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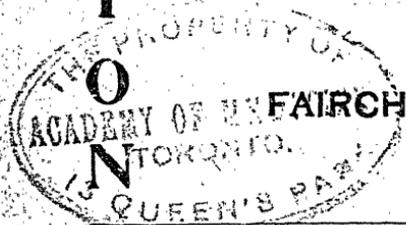
Vol. XV.

HALIFAX, NOVA SCOTIA, SEPTEMBER, 1903.

No. 9.

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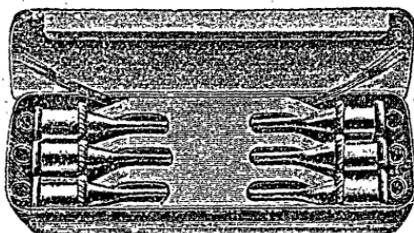
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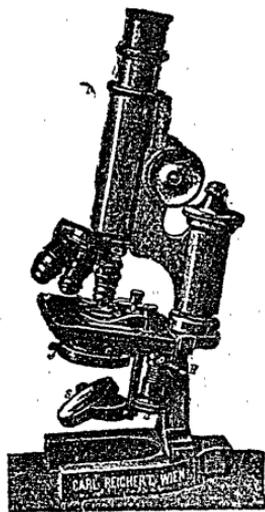
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MARITIME MEDICAL NEWS.

A MONTHLY JOURNAL OF MEDICINE AND SURGERY.

EDITORS.

D. A. CAMPBELL, M.D. Halifax, N.S.	JOHN STEWART, M. B. Halifax, N.S.
J. W. DANIEL, M.D., M.R.C.S. St. John, N.B.	W. H. HATTIE, M. D. Halifax, N.S.
MURRAY MACLAREN, M.D., M.R.C.S., St. John, N.B.	R. MACNEILL, M. D. Charlottetown, P. E. I.
JAMES ROSS, M. D., Halifax, N. S.	

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THE MARITIME MEDICAL NEWS.

A MONTHLY JOURNAL OF MEDICINE AND SURGERY.

VOL. XV. HALIFAX, N. S., SEPTEMBER, 1903. No. 9

Original Communications.

THE DIFFERENTIAL DIAGNOSIS OF SMALL-POX.*

By GEO. G. MELVIN, M. D., Dermatologist to Home for Incurables, etc.,
St. John, N. B.

Some subjects are of unfailing interest because of their intrinsic importance. Others are noteworthy, not because of any great importance in themselves, but by reason of some seasonable or local curiosity attaching to them. The topic which forms the heading of this paper, I think it will be admitted, is important from both stand-points. Certainly, there is no disease, excepting tuberculosis, perhaps, to which there attaches a greater interest, or is in itself more important than small-pox, and that the question of the existence or non-existence of the disease in the centre of this province is what the politicians call a "burning one," will not, I think, be denied. Before proceeding further, it may be needful to say that any remarks I may make with reference to the last mentioned matter will be purely academic, as I have not had the privilege of seeing any of the cases in dispute. To discuss the question of the diagnosis of small-pox, that is to say, of genuine virulent unmodified variola, would be like announcing that "the Dutch have taken Holland"; it would be going over something that has been definitely settled in the profession for two hundred years. Indeed, a blind, deaf mute could diagnose a straight-forward case of small-pox. All he need do would be to use his finger-tips; the far-famed "shotty" condition would tell him the whole story. But since the introduction and almost universal application of vaccination, small-pox has ceased, clinically, to be the disease it once was. It is no longer the most easily recognized of all disorders. So pronounced has this become, that an entirely new name is required to describe this condition, and, in our practical acquaintance with it, probably three-fourths of the cases seen deserve

*Read before the Maritime Medical Association, St. John, N. B., July 22nd, 1903.

the term varioloid instead of variola. And even this is not all. Varioloid is a modification stretching between wide extremes; from a condition but little removed from the classical disease to a state very little different from the normal condition of health. Yet, as every one knows, this apparently trivial phase of the disease is just as dangerous, so far as contagion and reproduction are concerned, as the most violent instances of the hæmorrhagic or "black" type.

In order, then, to approach the subject in a practical and judicious manner, several separate ideas must be noted and discussed. First among them is to definitely determine the class of disease in which it is proper to place small-pox; second, the diseases which most resemble it; and third, and by no means least important, the quantity and quality of knowledge requisite in the examiner to properly recognize and classify it. To those three headings then, with your kind permission, I will address myself, in as brief but as clear a manner as possible.

(I.) The principle of evolution, so strikingly promulgated in the middle of the preceding century by the profound and almost divine genius of Darwin, leaves it scarcely a matter of doubt but that mankind at first was affected by only a few, possibly only one, primordial disease. What that disease was, is, of course, far beyond the power of any one to say, or even to speculate upon, with anything like probability. The universal law of evolution, acting in this, as in every other department of nature, gradually differentiated the kinds and multiplied the number of those diseases. Even to-day we can trace, dimly indeed, yet clearly enough for our purpose, collateral lines between many of our most important disorders. For example: those diseases attacking the lower intestinal tract, as ordinary diarrhœa, cholera morbus, typhoid fever, typhus fever, yellow fever and Asiatic cholera, are all, to my mind, undoubtedly descended in successive or parallel lines from one ancient type. They are all germ-produced, and that fact alone serves to solve the riddle of their causation and connection. If one species of pigeon has given rise to scores of varieties, all differing in appearance, manners, and favorite location: if one species of rose has, in like manner, evolved into a hundred, it does not require a very great stretch of the imagination to conceive of one species of germ being similarly evolved into a dozen or so, collateral, and yet distinct types, each having its own method of propagation, its own favorite location, and its own method of manifesting its effects upon the human economy. A similar parallel could be drawn between a dozen or so diseases affecting the respiratory organs, and above all, because so apparent to the eye and touch, we see a very great number of diseases of the skin undoubtedly arising or descending from one primeval progenitor. All of us, with a taste for history, know perfectly well that even within historic times, a space of not, at the outside, more than 3000 years, many of

those diseases were regarded as identical. It is no answer to reply that this was merely the result of ignorance. To differentiate many of these disorders does not require a profound knowledge of medicine in all its branches. What commonly intelligent man, accustomed to meet with disease, could confound a typical case of measles with a like case of scarlet fever? Yet no such distinction was known to the ancients. Were they, then, not only ignorant, but also stupid? We know the contrary. No more brilliant minds existed than those of some two thousand years ago, among the Grecian philosophers and physicians. We are, therefore, forced to the inevitable conclusion that at that time, and for long afterwards, there were not the well-established boundary-lines between many of the allied diseases that there are at present. As time went by, those germs showed more and more predilection for particular parts of the human body. I have elsewhere* discussed the remarkable favoritism of the tubercle bacillus for localized situations, this peculiarity being so pronounced that it is becoming more than probable that, even in this one species of micro-organism, there are several distinct varieties. The celebrated distinction recognized by Koch between the human and bovine varieties, brings additional force to this hypothesis. This fairly well-defined law of segregation among germs led, early in the history of disease, to the classification of the so-called "local" diseases. It was not without difficulty, however, that this term, with its underlying idea, came to be incorporated into medical science. Indeed, there are not wanting yet, many authorities of very reputable standing that deny that there is, properly speaking, any such thing as a "local" disease. It is not my intention to enter upon this controversy; we all know the "pros and cons" of it already, and, also, that if strictly in theory, there be no such thing as a disease attacking one organ of the body to the utter exclusion of all others, yet in practice it is so, and that scarcely anything in the way of classification has done more for the advancement and convenience of medicine than this principle. But small-pox, for long, was denied a place in this category, and I am not at all sure that there is any great degree of unanimity yet, even among the present distinguished audience, upon the subject. But, I most humbly submit, until such acknowledgement has been made, and small-pox be clearly recognized as, purely and simply, so far as any disease can be restricted to one organ, a disease of the skin, no great progress can be attained in its prevention and treatment, and doubt and disturbance will continue to dog the path of the observer concerned in its detection and recognition. Here, permit me to say again, that I am quite aware that such a statement will not be accepted by, perhaps, a majority of

* *Vide* article, by author, "Report of One Hundred and Fifty Cases of Skin Disease," in the News, Feb., 1901.

those listening to me, but for that I am not responsible. It is not very long ago that I heard an old and very much respected member of the profession declare that the most important symptom in small-pox was the pain in the back! That, in a nut-shell, illustrates the stand-point,—the erroneous stand-point, I respectfully contend, from which it is viewed by a great number of our physicians, even yet. The truth, however, is slowly making its way. It is well known, although I have spoken of variola as a germ-produced disease, that its specific cause has not yet been isolated. Recently, however, Dr. Councilman, in a "Preliminary Communication on the Etiology of Small-pox," announces that he has succeeded in isolating a germ that apparently satisfies all conditions necessary to be the true causative factor in this disease. Though not specially german to our subject, it may be stated that, unlike the majority of important pathological germs heretofore discovered, it belongs, not to the vegetable, but to the animal kingdom. In other words it may be classed with the protozoa, and in this respect is akin to the famous and recently differentiated cause of malaria. I regret very much my inability to have had access to the original monograph, but I quote from an apparently trustworthy review of it. He enters, at considerable length, upon the life-history and mode of operation of the germ in the human economy; but the point to which I wish especially to give emphasis is his description of the final action of the germ just previous to the beginnings of the clinical manifestations of the disease in the human subject. It is first necessary to say that he believes the germ to be the common causative factor in variola and cow-pox, or vaccinia. I quote: "The whole process, as now known, takes place in the lower layers of the skin, where the germ penetrates the epithelial cells and takes up its cycle of development. In cow-pox it is chiefly amœboid in character, and does not involve the nucleus of the skin-cell. In small-pox, on the other hand, it grows and there enters the nucleus of the skin-cell, where it undergoes an apparently sexual generation, ending in the breaking down of the nucleus, the dispersion of the spores, and the setting up of the fever which constitutes the seizure of the disease, and the pustules which follow closely upon it." He does not claim that it alone is concerned in the whole of the pus formation, as, undoubtedly, the well-known pus bacteria here play also a part. "It is, however," he says, "the efficient and main cause." The reason I have given this point such attention is, I think, clear. Nothing could more lucidly point out the purely dermal and local character of the disease. Just so surely as the germ of typhoid has an extreme predilection for Peyer's patches in the intestines, so surely does the germ of small-

pox pick out the skin to pursue its life-course.* If more proof of the cutaneous nature of the disease were wanting, it would be seen in the remarkable success obtained in the treatment of the disease by enveloping the patient in blue light. Recent experiments have proved that this procedure cuts short the fever, aborts the pustules and entirely prevents pitting. Having then, I think, shown that the disease is essentially a skin one, a very great step forward has been taken as to its diagnosis. To an audience of general practitioners it is, perhaps, necessary to say that skin-diseases depend almost wholly on objective symptoms, or, as Flint very properly called them, signs, for their diagnosis. In fact, this should be true of nearly all diseases. We constantly place far too much stress on the subjective symptoms: upon what our patients tell us. They may deceive us, consciously or unconsciously, but we can, or ought to be able to, depend upon what we can see, hear and feel. Therefore, I reiterate, when coming to a suspected small-pox case, we should firmly and unswervingly cast aside all ideas relative to the patient's story and look upon the true seat of the disease—the skin—with unbiassed and unprejudiced eyes. Should the case be small-pox, modified or unmodified, what shall we see or feel? I reply, in every instance, papules, in some phase of their development and situation, either under the horny layer, upon a level with it, or raised above it, and either true papules, vesicles or pustules. I make no mention of number. This may vary from, possibly, one or half a dozen to very many hundreds. But, unless there be papules, or their successors, I hold there can be no diagnosis of small-pox. We have here a local irritant, the suspected causative germ. Irritation, everywhere, causes inflammation, which is nothing more or less than a temporary increased flow of blood to the irritated part. This increased blood supply lays down or builds up an abnormal tissue, abnormal both in kind and degree. This tissue is a tumor—this tumor is the papule. The causative factor of cancer, whatever it may be, is likewise an irritant, a precursor of local inflammation—a builder-up of abnormal or debased tissue: the procedure is the same, or very similar, in both cases, one being acute, the other chronic. In the small-pox instance, this occurs in the *cutis vera*, and according to a natural law—the law of least

*Since writing the above I have noted the following, which further demonstrates the peculiar affinity of pathological germs for particular locations in the system:

Proliferation in Micro-Parasitic Infections:—

“In the case of the so-called toxin bodies, their selective activity on certain tissues and cells is well known—for example, the tetanus toxin, which acts selectively on the cells of the central nervous system. In the same way, certain microparasites exert this reproduction reaction specifically—for example, the *coccidium oviforme* excites proliferation on the epithelial cells of the bile ducts; the infective agent of syphilis excites proliferation on the connective tissue cells.”—KEITH W. MONSARRAT, M. B., F. R. S. C., Edin., in “Etiology of New Growths.” (Brit. Med. Jour., June 27, 1903.)

resistance—the papule becomes a veritable eruption; it erupts or breaks through the thin physiological covering above. The true disease resides in and about these papules; indeed, for the purpose of argument we need only concern ourselves with one single papule. The mere multiplication of them does not alter the principle of the disease, although it does affect its gravity. Just as cancerous tissue, breaking down, and in direct proportion to its size and situation affects the entire life functions of the body, so small-pox papules, almost, at times, infinite in number, and rapidly changing into absorbable pathological products, affect, in a profound manner, the general constitutional processes; hence the fever, pain, vomiting, etc., etc. Flint, the very best of all English medical writers, so far as elegance and accuracy of language go, in describing the clinical history of the disease, says that the amount and virulence of the eruption depend upon the acuteness and gravity of the constitutional symptoms, as fever, reduced action of the heart, etc. In the light of advanced knowledge the very reverse is true. The constitutional symptoms arise from the skin-lesions, and not *vice versa*. We have all heard of *variola sine eruptione*, but few of us, I think, have seen it; nor do I think it will ever be seen again. It is, I have not the smallest hesitation in saying, a figment of the imagination. All such cases have been observed, or supposedly observed, in epidemics of the disease, when the reputation of some gentleman was at stake in the matter of prognostic diagnosis, if I might coin a phrase. This, or lack of accurate knowledge concerning the pathology of the disease, amply accounts, in my mind, for all such anomalous instances. The case for the appearance of ghosts is a thousand times stronger than is the case for small-pox without eruption. Yet few of us have had the pleasure of meeting the former.

The relative importance of the constitutional symptoms are not denied; but in view of the fact that in nearly every case of difficult diagnosis in small-pox they are nearly always either absent or very slight, and that each and all of them may be present in any one of a dozen or more diseases, resembling to a greater or less degree *variola* itself, I claim that in obscure cases, and these are the only ones with which we are concerned, almost exclusive attention should be centered upon the eruption. Enough has already been said as to the character of this eruption. It is papular, not macular: progressively and invariably changeable, not stationary: and is altogether dependent upon the localized causes, and not upon the constitutional symptoms; the later being, in truth, only symptoms.

Having dwelt, perhaps inordinately long, upon this heading, let me hurry on to briefly mention some diseases with which small-pox may be confounded. I say, "may be confounded," not the reverse, for the great danger in any epidemic of the disease is not that it should go unrecognized, but that ordinary and generally harmless cutaneous

eruptions may be taken for it, to the inexpressible detriment and danger of the unfortunate individual subject to them. For, undoubtedly, when public excitement is aroused, and fear is at fever-heat, it does not require any great amount of courage to pronounce a suspected case one of small-pox. Where courage and knowledge are required is when one pronounces such a case not one of the suspected disease.

(II.) I will not attempt an exhaustive list of variola-like diseases. As is more practical, I will give a few illustrative incidents, occurring in my own practice, during the epidemic of 1901-02, in this city.

(1) At the request of a prominent general practitioner, who, by telephone, informed me that he strongly suspected small-pox, I examined Mrs. ----- . Found the forehead, hands, wrists and arms covered with a papular eruption. Papules small, pointed, hard ; scarcely sensitive, dark, and of coppery color. Had been *in situ* several days. Throat somewhat inflamed, and, upon stripping, found an extensive fine papular rash over the whole body, of about the same age as the more pronounced and comparatively larger papules upon the exposed surfaces. My diagnosis of *secondary syphilis* was confirmed by the woman herself, upon the spot, and afterward by other and more trustworthy information. Here there was every reason to suspect the epidemic disease, and the attending physician was by no means to blame for doing so. Nothing could more nearly resemble the papular stage of small-pox than the woman's exposed surfaces, and nothing less than a thorough examination and the presence of that almost undefinable something never absent from a syphilide could possibly remove the doubt. (2) A child, female, about seven years old. Had been vaccinated ten days before. Over posterior aspect of hands, and extensor surfaces of wrists and forearms, around both temples and under chin were a number of pustules, perhaps twenty or thirty. They were flattened on top and covered with thick crusts. Scratch-marks were somewhat in evidence, especially upon the forearms. Upon examining the vaccination sore, found copious inflammatory products present and discharging and well-marked linear scars, the result of scratching. For fear of possible contagion, the father had remained at home three days already, being an employee of the I. C. R. postal department. Upon reassuring him that *impetigo* was, if not non-contagious, at least far from dangerous, he, with great satisfaction, resumed his employment. Here again, the observer, not anxious, at such a time, to take too many risks in examining for himself, was amply justified in being suspicious. Many cases of varioloid have passed through the whole disease with less evidence of an eruptive disorder than this child presented. Of course, seen at a time when no question of small-pox was agitating the public, it would have cost the physician not a second thought ; the application of a simple mercurial ointment, would, probably, have been the beginning

and end of his connection with it. But during other periods, when scores are being attacked, and thousands are in fear, every skin eruption in the community should be examined, and not only examined but definitely pronounced upon. We should not be content in saying it is not small-pox, but should take pains, and no pains should be thought too great to ascertain exactly what it is. Too many of us have a comfortable habit upon seeing an eruption of the skin of remarking: "Oh it's just a rash, and it's better out than in." Such a procedure may satisfy in ordinary times, but should not obtain when small-pox is epidemic. No eruption, however trivial or insignificant, is without a definite name and history. To doubt this would be to insult the memory and reputation of hundreds of indefatigable workers of Europe and America, who have raised dermatology to the most exact, complete and precise of all branches of medical science.

(3) In February, 1902, I was requested by the medical superintendent of the Alms House to see an elderly female who had been admitted the evening previous. He informed me that upon his examination that morning, he had discovered her to be completely covered with a papular eruption that very much resembled small-pox. In company with that gentleman and Dr. T. E. Morris, at that time in charge of the Small-pox Isolation Hospital, we found her in the condition named. A more equable and complete papular distribution I never saw. With the exception of the face, palms and soles, the whole surface was involved. They numbered, at least, half a dozen to the square inch, were only of medium size, were either covered with a pustular point, or else flat-topped and bleeding or excoriated, the result of beheading with the finger-nails. Scarcely any history relative to the eruption could be obtained from her. A close inspection, however, revealed numerous scars and cicatrices, the sites of older lesions, as well as parallel linear streaks indicating vigorous and long continued scratching. The attendants testified that upon admission she was in a deplorable condition from dirt, and that her whole body was the host of very numerous pediculi corporis. Indeed, even after the vigorous scrubbing she had undergone, the ova of the pediculi capitis were to be seen on the margins of the scalp. Taking these facts into consideration, it was not difficult to arrive at a diagnosis negative to small-pox, and to indicate her disease or condition by an appellation fortunately of little use in this country—phtheiriasis, or "lousy disease." Yet, as before, there was abundant excuse in a time of general fear, to be exceedingly cautious and suspicious in this case, and I have no hesitation whatever in saying that no practitioner would have been censurable for imposing a temporary quarantine to await developments. I might go on, if space and time permitted, and give numerous other illustrative cases met with in the same epidemic, all of them equally suspicious, but none of them having anything to do with genuine variola. But this

paper already promises to be too long, so I will spare you the infliction. Here we have three instances, however, two of them diseases of frequent occurrence, and one, very rare, of close simulation, clinically and objectively, to modified small-pox. Impetigo and syphilis are of constant happening, especially among the class in which variola is most liable to spread, the city poor living in congested districts, and in a dirty condition.

It would be almost a loss of time to name the very many other cutaneous lesions capable of simulating the grave epidemic disease under discussion, but, perhaps, one or two more may be mentioned. Herpes, in some of its many forms, might readily excite fear in a time of general suspicion. More especially that form of it often called *hydraea herpetiformis*, frequently seen in pregnant women. Of course a few days' observation would clear up the difficulty, but this is exactly what is generally denied to both patient and physician at such a time. Again, *erythema multiforme* might well be mistaken for it, in a critical period. I well remember a very pronounced case of it I saw two years ago, not when there was any mention of small-pox, but in which the patient herself, a washerwoman, was quite positive she had the epidemic disease. It is only a few months since, that I saw a case of *neurotic eczema* in a boy of twelve, the patient of one of our city physicians; he was covered completely with a raised, almost papular eruption. The rash was so violent that it produced quite decided constitutional symptoms, among them being a considerable degree of fever. Seen at a time when variola was epidemic, no general physician would have been justified in leaving the case undiagnosed for twelve hours. In like manner a number of other cutaneous lesions might be quoted, not, of course, closely resembling small-pox, and capable of exciting no suspicion at a non-suspicious period, but, nevertheless, enough to cause anxiety and engender mistakes where care is not taken, at other times. Each one of you can supplement the list for himself. The point I wish expressly to make is that we should not rest satisfied in merely coming to a negative conclusion as regards variola, but in each and every case clearly define and indicate the exact name and nature of the disease. By this means multitudes of unfounded suspicious and sensational reports will be set at rest; identical diseases afterward appearing in the same family or neighborhood will be easily recognized, often without the interference of a physician; and, by far the best and most important result of all will be attained, no unfortunate will be spirited off to the horrors and dangers of an isolation hospital without certain evidence of being affected with the epidemic disease.

III. I come, with much diffidence and perturbation of spirit, to the discussion of my third heading—the amount and quality of knowledge requisite to recognize and define the various varieties of variola.

Of course, to that class of medical men, happily now very small in number, that think and generally act upon their conviction that all regularly qualified physicians are, or should be, upon a par as regards medical knowledge in all departments; that refuse to recognize anything approaching specialism in medicine; that believe that no amount of extra study, extra opportunity, or extra taste in a certain direction can make any one superior to another in any particular; on these gentlemen, I admit at the outset, my argument will be entirely thrown away. But I am persuaded that few, if any, now listening to me are in that class; that none of us are quite so sure of such an universal uniformity, and I, therefore, am emboldened to go on with my case. Who then is the expert in the diagnosis of modified, obscure, or suspected cases of small-pox? If we follow the apparently almost unanimous practice of this province, it is the man who has seen most cases of the disease. Only recently a gentleman was brought here from a neighboring province, at, I suppose, a very considerable expense for this purpose, and his sole or chief qualification, I understand, was that he had seen hundreds of cases of the disease. I wish to state that I speak only from newspaper report, but I believe such report to be substantially correct. Now, of course, such gentleman may have had qualifications far broader and greater than that I have indicated, but such were not mentioned, nor do I believe, if he did possess them, were they the cause of his selection by our authorities. Is this then the sole requirement for a correct differential diagnosis of variola? I hold it is not. If so, then the man who has never seen anything but a Corinthian column in architecture would be an infallible judge as to whether a certain column was Doric, Ionic, or Corinthian. All these designs have innumerable gradations and modifications. There may be but an almost infinitesimal difference in an instance between a modified Doric and a modified Corinthian. The column may be really Ionic, but our judge, never having seen such design, being pressed for an answer, (and should a negative reply be returned, great loss may be experienced by the column's rejection,) what will be his answer? Human nature being as it is, there are ninety-nine chances out of a hundred that he will risk erring on what to him is the "safe" side, and say that the column is Corinthian. But to come nearer to our own profession. What is meant by the term diagnosis? Does it not, of itself, naturally infer a choosing? And, if a choosing, does it not inevitably follow that there must be more than one to choose from? And if there be more than one to choose from and a correct choice be desired, does not such correctness depend upon a real and intimate acquaintance, not with *one* of the objects to be chosen from but with them all? Do we not all know that one of the very best and safest methods of diagnosis is by "exclusion?" We have a patient suffering

from fever, cough, etc., etc. We find he has not pneumonia, that he has not pleurisy, nor hydrothorax, nor empyema, nor pronounced bronchitis, or, may be, one of a dozen or more diseases of the chest we may think of, and knowing also the symptoms of phthisis, find that he has some of these, is not this the most absolutely safe diagnosis that can be made? Yet, how could such a diagnosis be possible to one who has not an exact and familiar acquaintance with the excluded diseases? Or, in what position would an examiner be, if in a suspected phthisical case, he found many of the symptoms of other diseases, and not one unmistakable one of consumption, and yet know little or nothing of the other diseases? I say the idea of a specialism, in *diagnosis*, of any *one* disease, is an anomaly, an absurdity, and a contradiction of terms. There can be no such thing. There *may* be such specialism so far as *treatment* is concerned, but certainly not as regards diagnosis. Specialism implies an intimate, accurate and exhaustive knowledge of a large number of allied or collateral diseases, or else of an equally large number affecting a particular part of the body. Indeed, the chief reproach, and the truest one, that can be brought against specialism, is that it tends to restrict medical knowledge to within too narrow limits, and so to exalt a certain variety of diseases to a height they are not entitled to. What, then, can we say of a specialist restricted to *one* disease, and that, regarding diagnosis!! If there be a tendency to exalt a whole variety, will not that tendency be immeasurably stronger when it is restricted to but one disorder? But some one may say that such a man is likely to have a knowledge of allied and collateral diseases. If so, the whole question is settled, and I have nothing more to say. Such a man is the man in the right place. But, in the case of the supposed small-pox expert, the very reverse is likely to be the fact. Is the man at the head of an epidemic hospital likely to meet with, and be in a position to investigate, at his leisure, cases of psoriasis, syphilis, intertrigo, phtheiriasis, eczema, and the hundred and one other cutaneous lesions with which it is necessary to be acquainted in dermatology? Is he not, on the contrary, the man least likely in the world to meet with such cases? I feel I need not push the argument further. However imperfectly I have put it forward, and I know only too well its imperfection, I am sure every reasonable man will see the point. What is the reason our medical journals and the medical world in general is deluged with such absurd titles as "Cuban itch," "pustular chicken-pox," "Havana hives," "Southern scabies," and scores of other equally senseless and foolish names? Is medical nomenclature so scanty that this unmeaning twaddle has to be foisted upon it? We all know the reason. These names are merely the poor coverings of inaccurate and insufficient knowledge; the inky exudation of retreating medical cuttlefish; the spurious coin in place of the pure gold of medical science.

I need scarcely state therefore, the conclusion of my argument

except for the mere purpose of completeness. That conclusion is that small-pox occupies no unique position in medicine as regards diagnosis. To recognize obscure cases of tertiary syphilis, or of psoriasis, or of eczema, and, more particularly, to distinguish one from the other, requires an intimate and extended knowledge of diseases of the skin. To do the like with small-pox requires merely like conditions.

SMALL-POX*

By E. BAYARD FISHER, M.D., Fredericton, N.B., Secretary of the Provincial Board of Health.

Mr. President, Ladies and Gentlemen: It is with feelings of some considerable diffidence that I present a paper to you to-day with small-pox as its subject matter. The mere mention of small-pox in this Province suggests to the mind of the medical man the question of diagnosis, and to the lay mind the very important question of taxes. For these reasons I am sorry that one better able to present the subject in a forceful manner has not the matter in hand.

As many of you know, I am of a retiring disposition, and must ask allowances for all imperfections and omissions, and your indulgence for taking up the time of this Association.

I have always held the opinion that, at these meetings, the papers should come from the older members, whose experience renders them better equipped with material, which may be of benefit to those attending the meetings. Information as derived from books is within the reach of us all, but there is a fund of knowledge, from a practical standpoint, only derived from experience, and it is the benefit of this, which all, especially the younger members, look for and expect at our Association meetings.

The importance of the subject, however, the fact that I have frequently been asked to prepare a paper on small-pox, on account of my connection with health matters, and the fact that I consider the present time opportune, will have to be my apology for presuming upon your valuable time.

The question of diagnosis I understood would be taken up by Dr. Melvin, so I will not take up that aspect of the question to any extent. My object is to take the subject up in such a manner as will be of benefit to others, and as will give what I believe to be a satisfactory explanation of my reasons for claiming that this disease with which we have been dealing, and are dealing with, is beyond doubt small-pox.

And this I desire to put forward as the justification for my course, and for the course of the Provincial Board of Health, in advising the Government of this Province, to resort to all necessary and recognized means of combating and stamping out the disease.

*Read at meeting of Maritime Medical Association St. John, July 22nd, 1903.

The fact that heavy expenses have been incurred in carrying out these measures has laid us open to a large amount of criticism from certain quarters, much of which I claim is unjust, and many of the charges made against us entirely unfounded in fact. On a number of occasions I have felt tempted to vindicate my actions through the public press, but have refrained, believing that nothing is to be gained by newspaper controversy, but that before the medical men of the country was the proper place to discuss the question.

During the past three years, as many of you know, I have of necessity been brought in contact very largely with small-pox cases. During this time discussions have been aroused, differences of opinion have occurred, but surely the climax was reached, when from the pulpit, a Sunday or two ago, we were scored for saddling upon the Province of New Brunswick, heavy expenses, entirely unnecessary, in the suppression of a disease which is not small-pox, and our zeal in the matter attributed to the attaining of personal gain. Surely strange utterances to come from the pulpit on a Sabbath Day.

As to whether my claims re diagnosis can be sustained, I will leave to you, Gentlemen. The latter part of the above I brand as utterly false with respect to my personal course, and to the course of Local Boards of Health as far as I had any knowledge or control from an official standpoint.

Although I have endeavoured to make my paper short, still it is practical enough, I think, to demonstrate to you of the medical profession here present that the data I present should be sufficient to satisfy any intelligent person that the disease with which we are dealing can be no other than small-pox. And I think you will agree with me when I say that I am too small physically, if not mentally, to bulldoze the Government of the Province in order that personal ends may be attained.

It is not to our Province alone this disease has been confined, but it has been general throughout the continents of America and Europe, and everywhere accepted as small-pox.

It is small-pox, mild I grant you, and the mortality very low. But are not others of the communicable diseases very much milder, with a lower death rate, and much less feared by the public to-day than they were twenty years ago?

And it appears to me that we have more reason to expect that small-pox should from year to year lose some of its severity than we have in the case of typhoid fever, scarlet fever and diphtheria. And why? My reason for saying this is, that, while the nature and causes of the latter diseases are better understood, and methods of treatment have improved, and probably the germs themselves have become less virulent, we have in the case of small-pox, besides these,

the benefit of a preventive in the form of vaccination. And does it not stand to reason that vaccination performed from generation to generation should render people at the present day more immune to the disease, and act as a preventive to such an extent, that even if one has not himself been vaccinated, he may derive a certain amount of protection by reason of successful vaccination in the case of his parents and grandparents? It seems to me that this ought to explain, to some extent at least, the mildness of the epidemics we are now experiencing.

This mild type of the disease, of which we have certainly had our share throughout the Province during the past three years, and which we still have with us, has in this same mild form, been very prevalent throughout other portions of the Dominion and the United States, everywhere mild, and in some localities causing differences of opinion much the same as we have had in New Brunswick. And if reports can be relied upon, our friends from Nova Scotia have recently been experiencing this same trouble.

In the reports received from Washington recently, covering a period of six months, I noticed that in one State in the Union, fifteen hundred cases occurred with but one death, and for the same period of time, some forty-five thousand cases occurred throughout the United States with a death rate of only about three per cent.

A great deal has been said lately in the press and elsewhere with regard to this disease, and we have been accused of putting the country to a large and unnecessary expense in our efforts to stamp out a disease in which the mortality is so very low. Well—what other course could we pursue?

The question resolves itself down to this: If we are unable to obtain a general compulsory vaccination of our different Provinces (which I maintain is the only sure method of stamping out this disease), we must then either carry out rigid quarantine measures, or on the other hand, allow the disease to run havoc until all have had it. It is the very mildness of the disease which renders it necessary to quarantine, and if we are to quarantine we must do it thoroughly, and go about it in no half-hearted way. Better by far let the disease run if we are not going to carry out an effective quarantine, for in that case the expense is continuing, while we are getting no nearer an end of the scourge.

As to the question of allowing the disease to spread, in my opinion it is not tenable for an instant, except under one condition, and that would be to give the disease a new name. And this would appear to me to be an impossibility.

The result that would follow the raising of our quarantines and letting the disease spread would be very disastrous, especially in

manufacturing districts. Industries would have to close their doors, and this fact becoming known to the outside public, would simply mean that the output of these industries would have no market, not only for the time being, but for some considerable period afterwards. The mere fact of small-pox having caused a manufactory to close down, when it became known abroad, would certainly result as above mentioned, even though the mortality of the disease might be very low. Thus it follows that it would be the name and not the mortality rate which would cause these evil results.

This being the case then, as long as we are unable to obtain a compulsory vaccination law, we must resort to the next best means, namely, the quarantining and isolation of patients and the adoption of every possible means to prevent the spread of the disease.

I would like now to take a moment or two with reference to the nature of the disease as we have found it, and the reasons which have led to the conclusion that the disease beyond doubt is small-pox.

I have had the opportunity of seeing a large number of cases during the last three years, and if it has been small-pox in one locality, it has been small-pox in all. And if you will permit me I will give a short and concise history of the disease as I have found it.

The first symptom as a rule is a chill, or as some say cold feelings, followed by elevated temperature, varying from 100 to 103 or 104 degrees Fahr., excessive headache and backache, the latter of which in many cases is extremely severe, nausea and vomiting. Rarely this may be wanting, but in most cases where there has not been actual vomiting nausea has existed. For three or four days there is a condition of extreme malaise, and in most cases the patient is confined to bed. Then you get a history of a rash appearing, usually on the fourth day, but sometimes towards the end of the third day. With the appearance of the rash invariably the patients say they feel much better. This has always been the case, that with the appearance of the rash the patient feels much better, and in many cases they say that they feel all right. I have often found them about this time working out in the fields with the rash well broken out.

This rash as a rule first appears on the face, generally on the forehead near the hair. First a small rose colored macule, which soon assumes a distinctly shotty condition. In from twenty-four to thirty-six hours this rash becomes general all over the body, with a tendency towards grouping in some localities, as on the wrists. The papule gradually increases in size, as a rule being round or oval in shape, and elevated above the skin. On about the third day the contents become watery, and this constitutes the vesicle. If the cases are carefully watched from day to day, as the vesicle develops um-

bilication will be noticed. The areola which gradually becomes less as the shotty papule spreads over the area of the macule and becomes vesicular in character, disappears as the vesicle develops. Then in the course of a few days the contents of the vesicle become cloudy and yellowish in colour, thus developing into the pustule, which is matured at about the eighth day of the rash, before this umbilication disappears, and each lesion has very much the appearance and size of a split pea. This change from vesicle to pustule was very well demonstrated by one of my patients, who was very sceptical as to the nature of the disease. On about the eighth day of the rash, to a friend who was passing along the road, he made the remark, "Why this thing only contains water," and punctured one of the lesions. What was his surprise to find matter instead of water escape. He had noticed a few days before that the sores contained a watery fluid, but was unaware of the change which had taken place since. With the pustular stage the secondary fever occurs, due to absorption. From this time the rash goes on to dry up, first a dark spot appearing in the centre and spreading over the pustule. Part of the contents dry up to form the dark scab, and part is absorbed. The drying up and sealing become complete in from three to four weeks.

This has been the history of the cases as they have come under my notice, and it seems to me can be typical of small-pox only.

I have here Fox's plates on small-pox, a late work as you will see, published in 1902. In his, Fox's, treatise on the disease, which accompanies the plates, he says that a rash of this nature developing on the palms of the hands and soles of the feet is diagnostic of small-pox.

"In varicella the distribution of the lesions over the body is far more erratic than in small-pox. The very decided tendency to grouping of lesions upon the face and about the wrist so characteristic of small-pox does not occur in varicella, in which the vesicles may occur even more extensively on the trunk than upon the face. In varicella the palms and soles, except in infants, are almost never affected; while in small-pox these regions are practically never exempt. It is true that in the extraordinarily mild cases of small-pox, such as have constituted the majority of cases during the past two years throughout the West, lesions may or may not be present on the palms and soles; but in the severe and moderately severe cases, such as have characterized the recent epidemic in New York, the soles and especially the palms have practically without exception shown the lesions. The localization of small-pox lesions on the palms and soles deserves far more emphasis than is generally accorded to it in the textbooks, many of which even fail to mention it. It may be put down as a safe rule that a case showing an extensive

eruption of vesicles or pustules, however suspicious in other respects, is not small-pox if the palms and soles are free."

This authority you see lays special stress upon the existence of the rash on the palms and soles as a diagnostic sign, and in the epidemics of this disease which have come under my notice, it has been characteristic of them that the palms and soles have invariably been involved. I have also seen a case of what was supposed to be small-pox by the attending physician, in an infant. In this case the palms and soles were involved with the rash. Dr. Atherton saw the child with me in Fredericton, and it was the fact that the palms and soles were involved which caused us to hesitate in our diagnosis. However, we decided in favor of chicken-pox, and this proved correct.

I will just quote one other paragraph from this same treatise, which reads as follows :

"There is an old and oft-repeated statement, that a uniform rash is a characteristic of small-pox, and that a mixed rash indicates chicken-pox. This deserves to be promptly refuted. It is most unusual to find a case of small-pox with the eruption all in one stage. While it is a well known fact that chicken-pox runs a hasty course—so that in from one to two days we have, or may have, macules, papules, vesicles and even crusts—in small-pox this is not likely to occur, as the disease never runs such a rapid course. In the early stage we may have macules changing into papules on the head and neck, while there are simply macules on the trunk. Later in the disease the eruption may be vesicular on the head and neck, while still papular on the trunk. When vesiculation is complete, we have the distinct umbilicated appearance that has long been recognized as characteristic of small-pox."

I quote the above because some slight irregularity in the character of the rash in some cases we have had has given rise to doubt in the minds of some as to whether we really had small-pox or not.

I would now for a moment like to refer to the relation of vaccination to this disease. The cases which I have seen have invariably occurred in unvaccinated persons, and this has been the rule throughout the Province. In addition to this successful vaccination, performed in time, has always protected.

An interesting series of cases occurred recently in my own practice, which undoubtedly proved the efficacy of vaccination, and goes a long way towards supporting or sustaining my claim that the disease is small-pox :

1. In the first house the father of the family had the disease. There were a large number of children in the family besides the mother and another woman. All of these I vaccinated, with the exception of two, who had been successfully vaccinated within a

year. Every vaccination took well, and although the members of the family were continually mingling with one another, yet not another case developed in the house.

2. In the second case of this series there were only two in the family at that time, the mother and daughter, the former of whom had the disease. The daughter, who was a delicate girl, requested me not to vaccinate her. To this I assented, at the same time assuring her that she would without doubt have the rash. She rather ridiculed the idea of it, but nevertheless she did not escape.

3. In the third house there was a large family, the mother of whom had the disease. I vaccinated all the rest with the exception of a silly boy, whom we could not control sufficiently to allow me to scratch his arm. Every one of these vaccinations was successful, and none of them contracted the disease, but on the other hand the silly boy was literally covered with the eruption.

Now I do not think there is one present who does not recognize and accept the fact that vaccination does protect against small-pox, and against no other disease. Why, then, if this disease was not small-pox, did not those who were vaccinated, as well as those who were not vaccinated, contract the disease?

Surely one could not ask for a stronger argument in support of his claim that this disease is small-pox than the results obtained in connection with the above vaccinations.

To sum up, then, I may say that I base my conclusions that this disease can be none other than small-pox upon the following:—

1. The nature and course of the disease as I have found it, and as described above.

2. The fact that it has only occurred in unvaccinated persons.

3. The fact that vaccination protects, and that those exposed in a house who are not vaccinated contract the disease.

4. And the fact that the rash always occurs on the palms and soles. Another factor in support of this claim is that in the great majority of cases which have come under my notice adults have been affected rather than children.

There is just one matter to which, in conclusion, I would like to refer, and that is the results obtained in the cases of those vaccinated after having had small-pox. This matter has received quite a share of prominence in York County, several persons having been vaccinated after recovery from this disease. I will state, and that advisedly, that in none of these instances which have come to my knowledge, has the vaccination taken successfully. One of the cases was the woman whose photograph I have here. She had small-pox just a year ago, and her face is well pitted. She was vaccinated twice in May last, and although it has been claimed that it took, I

can assure you it did not, and I examined her arm a week ago to-day.

However, even were a vaccination to take after a person has had small-pox, this could not be considered proof positive that the disease was not small-pox. Instances of this have occurred after the worst forms of small-pox, why then might there not be more probability of it occurring after cases of this mild form of the disease, such as we have been having?

In the Twentieth Century Practice of Medicine, Vol. 13, page 522, the following will be found, written by a Paris specialist:

"In 1868 I saw a lady at Passy who was suffering from confluent variola, being then thirty-two years of age; in 1871, after the siege of Paris, she had an attack of discrete variola; in 1873, having occasion to vaccinate her niece, I performed the operation on her and was surprised to find that it took perfectly. Thereafter I revaccinated this lady six times, at intervals of six months, in the presence of Dr. Lorain, and each time the vaccinal eruption appeared with absolute regularity."

DISCUSSION.

Dr. Chisholm: It is an injustice to the writers of papers to limit them to ten minutes unless they knew so when preparing the papers. Dr. Melvin said some things new to me. He said the disease should be diagnosed through the skin. This depends on the environment, and Dr. Melvin is a specialist on the skin. I dissent from this view, for in the beginning of small-pox there is no rash. Backache may be the first symptom which would be enough to arouse the suspicion of the general practitioner. I also dissent from the idea of a change in the type of micro-organisms. I believe the organisms of scarlet fever, measles, etc., were the same thousands of years ago. Only the eyes that were then are not the eyes that are now.

Dr. Morris: There are sometimes virulent cases of small-pox with no pain in the back. In la grippe there is often severe pain in the back. The typical vesicle is a picture one cannot forget. One case I saw had only one vesicle. There have been claims made as to successful vaccination after having suffered from this epidemic. I would like to know what is successful vaccination. It cannot be successful without a scar, and a good one.

Dr. P. C. Murphy: Pain in the back is not more peculiar to small-pox than la grippe. The determining factor is after all the skin lesions, as said by Dr. Melvin, and the only way to make a diagnosis.

Dr. H. H. McNally: In reference to the recent epidemic, three cases were vaccinated, two having good scars, and the third, a small scar resulted from one scratch. The following is the history of a case:

Robt. Forbes, of Gibson, age 35 years, foreman of J. R. McConnell's lumber crew, had returned from his winter's work about two weeks previous to present illness, where he had enjoyed good health through the whole time. Sent for me on the 8th day of April—Sunday evening. Being away from home I went to him Monday morning at 6 o'clock and found him dressed in his working clothes and at breakfast with his family. He told me he was feeling better but had been quite sick yesterday with headache, backache and pains all over. I found his temperature 98 3-5, and told him I judged he had been having an attack of influenza but it had apparently passed off before my arrival. I brought away a sample of his urine, which I found darker than normal, sp. gr. 1020. Acid reaction, no albumen, no sugar.

Tuesday morning, called to report on urine, and found him broken out with a papular rash, viz: a few spots on the body, arms and a few on his face. I think at that time there were a few spots on the palms of his hands. No rash in his mouth, although in some of the cases I did find some rash in mouth.

This papular rash was not what I would call shotty; it was fairly hard but would not move under the skin. There was no discoloration of the skin beyond the papular. Temperature normal. Said he felt all right.

Wednesday morning found him feeling well. Rash vesicular on. No umbilication. New ones appearing. Opened some of the blisters and found the vesicles to contain serum. Marked some of them with a pencil that I might see how many new ones would appear in this region, and day by day I would find new crops of the same type appearing, until the whole body, extremities, face and scalp were well peppered. Temperature remained normal all the while.

The individual crops would remain in the filled state for a few days, then dry up, scab fall off, leaving red stains but no pitting. Occasionally I would find two papular so close together that the edges would almost touch, but never did they coalesce at any time.

On the 15th day of April, 9 days after I first saw him, Dr. Dundas saw him with me. Part of the rash was fully dried up and scabby, while some of the vesicles were well filled. The Dr. pricked one with a needle and got serum. Forbes had never at any time in his life previous to the appearance of the rash been vaccinated.

Up to the time of quarantining, namely, eight days after rash appeared, he was going about where he would, although I had asked him to remain at home.

After quarantine was established, he spent most of his time standing in front of his own house, in close touch with persons going by on the side-walk. No one outside of the house contracted the disease. None of the inmates of the house had ever been success-

fully vaccinated and were not at time of placing quarantine, yet but one small child in the house contracted the disease, which presented itself in the shape of a few spots. It was not at any time ill enough to remain in bed.

Some weeks after my patient was released from quarantine, I vaccinated him with P. D. & Co.'s vaccine, producing a good "take," leaving a good scar. Dr. Bayard, of St. John, examined the "take" and pronounced it satisfactory.

This is the type of the cases throughout New Brunswick. I have no reference to the St. John epidemic which gave a mortality of 23% and was brought to St. John by a sailor. While it is questionable as to whether the epidemic of so called small-pox throughout the rest of the Province has given any mortality which cannot be attributed to any outside cause. This disease of the interior was in existence before the St. John epidemic.

Dr. W. A. Christie: In many cases the difficulty of diagnosis is in the early stages. (Reference was made to a few points in this connection.)

Dr. Daniel: I have seen cases of severe small-pox vaccinated and taken typically. Modified small-pox (varioid) is sometimes very difficult to diagnose. I have noticed pain in the back complained of in nearly every case. We ought to abide by the decision of the health officer.

Dr. Wetmore: Dr. Melvin called small-pox a skin disease. Would he also call measles and scarlet fever skin diseases?

Dr. H. H. McNally: I would accept the opinion of the health officer unless I felt the health officer's diagnosis was not correct. Only a short time since reference was made to fifty-two cases vaccinated after small-pox and none took.

Dr. Melvin: The cause of sickness in small-pox is due to the lesion in the cutis vera when the micro-organisms are there. I am glad to know that Dr. Morris corroborated me with regard to the symptom of pain in the back. There probably have been cases that have been successfully vaccinated after small-pox, but extremely few, and probably they did not have the disease within recent years. I am very grateful for the interest and attention given my paper.

Dr. Fisher: I saw one case mentioned as successfully vaccinated after small-pox, but I would not call it successful. I am satisfied that none of them were satisfactory "takes."

Dr. J. Ross: I would like to say a word or two, before the discussion closes. I am sorry that I heard but little of Dr. Melvin's paper. Dr. Fisher's paper was an interesting and instructive one. A short time ago I saw a severe case of chicken-pox in a girl aged 18 years, whose face was simply covered with rash and who had likewise two or three lesions on the palms of the hands.

PYO-NEPHROSIS OF LEFT KIDNEY—NEPHROTOMY; RENAL CALCULUS OF RIGHT KIDNEY—NEPHRO-LITHOTOMY.*

By N. E. McKAY, M. D., M. R. C. S., Surgeon to Victoria General Hospital, Professor of Surgery, Clinical Surgery and Operative Surgery, Halifax Medical College, Halifax, N. S.

Mrs. D., age 34, married, was admitted to the Victoria General Hospital on February 18th, suffering from a large tumor in the left hypochondriac and left lumbar regions. The following history was elicited from her: Born in England, but lived in Nova Scotia for the past twenty-two years; was married fourteen years ago, has five children living and one dead. Until after the birth of her last child patient generally enjoyed good health. She had been threatened with abortion the first four months of her three last pregnancies, and she has had a good deal of difficulty with her three last confinements. Four months before her last child was born, she suffered greatly from irritability of the bladder, and noticed blood in the urine, but had no pain in voiding it, nor afterwards. The urine was very foul and contained a whitish deposit andropy mucus. Her physician ordered her to bed, and put her on appropriate treatment, but her condition remained unchanged, till after the birth of her child, when the urine became normal in colour, but the sediment remained. Since the birth of her child on the 5th November, she has had pelvic pains, chiefly in the left iliac region, and a feeling of weight, also a dragging sensation in the lower part of the stomach. Exercise aggravated these symptoms. About three weeks before being admitted to the hospital, she experienced a chilly feeling with flashes of heat, and anorexia; she vomited occasionally, she also suffered from back-ache, which was worse on walking about, and had an occasional attack of indigestion and flatulence after food.

Patient looked healthy when she was admitted to the hospital. Her appetite was poor, she had no pain on micturition, but she had at times a constant desire to make water, and had had to get up often at night for that purpose. Bowels were fairly regular, the circulatory and respiratory systems were normal. Patient had a large tumour in the left hypochondriac and left lumbar regions, and it extended from the lower ribs down to a little below the umbilicus. It was as large as a child's head, and extended a little to the right of the mesial line of the abdomen. The tumour caused a distinct prominence. Percussion elicited a dull note, but there was no evidence of

*Read before the Maritime Medical Association, St. John, July 22nd, 1903.

fluctuation. The dull note remained unchanged with the changed positions of the patient. The mass was painful and tender on percussion and practically immovable, and the muscles over it were quite rigid. She was unable to lie comfortably on the healthy side.

We kept her under observation for ten days, getting her ready for operation, during which time the urine was examined on various occasions. The quantity of urine voided on an average every twenty-four hours was about 40 ounces. It contained an enormous amount of pus; fully half of it was pus.

The following is the result of an analysis made of the urine on two different dates:—

February 19th, urine foul-smelling and turbid; colour straw; reaction, alkaline, sp. gr. 1015; albumen present; heavy whitish deposit abundant; crystals, calcium oxalate; pus abundant; blood cells and epithelial also present; no casts.

February 23rd, colour opaque yellow; odor foul; reaction, faintly alkaline; sp. gr. 1022; large amount of albumen present after two filtrations; about half the amount of urine voided in twenty-four hours was a thick pus coloured deposit; pus cells present in abundance; no casts.

February 24, patient is passing an enormous quantity of pus with the urine.

February 26. Amount of pus in urine remains unchanged, pain and tenderness on left side still.

Operated on the 28th of February and removed from the left kidney about $1\frac{1}{2}$ pints of very foul smelling pus. Chloroform was the anaesthetic used. The usual incision for a lumbar nephrotomy was made. It began at the outer edge of the erector spinae, $2\frac{1}{2}$ inches from the spinous processes, and extended outward, downward and forward parallel with and half an inch below the 12th rib. On dividing the muscles and fasciae, and making my way through the circumrenal fatty tissue, I came down upon a well defined cystic tumour. There was little or no evidence present of perinephritic inflammation, old, or recent.

The kidney which was converted into a unilocular cyst was cut into, and its contents evacuated, and the abscess cavity was well irrigated with warm boracic solution. The secreting substance of the kidney was apparently all gone, no trace of the origin of the ureter was found. In view of the conditions present, I did not consider it advisable to make any prolonged search for it. I then inserted a good sized rubber drainage tube into the kidney and brought the anterior and posterior ends of the incision together with a few sutures, and dressed the wound antiseptically; bleeding was very slight. Patient stood the operation well. The further progress of the case was uneventful till the 17th March, when the patient complained of pain and tenderness in the right lumbar region at MacBurney's point.

On examination a tumor was felt here, but on account of the tenderness of the mass and the rigidity of the abdominal muscles, it could not be mapped out.

From the 28th of February till the 17th of March, her temperature ranged between normal and 99.5.F. and her pulse between 80 and 100 and good. The quantity of urine voided on the following dates was: On the 28th February, 10 oz.; on March 1st, 33 oz., and on the 2nd of March, 49 oz. From this date until the 27 March, the quantity voided daily amounted to 32 or 33 oz. on an average. The amount of pus present became gradually less, but never disappeared altogether.

The following records were made by the house surgeon: March 19th, patient doing well, pain and tenderness in *right* lumbar region persist. It looks as if there was another abscess on this side.

March 26. Discharge from wound is now clear and has a urinous odor. Urine about the same as for some time past.

March 27. Tumour in the region of the right kidney can be felt distinctly, but the tenderness is so great that it is impossible to make out anything definite about it without an anæsthetic. Since the operation the quantity of pus diminished from $\frac{1}{2}$ to 1-12 the bulk of urine voided.

Performed nephro-lithotomy on 28 March, four weeks after the first operation. The anæsthetic used was chloroform. Upon the abdominal muscles being relaxed thoroughly I examined the tumour bimanually before proceeding with the operation. It occupied the right lumbar and iliac regions, and its surface was smooth and indurated, and the mass was three times the size of a normal kidney. The lower end of it extended to the brim of the pelvis on the same side. In shape it was oblong and very slightly movable. It was now evident the tumour was not a pyo-nephrotic kidney, which I thought it might be before I was able to make a careful examination of it under an anæsthetic.

I turned the patient at once upon the left side with a pillow under the loin and exposed the right kidney by the usual incision for a lumbar nephrotomy. Its surface was smooth and glassy and had a dark-red hue. In appearance it looked like a healthy kidney, but much larger and very congested. There was no evidence of inflammatory adhesions in the circumrenal tissue. On removing from the field of operation all the perinephritic fat, I examined the organ carefully; its surface was hard, smooth and even, and in isolated spots somewhat doughy. The kidney was then explored with a needle, which elicited a distinct grating noise. The point of the needle came against a hard, firm, unyielding substance. I now laid the kidney open by making an incision about three inches in length along its convex border, and grasped the organ with its contained calculus with my right hand in front of the abdomen and pressed it upward

and backward against the finger and thumb of my left hand, which were held firmly on the edge of the wound in the kidney. In this way the stone was slowly and gently squeezed out of its bed without inflicting any undue damage on what was left of the secreting substance of the organ. It was a bimanual procedure. The calculus was firmly adherent to the substance of the kidney. Forceps were of no avail to dislodge it. Roughly the stone measured $4\frac{1}{2}$ inches in length, 3 inches in width and $2\frac{1}{2}$ inches in thickness and weighed $13\frac{1}{2}$ oz. (av.) It was oval in shape. A terrific gush of blood immediately followed the removal of the stone and the patient became suddenly collapsed, whereupon I quickly grasped the kidney in my right hand and introduced my left into the wound to plug it up and so check the hæmorrhage, but it had little effect upon the bleeding. It was venous oozing. Something more had to be done to save my patient, so I speedily ran three of my fingers up into the cavity of the kidney and to my surprise I found I had come upon a regular gravel pit. I scooped out quickly 28 small calculi each the size of a small sized bean and faceted, also blood clots, and packed the cavity firmly with sterilized gauze. This controlled the hæmorrhage. In the mean time every thing possible was being done to rally her by means of artificial heat, hypodermic injections of brandy and of strychnine nitrate, and by enemata of concentrated coffee and brandy and by bandaging and elevation of the lower extremities. In a few moments the patient rallied a little and two or three stitches were hurriedly inserted into each end of the lumbar incision and the wound dressed antiseptically. A large pad was placed over the kidney under the abdominal bandage to keep pressure upon the organ, and the patient was removed to the ward in a very weak condition. Her respirations were, however, good and regular, although slow, but the pulse was very small and frequent. It was very unsteady. At times it was fairly good in volume, but in a few minutes afterwards it could not be counted. Injected one pint of normal saline solution into the rectum, after which the pulse temporarily improved the volume and regularity. This was at 1 p. m. At 2.15 the pulse again became very small and she was given subcutaneously in the pectoral region one pint of normal saline solution and at 2.30 atropine gr. 1-120, morphine sulph gr. 1-12, and nitrate of strychnine gr. 1-30, hypodermically. Her temperature was 99°F . and pulse between 150 and 160, and very small. At 4 p. m. the nurse made the following record:—"Pulse still too weak to count." At 4.15 the following enema was given:—brandy, one ounce, spr. ammon. arom, half ounce and concentrated coffee three ounces; 6 p. m., pulse stronger and patient resting quietly; 7 p. m., pulse much stronger. For the first six hours after the operation, gr. 1-30 of strychnine nitrate was given hourly, and an enema of concentrated beef tea and brandy every two hours. At 7.45 the nurse entered the following record on the

chart :—"Patient seems very weak and complains of pain in the region of the wound by spells, but rests quietly greater part of the time." After this her condition gradually and steadily improved. She had a very good night, slept four hours. At 6 a. m. the 29th, her pulse was 96, temp. 98.8, respirations, 21. Voided since the operation $7\frac{1}{2}$ ounces of urine. An interesting feature of her case was the ease and regularity with which she breathed, notwithstanding the profound shock from which she suffered.

On March 30th, I removed the packing and irrigated the cavity of the abscess well with warm boracic solution and inserted a large rubber drainage into the kidney and packed the wound all around it with iodoform gauze. There was no bleeding. The profuseness of the discharge, which was largely decomposed urine, made it necessary for the dressing to be changed the first ten or twelve days every two hours.

From the 30th of March until the 7th of April, her temperature ranged between 100 and 101.4°F., and pulse between 118 and 128; respirations were about 23. Quantity of urine voided on 30th of March was $33\frac{1}{4}$ oz.; on 31st, 33 oz., and between the 1st and the 6th of April from $22\frac{1}{2}$ to $28\frac{1}{2}$ oz. per diem.

From the 6th till the 30th of April, pulse stood between 90 and 100 and temperature between normal and 99.6°F. The minimum and maximum quantity of urine voided during the same period, (24 hours), was 18 oz. and 37 oz.

Result of an analysis of the urine on the 9th of April:—Color, light yellow (turbid); odor normal; reaction faintly acid; sp. gr. 1009; albumen present after filtration; pus cells in abundance; epithelium in abundance; heavy whitish deposit; crystals of triple phosphates.

During the month of May and until she was discharged on the 26th of June, the average amount passed daily would be about 24 oz.—minimum $15\frac{1}{2}$ oz., maximum, 29 oz.

An analysis made on the 15th of May, gave the following results:—Color pale; odor urinous; reaction acid; albumen present, also heavy whitish deposit; pus cells and crystals present; sp. gr. 1010.

From the first of May her health improved steadily and uninterruptedly. On the 10th she was allowed to sit up in the chair.

June 19th, urine still comes in considerable quantity from the right sinus. On the left side only pus appears on the dressings.

To test the potency of the ureters, on June the 20th a few c. c. of methylene blue, representing about one gr., was injected into the fistula on the right side through a small catheter. In $1\frac{1}{2}$ hours the urine, the first which was passed afterwards, was colored a deep blue. On the 23rd of June, the methylene blue test was applied to the left side with completely negative results.

The patient left the hospital on the 26th of June, feeling well and looking healthy. The two sinuses were still discharging.

On July 20th I received the following report of her condition:—"Saw Mrs. D. and she feels very well." Results of an analysis of urine voided same date: Color pale; odor urinous; reaction faintly acid; sp. gr. 1005; albumen present after filtration; moderate amount of heavy whitish deposit; pus and epithelial cells a few; no crystals or casts; quantity about 25 oz.

The points of interest in the case are: 1. The entire absence of the most prominent symptoms characteristic of renal calculus; 2, the enormous size of the stone; 3, the small amount of healthy secreting kidney structure which is capable of maintaining life under adverse conditions.

With reference to the first point, I may state that renal calculi may and do exist and give rise to no special subjective symptoms, but this is not usually the case. Mr. Henry Morris records a case in which a calculus had grown quietly to such a size as to be felt by palpating the abdomen without giving rise to any special symptoms. Bruce Clark refers to thirteen cases of quiescent calculi out of twenty-four post-mortems, and Mr. Murray, of Cape Town; Noble, of Philadelphia, and Doran, of London, have each reported cases of painless renal calculi.

Then again the symptoms caused by renal stones may not be referred to the kidney or ureter. On the contrary they may be transferred to other organs. Cases of renal calculi are often treated for cystitis. A very interesting case is referred to by Mr. Morris, in which a vesicovaginal fistula was maintained for nearly ten years, to relieve a supposed case of cystitis, but at length a renal calculus was removed and then the fistula was closed without any return of the symptoms, and the patient recovered perfect health.

The pelvic pains and cramps (flatulence), from which my patient suffered were no doubt reflex from the kidney affections, for these symptoms have all disappeared since the operation.

As regards the second point—the enormous size of the stone, I may say that the largest renal calculus I find recorded weighed 10 oz. It was removed by Henry Morris, of London. He also mentions having removed from the right kidney of a man a stone which weighed about 2 oz. 6 drs. (1333 gr.), and from the left, one that weighed 1 oz. 1 scruple (513 grs.). Mr. Foster, of Tunbridge Wells, removed one that tipped the scales at 1 oz. 5½ drs. (822 grs.), and Mr. Day, of Norwich, at 2 oz. 6 drs. (1331 grs.). Dr. Shepherd, of Montreal, reported in the *Philadelphia News*, April 23rd, 1887, having removed a stone that weighed 4 oz. 7 drs. and measured 3½ inches in length and 9 inches in circumference. It was composed of triple phosphates. The stone which I now show you weighs 13½ oz. (av.) This does not include the 28 small calculi removed at the same time.

What is of interest about the third and last point is that the left kidney was converted into a unilocular cyst cavity with no secreting substance left, and that all the secreting substance left of the right was a layer apparently half an inch in thickness, which encircled the stone. The medullary portion seemed all gone—and still even this small amount was not only able to maintain life under ordinary conditions, but was capable to withstand the extra strain incidental to two major operations.

During the past two months the average amount of urine voided daily has been 24 oz., and still the patient feels well and looks healthy.

In reporting this case I do not claim to have anything new to offer to the Association, but I do think it possesses sufficient interest to warrant my putting it on record.

DISCUSSION.

The President: I wish to congratulate Dr. McKay, and would like to know if the stone removed by him was the record.

Dr. McKay: In Dr. Shepherd's case the stone was larger in dimensions but not so heavy.



A CASE OF URETHRAL CALCULUS OF EIGHT YEARS' DURATION.—CALCULOUS KIDNEY.*

By S. S. SKINNER, B. A., M. B., C. M., St. John, N. B.

Timothy Collins, age 38 years; occupation, mason. Admitted into the St. John General Public Hospital, June 21st, 1903. Complaint: Inability to pass his urine through the penis, it continually dribbling through openings behind the scrotum. Duration of the complaint, 8 years.

Family history good.

Personal history, nothing of note. The patient has never had syphilis or gonorrhœa.

Present illness began in the summer of 1895. He then had trouble in micturition. An abscess formed behind the scrotum, which was opened by his physician. From that time on to the present he has had trouble in micturition, a quantity always escaping through fistulous openings. At times some would pass through the urethra with comparative ease, but the flow would suddenly stop entirely or come in dribbles. At other times the urine would entirely pass through the fistulous openings. Four years ago he was admitted into the General Public Hospital. Sounds were passed up to the largest size. After this more urine escaped by the urethra, but some always came through the fistulæ.

On admission into the hospital last month the patient was found to be greatly emaciated, with a hectic temperature, the thermometer registering 104 in the evening. Heart and lungs normal. On examination four urinary fistulæ were found, one opening through the scrotum, two between the anus and the scrotum, and another to one side of the anus. The urine kept continually dribbling through all of these. A large sound was passed through the urethra. So much pain was caused by the instrument that the examination was unsatisfactory.

Assisted by Dr. W. A. Christie, I operated upon the patient on June 26th. The fistulæ were probed and opened. A sound was passed without difficulty and a stone was detected, which was thought to be situated at the base of the bladder. Feeling confident that the calculus was in the bladder, a supra-pubic lithotomy was decided upon. The operation was performed in the usual way, but on examining the interior of the bladder no calculus could be found. A sound was then passed and the stone was ascertained to be situated in a sac in the prostatic portion of the urethra and part-

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ly behind the neck of the bladder. A median lithotomy was then performed and a stone the size of an almond was removed without difficulty. The bladder was allowed to drain through the suprapubic opening as well as through the perineum, as there was a very septic condition of the urine. On section of the calculus it was found to be an alternating one, the nucleus being composed of uric acid, next a layer of oxalate of lime and outside a coating of phosphates.

This case is of interest especially for the long duration of the symptoms. The stone was first of all formed in the kidney and passed into the bladder. The patient gives a history that about eight years ago had a paroxysm of pain on one side, probably due to the passage of the stone through the ureter. The calculus was then forced into the urethra, causing the abscess, which was opened by his physician at the first of his illness. The calculus became lodged in a sac formed by the abscess, only partially obstructing the urethra. This will account for the calculus not being discovered before, as the sound must have passed over the calculus without giving the characteristic feel and click. The manipulations about the perinæum during the operation probably dislodged the stone from its sac as it was easily detected at that time, though it could not be elicited when an examination was made some days before. It has been most unfortunate for the patient that his condition was not diagnosed at the first of his illness, as he would have been spared eight years of suffering.

Had we not been deceived in thinking that the calculus was in the bladder the patient would not have had to undergo the suprapubic operation, and it is a question even acting on the diagnosis made if the best procedure was not to remove the stone through the perineum. Lithrotomy was contraindicated because of the difficulty of entering the bladder, and owing to the excessive irritability of the urethra as evidenced by the occurrence of severe rigors, and the existence of cystitis. These conditions contraindicating lithrotomy a choice was to be made between entering the bladder from the perineum or above the pubes. On reviewing the case the indications were more favourable to going through the perinæum, though lateral lithotomy is an operation which has always been of great interest to the surgeon; still at the present day it is comparatively seldom performed. Suprapubic cystotomy is an operation which has been extensively practised of recent years, and with considerable success.

I will pass around the calculus. It still shows the shape of a urethral one, being elongated, rounded at one end and pointed at the other, though the phosphatic covering in this specimen has been to a considerable extent chipped off. On looking at the transverse section the composition of the stone is easily detected. Although

most urethral calculi are undoubtedly renal in their origin, still in some rare cases they are primarily formed in the canal. These calculi are usually of the uric acid variety or oxalate of lime, but this one from its long sojourn in the urethra has been coated with phosphates, and has become moulded to the shape of a urethral calculus. The patient is making a good recovery.

Louis Devine, aged 27, occupation, engineer. Admitted into the General Public Hospital on December 12th, 1902. Complaint: Sharp stabbing pains in the right flank, and frequency of micturition.

Personal history, suffered from gonorrhœa five years, the discharge lasting about six months, resulting in a stricture which had to be dilated by bougies.

Family history, father and mother both died at a comparatively early age. The cause of their death cannot be ascertained.

Present illness: When the patient was in his twenty-first year he was seized with a very sharp pain in his right side. This pain was accompanied by nausea and vomiting, the attack not lasting more than twenty minutes. It was not until a year later that the second attack occurred, and from that time up to three winters ago he was free from them, but during that season he had several similar seizures. From that time until about eight months ago he was not troubled with the pain. The attacks then came on at frequent intervals and the pain also became more permanent. At the time of his admission into the hospital he had a dull, dragging pain in the region of the right kidney, which at times became very sharp. The pain was aggravated by pressure. The urine contained pus in considerable quantity and was neutral in reaction.

The case was evidently one of pyelitis of the right kidney: there was pain and tenderness over the affected organ, increased frequency of micturition and an intermittent discharge of pus. The diagnosis lay between a pyelitis due to renal calculus, primary tuberculosis, or secondary infection, caused by the former gonorrhœa passing up from the bladder. The diagnosis of primary tuberculosis is usually a matter of doubt, if the bacilli cannot be demonstrated in the urine, since the symptoms are very similar to calculus. In this case several examinations of the urine were made for the tubercle bacilli, but no trace of them could be found. The history of the patient and of his family may be of importance in distinguishing between calculus and tuberculosis, but next to finding the tubercle bacilli the chief points of distinction are that the symptoms are less influenced by exercise or rest, and there is less hæmaturia or colic than when calculus is present, and the kidney is also not usually so tender on manipulation. The fact that in this case, when the pus disappeared, as it did for several days at a time, the quantity of urine at the same time was considerably decreased in amount, points to the origin of the trouble being a calculus.

In December last the kidney was explored through a lumbar incision. The substance of the organ was probed to ascertain if there were any calculi present, but none could be detected. A trocar was passed into the pelvis of the kidney and through it a quantity of urine and pus flowed. A free incision was then made through the substance of the kidney and free drainage was established.

The patient improved considerably after the operation. A mixture of pus and urine escaped through the opening in the loin and a permanent fistula resulted. Early in March the condition became worse, the pain in the side returned in a severe form, the pulse rate increased and the temperature rose. Another operation was decided upon and under ether the urinary sinus was enlarged by a free incision. A large quantity of pus escaped from the upper portion of the wound and a very free hæmorrhage occurred, which was with difficulty stopped by packing. The patient from this out rapidly improved, the pus gradually disappeared from the discharge and for two months nothing but urine has escaped from the fistula in the loin. He has been able to walk out of doors daily and has become quite fleshy and free from pain. The temperature and pulse are normal.

It is important to note that about six weeks ago he passed a stone through the urethra and another a few days ago. This last specimen, which is about the size of a split pea, will be passed around for your inspection. The passage of these calculi point strongly to the cause of the trouble as being due to renal calculi.

An examination was made, by the aid of Dr. Murray MacLaren, with the Harris segregator. It was found that no urine flowed into the bladder by the right ureter, but through the left ureter normal urine passed.

On examining the patient you will find that he has a urinary fistula situated in the right flank midway between the crest of the ilium and the last rib. This fistula has existed since the operation in December.

In the great majority of cases renal fistulæ are caused by calculi in the pelvis of the kidney or in the ureter; other causes are: injuries inflicted by operation and abscess of the kidney. The opening into the cavity of the kidney is usually single and connected with the posterior aspect of the organ.

If the other kidney be sound and a permanent fistula communicating with a diseased organ resist other treatment, the best plan is to perform nephrectomy. In all cases before undertaking this operation the condition of the other organ must be ascertained if possible. Various methods have been suggested for doing this. Catheterism of the ureter cannot be carried out with sufficient certainty to be of any use. A few years ago exploration by abdominal section was the only means by which the state of the other could

be ascertained with any certainty, but in the instrument invented by Harris we have a valuable aid in determining whether the other organ is diseased.

The condition of this patient points to the need of the removal of the right kidney. We are fortunate in having Dr. Maurice Richardson, an authority in abdominal surgery, present at this meeting of the Association. It is my intention to ask him to operate on this case, so that we may all reap the benefit of witnessing his skill.

DISCUSSION.

Dr. P. C. Murphy: I would like to ask what is to be done with the renal fistula—whether it is to be left or operated on.

Dr. Cushing: This is a big subject. One case I engrafted the ureter above obstruction to the bladder and patient lived five years. In patients where there are old urinary fistulæ, the conditions are not favorable as there is apt to be pyelitis. Otherwise it is better to remove the kidney. Where parts are clean I prefer to remove kidney through the abdomen, but where suppurative enlarge the fistulous opening.

NOTE—Dr. Richardson, assisted by Dr. Skinner, performed a nephrectomy on the above case in the St. John General Public Hospital in the presence of over fifty medical men. The operation was rapidly and very successfully performed. The kidney was found to be a calculous one and the structure of the organ was greatly disorganized. The patient is making an uninterrupted recovery. The daily secretion of urine never fell below thirty-six ounces.



ANEURISM OF ORBIT.—CONGENITAL NASAL OBSTRUCTION.*

By J. R. McINTOSH, M. D., St. John, N. B.

I shall not venture to trespass upon your time by going at any length into the discussion of aneurismal dilatations in the orbit, further than to say that such conditions are rare—even in adults, and still rarer are they in infants.

About 200 such all told are recorded. As you know, in adult life the condition in most cases results from traumatism, and chiefly through a fractured skull and tearing of the vessel walls in the region of the optic foramen, whereby we get true or false aneurismal conditions resulting sooner or later and varying in severity very considerably.

Diseased conditions of the vessel walls may also give rise to aneurisms here or elsewhere, but this is a much rarer occurrence and is chiefly seen in females, whereas those of traumatic origin are more commonly seen in males.

The diagnosis of both these forms would seem simple, but experience has shewn that it is no such simple matter in many cases, and a pulsating exophthalmos does not of necessity mean an aneurism at all.

Congenital aneurisms, or those arising soon after birth, are so rare that little is known of them—or at least described. They may, however, be cirroid (aneurism by anastomosis) in nature, and in such a position it is difficult, if not impossible, to distinguish them from cavernous angiomas or highly vascular sarcomata.

Such a case is that of A. Dew—now 5 months old—a first born child, whose mother first noticed a red swelling at the inner angle of her baby's eye when it was three weeks old. The swelling gradually grew larger, and when I saw her first at the age of three months, the eye ball was proptosed, the eyelids swollen, and during sleep a very well-marked pulsation threw the whole visible contents of the orbit forward at each beat of the heart, though when awake no pulsation could at that time be seen or felt notwithstanding that the proptosis remained and was increased by crying.

The condition continued to increase for a month or so, but lately the upper lid is much less prominent, though the lower remains about the same. The pulsation is still visible and a purple appear-

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ance is commencing to shew itself through the skin of the lower lid, while the lower palpebral conjunctiva is becoming more prominent and shewing itself above the lid in nearly its whole extent. The pulsation could be easily controlled by compression of the carotid of the same side.

The lids, however, still cover the eyeball well, the cornea remains intact and the movements of the eyeball are unimpaired. The media of the eye are clear and the fundus practically normal; the only noticeable change within the eye being a small streak of visibly dilated vessels running from the pupillary margin downwards to the periphery of the iris. The pupil is active. In the lower lid is a small nodule which is not increasing in size. The eyeball is not only pushed forward but also outward from the middle line and is on a higher level than its fellow. No definite mass nor enlarged single vessel can be distinguished, nor can any distinct delimitation of any sheath or capsule be made out, nor are there any enlarged glands elsewhere. Pressure on the lids easily compresses and lessens the contents of the orbit to a considerable extent.

There is no thrill or bruit to be made out, but the restlessness of the child makes this difficult to be determined. The child is healthy and seems happy and without pain or discomfort.

It is the treatment of such a condition, should it continue to advance, that renders such a case serious in a baby.

Rest and diet are out of the question with a babe at the breast, and medicines, I should imagine, would avail little with the rapidly growing tissues. The other means at our disposal would be surgical or electrical.

Ligature or compression of a carotid in the adult has been none too successful either in its immediate or remote results in the past, and I could not imagine it to be more successful in an infant, though I might be wrong on that point, and the same remarks might be made should one attack and attempt to remove the vascular mass itself. Electrolysis, however, might give a more satisfactory result, and should, I think, be given a first trial should the condition continue to advance.

In regard to the second condition which I wish to bring before you, I will be very brief.

Nasal obstruction is common enough it is true, but a congenital deformity, as a cause, is not so common. You will remember how that the upper part of the nasal cavities arise in early foetal life from cutaneous depressions, while the lower part of these cavities are formed by the ingrowth of the horizontal plates of the palate bone, so forming with a groove above them the inferior meatus of each nostril.

Sometimes, however, a thin bony plate from the vertical portion of this (palate) bone occludes the posterior opening of the nostril on one or both sides, and so although the nose be otherwise patulous, no passage for air or other use can be made of such a nostril. Such is the condition to be seen in the case of Miss R., an adult, who has never been able to breath through her right nostril, who has no sense of smell in that nostril and who, when you examine, you will find to have a hard and resisting obstruction filling her right choana and by posterior rhinoscopy the bony color can be seen through its thin mucous coating.

I may add that she is not free from catching cold in the head, and the increased secretion which takes place on such occasions is troublesome to remove from that side, as to put it plainly, she cannot "blow" on that side. Her voice is not particularly affected, probably due to time and not acquired.

Further I need only say that diphtheria and other diseases may also occlude the posterior nares, but such obstructions are always membranous, not bony in character.

I propose to remove the obstruction.

THE TREATMENT OF NASAL DEFORMITIES BY SUBCUTANEOUS INJECTION OF HARD PARAFFIN.*

By GEO. K. GRIMMER, B. A. (Univ. of N. B.), M. D. (Edin.), F. R. C. S. (Edin.) Assistant Laryngologist and Rhinologist, Montreal General Hospital.

At the meeting of the Canadian Medical Association in September, 1902, I had the privilege of reading a short paper on the subcutaneous injection of paraffin wax, and of exhibiting two patients that I had subjected to that treatment; since that a much wider experience of the method has been gained, the technique improved and some of the results obtained by Eckstein, Paget and others, are, I venture to suggest, little short of marvellous.

Melted paraffin wax has been used with success to overcome many physical deformities; but it is, with reference to the suitability of this method in the treatment of nasal deformities that I beg to draw your attention to-day, and show photographs taken before and after treatment of four of my cases. Sunken, or what are known as saddle-back noses of diverse degrees of flatness and ugliness, the result of destruction, wrought by congenital or acquired syphilis, tuberculosis or traumatism, have been built up and made presentable, if not handsome, by this method.

*Read before the Maritime Medical Association, St. John, July 23rd, 1903.

In carrying out the treatment the following are the essential points:—

The Melting Point of the Paraffin.

When Gersuny, the father of paraffin prosthesis, published his first results in 1900, he recommended paraffin melting at 104°F. Eckstein, who enthusiastically took up this work, and experimented on animals with paraffin of higher melting points, came to the conclusion that paraffin melting at 132°—140°F., gave better results. In July last, I injected 10 c. c. of paraffin melting at 102°, 107° and 112°F. beneath the subcutaneous tissue of the noses of each three rabbits. The shape of the nose of the rabbit injected with paraffin at 112° has remained unchanged, in the others the result has not proved satisfactory. The nose of one of my first patients built up on the 6th of September last with paraffin melting at 104°F. has remained unchanged in outline and the appearance of it is now better than it was a few weeks after the operation, when I exhibited the case at the Montreal meeting.

In the two cases I have recently treated I used paraffin melting at 112°F. and I believe paraffin at that melting point will prove most satisfactory for the following reasons: 1st. It is easy to work with; 2nd. It can be injected at a temperature (of 118°—120°F.), which does not endanger the vitality of the tissues by burning. 3rd. It becomes a solid substance at the time of, or a few seconds after injection, and of a permanent hardness in 15 or 20 minutes, and with the exception of slight shrinkage (which is common to all paraffins) retains its original shape, unaffected by fever temperature.

The Best Syringe—A 5 c. c. solid metal syringe with a metal piston, having both a push and screw action, answers the purpose well; the syringe and proximal part of the needle should be covered with rubber tubing to retain the heat. The needles should be $\frac{3}{4}$ to $1\frac{1}{4}$ inches long, curved or straight, and the calibre about that of an antitoxine needle.

Preparation of the Paraffin Syringe and Needle.

These must be sterilized and placed in a bath of sterile lotion at 120°F. until required.

The Operation can be done without an anæsthetic, under local anæsthesia, but by preference under general anæsthesia. Immediately before injecting the paraffin, the syringe is filled and tried, and a few drops of hot water drawn into the needle. the point of the needle dipped in boiling water for two or three seconds and inserted at once into the tissues. The needle puncture should be made $\frac{1}{2}$ inch or more

from the depression and carried subcutaneously a little beyond the point of greatest deficiency, making sure that the sides and root of the nose are firmly compressed, to prevent escape of the paraffin into the loose tissue near the inner canthi, and on to the forehead. The piston is then slowly and continuously compressed or screwed in, until sufficient paraffin has been injected, meanwhile the point of the needle can be moved about as desired. After a few seconds the needle is withdrawn. In two or three minutes the paraffin becomes firm and the assistant can remove his fingers, but the operator must continue moulding the nose to the desired shape for fifteen or twenty minutes when the paraffin becomes thoroughly set. Should the needle clog before sufficient has been injected, it must be withdrawn, cleaned, and the operation repeated. Usually it is best to insert the needle from near the point of the nose.

The After Treatment. Flexile collodion is applied to the needle punctures and a lint dressing placed over the nose. If swelling of the nose or oedema of the eyelids occurs, cold compresses should be applied, and the swelling will disappear in three or four days.

The quantity of paraffin required varies with each case (enough being used to correct the deformity so far as possible) the amount necessary in nose cases is usually between 1 and 8 c. c.

The Dangers of Paraffin Injection.

Accidents following the injection of paraffin have been few, only two of a serious nature having been reported in European and American literature, in relation with this operation so far as I have been able to learn; in both the cases mentioned there was loss of sight in one eye shortly following injection. The first of these was reported by Leiser in April, 1902, and the other by Hurd, of New York, on the 11th of this month. In Leiser's case, thrombosis of the ophthalmic vein followed injection. In Hurd's case, embolism of the central artery of the retina is said to have followed. This, I think, is an anatomical impossibility unless the patient had a patent foramen ovale. Many cases have now been reported in which no accidents have occurred. Of these 29 are by Paget, and 19 by Eckstein. A suppurating point appeared in one of Bush's cases, but after the pus escaped, healing occurred, the ultimate result being good.

Congestion of the skin over the paraffin will follow when too much has been injected, but this hyperæmia disappears in one or two months. In my first case a small superficial slough, the size of a pea, formed in the skin of the nose, the result of high tension, but it separated, and left no disfigurement. The greatest danger of this treatment is undoubtedly venous embolism, which I believe is a preventable accident if sufficient care be taken in performing the

operation. The chief facts in favour of this method of dealing with nasal deformities may be reviewed:—1st, that nasal deformities the result of destruction, or non-development of the nasal bones, which have not previously been treated successfully by any other method can be obliterated. 2nd, that after some experience in working with paraffin, the operation is easily performed and gives little or no pain. 3rd, that results are good and the risks few.

I think it can now be justly claimed that the subcutaneous injection of paraffin has acquired a firmly established reputation for the correction of many nasal deformities and many persons who were rendered conspicuously hideous from flat or sunken noses, and were constantly made to feel their misfortune by the remarks and stares of those with whom they came in contact, have at least been rendered unnoticeable by this treatment and to many of these the knowledge that they are no longer oddities but presentable persons, has brought a feeling of self-respect and a cheerful expression denoting much happiness not previously experienced.

DISCUSSION.

Dr. Ford: I would like to ask if when blowing the nose the shape would vary.

Dr. T. D. Walker: Would the wax be liable to melt if the day was hot?

Dr. Grimmer: Paraffin becomes firm, still there is no obstruction to breathing. It will not melt once it becomes firm. The operation is done for cosmetic purposes.





TWO DAYS BEFORE TREATMENT



FOURTEEN DAYS AFTER TREATMENT



TWO DAYS BEFORE TREATMENT



FOURTEEN DAYS AFTER TREATMENT

TUBERCULOUS ARTHRITIS—WITH SPECIAL REFERENCE TO THE KNEE.*

ITS PATHOLOGY.

By JOHN STEWART, M. B., Halifax, N. S.

As I have been asked to deal with the pathology of tuberculous arthritis, and as the bacillary theory of tuberculous disease attains its majority in this year, for it is just twenty-one years since Koch's great discovery, I may be permitted to give a short resumé of the pathological work which culminated in the discovery of the tubercle bacillus.

The term "tubercle" is an ancient word in medical literature. Celsus frequently uses it. Etymologically it means a small lump. The anatomist describes the tubercle of the tibia, or the scalene tubercle; the dermatologist speaks of a tubercular syphilide, and there is a condition known as the painful subcutaneous tubercle. And formerly the pathologist applied the term "tubercular" to any nodular or lumpy growth. It was in this anatomical sense used by John Hunter. But the pathological meaning of the word is now restricted to a definite kind of nodule, with very definite pathological properties.

The pathological study of tubercle may be said to have begun about one hundred years ago. In the same year in which John Hunter died (1793), his nephew, Matthew Baillie, published his *Atlas of Pathology*, the first of its kind and it gave the first accurate description of tubercle as found in the lungs. About the same time, and in the early years of the XIX century, Laennec and Bayle in Paris were making clinical and pathological studies of pulmonary tuberculosis and beginning the long argument about the grey and the yellow tubercle, which was to rage for nearly a century. Laennec made two most important observations. He was the first to show that the grey tubercle developed into the yellow, or caseous tubercle (though this was denied by many), and he maintained that tuberculous tissue existed in a diffuse, or infiltrating form as well as in the nodular variety. He also pointed out the similarity in the course of tuberculous disease to that of the infective fevers. These observations introduced a distinctly pathological notion in the meaning of the word tubercle.

During the next fifty years very little progress was made: the chief advance being in a growing conviction of the infective nature

*Discussion at meeting of Medical Society of Nova Scotia, Antigonish, July 2, 1903.

of tubercle. And although Nelaton had shown (1837) that the anatomical characters of scrofulous bone were the same as those of tuberculous tissue, few believed in the identity of these diseases. Men spoke of strumous glands, scrofulous joints, and tuberculous lungs, and did not recognize a common factor. The next quarter century, however, was one of rapid advance. The introduction of the modern microscope, and of the methods of experimental pathology brought about a period of immense activity in pathological study. Let us recall the position of affairs about the year 1875. In the first place the histology of tubercle had been pretty thoroughly worked out, and we were familiar with the constituents of the tubercular nodule, the giant cell, the epithelioid and the round cells. The microscope had also demonstrated the identity from a histological point of view of strumous, scrofulous and tuberculous tissue, and, following the nomenclature of Virchow, this kind of tissue, with similar forms found in lupus, leprosy, and syphilis, was termed "granuloma."

In the second place, the old conflict of the grey and the yellow tubercle was still going on. The French School, following Laennec held that the grey, or miliary tubercle was the initial lesion and that the tubercle, or caseated mass, was a consequence. The German school, headed by Buhl and Niemeyer maintained that miliary tuberculosis was always secondary to a caseous deposit already existing in the tissues, which, might be due to various causes. But there was a third point of more importance than anatomical structure or causal relationship, namely the pathological character of tubercle and its etiology. Ever since the time of Laennec the idea of the infective property in tubercle had been more or less clearly before the mind, but it was the experimental work of Villemin that first afforded convincing proof of its infectivity. He published the results of his researches in 1865. He proved the inoculability of tubercle, and also showed that the so-called scrofulous tissue, inoculated into healthy animals, was capable of producing miliary tuberculosis. And yet other pathologists endeavoring to repeat his experiments arrived at different conclusions. It was held that the inoculation of almost any kind of material might set up tuberculosis. And so it was that the leading English text book of Pathology, in 1875, stated that "no specific inoculation is necessary for the development of tuberculosis." But Villemin was right and, as years went on, his experiments carefully repeated, and carried out with all the precautions indicated by the rising science of bacteriology, pointed conclusively in one direction. It became impossible to doubt the existence of a virus of some kind, and the pathological concept of tubercle was a chronic infective granuloma. Cohnheim, in the second edition of his work on General Pathology, discussing the results of these experimental researches, says, "All these facts

“speak, as I think, so eloquently and pointedly for the *infective nature of tuberculosis*, that we cannot allow ourselves to be “shaken in our conviction by the circumstance that the direct “demonstration of the tuberculous virus is still an unsolved “problem.” This was in 1881. He had not long to wait for the solution. At a meeting of the Berlin Physiological Society, on the evening of March 24, 1882, Robert Koch announced his discovery of the tubercle bacillus.

How does the tubercle bacillus get into the knee-joint? There are three ways in which we may become infected by the tubercle bacillus, by inhalation, by ingestion, by inoculation. Now in studying the infective diseases we have to note two factors, the soil and the seed; the infective and toxic action of the germ, and the protective and immunising action of the tissue cells. And it is a difficult problem. Conditions are varying; reactions are intricate; observations are conflicting. Remembering the past we ought not to be too positive in our conclusions.

But we may feel pretty sure that under some conditions the tissues are more than a match for the invading bacillus and that it is destroyed before it has done any damage. It is probable that every one of us, is at one time or other, and perhaps frequently, the unwilling and unconscious host of the tubercle bacillus. Where the bacillus has effected a lodgement it acts as an irritant, and the reaction of the organism is seen in the proliferation of epithelioid cells, the most characteristic elements of a tubercle, and gradually the tubercular nodule is formed, essentially a mass of epithelioid cells, with a few giant cells, surrounded by an envelope of leucocytes. The bacilli are found in the central part of the nodule, not among the leucocytes. In fact, the very formation of the nodule seems an effort on the part of the organism to check the advance of the invader. And sometimes the leucocyte envelope gives place to a fibrous capsule and the bacillus is shut in; then we have “quiescent tubercle.” But no sooner is the tubercle formed than it begins to degenerate: the central part undergoes caseation. This caseation is one of the most characteristic things about tubercle. The pearly grey miliary tubercle is transformed, as Laennec held, into yellow tubercle. And when several tubercles have merged together, and the caseating process has extended, large irregularly shaped caseous masses are the result.

When the resisting powers of the tissues are insufficient and the tuberculous process advances, there are three routes open for it. The first is by direct continuity of tissue. While some tissues such as serous membranes are particularly sensitive to the action of the tubercle bacillus, and others, as muscle, very resistant, the tendency of the tuberculous process is to advance steadily, attacking everything in its way. This method of progress is slow, and quite

localized. The most common path of advancing infection is by the lymphatic system. The tubercle bacilli inhaled into the air passages are soon found in the submucous lymphatics, and then in the bronchial glands. Bacilli taken into the alimentary canal reach the mesenteric glands. The cervical glands may be infected from the lymphatics of the mouth and pharynx. But there is a third route, and to reach the joints the tubercle bacilli must get into the blood current. A caseating focus in the lung may break into a blood vessel, a caseating mesenteric gland may return its bacilli and their products into the lymphatics and thence through the thoracic duct into the venous system, and there are also direct anatomical anastomoses between the smaller blood vessels and lymphatics. It is certain that in whatever way they reach it, tubercle bacilli occasionally circulate in the blood.

Now, what determines their deposit in joints? We know that synovial membranes like serous membranes are readily attacked by tubercle. Then, the arrangement of the blood vessels in the cancellous tissue of bone may have some part in determining the deposit of tubercle. Cancellous tissue is very vascular, and contains large venous sinuses. In these the current of the blood must be very slow, and the bacilli, which in other tissues, are swept swiftly on in the blood stream, float slowly through these venous channels and have time to subside, and there come in contact with the endothelium of the blood sinus which is soon attacked. Cheyne has frequently demonstrated the direct developement of the endothelium cells of blood vessels into epithelioid cells of tubercle.

And finally, a joint even if it has the advantage of a very free circulation is a part subject to very great strain and what may be called local fatigue, and anything that lowers vitality disposes to an attack of tubercle.

There are two types of tuberculous arthritis, the one commencing in the synovial membrane, the other in the articular end of the bone. In the synovial form the membrane becomes swollen and hyperæmic. The synovial fluid is not increased in bulk but becomes turbid. There is an increase in the swelling and vascularity, the deeper layers become fibrous, the superficial are transformed into a granulation tissue of a peculiar soft gelatinous consistence, hence the name once very common of "gelatinous degeneration." These changes are seen especially in the synovial fringes, they grow in bulk, they fill up the angles of the joint and creep over the cartilage. At last the whole is transformed into granulation tissue, opposite surface may coalesce and the joint cavity may become obliterated. At this stage the joint has the appearance of a synovitis, in the characteristic shape, and the bulgings at the sides. The process may be arrested here, a fibrosis taking place with fibrous ankylosis. If the disease extends the ligaments and capsule

are soon affected, they swell and become œdematous and pulpy, the characteristic shape of the joint is lost, it is globular or fusiform, with no special bulging, as all parts are equally softened. The natural colour of the skin is still preserved, hence the name given by the Elizabethan surgeon, Richard Wiseman, "White Swelling." Owing to the great softening of ligaments, dislocation may occur, the tibia being drawn back and behind the femur. The granulations of the synovial membrane attack the cartilage and grow into it, gradually perforating it and attacking the bone. The cartilage may peel off in flakes, as in a septic inflammation. The bone becomes carious and shows caseating masses, or sequestra, with fungating granulations, and if pyogenic germs gain access we have a mixed infection and true suppuration. This is the usual type of synovial disease. There are three other forms. One is acute miliary tuberculosis, only seen in an acute general infection. Another is a limited thickening, generally seen in the knee joint, resulting in nodular or polypoid growths. And a third is tuberculous dropsy of the joint, the synovial membrane is slightly thickened or coated with fibrin and there is a quantity of thin turbid fluid, often containing rice-like bodies. This is generally seen in young adults, rarely in children, and when it occurs in old people the fluid is as a rule purulent, an empyema of the joint. The synovial type of disease is present in about 25% of all cases. It is more frequent in the knee than in the hip or elbow.

The osteal type of arthritis results from the deposit of the bacillus in the cancellous tissue. In the knee this is usually in the lower end of the femur. Rarely it is primary in the patella. The result of the tuberculous process is either the formation of soft caseating deposits, or sclerosis of the bone with separation of sequestra. In either case the infection extends towards the joint and towards the periosteum. If it should happen that the extension is more rapid toward the periosteum or that the surgeon detects the condition and cuts down on the diseased area, the joint cavity may escape. Otherwise the tuberculous ulceration, true caries, works its way toward the joint, erodes the cartilage, and attacks the synovial membrane, setting up all the changes which we have already noted in the primarily synovial type.

Perhaps the most important practical point in the pathology of tuberculous arthritis is the recognition of the fact that the disease in the majority of cases occurs in the articular end of the bone, and that if this is detected and the diseased focus removed by timely operation, the disastrous results of extension into the joint cavity may be averted.

SANATORIA AND TUBERCULOSIS.*

By G. E. DEWITT, M. D., Wolfville, N. S.

The advocacy of the open air treatment for consumption before this meeting after all that has been said and written upon the subject within the last five years may appear unnecessary, as doubtless all are convinced that the open or fresh air treatment of this disease has come to stay and without it all other means will not avail. If, however, the sanatorium life, or life in the fresh air, has been satisfactorily demonstrated so as to impress the profession with its importance and truth, like all other things which are good and true, and their advocacy and application result in the betterment of the condition of the human race, it is our duty to continue to advocate and apply them.

EARLY CASES.

The public is not sufficiently educated as to realize the importance, the urgent necessity of treating consumption in its earlier stages. The majority of those applying for treatment in sanatoria are in the advanced stages, hence there is too much mingling of the early cases with the advanced. It is true that in no place is there so much care exercised to check the means of contagion as in the sanatorium, but the vigilant eye of the management of these institutions cannot always be upon the careless and indifferent. The act of coughing may distribute particles of sputum, loaded with the bacilli, upon the clothing of others, or the floors of verandas, and thus become a source of infection to the susceptible. Constant coughing attended with purulent expectoration in a sanatorium by those in the advanced stages is objectionable and repugnant to those whose health is not broken down and becomes a check to many who would avail themselves of the treatment afforded in a sanatorium. The need of the hour seems to be to have and conduct sanatoria especially for those who are in the earlier stages of the disease, and the advanced treated elsewhere.

“Tuberculosis, like all other poisons invading the host, is dependent upon the dose and the susceptibility of the tissues receiving it.” If, therefore, those who are in the earlier stages of the disease live with those who are more advanced, the expectoration of the latter being more virulent than the former a fresh invasion may take place in those whose systems are susceptible, although in the incipient

*Read at meeting of Maritime Medical Association, St. John, July 22nd, 1903.

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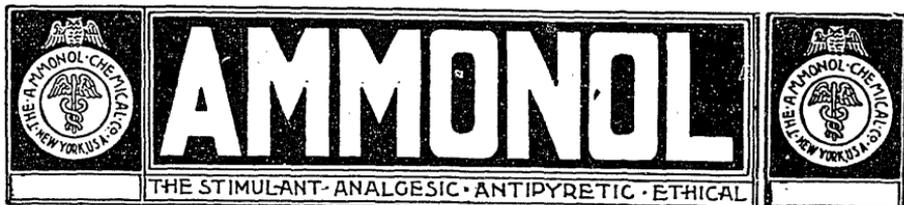
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stage, for it must be admitted that notwithstanding the intensity of the poison, or the source from which it emanates, the susceptibility of the person exposed is the main factor whether invasion takes place or not.

THE SANATORIUM AN EDUCATOR.

One of the greatest and most beneficial results to be obtained from sanatorium treatment is educative. In the sanatorium the patient learns to submit to the methods of treatment prescribed in the open air; how to care for the sputum; how and when to take exercise, rest, diet; they are away from those who would advocate this or that drug as likely to affect a sure cure. The physician when treating consumptives in their own homes is often annoyed by the patient expatiating upon the value of some drug or cure which has been recommended as a sure and infallible means to health. The great number of medicines which have been and are recommended by the profession even is a sufficient condemnation of their efficacy.

Sanatoria are necessary to inculcate in the minds of the patients those principles and methods of living which should govern all consumptives. The consumptive who has been cured or benefitted at a sanatorium will become a teacher to a greater or less extent, of all with whom he comes in contact, and thus will be better disseminated the principles necessary for the prevention of the spread of the disease. The treatment of patients at sanatoria has been the means of the home treatment receiving greater consideration than hitherto. One of the hardest and most perplexing cases which meets the practitioner is when he is called to the mother of a family whose lungs are unmistakably giving way, and whose means can ill afford to support her in a sanatorium. She undertakes by the advice of a physician to take what fresh air treatment she can in her own home, but to do her own work and go into the open air a part of the day cannot be satisfactory. There must be an immunity from fatigue, from anxiety and care. The temperature of the body must be kept as near normal as possible. When the temperature is increased is when the tubercle bacilli are the most active. It is said that the horse is never known to have tuberculosis, the temperature not being suitable. The normal temperature of the cow is 102, and the only way to rid the animals of it is to slaughter the herd.

CLIMATE.

Is it imperative that consumptives in the Maritime Provinces should seek sanatoria in another climate, and far from their own homes? I think the concensus of opinion is that there is not so much in the climate after all. When we compare reports of sanatoria in different countries, as Nordrach in the Baden Black Forest, Gorbersdorff in Salisia, Falkenstein, the Cragleith in Edin-

burgh, the sanatoria of Muskoka, the Adirondacks and those in the low lying lands of Massachusetts all reporting similar results; the effect of the treatment in different climates shows that it is not so much the climate as the systematized treatment in the sanatoria.

These demonstrated results ought to assist materially in stimulating the public and governments to construct sanatoria for the treatment of consumption in their own country. We believe the treatment of the disease should be carried out, if not near the patient's own home, certainly in a climate as similar as possible to that in which he has to live and work.

PUBLIC SCHOOLS.

Two years ago at the meeting of the Maritime Medical Association I ventured to say that some of the simple rules advocated for the prevention of tuberculosis should be taught in our public schools. Dr. C. D. Murray, in an address before the Branch of the British Medical Association at Halifax, referred to the school teacher, "who when instructed, should be able with the aid of suitable text books to adequately instruct the child." The child should not only be instructed in the general and salient principles which prevent the spread of tuberculosis, but a strict surveillance should be exercised in the selection of school teachers. The school teacher who expectorates sputum loaded with bacilli in the school room is a menace to the health of the pupils and a danger to be avoided.

When we have incorporated into the text books of our schools a few of the practical principles which guard the health of the children, and which teach that tuberculosis is contagious mainly through the sputum, that a low tone of health renders the resisting power of the cells of the lungs less liable to oppose the lodgement of the tubercle bacillus; when the yare taught that a lack of fresh air, sunlight, of good diet and that respired air predisposes to the spread of tuberculosis, teachers with tuberculous lungs will not be so ready to apply for the situation to teach these things and the generation now in the schools will receive a knowledge of the prevention of tuberculosis, which will in the years to come do more to teach the masses than any other means can possibly do, not excepting sanatoria for the treatment of this disease.

During the past twelve months I have had ten patients under sanatorium treatment. For the purpose of not being tedious, I will not give their pathological condition, but simply say that six of the ten were advanced cases. While I can report a decided improvement in most of the latter, such as a gain in weight, in chest expansion and improved digestion, yet they were too far advanced to expect a decided cure. The incipient cases, particularly those who lived in the sanatorium several months, recovered.

Already there is evidence that fresh air, and plenty of it is being sought after and planned for, by builders of residences, than heretofore. There is a greater tendency to construct dwellings so that they will command more sunlight than formerly. The people are realizing that it is compatible with their health to live in houses constructed on a dry, or well drained soil. They sit and live in the open air more than before. Rooms in country houses are more frequently aired than in the past. The one room in the house known as the drawing-room, or parlor, where visitors were shown when they called and where they inhaled pent up air, smelling of damp and fungus, is not so much in evidence now. The teaching of hygiene, the building of sanatoria for the fresh air treatment of consumption, have had much to do in arresting the thought of the public and concentrating the mind on the necessity of inhaling fresh and unrespired air as paramount not only in battling with consumption, but necessary to guard and keep the citadel of health so as to oppose the lodgement of any disease germ.

DISCUSSION.

Dr. Botsford: I think first the legislatures should be taught concerning tuberculosis. Likewise chapters should be inserted in the school books in regard to it.

Dr. T. D. Walker: In one case of phthisis with a high temperature, no remedies would reduce the temperature. A nurse was put in charge, friends were kept away, and the temperature became lower.

Dr. Cushing: A very good scheme has been used by a Cape Cod doctor, where small platforms can be put out for the patient to sit on.

Dr. DeWitt: I agree with Dr. Walker as to the influence of friends exciting the patient and temperature becoming higher.



OBSTRUCTION OF BOTH URETERS BY CALCULI.—MULTIPLE CALCULI IN BOTH KIDNEYS*

By G. A. B. ANDY, M. D., St. John, N. B., Provincial Pathologist and Bacteriologist.

I first thought of reading the notes on the case of obstructed ureters; but on thinking it over I came to the conclusion that it would be more interesting to also report briefly a case of multiple calculi in both kidneys, show you the specimens, and more clearly demonstrate the association of the two conditions that I am about to present for your consideration. I have generalized as much as possible so as not to take up too much of your time.

The first case was a man about 41 years, freight agent, well nourished and always enjoyed very good health. While at work was attacked with very severe abdominal pain extending from the small of the back around to the groins on both sides. It was very severe and he was only able to get home with the greatest difficulty. For a week previous to this acute pain the patient had noticed a gradual diminution in the amount of urine, until the onset of the pain, when it stopped entirely. There was absolutely no urine passed from noon until 2 p. m. the following day—twenty-six hours. During this total suppression the condition of the patient was alarming; rapid pulse, temperature 103, vomiting, perspiring freely, and pain intense. This condition continued until he experienced a feeling as though something had given away in the region of the bladder, when he passed two calculi within a few seconds of each other, and about ten ounces of urine. The relief was immediate, but the patient was in a very much exhausted condition.

The stones you will notice are not very large—one about the size of a bean and the other a little smaller. It is just possible that they are from the same ureter. There being no history of a previous attack, the pain bilateral, the resulting tenderness along the course of both ureters, and the passage of two stones, convinced me that it was a case of bilateral and synchronous occlusion of both ureters.

The second case demonstrates what is possible to meet in the way of renal calculi and the patient with the exception of his kidneys a perfectly healthy man. I was permitted to have a post mortem examination and preserved the both kidneys, which I will show you: The effect of the calculi is seen distinctly, there were at least half a dozen stones in the calyces and pelves of each, there was evident pyelitis and pyonephrosis, also great deposition of fat, with atrophy of the kidney substance.

*Read at meeting of the Maritime Medical Association, St. John, July 22nd, 1903.

This patient enjoyed very good health to within three weeks of his death, when he was attacked with severe pain in the region of the left kidney—heavy chill followed by fever in which the temperature went to 104. The urine was turbid and contained abundant epithelium and pus. This continued until he died about three weeks later. All the symptoms of this case were located in the left kidney, which was distinctly enlarged and tender. The right was not complained of at all and you can see by the specimens that it is almost as bad as the left. If the condition of the patient had admitted of it I would have operated, but the result would not have been different when you note the condition of both organs.

In the first case we have obstructive suppression and is called "calculous anuria" and due to blocking of both ureters, or the blocking of one ureter, with the other functionally inactive. In the second case we have the existence of several calculi, with marked destructive changes in both cases; and the clinical symptoms noted on the left side only.

Sufficient illustrations have now been adduced to show many of the difficulties that may arise, both in diagnosing and treating states of renal disease under such circumstances. In the case of a patient urgently requiring surgical relief for renal affections, the possibility of his having only a single kidney must never be lost sight of. Persons so situated, as, for example, where a stone is impacted in the pelvis or ureter of the solitary kidney, would doubtless have lost their lives, in several instances, unless such a contingency had been recognized and promptly acted upon. And so in the course of surgical procedures, as, for example, nephrectomy, we must not forget that the organ we are in search of may be a solitary one.

It is with these objects in view that a brief consideration of this aspect of the subject has been here introduced; and only by a comprehensive knowledge of the different conditions under which ureteral obstruction is likely to occur that the practitioner is enabled to recognize those which are probably remediable by the application of his art, as well as to draw his conclusions as to the time and nature of the proceeding to be adopted, according as signs of urgency or danger are developed.

DISCUSSION.

Dr. Inches: I saw a somewhat similar case last year. The first case I saw was many years ago before the days of laparotomy. In the case last year there was complete suppression of urine for five days at least. The diagnosis was difficult. He was taken to Boston and on his way passed a little water, but after arriving at the hospital there was suppression for three days. Three men who ex-

amined him did not agree on the diagnosis. An operation was performed and the ureters were found involved by a mass, hard but not nodular. Ureters were dissected out and were ballooned which disappeared on freeing them. The tumor was evidently simply inflammatory tissue. Another surgeon present thought the tumor was an aneurism, while a third thought it malignant. However, the patient is alive and well.

Dr. N. E. McKay: The paper was a very interesting one. I would like to know what treatment was given to remedy the anuria.

Dr. P. C. Murphy: Are there any means here to catheterize the ureters? And would that not have cleared up the first case?

Dr. T. D. Walker: I had a case who showed symptoms as if two calculi had been passed, one after the other. Morphia could not be borne and heroin relieved the pain for some time.

Dr. P. C. Murphy: I had a similar case recently and an herpetic eruption occurred over the kidney.

Dr. Addy: In answer to Dr. McKay, the treatment of the first case was hot applications and morphia. In the second case, treatment was symptomatic.

Catheterization of the ureters in male subjects has not been done here though it has been done in female cases. X-rays might have been used.

Dr. McKay: The treatment used was only palliative. I believe where characteristic symptoms are present a nephrotomy should be done at first.

The President: Collecting urine from each ureter without catheterizing can be done. I would like to show the method to any interested.

THE MARITIME MEDICAL NEWS.

A MONTHLY JOURNAL OF MEDICINE AND SURGERY.

VOL. XV. HALIFAX, N. S., SEPTEMBER, 1903. No. 9

Editorial.

"RING RULE" IN THE MARITIME MEDICAL ASSOCIATION.

The *Charlottetown Patriot* has abandoned its complaint against the manner in which the St. John meeting of the Maritime Medical Association was conducted, but reiterates its charge that the Association is being run by a "ring or clique," remarking that the MARITIME MEDICAL NEWS is careful not to deny the existence of such a body. We had thought the denial by Dr. Murphy, of Tignish, was sufficiently explicit and direct. We will, however, if necessary, repeat that denial. It has always in the past fallen upon certain members to bear the heat and burden of the day in connection with Association meetings, and on these, no doubt, in future will the same duties devolve; but these members have never sought and have rarely attained the positions of honor in the gift of the Association. These men, having at heart the success of the meetings, have endeavored, as far as possible, to secure the election to positions of honor and responsibility of such as will give dignity and order to the meetings. It is only necessary to recall the names of the gentlemen who have in the past thirteen years held the presidency of the Association to dispel any thought of ring or clique rule. Bayard, Walker, Daniel, Jas. Christie and Murray MacLaren, of New Brunswick; McLeod, Conroy, MacNeill and Taylor, of P. E. I.; Parker, Farrell, D. A. Campbell and W. S. Muir, of Nova Scotia, give the lie to any such suggestion. Surely even the editor of the *Patriot* could choose no more suitable Presidents, nor gentlemen more representative of their different provinces. We hope that the Island (?) delegates with whom the editor of the *Patriot* states he discussed this matter, and all of whom admitted the existence of the ring in question, will give us some hint

in what direction the selection of the nominating committees have failed to meet their wishes. Their representation on the last committee consisted of a large proportion of their delegates present at the meeting. In selecting officers for a medical association meeting it is necessary to choose those who can be depended upon to lend dignity to, and preserve order in the meetings. A man may be a good wire-puller and canvasser, and may even occupy a position of somewhat "splendid isolation," and yet not have these very necessary qualifications. Hence the disappointment and spleen of those who, while contributing nothing to the good of the profession or public,—save for sordid and ungenerous motives, would endeavor to snatch at high positions for the purpose of self-aggrandizement.

We decline the rather pointless dilemma in which the *Patriot* would place us. The editor of this journal has never held nor sought official position in the Association, but trusts he has contributed something to its success, and that he is better fitted to judge its actions than the lay editor, who has probably never sat through a session of a medical meeting.

The magnificent and steadily increasing success of the Association's meetings is the best tribute to those who have guided its progress, and we anticipate that the coming meeting in Halifax will be the most successful yet, and amply refute the lugubrious anticipations of the *Charlottetown Patriot* and its Island (?) delegates.

TO NON-SUBSCRIBERS PARTICULARLY.

In the August and September numbers of the *NEWS* the number of pages has been increased considerably—in our endeavor to publish the papers and discussions delivered at the Maritime Medical Association meeting in three issues. The October *NEWS* will be the largest by far yet published. The titles of some of the papers will be as follows:

"The Surgical Treatment of Diseases of the Biliary Passages," by Dr. Maurice Richardson, Boston.

"Pure Atmospheric Air a Necessity for the Well-Being of Man," by Dr. Wm. Bayard, St. John.

"Should Physical Training and Especially Military Drill be Compulsory in Our Schools;" by J. A. Sponagle, Major, A. M. S., Middleton.

"Fatal Poisoning by Methyl Alcohol," by Dr. M. E. Armstrong, Bridgetown.

(a) "An Unusual Termination in Perforating Appendicitis," (b) "An Unexplained Bradycardia," by Dr. P. C. Murphy, Tignish, P. E. I.

Discussion on "The Treatment of Tubercular Arthritis, with Special Reference to the Knee," by Dr. N. E. McKay.

Likewise a full report of the Canadian Medical Association meeting at London, Ont., will be given, including the Presidential Address, by Dr. Moorehouse.

Intending subscribers will never have a more favorable opportunity of getting full value for their money.

Personal.

Dr. W. D. Finn, of this city, was married on the 1st inst. to Miss Emma Grant, daughter of Mr. Duncan Grant, Brenton St.

Dr. M. J. Wardrope, of New Campbellton, and Miss Kathleen M. Mumford, of Dartmouth, were united in marriage on the 17th inst. Dr. Wardrope was for one year house surgeon at the Victoria General Hospital, while his bride is a graduate nurse of the same institution.

The NEWS extends its congratulations to the interested couples.

Dr. W. S. Morrow, lecturer in Physiology at McGill, who is a former Halifax boy, is on a visit to his native city. Dr. Morrow recently recovered from an attack of typhoid fever and is now enjoying the bracing effect of our sea air.

The death of **Robert U. Slayter**, a brother of Dr. J. Howard Slayter, will be much felt by his companions at the Halifax Medical College. "Bob" was a general favorite, and a valued member of the Dalhousie football team.

Notes.

SANMETTO IN ENLARGED PROSTATE, WITH SUPPRESSION OF URINE, AND CHRONIC INFLAMMATION OF BLADDER.—I have used Sanmetto in enlargement of the prostate, suppression of urine and chronic inflammation of the bladder, and can recommend its use for any and all of the troubles of the urinary tract.

J. A. WILSON, M. D.

Columbus, O.

GERM DESTROYING AND NERVE SOOTHING.—The following excerpt from an article in the *Virginia Medical Monthly*, by Stephen J. Clark, M. D., No. 66 W. 10th Street, of this city, plainly outlines the useful combination of two leading remedies in materia medica :—

Rinz claims specific antiseptic powers for quinine; other writers are in accord with him on this point, and report good results from large doses in septicæmia, pyæmia, puerperal fever and erysipelas. It is a germ destroyer of the bacilli of influenza (la grippe.) Antikamnia and quinine tablets will promptly relieve in this disease. Quinine is a poison to the minute organism, sarcinia; and antikamnia exerts a soothing, quieting effect on the nerve filaments. A full dose (two five-grain tablets) of this remedy will often arrest a commencing pneumonia or pleuritis. These tablets are also useful in the typho-malarial fever of the South—particularly for the hyperpyrexia—both quinine and antikamnia, as previously said, being decided fever reducers. They are likewise most valuable in cases of periodical attacks of headache of non-defined origin; of the so-called ‘bilious attacks’; of dengue; in neuralgia of the trigemini; in that of ‘ovarian catarrh’; and, in short, they are effective in every case where quinine would ordinarily be prescribed, and without the ‘ringing’ which generally accompanies the administration of quinine alone.”—*New York Medical Journal*.

MENORRHAGIA.—Menorrhagia is frequently dependent upon a condition of subinvolution of the uterus, resulting later in endometritis, and it is in these cases that the value of Hayden’s Viburnum Compound is particularly recognized. Under its administration the uterine congestion is relieved, the relaxed tissues restored to a normal tone, and the flooding promptly checked. This is accomplished without the unpleasant effects of ergot. If there is a profuse hemorrhage from the uterus in consequence of the presence of tumors, such as polypi, fibroids or malignant growth, the administration of Hayden’s Viburnum Compound is indicated, in order to lessen the flow until such a time as the removal of the tumor can be accomplished. Aside from its hemostatic qualities, this preparation furthermore relieves the accompanying pain and renders the patient more comfortable. During the climacteric patients often are troubled with flooding, and if this be not due to the presence of malignant or other diseases, which must be carefully sought for, it can be greatly relieved by the continued administration of Hayden’s Viburnum Compound.

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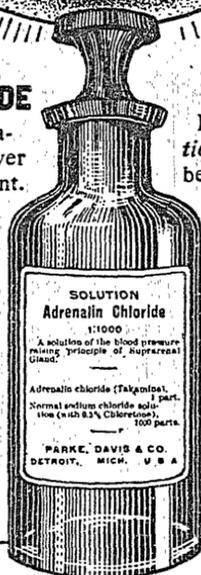
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