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ADDRESS IN SURGERY.*

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WHEN asked by your President to deliver the Address in Surgery before the Maritime Medical Association, I accepted the honor in ignorance of what it involved. It would have given me infinitely more pleasure had I been permitted to attend your society meeting in a much humbler capacity; but, as a Nova Scotian by birth, I feel that I am addressing friendly critics, who will pardon my shortcomings, and perhaps account for them by considering that they are due to the unfortunate circumstance that I left my native province and have settled in the West.

The beginning of the new century has brought out many able articles describing the progress of surgery for the past hundred years. The death of our beloved Queen a few months ago has stimulated many British writers to give a retrospect of the progress of our profession during the Victorian era. The historical record has thus been fully written, and it would appear justifiable now to make reference to some of the more recent developments in surgery, particularly in connection with certain principles which have been enunciated during the latter part of the nineteenth century, and which are at the very foundations of modern scientific surgery, principles forming the foundation which has been

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laid broad and deep, and has stood the stress and strain of the development of a remarkable superstructure in the surgery of to-day.

ANÆSTHESIA.

The practice of surgery before Simpson's time was a cruel task for both operator and patient, and those of us who were not in practice during the pre-anæsthetic days can hardly realize what an untold blessing the introduction of anæsthetics has been in relieving human suffering and in permitting us to extend the field of operative surgery.

There was most unreasonable opposition to the use of anæsthesia shortly after its introduction. In addition to objections on moral and religious grounds, it was supposed that various dire calamities followed the administration of chloroform; for example, many urged that apoplexy frequently ensued and proved fatal. Simpson, in referring to apoplexy, speaks of an incident in the life of Lord Loughborough, as related by John Lord Campbell. The biographer states that when he first travelled from Edinburgh to London in a mail coach the time had been reduced from the former twelve or fourteen days to three nights and two days. "But," he adds, "the new and swift travelling from the Scottish to the English capital was wonderful, and I was gravely advised to stop a day at York, as several persons, who had gone through without stopping had died from apoplexy from the rapidity of the motion." "Be assured," says Simpson, "that many of the cases of apoplexy alleged to arise from ether or chloroform, have as veritable an etiology as this apoplexy from the rapidity of motion."* All such absurd objections to the use of anæsthesia have of course been removed, but the choice of anæsthetic is to-day a question the importance of which can hardly be exaggerated. In this age of specialism one is inclined to relegate the settlement of it to those who make it a special study. It is true that experimental physiologists have so far been of little assistance to us in their attempts to settle this difficult problem. The Hyderabad Commissions have failed to convince the profession as a whole of the infallibility of their conclusions, and we find even that their results are directly challenged by eminent British experimenters, chiefly those of the Cambridge school. In the meantime we are content to watch the "battle royal" from a respectful distance, and to entertain the hope that some definite and incontrovertible evidence may soon be forthcoming from the physiological laboratory regarding the action of chloroform on heart, respiration, etc. We turn, however, more hopefully to the anæsthetists who are daily administering anæsthetics to their fellows. It is true that

* "Sir James Young Simpson and Chloroform," by H. Laing Gordon, p. 118. 1897.

here, too, we find difference of opinion. Visiting Edinburgh recently, I found as of old that chloroform was the favorite general anæsthetic, whilst in London one observed that ether is still considered the preferable drug. I am bound to admit that as an Edinburgh man visiting London, I always felt convinced that the London men did not know how to give chloroform; and, to be absolutely fair, one might add that in Edinburgh ether is not administered as elegantly and with as much comfort to the patient as in London. I have learned as an operating surgeon to be content to leave the choice of anæsthetic at my operations to the anæsthetist, provided I have thorough confidence in the administrator. With perfect satisfaction I find that ether preceded by nitrous oxide gas is thoroughly satisfactory, after the manner suggested by F. W. Hewitt of the London Hospital. In the hands of a competent administrator I find that the patient almost invariably becomes completely anæsthetized without a struggle in from 1-2 to 4 minutes, and one may at once proceed with the operation. Whilst this is my experience in Toronto with ether in the hands of a skilled administrator, I find that another colleague of mine, also a skilled anæsthetist, but from the Edinburgh school, sticks with the pertinacity of his Scotch preceptors to chloroform, and, I freely admit, with results leaving nothing to be desired. Thus I have come to the conclusion that for the operating surgeon it is rather the choice of an anæsthetist than the choice of an anæsthetic that concerns him.

Fortunately, fatalities from the administration of anæsthetics are extremely rare. Recently Gurlt produced statistics before the "Deutschen Gesellschaft für Chirurgie" concerning the mortality under anæsthetics as follows:*

Chloroform	1 death in 2,075 administrations.
A. C. E. (Billroth's mixture) .	1 " " 3,370 "
Ether	1 " " 5,112 "
Chloroform and Ether	1 " " 7,613 "

Statistics are, however, of little value. It seems clear that not infrequently when death occurs the fatal issue is postponed for some hours, so that, particularly in respect to ether, fatal consequences which may be directly traced to the anæsthetic do not occur for twenty-four hours, or perhaps several days from the date of administration. I suppose we all feel that at least some of the fatalities under anæsthesia might have been prevented. However this may be, it is obvious that one of the most important branches of instruction in our medical schools should always be instruction in the proper method of administering anæsthetics.

*Vide "Hundert Jahre Chirurgie" H. Tillmanns, p. 8. Leipzig, 1888.

Local anæsthesia has, of recent years, proved a discovery of great importance. The discomfort and danger of the general anæsthetic may often be dispensed with in minor surgical operations under cocaine. In 1894 Dr. Schleich, of Tübingen, demonstrated a new method of what he called "Infiltrationsanæsthesie." A very weak solution of cocaine (1 per 1,000) is used, the solvent being a physiological salt solution of about half the usual concentration. A small spot of skin near the field of operation is rendered insensible by ethyl chloride, and here a few drops of cocaine solution are injected. At the spot of infiltration a bulla immediately rises, which is absolutely without sensation. Pushing the point of the syringe through the area of insensibility Schleich again injects a few drops. Another bulla rises close to the first, and, proceeding from bulla to bulla around the field of operation, the whole is infiltrated and rendered quite anesthetic. Schleich suggested three different solutions for this purpose of varying strength. In normal healthy skin the cocaine injection is very much weaker than is necessary in inflamed or hypersensitive areas.

The writer has observed that a 2 per cent. solution of cocaine is all that is necessary in most cases in which local anæsthesia is indicated. One is bound to state from one's own experience that the infiltration method is sometimes fraught with danger, being sometimes followed by extensive sloughing of the tissues throughout the area of infiltration. If the operation is too extensive for the use of a 2 per cent. solution of cocaine in the usual way, one would prefer a general anæsthetic to Schleich's infiltration method.

Some reference may be made to the introduction of cocaine into the spinal meninges in the lumbar region. This was suggested by Bier of Kiel. It would appear that some years previously Covering, of New York, in 1885, injected a solution of cocaine as near to the spinal cord as possible, and produced insensibility of all the body below the point of injection. The idea of injecting the solution into the lumbar region of the spinal meninges was suggested to Bier when Quincke of Kiel devised the well-known means of puncturing the spinal canal in the lumbar region for the purpose of drawing off cerebro-spinal fluid. One cannot speak from experience of this method, but one is interested in observing cases which have been reported in literature. It has been recently stated that the method has been used on the continent about 2,000 times, and of these six fatal cases have been placed on record. If this be true, the mortality under this method of producing anæsthesia is about six times as great as that of chloroform, and many more times greater than that of any other anæsthetic. It would therefore appear from this standpoint alone that one should hesitate to employ the method, though one can conceive that certain circumstances might arise in which its employment might be desirable.

ANTISEPTIC AND ASEPTIC SURGERY.

A review of the more recent progress of surgery demands some inquiry into the present status of our knowledge regarding the guiding principles which underlie the surgical treatment of wounds known as the antiseptic or aseptic method—a method which we owe to the scientific insight and genius of Lord Lister. The writer is old enough to remember something of the fierce antagonism which many leaders of our profession showed to Lister's methods. Even as late as 1887 one finds a prominent English surgeon writing as follows: "The germ hypothesis has in this country adherents whose opinions are entitled to respect, but it appears to me to be not proven and more likely to be abandoned than to be confirmed." To-day we find that the field is completely abandoned by such sceptics, and Lister has lived long enough to have received something of the gratitude he so well deserves for the inestimable service he has rendered to humanity. It is true he received encouragement very shortly after he had introduced the system from the remarkable results which were at once obtained. In his address before the British Association in 1896, after referring to his early results in the Glasgow Royal Infirmary, he relates the following incident: "Equally striking changes were afterwards witnessed in other institutions. Of these I may give one example. In the great Allgemeines Krankenhaus of Munich, hospital gangrene became more and more rife from year to year, till at length the dreadful condition was reached that 80 per cent. of all the wounds became infected by it. . . . The institution seemed to have become hopelessly infected, and the city authorities were contemplating its demolition and reconstruction. Under these circumstances Professor VonNussbaum despatched his chief assistant to Edinburgh, where I at that time occupied the chair of Clinical Surgery, to learn the details of the antiseptic system as we then practised it. He remained until he had entirely mastered them, and on his return all the cases were on a certain day dressed on our plan. From that day forward not a single case of hospital gangrene occurred in the Krankenhaus. The fearful disease pyemia likewise disappeared, and erysipelas soon followed its example."

For the last few years Lister has learned something of the gratitude of his fellows by the honors which have been conferred upon him. In Britain he has been created a Peer of the Realm, and in turn President of the British Association for the Advancement of Science, and President of the Royal Society. In foreign countries, too, scientists have vied with one another in their efforts to do him honor. One would think, however, that perhaps the greatest satisfaction which he must now enjoy is in being able to write, as he did in the Huxley Lecture, that "the principle that

first guided me still retains its full value; and the endeavor to apply that principle so as to ensure the greatest safety with the least attendant disadvantage has been my chief life work."

It is not my intention to say anything in detail regarding the work of Lister. We have all, I am sure, been greatly interested in the delightful sketches he has himself given of his life's work, mainly in two articles, the first as President of the British Association at Liverpool in 1896, and last year in the Huxley Lecture at the Charing Cross Hospital. In the latter paper he speaks of his early work in the physiological laboratory, where he made important observations on the physiology of the blood, the process of clotting, the phenomena of inflammation, the function of cilia, the diffusion of pigment in the cells of the frog's skin, etc.

Lister was essentially practical. He seemed to have the peculiar faculty of getting a fragment of scientific truth and then building upon it, so as eventually to evolve deductions of great practical value. For example, Kölliker discovered the fibre cells of involuntary muscles, which he demonstrated as existing along with elastic tissue in the middle coat of the larger arteries. Lister followed up this piece of work by demonstrating muscle in the finest arteries, and thus he settled a difficulty in accounting for the hitherto unknown mechanism of constriction of these vessels. Bernard detailed his classical experiment regarding the turgid condition of the rabbit's ear from increased blood supply after section of the cervical sympathetic; Waller showed that extreme pallor was the result of stimulation of its peripheral end; Lister connected the central nervous system with these processes, and suggested by his experiments on the spinal cord the true mechanism of vasomotor action. Whilst experimenting in order to test the accuracy of Richardson's view that coagulation of the blood was due to the escape of ammonia, Lister not only proved the falsity of Richardson's view, but in doing so he demonstrated the very important influence which injury of the vessel wall has in determining the formation of a clot. But the crowning proof of Lister's remarkable power of assimilating scientific truth and developing it, appeared when Pasteur demonstrated that putrefaction was caused by microbes growing in putrescible material, and the falsity of the suggested possibility of spontaneous generation of microbes. It was the application of this truth to scientific surgery which has made Lister the hero in medicine which we acknowledge him to be to-day.

The time has gone by when the enthusiastic disciple of Lister in an address of this kind finds it necessary to define the principles of antiseptic surgery and then summon evidence from his own practice in support of that doctrine. We have all had experiences nowadays which prove the truth of these principles, and we are all of one mind on the subject.

The progressive character of Lister is remarkable—in fact he moved far too fast for many of his followers. Witness his remarks at the Berlin Congress in 1890 (eleven years ago)—remarks which almost staggered those who had learned to place absolute confidence in every detail of his antiseptic methods. At that time in Berlin he produced what he stated to be “absolute demonstration of the powerlessness of atmospheric dust in surgical operations.” “This conclusion,” he says in a recent address, “has been justified by subsequent experience. The irritation of the wound by antiseptic irrigation and washing may therefore now be avoided and nature left quite undisturbed to carry out her best methods of repair, while the surgeon may conduct the operation as simply as in former days, . . . the use of simple means which will suffice to exclude from the wound the coarser forms of septic impurity.” This, one observes, is the true basis of modern aseptic surgery.

In attempting to give an address upon the status of modern scientific surgery one has almost involuntarily turned to Lord Lister's work as constituting the basis of it all. Let me, before concluding my remarks on Lister's work, call attention to the fact that, although, as he remarked himself recently with great regret, advancing years have made it necessary for him to retire from the active work of his profession as a surgeon, yet one finds that he is still active in his efforts to promote scientific truth of practical value for the profession. Witness his exhaustive paper “On Recent Researches with Regard to the Parasitology of Malaria,” delivered to the Royal Society on the 30th November last. He shows the gradual evolution of the mosquito-malarial theory, and indicates its true value. Incidentally he gives credit where it is due to the pioneers in this field of research, and, in the words of a writer in the *British Medical Journal*, checks “the somewhat undignified form of scientific piracy of certain ‘continental workers’ who have attempted to belittle the work done by others and to claim credit for themselves.”

There is such a thing as riding a hobby too hard, and it is ludicrous to observe how extreme some individuals have become in their efforts to outdo Lister. The late Mr. John Duncan, of Edinburgh, in his address on opening the surgical section of the British Medical Association in 1898, referred to the ridiculous extremes to which some so-called antiseptic surgeons go. The expenditure of money on tiles and glass to such a lavish extent in some hospital theatres is remarkable. He suggests that if some of these extremists would be logical in carrying out all necessary requirements they must cut off the spectators at an operation by an impermeable but transparent screen—the emanations, too, of the operator and assistants being much more likely to reach the wound than those of the spectators, Mr. Duncan pictured to him-

self "a time when every one concerned in an operation—patients, surgeons, and assistants—having been rendered from top to toe cutaneously aseptic, shall cover each natural orifice of the body with an antiseptic mask, and clothing themselves in a raiment scientifically pure, shall pass into an atmosphere freed from germs by the air-pump and by heat."

There really appears to be a danger that the elaborate measures which are sometimes taught regarding necessary procedure in operative surgery are destined to mask and render obscure the few simple elementary principles regarding micro-organisms and their action on wounds which should be impressed with direct and absolute clearness upon our students.

One aspect of the subject is deserving of our best attention at present. The tendency is to lavish all the care possible upon our methods of conducting an operation aseptically. This is prudent, but too little attention is paid to the subsequent treatment of the wound. The surgical dressing deserves more attention than it gets, and if certain individuals would turn their attention to the dressing and divert their minds for a little from the fixtures and upholstery of the operating theatre, they would be rendering more useful service to surgery.

A paper was recently published dealing with the dressing from a physical point of view,* by Preobajensky, of St. Petersburg. A fact which is now well recognized is stated, to the effect that wounds made under the strictest antiseptic precautions are often not sterile. It has been calculated, in fact, that only 15 per cent. of such wounds are sterile, the remaining 85 per cent. become contaminated with micro-organisms, often with pyogenic microbes. In spite of this fact a large number of the 85 per cent. heal by first intention. The chemical action of antiseptics on bacteria is no doubt of value in preventing the entrance of bacteria into the organism, but there are other considerations demanding our attention in our efforts to render these bacteria innocuous in wounds. The following considerations are culled from the paper by Preobajensky. The material of the dressing must be porous and permeable. The capacity for absorption varies with different materials, thus undressed hemp absorbs from 2 to 20 per cent. of its own weight of water, whilst charpie, gauze and cotton wadding absorb 186 to 312 per cent. of their own weight of water. The nature of the liquid also affects the amount of absorption. Thus a smaller quantity of blood will be absorbed than of water. To these factors must be added the hygroscopic and elastic qualities of the dressing material.

*"Les bases physiques du traitement antiparasitaire des plaies, par M. le Dr. M. J. Preobajensky, St. Petersburg. "Annales de l'Institut Pasteur," Tome XI., No. 9, p. 639. 1897.

A very pretty experiment is devised to show the direction of the current of fluid through an absorbent dressing under different conditions. A skein of charpie (very narrow thread-like strips of linen torn off so as to leave fringed edges), or a small roll of gauze is placed in a flask containing water. One end of the skein is immersed in the water in the flask, the other projects some distance beyond the mouth of the flask and externally lies at a point beneath the level of the fluid in the flask. The fluid first rises in the gauze by capillary attraction and then passing out to the extremity of the skein, it courses on by siphon action and drops readily from the free end of the gauze. If at some point in the gauze skein a small fragment of aniline blue (soluble in water) be placed, the part of the skein beyond that point becomes stained as the current carries the dye on. Raise the free end of the skein above the level of the fluid in the flask, then, if the rapidity of evaporation is sufficient, *e.g.*, if the air be dry, the blue travels on in the same direction as when there was siphon action. If on the contrary one prevents evaporation by such a simple device as putting a bell-jar over the flask, then the current is reversed, and the colored fluid passes towards the water in the flask. Absorbent cotton gives similar results, but it will be necessary to tease out the free extremity of the wool in order to favor evaporation. It is most interesting to observe that evaporation may further be facilitated by applying various powders which get wet because their molecular attraction for the water is greater than that of the wool, and they add their evaporation to that of their substratum of wool. Iodoform, charcoal, subnitrate of bismuth and other substances have been found to produce this effect.

Osmotic currents were also experimented with by immersing sacs of parchment in a fluid and causing a current into the sac by placing a gauze wick therein, which was exposed by a free end to the air and allowed to evaporate.

The nature of the dressing, and the external conditions of humidity and temperature necessarily affect the rapidity of evaporation and the result.

Experiments of a more interesting and suggestive type were conducted on animals to determine the influence of the dressing and other conditions of environment upon the processes of absorption from the surface of the wound into the body of the animal. The influence of the dressing, the effect of the application of various powders to the surface, the action in this regard of aqueous solutions, disinfectants, glycerine and oil, also the influence produced by the surrounding medium were noted. Certain substances were applied to the wound of such a nature that their poisonous effects upon the animal would be very obvious if they were absorbed. Those substances were: strychnine, ricin (powdered or in aqueous solution), blood, decomposed and putrid by

exposure to the air, pyogenic microbes, and the streptococcus of Marmorek.

In conducting the experiments with strychnine, white mice were used, and one hundred and fifty experiments were made. A wound was made by scraping the epidermis off with a razor, or a deeper wound was carried into the subcutaneous tissue. A seton or tampon of gauze powdered with strychnine or saturated with a solution of strychnine in excess is applied. If the subsequent dressings permitted of sufficient absorption of the wound into the dressing, and also of evaporation from the surface to the surrounding air, then the animal recovered, but if the dressing were not absorbent and evaporation were interfered with the animal died with symptoms of strychnine poisoning. The effect of powdered substances on absorption was also observed, and for this purpose coffee, charcoal, chalk, magnesia, talcum powder and iodoform were used for the experiment. The wound was first powdered with strychnine and afterwards with one of these powders. In most instances the animal survived, whilst it was killed if strychnine alone were used. From the variety of substances used it was evident that the beneficial result obtained was due to the absorption and evaporation produced by the powders rather than to their possible antiseptic action. Similarly liquids were experimented with, the ordinary antiseptic fluids being used—carbolic acid, 5 per cent., corrosive sublimate, 1 per cent., zinc chloride, 5 per cent., glycerine, oil, alcohol, ether and water. With carbolic acid and sublimate the exudate is increased, and if allowed to remain stagnant the animal dies of strychnine poisoning. The wound was first scrubbed with the lotion, and then the strychnine powdered on. If on the first symptoms of poisoning an absorbent dressing is applied, the animal usually recovers, but if a piece of impermeable protective be applied over the same dressing, the animal dies of strychnine poisoning. Thus by preventing evaporation by means of the protective one creates conditions favorable to the absorption of toxic substances by the skin. Similar results were obtained with alcohol, which, however, diminishes exudation; and with glycerine, which prevents the wound from drying. In the case of oil it was found that if the strychnine were applied before the oil, then death occurred, but if in the reverse order then the animal recovered. In other words the oil formed an efficient barrier to the entrance of the poison, and also an effective hindrance to evaporation.

As an example of a tox-albumen, ricin (the active principle of castor oil, a vegetable albumoid) was used, and guinea pigs employed for the purpose. This is a most rapidly fatal poison if absorbed or if injected subcutaneously. The material was powdered on the wound or applied in solution. It was found well to increase the exudation from the wound by appropriate applica-

tions, and to favor absorption into the dressing and evaporation from the surface by loose dressings and the use of powdered substances. An efficient dressing for the purpose was found to be first a layer of moist gauze, over which a layer of dry gauze. If the conditions of the absorbent dressing and of evaporation were efficiently realized the animal survived and the wound healed, but death rapidly occurred if these conditions were not fulfilled.

An instructive series of experiments was carried on with blood which had been allowed to become putrid by exposure to the air. Dogs were operated upon in the dissecting room under septic conditions without any attempt to carry out antiseptic details. In the first series of experiments the action of wounds under these conditions was observed, the application of the putrid blood being omitted. An incision 15 to 20 cm. long was made through the skin and the wound allowed to granulate. The only dressing employed was that of placing every day upon the wound a piece of gauze, which had been immersed in distilled water, over this dry gauze, and a bandage. These wounds healed without suppuration, and it is claimed that they did so because of the physical qualities of the dressings allowing of efficient absorption and evaporation. Putrid blood was now added in the second series of experiments. The toxic quality of this blood is proved by the fact that when injected into the vein of a dog it caused fatal results in twelve hours. The surface of a wound was first washed with water and then covered with the putrid blood. Healing by first intention occurred under the dressing similar to that employed in the first series of cases. If, however, with exactly the same conditions, there be added to the dressing a covering of impermeable protective, the animal will die of sepsis, unless, indeed, it succeeds in tearing the dressing off and in licking the sore.

Virulent cultures of anthrax were used in similar lesions of the skin in guinea pigs. The wounds were spread over with portions of a culture of the bacillus of anthrax in bouillon. With non-absorbent dressings the animals succumbed in two or three days. With efficient dressings the animals lived six or eight days, the dressings not having been removed.

The streptococcus pyogenes of Marmorek in its very virulent form was used extensively for experiment. For example, lesions in rabbits were treated with gauze steeped in a culture of this organism. Two rabbits were placed in a cage in which the air was kept very moist, thus preventing sufficient evaporation, and the animals died. Two other rabbits were similarly treated but were placed in a very dry atmosphere, where evaporation from the dressing was free; these animals recovered with but little irritation in the wounds.

The evidence we thus get from the experimental laboratory is precisely in accord with our everyday experiences. One has insisted

frequently on the necessity of changing a dressing the moment it is observed that the discharge has reached the surface. One has taught that under such circumstances there is great danger of septic infection of a wound. One is bound to admit, however, that the explanation offered has not been along the lines of that suggested by the experiments I have just narrated. It is quite obvious that the true explanation is that when the dressings become saturated with the discharge the absorbent quality of the dressings is destroyed and evaporation interfered with. A further lesson we learn is regarding the value of gauze both as a dressing and as a drain. It is of great value, for example, in draining every cul-de-sac in a case of purulent peritonitis. Recently in a case of this nature a child with suppurative appendicitis and general purulent peritonitis with profound septic poisoning, I contented myself by opening the abdomen and placing gauze drains in various directions without further interference. The child recovered after a very critical illness. A series of experiments was carried out by Preobajensky, in which he proved that the microbes themselves as well as their toxins were carried in osmotic currents by siphonage, by absorption, etc.

I have described these experiments in some detail because they appear to me, as a practical surgeon, to be of considerable importance. They explain many of our difficulties, and incidentally they clear up many of the discordant results which have been obtained by various experimentors who have not taken into account the physical qualities of the dressing, but attributed their results wholly to the action of the antiseptic substance used on the surface of the wound. It is obvious that Lister's protective was a mistake. True, it might not always interfere with the favorable results in a wound produced under antiseptic conditions, but undoubtedly it added an element of danger, and it is now, I think, pretty generally abandoned. A few weeks ago in operating on a case of empyema I demonstrated to my class the use of a piece of protective arranged in the manner which has been suggested, so as to have a valvular influence in bringing about expansion of the lung. Apart from this being in my opinion quite unnecessary, I satisfied myself that it had a positively pernicious effect. The child's temperature kept up when I looked for a fall, and in the course of a few days it suddenly occurred to me that my protective was the cause of it. I replaced it by an absorbent dressing, and next day the temperature was normal. It is quite obvious that one cannot carry out the conditions necessary to produce a dressing in all instances which is faultless as to its physical properties. It is not claimed that these physical properties are even as important as the antiseptic qualities of our dressing, but we should exercise the utmost care to establish conditions which should favor absorption and evaporation from our wounds.

Undoubtedly of great importance in securing the protection of the tissues of the body from the invasion of bacteria is the vital function of the tissue cells in their destructive action on microbes. The story of this discovery forms one of the most romantic pages in the history of modern scientific medicine. In 1884 Metschnikoff first published his researches in connection with an experiment upon the water flea, the daphnia, and its power of dealing with the attempted inroads of a parasite in the form of a single-celled yeast plant (*monospora bicuspidata*). The parasites are apparently swallowed by the daphnia, and the spores of the yeast plant become loose in the stomach and penetrate its walls, and thus find their way into the tissues of the animal. Metschnikoff observed that each invading spore became surrounded by blood corpuscles, and as a result the spores undergo degeneration and are destroyed. "The blood corpuscles unite to form firmly granular pale plasmodia, which exhibit amoeboid movements and contain the granular remains of the spores. When, however, too many spores reach the body cavity, or when for some reason the spores remain uninjured, disease occurs, the spores germinate and are carried all over the body." Metschnikoff subsequently experimented with the anthrax bacilli in frogs, and made some early observations in connection with erysipelas in man. Upon the results observed in these experiments he built up the beautiful theory of phagocytosis and its relation to immunity; conclusive proof was soon forthcoming from a host of observers that leucocytes and other cells of the body were thus capable of taking up bacteria into their substance. Contrary to Metschnikoff's early view, however, it became evident that the presence of living microbes in the substance of a cell does not necessarily mean destruction of the microbe; it might, on the contrary, and does sometimes mean destruction of the cell by the microbes.

We have not time within the limits of this paper to discuss phagocytosis, or that apparently somewhat co-related condition in connection with tissue activity known as chemotaxis, *i.e.*, the property possessed by certain chemical agents, whether secreted by bacteria or of other origin, of attracting or repelling leucocytes. But a reference to the more recent additions to our knowledge of the conditions influencing the healing of our wounds would be wholly incomplete if we omitted mentioning these phenomena. In these processes we have demonstrated another safeguard against the inroads of bacteria—that furnished by the vital activity of the individual leucocytes and of other cells of the body.

Some of us remember how delighted Lister was to learn of the phenomena of phagocytosis because, very early in his experience, he realized the fact that it was exceedingly difficult, often impossible, to get an absolutely sterile wound, and until the doctrine of phagocytosis was propounded he could see no reason why every

wound containing microbes should not become septic and permit of unlimited increase of the number of microbes such as would occur in any suitable artificial culture medium. As a fact he found that many of these wounds healed if the dosage or the virulence of the bacteria were not too great. We now know that destruction and disappearance of the bacteria occur in such cases by phagocytosis, and healing then takes place by first intention.

It is well observed that the chances of absorption of toxins or of microbes are greater at the time of operation, when we have open blood vessels and lymphatics, than at any other. This being the case, it has been suggested that we should employ substances in our wounds which provoke the coagulation of the blood. Alkalies and soap, for example, arrest coagulation, and should not be brought in contact with the wound. Later, however, the establishment of healthy granulation tissue is a great safeguard against absorption, and we therefore recognize that the early treatment of the wound, until such time as granulation has been established, is to be carried on with scrupulous care.

Let me direct your attention for a moment to a recent paper published in *Zeigler's Beiträge*, by Dr. Jürgelinas, from the laboratory of Prof. Pawlowsky in Kiev*) regarding the effect of granulation tissue in preventing the absorption of micro-organisms or their products into the organism. The technique of the experiments carried out was as follows: An aseptic wound was made in the back of an animal of sufficient depth to divide muscular fibre. After checking bleeding, the wound is dressed with sterilized gauze and an aseptic bandage applied. No antiseptic fluid is employed. After three to six days, when healthy aseptic granulation tissue is formed, a pure culture of a pathogenic microbe is implanted upon the granulation tissue. After a limited period the animal is killed by chloroform, and the condition of the wound and of the internal organs is investigated. Two varieties of dressing were used, one in which a waxed cloth (really comparable to protective) was placed on the surface of the wound and then gauze dressing and a bandage; the other, in which loose absorbent gauze was used, omitting the waxed cloth. Experiments were conducted with the staphylococcus pyogenes aureus on two guinea pigs with a granulating wound of four days' standing, and on a rabbit with a granulating wound of five days' standing. A pure bouillon culture of staphylococcus pyogenes aureus was implanted on the granulating surface in each case. After twenty-four hours the animal was killed by chloroform. A rich culture was found on the surface of the wounds, but the internal organs of the animal were sterile. Control experiments were carried out at the same

*) "Ueber die Durchgängigkeit des Granulationsgewebes für pathogene Mikroorganismen"—*Beiträge zur Pathologischen Anatomie und zur allgemeinen Pathologie*. XXIX. Band Heft 1, p. 92. 1901.

time, the staphylococcus being implanted upon perfectly fresh wounds made under similar precautions to the others. In these not only was a rich culture found on the surface of the wounds, but the internal organs also gave cultures of staphylococcus aureus and no other important microbes. From this experiment we are forced to believe that granulation tissue acts to a certain degree as a preventive against the entrance of micro-organisms (staphylococci) into the body.

Similar experiments were conducted on three rabbits and one dog with granulating wounds of from three to five days' standing, with bacterium coli commune. Twenty-four hours after implanting the culture the animals were killed and culture found on the wound surface, but none in the internal organs. Whilst with control animals with perfectly fresh non-granulating wounds a culture was obtained not only from the wound surface but also from the internal organs. Similar results were obtained in three guinea pigs with the use of the bacillus pyocyaneus. Still more remarkable results were obtained in experimenting with the anthrax bacillus. Here observations were made on the conditions of absorption in a granulating cavity. In a four months' old dog the knee was resected, and five days after he inserted a culture of anthrax. The dog remained alive, whilst the control animal died after five days.

Jürgelūnas also conducted a most interesting series of observations on the granulation tissue of infected wounds as studied under the microscope. The fate of the bacteria in the granulation tissue and in the exudate from the wound was observed. Gram-Weigert's method of staining was employed, and the tissue examined at intervals of from four to twenty-four hours after inoculation. Bacilli were found in the peripheral portion of the granulations. They stained well and were well formed. In the twenty-four hour preparation the mass of bacilli had diminished. In the exudate, the first hour after inoculation the bacilli were normal in form and stained well. In later preparations they stained more feebly. In a sheep, which died of the infection, bacilli were found in all sections of the granulation tissue chiefly in the spaces between the cells and in the blood vessels, the latter being almost blocked with them. Phagocytosis was very feebly noticeable, but it was observed here and there. In more or less immune animals bacilli were present in the superficial part of the granulation tissue, but their number was small. Each bacillus appeared a little swollen, and stained feebly, but there was no marked evidence of degeneration. In the section six days after infection the granulation tissue was wholly devoid of bacilli. On examining the exudate after the first hour the bacilli appeared as in the other animals, but after that they appeared granular, aggregated sometimes, and thickened, staining feebly. Phagocytosis

is not observed, the death of the bacilli being apparently determined by extra cellular processes.

We conclude, therefore, from this series of experiments that uninjured granulation tissue acts in most cases as a barrier against the inroads of bacteria into the body. The bactericidal property of the cells of granulation tissue and the phagocytic processes also of the leucocytes play a twofold role in protecting the animal against infection.

These experiments and observations demand our most careful consideration, and should guide us to some extent in our practice. The ideal surgical dressing may not as yet be at hand. My favorite dressing is plain sterilized gauze, and for some years I have first powdered my wound with a powder composed of acetanilide, 1 part, and boracic acid, 3 parts; over this the gauze applied has been wrung out of carbolic acid, aqueous solution 1 in 40, then dry gauze, then a bandage. This dressing seems to fulfil the conditions as to the physical qualities necessary, it combines also the requisite antiseptic precautions, and I find that it is very satisfactory.

It is extremely interesting to observe that whilst we are able nowadays to employ rational methods of treatment on a true scientific basis, good results were often obtained by our predecessors working from a purely empirical standpoint. We speak to-day of the necessity of absorbent dressings and of the value of providing free evaporation; formerly similar effects were produced upon wounds, but in a much less efficient manner, by the use of a drainage tube, the value of which was recognized over three centuries ago. Ambrose Paré mentions their value in his work published in 1579. It was pure empiricism then, however. The comparatively vague ideas he has of the anatomy and physiology of the body, and the entire absence of any scientific basis for the use of the drainage tube may be imagined from his description of a fracture of the skull. After narrating the circumstances which led to the injury, he says: "I trepanned him, and after I had done, some days after, I took out some four splinters of broken bone; and I put in a plain leaden pipe (I insisting the patient ever, when I dressed him, to hold down his head, to stop his mouth and his nose, and then strive, as much as in him lay, to put forth his breath), much sanious matter came forth, other filth which stuck more fast I washed with a detergent decoction, and I did so much, God blessing my endeavors, that he at length recovered." Paré used a pipe of gold, silver or lead, for wounds of the chest, and a great sponge steeped in aqua vitæ was wrung out and laid over the orifice of the tube in order that air might be prevented from entering, and that it might help to draw forth the discharge.

The French surgeon, Chassaignac, was the first to use the

drainage tube extensively in modern surgical practice. We all know the importance which was placed upon the use of the drainage tube by Lister in the early days of antiseptic surgery. We are only now, however, beginning to appreciate its true value, and, as we know, more favorable results are in many instances obtained by securing drainage by other means than through a tube.

The recognition of the principles of anatomy, physiology, pathology and bacteriology, and along with these chemistry and physics, is responsible for the great advances in surgery in recent years. In this age we must not be wedded too closely to special methods; we must be prepared to improve these as advances are made in the sciences upon which our treatment must be based. We too slavishly follow authority on many occasions. We learn much by reading history, and if we studied history more we would be come convinced that it is sometimes salutary to "kick over the traces." For example, we owe the tremendous advance in the knowledge of anatomy in the sixteenth century to the courage and determination of Vesalius. At that time Galen was still the authority whom no one but Vesalius had the courage to challenge. Galen had drawn his knowledge of anatomy chiefly from dissections of the monkey. Adverse critics attacked Vesalius, his old teacher Sylvius being one of the most bitter. When Sylvius got worsted in the controversy, and was at last forced to make admissions that some of the statements of Galen were not in accord with what was found in the human body, he covered his retreat by insisting that the human body had changed since Galen's time, "and," he added, "not for the better." It was deterioration he saw, not improvement, although the standard of excellence chosen by Sylvius was Galen's description of the ape. "History repeats itself"—witness the hostile critics who greeted Simpson in his efforts to champion the use of anæsthetics; and, as we have had occasion to observe, Lister likewise encountered a fierce and unreasonable antagonism.

Let us therefore endeavor to take every advantage of the advances made in science, and never hesitate to employ new methods and abandon old ones when we are convinced that such a course is demanded of us. We cannot do better than follow the advice laid down by Lord Lister in his address before the British Association, "Let the thing tried be that which, according to our best judgment, is the most likely to promote the welfare of the patient. In other words, Do as you would be done by."

**COMPLICATIONS AND DEGENERATIONS OF FIBROID
TUMORS OF THE UTERUS AS BEARING UPON
THE TREATMENT OF THESE GROWTHS.***

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(*Author's Abstract.*)

TRADITIONAL teaching considers fibroma of the uterus common, that they tend to undergo spontaneous cure at the menopause, and only rarely produce grave symptoms or cause death. This teaching has been combated from time to time by those having to deal with grave conditions, the result of fibroid tumors. In 1853, the essay of Atlee† appeared, and consisted largely of a description of serious conditions resulting from fibroid tumors, together with the earnest plea for their radical surgical removal. Hemorrhage has been considered the chief danger arising from fibroid tumors; but it is now appreciated that patients suffering from these growths are also subject to many other risks that arise from necrosis, myxomatous and cystic degeneration of the tumor, calcareous infiltration, or the associated malignant disease of the body of the uterus, or cervix, and such complicating diseases of the uterine appendages as ovarian tumors, pyosalpinx, salpingitis, etc. Besides these the more remote effects upon the alimentary tract, the cardio-vascular, urinary and nervous systems may cause death or lead to continued invalidism of the patient, independent of the natural history of the tumor itself. The profession has been too prone to be guided by the teachings of the past rather than by the more careful observations of the present, in estimating the risks of patients suffering from fibroid tumors, and the chief purpose of this paper is to present in detail the nature and complications of fibroid tumors as they are met with in actual practice. Accurate tables of a considerable number of cases with their complications are rare, and I wish to report 213 cases in which various operations have been performed. This contribution includes all cases of operation for fibroid tumors in my practice, and the study of this group of cases should give a more accurate picture of the condition of patients suffering from fibroid myomata of the uterus than any merely theoretical consideration of the subject. It is apparent from the following analysis that in actual practice fibroid tumors do not commonly occur as an isolated, uncomplicated, morbid condition.

* Read at the Ontario Medical Association Meeting, Toronto, June, 1901.

† "The Surgical Treatment of certain Fibroid Tumors of the Uterus heretofore Considered Beyond the Resources of Art," *Trans. Amer. Med. Ass'n*, 1853, Vol. VI., p. 547.

In the 218 patients operated upon for fibromyoma uteri to May 24th, 1901, the following complications were encountered:

Appendicitis	4
Bilateral hydrosalpinx	8
Unilateral hydrosalpinx	5
Hematosalpinx	1
Calcareous infiltration	5
Cystic degeneration of ovaries	2
Ovarian cyst with twisted pedicle	1
Ovarian cyst, bilateral	2
Ovarian cyst, unilateral	19
Ovarian cyst, suppurating	1
Bilateral dermoid cyst; umbilical hernia	1
Dermoid cyst, suppurating sinus through abdominal wall ..	1
Dermoid cyst with twisted pedicle	1
Intraligamentous development of fibroid	10
Retroversion of uterus	3
Procidentia of uterus	3
Parovarian cyst	2
Ectopic pregnancy	3
Papillary carcinoma of both ovaries	1
Abscess of ovary	1
Pyosalpinx, bilateral	5
Pyosalpinx, unilateral	3
Salpingitis, bilateral	2
Salpingitis, unilateral	5
Myxomatous degeneration of tumor	5
Cystic degeneration of tumor	5
Necrosis of tumor	12
Adenocarcinoma of body of the uterus	3
Epithelioma of cervix uteri	4
Sarcoma	2
Synceytioma	1

We may divide these cases, *first*, into those which would lead to a fatal result; *second*, those which would threaten the life of the patient; and *third*, those which would involve more or less invalidism. Including under the first heading the ovarian tumors, the cases of ectopic pregnancy, of abscess, pyosalpinx, cystic degeneration, and necrosis of tumor, and of malignant disease of the body of the uterus, we have a total of 66 isolated conditions, the presence of which would tend to a fatal issue without operative intervention. To these must be added five cases of carcinoma of the uterus in which hysterectomy was not performed, making a total of 71 cases. Under the second head, of "complications threatening the life of the patient," would be included the cases of appendicitis, of hydro- and hemato-salpinx, parovarian cyst and myxomatous degeneration of the tumor, found in a total of 25 cases. Of conditions leading to a more or less permanent invalidism of the patient, we may include calcareous infiltration, cystic ovarian degeneration, intraligamentous degeneration of fibroid, retroversion and procidentia of the uterus, and salpingitis

—30 in all. From this, probably a moderate estimate would be that 78 of these patients would have died of complications if the fibroid tumor had not been operated upon. Besides this, it is difficult to estimate the number of deaths that would have resulted from symptoms produced by the tumors themselves, such as hemorrhage, degeneration of the heart and kidneys from chronic anemia, the pressure of the tumor upon the ureters and intestines, or the increase of intra-abdominal pressure interfering with the functions of the alimentary canal; the tendency to contract intercurrent diseases such as thrombosis and embolism from an associated phlebitis; or septicemia from necrosis of the tumor. To these must be added the risks of pregnancy and parturition, when complicated by the fibroid tumor. It can hardly be considered as other than moderate to estimate that 15 of these patients would have died eventually as a result of the presence of the tumors, independent of the complications. This would make a total of 93 deaths in 218 cases, as a result of the tumors themselves or their complications, a mortality of 42 per cent., and even should a difference of opinion occur as to the probable history of the several complications, this difference of opinion would merely take away a small number of the list of deaths and add to the list of invalids. I am not familiar with similar complete tables of the complications of fibroid tumors based upon a definite number of cases, which would give a basis for comparison, but Martin (A. Martin, "Pathology and Therapeutics of Diseases of Women," Boston, 1890, pages 268-272) reports 57 serious complications of fibroid tumors met with in 205 cases. But this includes no complications due to diseases of the uterine appendages. The cases of cancer and sarcoma of the uterus and the large ovarian tumors might perfectly well have had a different classification, thus decreasing the number of fatal complications, but even allowing such a different classification, there can be no doubt that at least one-third of my patients would have died as a result of the tumors or their complications. Two patients were operated upon during pregnancy. Mrs. A., aged 36, multipara, was pregnant two months, and on examination was found to have a freely-movable, soft, pedunculated abdominal tumor, believed to be an ovarian cyst. Upon operating and delivering the tumor, it was found to be a soft fibroid, with a slender pedicle that was injured in the delivery of the tumor, making the removal of the fibroid preferable to its return. The patient recovered, but unfortunately aborted subsequently. However, she later gave birth to a living child. The second patient, aged 37, had four children, and suffered markedly from pressure symptoms, due to a large, rapidly-growing fibroma. Pregnancy was suspected, and was believed to add to the indication for hysterectomy, because of the size of the

tumor. Hysterectomy was successfully performed, and the specimen showed the existence of twin pregnancy of six weeks' duration.

In the twelve cases of *necrosis* of the tumor, six were submucous fibroids in which the tumors were removed per vaginam. Two died, one from embolism resulting from a septic inflammation, antedating operation and persisting after it; the other from advanced endocarditis. In all six cases of necrosis in which abdominal section was done, the patients were in bad condition from septic absorption. All would probably have died from septicemia without operation. Three succumbed from septicemia, one died of embolism of the brain. Thus, of the 12 cases of necrosis, six died, and six recovered, indicating the extreme gravity of this condition. A striking illustration of the fact that the *menopause* need not bring relief, is the case of Mrs. C., aged 67, who had had one child, forty years ago. She consulted me for the relief of intolerable bladder symptoms. She suffered from hemorrhage of the uterus from the age of 35, until the menopause was established at the age of 52. The examination showed a multinodular fibroid tumor, the pelvic portion of which was calcareous, and it was found that this portion, by pressure upon the right ureter, had caused degeneration of the corresponding kidney. At the urgent request of the patient, the operation was performed March 6th, 1895, in spite of a bad prognosis, but she died four days later, of suppression of the urine.

A second case, indicating the persistence of tumor symptoms after the menopause, was that of a patient who suffered from the age of 35 to 53 from uterine hemorrhages, and when 70 years of age, after a drive over a rough road, the tumor became necrotic, and an abscess formed, rupturing into the bowel. The patient died from sepsis after an operation to secure drainage.

The disappearance of fibroid tumors after the menopause and after labor has not been noticed in my experience, although, in one case, seen fifteen years ago, a fibroid tumor was found to have gradually lessened in size after labor, as compared to its size before pregnancy. It is evident, therefore, that the disappearance of fibroid tumors as the result of the menopause or pregnancy, is merely one of the curiosities of the history of these growths, and is not to be expected.

The ages of the patients operated upon, grouped in decennial periods, are as follows:

Under twenty	1
Between twenty and thirty	6
Between thirty and forty	77
Between forty and fifty	76
Between fifty and sixty	20
Between sixty and seventy	7

The remaining 31 cases were operated upon per vaginam, and

the histories are not complete. One was between fifty and sixty, and a number between forty and fifty. Indicating the occurrence of these tumors in early youth, one of the patients was aged seventeen, one twenty-two, one twenty-four, and one twenty-six. The patient, aged seventeen, began to menstruate at thirteen, and was regular for five months. Menstruation then ceased for two years, except for two periods. Following this a severe metrorrhagia developed, and when the patient consulted me, she was in a condition of extreme debility from loss of blood. The tumor choked the pelvis and extended half way to the umbilicus. It is of great interest that 21 patients, including one operated upon per vaginam, were between fifty and sixty years of age, and seven patients between sixty and seventy years of age. Twelve per cent. of the patients were above fifty years of age when their symptoms caused them to seek relief in operation, a time, according to classic teaching, in which most of the patients should have regained their health as a result of the influence of the menopause. It is not possible to give the exact age at which menstruation ceased in patients operated upon after the fortieth year, but a large percentage menstruated after fifty, and one as late as fifty-five years. No fact is more evident in connection with the history of fibroid tumors than that the menopause is delayed for from three to ten years.

The relation of fibromyomata to *sterility* is indicated by the fact that only 91 of the 218 patients operated upon had been pregnant, and of the remainder a number were unmarried. In considering the complications, no mention was made of adhesions, although in numerous cases intestinal, appendicular and vesical adhesions were a marked feature. Especially was this true when the tumor was associated with forms of salpingitis. Adhesions cause pain, constipation, digestive disorders, and add to the operative risks.

The tendency to *phlebitis* and *embolism*, both before and after operation, in cases of fibroid tumors, is well recognized.

A striking case was that of Mrs. D., aged 46, multipara, who, while standing upon a ladder working, with the arms extended, was suddenly seized with violent pain in the abdomen, followed by collapse and grave peritonitis. After several weeks the peritonitis improved, but phlebitis, involving the veins of the left side of the neck and axilla, developed. Several weeks later death resulted from embolism of the brain. The peritonitis was due to the torsion of a pedunculated fibroid, leading to necrosis of the tumor. Another death, from embolism, occurred in a patient who was operated upon when septic, as a result of a fibroid polypus. Death occurred twelve days after operation, after a febrile course. Phlebitis following operation for fibroids is quite common, and its precise etiology is obscure. It is difficult to prove or believe

that all cases result from infection. The most prominent characteristic of a series of cases of post-operative phlebitis is that the patients are almost invariably anemic and prostrated.

Anemia was present in a large percentage of the cases of fibroma, and in some the degree of anemia was extreme.

In the case of Mrs. E., aged 45, the skin was waxen, the nose and ears were characteristically transparent. She had been bleeding almost constantly for months. Examination showed a number of fibroid nodules, also a small tumor of the right ovary. To control the hemorrhage until her condition could be improved, the patient was everted on the 19th of January, 1901. On the 23rd the blood examination showed erythrocytes, 2,325,000; hemoglobin, 10 per cent.; poikilocytosis, marked; leucocytosis, marked and of the usual type. February 6th the erythrocytes numbered 2,760,000; hemoglobin, 35 per cent.; and by March 4th the erythrocytes numbered 3,460,000; hemoglobin 45 per cent. A successful radical operation was later performed. In others of the grave cases of anemia the result was less fortunate. The risks of shock, of edema of lungs, and septic infection after operation, are all increased in anemic patients. The attitude in advocating conservative, or more properly expectant treatment, in cases of fibroids with hemorrhage, is difficult to appreciate. To agree that when a patient has become profoundly anemic from hemorrhage, operation is indicated, but to oppose operation before that state has been reached, as is often done, seems illogical. It would seem much better to operate early and thus save the patients months and years of invalidism, reduce the immediate operative risk, and shorten the post-operative period of convalescence. When anemia has become profound and of long duration, at times it is incurable, or the treatment must be continued many months to bring about a cure. The secondary effects of chronic anemia are also overcome with difficulty. In certain cases it may become imperative to operate, despite the transgression of Mikulicz's rule, never to operate in any case when the hemoglobin is below 30 per cent.

Over fifteen years ago Hoffmeyer (Hoffmeyer, M. Zur Lehre vom Shock. Zeits. fur Geburts und Gynak., xi. Band, 1885, p. 366) collected seven cases of uterine fibromyoma, in one of which death resulted from pulmonary embolism, in two from a high grade fatty degeneration, and in four from brown atrophy of the heart muscle. In a number of my own fatal cases, the immediate cause of death was the rapid onset of pulmonary edema. Whether, in these cases, the pulmonary edema was the result of embolism, or myocardial degeneration, I am unable to say, as thorough *post-mortem* examinations were difficult to secure.

Carcinoma and fibromyoma being such common diseases, it would be expected that they should frequently co-exist in the uterus. In proportion to its relative frequency, the adeno-carci-

noma of the uterine body is more often found in this association than is the more common squamous epithelioma of the cervix. That the irritative action of the fibroma should predispose to the development of the adeno-carcinoma, would seem only slightly less plausible than that laceration of the cervix should predispose to that of epithelioma of the cervix. Clinical experience and embryological studies both refute the idea, however, that the benign tumor may undergo carcinomatous degeneration. Even the penetration of the capsule of the fibroid by an adjacent carcinoma is extremely rare. In two of my cases the carcinoma had reached the capsule, but there was no tendency to penetrate the substance of the fibromyoma. Sarcomatous degeneration of fibroids would seem to be possible, although the close similarity between fibroid and spindle-celled sarcoma and fibromyomata renders it difficult for the pathologist to determine whether a given growth has been malignant from its inception, or has been the result of a sarcomatous degeneration in a fibroid. According to classical teaching, a *fatal termination* in the course of fibroid tumors is very rare. At the present time it is not difficult to understand why this is so, as when the condition of the patient becomes grave, and hemorrhage, repeated attacks of peritonitis, digestive, vascular, or urinary disturbances occur, they are usually submitted to operation. Patients operated upon when in bad condition swell the mortality of operations, and also greatly increase the lists of those making poor recoveries after operation. Doubtless in the future, the number of cases dying as a result of fibroid tumors or their complications, will be less than in the past, because in a larger percentage an earlier operation will be performed. Numerous cases of death from fibroid tumors can be found in the literature. Bishop, E. S. ("Uterine Fibroma and Myomata," 1901, pp. 27-31) reports 37 fatal cases which he has collected. If the cases of fibroid tumor of the uterus which have come under my observation can be taken as representing these growths as a class, it is a fair conclusion that death will result in more than one-third of the cases, while in more than one-quarter the result will be chronic invalidism. The number of invalids would be increased by the number of cases ultimately ending in death, so that from one-half to two-thirds of the patients having fibroid tumors, which have come under my observation have been confirmed invalids. Of the remainder, but few have not been incommoded as a result of the presence of the tumor. The percentage of cases in which tumors have been found more or less accidentally, is quite small. This estimate of the gravity of fibroid tumors is radically opposed to the classical teaching. In gratifying contrast are the results which can be secured through the resources of modern gynecology. The mortality of hysterectomy and myectomy is variously estimated from 2 to 10 per cent. In a series of 345 cases pub-

lished by myself, 1897,* the mortality of hysterectomy by supravaginal amputation, in the hands of five American gynecologists, was 4.9 per cent., and in a series of 100 total hysterectomies, the mortality was 10 per cent. Olshausen reports a mortality of 5.6 per cent. in 806 supravaginal hysterectomies, contrasted with 9.6 in a collection of 520 cases of total extirpation. According to Bishop (L. C.), Martin reports 35 total extirpations, with a mortality of 28 per cent.; Doyen, 60, with a mortality of 2.6.; A. Martin, 81 cases, with a mortality of 7.1 per cent. The advocates of a vaginal hysterectomy for fibroid tumors report equally as good, if not better, results. The results of myomectomy indicate that this is more dangerous than hysterectomy, although in the hands of trained men, the results are excellent. Kelly reports 97 myomectomies, with 4 deaths, which is to be contrasted with 307 hysterectomies with 15 deaths, or a mortality of 4.8 per cent. (Kelly, H. A., "Abdominal Myomectomy," *Trans. Amer. Gynec. Soc.*, 1898, Vol. xiii., p. 223; 1900, Vol. xxv., p. 213.)

In a private communication, in 1898, MacMonagle reports 65 cases of myomectomy, with no deaths. We are now able to contrast the mortality of fibroid tumors, including that of their complications, 33 1-3 per cent. with the mortality of operation less than 10 per cent., also the morbidity incident to the history of fibroid tumors as compared with that which follows operation, which is very much in favor of the operation. The conclusion is inevitable that the proper treatment of fibroid tumors of the uterus is their early removal, for this not only greatly lessens the mortality, but what is perhaps more important, saves the long period of invalidism which is otherwise inevitable. Believing that the best treatment for fibroid tumors in general is their early removal, are there no exceptions to this rule? The best answer to this is that each case must be decided upon its merits. My individual experience is that small multinodular subperitoneal fibroids in women of 40 years of age, or more, are the least apt to grow and cause serious symptoms. Conversely, submucous and intramural fibroids in younger women are the most apt to develop and cause serious trouble. I have seen few fibroids that were not producing symptoms, and it is therefore my belief that the percentage of cases is small in which operation is not more advisable than expectancy.

*"The Development and Present Status of Hysterectomy for Fibromyomata," by Chas. P. Noble, *Trans. Amer. Gynec. Soc.*, 1897, Vol. 12, page 59.

PULMONARY TUBERCULOSIS: ITS TREATMENT IN SPECIAL SANATORIA.*

BY J. H. ELLIOTT, M.B.(TOR.), GRAVENHURST.

THE Hygienic and Dietetic Treatment of Phthisis, the fundamental principle of sanatorium methods, is not by any means of recent origin, although it is only within the last quarter of a century that there has been a general acceptance by the profession at large. I would be quite within the mark if I should say that only the last decade has seen an adoption of this treatment outside those specially interested in lung diseases.

Hippocrates expresses his belief in the curability of the disease, "If the patient is treated from the beginning he will get well," and tells us to have the patient walk if he feels benefited thereby; if not, to rest as much as possible. Pliny, Celsus and Galen, advised life in the country, and pine forests.

It may be fairly claimed that English physicians were the first in modern times to advocate aërotherapy in the treatment of consumption. Bodington, of Warwickshire, in 1839, treated such patients "in a special building with systematic arrangements in regard to exercise, diet and general treatment, with the watchfulness daily, nay hourly, over a patient of a medical superintendent" (1).

Bennet, himself cured by aërotherapeutic measures, writes (2): "My consumptive patients live in the open air, sleep with their windows more or less open, wash the entire body daily with cold water, live on the best food and wine they can get, take as much of it as they can digest."

In spite of Bennet's good results, the English profession were very slow to adopt his methods of treatment.

The sanatorium treatment of pulmonary tuberculosis may be said to have been promulgated by Brehmer of Goerbersdorf, who, through the influence of his friends, Humboldt and Schönlein, opened his sanatorium in 1859. The remarkable increase of sanatoria throughout Germany is directly traceable to the work done by Brehmer, and by Dettweiler, who was first a patient and later an assistant in the Goerbersdorf Sanatorium.

In Brehmer's institution exercise was all important in the treatment of his cases. Dettweiler, as the result of his observa-

*Presented at the Annual Meeting of the Ontario Medical Association, Toronto, June, 1901.

1. Knopf—*Prophyl. and Treat. Pul. Tub.*, 1899 p.n.

2. Bennet—*On Treatment of Pulmonary Consumption by Hygiene, Climate and Medicine*, 1871.

tions, then became convinced he could secure better results with a "rest cure." In 1874 he was enabled, with the aid of the physicians at Frankfort, to open the Sanatorium at Falkenstein in the Taunus. This was for paying patients. The subscribers were to receive 5 per cent. on their investment; then after perfecting the institution, all surplus was to go towards the erection and maintenance of a sanatorium for the poor. This was opened in 1892, at Ruppertshain, the first sanatorium in Germany for the poor. It now accommodates some ninety patients, and is being enlarged.

Though one sees a great variety in the style of building, there are two noticeable types, the European system, where 50 to 200 patients are housed under one roof, as in a hospital, and the American cottage system, originating with Dr. Trudeau, and since adopted in the Loomis Sanatorium at Liberty, N.Y., and in the Muskoka Cottage Sanatorium. Both plans have their advantages and disadvantages, to discuss which, however, is outside the scope of this paper.

It will be hardly necessary for me to bring forward proofs that consumption is curable, that taken early it is perhaps one of the most curable of chronic diseases, nor need I burden you with statistics showing the excellent results universally obtained in sanatoria. It is indeed difficult to properly tabulate the results of the various institutions, from the great difference in the nomenclature adopted by their medical directors. Where one uses the terms absolute and relative cure, another will use apparent cure and disease arrested, another, again, will use the term arrested cases, covering both the former conditions. Again, there must be great difference in the results, from the fact of some sanatoria accepting almost all cases which present themselves for treatment, while others accept only the earlier or more favorable cases.

Speaking generally, it may be said that from 50 to 70 per cent. of the incipient cases are restored to health, while from all classes from 15 to 30 per cent. are reported cured or arrested, in 60 to 70 per cent. a marked improvement.

Soon after entering the sanatorium there is noted in most cases an improved appetite, a gradual gain in weight, and a decline in the evening temperature. With the improvement in general health night sweats disappear without medication, the cough and expectoration notably lessen, and the patient sleeps soundly until morning. The principles of treatment generally adopted are:—

1. A continual life in the open air, with rest or exercise as indicated.
2. A liberal, suitable diet.
3. Medicinal treatment, according to indications, and to a great extent symptomatic.

4. Hydrotherapy.

5. A strict medical supervision of the patient's daily life.

This practically means placing the patient under the best possible conditions to strengthen the whole organism, by living an hygienic life, amidst hygienic surroundings, to so increase the resisting powers that not only is the further progress of the disease stayed, but with the vital energy so increased, nature is able to re-assert herself, and overcome the disease.

Life in the open air does not mean two or three hours out of doors in the morning, the same in the afternoon, with perhaps an hour in the evening, the remaining 15 to 18 hours spent about the stove, and in a bedroom, with the window open an inch or two. The good resulting from having been outside will be more than overbalanced by the many more hours of indoor life. It means 24 hours each and every day in the pure, out-of-door air; 9 to 13 hours spent daily out of doors, summer or winter, rain or shine, the meals taken in an airy, well-ventilated dining-room, with, in summer, the windows wide open, or out altogether, and sleeping in a large bedroom, with here also the fresh air of heaven finding no obstruction to its free entrance.

When there is a daily rise in temperature there is active disease in progress. This means an increased combustion and waste of the tissues. We know also that in exercise of any sort muscular movement necessitates combustion. If then exercise is indulged in, there is a double consumption of the nitrogenous constituents, a literal burning of the candle at both ends, and, if long persisted in, causes irreparable injury.

The object of the "rest cure" in febrile cases is to reduce muscular exertion to the least point consistent with the ingestion and proper assimilation of a good diet.

Whether a patient is to take exercise or remain absolutely at rest is decided by the temperature curve. A patient admitted with an evening temperature of, say, 103 degrees, is put at once to bed, and remains until there is no rise above 100.5. If this point is not exceeded for three or four days the patient may get up for the morning, and begin very short walks, going to his room again shortly after the mid-day meal, not leaving it again until the next morning. If with this the temperature still slowly drops, the amount of daily exercise may be gradually increased.

It may be noted with some patients, whose evening temperature does not rise above 99 degrees, or 99.5, that, after a long walk, the thermometer may register 101 degrees, or even higher. This, of course, means that the exercise has been too much. *The thermometer should always be the guide in prescribing or restricting exercise.* Two or four hourly observations of temperature are made for a few days after admission, and then morning and evening, as long as there is a departure from normal. Contrary to the rule

in other diseases, the patient is taught to use the thermometer himself. There are certain patients who, when they find an evening elevation of temperature, will worry, but these are very few. The intelligent use of the instrument is soon easily taught, and the patient then knows within what limits he may or may not exercise, and is also in a position to report to the nurse or physician any rise in temperature after he has been for a time afebrile.

In a few sanatoria, notably Nordrach, the temperature is always taken in the rectum, being considered a safer guide than when taken in the mouth. A number of observations I have made upon patients show definitely that the subnormal temperature of 95 degrees, or even 94 degrees, often seen when taken by the mouth, is not registered as such in the rectum, and in these cases will read 97 degrees and 98 degrees. The normal rectal temperature is about 1 degree higher than that of the mouth.

Some object from an aesthetic point of view, but as the temperature is always taken in the patient's room, this can scarcely be considered, if we really appreciate the value of a correct temperature record. More especially in the cold weather is the mouth temperature misleading. On more than one occasion when a patient has returned from a walk on a winter's day, with a flushed face, have I found with a mouth temperature of 99 degrees, or 99.5, a rectal temperature of 101 degrees to 102 degrees. I would not advise this method in all cases, but it certainly has its use, and is valuable where properly used.

The "rest cure" has its modifications in different sanatoria. At Falkenstein and Hohenhonnef, the febrile cases, as a rule, are placed in rooms which open out on a balcony, where the patient may spend the greater part of the day. When able to take gentle exercise the Liegehaile are used. These, as a rule, are on the ground floor, both in Germany and America. At Edmundsthal, near Hamburg, and Belzig, near Berlin, there are large protected balconies on the first floor. On these verandahs, or shelters, as we term them, the patients recline in their chairs the greater part of the day, at all times of the year, and with proper protection in the way of glass and canvas screens, and with plenty of rugs, can enjoy the roughest weather. In dry weather the chairs are placed under the trees at some distance from the buildings.

As for exercise, walking and hill-climbing are the safest forms. Of games, croquet is excellent, quoits and golf in many cases. When near the water, nothing is better than rowing or paddling. The billiard table is found in most of the sanatoria in a large room with wide-open windows. Cards I found prohibited in most of the German and Austrian sanatoria; this is, I think, from the fact that on the Continent a stake is the rule, and this lends too much excitement to the game. I know of no American sanatorium

where cards are not permitted, but no patient is allowed to play for money.

Diet.—The diet of a sanatorium is essentially abundant, and nourishing, the best of food is used, and used to the best advantage. Each patient is taught that he requires a greater amount of food than the ordinary individual. It is usually explained to him in this way:—The average man requires two portions of food: one devoted to carrying on body functions, the other to replacing the waste caused by physical or mental work. The consumptive requires three portions: one for carrying on the body functions, the second to replace the waste daily going on in the course of the disease, the third to replace that already lost, and to restore him to his former condition of health and bodily vigor.

When this is considered, one quite understands that the sanatoria patient who is eating daily, and properly assimilating, more food than the average working man, is not undergoing a stuffing process, but is simply gratifying the appetite stimulated by a change of scene, and by a life in the open air, and assisting nature in her endeavors to overcome the inroads of the disease upon the body.

With an abundant dietary, of which fresh meats, eggs, milk, cereals and a fair proportion of fats, are an important part, the patient is not restricted to certain dishes, but is allowed to eat almost any food of which he may care to partake.

This, of course, applies to those cases in which there is no pronounced stomach disturbance. In a disease in which there is such a marked tendency to gastric troubles, both at its inception and during its course, no definite rules can be laid down, but every case where indigestion is present must be considered by itself. Keeping the digestive tract in good order taxes the patience of every sanatorium physician, for he knows so much depends upon this.

The intervals between meals vary a great deal at various sanatoria, and depend a great deal upon the habits of the country. In Germany, as a rule, there is a first breakfast at 7 to 7.30 a.m., second breakfast at 9 to 11, dinner at 1 p.m., tea at 4, supper at 7, with milk on retiring at 9 or 10. In the sanatoria of the eastern United States which I have visited there are three principal meals, at 8 a.m., 1 p.m., and 6 p.m., with light lunches at 10.30, 3.30 and 9. I think the rule should be three meals a day for the average patient, modifying this as required. Where the appetite is such that more nourishment is needed, the patient should take the lunches, or, on the other extreme, where the appetite is poor, and the patient is able to eat but little, the nourishment should be taken at shorter intervals.

Of medicinal treatment I need say but little. With the patient under constant supervision early symptoms of an intercur-

rent affection are noted, and serious complications often anticipated. With an hygienic life, fewer medicines are required. The various tuberculins and serums are being used both in America and Europe with the prospects of yet securing a specific for those cases where mixed infection is absent. But in the absence of a specific, symptomatic treatment is resorted to until such times as nature has again the upper hand of the bacillus and its toxins.

Time will not warrant a discussion of the various agents for the relief of cough, night sweats, hemorrhage, chills, diarrheas, anorexia, anemia, and other conditions met in the disease. The methods adopted and drugs used are practically those of the best hospital practice.

Hydrotherapy has not advanced to the same point in America as in Germany and Austria, where most of the larger sanatoria have very complete installations. There is, as a rule, a waiting-room, several dressing-rooms, one room for packs and one for massage, in addition to the douche room itself. In the douche room are tub baths, sitz bath, needle bath and douche table, behind which stands the attendant or physician who gives the douche. On the douche table are stop-cocks and hose, controlling the water supply from the hot and cold water and steam pipes, which terminate here. An outflow pipe regulates the pressure of the water, which is indicated by a gauge. A thermometer is also placed with its bulb in the pipe leading to the hose, showing the temperature of the water flowing upon the patient.

The physician's prescription states accurately what sort of douches are to be used, the order in which the various parts of the body are to be douched, the pressure and temperature of the water, and the duration of the douche.

The cold douche does not, as a rule, last longer than 20 to 25 seconds. It is followed by a good rubbing down or by massage, and then a walk or return to bed, as indicated.

The douches are seldom used for other than incipient or arrested cases. They have not only a tonic effect on the skin, but there is a stimulation of the general system. There results almost an immunity to catarrhal troubles, and a decrease or disappearance of night sweats. "Lateral douches, not too strong, directed toward the seat of an old pleuritic adhesion, often aid considerably in the resorption of the fibrinous bands, and a consequent free chest expansion" (1).

Every patient in a sanatorium is taught to sponge the chest and arms with cold water on rising, rubbing well afterwards. If not strong enough, an attendant does it for him. In cases where there is too much shock, the patient goes through a preparatory course of dry rubbing, friction with alcohol, alcohol and water, and finally cold water alone.

Wet packs are often used for pleuritic or intercostal pains, or

for those indefinite feelings of discomfort in the chest, rarely called pains, which are so frequently complained of.

Wet compresses to the chest prove very useful for combating night sweats.

The constant supervision of the patient is the most important point in which the sanatorium treatment must necessarily differ from that adopted by the general practitioner, and living with the patients, adopting their mode of life, having his meals in common with them, the physician is enabled to individualize the treatment, and though on broad lines, the patients all receive the same treatment, each one has to be studied in detail, and the indications met accordingly. Climate, change of scene and medicines, all have their influence on the course of the disease, but nothing is so essential as this constant oversight. Perhaps in no disease is the patient so disposed to be erratic, or to do thoughtless, injurious acts, and to require constant supervision. Niemeyer, in 1867 (2), after speaking of proper medicinal treatment, abundant diet, rest in febrile cases, the spending of the day in the open air, closes by saying (the italics are his), "*The chief point under all circumstances is that the patients, wherever they may be, live prudently, and be under the care of an intelligent and firm physician.*" The physician studies the patient from every aspect, and his daily life is laid out in detail. There is a fixed hour for rising and dressing, the patient is directed what time is to be spent in walking, and what in resting. He is told what he may eat, and what to avoid. He is instructed in hygienic living. Not only is the patient taught the necessity of care in the disposal of the sputum, and the absence of any danger when this is properly done, but he is taught to observe all the rules of health: the care of teeth, and the proper mastication of food at his meals, to avoid dyspeptic troubles, the regulation of the body functions, proper attention to clothing—especially is this necessary in the case of women, who are taught to dispense with all constricting bands about the waist, to support the clothing from the shoulders, and to do away with long skirts.

In the absence of a specific for this disease, success in treatment depends upon the attention paid to the smallest details of a patient's life, and the scientific application of every agent which can be used to build and strengthen the system, and to this constant supervision, and strict attention to hygiene, is attributable the excellent results obtained in special sanatoria.

1. Knopf—Prophyl. and Treatment of Pul. Tub., 1900, p. 232.

2. Niemeyer—On Pulm. Consumption. Transl., New Sydenham Soc., 1870.

THE OUTDOOR TREATMENT OF SICK PEOPLE.*

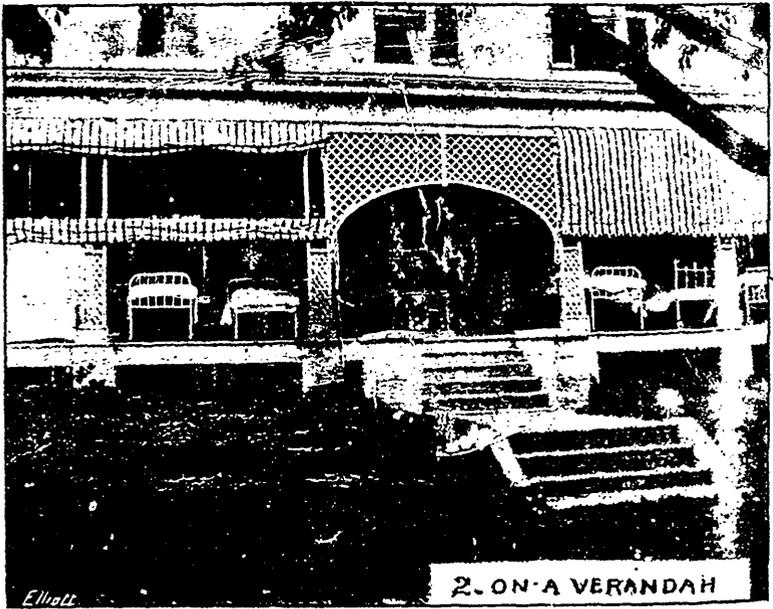
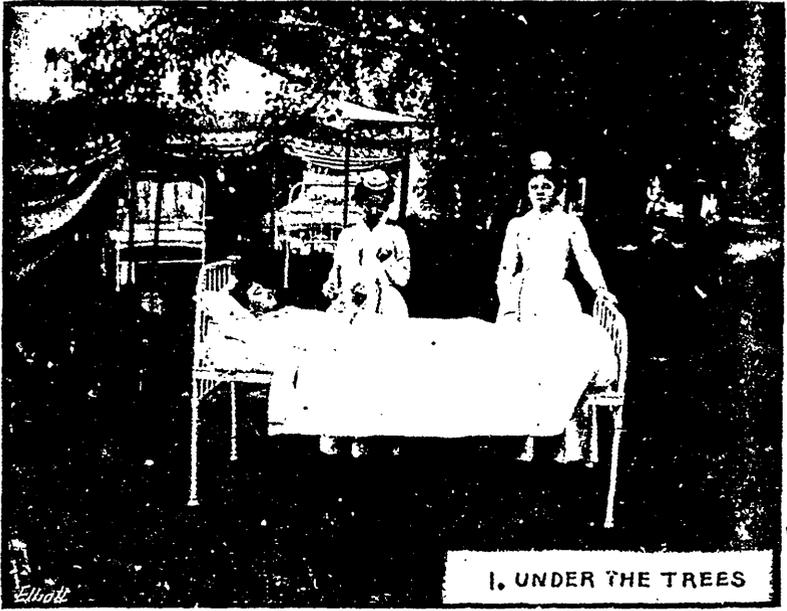
BY GEORGE H. CARVETH, M.D.

Physician to Toronto Western Hospital, Toronto Home for Incurables, etc.

Introductory.—Eighteen years ago, when in the office of the late Dr. W. T. Aikins, I was taught to treat sick people by bringing into the bedroom a plentiful supply of fresh air through the open windows, guarding the patients against direct drafts. To-day we go a step further, and place the patient out of doors, thus supplying him with all the fresh air procurable. Why I do this came about in this way: A medical man of Toronto owned a pair of game fowl about equally matched in fighting powers in the autumn of the year. One he kept in a warm, comfortable place during the winter; the other was allowed to do as he liked all the time, and he spent most of the winter in an open shed and in the barnyard, exposed to all changes of the weather. In the spring the open air one whipped the house bird in every contest. This taught me a lesson, and I determined to try the open air plan on my patients. In February and March, 1900, I placed a young woman suffering from chronic inflammation of the knee joint on the open verandah, and in spite of the severe weather she did well. In April I tried the same treatment on a young woman suffering from anemia and general debility; in this case I was encouraged by her grandmother, aged 85, who came daily to visit the patient and approved of the treatment. Under this treatment the young woman did well, but could not sleep in a house for the remainder of the year. The next case was one of operation for appendicitis, which recovered in much less than the usual time after operation. The next was one which the medical attendants thought hopeless, acute Bright's and sepsis; we were all surprised at the brilliant result in this case, and the prejudice against the plan of treatment in severe cases among a group of a dozen medical men who were interested in her case vanished. In the month of May of the same year I became acquainted with a Church of England Minister, who had lived in a tent all winter with good results to his health, and learned from him the management of sick people in tents. Since that time most of my patients have been treated out of doors, with excellent results, and I have watched the results in the practices of a large number of my medical friends, and in every case the treatment is a distinct advance on the house treatment.

Now, what is the treatment? It is placing the patient in the open air all the time, rain or shine, hot or cold, day or night, summer or winter, properly protected against changes in the

* Read at meeting of the Ontario Medical Association, Toronto, June, 1901.



weather, having a trained nurse within call to put on or take off clothing as required for the comfort of the patient. This plan can be carried out in any one of three ways: Firstly, on a lawn underneath the trees (see photo No. 1); secondly, on a verandah on the east or south side of a house (photo No. 2); and thirdly, in a properly constructed and managed tent (photo No. 3).

Cases Suitable for the Treatment.—I have observed cases of the following treated in this way: Debility, bronchitis, rheumatism, accidents, insanity, alcoholism, measles, diphtheria, Bright's disease, severe operations, pneumonia, typhoid fever, tuberculosis, and many others. In fact, all cases we are called upon to treat are suitable for this plan.



Results.—Judging from my experience during the last sixteen months, cases of illness recover in about two-thirds of the time required under the old plan of treatment, and the time of sickness is much pleasanter for the patient and more healthy for the nurse. The more healthy appearance of the patient under the influence of the wind and sun has an encouraging influence on the friends and visitors, and their remarks to the sick one on this point again add hope and encouragement to the patient.

Operation cases of all kinds have less sickness after anesthesia, and the time of recovery is certainly much shorter and pleasanter than under the old house treatment.

Applications of the Treatment.—Besides the use of this plan of treatment in ordinary cases of sickness and operation, as mentioned, it can be made use of (1) when the patient is in a small and crowded house; (2) when an operation is required away from an ordinary operating room, as an emergency case in the country. An operating room suitable for the most serious case can be arranged in a tent in a very short time, and the patient can receive the after treatment here much better than in the ordinary badly-arranged house. (3) When contagious disease breaks out in a boarding school, or other large educational institution, tents being placed on the lawn for the reception of patients and nurses. (4) When treatment of smallpox is required on a large scale, as arranged by the Provincial Board of Health during this year. (5) When treatment of tuberculosis of the lungs on a large scale is made use of, as in New Mexico. (6) And, lastly, when we wish to guard against sickness, as the students of the *ΔΓ* fraternity at Cornell University did last winter by sleeping on the open verandah of their fraternity house, coming out in May the healthiest and brightest group of students at the University, and as a chancellor of a university and many others in Toronto are doing at the present time with great gain to their comfort and health.

THE RELATION OF NASAL OBSTRUCTION TO OBSCURE CASES OF ASTHMA.*

BY ARTHUR W. MAYBERRY, M.D., TORONTO.

IN making a few comments on nasal obstruction, will limit the remarks to such conditions as may affect obscure cases of asthma, and my apology for this brief contribution is that patients suffering from nasal obstruction are frequently coming before the notice of the busy practitioner, who has scant leisure for the study of comprehensive treatises.

The etiology of asthma is complex, and the close association of this disease with nasal trouble is sometimes very remarkable. In the case of nasal polypi, the removal of even small growths, which do not materially interfere with respiration, frequently produce immediate improvement. The best results generally follow intranasal treatment where the probe touching any part of the nasal mucosa produces cough, and not the normal nasal reflex.

Adenoid growths in the pharynx frequently cause asthma, and in recent years much stress has been laid upon the nasal origin of this disease. Voltolini's operations have brought about a clearer

* Read at meeting of the Ontario Medical Association, Toronto, June, 1901.

recognition of this reflex source of asthma, and Bosworth goes so far as to assert that asthma, in a large proportion of cases, is attributed to some form of nasal obstruction or inflammatory condition which, through the agency of the sensory distribution of the fifth nerve, by reflex sympathy, cause bronchial spasm.

I will ask you to recall that along the free borders of the inferior turbinated body and its anterior and posterior ends are situated "swell bodies," which are the erectile tissue of the nose, and which have the power to become engorged or tumefied and to collapse under certain physiologic stimuli. Their chief functions are to humidify and temper the inspired air so that its presence in the lower air-tract will not excite irritation, and to transude serum. Under aggravating conditions, this tumefaction becomes more or less persistent, and tends to provoke mouth breathing. The absence of proper nasal respiration in cases of asthma is a serious factor, demanding careful attention and the removal of the cause. One of the leading indications for operating in nasal obstructions is the aggravation of such a chest affection as asthma. In my experience other inflammatory conditions or forms of nasal obstruction are not so likely to be overlooked, and therefore do not bear closely on obscure cases. It is not my intention to discuss treatment, and will only say that while well defined nasal disease must, of course, be treated on its own merits, it may not be out of place to add a word of warning against operating on the nose with the idea that if it does not cure the neurosis this method can do no harm. Indiscriminate operating, and universal ignoring of nasal complaints are equally erroneous, and the surgeon who is guided by the ordinary principles of surgery and pathology will best serve his patient.

253 Spadina Ave.

A RARE VARIATION IN PHALANGES OF HANDS AND FEET.

BY FREDERICK WINNETT, M.D., M.R.C.S.(ENG.).

THE skiagraphs of hand and foot taken by Chandler & Massey are interesting, in showing the absence of second phalanges in toes and only rudimentary ones in two of the fingers. It is congenital, having been present in mother, grandfather, great-grand-



Skiagraph of hand showing absence of second phalanges of index and little fingers.



Skiagraph of foot showing absence of second phalanges.

father, and great-great-grandfather. Only about half the members of each family are so affected. It is difficult to understand how parts of so great antiquity, and not prone to variation like structures highly and unusually developed, or like vestigial structures, can be so modified. Is it higher evolution, reversion, or merely a sport?

THE OLD SHIP'S MEDICINE CHEST.

TO THE HON. CAPTAIN SAM. BLANDFORD, COMMANDER
SS. *NEPTUNE*.

THE old ship's medicine chest astern has been in every sea,
And has a bottle for each ache, whate'er that ache may be.
The old black chest with brass bound lid, which every pain can thwart,
Has sailed the seas these fifty years and been in every port.

And oh ! if it could tell its yarn of faces red and pale,
Of fever in the Indies and of blood upon the rail ;
Of foreign tongues and foreign skies, of pistol shot and knife ;
Of men now sleeping deep at sea and of their fight for life !

If it could tell its tale, my lads, of voyages long past,
In peace or war, by foreign coasts, in calm or storm o'er cast !
Why man, ere you and I were born it felt the great swell toss
Beyond the coasts of Zanzibar and 'neath the Southern Cross.

These phials with a touch of dust, arranged here row by row,
Have oped where waves the southern palm, where gleams the northern
snow.

Rude mates have mixed these powders ill, and boatswains unexpert,
When some poor devil on the deck lay dying of his hurt.

Oh ! silence of forgotten war, that blazed on sea and shore !
Oh ! darkness of the shining pomps that fell for evermore !
From trampled fields and sunken ships, when perished all the rest,
They brought, with these few bullet holes, the surgeon's medicine chest.

The fleeting customs veer and change ; the spirit is the same
That scorned the lure of gold and rose above the wreath of Fame ;
And down through all the storms of time the art untarnished comes,
While cities fall and cannon rust and cease the battle-drums.

Ah, dauntless art of surgery, and comrades of the craft,
Who sent dead hope upspringing when with jeering eyes you laughed :
Who in the toils of pain have ever played a gentle part,
When light died from the glazing eyes and stopped the broken heart !

We're outbound from the grey old port, and bearing north to-night,
And many days will pass before we hail the harbour light ;
But be content, my skipper men, in fore-castle or hatch,
For we can cure all wounds you get, or anything you catch.

When freezing gales are blowing from the lonely Greenland coast,
And you go blind upon the ice or wander from your post ;
And cannot see the trail of blood across the glaring white,
We've venerable collyria which will restore your sight.

When dog hoods on the heaving pans, or polar bears attack,
And tear the flesh from off your bones or clothes from off your back ;
We've knives and needles, splints and lint, and Friar's Balsam, too,
To put in the repairs and make a happy man of you.

When swarming down the bulwarks, or when boarding, half steam on,
 The gaff barsbs tear your face and breast ; perhaps a finger gone :
 Or, if the lads are shooting, with a rifle ball besides ;
 We'll dress your wounds when burned down, and the ship at midnight rides.

Or, if with fever in your berth you toss with parching lip,
 There's nothing is too good for you on all the bloody ship ;
 And when you're coughing all night long and shiver with the cold,
 We'll take our soothing mixtures down to dose you in the hold.

We'll lance you till you howl and swear ; and for the scurvy too,
 Or bellyache will give you just the drug we think will do.
 The old ship's chest is open aft with all its phials complete,
 Beneath the rattling rudder chains upon the cabin seat.

I hear the crashing ice-sheet break before the Atlantic swell,
 The gleaming bergs are floating south, outbound from Cape Farewell,
 The rocking pans are grinding all night long upon the sea,
 And shrieking comes the northern gale amid the rigging free.

Black downward rides the wrack of clouds athwart a sunless sky,
 The catching slob grows thicker and the whelping ice is high ;
 Their black heads at the bobbin holes rise at the steamer's churn ;
 Your work is yonder in the storm—your homes are far astern.

So all hands out upon the ice with rifle, gaff and knife,
 And keep in the ice-master's sight on peril of your life ;
 If from the rocking floe you fall, swim back to ice again,
 Black with the blood of bedlamers at early morning slain.

The harps are panned : the hoods rise up behind the roaring keel,
 The scunners hoarsely shouting to the men upon the wheel ;
 Our number's thirty thousand and a hundred every man—
 Oh ! don't you hear them yelling ? out, all hands, upon the pan !

Heave out the coal into the sea, and off the hatches drag ;
 And so all day among the pans, astearing flag to flag.
 And all night, Master Watches, while a thousand torches flare
 In twinkling lines across the ice, as point to point you bear.

And now our flags are hoisted from every yard complete,
 And we are back to port again—the devil take the fleet !
 I've half a mind to tell you, boys of Bonavista Bay,
 What you will tell the girl ashore—I know what you will say.

But ere we steam by Bacalieu, one other toast must come ;
 Drink it, my skipper men, for me, in red Jamaica rum :
 Drink my toast here upon the sea—drink it on shore at rest—
 See it behind my shoulder, lads, the Old Ship's Medicine Chest !

—EZRA HURLBURT STAFFORD, M.D., C.M.,
 Surgeon SS. *Neptune*, Saint Johns Fleet.

Pharmacology and

IN CHARGE OF
A. J. HARRINGTON, M.D., M.R.C.S.(Eng.)

Therapeutics.

SLEEPLESSNESS IN HEART DISEASE AND ITS TREATMENT.

GIBBES states, in the *Chemical Journal* of January 16, 1901, that in all cases of heart disease our first treatment should be directed to relieving, if possible, the most urgent symptoms. Sleeplessness, if it is present to any great extent, must always be a serious symptom, and is bound to make itself felt in all cases, being in some a matter of vital importance.

We have therefore to decide when hypnotics are required, and what character of drug should be given. The ill effect produced from the persistent and unregulated use of sleeping draughts by the general public cannot be too strongly condemned, and it enforces upon us the necessity of using the greatest caution in prescribing them. They should be used either to break the habit of sleeplessness, which the system may have acquired, or to give rest when it is urgently needed. In the former instance, the influence should be kept up for three or four nights, or a speedy relapse will follow. In many cases we obtain far better results by giving three or four smaller doses during the day than from a larger amount given in one dose at night; this specially applies to opium, chloroform, and bromide. Our choice of drugs must always depend on the character of the case and the complications that are present. To describe the various hypnotics that have been recommended would be waste of time; therefore, only those drugs are given which the author has used and found most successful.

Opium and morphine are among our most reliable sleep-producers, and when pain is present are invaluable; they can be safely given in any uncomplicated form of heart disease, and the presence of lung and kidney complication is by no means such a rigid bar to their administration as some would lead us to suppose. Greater care is, of course, required under these circumstances, and their effects must be carefully watched; but they have frequently been used by Dr. Gibbes with the greatest benefit when the lungs have been clogged, and a large quantity of albumen present.

after having failed to obtain sleep by any other means. If pain is very severe, and immediate results are required, morphine should be given hypodermically, care being taken in extreme cases to minimize the shock of inserting the needle as much as possible. While opium and morphine can always be relied on to relieve pain, they do not necessarily act as hypnotics, unless the dose is larger than we may wish to give, for the writer frequently finds their action delayed, the patient not getting to sleep for hours and sleeping better the second night than the first. Sometimes he can obtain a much better hypnotic result by giving a quarter or half grain dose of opium three or four times during the day than two or three grains at night; in other cases one-sixth of a grain of opium every hour for five or six doses during the latter part of the day will produce a more satisfactory result.

Chloral hydrate should only be given when the arterial tension is high, and its depressant action on the heart is beneficial, as is sometimes the case in acute alcoholism. He has not, however, derived any special advantages from its use in other conditions to compensate for its depressing effects.

Chloralide acts in the same manner as chloral, but has the advantage of being less of a depressant. It has been strongly recommended, but Gibbes has not found its action as speedy as some other hypnotics.

Trional is very useful, and acts speedily. It has no special action on the circulation or respiration, and can consequently be given in any form of heart disease, but he has not found it satisfactory when pain is present. Sulphonal acts in the same manner as trional, but as a hypnotic its delayed action is much against it. The combination of the two in 10 or 15 grain doses each has a more satisfactory effect than if they are given separately. If much prostration is present, as is sometimes seen after influenza, it is advisable to avoid their use.

Paraldehyde is a very useful hypnotic. It has no effect on the circulation or respiration, and can be given in any form of heart disease. As, however, it has a slight irritant effect on the gastric mucous membrane, it is not always advisable to administer it when the cardiac sleeplessness is complicated by dyspeptic troubles.

Chloretone is one of the most recent additions to our list of hypnotics, and is very useful in heart disease. It has no depressant action on the circulation, can safely be given when kidney or lung complications are present, and is quick in its action; its special usefulness, however, in heart disease is due to the fact that it is not only a perfectly safe hypnotic, but a powerful germicide and anesthetic as well, relieving the dyspeptic symptoms so commonly present by anesthetizing the coats of the stomach and

arresting fermentation. It is a perfectly safe hypnotic, a case having been recorded in which 120 grains were given in 24 hours without serious result. As a hypnotic, Dr. Gibbes generally gives 15 grains at bedtime, and repeats in two hours if required; when there is much excitation of the nervous system, 1 1-2 or 2 grains three times a day, with a 15 grain dose at night has an even more than beneficial effect, and produces sleep the second night without any further dose being given. The bromide salts are chiefly indicated where the neurotic element predominates, and if given three or four times a day will often relieve sleeplessness, but the writer has frequently found them fail when any one of them is given as a pure hypnotic in one dose at night.

Alcohol will in many instances promote sleep before heart failure has far advanced, and where restlessness is great; it should, however, only be given in small doses just as the patient is settling down to sleep. If the arterial tension is high, it is worse than useless, as it may increase the sleeplessness. In the later stages it may have a soothing, but not a hypnotic, effect (*Therapeutic Gazette*, May 15th, 1901).

In prescribing morphia and opium in cases of heart disease complicated by the presence of albumen in the urine, I have noticed in several patients that the administration of morphia or opium by the mouth has set up alarming symptoms. One patient, I remember, went into a convulsive state by giving 1-4 grain morphia sulph. in tablet by the mouth, and another into a comatose condition from 15 drops of liq. opii sedative; to both of these patients I have given 1-4 grain morphia sulphate hypodermically since. I now always use this drug hypodermically in these cases with no untoward effects. Chloral hydrate is best dispensed with syrup of licorice. As it sometimes has an irritant effect on the gastric mucosa, it is contraindicated in neurotic cases except in small doses combined with bromides.

Trional and sulphonal should be dispensed in konselals, in 20 to 30 grain doses, followed by hot drink. Paraldehyde dose, 30 to 60 minims soluble 1-10 water, best prescribed with glycerine or syrup of orange. Chloretone best prescribed in konselals, 20 grains, or in pills, 3 grains, very reliable. Like chloral, trional and paraldehyde are of little use if there is much pain. Bromides are best prescribed in 30-grain doses, combined with syrup of orange or fluid extract of glycyrrhiza and syrup. A. J. H.

DIAGNOSED.—Della—Orlando Smiggs was out to see me last night, and he was, oh, so nervous, and showed so plainly that he had something on his mind that I was sure he was going to propose, but he couldn't muster up the courage. Ophelia—Yes, Orlando is subject to those sudden attacks of cholera morbus.

Selected Articles.

FIRST AID TO THE PROSTRATED.

THE great heat so prevalent every summer has given rise to many questions regarding the causes leading to heat exhaustion, sunstroke, and the prevention and treatment of such cases. Below will be found a resume of the opinions as to how this condition should be treated.

When overcome by heat exhaustion, the conditions are as follows:

Mind usually clear and in a normal condition.

Pulse feeble and rapid.

Skin cold to the touch and covered with perspiration.

Always a decrease in bodily temperature; often this decrease is very great, in many cases the temperature falling to 97 degrees.

The voice is weak, and there is a general muscular relaxation and sense of weakness.

The above conditions are apparent to a more or less degree in every case of heat exhaustion.

SYMPTOMS OF SUNSTROKE.

In cases of sunstroke or thermic fever the conditions are much different. There is generally total insensibility.

Pulse is usually rapid, and at first strong and full, but in many cases becomes weak and irregular.

The skin of the patient is dry and burning to the touch.

The face is flushed, and often becomes cyanosed.

Temperature very high, varying from 103 to 106 degrees.

The breathing of the patient is always affected, it may be rapid or it may be deep, irregular and labored, with generally a rattling, due to a collection of mucus in the throat.

The pupils of the eyes are generally tightly contracted.

THE EFFECTS OF HUMIDITY.

The effects of humidity are more readily felt in a dry than a moist atmosphere, as the body cools itself much more readily in a dry than in a moist atmosphere. Therefore, persons much more easily withstand high temperatures in a dry atmosphere than in a lower temperature. It is for this reason that sunstroke is much less frequent in dry atmospheres than in the moist atmosphere of India or our own city. This fact also explains the reason why

persons employed in laundries, sugar refineries, kitchens, etc., are much more prone to be attacked by thermic fever than those who are actually exposed to the direct rays of the sun.

The general distinction between sunstroke and heat exhaustion is not generally understood. Many persons imagine that sunstroke is an advanced stage of heat exhaustion. The cases are entirely different. At the base of the brain there are two so-called centres, which are really automatic devices for controlling the production and elimination of bodily heat.

One of these centres, known as the inhibitory heat centre, controls the amount of heat produced, acting as a check upon overproduction. The other centre has to do with the production and dissipation of the heat, or, in other words, sees to it that the ratio between the amount of heat produced and the amount of heat thrown off is kept equal.

EFFECTS OF HOT ATMOSPHERE.

If a man be placed in surroundings which have been shown to be favorable to sunstroke, viz., a moist, hot atmosphere, the production of bodily heat will go on as usual, but the moisture in the atmosphere prevents its rapid elimination thereof, thereby causing an excess of bodily temperature or a mild grade of thermic fever.

After this has continued for a time, the inhibitory centre becomes exhausted or paralyzed, thus losing control over heat production, and at once an excess of bodily heat is generated in all the tissues of the body. Joining in this overproduction, the bodily temperature rapidly increases, and the victim falls, overcome by the heat. This is the generally accepted theory, and if it be correct heat exhaustion is easily explained.

In heat exhaustion, instead of the heat-producing centre being affected, the centre governing heat elimination is paralyzed, the bodily heat is dissipated more rapidly than it can be produced, and exhaustion follows.

The treatment of cases of heat exhaustion in the various city hospitals is practically the same, consisting in stimulation of the circulation and the production of heat. The first is best brought about by the administration of cardiac stimulants, hypodermically, such as digitalis, strychnia, ammonia, and atropine.

USE OF THE HOT BATH.

The demand for an increase in the bodily temperature is met by the application of hot water bottles, or even the use of the hot bath in exceptional cases.

In the treatment of thermic fever cases the greatest indication is to reduce the temperature of the patient, and this is best done by removing the clothing and putting him into a cold bath, the temperature of which is rapidly lowered by the addition of ice.

In severe cases the patient is rubbed with ice while in the bath, the patient is kept in a cool place, with ice bags applied to his

head. The latter treatment is resorted to if there be much indication of distress in the head.

The after treatment is very simple, the patient generally being allowed to leave the hospital in a few days, with the caution to remain away from manual labor, and to keep out of the sun for several days.

Formerly the treatment for sunstroke cases was bleeding, but this never proved very satisfactory, and is now rarely done.—*Selected.*

MEDICINE AS A PROFESSION.

DISCUSSING the prospects of a newly-fledged practitioner of medicine, the *British Medical Journal*, which recently was wholly given up in one issue to the subject of medical education, says:

“Supposing our student to have become fully qualified and registered, he is next confronted with the question, What is he to do to obtain a livelihood? There are, of course, the medical services of the army and navy open by competitive examinations; or, if he has filled the offices of house-physician and house-surgeon at his hospital with credit and distinction, and has some facility for acquiring languages, he may be advised to compete for the Indian Medical Service. . . . Other openings which frequently occur and are advertised in the medical journals are those of assistant medical officers at lunatic asylums, or in the smaller general and special hospitals in London or the provinces, and assistant medical superintendents at the metropolitan infirmaries or fever hospitals; but these, though well enough for a year or two, ought not to be held too long, or the holder is liable to become unfitted for ordinary practice. One form of temptation which the newly-qualified man cannot be too strongly cautioned against is that of the co-operative friendly societies, who seek to engage his whole services at a certain fixed salary, they providing him with drugs and a dispenser, and also with a residence or allowance in lieu of one.

“The General Medical Council has expressed disapproval of medical men taking office under these societies, and the profession, as a rule, fights shy of them, so that the holders find themselves looked upon as black sheep, and cut off from professional society: some of the branches of the British Medical Association have decided not to admit the holders of such appointments to the membership of the branch.

“The newly qualified man who secures an assistantship with a successful practitioner in the suburbs of London or in the country, may expect to receive from £100 to £150 a year indoors, with a prospect of rising, if he is found to contribute to the success of the practice, to perhaps £200 or £250. He will also usually have

a percentage on the midwifery cases which he attends. At the present time, in consequence of the condemnation by the General Medical Council of the employment of unqualified assistants for any duties except such as dispensing, there is said by medical agents to be an abnormally large demand for qualified assistants and an abnormally small supply of them, showing itself, particularly at this season of the year, in a dearth of locum tenentes to supply the place of principals going away on holidays; but the laws of supply and demand will doubtless set this all right within a year or two. . . . Should the practice be a country one in England or Wales, he will find that it is principally made up of three elements, in varying proportion: (1) Private practice, which is, of course, as a rule, the part which pays best; (2) Poor law appointments, generally including that of public vaccinator, which, since the antiseptic method of performing this little operation has been made obligatory and vaccinating stations have been done away with, are better paid for than they used to be; and (3) clubs and friendly societies, which are taken more as an introduction to other practice than for the sake of the remuneration given, which, ranging from 2s. 6d. to 4s. a head per annum, is far too small—certainly the lower figure is—to pay for the actual work done. If the Conciliation Board, proposed by the General Medical Council, is able to bring about, as we have been led to hope, a rise in these contract prices to at least 4s. a year, it will have done a very considerable service, both to our profession, and to the friendly societies.

"It will be seen that from the moment when the student becomes a registered medical practitioner his services have a definite money value, which ought, in the course of years, to give him a fair interest on the capital expended on his education, and, if he be at all successful, by degrees the return of the capital itself. Should he be so fortunately situated as not to have expended the greater part of his capital already, the choice lies before him of either setting up in practice for himself or purchasing a practice or partnership, for which, however, much judgment is required. His safest plan is to consult some well-known medical agent, and under his advice to purchase a partnership after a year's preliminary assistantship."

QUAINT REMEDIES AND IDEAS.

At the last meeting of the New York Historical Society Dr. Sydney H. Carney, jr., read a paper on "The New York Medical Profession in 1800." The better to put his hearers into the proper mental attitude for what he had to say to them, Dr. Carney reminded them that at the time of which he was speaking, peach,

plum, and pear trees flourished in Madison Square, and Babylonian maples and sycamore trees waved their branches as they had done for generations in City Hall Park.

There has been some speculation among the curious as to the prevalence of gripes at bedtime among New Yorkers of a hundred years ago. The remedy for this complaint prescribed by the physicians was nutmeg and brandy, and the yolk of an egg to be taken before going to bed. For apoplexy, salt and cold water were to be used, whereupon the patient was "immediately to come to himself." A toothache remedy efficacious always with one exception in the practice of one physician was to crush a lady-bug between the thumb and forefinger and then to rub the finger on the gum and tooth. Freshly crushed bugs were recommended. For the bite of a mad dog the prescription was an ounce of the jawbone of the dog, some colt's tongue, and a scruple of verdigris, that taken from the coppers of George I. and George II. being preferred, of which compound a teaspoonful a day was to be taken. If that failed to cure, 180 grains of verdigris and half an ounce of calomel were to be given in one dose by a physician in person. If this still failed, four grains of pure opium were given to the patient. This last was a secret remedy so successful that early in the century the State Legislature bought the secret for \$1,000.

For a visit the fee charged was \$1, for a visit and a dose, \$1.25. Pills were 12 cents. Doctors got \$1 a mile for going out of town. It cost \$3 to get one to Brooklyn, and \$10 to have one visit Staten Island. For bleeding, a charge of from \$1 to \$5 was made.

Tadpoles figured in the regimen of that day to such an extent that it is said the people of Vermont, in a season of scarcity, almost fattened on them. And one of New York's famous physicians spent a part of his time in the study of the alimentary qualities of these tid-bits.

WOODEN PROTEST.—"Ah," quoth an Edinburgh gentleman to a manufacturer of artificial limbs, as he was being shown over the latter's busy factory the other day, "these pieces of timber"—pointing to a lot of wooden legs—"are but so many eloquent protests against the horrors of war." "Exactly," answered the manufacturer, "stump speeches."

A DOCTOR once presented himself at the Golden Gates for admission, and after passing a fair examination as to his conduct, Saint Peter agreed to permanently admit him if he could pick out Adam and Eve from the assembled angels. The doctor looked around and soon found his progenitors. But Peter was puzzled, and asked the doctor how in the name of the golden harps had he managed to recognize the first couple. "Oh!" said the doctor, "that is quite easy; they are the only ones without an umbilicus."—*Indian Lancet.*

Proceedings of Societies.

MARITIME MEDICAL ASSOCIATION.

ELEVENTH ANNUAL MEETING, HELD AT HALIFAX, JULY 3RD AND 4TH, 1901.*

THE eleventh annual meeting of the Maritime Medical Association was held at Halifax, Nova Scotia, on July 3rd and 4th, 1901. The President, Dr. W. S. Muir, of Truro, N.S., occupied the chair.

We in Ontario are in the habit of considering the meeting of the Ontario Medical Association a success numerically when we have an attendance of 200 members, *i.e.*, an attendance representing 8 per cent. of the practitioners of the province, there being 2,500 on the Ontario Register. In the Maritime Provinces, however, there are in all about 800 practitioners, and at the recent meeting in Halifax no less than 106 members of the Association were in attendance, representing 13 per cent. of the practitioners in that district.

From that standpoint, therefore, the meeting of the Maritime medical men was a decided success, but in other respects also the visitor was most favorably impressed. The work of the meeting was dispatched in a prompt and business-like manner. The papers were of a high standard, and the animated and interesting discussions were calculated to sustain an unusual interest in the proceedings from the beginning to the end. Marked evidence of this fact was observable in that the reader of the last paper of the meeting had as good a hearing as any other on the programme. The Address in Medicine was read by Dr. H. A. Lafleur, of Montreal, and the Address in Surgery by Dr. A. Primrose, of Toronto.

There is no man better known to the profession of Canada than Dr. Muir, of Truro, the President of the Association. Those of us who have attended the meetings of the Canadian Medical Association have seldom failed to find him there. His executive ability is well known. He has served on the Committee on Dominion Registration, of which he is a warm advocate, at every meeting of the Association since Dr. Roddick first proposed that measure. Dr. Muir was one of three to start the Maritime Medical Association twelve years ago in St. John, Dr. J. W. Daniel

* For this report we are indebted to Dr. A. Primrose, Toronto.

and Dr. George E. Hetherington being the other two. Dr. Daniel occupied the chair, and the necessary resolutions were moved and seconded by Drs. Muir and Hetherington. From this beginning the Association has grown to its present remarkable strength. In addition to his connection with the Maritime Medical Association, Dr. Muir has been Secretary-Treasurer of the Nova Scotia Medical Association for the past fifteen years. This Association is thriving also, as evidenced by the fact that the attendance at Auberst last year (the 32nd annual meeting) was 65. The members of the Maritime Medical Association made a very graceful presentation to Dr. Muir at the banquet; they presented him with a very handsome tantalus in cut glass and mahogany, with silver mountings, also some very chaste china ornaments for Mrs. Muir. This presentation was made in recognition of the great services Dr. Muir has rendered to the medical profession in the Maritime Provinces.

The social side of the recent meeting at Halifax was also a complete success. Halifax presents attractions seldom equalled for such a gathering. Its beautiful park and public gardens, with the magnificent harbor, are universally admired, whilst the general hospitality of the people insures thorough enjoyment to the fortunate sojourner. The Reception Committee, under the energetic chairmanship of Dr. G. Carleton Jones, had looked well after the social side of the programme, the items of which included a garden party given by the Lieutenant-Governor at his beautiful residence on the North West Arm, and a banquet at the Hotel Florence on Bedford Basin on the last evening of the meeting. The banquet was preceded by a sail upon the harbor.

A resolution was adopted at the meeting urging the formation of a Medical Defence Union, a copy of the resolution being sent to the Canadian Medical Association, where it is understood the subject is to be dealt with during the Winnipeg meeting this month.

The medical profession of the Maritime Provinces are to be congratulated on the existence among them of an Association of such real worth. One cannot close this short reference to the meeting without a remark on the untiring efforts of Dr. G. M. Campbell, of Halifax, the efficient Honorary Secretary, to whose untiring labors the success of the meetings is largely due.

THE following gem is taken from the *Cleveland Medical Gazette*: "Mamma, what's twins?" asked the smallest child. "I know," replied the older one, before the mother could answer. "Twins is two babies just the same age. Three babies are trip-lets, four are quadrupeds, and five are centipedes."

The Canadian Journal of Medicine and Surgery

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Doctors will confer a favor by sending news, reports and papers of interest from any section of the country. Individual experience and theories are also solicited. Contributors must kindly remember that all papers, reports, correspondence, etc., must be in our hands by the fifteenth of the month previous to publication.

Advertisements, to insure insertion in the issue of any month, should be sent not later than the tenth of the preceding month.

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NO. 3.

Editorials.

LIQUID ALIMENTS IN DISEASE.

WE are indebted to the editor of *Le Progrès Medical* for a review of Professor Cornet's recent work on the alimentation of patients, and propose to reproduce in this article some of the author's views on the use of liquids in the diet of the sick. Incidentally, it may be remarked, that carefully written books on dietetics have never been, and are not at present, common in medical literature; although

in the treatment of some cases, diet is the more important therapeutic agent and frequently the only really active one required.

Liquids, especially water, are indispensable, especially in fever cases, and sometimes water is the only aliment which can be tolerated. Water is used in a great variety of forms; spring water, filtered water, toast water, infused water (as in tea or coffee), boiled water, or water mixed with honey, lemon, cognac, albumen, mineral water or gaseous waters. Professor Cornet examines all these different forms and indicates their advantages and defects. He mentions the temperature, which water should have at the time it is drunk (more than 9° F. and less than 68° F.). He shows the inconveniences of iced drinks, which spoil the teeth, irritate the stomach, retard and disorder digestion, lower the temperature of the blood, but which have, however, a useful therapeutic effect in nausea and vomiting. He recommends hot infusions (hop and linden), which when drawn have a temperature of about 131° F., so that when they reach the stomach they may have a temperature of about 108° F. Hot drinks increase caloric, excite the motility of the vessels and nerves, and facilitate the chemical reactions of digestion. However, they should not be used to excess, or an individual may end by producing gastric dilatation. In general, people drink too much, but, on the other hand, they should avoid the other excess, a dry diet, which, if used without discernment, may be very hurtful. One should drink, preferably at the end of a meal and in little sips. Exceptionally, in case an individual suffers from thirst, or wishes to relieve pain or excessive acidity of the stomach, he may drink between meals, or a quarter of an hour before meals, in order to attenuate the too powerful action of a hypersecreted gastric juice. In digestive disorders certain liquids should not be permitted; they are wines, beers, cider, perry, artificial aerated waters, liqueurs called aperitive and liqueurs called digestive, although in some cases the physician can make exceptions to this general exclusive law. Coffee, stimulating and diuretic, is useful to the obese, to depressed, nervous people, to hypopeptics, to those with dilated stomachs and to the constipated; its excessive use may cause trembling, palpitation, oppression, neurasthenia, lowering of blood pressure and venous plethora of the abdomen. It is unsuitable for children, the hysterical, the epileptic, for nervous, excitable people and for those who have certain forms of heart disease. It should not be taken in its purity when one is fasting. It should not be given to dyspeptics who have pain or tenderness in the stomach (ulcer,

gastritis, hyperacidity). We may add to coffee, cream, milk, sugar, milk sugar in constipated cases, or eggs. We should not add to it chicory, which is indigestible, nor alcoholic liquors, which cause agreeable but momentary and deceptive sensations.

Professor Cornet considers that tea is inferior to coffee as a drink at the end of a meal, but it may be useful as a stimulant and a hot drink. Drunk between meals, as at five o'clock teas, he thinks that tea is hurtful. For dyspeptics cocoa is not very digestible and chocolate still less so. The digestibility of these aliments is in an inverse ratio to their nutritive value. Meat bouillons and saline solutions exercise a stimulating action, which, according to the case, may be sought for or avoided in dyspeptics. Bouillons often serve as vehicles for yolks of eggs, raw meat, meat powders, artificial albumoses, peptones, etc. One may take them at any moment and at any temperature. Taken before meals bouillon answers as a real aperient.

Professor Cornet recommends milk in diseases of the liver, general hyperpepsia, acute gastritis, chronic gastritis, ulcer of the stomach, and in ulceration of the stomach, duodenum and intestines, in certain diarrheas, dysentery, slight hyperchlorhydria without dilatation. It may be injurious as a liquid in dilatation of the stomach and in atony of the stomach. It is not suitable in hypopepsia and in secreto-motor insufficiency. It should be used with reserve in acute diarrhea, cancer of the stomach, nausea, certain forms of gastritis when there is much flatulence, in intestinal tuberculosis, amyloid degeneration and in constipation. A patient confined to an exclusive milk diet should drink milk at a temperature between 60° and 91° F., in little sips and at regular intervals varying according to the patient. Milk may be diluted with boiled water, mineral water, lime water to make it more digestible, and preferably with the gaseous solution of glycerophosphate of lime or with sugar or cream. In certain cases these last mentioned bodies, if added to milk, may produce acid fermentation and re-awaken pain. When there is distaste for milk one may add to it seltzer water, peppermint water or some table salt. Ordinarily, brandy, rum or whiskey should not be added to milk, and some peptones cause it to coagulate immediately. Condensed milk, milk powder, milk albumen and lactated farina may be useful in certain cases. The therapeutic value of whey is still to be decided, but its alimentary value is very small. Kephir and koumiss are fermented milk, useful in hypopepsia, aepsia,

secreto-motor atony, chronic enteritis, constipation and cancer but they are contra-indicated in hyperpepsia, hyperacidity, ulcer of the stomach and in cardiac cases.

It is needless to state that Professor Cornet's opinion will go far to settle disputed points in the dietetic practice of physicians. By clinical methods one finds out, after a number of years, that, in recommending this or that liquid aliment, generalisation is unsatisfactory. A great prejudice exists in many minds against coffee, and it is quite likely that much of this may be due to the indigestible character of chicory, which in this country is almost universally combined with coffee. The right or wrong prescription of milk in a case of disease of the stomach or intestines may make or mar a medical reputation, so that one must be careful to avoid generalisation in prescribing this favorite liquid for dyspeptics. It is pleasing to see that Professor Cornet does not pin his faith to wine, and it may be that during this twentieth century, owing to his excellent advice, Frenchmen may eat more nutritive food and drink less sour wine.

J. J. C.

IS A DRUGGIST JUSTIFIED IN DIVERTING A SALE OF A PROPRIETARY MEDICINE?

THIS interesting question was discussed in a paper read before the Kentucky Pharmaceutical Association by Mr. C. S. Porter, the paper being published in the July number of the *Western Druggist*, Chicago. The essayist explained at the outset his view of the difference between diversion and substitution. The former he approved of, the latter he condemned. He said: "I claim that a prescription should be filled as written (if correct), even to brand, if possible. . . . But this does not bar me from calling on my friend, the physician, explaining to him that I am prepared to compound these remedial agents into any form or combination that he may desire, that it is to his interest as well as the patient's to have me do so. Nor does this prevent me from making similar combinations, or using the formulas of the National Formulary to meet his needs along these lines. For example, I am justified in diverting his prescription for the compound syrup of hypophosphites from any well-known make or from any of these brands to another, the sale of which is more profitable to me, provided I do not sacrifice quality."

In other words, Mr. Porter claims the right of diverting the

dispensing of one manufacturer's product (quoted in the prescription) to that of another, if it be equally good. Assuming that the products of rival drug houses are of equal quality, there would be no harm in doing as Mr. Porter says, if the prescriber's consent is obtained. A dispensing pharmacist should know the qualities and strength of the different preparations which he handles in the course of his work, and if, to give an example, he should be short of S—'s fluid extract of cascara (quoted in a prescription), there would be no harm in diverting the prescription so that P—'s brand of that preparation is used instead. It certainly does seem unnecessary that a pharmacist should be obliged to keep in stock a large number of duplicate samples of the same drug which have been manufactured by different houses. Under this head, in compounding a prescription, all that can be reasonably asked of a pharmacist by prescriber and patient is that preparations of proved strength and efficacy shall be employed in fabricating the order.

On the other hand, the prescriber may have good and sufficient reasons for preferring certain products of one factory to similar products of another factory, and, in the last resort, he has the right to dictate that, in putting up any of his prescriptions in which a certain brand is mentioned, the dispenser shall not have the privilege of diverting to another brand, even though it be thought to be of "equal quality." Chemical composition and the assay of a drug is one thing, its physiological or clinical behavior is another. A physician who attends closely to the details of his practice, inquiring into the actions of the medicines he prescribes, will observe differences in the actions of similar drugs, prepared by different houses, and he should have the right of choice. Should he not feel any interest in the quality of the preparations he orders, and be satisfied if his prescription reads well, the dispenser is quite justified in looking after his own business interests and in endeavoring to promote the sale of such preparations as he has in stock, instead of going to the expense of buying a fresh preparation, which may not be purer or stronger than those he has already on his shelves.

We do not agree with Mr. Porter's statement that, "if the pharmacists return to the simpler forms of the pharmacopeia, our physicians will again become thinkers and will fit their remedies to their cases and not their cases to their remedies, while pharmacists will cease to be mere peddlers of other people's goods," because the dispensing pharmacist is credited with more than his

share of influence in seducing the doctor from the path of pharmaceutical rectitude. We think that the drug-manufacturing houses of America have had more influence in this direction. The latter deserve unstinted credit for their successful efforts in obtaining rare foreign drugs, for preparing them carefully, and for marketing them in attractive forms. They employ, at great expense, skilful workmen, trained chemists and experienced physiologists. All this we cheerfully acknowledge. But it would be more conducive to the exercise of brain tissue by the physician, more profitable to the dispensing chemist, and more reputable for the manufacturing chemists if the latter would cease turning out ready-made prescriptions. The discovery and trial of new vegetable, animal or chemical substances, together with the manufacture of all regular pharmaceutical products, should be the limit of their ambition. Inasmuch as manufacturing chemists have shown themselves capable of noble enterprises, they should not block the way of pharmaceutical reform. Reforms mature slowly, but in the end the right thing is done. Let us hope that with the added momentum of the twentieth century, physician, dispensing chemist and manufacturer may quickly discover the grosser errors in their behavior towards one another, and that each may assist the other in securing the triumph of the best.

J. J. C.

THE ETIOLOGY OF NOMA.

NOMA, or cancrum oris, is a term used to designate a progressive mortification of the cheeks. It appears at the decline of infectious diseases, especially measles; it may also follow scarlet fever, typhoid, small-pox, or pertussis. It attacks girls more frequently than boys, usually between the ages of two and five years. It is said to be endemic in low, moist countries, as Holland, though apparently it is not contagious.

As one might expect, this special form of gangrene is most frequently observed in children who are sickly and ill-nourished, and who show feeble resistance of the tissues. When the body is vigorous, the reaction provoked by a microbic attack is revealed by suppuration; when the organism is weakened and incapable of sufficient reaction, gangrene develops.

"Freymuth holds that noma is an infectious process, without, however, a specific organism in all cases. Guisetti found pseudo-

diphtheritic bacilli together with staphylococci and streptococci. Foote thinks that noma is due to a double infection." (Anders, A.D. 1900.)

"Babes and Bambilovici think they have succeeded in isolating the special microbe of this disease, which they describe as a long, very slender bacterium. When injected under the skin of a rabbit it develops gangrene at the seat of inoculation. This observation was confirmed by Guisetti in 1896" ("Les Processus Généraux. par MM. Chantemesse et Podwyssotsky, A.D. 1901"). Walsh (Proceedings Phil. Pathological Society, 1901, IV., 179-186) concludes that true diphtheria bacilli are found in many cases of noma, and that, as noma is a form of gangrene, the diphtheria bacillus may be the primary cause, at least in some cases, of the putrefactive softening resulting from the growth of saprophytic germs.

As the editor of the *Journal of the American Medical Association* wisely says, in his editorial, July 13th, 1901: "A larger number of cases (Walsh reports eight) must be studied before the unity or multiplicity of the etiologic factor in noma may be definitely settled." Besides, from the fact that diphtheria antitoxin was successfully used in the treatment of two cases of noma by Freymuth and Petruschky in 1898, it would not follow that noma was caused in these cases by the diphtheria microbe. Anti-diphtheritic serum was used by Dr. Talamon, of the Bichat Hospital, Paris (*La Presse Médicale*, February 22nd, 1901), in the treatment of pneumonia. He treated fifty cases of pneumonia, with seven deaths, *i.e.*, a mortality of 14 per cent., and of these forty-two were undoubtedly alcoholics. No effort, however, was made to show that these cases of pneumonia were etiologically due to the Klebs-Löffler bacillus.

One practical conclusion, however, to draw from considerations about the etiology of noma would be that in treating measles and other acute diseases of childhood, oral antiseptics should be carefully supervised.

J. J. C.

EDITORIAL NOTES.

How is the Contagion of Tuberculosis Conveyed?—As some of our readers may remember, the Committee on Epidemics of the Provincial Board of Health of Ontario issued, June 19th, 1900, a circular containing, among other instructions, a copy as follows of the resolutions dealing with the problem of limiting the spread

of tuberculosis, and especially of that more prevalent and contagious form of it known as consumption :

Moved by Dr. Cassidy, seconded by Dr Bryce :

1st. That as tuberculosis is a contagious and infectious disease, all inmates of provincial institutions who are affected with this disease should be isolated in wards set apart for such patients, and not be permitted to associate generally with other inmates.

2nd. That when rooms or wards which have been occupied by consumptive patients become vacant, they should be disinfected according to the methods set forth by the Provincial Board of Health in the pamphlet issued by it containing rules for checking the spread of contagious disease.

3rd. That an individual affected with tuberculosis and living in a private family should be isolated as much as possible from other members of the household, especial care being taken in the destruction of his expectorations.

4th. That when the room occupied by such a patient becomes vacant, it should be thoroughly disinfected, and, as a matter of prevention, the whole dwelling should be disinfected according to the instructions in the pamphlet regarding disinfection issued by the Provincial Board of Health, and that such other precautions be taken as are provided in Section 101 of the Public Health Act (1897).

5th. That the Local Boards of Health be urged to establish rules for the notification of cases of tuberculosis to the Medical Health Officer or to the secretary of the local Board of the municipality.

As the conviction grows in the minds of the Canadian people that the opinions expressed in these resolutions are well grounded, definite action will be taken to carry them into effect.

Foreign Body in a Case of Appendicitis.—At a meeting of the Anatomical Society of Paris, July 5th, Dr. Weinberg presented, in the name of Dr. Marien (Montreal), an appendix removed from a young man who had been operated on after a third attack of appendicitis. The free extremity of this appendix was very much dilated. The operating surgeon had found a tack of about the third of an inch in length embedded in mucus. Dr. Weinberg stated that the specimen revealed chronic atrophic lesions; its upper part exhibited signs of chronic inflammation, but no well-marked acute lesions. Helminths have been mentioned recently as a cause of appendicitis, and santonin has been successfully used as a remedy. Helminths would not seem, however, to be a common cause, for women, though less subject than men to appendicitis, are just as likely as they are to have helminths in the intestines. Senn thinks that the influence of foreign bodies in producing appendicitis has been greatly overestimated. He found

foreign bodies in only two cases out of a total of more than three hundred operations for appendicitis. He says "fecal concretions are found in from 15 to 20 per cent. of all cases subjected to operative treatment. Fecal concretions are concerned in two distinct ways in the etiology of appendicitis: (1) Their presence causes a mechanical irritation and lesions of the mucous membrane, which serve as an infection atrium for the entrance into the tissues of pathogenic microbes. (2) In case the appendix becomes swollen from mechanical or inflammatory causes, pressure necrosis directly over or around them may ensue, as is so often seen in perforative and gangrenous appendicitis.

The Time of Reaction to Stimuli According to Race or Social Condition.—Dr. L. Lapique gives the result of experiments made in 1893 on the inhabitants of the Andaman Isles, native savages, English convicts and officials, and also more recent experiments made at Paris on persons of different social rank. He concludes that variation in the time of reaction to stimuli is not due, as he first thought, to the position occupied by an individual in the ethnic scale, but to the functional, dynamic condition of the nervous system, which is well known to vary, according to the ensemble of the biological conditions. Thus, the Negritos in replying to tactile excitations, took generally 0.19 of a second; the Hindoos, 0.22; the Europeans, 0.15, the time of reaction in the Hindoos being notably longer than in the Negritos, who are, however, at the bottom of the ladder racially. The results were different when Dr. Lapique studied individuals of the same race occupying different social conditions. Students reacted to excitation in 0.15 of a second; Parisian workwomen in 0.17; alcoholics, fatigued or exhausted persons in 0.18 of a second. The influence of race on the time of reaction is therefore illusory; that of the functional, dynamic nervous system is incontestable.

A Monument to Pasteur.—Pasteur's monument will be more lasting than bronze, yet, though a statue cannot add to his renown, it may serve to indicate the place he holds in the hearts of his countrymen and lovers of scientific greatness the world over. It is regrettable that scientists are not rich, otherwise there would be no difficulty in collecting the necessary funds to pay for the statue. It is rumored, however, that the French sculptor entrusted with the work is so enamored with Pasteur's greatness that he

proposes to do all the work at his own expense. The statue to be erected in the little village of Dole, where Pasteur was born, will be of colossal proportions, and, when finished, will be a great work of art. The total height will be eight metres. The pedestal is a massive round column on a square base, the front of which is decorated with an allegorical group of figures, symbolizing suffering humanity and science bearing a wreath for the departed. Pasteur himself is represented standing in a pensive attitude, with chin lightly supported by one hand, as if engaged in solving some scientific problem. The likeness is said to be perfect.

Can the Clothing of Well People Carry Disease?—The *Hospital* says that "The daily life of every doctor appears to give the lie to any such idea," and it quotes the opinion of Dr. Doty, health officer of the port of New York, that infectious diseases are rarely communicated by means of clothing. Most physicians are of the same opinion, inasmuch as they visit cases of infectious disease and go directly to other patients without change of clothing or other disinfection than washing of the hands. Health inspectors also visit infectious cases in the same manner. In families where scarlet fever exists, the adult members who are actively employed outside, are allowed to continue their business without interruption if they do not enter the apartment of the sick when at home; but in many cases there is not much attempt to avoid contagion in these cases, as the patient roams about the house or apartment at will. Nurses in attendance on cases of contagious disease are in a different position, on account of the prolonged exposure and intimate contact between them and their charges.

The Canadian Medical Association.—Owing to this journal coming out always sharp on the 1st of each month, it was impossible for us to wait to publish the Report of the Canadian Medical Association meeting at Winnipeg, which opened on August 28th, in the September number. We have made arrangements, however, to publish a very full and interesting account of the meeting in next issue.

OLD Trinity Medical School, on Spruce Street, looks particularly well and most attractive after receiving a coat of paint and being otherwise improved and made ready for the coming winter's work.

PERSONALS

DR. R. B. NEVITT left for the Pacific Coast ten days ago.

DR. A. J. JOHNSON returned from England on the 24th of August.

DR. GEIKIE returned from the Maritime Provinces on the 14th ultimo.

DR. ALEX. MCPHEDRAN returned from England on the 20th of August.

DR. AND MRS. A. O. HASTINGS left the city two weeks ago for the lakes.

DR. A. W. MAYBURY is now devoting his time to nose, throat and chest diseases.

DR. YOUNG returned from Atlantic City, N.J., where he had spent two weeks, on the 13th ultimo.

WE beg to tender to Mrs. (Dr.) Overton Macdonald, of 329 College Street, sincere sympathies *re* the sad death of Dr. Macdonald last month.

DR. J. J. CASSIDY, with his family, has been summering at Long Branch. The Doctor has a very fine cottage at that increasingly popular resort.

THE *Canada Lancet* has now passed out of the hands of the medical profession, having been purchased by the Ontario Publishing Company, of Toronto.

DRS. Alex. McPhedran and J. T. Fotheringham, of Toronto, received a very warm welcome at the hands of their brethren in London, while attending the Congress held there.

DR. H. B. ANDERSON was married August 14th, and on his return will occupy the house on Carlton Street recently vacated by Dr. Herbert Bruce, who was his groomsmen.

DR. BRUCE RIORDAN, of Toronto, and Dr. Hutchinson, of Montreal, left for the Pacific Coast two weeks ago, and will be gone a month. They will attend the meeting of the Canadian Medical Association at Winnipeg on their way back.

WE are very glad to know that Dr. D. A. Dobie, who for years practised on McCaul Street, Toronto, but who left for New York some time ago, is doing so well. The Doctor has taken up eye and ear work, and, besides doing a very nice practice of his own, is connected actively with the ophthalmological department of more than one of the hospitals in Greater New York.

The Physician's Library.

BOOK REVIEWS.

Practical Surgery. A Work for the General Practitioner. By NICHOLAS SENN, M.D., Ph D., LL.D., Professor of Surgery, Rush Medical College, Chicago. Handsome octavo volume of 1,133 pages, with 650 illustrations, many in colors. Philadelphia and London: W. B. Saunders & Co. 1901. Cloth, \$6.00 net. Canadian Agents: J. A. Carveth & Co., Toronto, Ont.

As the distinguished author states in his preface, this work is particularly intended for the general practitioner, and there is much appropriateness in this remark, for, of necessity, many minor and some major surgical operations are called for in portions of the country far removed from hospitals. A good knowledge of anatomy and a dexterous hand often enable a surgeon to cope with great difficulties, particularly in emergency work. It is very proper then, that the young practitioner should familiarize himself with all the more important advice and instruction that modern surgery can bring to his aid for the thorough and effective performance of such surgery as may fall to his lot. This, Dr. Senn has very amply supplied.

The work is subdivided into twenty-nine chapters, in which the following subjects are treated: Emergency and military surgery, traumatic shock, general anesthesia and local anesthesia, prophylactic hemostasis and treatment of hemorrhage, wounds and wound treatment with antiseptics, gunshot wounds, rupture of the urethra, fractures (general, special and compound), dislocations, exploratory puncture, subcutaneous and parenchymatous medication, paracentesis and drainage of suppurating joints, septic catheterisation, emergency operations on the air passages, empyema, peritonitis, appendicitis, intestinal obstruction, enterostomy, colostomy, abdominal section, enterorrhaphy, anatomico-pathologic forms of obstruction, strangulated hernia, intestinal fistula, resection of joints, amputations and disarticulations. A full index is supplied.

The author expresses himself with ease and precision. He does not hesitate to offer lessons, drawn from his own operative experience, which has been extensive. The illustrations, many of which are colored, add much to the value and beauty of the work. As a specimen of bookmaking the work reflects great credit on the publishers, the text being clear and legible.

Although rather large for a handbook of surgery, it is just the kind of book a practitioner will cherish as a desk companion.

J. J. C.

Pathologie Générale et Experimentale les Processus Généraux. Histoire Naturelle de la Maladie Héritée—Atrophies—Dégénéscences Concrétions—Gangrènes. Par MM. A. CHANTEMESSE, Professeur de Pathologie Experimentale et comparee à la Faculte de Medecine de l'Universite de Paris; Medecin des Hopitaux; et W. W. PODWYSSOTSKY, Doyen de la Faculte de Medecine d'Odessa; Professeur de Pathologie Générale à la même Faculte. Avec 162 figures en noir et en couleurs, Paris: Ancienne Librairie G. Carre et C. Naud. C. Naud, Editeur, 3, Rue Racine. 1901.

This is the first volume of a work on general pathology, a second volume being promised for next year. The authors, a Frenchman and a Russian, have joined forces and produced a notable work, their aim being the expression of scientific truth without prejudice. As they say, "the experience of a careful practitioner, unskilled in general pathology, was gained in former days by twenty or thirty years of work. Nowadays an equal advantage is within the reach of every hard-working, conscientious student of medicine, who does not begin the study of clinical medicine until he has thoroughly mastered the essential elements of general pathology."

The volume is divided into nine chapters, the following subjects being fully treated: Definition, propagation, course and termination of disease, general etiology of diseases, atrophic disorders of the cellular nutrition, degenerations, albuminoid degenerations, degenerations with coagulation of protoplasm, glycogenic degeneration, fatty degeneration, pigmentary degeneration, incrustations, deposits, concretions, necrosis, mortification and gangrene.

Two indexes are added, a bibliographic index and an alphabetical one. There are many beautiful plates, the colored ones being particularly graphic. The printing is very well done. The volume is bound in paper, but is worthy of a stronger and more ornamental cover.

J. J. C.

Cliniques Medicales Iconographiques. Par MM. P. HAUSHALTER, G. ETIENNE, L. SPILLMAN, CH. THIRY. First number. Paris: C. Naud, Editeur, 3 Rue Racine.

The first number of this atlas bears promise of a most valuable and important work. There are fifty-three figures given, illustrating varieties of progressive muscular atrophy.

The large clinics in nervous diseases in France enable the authors to give a most valuable collection of illustrations. This comparatively obscure and rare affection can be better elucidated through the eye than by any other means.

The most careful verbal description could not always express with as much lucidity the remarkable changes, attitudes, deformities and expressions of these patients. Clinical photography serves to revive with great precision the recollection of analogous conditions previously observed; it gives form to notions otherwise vague concerning morbid conditions verbally described but not observed, and to those that are seldom seen and hurriedly studied; it fixes the external forms and manifest signs in a group of cases whose clinical history may have been most minutely given in terms the most appropriate; and it permits one to bring the salient points into bold relief. It supplies a means for comparison in all cases which resemble each other, and demonstrates at a glance the analogies and differences; it becomes a means for clearing up the limping diagnosis of the physician whose opinion remains undecided in the face of a clinical fact not clearly set forth in any verbal description.

Not only are there cuts which speak almost with the force of living figures, but the text is clear and concise and sufficient in extent to explain the illustrations. The printer's part is so well done that it is a veritable work of art.

B. E. M.

International Clinics. A quarterly of clinical lectures and especially prepared articles on Medicine, Neurology, Surgery, Therapeutics, Obstetrics, Pediatrics, Pathology, Dermatology, Diseases of the Eye, Ear, Nose and Throat, and other topics of interest to students and practitioners, by leading members of the medical profession throughout the world. Edited by HENRY W. CATTELL, M.D., Philadelphia, with the collaboration of Jno. B. Murphy, M.D., Chicago; Alex. D. Blackader, M.D., Montreal; H. C. Wood, M.D., Philadelphia; T. M. Rotch, M.D., Boston; E. Landolt, M.D., Paris; Thos. G. Morton, M.D., and Chas. H. Reed, M.D., Philadelphia; J. W. Ballantyne, M.D., Edinburgh; and John Harold, M.D., London, with regular correspondents in Montreal, London, Paris, Leipsic and Vienna. Vol. II., eleventh series, 1901. Philadelphia: J. B. Lippincott Co. Sole Canadian Agent: Charles Roberts, 1524 Ontario Street, Montreal.

It has been with more than ordinary pleasure that we perused Vol. II. of Series XI., "International Clinics." In a word, it is the best of all, the matter it contains and the manner in which the publishers have done their part being thoroughly up-to-date. The colored plate in the frontispiece showing a mild variola is exceedingly delicate, beautifully executed and as natural as life. The lecture which drew our attention most was that on small-pox, by Dr. J. F. Schamberg, of the Philadelphia Polyclinic. This chapter is exceedingly timely, coming, as it does, when Canada has experienced, and is still experiencing, quite an epidemic of this disease. The author gives a most interesting lecture on variola, and the half-tone illustrations are amongst the finest we have seen, showing the eruption at different stages. Our friend, Dr. A. D. Blackader, of

Montreal, contributes a lecture upon "The Acute Dilatations of the Heart met with during Childhood and Adolescence." The Canadian agent for this series is Charles Roberts, 1524 Ontario Street, Montreal.

Pro Patria. By MAX PEMBERTON, author of "Kronstadt," etc. Illustrations by A. Forestier. Toronto: The Copp, Clark Co.

This new and startling romance of our own times is indeed a "novel" in the true sense of the word, inasmuch as the hero, instead of being a gay cavalier of historical times, is an inanimate thing, being no other than a "tunnel" eating its way beneath the waters of the English Channel.

The narrator of the story is a young Englishman, Alfred Hilliard by name, who for some time has been resident in France, and who becomes accidentally involved in the fate of the "Great Tunnel" by means of which the French intend to satiate their eternal hatred of England.

As an Englishman, Alfred Hilliard feels it his duty to report his discovery to the British Government, but is closely watched by the French to prevent him divulging the great secret of the progress of the tunnel, which is slowly creeping towards his native land. The daring scheme is just frustrated by his efforts when on the brink of success.

Although the plot is visionary, yet it is possible that some day it may become a reality, and this subject of a tunnel under the English Channel makes the story one of absorbing interest to every Englishman.

Bound in our national colors, with a background of kharki, and illustrated beautifully in black and white, "Pro Patria" is a novel which will find its way into multitudes of our best homes.

W. J. W.

Panama and the Sierras: A Doctor's Wander Days. By G. FRANK LYDSTON, M.D.

"The shoemaker to his last and the carpenter to his saw," is an old-time expression and full of much truth. A few doctors have attained some eminence as authors, but they were generally the sons of men who had no idea what avocation their offspring was really intended to follow, and so they were sent to a university and in due time emerged with an M.D. attached to their names, which profession time soon proved they were never destined to follow, as their attainments were to be exerted in a different role in the struggle for existence. If this book is an indication of this particular condition of affairs, the author is certainly not of the class above mentioned, but should have stuck to his chosen profession, where undoubtedly he has achieved much fame, and leave the writing of books to those more capable. The scenic description in some places is fair, the portrayal of Chinese character questionable, and the attempts to be witty are sorrowful. The trip extends from Chicago to New York, thence by steamer to Panama, north along

the western coast of Mexico and California to San Francisco, and finally ends in the worn-out gold fields of California. The book is published by the Riverton Press of Chicago. A. J. H.

The Hygiene of Transmissible Diseases: their Causation, Modes of Dissemination and Methods of Prevention. By A. C. ABBOTT, M.D., Professor of Hygiene and Bacteriology, University of Pennsylvania. Third edition, revised and enlarged. Octavo, 351 pages, with numerous illustrations. Philadelphia and London: W. B. Saunders & Co. Canadian agents, J. A. Carveth & Co., Toronto. Cloth, \$2.50 net.

There is no branch of medical study which has made such strides during the past few years as the causation, methods of dissemination and prophylaxis of disease. Hardly a year elapses that some new thing is not advanced as to the manner in which some of the specific infectious diseases are spread, so that a work upon that subject without constant revision would very soon become stale and obsolete. Dr. Abbott's "Transmissible Diseases" received a good reception when first placed in the hands of the medical profession and deservedly so; but his third edition is still better, being fully and in every respect up-to-date and modern in the opinions expressed. The twenty pages devoted to those diseases due to animal parasites are full of interest and well worthy of careful perusal, proving how important a part may be played by the animal kingdom in the dissemination of disease.

Purulent Nasal Discharges, their Diagnosis and Treatment. By HERBERT TILLEY, M.D., B.S. (Lond.), F.R.C.S. (Eng.). Surgeon to the Throat Hospital, Golden Square; Lecturer in Diseases of the Nose and Throat, London Post-graduate College. London: H. K. Lewis, 1901. Pp. 133. Price, 4s.

In no department of medical science has there been greater advance during the last few years than in our knowledge of chronic suppuration of the accessory cavities of the nose. This knowledge is hidden away in the pages of the journals devoted to rhinology; but little has filtered into the text-books devoted to diseases of the nose, still less into those devoted to general surgery. Dr. Tilley has delivered some lectures on this subject, and these form the basis of the present book. The standard work on the subject is Grunwald's "Nasal Suppuration." This may well be read as an addendum. J. M. M.

Sexual Hygiene. Compiled from books, articles, and documents, many not heretofore published, by the editorial staff of *The Alkaloidal Clinic*. Chicago: The Clinic Publishing Co., 1901.

A subject such as this has been avoided altogether too much by writers during late years. This is due to a sense of pro-

priety, no doubt, or one of ultra modesty, shall we call it. No physician, no matter what amount of study he may have given to the subject, but feels that he might be criticized were he to launch forth and put in writing what he feels, and that correctly, even his fellow-practitioners know too little about. There is very little doubt that it is due to this idea of modesty that a wider knowledge in matters of sexual hygiene is not more general, and the profession are under a debt of gratitude to the publishers of this little book for the valuable matter contained within its pages. It is full of practical facts—facts which it would be well were they to become more disseminated, and by that means the public well the better considered. The book is divided into twenty-seven short chapters, and can be procured by any physician from the publishers for the small sum of one dollar.

Atlas and Epitome of Obstetric Diagnosis and Treatment. By DR. O. SHAEFFER, of Heidelberg. From the second revised German edition. Edited by J. CLIFTON EDGAR, M.D., Professor of Obstetrics and Clinical Midwifery, Cornell University Medical School. With 122 colored figures on 56 plates, 38 illustrations, and 317 pages of text. Philadelphia and London: W. B. Saunders & Co. 1901. Cloth, \$3.00 net. Canadian Agents: J. A. Carveth & Co., Toronto.

This volume takes up the different and more frequently recurring obstetrical operations, and there are but few general practitioners who will not be well repaid by a careful study of the book. How often does it occur that a physician comes unexpectedly face to face with an obstetrical case which puzzles him as to treatment. The mere perusal of one or two of the fine lithographic illustrations contained in Dr. Shaeffer's Atlas will often be enough to simplify just such a case, so true to life and natural are they. The Atlas goes into the symptomatology, diagnosis and prognosis very well, the whole book striking us as being not merely an adjunct to the larger text-book, but more valuable than many works double the size.

Golden Rules of Hygiene. By F. J. WALDO, M.A., M.D. (Cantab.) D.P.H., Barrister-at-law, etc. "Golden Rule" Series No. X. Bristol: John Wright & Co. London: Simpkin, Marshall, Hamilton, Kent Company, Limited.

This is one of the "Golden Rule" series, and is of waistcoat pocket size.

The writing of so condensed a work on hygiene is a more difficult feat than the preparation of a more pretentious work would be.

Essentials only are given. Such a book should be popularized, as it tends to give accurate ideas on hygiene to people who would

not otherwise read a line on the subject except in a newspaper. It may also serve as a remembrancer to those who know something of the subject. The prominent points under (1) Air, (2) Water, (3) Disposal of Refuse, (4) Food, (5) Infectious Diseases, are put briefly but cogently.

J. J. C.

Essentials of Refraction and of Diseases of the Eye. By EDWARD JACKSON, A.M., M.D., Emeritus Professor of Diseases of the Eye in the Philadelphia Polyclinic. Third edition, revised and enlarged, 12mo, 261 pages, 82 illustrations. Philadelphia and London: W. B. Saunders & Co., 1901. Toronto: J. A. Carveth & Co. Cloth, \$1.00 net.

This edition has been revised and very much enlarged, and is consequently more complete and more symmetrical than the earlier editions. Injuries of the eye by traumatism, and the ocular symptoms and lesions of general disease are now given a consideration proportioned to their importance to the general practitioner. The entire ground is covered, and the points that most need careful elucidation are made clear and easy.

J. M. M.

Etidorpha, or the End of Earth. The Strange History of a Mysterious Being and the Account of a Remarkable Journey. By JOHN URI LLOYD, author of "Stringtown on the Pike," with many illustrations by J. Augustus Knapp. Eleventh edition, revised and enlarged. New York: Dodd, Mead & Co., 1901.

A rich blending of fiction and science, a combination rarely successful; but here the deeper reasoning on such scientific matters as heat, light and gravitation are presented to the reader in such a fascinating and clear manner that he is astonished to find what a large amount of useful knowledge he has acquired while buried in this strange romance. Certainly the holiday kit will not be complete without it.

W. H. P.

The Observations of Henry. By JEROME K. JEROME. Toronto: The Copp, Clark Co., Limited. Cloth.

Jerome's short stories, or rather the bits of human clay he uses upon which to build his tales, are often as surprising to the reader as the dose of quinine concealed in the chocolate drop to the physician's small patient. Very diverting are *The Observations of Henry*, the waiter, who tells of the people he waits on in the London coffee houses, then as he ascends the ladder and gains prestige as a "slinger up of the hash" he becomes "Henri," and goes to the continent. His experiences are numerous, varied, very droll, and well told. In a word, this small book can be read aloud in the bosom of one's family ere the clock cuckoos the midnight hour.

W. A. V.

The Canadian Year Book for 1901. Fourth year, 25 cents. All about Canada. Published by Alfred Hewett, Toronto.

To any one wanting information of any kind about any part of this Canada of ours, we respectfully but emphatically refer them to *The Canadian Year Book* for the current year. It is the cheapest 25 cents worth of information procurable. Go to it if you want to know all about the Tariff of Customs, List of Post Offices in Canada; all about the Ontario Agricultural College and Experimental Farm, the list of Governors-General, Lieutenant-Governors, Senators, Members of Parliament, Militia List, and Sporting Record. *The Canadian Year Book* is truly a "*multum in parvo.*"

Doom Castle: A Romance. By NEIL MUNRO. Toronto: The Copp Clark Co., Limited. Edinburgh and London: William Blackwood & Sons.

"*Doom Castle*" is a most fascinating description of the life and adventures of a French nobleman in the Highlands of Scotland. The scene is laid in Argyleshire in the year 1755. The skilful introduction of the Jacobite conspiracies lends color and interest to the romance. The plot is well sustained; the descriptions of Highland character and scenery are very cleverly sketched. It is altogether a delightful book and well merits a careful perusal.

J. J. C.

PUBLISHER'S DEPARTMENT.

At the Ninth International Congress for Hygiene and Demography, held in Madrid in April, 1898, Professor Finkler, of Bonn, made his first communication on Tropon, under the title of "Albumen Nutrient." He said as follows: "Through the courtesy of Professor Finkler I received a quantum of Tropon several months ago with which I began my experiments in feeding tuberculous patients. The results were so encouraging that I wrote for an additional supply. I selected patients with whom I had had unusual difficulty in increasing their weight, with some among them on account of their aversion to fats. To summarize the results obtained, I may say that with from one to two ounces per day the average gain in twenty days was about one pound and a half, including one case with negative results. I must, however, add that these patients were mostly ambulant. In Weicker's sanatorium in Goerbersdorf, where patients in all stages of the disease are admitted, from out of eighteen cases fifteen responded to the treatment, gaining in the average 2½ pounds in four weeks. The relatively better results obtained in the sanatorium must be ascribed to a better supervision and a more regular administration of the Tropon than is possible with ambulant patients. Tropon has since been extensively used with satisfactory results in the clinics of von Leyden and Senator in Berlin; Schmilinsky and Kleine in Hamburg."



THERMOL is a white, crystalline, odorless and tasteless synthetic alkaloid. It is the best heat dissipator of the synthetics, because of the removal of the phenyl or anilin poisonous properties during the process of manufacture. There is, therefore, no need of associating any heart stimulant along with it to keep it from doing harm, because it is not of itself a heart depressant, being absolutely safe to use alone even in the presence of cardiac disease.

Thermol is a true *thermotaxic*, and acts by restoring the normal heat-regulating powers of the nervous system. It prevents the formation of heat by stopping increased tissue combustion through its sedative and controlling influence over the nervous centre. It increases arterial pressure by stimulating the heart and vasomotor system. Its force, in alliance with the forces of nature, combats disease force.

The *analgesic* action of Thermol is as energetic and permanent as its antipyretic. This valuable property makes it an effective remedy in *neuralgia*, *rheumatism*, *gout*, etc., which fact, along with its safety in regard to the affected heart, makes it a valuable acquisition to the physician's armamentarium. Its action on the spinal cord renders it quite serviceable in *pertussis hysteria* and *asthma*.

The *nerve calming and soothing* effects of Thermol give it an agreeable soporific sensation that is especially gratifying to sufferers from *typhoid* and *similar diseases*, on account of the natural refreshing sleep it produces.

Thermol is also an *antiseptic*, exerting this valuable property both in the gastro-intestinal tract, and in the blood, and thus inhibits the culture of the germ of the disease. This property seems very manifest in *typhoid fever* and *pneumonia*. In fact, it seems to be almost a specific, and able to abort many cases when administered at the beginning of these diseases.

Having come to a knowledge that its physiological action is that of an analgesic antipyretic, nerve calmative and antiseptic in the blood, we pass on to its use in *la grippe*, and *pneumonia*, where it

combines all four of these strong qualities, and has often proven itself a matchless remedy in 5 to 8 grain doses. Its efficiency in these diseases it positively seems to have no equal. The *dose* is to be regulated according to the severity of the febrile attack, with this assurance, that the remedy is not injurious, and that there will be no distressing after-effects when we come to its use.

In *phthisis* we find that it requires but a small dose to afford quite a relief, and gives much needed sleep.

In *typhoid*, *malaria*, and *scarlet fevers* Thermol should be given in 3 to 5 grain doses through the whole course of the disease, because of its antiseptic properties in the blood. In these diseases it maintains a moist skin and mucous membranes, a quiet, restful condition, preventing delirium and other unpleasant nervous symptoms, maintains elimination, saves exhaustion of the patient, and thus *preserves the tissues of the body* better than any other known remedy or treatment.

In *pertussis*, in 1-2 to 3 grains every two to five hours, it ameliorates the severity and frequency of the paroxysms. Being tasteless, children do not object to it.

In *dysmenorrhea*, *gout*, *rheumatism*, *neur¹gia*, *angina pectoris*, *nervous headache*, we find that Thermol does its work quietly and gradually, but very effectively, in 5 to 15 grain doses. Its peculiar cooling and soothing properties are much appreciated by sufferers from *migraine*.



The reason why salicylic acid has, of late years, lost prestige in the treatment of rheumatism has been solved by Prof. Charteris, of Glasgow. He has found that the *synthetic* or *artificial* salicylic acid (which is made from carbolic acid) contains such toxic substances as cresotic, parahydroxy-benzoic and hydroxysophalic acids, and that ten grains of the salicylic acid obtained from coal tar will kill a rabbit weighing two and one-half pounds, whilst the *natural* salicylic acid obtained from natural oil of wintergreen has no injurious effects whatever on a rabbit of the same weight. The *true*

or *pure natural salicylic acid* is possessed of strong antiseptic and antipyretic properties, in addition to it being an antidote for the uric acid diathesis, and is, as shown by Prof. Charteris, free from heart depressing qualities. This pure natural salicylic acid combined with the alkaloids colehicine and themol forms a triple alliance that will afford positive relief in all true rheumatic and gouty conditions and hasten the elimination of urea and uric acid from the system. The best results are obtained by administering a tablet every hour for 12 to 15 consecutive hours each day.



Iodomuth is a new preparation of bismuth containing 25 per cent. of iodine in a permanent and unirritating form. In color, it is of a reddish brown; in form, it is an impalpable powder, and is both odorless and tasteless.

The physiological action of Iodomuth is that of an alterative and stimulating antiseptic, possessing desiccating, deodorizing and sedative properties.

The uses of Iodomuth are many, because it is undoubtedly "the *par excellent* healing agent." As an alterative and stimulating antiseptic, without odor or irritating qualities, it is much superior to iodoform, both internally and externally, in its wide field of usefulness. Its desiccating properties render it very valuable as a hemostatic in dental and minor surgery, and in gastric or intestinal hemorrhage. The deodorizing and sedative properties of Iodomuth cause it to be of good service in the treatment of catarrhal and ulcerative conditions, more especially of the stomach and intestines. Theoretically, Iodomuth should be remarkably curative in gastro-enteritis, dysentery, cholera infantum, or summer complaint. Practical experience at the bedside has proven that it is, and that it does its work better, than any other remedy.

The use of Iodomuth as an external application, either in the form of a dusting powder or in an ointment, is quite extensive, as learned by a knowledge of its physiological action. In obstinate cases of rhinitis and suppurative otitis media "it is more efficient

than any other dusting powder." In indolent, or leg ulcers, it is a most valuable remedy. In chancroidal, syphilitic, or tubercular sores, Iodomuth is superior in all respects to any other medicinal agent. When given internally, the dose of Iodomuth is the same as in other bismuth preparations, namely, from one to ten grains, as occasion requires.



The natural phenol—guaiacol—is one of the most satisfactory remedies for internal medication in the treatment of pulmonary tuberculosis. The manner of its action is thought to be "through the formation of compounds in the blood, with the toxins produced by the presence of the tubercle bacillus in the organism, and assists in their elimination from the system"; and as a bitter tonic to the stomach, thereby increasing the amount of the digestive fluids and enhancing good assimilation, thus producing a gradual restoration of flesh and strength.

But the taste and smell of plain guaiacol are so objectionable, that the continued use of the remedy—which is so essential—cannot be kept on with.

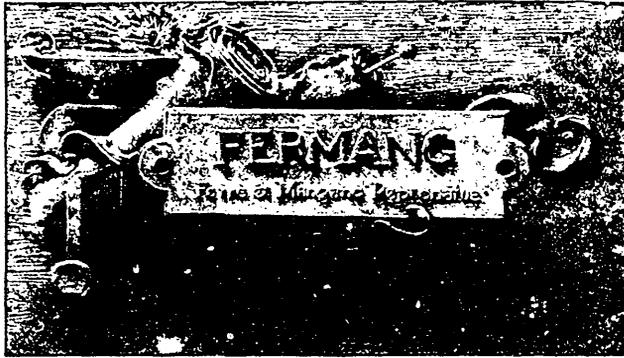
This serious objection has been overcome in our organic compound—Guaialin, a white, crystalline, odorless and tasteless powder, which contains 55 per cent. of pure guaiacol, and at the same time *nonirritating* and readily assimilated.

Retaining all the good qualities of guaiacol, Guaialin is a mild antipyretic and analgesic, and an elegant antiseptic in all stomach and bowel troubles.

Under the continued use of guaialin in the early stages of pulmonary tuberculosis the number of bacilli grow less, coughing becomes easier, expectoration lessened, night sweats diminished, and the general physical signs improve under its influence.

Guaialin is very beneficial in bronchitis and influenza, as well as in pneumonia.

It may be administered either in powder or capsules, and the adult dose should be 5 to 8 grains every four hours, and gradually increased until twice that quantity is given.



Fermang is the name of our true organic union of iron, manganese and peptone, which contains .6 per cent. of iron and .2 per cent. of manganese.

Preparations claiming to be Peptonate compounds have become quite numerous. They are all represented as having special merits in the attainment of an easy absorption and administration where iron and manganese are medicinally required.

For a moment let us consider what is intended to be accomplished by these newer organic compounds as contrasted with the older recognized standard preparations.

Where the object is to impress the tissues with which they come in contact in the act of ingestion, or while present in the alimentary canal; where the contents of the viscus into which they enter are to be affected by their chemical or physical properties; in other words, when astringency, irritation, antiseptics or decomposition are to be affected by action on the absorbing membrane, or on the substances with which it is physiologically concerned, then the older drugs are probably best suited for the work. But where it is desired that the blood and tissues should be reached by a substance capable of exercising a restorative and specific influence, with the least incidental change either in the drug or in the organs concerned in introducing it, then the newer compounds will be far the more available. Such conditions as anemia and chlorosis are due to the lack of certain organic constituents of the economy, which the laboratory can furnish ready for immediate assimilation. To introduce these in the most direct manner is the ideal achievement of the therapist.

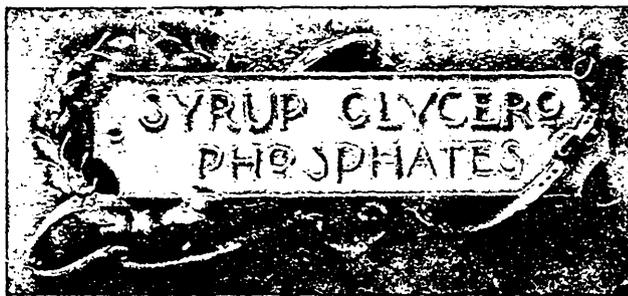
To be wholly desirable, a preparation of this nature should have sufficient permanence of chemical constitution to reach the blood in the state in which it is swallowed; should be non-toxic, should rapidly restore the normal corpuscular standard of the blood, and should be without disturbing effect on the digestive processes.

Clinical observation, which by this time has been quite extensive, has proved all these properties existent in a high degree in Fermang.

Drop a little tannic acid in Fermang and note the absence of tannate of iron; thus proving the true organic compound.



The stools are not blackened nor changed from the normal while Fermang is administered. It also proves that the metallic elements are not precipitated from the solutions, and that the *entire* dose is absorbed. No constipation ensues, and the digestion is in no way deranged.



The recent great strides in organic chemistry have enabled us to produce in our laboratory a physiological compound of phosphorus in the form of a Syrup of Glycerio-Phosphates, which comprises the glycerio-phosphates of iron and manganese, strychnin and quinin, and calcium, sodium and potassium.

The *raison d'être* for our placing this compound upon an already overcrowded market, is because science has proven that the phosphorus of the system is found as an organic compound, or

rather as a glycerophosphate, a constituent of lecithin ($C_{44} H_{90} N P O_6$). The latter is a glycerophosphate of neurin, which is an essential constituent of the brain and nervous system. The glycerophosphates are absorbed directly into the system, and do not need to be chemically changed or digested in the stomach, as do the inorganic preparations.

In cases of nervous exhaustion and similar debilitating diseases, a large proportion of phosphorus, in combination with organic substances, is excreted by the kidneys and found in the urine, thus showing an increased loss of the lecithin of the system.

In its physiological action, syrup of Glycerophosphates accelerates metabolism, favors the assimilation of food-phosphates and of albuminoid substances, and increases the excretion of nitrogen, thus tending to lower the proportion of uric acid to urea, although it does not influence the formation of uric acid. It affords a protective influence to the combined phosphorus in the system, and causes a marked increase in the number of red blood corpuscles, as well as increasing the appetite and general weight. It diminishes glandular activity but stimulates tissue change.

Clinically, our Syrup of Glycerophosphates Comp. is indicated in all conditions of nitrogenous waste, which are associated with an increased quantity of phosphates in the urine, as for example: In chlorosis, diabetes, chronic nephritis, gout, uric acid diathesis, obesity, muscular atrophy, asthma, phthisis pulmonalis, phosphaturia, sexual exhaustion, the impotency of old age, convalescence from acute diseases, neurasthenia, exophthalmic goitre, sciatica, Graves' disease, etc., etc.

The dose is from 1 to 4 teaspoonfuls, plain or diluted in water, four times a day. Each teaspoonful contains the equivalent of 1-120th grain strychnin.

The Syrup of Glycerophosphates Comp. has proven itself a remarkable tissue-builder and reconstituent.

A REFLECTION.—“In your advertisement,” said the man with the suave manner, as he entered the office of the ice company, “You say there are no microbes on the ice that you furnish to your customers.” “Yes, sir,” replied the treasurer, as he placed a blotter in front of his diamond stud so that the caller would not have to blink, “and we stand by our assertion.” “I stand by it too,” said the man with the suave manner, “and I have called to say that, as I have no fear of microbes, believing they are harmless, I wish you would direct your delivery man to leave at my residence in the future ice of such dimensions that two or three microbes, if they felt so inclined, could occupy it without crowding each other.”—*Harper's Bazaar*.