above and below the lesion, and paralyse the muscles by compressing them. I did not look at the compound fracture for twelve days after I put it up; and then the wound was all but entirely healed. Depend upon this, if you are to save compound fractures, you must reduce them to the condition of simple ones, effect reduction, close the wound, immobilise the limb, and bear in mind that, once you have done so, nicely and effectively, to meddle is to muddle.

As a wound in the soft parts of the highest moment, let me call your attention to Mary Ann Sweet, aged 20, a patient of my friend Dr. Sutherland, on whom I performed ovariectomy on July 24th. The tumour, being in great part solid, required a free incision (nearly eight inches) for its removal; the pedicle was secured in a carpenter's callipers; and the wound accurately closed with points of silver suture, a third of an inch distant from each other. The healing of the wound was most satisfactory, as it has been in every case in which I have performed ovariectomy; and there is no doubt that this great operation would be a hopeless one if we did not take measures to bring accurately together the divided edges of the abdominal wall, and exclude the air from the peritoneal cavity; the intention and the principle of practice being the same as in the case of the compound fracture just previously under notice.

In the series of events which have raised ovariectomy to the position of one of the most legitimate operations in surgery, no incident has been more remarkable, none more opposed to tradition, than the comparative impunity with which long wounds may be made in the abdominal wall. A chief reason of this impunity is, I apprehend, the fact that the imposing circumstances of the operation have made all surgeons feel the common necessity of closing the wound at once and immediately, and endeavouring to obtain reunion of the abdominal wall, according to the practice of plastic surgery, by direct adhesion, uncomplicated by supuration.

In enlightened endeavour to enforce these principles in the general practice of surgery, no one has been more persevering and successful than Jules Guérin, to whose initiative is owing M. Maisonneuve's treatment of amputations by pneumatic occlusion.

My observation of the practice in two cases which I recently saw in the Hôtel Dieu at Paris, so convinced me that the proceeding deserved further investigation, that I determined to put it to early trial. Accordingly, I adopted it in the case of —, now in Ward 5, last Wednesday, just five days ago. The woman had suffered for upwards of two years from disease of the left knee-joint, which had resisted all palliative measures. The hysterical temperament of the patient was so marked that, for some time, it masked the true nature of the disease. Having amputated just above the joint by a large front flap, after Mr. Carden's method, the vessels secured, I adapted the flap at once, and held it in position by long strips of plaster, but I used no sutures. I then slipped over the stump, nearly to the groin, a closely fitting hood of vulcanised India-rubber. The crown or dependent point of the hood was connected by a rubber tube with a closely stoppered bottle, into which another tube was accurately fitted, the latter being connected with an air-pump. A few strokes of the piston emptied the glass jar and the vulcanised rubber hood, which at once adapted itself to every point of the surface of the stump; evidently exercising a very considerable pressure. In this state, the patient was removed to bed. The stump has not been moved from the pillow on which it was first placed; and a small quantity of reddish-looking discharge is drawn into the jar every time the piston is worked—every six hours, on an average. Much less pain and discomfort than usual has been complained of; the skin is cool; and the records of temperature, pulse, and respiration concur in encouraging the belief that all is well. Meanwhile, the patient is taking solid food and malt liquor with relish. If such a method of treatment be unattended with disadvantages peculiar to it, it is almost superfluous to observe that it must be of great service in ensuring rest, resisting muscular retraction, preventing the accumulation of matter and its decomposition, and in direct measure lessening the attendant risk.

UNVACCINATED CHILDREN.—Dr. Septimus Gibbon, in his report to the Holborn vestry, says:—"My own efforts and those of the parochial surgeons would be greatly assisted if the authorities of all the schools in the district, whether public or private, national, parochial, or ragged, would insist upon previous vaccination as a qualification and condition for admission into their respective schools. It would be wise, also, if the Board of Guardians were to require every child born in the workhouse to be vaccinated before leaving it, and by way of stimulating the practice to give a special and extra fee for the operation. At present the surgeon, unlike the out-door vaccinators, is paid no special fee for the operation. The consequence is that very few of the children born in the workhouse ever get vaccinated. After leaving the house it is left to the discretion of the parents, and so in very many instances is totally neglected."

ON THE

TREATMENT OF PULMONARY CONSUMPTION.*

By J. HENRY BENNET, M.D.

MY principal motive in writing this paper has been to bring the treatment of pulmonary consumption before the British Medical Association, for the purpose of discussion. The subject is a momentous one, involves many important scientific and practical questions, has a direct bearing on the pathological doctrines and tendencies of the present day, and is, in every respect, worthy of consideration and discussion at the hands of the eminent practitioners who are this year present in the capital of the sister kingdom. I may also add, in passing, that many of our medical brethren who adorn the profession in Ireland have acquired a world-wide reputation by their researches in thoracic pathology, none more so than our illustrious President, and that this meeting will afford us a valuable opportunity of eliciting the expression of their present views with reference to this important therapeutical question.

The subject of phthisis is so vast in itself, in its pathological affinities and connexions, that it would require not one but twenty meetings to discuss it in all its bearings. I shall, therefore, omit all allusion to the nature and origin of tubercle, and confine myself to the consideration of treatment, merely prefacing what I have to say by a few brief remarks on the general pathology of pulmonary tubercle, as a basis for the therapeutical opinions subsequently developed.

The deposit of tubercle in the animal economy, in the lungs, or in any other organ or tissue, whatever the views entertained of its intimate nature and origin, is generally considered to be a result of defective nutrition, itself the result of a lowered state of vitality, hereditary or acquired. It is a sign of defective vital energy, of vital decay, and the forerunner of eventual death; in a word it is a mode of dying. Taking a philosophical view of the disease, I do not consider tubercularisation to be a dire pestilence, an inexplicable scourge of the human race, as it is often represented. On the contrary, I look upon it as one of the means by which Providence purifies the human race, weeds it of effete organisations incapable of propagating it in its integrity, and thus secures its perpetuation in conditions of health, strength, and beauty. Were those who marry too young or too old, broken down by constitutional diseases, or worn down by sorrow, by bad air, by the struggles, the superhuman labours, the anxieties of city life—were such persons to have the power to generate children with the germ of continued life in them, mankind would soon become a race of pigmies, of dwarfs, of misshapen abortions; but they have not that power, their children mostly die young, of scrofulous and kindred diseases, or, if they reach puberty, of pulmonary consumption. Thus are the errors of the fathers visited on the children to the third and fourth generation, according to the divine law, and thus is the integrity, the sanctity, of the human race redeemed from our mistakes by an all-wise hand. The preservation of the human race from generation to generation, in its integrity, is the grand object of Providence, and in comparison with this grand object the prolongation of individual life is clearly of little value. Such considerations show how vain is repining, is rebellion, when we ourselves come under the operation of these great laws of our being. We might as well rebel against the north wind, or the south wind, blowing each in their due season. We may endeavour to protect ourselves individually from the wind that cuts us, but if we fail we must bow to a higher will, and submit to what is right and just in itself, and good for the human ocean in which we only represent one drop of water.

The attention of thinkers has been much directed of late years, by Mr. Darwin's luminous researches, to the struggle for life which pervades animated nature. This struggle is carried to such an extent amongst the undomesticated members of the animal kingdom, from the lion of the forest to the minute beings revealed by the microscope, that only the young and the strong survive. The weak, the diseased, the old, either die because they cannot secure the means of existence, or are at once exterminated by their natural enemies. Thus their races are propagated only by the young and the strong, for none other are allowed to exist. But with man it is different; he has intellect, can and does provide for sickness and old age, and thus throws the shield of his mental strength over his weak and sickly progeny. In civilised life, therefore, all are not young and healthy. Society is full of effete organisations, artificially prolonged. They have desires, passions, like their stronger brethren; like them they marry, are given in marriage, bear children, cherish and provide for them, although their offspring may be feeble and diseased. The laws of Providence, however, laws severe in their individual appli-

* Read in the Medical Section at the Annual Meeting of the British Medical Association in Dublin, August 1867.

cation, but beneficent and necessary in a generic sense, come into play, and sooner or later repair the errors blindly committed, through the sad agency of disease and death.

These views are not mere theoretical speculations. They will stand the test of careful and close scrutiny. Practically, pulmonary consumption may be said to be hereditary or accidental. In the first case the patient is either the child of parents tainted with the disease, or of parents whose constitutions are defective from age, disease, anxieties, and privations. In the second, when the disease is accidental, there is no flaw in the antecedents; the parents may have been young and healthy, but the patient's own health has been compromised by some of the above mentioned causes, his own individual vitality has been lowered, and tuberculosis has supervened, accidentally. Its manifestation may be considered an evidence of organic decay, the first stage of a condition which, unchecked, leads to the death of the organisation.

If these views are correct, if the deposit of tubercle in the lungs, or elsewhere, is merely the evidence of a constitutional state of lowered vitality, hereditary or acquired, it becomes at once evident that the only rational treatment is a sthenic treatment. All our remedial agencies must be directed to invigorating the originally defective organisation, or to renovating the constitutional powers of the accidentally debilitated individual. If we can do this, if we can rouse the organic vitality of the patient, the progress of the tubercular disease or deposit will stop of itself. The lung mischief will then become a mere local wound or sore, which nature can and will limit and either heal or render harmless.

In this view of pulmonary tuberculosis, the inflammatory conditions that accompany and follow the deposit, the softening, and the elimination of the tubercular matter, are mere epiphenomena. Thus, the bronchitis, the pneumonia, the pleurisy which accompany the evolution of pulmonary tubercle, although they have their importance, are altogether secondary to the general diathesis of organic debility that rules the formation of the tubercular deposit. If that can be checked and prevented, the sufferers get well of themselves, without local treatment. If the defective organic vitality that governs the tubercular diathesis cannot be favourably modified, renovated, the inflammatory epiphenomena persist, as concomitants of the ever extending lung disease, notwithstanding all treatment, and they thus help to quench life.

But how are we to renovate an exhausted organisation? If debilitated parents have given to their children an amount of vitality that only responds to ten, fifteen, twenty, or thirty years of life, and the hour of decay has come, how are we to retard it, to prolong an existence thus early drawing, naturally, to its close. If again an organisation, hereditarily strong, has been abused and worn out, and decay, in the shape of pulmonary tuberculosis, comes, how are we to stem the torrent? My answer is that we may, not unfrequently, succeed in so doing, by the steady application of the laws of healthy life, in which we must place our principal reliance. In other words, we must seek arms to fight the battle of life sooner in physiological therapeutics or hygiene, than in medicinal therapeutics or pharmacy. What can iron, or quinine, or phosphorus, or arsenic, or acids, or alkalis, do to renovate an exhausted or worn out constitution? They may fulfil some medicinal indications it is true, but that is all, and our reliance must be mainly placed in the removal of all social or hygienic causes calculated to prejudice the patient's health, and in placing them in the most favourable hygienic conditions for the development of sound human life.

A comparison taken from horticulture will aptly illustrate my meaning. If a flower, a shrub, a plant, has been living under influences which are antagonistic to its organisation, say in a bad soil, in a city, exposed to cold winds, to smoke, to bad air, to defective drainage, and to drought; if it has suffered in vitality and health, is losing its leaves, has been attacked by insects and mildew, what does the skillful horticulturist do to restore it to health? He does not merely give it manure, or lime, or bone-dust, or guano, and leave it where it is. He knows that his remedies would fail because the antagonistic influences are still in force, that decay would go on, and that the plant would die sooner or later. If he is really anxious to save it, he takes it out of the city, out of the bad soil and bad air, and plants it in good genial soil, in the country, in pure air, protecting it from the ungenial winds, watering it regularly, and exposing it to the sun's fostering rays. If he thinks the soil would be improved by the addition of some element suited to the plant, he adds it, but this addition he considers quite secondary to the other measures. By degrees, little by little, under the influence of agencies favourable to plant life, he sees his invalid gradually revive, and in the course of time he may witness its complete recovery.

Such, in every respect, I consider ought to be our conduct in the treatment of consumption. Following out these indications, I will now consider it under the three heads of hygiene, climate, and medicine.

By hygienic treatment I would imply that we must place our patients in the conditions most favourable to the conservation of health, and to

the prolongation of life; in a word, we must rigorously apply all the established laws of physiological hygiene. These laws are too well known to the profession for it to be necessary to insist upon them. I shall, therefore, only allude to those points, respecting which there can be ground for difference of opinion.

Firstly, as all agglomerations of human beings bring with them conditions detrimental to health and to life, and as the average duration of life is much greater in the country than in the very healthiest cities, consumptive patients should be sent out of towns. The rich and well-to-do should be located in the country, or on the outskirts of towns. The poor should be driven back as far as is possible, to the villages from which they have mostly migrated. The pure air they would there find, would tend more to the recovery of their health, or to the prolongation of life than all the physic they could get from town hospitals and dispensaries. Consumption hospitals should always be placed in the country at a distance from towns; consumptive patients should not be retained in the general hospitals of cities, but drafted as far as possible on the country union infirmaries.

As pure air is the first necessity of health, and its absence in cities, in crowded workshops, in close sleeping apartments, is probably the principal developing cause of tuberculosis, the greatest possible attention should be paid to ventilation. There should always be a current of air passing through the room occupied by a consumptive patient, day and night, so that the air, contaminated, poisoned, by their respiration, may be constantly renewed. So far from the cool air of free ventilation, day and night, predisposing to bronchitis, and to other inflammatory chest affections, it preserves from them. I myself, and all my consumptive patients live in pure air, in a constantly renewed atmosphere, day and night, and escape these ailments all but entirely. Such ventilation, however, can only be secured by open doors or windows, or both. The patients must, at the same time, take care not to place themselves in the current of air which enters the room. An important practical fact is that by thus breathing constantly renewed air the possible danger of the extension of the disease from the tubercular to the non-tubercular is diminished. This danger appears really to exist from the recent researches respecting the inoculation of tubercular matter. I have certainly seen cases which appear to corroborate the fears entertained by Southern Europe respecting the possible extension of the disease from the unsound to the healthy. If this danger does exist, it must be increased a thousand fold by the non-ventilation of the room in which consumptive people are often made to live, owing to the unsound dread of chills and colds.

Another hygienic point, respecting which there is room for discussion, is the treatment of the skin in consumption. Although it is well known that there is, physiologically, a see-saw between the skin and the lungs, and that the best way of relieving the lungs from undue excretory action is to stimulate the excretions of the skin, the latter is seldom interfered with, from the apprehension of chills. Experience has proved to me that these fears are totally unfounded. Daily cold sponging at from 62° to 68° Fahr., with proper precautions is not only absolutely free from any danger in all stages of phthisis, with softening or without, with cavities or without, with chronic bronchitis, local pleurisy, or local pneumonia or without, but it is a powerful agency for good, arresting or diminishing night-sweats, lowering febrile action, cooling and invigorating the economy, and promoting sleep at night.

The treatment pursued being essentially sthenic, that of a disease of debility, it stands to reason that the nourishment of the patient should be as abundant and as nutritious as the digestive organs will bear. The lighter wines, clarets, Burgundies, hocks, Hungarian, or light bitter malt liquors, may also be taken in moderation, with benefit, notwithstanding the existence of local inflammations, connected with the tubercular deposits. I have not, however, found the alcoholic treatment, recommended by our American medical brethren, as efficacious or as desirable as they represent it.

I have a few words to add on exercise. Tuberculosis being essentially a disease of debility, it may safely be asserted that, as a rule, consumptive patients have "no strength in them," and that active exercise, unless very moderate, however agreeable, does them harm. Any great exertion, mental or bodily, is attended with such an expenditure of vital power that there may not be enough vitality left to carry on the functions of digestion and assimilation, which are, therefore, inefficiently performed. Thence follow derangements of the digestive organs, usually termed dyspeptic or bilious. Passive exercise, such as riding in an open carriage, or boating, is most conducive to health, as likewise is living in the open air, lazzarone fashion, taking, as it were, atmospheric and sun baths.

When pulmonary consumption was considered a disease of the lungs, having an affinity to inflammation, and attention was riveted on the local inflammatory phenomena which attend upon the evolution of

tubercle, moist, mild, even warm climates were thought indicated, as having a favourable influence on such inflammatory conditions. The relaxing, debilitating character of these climates was not considered a contraindication, and consumptive patients were drafted to the tropics and to Madeira in winter.

The experience of our army and navy surgeons, as also that of their French brethren, all over the world, has shown that these views are pathologically a mistake; that consumptive patients do not rally in a climate that debilitates still more their constitution and impairs the power of their digestive system. To send persons suffering from phthisis to such climates is, in reality, to treat the epiphenomena of the disease, and at the same time to place the patient under unfavourable climatic conditions for their recovery from the state of organic debility and decay which is at the root of the evil. I believe that Professor Bennett of Edinburgh was the first to clearly point out this important fact, in the first edition of his valuable work on consumption.

The winter climate really indicated in such cases is one in which the absence or paucity of rain, the absence of fog, of cold moisture in the atmosphere, and the presence of sunshine, enables the invalid to live out of doors, and to take passive exercise all but every day. The temperature also should be cool and bracing, not warm and relaxing. Such a climate I have found on the north shores of the Mediterranean, on the Genoese Riviera, from Cannes to Massa Carara, that is on the western and eastern shores of the Gulf of Genoa. No doubt other equally favoured regions exist on the north Mediterranean shores between the Gulf of Genoa and the Dardanelles.

In this region in winter, the north winds, which reign systematically, pass over the tops of the mountains which skirt the shore, and falling into the sea at a distance from the land, leave the shore ledge free and calm. These winds being dry, because they are cold and have precipitated their moisture on the mountains of central Europe, the atmosphere is usually free from watery vapour or cloud and allows the sun's rays to shine through. The south winds, which only reign exceptionally in winter, are warm, so that their presence merely brings warm rains, and does no harm to the chest invalids. As the winds from the north are not felt and the air is dry, and the rain is warm rain from the south, there is an absence of the cold rain that is so conducive to inflammation of the mucous membranes of the aerial passage in our climate.

I have but little to say on the medicinal treatment of phthisis. I do not believe in the existence of any absolute antidote to tuberculosis, nor can we rationally expect to find one if the disease is what I have assumed it to be, viz., a natural mode of death from defective organic vitality and decay, hereditary or acquired. I believe medicinal agencies to be most valuable, however, in the treatment of tubercular diseases, as a means of removing and modifying complications, of restoring healthy functional activity, and thus of helping, assisting, hygiene and climate. Even cod-liver oil, although a most valuable therapeutic agent, may be more a dietetic adjuvant than a pharmaceutical remedy. It may act more by promoting the healthy digestion of food than by its medicinal properties. It certainly can only be taken in the more favourable class of cases by those patients who are the most likely to get well without it, by those whose digestive functions can be got into good working order.

My opportunities of observing phthisis have been threefold. In early life I studied it as a student, and for many years an official in the Paris hospitals; in middle age I observed it in a large London consulting practice; during the last eight years I have watched its course on fellow sufferers, as a consumptive invalid myself, in a winter sanitarium, Mentone, in the region I have described. Eight years ago I was stricken by this dire disease, and when already in an advanced stage, gave up practice to take refuge during the winter, and die as I and others thought on the Genoese Riviera. To my utter astonishment, I have recovered, under the combined influence of hygiene, climate and medicine, and so have many fellow sufferers, principally persons connected with my former career, who have followed me to the south, and have acted likewise.

In this new field of observation, by combining the therapeutic influences I have above described, I have obtained results for which I was totally unprepared by previous Paris and London experience. I have not only saved my own life, but also that of many others.

The principal points for favourable treatment of pulmonary phthisis are that there should still be enough healthy lung left to carry on the functions of life, and that the disease should not be of an unfavourable type.

Of course if the lungs are destroyed, or all but destroyed, if patients are existing on a small portion only of one or both lung, they must die, from defective nutrition, from blood poisoning, from the reaction of inflammatory epiphenomena. Death supervenes in such conditions, even if the fresh deposit of tubercle can be arrested.

Again, if the tubercular deposit assumes the acute type, if it is deposited at the same time all over the lung, if it is intensely hereditary, if its appearance in the midst of luxury and plenty is merely the evidence that the patients have lived their life, have come to the natural end of their existence, if its presence coincides with a complete constitutional break up, with disease of liver and kidney, then there is but little hope of recovery, or even of prolonged invalid life.

On the other hand, there is a fair prospect of arresting the disease, and even of effecting a cure in the more favourable class of cases, if we can combine all the means of treatment enumerated.

This more favourable class is that in which the disease has only extended to a limited portion of the lungs, leaving sufficient lung tissues in a healthy state to support life, in which the malady appears in a chronic form, and more especially in which it is developed accidentally, as the result of unhygienic causes capable of being permanently removed. I am myself a remarkable and instructive evidence of such a favourable issue of the combined influence of these therapeutic agencies. The details of my case, to which I allude for the benefit of others, are well known to many, and especially to my friend Dr. Quain of London, and to my friend and namesake Professor Bennett of Edinburgh, whose researches on pulmonary consumption are so well known to the profession. It was they who gave me the courage to fight the battle of life, and to whom, therefore, I owe my present well being. I had surrendered my existence as irreparably lost, and was floating down the fatal stream in professional harness, when they roused me to exertion, and inspired me with the courage to abandon everything that a scientific observer the most values, to make the effort that has so far been crowned with success. I may add, as an encouragement to others, and to my professional brethren, that now, after eight years observation of similar invalids pursuing the same course, I am surrounded by a considerable number of patients and friends, in whose cases the same result has been obtained by the same means.

THE TREATMENT OF PORRIGO FAVOSA BY CARBOLIC ACID.

By CHARLES E. PRIOR, M.D., Bedford.

IN no department of medical science has a more gratifying progress been made during the last twenty years than in that of the recognition and treatment of parasitical diseases. Scalp-affections, which the student in vain endeavoured to identify, while wandering with bewildered brains from Alibert to Bateman, or Bateman to Biett, have been so positively fixed and settled by microscopical research, that there is no longer room for difficulty. We may beat the weary round of blisters, sudorifics, alkalies, tonics, or depletion, in our treatment of acute disease, and one or the other may come to the surface with the fashion of the hour, often dependent on the vigour of assertion of its advocate physician; but the nature of Achorian Schönleini or of Trichophyton tonsurans is known once for all, and the constitutional treatment of local vegetable parasites may be dismissed as an idle dream.

If, therefore, I adopt the term *Porrigo Favosa*, I do it as the best which we had at command previously to the microscopical investigation of the disease, and the one by which it is most generally known.

At the present day, the disease, I believe, is not a common one. In a tolerably extensive acquaintance with the diseases of the lower orders, I have met with it but rarely; a second specimen has been recently sought for in vain throughout an extensive district; and the experience of other medical friends corresponds with my own. My individual opinion is, therefore, not of much value as to the puzzling distinctions of *porrigo favosa* and *porrigo scutulata*, and other varieties. Reasoning from what I have seen, and highly as I value the light we have derived from microscopical research, I should say that the external appearances of *porrigo favosa* were sufficiently remarkable to defy confusion—the seat, the shape of the favi, their colour (whitish sulphur-yellow), such as I have endeavoured to depict in the accompanying photographs—present a *tout ensemble* very different from any other scalp-disorder (in this point I cannot too highly commend the description of Cazenave and Schedel); while the microscopical appearances are not, unless to an expert, so different from what I have seen in a case of *tinea tonsurans* or *trichophyton tonsurans*.

As respects curability, all external parasitical diseases, as a rule, are curable with attention and with the proper parasiticide remedies; but, practically, attention flags, and parasiticides are sometimes so injurious to the constitution that their use must be relinquished or suspended. The girl from whom this photograph was taken once passed sixteen

* Read before the annual meeting of the South Midland Branch.