positively confirm those of Drs. Moerloose and Vanzetti.

In no instance was any specific treatment employed. Tonics in various forms, and good food, were often required. The cure by local measures is a further argument against the specific character of the disease. In syphilitic onychia, the nails appear liable to separate and drop off from the root towards the tip; more than one nail is usually affected; there are fissures or ulcers in the interdigital folds; and there is other evidence of syphilis usually present. In the cases I have seen, however, much as the nail may have disintegrated, the proximal portion remains as firmly imbedded as ever in the root-matrix; and, if it be evulsed, which it is often difficult or impossible to do, from the softened character of the portion left, the root presents a healthy opalescent appearance.

No doubt the fragmentary stump of nail projecting from the surface, and liable to constant knocks and twists, is a very likely source of irritation, and acts much like a foreign body; but the results of the nitrate of lead treatment appear to prove that it is not the nail-secreting structure at the root which is the seat of the disease, but the soft tissues on which the body of the nail rests. If this be true, the excision or evulsion of the nail cannot be necessary to ensure the cure of the disease.

Possibly, this mode of treatment may be known to many surgeons, but so far I have seen no published record of their experience; and I trust I may be excused, therefore, for thus far trespassing on the time of the meeting.

ON THE USE OF RESIN-CLOTH, IN THE PLACE OF CERE-CLOTH, IN THE TREATMENT OF WOUNDS.

By EDWARD LUND, F.R.C.S.,

Surgeon to the Manchester Royal Infirmary.

To those who practise the system of dressing wounds advocated by Professor Lister, the use of the carbolised gauze which he employs, as far merely as expense is concerned, is a matter for consideration. This, perhaps, is the case more in hospital than in private practice; because in the former, at the present time, the gauze is largely used to test the value of the antiseptic method, and economy should be observed as far as possible. Moreover, beyond the cost, there is a difficulty in the preparation of the gauze, for the mixture of paraffin and acid with which the fabric is saturated, must be applied to it in a heated liquid state; and, unless a certain temperature be maintained during the whole process, the gauze will be of unequal thickness, and imperfectly porous.

I have tried to make the gauze myself, according to Professor Lister's recipe. I have often failed to do so in these particulars. In the paper in which he first described this dressing in the *BRITISH MEDICAL JOURNAL* (January 1871, p. 30), Professor Lister refers to a very curious property possessed by carbolic acid—namely, that it can be combined with resin, and resinous matters generally, with great facility; and, when so blended, nearly all its irritating acid properties are neutralised, while the compound so formed retains the power of evolving an antiseptic vapour at the temperature of the body. It is well known that to touch the mucous membrane, or even the skin of the lips, with a fragment of pure carbolic acid, occasions pain and excoriation, in some subjects more than in others; but when we experiment in the same way, on a mixture of the acid with five parts of resin, we find all this acidity destroyed; the acid is still present, but it is stored up and rendered harmless by this new combination. Having verified this fact by numerous observations, I came to the conclusion that we have here a method of forming easily, without the aid of heat, an application for antiseptic purposes in surgical practice of great value. All that is required to carry out the idea is to saturate very thin calico gauze with such a mixture of resin and acid, dissolved in methylated spirit, press it powerfully, spread it out to dry quickly, so that it may become quite porous and absorbent, and it is ready for use. Yet the resin and acid, thus left upon the threads of the calico after the complete evaporation of the spirit, would be too brittle and adhesive to the skin for a wound-cover and air-filter if something else were not added to impart flexibility. The substance which I employ for this purpose is castor-oil, because it is the only fixed oil easily accessible, which is quite miscible with spirits of wine. All samples of castor-oil, by reason of adulteration, do not show this property of perfect solubility in alcohol, as stated by Pereira (*Materia Medica and Therapeutics*, 1865, p. 251); and, therefore, I am content to use the oil, if it will unite perfectly with twice its bulk of rectified spirit. The exact composition of the solution is as follows:—Carbolic acid crystals, melted, two fluid-ounces; castor-oil, two-fluid ounces; purified resin, sixteen ounces by weight; methylated spirit, forty fluid-ounces: mix. To dissolve these ingredients easily, we must add them together in a certain order. To the resin, liquefied by heat and removed from the fire, add one-third part of the spirit; when these are well mixed, put in another third of the spirit, in which the oil has been previously dissolved; and, lastly, the acid in the remaining portion of the spirit must be slowly added to complete the mixture. The whole must be agitated until all the constituents are thoroughly incorporated, and afterwards passed through a muslin filter to get rid of any extraneous matters. If this plan be not adopted, the resin will concrete into a mass at the bottom of the vessel, and it will be extremely difficult afterwards to get it perfectly mixed. When thus prepared, the solution is of a dark colour, clear and free from any deposit; and it can be kept unchanged, in a

well corked bottle, for a long time. It is, in fact, a kind of thick varnish. To make the resin-cloth, as I term it, for the sake of distinguishing it from the cere-cloth dressing for wounds, which I described in a paper read at the Leeds meeting of the British Medical Association in 1869, it is needful to select a very thin, cheap, porous calico, or calico-muslin, known in the trade as "mulls", which costs at wholesale price about four shillings per piece of twenty yards. This, divided into strips, each about nine inches wide and six yards long, is reduced to a convenient form for general use. The calico should be unbleached and free from stiffening, and each of the strips should be carefully folded up, so as just to lie flatly in the press, as I am about to explain.

An ordinary square tincture press may be used to press the cloth, or such a press as is sold for copying letters, to which a tin box has been adapted, so that the plates of the press can work in it; and into this box the folded calico is placed, the solution being poured over each successive layer, so as to wet perfectly every part of it. There should be an aperture at the bottom of the box, with a tap by which the superfluous fluid can be removed, collected, and used a second time. The press being brought into action, the pile of calico should be squeezed as dry as possible, all the fluid drained off, the resin-cloth taken out, laid over a few lines of string in a warm room with a good ventilation; and in an hour or two, when all traces of smell of the methylated spirit have departed, the cloth may be rolled up and kept in tin cases ready for use.

It is difficult for me to state the exact cost of resin-cloth made by this process, for I have not yet bought the materials for its preparation at such prices as could be had if it were to be manufactured in large quantities; but, allowing for some slight reduction, where six or eight twenty-yard pieces of calico are bought at a time, and the solution made by the gallon, I find it comes to a fraction less than threepence per yard of average width of 44 inches. In using it as a dressing for wounds, I deal with it precisely as I would do with Mr. Lister's antiseptic gauze, for which it must be taken as a cheap and ready substitute. I generally apply ten folds of it over the face of a wound, as in an amputation, and perhaps six folds higher up the limb for some distance, and I cover it with the macintosh hat-lining, so as to distribute the serous discharges through the breadth of the resin-cloth thus covered. I have never found it to irritate the skin in any degree beyond what the oiled silk (protective), liberally used, could control; except once, when, in the hurry of preparing the resin-cloth, I had neglected to dry it thoroughly, and it was applied, still moist with the methylated spirit, the naphtha in it seeming to be the chief cause of the skin-irritation. But if this precaution be observed, I believe this resin-cloth will be found a very useful addendum to our means of treating wounds and abscesses on antiseptic principles.

A CASE OF TUBERCULAR LEPROSY.

By GEORGE GASKOIN, ESQ.,

Surgeon to the British Hospital for Diseases of the Skin.

J. M., aged 29, native of Herefordshire, a stonemason by trade, eighteen months since migrated to Sussex, where he has not stayed very long in any one place. The last four months he has been in town, much of the time in a general hospital. He is a married man, not of the lowest class or necessitous; his general health is not bad; he is tall, pale, and of phlegmatic complexion, sluggish in manner, with intellect at present rather dull. According to his relation, about nine months since he had very severe shiverings, immediately followed by swelling and inflammation in the right leg and foot, with some attendant fever. After three or four days, the swelling in part subsided, but the same circumstance was many times repeated; whenever there occurred a swelling of the leg, this had been preceded by a shivering. "Very red it was"; at last much thickening remained. Since being in town, the patient has ceased to have these shiverings; when they first came on, there was a fortnight or so of interval. He left off work last Christmas. The appearance of the leg is scarred or scabious, somewhat dark and rough, a case of elephantiasis Arabum, which one might even suppose of older date, and of no insignificant dimensions. Besides this, a red brand is very conspicuous on the left cheek. It crosses from mouth to temple; it is hard and tubercular, all of one piece. It came on when he was in hospital. On the right side of the neck are old scars from glandular ulcerations. These have recently become red and to some extent the seat of tubercular deposit, extending to the cheek and back of the neck. On the right shin, half-way down, there is a considerable projecting tubercle, the size of a small walnut, retaining the colour of the surrounding skin. On the opposite limb are smaller but corresponding tubercles. The four outer toes of the

affected foot display on their dorsal surface a projecting tubercular mass distinct from the general swelling. On this part there was previously a scar or trace from an injury received when a boy. Also in the affected cheek there is seen a small scar, with the history of a blow of more recent date. The tendency of the disease, as it would seem, is to fall on parts where vitality is impaired or the circulation low. The voice is not affected.

This case serves to confute the idea that elephantiasis Arabum is a local disease. The present condition of the patient comes very near to elephantiasis Græcorum, if not already merged into this. It has not seemed sufficient, however, for modern pathologists to distinguish the two diseases; the difference has been strained to the uttermost, but, being a mere idol of the theatre, the conclusion can have no permanency.

THE CONNECTION OF DIPHTHERIA WITH LOCAL UNSANITARY CONDITIONS.*

By W. N. THURSFIELD, M.D.,

Medical Officer of Health for the Shropshire Combined Sanitary District.

My object in this paper is to endeavour to elicit an opinion from you as to the exact connection between diphtheria and local unsanitary conditions, as this is a point about which there is much uncertainty, and on which members of a society constituted as yours is to a large extent are particularly well qualified to speak with authority. There are many points connected with the etiology of disease, especially as to the origin of certain diseases *de novo*, about which the observations of practitioners in country districts are of much more value than those of their brethren in large towns. They have a more intimate acquaintance with the habits, movements, and surroundings of their patients, and often they have a complete knowledge of all probable sources of infection in a district, and can thus eliminate various sources of error in a way not possible under more crowded conditions of life.

As the term diphtheria is occasionally somewhat loosely applied, I will define it to mean a systemic contagious disease, characterised by a tendency to membranous exudation, chiefly affecting the pharynx, and having these peculiarities, that, during its course, albumen is frequently present in the urine, and that the disease is liable to be followed by obscure local nervous affections. Another peculiarity of the disease is the remarkable and now well proved influence of hereditary predisposition; in determining personal susceptibility, this, in conjunction with the tenacity with which the contagion element in this disease is liable to remain in a room, unless great precautions be taken, may explain some of the cases where diphtheria has been noticed as recurring several times in the same house.

The medical practitioners with whom I come into contact in this country almost invariably connect diphtheria with local unsanitary conditions, and many of them are of opinion that such conditions not unfrequently originate the disease. On looking through the systematic works on medicine, both English and foreign, I have been struck by the almost complete absence of any reference to a connection between this disease and local influences. In the collection of monographs on the subject published by the New Sydenham Society, one author only, M. Empis, refers to it, and only so far as this, that "the disease is most obstinate, and relapses of the local symptoms most common, in weakly children surrounded by sanitary deficiencies." M. Trousseau states that "he has seen the disease raging on salubrious heights, whilst villages situated in marshy districts have escaped, and *vice versa*." In this country it has also been observed in several epidemics that the disease has prevailed with great fatality on elevated and exposed tracts of country; those of us, however, who are in the habit of making sanitary investigations in country districts know that many localities with the greatest natural advantages of site and air often exhibit, both inside and outside the houses, the worst forms of sanitary neglect, with which the pure winds in vain battle. The elaborate series of investigations, extending to upwards of seventy localities, made for the Medical Department of the Privy Council by Drs. Sanderson and Greenhow on the subject of this disease, and published in the second report (1859) of the medical officer to the Privy Council, do not seem to justify any definite conclusion on this particular point; but, in reporting a subsequent investigation, published in the eighth report (1865) of the medical officer to the Privy Council, Dr. Sanderson states, in reference to an outbreak of diphtheria, that "it is not possible to avoid the conclusion that it was due to local causes, and that it would have been prevented if the nuisance had been effectually abated."

* Abstract of a paper read before the Shropshire Scientific Branch of the British Medical Association.