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## Original Communications.

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### NOTES ON AN EPIDEMIC OF MILD SMALLPOX.\*

BY

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During the past three years an extremely mild type of smallpox has been prevalent in many of the Southern and Northern States and in certain parts of Canada.

Owing to certain peculiarities in its clinical features, much confusion has arisen in the diagnosis of the disease. According to Probst it has been prevalent for months in some districts without its true nature being suspected.

The low mortality noticed in many districts has been a very striking feature of the epidemic. Thus in New Orleans there were 232 cases and 5 deaths; in Ohio, 1882 cases and 30 deaths (Probst); and in a series of 128 cases reported by Welch, there were no deaths.

Having recently had an opportunity of seeing a number of cases of this affection at Sudbury, a town with between two and three thousand inhabitants, I wish to refer to the chief clinical features of the malady and to contrast them with the more familiar type of the disease. I am much indebted to Drs. Howey and Arthur, and to the Local Board of Health for the opportunity of seeing these cases.

The disease arose from several sources. The first case in the district was an Indian on the reservation, who seems to have brought the disease from the Sault. Several other cases came in from the Lumber Camps in the neighbourhood.

Altogether I examined 14 cases in various stages of the malady. There were 12 males and 2 females, all being whites. One was a child of 6, 10 were between the ages of 18 and 30, and 2 between the ages of 30

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\* Read before the Montreal Medico-Chirurgical Society, April 12, 1901.

and 50. The infrequency of the affection in children has been a very striking feature of the disease all through the country. In Welch's series of 128 cases in Philadelphia only 12 were under 10 years of age. These cases, however, were all treated in hospital so that conclusions drawn from such statistics are likely to be erroneous, as children with maladies of a comparatively mild character are usually kept at home. In mixed populations negroes suffer much more frequently than whites, owing to their neglect of vaccination. In Welch's series there were 122 negroes and only 6 whites.

The period of incubation could not be accurately determined in any of the cases seen by me, but so far as it could be fixed it was within the period of 8 to 20 days usually assigned to smallpox.

The first case in the district occurred in an Indian on the reservation, and was treated by Dr. Arthur. The disease appeared 20 days after his return from the Sault, where the disease was prevalent. Another patient, a woman, living 4 miles from Sudbury, visited an infected hotel on two occasions 8 and 13 days respectively before the outbreak of the disease. Her husband, who was unvaccinated, for some days after the exposure, Dr. Arthur writes to say, developed the disease 18 days after its onset in his wife, and presented the eruption of vaccinia and variola at the same time.

The prodromal symptoms varied considerably in intensity. In two cases the rash was the first sign of illness. Headache was present in about half the cases, and was in most described as severe. Pain in the back was usually associated with the headache; it was not severe and was in most instances described as of a slight aching character. Feverishness was usually complained of, and in two cases it was  $102^{\circ}$  and  $104.2-5^{\circ}$ , falling to normal on the appearance of the rash. Vomiting was not present in any of the cases, and the only other symptoms complained of in this stage were general soreness, anorexia and weakness.

The eruption appeared first and was most abundant on the face, particularly the forehead. The scalp was also attacked early and the rash then appeared on the trunk, especially the back, limbs, hands, palms and soles. The number of spots varied greatly. Some patients were thickly covered whilst others had only ten or fifteen spots on the whole body. In most instances the rash kept coming out for two days, and in two cases it took three and four days respectively before being completely out. As natural smallpox takes three days before the rash is completely out, it will be noticed that in this epidemic this stage was about 24 hours shorter. In the majority of cases the eruption appeared on the third and fourth day of the illness, *i.e.*, after 48 or 72 hours. In two cases the eruption appeared on the sixth day and in two, as already mentioned, it was the first sign of illness. The earliest lesions noticed were

hard shotty papules. The vesicular stage was ill-marked. In many instances the papules passed directly into the pustular stage, yellow cloudy centres appearing, rapidly developing into pustules with well-marked areolæ.

In many papules only the central part of the papule became pustular and rapidly died into a crust which fell off, leaving a raised hard papule with a depressed centre or a flat top. These papules with the central depression were seen as early as the sixth and as late as the fourteenth day of the eruption. The complete pustules died up and formed crusts which always appeared first and were most thickly set on the face. Suppuration never extended deeply and in no instance was a depression noticed after the separation of the crusts.

The time occupied by the evolution of the lesions was distinctly shorter than in ordinary smallpox. Pustules had usually passed into crusts by the 5th or 6th day of the eruption, and in no case were pustules seen after the 9th day, whilst in ordinary smallpox the pustules dry or rupture about the 10th or 11th day.

Secondary fever was not present in any case and its absence is to be attributed to the superficial character of the suppuration.

Welch regards the comparatively slight changes in the skin as the most striking feature of the disease. He points out that "the lesions, instead of actively involving the deeper layers of the cutaneous integument appear to develop between the outer epidermis and the layer of cells covering the papilla, and in the later suppurative changes the true skin becomes only mildly involved. Hence dermatitis and the consequent intumescence, so common on the face in variola vera, are either absent or very mild, and the necrotic changes are of course, greatly limited. The pustules, therefore, desiccate rapidly, forming comparatively thin scabs, which, when they have fallen off, leave pigmented spots and but little or no pitting. Even in cases exhibiting a considerable degree of confluence on the face the eruption behaves in the same way."

The general condition of the patients presented a remarkable contrast to ordinary smallpox. After the appearance of the rash they felt perfectly well, and amused themselves by smoking, playing cards, or walking about. Secondary fever was entirely absent even in cases with a thickly set pustular rash.

The protective influence of vaccination was very clearly demonstrated in the cases observed. Only two of them had been vaccinated; one of these presented three good scars and had a rather copious eruption. In the other vaccinated case there was only a single scar. Neither of these individuals had been revaccinated. In the cases reported by Welch,

only 17 out of 128 had been vaccinated, and of these a number had very poor scars. The great preponderance of the disease amongst the unvaccinated forms one of the strongest arguments that the disease is a true form of smallpox, and not impetigo or chickenpox as has been claimed by many practitioners.

No satisfactory explanation of the remarkably mild character of the infection has yet been offered. In this respect, however, the disease behaves like many other infectious processes. Epidemics of scarlatina, diphtheria and typhoid show remarkable variation of virulence in different years and in different epidemics. That the disease is not varioloid is proved by the selection of the unvaccinated, and again when the eruption appears it keeps coming out for two or three days, and does not all appear at the same time as in varioloid.

The gravity of the affection consists chiefly in the difficulty of isolating individuals. The symptoms are so slight that careless and ignorant people may readily walk about and form so many centres of contagion.

At any time this mild epidemic may assume a virulent type. Spalding refers to a mild case from Minnesota, visiting her home in Chicago. Two sisters, a brother and father, none of whom had been vaccinated, developed the disease. The father and sisters had a mild attack, but the brother had a severe confluent form of smallpox and died in two weeks.

The appearance of a patient suffering from the mild form of smallpox is unmistakable. The cutaneous lesions are similar to those occurring in ordinary smallpox, differing however from it in the more rapid evolution of the cutaneous lesions and in their more superficial character. The absence of secondary fever, the comparative mildness of the initial symptoms, and the remarkably low mortality are the most striking features of this type of the disease when contrasted with ordinary smallpox.

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## NOTES ON A RECENT EPIDEMIC OF SMALL-POX.

BY

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During November and December last we had about thirty cases of small-pox here and, as the type was abnormal and apt to lead to errors of diagnosis in the mild cases, I thought my experience might be valuable to the profession.

We traced the origin of our epidemic to Rosslyn, a coal-mining town on the Northern Pacific Railway in the State of Washington. Some 1300 cases occurred there without a death, and without a correct diagnosis. After the State authorities woke up and took the matter in hand with the diagnosis of a "contagious eruptive fever", by rigid quarantine it was speedily repressed. But many cases still exist throughout the State, forming centres from which, in this era of open and rapid



communication, it may spread to remote parts by the mail or by travellers.

My first case began with a slight chill, moderate fever, headache, a sore throat, and myalgic pains. The next day papules appeared on the face, trunk, and extremities, some of which were already vesicular. Two vesicles were also present on the soft palate. There was no sign of umbilication, nor was there any pain in the back. I did not see the case again for three days, when I found that the greater portion of the eruption had become pustular. The temperature and pulse were now normal and the patient eating heartily, only complaining of the soreness

of his skin, especially of his back where the tops had been scraped off the pustules by lying on them. The rash was universal, very thick on the face and back, and could also be felt on the soles and palms. Probably five per cent. of the vesicles and pustules showed a slight umbilication, but on careful examination under a lens, I found a hair in the centre of each umbilication. The eruption was very superficial with but slightly inflamed base to each vesicle or pustule. There was no tendency to coalesce, nor was the intervening skin either swollen or reddened.



I diagnosed the case as a very severe attack of varicella, by the papules appearing so early, becoming vesicular at once, becoming pustules inside of 24 hours, by the absence of severe constitutional symptoms with so very extensive a rash, by the absence of the characteristic smallpox

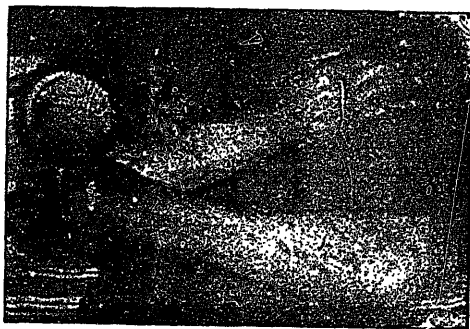


backache, by there being no smallpox odour, by the absence of secondary fever and of true umbilication, by the presence in town of many cases of chickenpox, which the patient had never had, and by the fact that there was no case of smallpox in the province, and the patient had not been out of town for months. Still I was wrong, as subsequent events proved, there having been four cases which showed true umbilication, although in other respects the cases were atypical.

The seventh case occurred in a woman who was confined one day, had a chill with temperature of  $102^{\circ}$  F. the next, an extensive measles rash the following day, which in twenty-four hours gave place to a papular eruption, which changed at once to a vesicular.

From a study of the thirty cases I have noted the following points: The first symptoms are like an attack of la grippe with, in half the cases, a sore throat, and no backache. I noted but one case which had this latter symptom, which yielded to a single dose of Dover's powder. There is a premonitory chill with elevation of temperature, myalgic pains, headache, vomiting generally, and the most constant symptom of all, sleeplessness. Nearly every case begged for something to induce sleep, so that I came to regard this as the most suspicious symptom before the rash appeared.

The initial temperature may be high or not, but did not average over  $102\frac{1}{2}^{\circ}$ , may last but one day or up to three, when there is a drop. Se-



condary fever is rare, about  $99^{\circ}$  being the average, with normal pulse, a strong appetite, and a general feeling of being quite well shortly after the rash appears.

The rash may appear as early as twenty-four hours after the initial symptoms, or as late as the third day, but the majority of cases developed it on the third day. The forehead and backs of the wrists are first affected. The papules may run through the vesicular stage into the pustular inside of two days, and begin to scab before pustulation would be reached in the ordinary type of the disease. The rash may be very extensive, or may be limited to a few scattered papules, etc. The photograph shown of two sisters in the same stage of the attack, illustrates this very well. Of the other photographs, one is that of a negro showing the abdomen, feet and legs in a severe type, another the rash on a sole and palm on the severer case of the two girls, and the last the arms of a moderate case.



Umbilication may be entirely absent or may be present in as high as 25 per cent. of the vesicles, but I have noticed that with an oblique light on the vesicles in early stage there is a distinct flattening of their summits, which is fairly marked in the majority of cases and represents an attempt at umbilication. The rash appears in most cases on the soles and palms, not so early as elsewhere, but can be felt before being seen.

There is very little inflammatory thickening of the skin even in cases where the rash is so extensive as to have the vesicles almost touching. An inflammatory halo can invariably be seen around the base of each pustule, but may be very faint. The thickness of the skin covering the vesicles on the backs of the wrists should be noted, as the deep-seated character of the eruption is there best seen. These vesicles are usually of a good size, very firm and tense, and pustulate much slower than those on the other parts of the body.

Contagion is not very great. Thus the first case, living in a hotel with isolation but imperfectly carried out, infected but four persons.

Several of the cases show slight pitting which may disappear eventually, but one case will have permanent marks.

The mortality is nil.

Formalin was used as a disinfectant with no failure, and is, I think, an ideal agent. Its acid fumes are readily neutralised by ammonia, either sprinkled on the floor or exposed in shallow pans in the rooms.

STUDIES UPON THE PLAGUE BACILLUS WITH SPECIAL  
REFERENCES TO THE PRODUCTION OF  
HAFKINE'S PROPHYLACTIC.\*

BY

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In March, 1900, I was transferred from my regular work in connection with the Outremont Experiment Station to the Public Health Quarantine Station on the Pacific Coast. It will be realized by all that the possibility that plague be introduced into Canada through our western ports from China or Japan, has been during the last year or two very considerable, indeed we know that there has been such introduction of the disease into San Francisco. To be fully prepared against its entry it was determined by the Government that all necessary steps should be taken, and my instructions were to establish a laboratory in connection with the Quarantine Station where I should manufacture Hafkine's prophylactic and should be prepared to diagnose by bacteriological methods any contagious diseases showing themselves on board the ships coming from the East.

Upon reaching Victoria I was met by Dr. Watt, the Superintendent of the British Columbia Quarantine, with whom I was to take up my temporary abode, who took me to the Quarantine Station where I established my laboratory and where I remained, working mainly upon the plague bacillus, for the next eight months. The Quarantine Station is on a rocky peninsula known as William Head, some ten miles by water, directly west of Victoria in the Straits of Fuca. A more beautiful situation could scarce be found anywhere, for across the Straits are the snow-capped Olympian Mountains with constantly changing colour and cloud effects, while the station itself, consisting of some 60 odd acres of very rocky land, has a beauty of its own. It is however not for me to dilate here upon these matters, my object is to detail my experiences in the work which I was thus called suddenly to perform, believing that this recital of my results may be serviceable to other workers upon this continent. The possibility that plague may gain a foothold in North America, still exists: the literature bearing upon

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\* This paper is in part taken from my report to the Minister of Agriculture for the year ending October 31st, 1900.

the bacillus and upon the preparation of Haffkine's prophylactic is very scattered and, especially, would there seem to be a want of a practical and sufficiently detailed account of the methods whereby to gain the most satisfactory growths.

Before leaving Montreal, the department empowered me to obtain and take with me such apparatus as I considered essential for the proper working of a laboratory. But the notice given me was so short, that while everything taken proved to be of the highest service, it will readily be understood that as the work progressed there was not a little apparatus that I greatly needed, apparatus which in my isolated position, thousands of miles from any good source of bacteriological supplies, it was impossible to obtain in time for that apparatus to be serviceable; while situated as was the laboratory many miles from Victoria and Vancouver, where the commoner forms of chemists' supplies could be obtained, it was not always an easy matter to rig up the simplest substitutes for ordinary pathological apparatus. I was thus often put on my mettle to obtain results in the simplest way possible. Add to this, I had access to no bacteriological literature save a few papers I had been able to collect in the course of a day or two before leaving, and the notes which I had hurriedly abstracted from the journals in the library in the Medical College at McGill. I had, in this way, but indications of the proper methods to pursue and had largely to work out my own salvation. My notes contained sufficient material to indicate for this special work some of the main difficulties in the preparation of culture media, but I had to determine from my own experience the minute details of the work in hand. It is remarkable how under conditions like these good results can, nevertheless, be obtained, and if my personal experience is of no other value, it is useful as showing that the plague bacillus can be cultivated and large amounts of prophylactic material manufactured under what may be termed, most elementary conditions.

There was no gas supply at William Head; in fact the laboratory had to be started from the very beginning, namely from a bare and plain wooden building designed for the detention of suspects, which had the one virtue of being well lighted. I installed however, an acetylene gas apparatus which worked admirably for furnishing both light and heat for my experiments. This was, I believe, the first time this gas had been similarly employed; the details of my application of this gas for temporary laboratory purposes, I hope to publish shortly elsewhere.

The apparatus installed, my first work was to familiarize myself with the bacillus *pestis bubonica*. I owed the germ with which I worked to Dr. W. Wyman, surgeon-general to the United States Marine Hospital

Service, who forwarded the cultures to me on the request of Dr. Montizambert, the Director-General of Public Health for Canada. The germ is so different in its characteristics from any that I have hitherto studied that the work proved most interesting and instructive.

#### DESCRIPTION OF THE PLAGUE BACILLUS.

The bacilli are short thick, straight rods with rounded ends varying in length from 0.7 to 1.2  $\mu$ , and being about half as broad.

They sometimes occur in chains and have been observed in some cases to have a capsule. In fresh broth cultures they are often seen in chains resembling streptococci. In old cultures they sometimes completely lose their elongated shape and appear as cocci. The germ takes the polar staining, leaving an unstained central portion. In unstained preparations and in the hanging drop this polar arrangement of the protoplasm is noticed. The form of the bacillus varies greatly according to the media upon which it is grown and also upon its age.

#### CULTURAL CHARACTERISTICS.

*Broth.*\*—It is upon broth that we get the characteristic growth of the plague germ. Rarely is anything seen on the first day even with the most virulent culture, but upon the second and third days, provided the flasks containing the inoculated broth are upon a solid bench and free from jarring, there are to be seen stalactite growths in the form of very fine needles. These stalactite growths upon the least jarring of the flask break away from the fat to which they are suspended sinking to the bottom, leaving the medium clear.

Various preparations of broth have been tried but the one found best suited to the work is that given in the formula to be referred to later. The germ does not thrive well upon broth to which has been added glycerine, glucose or lactose. The reaction of the media is also a very important point as a slight amount of acid or alkali will retard or completely destroy its growth. I obtained the best growths upon media rendered neutral to phenolphthalein, using a decinormal solution of potassium hydrate; this medium giving the strongest Haffkine's in the shortest time of any worked with at this laboratory.

*Gelatin.*—Upon gelatin there is nothing characteristic; the growth appearing after the fifth or sixth day as fine granular masses along the entire stab.

*Agar.*—Upon agar we get a characteristic look to plague cultures, the growth appearing as very pale masses upon the surface after the second day and having a shining slimy look. These masses upon being teased

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\* For the method of preparation see description given in connection with the manufacture of Haffkine's Prophylactic.

with a platinum wire draw out into long sticky threads and are easily moved about upon the surface of the agar. With a culture that has been grown in the laboratory for some time, even if fresh cultures are made upon the dry surface of agar tubes we get numerous involution forms which appear in the stained preparation as brownish masses swollen to such a size as to have completely lost their original shape. These rapidly developing involution forms are, as pointed out by Hankin and other observers, very characteristic of the plague bacillus and their rapid development in media containing certain proportions of common salt, would appear to be absolutely diagnostic. Upon agar plates there is little difference in the appearance of the germ from that seen in tubes of the same material.

*Blood Serum.*—Very slight growths only were obtained upon the blood serum at hand as it contained 7% glycerine, being originally put up for the growth of tubercle, and was not at all suited to plague work.

#### INOCULATION DISEASE.

The inoculation disease has been observed by me only in guinea pigs, they having been the most easily acquired animals.

*Symptoms.*—A guinea pig inoculated subcutaneously shows at the end of 24 hours marked depression, rise in temperature, enlargement of the lymph glands, particularly those of the inguinal region. He refuses food and water sitting in a corner of the cage motionless unless forced to move. The respirations are increased, the temperature rises to from 104-106° F., and remains at this point till death supervenes.

*Pathological Lesions.*—The lesions of plague as seen in the guinea pig are characteristic. We have first the enlargement of all of the external lymph glands. Those of the inguinal region are greatly enlarged and inflamed, much more so than glands in other portions of the body, which is probably due to the fact that they are nearer the point of inoculation. The chain of glands on either side nearest the point of inoculation was the first to enlarge. This fact conforms wholly with what has been observed in the disease in man. True suppuration was not observed in any of my cases. Upon opening the abdominal cavity the spleen is seen to be greatly enlarged and contains numerous necrosed, tubercular-like masses about the size of a pin head. The liver is enlarged and congested. The gall bladder is greatly distended with bile. The kidneys present little change to the naked eye. The lungs at times are affected and contain small inflamed masses about the size of a small pea. The bacillus pestis is found in all of the tissues and fluids of the body. With Klein (Ctbl. für Bakteriologie xxi, 1897, p. 849); I found that intraperitoneal injection of the bacillus in this animal leads to the develop-

ment of a thick, cloudy peritoneal exudate, rich in leucocytes and in chains of the bacilli.

#### VIRULENCE OF PLAGUE BACILLUS.

This varies greatly according to the media upon which it is grown and upon the conditions under which it is kept. The weakest germ worked with killed a guinea pig in seven days. This germ on being passed through a series of guinea pigs by direct inoculation from one animal to another rapidly increased in virulence till a germ of sufficient strength was obtained to kill a guinea pig in fifty hours. No attempts were made to increase its virulence beyond this point as this was sufficiently strong to meet the requirements in the manufacture of Haffkine's prophylactic. I do not know whether its virulence could be still further increased or not but think it possible within certain limits. This point I have not seen mentioned by other writers on this subject.

Grown upon ordinary culture media it soon loses its virulence. But I found that if I employed sterilized capillary pipettes filled these with a recent broth growth, then sealed them hermetically and kept them in a cool place in the dark, the virulence of the growth was retained for a period of at least three months. How much longer than this it would be possible to preserve the virulence of the bacilli I did not determine.

#### HAFFKINE'S PROPHYLACTIC.

Work in connection with this product has been the main feature in connection with the laboratory since its origin. The manufacture of this preparation while it is very simple requires great care in the preparation of the medium and in its subsequent treatment. The medium used was beef broth made in the following manner.

Liebig's extract of beef . . . . .	5 grams.
Witte's Peptone . . . . .	10 "
Sodium chloride, C.P. . . . .	5 "
Water . . . . .	1000 "

After thoroughly boiling this is neutralized to phenolphthalein, filtered and placed in flasks of suitable size for its manufacture. Situated as I was it can be understood that I had to employ ordinary bottles, Winchester quarts, etc., for making large growths, always endeavoring to get the largest that could be easily placed in the autoclave. The one essential of such flasks is that the contained broth shall exhibit a relatively large surface exposed to the air. To each of the flasks sufficient butter fat was added to form a thin film over the surface. After this was added they were sterilized and ready for inoculation. Haffkine employed "Ghee," a clarified butter in common use among the natives

in India. What is the exact method of preparation of "Ghee," I do not know, nor have I seen this mentioned by any writer, but I found that excellent results could be obtained by taking a small amount of butter and heating it in the autoclave in a large amount of water. This process of heating and dissolving out the salts and acid bodies I repeated several times and kept a stock of this butter in a sterile flask to be used as desired. Inoculation of the above flasks was practiced immediately from the affected organ or from a virulent culture; the best results being obtained when the virus was taken direct from the infected organ. These inoculated flasks are placed in an incubator and allowed to remain for a period of three to six weeks as the case may require. They are examined at least every four days and the crop of germs clinging to the under surface of the fat is shaken down in order that another crop may form. When it is seen that the successive crops are growing smaller and smaller the flasks are removed from the incubator and held for an hour at 70° C., which kills all of the living germs. While still hot it is drawn off into sterilized bottles, 10 c.c. being placed in each. These bottles are then sealed with a sterilized rubber stopper and immersed in paraffine to the neck, forming a thin film over the rubber stopper hermetically sealing it. Great care is essential in this process of bottling as there is great liability to contamination.

After the fluid has been bottled a number of these bottles are tested to determine the strength of the toxine and the amount required to immunize a guinea pig determines the proportionate amount required for man. The method of standardizing is, to say the least a very crude procedure. Attempts have been made to determine the strength of the toxine by chemical methods, but in this laboratory no success has been obtained by any of the methods tried. Such a method would be better than the one at present practiced.

A number of bottles from each flask are also placed in the incubator where they are allowed to remain for a period of two weeks in order to determine whether there has been a contamination of the product during the bottling, from imperfect sterilizing or accidents.

#### SYMPTOMS OF HAFFKINE INOCULATION IN GUINEA-PIGS.

The symptoms of the Haffkine inoculation in the guinea pig are much the same during the first few days as those of plague, after which the animal gradually recovers becoming by the process an "immune," so that it will resist infection by contact and by subcutaneous inoculation of virulent cultures. If an exceedingly large amount of a virulent culture is injected into an immune guinea pig, he succumbs, which is due to the fact that he is unable to withstand the shock and the poison-

ous effect of the toxine injected with the living bacilli. Under ordinary circumstances he is an immune and will remain so for a period of three months as shown by actual experiments. Whereas ordinary guinea pigs placed in the cages along with infected animals were certain to become themselves infected and to die 24 hours or so later than the inoculated animals, an immune guinea pig kept in the cages along with the infected animals showed no signs of ill health even when thus caged with successive series of infected guinea pigs for more than twelve weeks.

#### SYMPTOMS OF HAFFKINE INOCULATION IN MAN.

In connection with this inoculation I can only relate my own experiences as the conditions existing have not seemed to warrant the inoculation of any of the quarantine staff nor have any specially desired such inoculation.

A few hours after the inoculation there is a feeling of restlessness, slight rise in temperature, glassy look to the eyes, pains in the arms and legs of mild character. This feeling of restlessness continues, being accompanied by weakness. There is a desire to be moving all of the time but the feeling of exhaustion will not allow such movements. After ten hours the symptoms gradually decrease and no untoward effects experienced save the swelling and soreness at the point of inoculation. This soreness at the point of inoculation lasted for about ten days leaving a small nodule which disappeared in two months. The lymphatic glands were slightly enlarged in about eight hours after the inoculation and remained so for a period of three days.

This anti-plague vaccination or inoculation as it should be called was not as severe in this instance as are the symptoms which ordinarily follow the vaccination for the prevention of small-pox. It is true that neither Haffkine nor any of his fellow workers upon this subject pretend that the immunity conferred is nearly as lasting as that conferred by vaccination proper (against small-pox). What is obtained is a temporary immunity lasting over a period of danger, an immunity which can be prolonged if need be by repetition of the inoculation.



# REPORT ON THE CASES OF PNEUMONIA ADMITTED INTO THE ROYAL VICTORIA HOSPITAL DURING THE YEAR, 1900.

BY

FRED. E. TOOKE, B.A., M.D., Resident Physician.

During the year 1900 there were treated in the medical wards of the hospital 40 cases of pneumonia, 22 males and 18 females. There were in all seven deaths, or a mortality of 7.5 per cent. Of these, four were lobar and three were lobular in type. The following data are of interest.

**Etiology.** *Age*.—The average age was 30.3 years, the oldest patient being 72 years, the youngest 4 years. In decades they are as follows:—

Under ten years. . . . .	7
Between 10 and 20 years. . . . .	5
“ 20 and 30 “ . . . . .	12
“ 30 and 40 “ . . . . .	7
“ 40 and 50 “ . . . . .	2
“ 50 and 60 “ . . . . .	2
“ 60 and 70 “ . . . . .	4
Over 70 years. . . . .	1

*Season*.—The largest number of cases were admitted during the month of April, the smallest during the month of July. Twenty per cent. of cases were admitted during the months of December, January, and February. Forty-seven per cent. were admitted during March, April, and May. Twenty-five per cent. were admitted during June, July, and August. Eleven per cent. were admitted during September, October, and November.

*Exposure*.—In 20 per cent. of the cases there was a definite history of exposure to cold or wet immediately preceding the onset of the illness.

**Predisposing Cause.** Twenty per cent. of the patients were suffering from disease in the upper respiratory passages immediately previous to the onset of the attack.

In seven per cent. there was a history of a preceding attack of influenza.

One patient was suffering from pulmonary tuberculosis with hæmoptysis when admitted. One patient was convalescing from a recent at-

tack of empyema. One patient had recently been in the hospital with a previous attack of pneumonia.

**Onset. Chill:**—In 37.5 per cent. of the cases chill was the first symptom noted. The average duration of the chill was about forty minutes. In 17.5 per cent. there were chilly sensations at the onset of the disease without any definite rigor.

Pain was found present at the onset in 72.5 per cent. In nearly all cases it was in close proximity to or nearly over the pulmonary lesion. In four cases the pain was referred to the abdomen.

Vomiting occurred at an early period of the disease in 25 per cent. of the cases. Cough was present in 70 per cent., being hard and painful in 90 per cent. of these.

**Anorexia and Malaise.** Forty-seven and a-half per cent. gave a definite history of previous anorexia and malaise.

Feverishness was complained of in 22.5 per cent.

Delirium occurred at the onset in 15 per cent. of the cases. In one case the onset was gradual with malaise, anorexia and feverishness.

**Symptoms and Course.** The average duration of fever after admission to the hospital was six days. The shortest course was two days, ending by crisis. The longest uncomplicated case was eleven days, when both lower lobes posteriorly were involved.

**Part Involved:**—The lower lobes were involved in 82.5 per cent. of the cases, the upper lobes in 7.5 per cent. In three cases the upper and lower lobes were simultaneously involved.

In 57.5 per cent. the disease was present in the right lung, in 32.5 per cent. the left lung was affected, and in 10 per cent. both lungs were involved.

**Sputum:**—In 45 per cent. of the cases the sputum was tenacious and blood-stained. In sixteen cases there was no sputum, five of these were children under ten years of age.

**Cough:**—This was present in 82.5 per cent. of the cases. Of these, 75 per cent. occurred at the first day of the disease, 21 per cent. on the second day, while in 4 per cent. this feature did not present itself until the third day.

**Alimentary System:**—Anorexia was present in all cases. Constipation was present in 50 per cent. Vomiting occurred in 27 per cent. Diarrhœa occurred in two cases.

**Delirium:**—Delirium was present in 17.5 per cent. of the cases.

**Crisis:**—Of all the favourable cases, crisis occurred in 66 per cent. on the ninth day of the disease, or on the fourth day after entering the

hospital. The date of the earliest crisis was on the third day, while the latest occurred during the 12th day of illness. Pseudo-crisis occurred in 10 per cent., and termination was by lysis in 24 per cent.

**Complications.** Herpes occurred in nine cases, seven labial and two facial.

Empyema occurred in one case and was cured by operative interference.

Balanitis and phimosis was present in one case.

Acute parenchymatous nephritis was present in two cases.

Delayed resolution occurred in one case.

The disease was coincident with the following conditions:—

Pulmonary tuberculosis (1), chronic osteomyelitis (1), arterio-sclerosis and myocarditis (2), general septicæmia (1), pregnancy, fifth month, (1).

## CASE REPORTS.

BY

J. ALEX. HUTCHISON, M.D.,

Lecturer in Clinical Surgery, McGill University; Surgeon to the Montreal General Hospital.

### **Excision of the Elbow following Traumatism.**

W. W., aged 42 years, sailor, was admitted to the Montreal General Hospital, September 19, 1900, suffering from disease of the elbow joint.

In September, 1899, patient fractured his arm at sea, and three days later was admitted to the hospital at Algiers, where his arm was put up in extension, which was followed by good union. Sometime later when at sea, the arm was again injured in the neighbourhood of the elbow joint. Iodine was used until he was admitted to hospital at Sydney, C.B., apparently suffering from synovitis and cellulitis. Multiple incisions were made, and when he was discharged there was fixation of the joint and extensive suppuration.

On admission to hospital here there were two large sinuses leading down to dead bone, and involving the joint.

*Operation.*—Langenbeck's subperiosteal method of excision was employed from which the patient made a good recovery.

*Remarks.*—Owing to the long standing suppuration, associated with ankylosis at an angle of 90 degrees, there was marked contraction of the biceps and of the neighbouring muscles. Following operation there was a firmness and control of the limb not usually seen, which I attributed to this contraction.

There was nothing unusual in the case or in the result. One lesson to be drawn from it is the importance of surgical cleanliness and of passive movement. This, in many cases, would prevent the long sickness and the necessity for extensive operative interference.

[Notes from the case report of Dr. Murray, house surgeon.]

### **Myeloid Sarcoma of the Ulna; Excision.**

J. B., female, aged 28 years, married, was admitted to the Montreal General Hospital, January 14, 1901.

Four years ago a small, hard nodule appeared in the lower third of the left forearm towards the outer border. This has grown steadily until a few weeks ago when it increased rapidly.

Family history negative; no history of traumatism.

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\* Read before the Montreal Medico-Chirurgical Society, February 23, 1901.

The growth has been painless, its size only causing loss of movement and inconvenience.

*Description.*—The tumour involves the lower third of the ulna with the following characteristics:—(1) The smooth, uniform outline of the mass. (2) The firm, dense nature of the growth. (3) The apparent connection with the bone. (4) The network of large superficial veins. (5) Egg-shell crackling. (6) The freedom of involvement of the radius. (7) Absence of enlarged epitrochlear or axillary glands.

*Operation.*—Under ether anaesthesia and with an Esmark bandage about the arm, two long elliptical incisions were made to include the greater portion of skin adherent to the mass. The thin, spread out muscles were separated; the bone sawn at the junction of the upper and middle thirds, and the mass tilted out. After cutting the interosseous membranes and the attachments of the flexor profundus, extensor indicis and pronator quadratus, the bone was disarticulated. The extensor carpi ulnaris tendon, passing through a canal in the mass, was divided, freed, and sutured. A mass of new growth involving the articulation was removed and found to be fibrous tissue. The separated muscles were then sutured to neighbouring muscles and the wound closed, allowing for drainage at the lower part.

*Remarks.*—The operative treatment of tumours of the long bones has undergone a radical change in the last few years. When sarcoma was suspected amputation was formerly the rule, and later, removal of the entire bone involved. In 1895, Mickulicz practised partial removal in patients who refused to submit to the more extensive operation. In a total of six cases he reports only one of the ulna. In addition to the foregoing two other cases are mentioned in *Progressive Medicine*, December, 1899.

The case I present is, I believe, the first reported in this country, and shows very little deformity or impairment of movement following so extensive a dissection.

[Notes from report of Dr. W. G. Rowley, house surgeon.]

### Pathological Report.

BY

DR. JOHN McCRAE,

Faculty Fellow in Pathology, McGill University.

The specimen as I first saw it was already preserved in formalin, and was a tumour attached to and growing from the lower end of the ulna. It was roughly egg-shaped, measured 9 cm. by 5 cm., and weighed 150 grams; was sharply defined, hard (preserved), and with a fibrous-looking coat overspreading it beneath the skin, which was in places rein-

forced by a thin coating of bony substance, continuous with the surface of the ulna itself.

On section the gross appearances were as follows:—The tumour looked firm, and yet at some places it looked brittle and granular. The tumour tissue seemed to be walled off from the shaft of the ulna by a thick bony layer and did not seem to be continuous with the bone marrow, although from its nature such must have been its origin.

On microscopic section, it is a characteristic specimen of myeloid osteosarcoma with a large number of spindle cells and round cells, the former greatly preponderating. The giant cells are very numerous, some having a diameter of 1.5 mm.; in places there are masses of dead bone, which are isolated and necrotic looking, and are surrounded by a closely packed layer of cells with large irregular nuclei; these cells lie around the bone masses exactly as osteoblasts do in bone formation, but here, from the general appearance, these isolated masses of bone are undergoing destruction in the deep parts of the tumour. It may be surmised that as the growth of the tumour has been slow and unprogressive, so its ability to destroy the original bone has been slight.

### ECTOPIC GESTATION WITH SUBSEQUENT NORMAL PREGNANCY.\*

BY

DAVID J. EVANS, M.D.,

Lecturer in Obstetrics, McGill University, Montreal.

Mrs. P., aged 24 years, consulted me in February, 1900, on account of some indefinite pelvic pain associated with rectal irritation. She gave a history of having been under treatment for pelvic disease for some two years. She had married in July, 1899, and had been operated upon by Dr. Springle in the latter part of August of that year for ectopic gestation in the right tube, which was removed. As the left ovary was found to be enlarged and cystic it was removed at the same time.

On examination, there was nothing to be found locally except some tenderness on the right side of the uterus, where several bands of adhesion could be palpated. The right ovary could be palpated and seemed quite normal. On the left side there was less tenderness but no tube or ovary could be felt. The uterus was in good position and the fundus freely movable. Her general health was good but she feared that pregnancy might at any time expose her to great danger.

Towards the end of May, 1900, she reported that her menstruation had not returned and that she thought she was pregnant. During the next four months I saw her frequently, but there was nothing unto-

ward in the course of the early pregnancy. The uterus, developed quite symmetrically, at least, no asymmetry could be made out by combined examination. With the exception of nausea and slight vomiting the course of the pregnancy was uneventful until October 1st, 1900, when she complained of severe paroxysmal pain in the right iliac region and the passage of a small quantity of blood per vaginam. Nothing abnormal could be discovered on internal examination. The patient was put to bed for a few days and small doses of opium administered. As the condition passed off in a few days, I finally came to the conclusion that the pain was caused by the rupture of some of the adhesions I had felt previously.

Labour set in on February 8, 1901, and was very rapid and easy. I only reached the patient in time to deliver her of a large, male child, which had presented in left occipito-anterior position. There was a slight laceration of the perineum which required a couple of sutures to repair. The child weighed two ounces of nine pounds.

The patient made an uneventful recovery and to-day, six weeks after delivery is in good health with the pelvic organs well involuted.

In view of the fact that some operators have proposed the removal of the second tube in cases of ectopic gestation in order to prevent the recurrence of such an accident, I think it desirable to place this case on record.

# TUBERCULOSIS CONFERENCE OF CANADA.

## ADDRESS

BY

J. D. LAFFERTY, M.D.,

President Medical Council N. W. Council.

I am much pleased to see your Excellency presiding over this influential and important conference, and to learn from your address, that you are so deeply interested in the object of the meeting, and possess such a wide and comprehensive knowledge of the subject which we are gathered here to-day from all parts of Canada to discuss; and that it is your intention to take an active interest in the work of the Association. I am sure, everyone present here to-day, feels deeply indebted to you, and is inspired with confidence, that with your countenance and valuable assistance the aims and objects of the Association so ably presented in your address, are bound to be achieved. I have been asked to speak to the first resolution, so ably and eloquently presented by Sir James Grant, which on reading over you will find, deals in a general way with the disease, and I shall endeavor in my address to support the resolution on the same lines, leaving the gentlemen who are to follow, to present to you the details of the subject under the various resolutions into which the discussion is divided.

We are face up against a problem of the most serious character, the satisfactory solution of which cannot any longer be delayed without deeply and injuriously affecting the health, wealth, and prosperity, of the people of this Dominion, the future of which is most promising, if not marred and shadowed by the ravages of this terrible disease, which is carrying off daily, monthly, and yearly, an increasing number, not only of the young, fair, and most promising of the rising generation, but also the parents, the wage-earners, the wise and experienced in every department of life, whose loss cannot be suffered, without great injury and detriment to the Commonwealth. Many of you here to-day will probably learn for the first time the alarming prevalence of this terrible disease in all parts of Canada, how rapidly and steadily the number of its victims is increasing, and of the great and increasing mortality attending it. The death rate from tuberculosis in the Dominion, for the year 1899 as reported, was between seven and eight thousand, and for the Province of Ontario for the same year, between three thousand five hundred and four thousand. It is computed, that between one-sixth and one-seventh of the death rate in the Dominion



is the result of tuberculosis in its various forms. We are now assured by the highest medical authorities, that tuberculosis or consumption is not an hereditary disease (this assurance is now unquestioned by the profession) but is due to the introduction into the system of a germ known as the tubercle bacillus, and that the disease spreads by contagion and infection, and that though slow and insidious in its development, it is none the less surely contagious and infectious, and that it is spread by this means and by this means alone, not only from man to man, but from animals to man through the use of milk taken from cows suffering from the disease, and also probably in a less degree from the eating of insufficiently cooked meat of diseased animals.

It has been demonstrated, and this fact is well-known to you all and needs no proof from me to convince you, that the spread of contagious and infectious diseases can be practically limited and controlled by the adoption and carrying out of proper preventive measures and the observance of well-known sanitary and hygienic laws, and tuberculosis is no exception in this respect. And with the above facts clearly established and admitted by all well-informed persons, I trust you will all accept the position, as to the necessity for taking preventive measures against its spread, and agree with me, that on whomsoever the responsibility lies, to take, and put in force, the best advised ways and means to care for those suffering, and to control, as far as possible, the spread and ravages of this terrible disease. It is obligatory on them to do so and carry out this mission of duty and mercy, and if they have not the power, statutory or otherwise, it is clearly incumbent on them, to secure and fortify themselves with the necessary power and authority, on the first possible opportunity; and I further believe, that every person in this audience and every proper feeling and respectable elector and citizen in this whole Dominion, will endorse and support the action of those clothed with the necessary authority, from the highest to the lowest official, in combatting and overcoming this veritable plague, fraught with such danger and menace to the whole community. It is also well known to the profession, that the disease in its *earlier* stages, at *least*, is capable of cure, and although not as contagious in this stage as when further advanced, it is so to a certain degree, and persons suffering from it, even in this stage, are more or less a source of danger to those with whom they are in close communion, and experience and opportunity to observe results have proved that patients do better, and make more rapid progress towards recovery, when scientifically treated in homes and sanatoria erected, maintained, and specially equipped for the treatment of persons suffering from it. While a certain number of those affected may have the means to take advantage of these sanatoria or

homes, and pay for their attendance and treatment, we do know that a large number are not in a position to do so. A further condition in connection with our consumptive poor, which cannot be ignored and which makes the responsibility of the Government greater towards them, is the fact that of necessity they are poorly housed, overcrowded, poorly nourished, and surrounded by all the conditions favorable to the progress and development of the disease to a more advanced, and fatal stage; and moreover, the same conditions which exert such an unfavorable influence on this disease, make their families more susceptible and less able to resist infection, and thus favor its spread. Hence again, the responsibility of the Governments to come forward with well-directed financial aid towards the erection and maintenance of homes and sanatoria, and the necessity of these homes, and sanatoria is emphasized, when we have to deal with the disease in its more advanced stages. In the homes of sufferers, among the wealthy, well-housed, and well-to-do people, as well as among the poor and helpless, even when the greatest possible care and precautions are exercised, we cannot divest the surroundings of those suffering from being a source of more or less danger to the members of the household, if allowed any intimacy with them, and how difficult and trying it is to prevent it. Is there a husband or wife in this audience who, if their partner in life was afflicted or any of their children, and who, if by ministering to their wants, or by their presence, could alleviate or relieve their sufferings, but would do so, without for one moment considering the risk to themselves, while performing their work of love? You will more readily appreciate the danger of the presence of the disease in the homes of the rich and poor alike, when your attention is drawn to the fact of its long and lingering character, often taking years to complete its fatal work. Again we meet danger from infection in another and widespread form; many sufferers from the disease in the earlier stages, and even when the disease is well established and infection very active, have sufficient strength to move about and travel from one place to another, in the hope of getting relief from a change of climate, or from the ministrations of medical men of repute, and are admitted into hotels, boarding houses, and often into the homes of their relations and friends, who, in the latter case, have not the heart to refuse them admission. Sufferers of this class, are very numerous, and are a great danger to the public.

Incidentally I might mention here that the district where I reside, viz.: Calgary, and Alberta, on account of its favorable and well merited reputation of being an excellent climate for persons suffering from the disease, has been the resort for years of sufferers looking for relief, and the number is now so large that their presence is an urgent and press-

ing danger to the community. There are at least, from thirty to thirty-five cases, in various stages of the disease at the present time in the small city of Calgary, and a large number throughout the surrounding country, living in boarding houses, private houses, hotels, without any restraint or conditions being imposed on them, or on their manner of living or habits. It is clearly manifest, and our position, I am sure, will appeal to all fair-minded persons, that if this migration to our district continues, in justice to the safety and well being of the healthy residents, we must be given the authority to protect ourselves against this deeply unfortunate class of incomers, either to refuse them admission to our district, which would be an inhuman and drastic course, even if we were so disposed, or that provision be made for them by those on whom the responsibility lies, by the erection and maintenance of a home or sanatorium to receive and care for them.

I do not think I can more forcibly impress on you the views I have been advancing, than by using the example of an outbreak of small-pox in your midst. It will not be difficult for you to imagine, if a case of small-pox appeared, how indignant and resentful you would feel against the health authorities, if they neglected exercising their power at once to care for the case and prevent its spread, and how the whole community would rise and demand their instant action. And I am sure you would find it difficult to overlook or excuse them for any carelessness or indifference in the matter.

Now in contrast, let me refer to the attitude of the public and authorities towards the disease, tuberculosis, which, although not so quickly communicated, is just as surely and certainly spread by contagion and infection, and for every case of small-pox reported in Canada during the last twelve months, if we had a correct report, you would find hundreds of cases of tuberculosis, and while the death-rate from small-pox is as you know a very small per cent. of the case attacked, the fatality from tuberculosis, under existing conditions, is very great, the number of recoveries of those suffering being so few that, for practical comparison, we may say they are nil.

Now let me enquire: what steps have we taken, to overcome and meet the demand of this serious state of affairs? Absolutely nothing, authoritatively or officially, by Government or people, as far as I know, as to its prevention and spread.

The Ontario Government at its last session, in response to a strong appeal made to them by a large and influential deputation, nominated, by a committee, appointed at the meeting, of The Canadian Medical Association, held in Toronto in 1899 for the purpose of obtaining aid to provide homes and sanatoria for our consumptive poor, passed legis-

lation, taking power to grant \$4,000 to every institution or municipality towards the erection of a home for the treatment of the consumptive poor, and a per capita grant of \$1.50 per day for each patient while under treatment. So much and no more has been done to my knowledge as far as the Governments, federal or local are concerned.

Now as to private and philanthropic movements, as you know, certain gentlemen to whom all praise be given, erected and equipped a Sanitorium at Gravenhurst for the treatment of cases in the earlier stages of the disease offering fair chances of recovery, and I understand the result of the work done in this institution is gratifying and assuring, and justifies the statement I have already made as to the necessity of a sufficient number of these homes being provided in different parts of the Dominion, not only for those who are able to pay, but also for those unable to do so, and who in both cases if left in their own homes, have practically no chance of recovery and are a source of danger to their families and friends. To cover the requirements, these homes or sanitoria must be of two classes, viz.: first, for cases in the early stages of the disease that are capable of cure and can be favorably influenced by treatment, and secondly, homes for those advanced in the disease and incurable.

The urgency and number of sanitoria required to meet the demand, if comparative safety is to be secured, is too great to be left to the philanthropically disposed, and being in the interests of the public health and well-being of the whole people, it is clearly the incumbent duty of the various Governments to provide, or materially assist in providing, these homes or sanitoria. And in doing so, I am sure they would be enthusiastically and gratefully supported by the citizens of Canada, in making the necessary expenditure to protect and save the people from this contagious, wide-spread and most fatal of all diseases.

No doubt, in the carrying out of the necessary preventive measures, much mental suffering and anxiety would have to be endured by the afflicted, as well as by their friends; but as in all other diseases of a contagious character, where preventive measure are imposed, the few must suffer for the many.

Judging from the results already obtained from the Ontario Government, by the efforts of those who were moved by the action of the Canadian Medical Association in October, 1899, I am sanguine that greater and more far-reaching results will follow from this large and influential meeting.

Up to a few years ago, the Governments were to be excused for their inaction in this matter, but they can no longer expect indulgence for such inaction, as the educational crusade during these last few years

has, at least, placed before them the facts regarding the cause, the prevalence, and the contagious nature of the disease, and the best means of treating it and preventing its spread. There is no doubt if this movement is to be successful, we must obtain the hearty co-operation and support of the people, and to secure this we must carry on through the press, the public platform, and the publication and wide circulation of literature containing all the latest reliable information as to the non-hereditary character of the disease, the fact that it is curable in the early stages, and of the contagious and infectious nature of it, the many ways and means by which the disease may be spread, and the necessary precautions and measures to take to prevent its spread. We all know from experience that it is impossible to enforce any legislation that has not the hearty support and co-operation of the people, and we hope and believe that when a fair measure of knowledge of this disease is in the possession of the people, the greatest force and power for the prevention of its spread will be secured. To obtain this end, we ought to begin in our schools, and instruct the young as to the nature of the disease. It ought to be laid down in the curriculum of every school calendar, that instruction in this subject should be compulsory.

LECTURE ON SYPHILIS DELIVERED TO THE STUDENTS OF  
THE DENTAL COLLEGE OF THE PROVINCE OF QUEBEC,  
WEDNESDAY, 6th MARCH, 1901.

BY

A. MACKENZIE FORBES, M.D., C.M.

The study of syphilis, or syphilology, as it is called, is one of the most interesting studies which come before the student of to-day. Book after book has been written on this disease, and so much has been discussed, and is still being discussed, on this subject that I was puzzled to know, when I was first asked to deliver this lecture, what parts of our knowledge would most interest you.

I decided, however, to treat it from two standpoints. Firstly, I will discuss it with you as dental students, and will lay special stress on the manifestations of this disease most likely to be seen by you, and not only point out the dangers to yourselves when attending to the teeth of patients affected with syphilis, but the danger to the healthy individual whom you may attend immediately afterwards, if you neglect to employ the precautions necessary to disinfect both your hands and instruments.

Secondly, I wish to discuss it with you as students of dentistry as one small branch of natural science, to you as interested in everything that pertains to the welfare of the human race, and as men naturally interested in the characteristics of, and the means to combat, one of the greatest scourges of the age. Osler has stated that there are probably more families with a luetic, (syphilitic) than a tuberculous, (consumptive) taint, and I have but to add that one-fifth of the patients presented at the clinic for the Treatment of diseases of the skin at the Montreal General Hospital suffer from this disease to impress you with the importance of this subject from a scientific standpoint.

Syphilis has been defined as "a specific disease of slow evolution, propagated by inoculation, or by hereditary transmission. In the acquired form the seat of inoculation becomes the seat of a special tissue change—primary lesion. After an interval of two or three months constitutional symptoms develop, with affections of the skin and mucous membrane—secondary lesions. And, finally, after a period of three, four, or more years, granulomatous growths develop in the viscera, muscles, bones, or skin—tertiary lesions." (1)

**ETIOLOGY.** The nature of the virus is still doubtful; whether it is due to a germ, or to a chemical toxine, is not known; but the majority seem to lean to the microbic theory of its origin.

It is peculiar to man. Many have tried to inoculate it into the lower animals, but unlike tuberculosis, so far, it may be safely said without avail.

It is seen at all ages. It affects the babe unborn and the man or woman tottering on the brink of the grave. None seem to be immune. As you all know, in the vast majority, syphilitic infection is due to sexual intercourse, in other cases it is inherited, but most interesting to you will be the knowledge that it may be due to "accidental infection."

Of those cases due to sexual intercourse I need not speak. Of the cases of inherited syphilis it may be interesting to know that syphilis may be inherited: (a) from the father, (b) from the mother, (c) by placental transmission. The father may not only infect an innocent wife, and thus give birth to syphilitic offspring, but even without infecting the mother, the child developed from the syphilitic sperm (male element) may be inherently syphilitic. And here it may be worth while mentioning that a syphilitic child born of a mother presumably uninfected, through the inherent syphilis of the sperm, showing all the characteristic symptoms of this dread disease, seems to be, in the majority of cases, unable to infect the mother who bore it although suffering with the vilest and most contagious of lesions. This fact is known as Colles' Law.

A syphilitic mother is liable to bear infected children even though her disease may not have been active enough (or his resistance too great) to infect her husband.

The third means of infection *in utero* (in the mother's womb) is by placental transmission—that is, if a pregnant woman previously free from syphilitic taint acquires the disease she may infect her unborn child through the placental connection with her offspring.

The Accidental Cases, acquired otherwise than by sexual intercourse are probably the most interesting to you as students of dentistry. When you consider the amount of syphilis seen in a city like Montreal, and realize that the secretions from at least all the primary and secondary lesions (to be described later) are more or less contagious, and that the blood of all suffering from syphilis is capable of transmitting this infection, you will be surprised that this mode of infection is not more commonly reported. Osler has personally known of six medical practitioners who have been martyrs to their duty. Infected while doing their duty. I think that every medical practitioner personally knows of one or more of his friends or acquaintances, who, while attending syphilitics have been infected with a primary lesion (chancre) on his hand. I cannot recall having read of any case of this same accidental infection as occurring in a dentist, but it is quite conceivable

that such might easily occur; I will go further and state that a dentist attending to the teeth of a patient with any syphilitic lesion, and especially with mucus patches of the lips, tongue, or buccal cavity, is in imminent danger of contracting a hard chancre on his hand. Another fact that is sometimes overlooked, and this for you is important, is that it is possible to become infected by the blood of one suffering with syphilis, and by you, dentists, attending the teeth of syphilitics, who perhaps show no signs of this malady, this is a fact worth remembering, for surely, perhaps unknowingly, your fingers have been bathed in the blood of a syphilitic.

The question quite naturally arises at this point, "Why then do we almost never hear of such dentist having acquired a chancre on his finger?" and the only explanations I can offer are, firstly, that the blood of syphilitics does not seem to be so liable to carry infection as does the secretion from the cutaneous lesions, and especially those of the mucosæ; and secondly the dermis is much more likely to be intact than the mucosæ. Thus is offered a greater resistance to infection than would be offered by a surface covered with mucous membrane, such as the lips.

Consider therefore the danger to which patients who are treated by you after your treatment of the syphilitic, are exposed; and remember that your hands and instruments, unless thoroughly cleaned, can easily carry infection.

The most common of all accidental, or erratic, infection is the lip chancre, and this may be acquired in many ways outside of direct infection. Mouth and tonsillar chancres are said usually to be due to improper practices. Wet nurses are sometimes infected on the nipple, and occasionally the relatives of a child suffering from hereditary syphilis are accidentally infected.....

We have already in our definition of this disease mentioned that it has been arbitrarily divided into three stages, viz.—Primary, Secondary and Tertiary Syphilis. Let us now consider the practical points of interest of each of these stages.

(A) THE PRIMARY LESION OR CHANCRE is usually seen as a hard, indurated, sore. When extra-genital it is usually single, but those which are most interesting to the dental student are often difficult to diagnose. "Herpetiform lesions of the lips, papules on the tip of the tongue, scabby ulcerations, skin-scratches which absolutely refuse to heal—all such lesions should be regarded with suspicion if indolent in course, obstinate to treatment, and accompanied by slight discharge which has a tendency to form crusts or a pseudo-membranous deposit on the eroded surface. If, moreover, such lesions are placed upon "an elastic, sharply circum-



scribed, indurated base, and are followed by hard, painless enlargement of the nearest associated group of lymphatic glands, the diagnosis receives strong corroboration." "Chancre of the lip in its beginning closely simulates ordinary non-specific sores. It often begins as a chaf or fissure, frequently found in the median line as an apthous lesion, an herpetiform ulceration, or an ulceration such as would be produced by the burn of a cigar or of a cigarette. In the early stages there is nothing characteristic about these lesions, but in a few days the extension of the erosion, or ulcer, and the formation of a characteristic and usually very pronounced extensive induration, indicate the nature of the affection. The whole lip is generally congested, sometimes reaches an enormous size." "The tongue also may be the seat of a chancre, but the primary lesion of syphilis is less common on the tongue than on the lips. When found it usually involves the anterior half of the organ and is situated on the dorsal surface, the sides or the tip. It commonly assumes the erosive form, presenting an appearance almost identical with that of similar genital lesions. There is simply a painless, oval or rounded, superficial lesion with smooth surface, frequently covered by a grayish pseudo-membrane seated upon a parchment-like induration. It is often as large as a ten cent piece. The ulcerative form of lingual chancre exhibits a deep lesion often upwards of an inch in diameter, with sloping edges, and dense, well-marked induration. . . . If an ulceration apparently produced by carious teeth, or a papule arising without given cause, fails to heal in five or six days, and, on the contrary, enlarges, becomes elevated, is eroded, is covered with pseudo-membrane, and is not improved by applications of silver nitrate, the lesion may be looked on with great suspicion, which will deepen into almost certainty with the appearance of induration and glandular enlargement.

"Chancre of the tonsils and fauces is rare and when observed is so masked by concomitant inflammatory symptoms that diagnosis is almost impossible." "

(B) SECONDARY LESIONS. These usually appear about six weeks after the primary sore and are often accompanied by fever, anæmia, adenitis, alopecia, neuralgia, and sometimes by iritides, visceral lesions, etc.

The most characteristic lesions of this stage are, of course, the skin affections,—those bilateral, painless, often copper-colored infections. But for the dentist the most important lesions are those of the mucosæ and especially those of the mouth and buccal cavity. Realizing their importance, and remembering the great contagiousness of most of these lesions, I will describe at some length their characteristics, in many instances quoting almost *verbatim* the description of White and Martin.

The mucous-membrane manifestations of syphilis correspond, in pa-

thology and general features, with those appearing on the skin, the difference depending on increased vascularity, diminished resistance to extension and ulceration on the part of the surrounding macerated mucous membrane, and a greater or less degree of irritation incident to secretions which are constantly brought in contact with the lesions.

The lesions of syphilis which affect the mucosæ during the secondary stage of the disease are best classified thus :—

(1) Erythematous Syphilide. These lesions first appear as discrete spots; these become confluent in a few hours, exhibiting then a somewhat sharply circumscribed circinate margin. The mucous membrane of the throat is most frequently attacked, the patient suffering from syphilitic angina which may assume the acute, or the chronic, form. The hyperæmia and œdema involve the pharynx, tonsils, arches and soft palate though the latter may exhibit discrete macules. So quickly does the macular eruption of the mucous membrane become confluent that, when first observed, the lesions depending upon their location closely simulate simple sore throat. The discharge from these lesions is said to be contagious.

(2) Papular Syphilide. (Mucous Patch).

(a) The Papular Erosion is in the form of oval or rounded, infiltrated patches, exhibiting a raw ham colour, denuded of epithelial covering and showing a smooth, glistening surface. It is usually placed on the dorsum of the tongue and associated with it are found fissures of the borders of the organ. It is particularly common in inveterate smokers and hard drinkers.

(b) The Diphtheroid Papule. The commonest form of the mucous patch appears as a small, or large, discrete, or confluent, papule covered with a tightly adherent, gray-white pseudo-membrane, which, on being removed leaves a bleeding surface. This form of mucous patch is generally found on the mucous membrane of the cheeks and lips and at the angles of the mouth, where it becomes fissured, on the sides, under surface, and frænum of the tongue, on the gums, and on the soft palate, pillars arches and tonsils. The lesions may be attended with fissuring, with superficial ulceration and when situated on the tonsils, with deep and destructive ulceration. When the mucous patch is undergoing involution either under the influence of constitutional, or local, treatment, or spontaneously, and loses its diphtheroid covering, it presents the appearance of a papular erosion.

(3) The Vegetating Papule is comparatively rare, and exhibits the tendency towards local hypertrophy which is sometimes a marked feature of syphilitic lesions, and there results a raised lesion which is in

reality an infiltrated papilloma, varying in size from a split-pea to a half-walnut.

(4) The Papulo-Squamous Syphilide. Mucous Psoriasis. Scaly Patches rarely appear in the course of constitutional syphilis. They are rounded or irregularly shaped, flat, smooth, bluish-white patches, such as would result from lightly brushing a surface with strong silver nitrate solution. From the confluence of such patches curious markings are sometimes observed on the tongue.

This finishes the description of the Secondary Lesions which will likely come under your notice as dentists, and brings us now to the consideration of.

(C) TERTIARY SYPHILIS. The origin of the lesions which come under this heading is, even now, much disputed. Many hold that these lesions which are usually localized tissue hypertrophies (gummata) are due to a post-syphilitic degeneration of the tissues, while the majority still cling to the theory that they are due to the same causation as are the earlier manifestations; but before describing the lesions of what is commonly described as tertiary syphilis, which you will most likely meet with in your daily practice, let me briefly state that these differ from secondary lesions in that they tend to be unilateral; and from both by the fact that the secretions from tertiary lesions are certainly far less contagious than those of either of the other two stages of syphilis. The most common lesions of this stage are skin eruptions, gummatus growths in the viscera, and amyloid degenerations.

The lesions characteristic of the so-called tertiary syphilitic state when affecting the skin usually show, as I have already stated, a far greater tendency to ulceration and destruction of the deeper layers of the skin with a tendency to leave scars, than is shown by the earlier manifestations of this disease.

The most characteristic lesion of this stage, however, is the localized tissue hypertrophy of which I have already spoken, and which are commonly known as gummata. These may develop in the skin, subcutaneous tissue, muscles or internal organs, and it is these alone that you are likely to meet with in your professional capacity. These quite frequently will be met with in the mucosa or deeper structures of the tongue, hard, and soft, palate, and other structures which are continually before you, and will present themselves both in the form of diffuse infiltrations, and circumscribed tumors with the common characteristic of always tending to break down and form ulcers, often having a serpiginous formation. They are most commonly responsible for the enormous loss of substance quite frequently seen in the palate.

There is now left to us but one form of syphilis which I will briefly

describe before dealing with those general considerations of this disease which will be more interesting to you as practicing dentists. I speak of congenital syphilis.

**CONGENITAL SYPHILIS.** Not every one born of a syphilitic parent, or parents, necessarily shows signs of syphilization at birth. It is noteworthy that the result of the marriage of a syphilitic which is followed by conception is usually, at first, abortion or miscarriage; later, offspring characteristically syphilized, are born who probably live but a few hours or days; and later still come those who show signs of the disease, yet whose resistance is strong enough, or whose infection is mild enough, for them to recover from the early symptoms and grow up perhaps showing no sign of a characteristic or noteworthy nature till puberty; others again, who growing up always present one or more of those lesions so suspicious of the syphilitic heritage—I speak of the peculiarly-shaped head with its square forehead, the flat, sunken nose, the osteites, iritides, keratitides, and, what to you will be most interesting, those teeth which bear the name of him who first described them, the greatest of English syphilographers, Jonathan Hutchison.

**THE GENERAL DIAGNOSIS OF SYPHILIS.** There is seldom any doubt as to the diagnosis of this disease, except in those cases where there has been a primary sore without subsequent secondary symptoms, or where the primary sore has not been noticed, and the secondary lesions have been few, and not characteristic.

**PROPHYLAXIS.** Let me quote, almost verbatim, from Osler. “Irregular intercourse has existed from the beginning of recorded history, and unless man’s nature wholly changes—and of this we can have no hope—will continue. Resisting all attempts at solution, the social evil remains the great blot on our civilization, and inextricably blended with it is the question of the prevention of syphilis. Besides personal purity, which physicians are bound to advocate, there is another measure for the prevention of the disease which we must consider, viz,—rigid and systematic regulation of prostitution. The state accepts the responsibility of guarding citizens against small-pox or cholera, but in dealing with syphilis the problem has been too complex, and has hitherto baffled solution. On the one hand inspection, segregation and regulation are difficult if not impossible to carry out; on the other hand, public sentiment, in Anglo-Saxon communities, at least, is as yet bitterly opposed to this plan. While this feeling, though unreasonable, as I think, is entitled to consideration, the choice lies between two evils—licensing, even imperfectly carried out, or wide-spread disease and misery.

If the offender bore the cross alone, I would say forbear; but the physician behind the scenes knows that in countless instances syphilis

has wrought havoc amongst innocent mothers and helpless infants, often entailing life long suffering."

It is for them he advocates protective measures.

**TREATMENT.** Syphilis is, perhaps, of all diseases the one whose symptoms are greatly amenable to treatment. Great relief may be afforded the patient, and protection offered the public.

**MARRIAGE.** With reference to the marriage of one who has suffered from syphilis, although it is generally allowed that if two full years have elapsed since the date of infection marriage may be allowed, it is certainly advantageous to delay this for a much longer period. But here the words of Hutchison will be of interest, "It has long been my practice to permit and even to encourage marriage, when two full years have elapsed from the date of contagion."

As regards the ultimate prognosis. One who has suffered from syphilis even though he has had careful and prolonged treatment can never be said to be as certain of good health—yes, I may even say, as certain of life, as he who has escaped this scourge.

In closing, gentlemen, I beg to mention that it has been my desire not only to accentuate, and impress you with the characteristics of those lesions which you as practitioners of dental science will often meet with, but to give you a general knowledge of a disease which it is our fondest hope may some day be numbered, as one of the past, while believing that by the diffusion of the knowledge of the disease, its dangers, and its prophylactic treatment, the protection of the innocent will be furthered, as will be hastened the dawn of that day when the dangers of syphilis will be almost annihilated by the legislation of a paternal government as the representatives of an enlightened people.

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# RETROSPECT OF CURRENT LITERATURE.

## Medicine.

UNDER THE CHARGE OF JAMES STEWART.

### Value of Tuberculin in Determining the Condition of Tuberculous Joint Lesions.

FRAZIER AND BIGGS. "The Value of the Tuberculin Test in the Recognition of Latency or Quiescence in Tuberculosis of the Bones and Joints." *University of Pennsylvania Medical Bulletin*, March, 1901.

Although the applications of the test reported upon by these observers were made in surgical cases, yet the use of tuberculin is of such importance in all departments of medicine that a *resumé* of this article may well be allowed here.

The investigation was undertaken with the object of determining solely whether tuberculin could be employed to advantage as a means of determining whether, when the disease has apparently run its course and subsided, the process is in a state of quiescence, of latency, or whether resolution with total disappearance of all tuberculous material has occurred.

The technique adopted in this investigation was practically that which obtains in the application of the tuberculin test in the human subject. The tuberculin was obtained from the laboratory of the State Live Stock Sanitary Board of Pennsylvania prepared under Dr. Ravenel. The amount of tuberculin varied according to the age of the patient and the reaction of the initial dose, which was .001 gram. In the event of no reaction from the initial dose, .003 grams. were used, and so on. Two days usually elapsed between the injections. The time of injection varied from 8 a.m. to 8 p.m., usually, however, at 11 a.m. or at 1 p.m.

*The Reaction.*—The effects were carefully studied and were both constitutional and local; the former may be compared to the symptoms of grippe, while the latter, often variable in degree, consist essentially of the increased vascularization of the tubercle, and of degenerative changes in the cells surrounding the bacilli. The local lesion is usually small and of short duration, when considerable constitutional disturbance results. One does not find, therefore, what one might suppose,

viz., a constitutional reaction in proportion to the local lesion. "In advanced cases the general reaction is slight and the local reaction is marked, while in the incipient cases the reverse is true." What constitutes a reaction is a point upon which opinions differ. These authors, along with many others, regard an elevation of the temperature to three degrees above normal as a reaction, whether or not it is accompanied by other phenomena.

Thirty-one patients were subjected to the tuberculin test. They were divided as follows:—(1) Fourteen classified as "recovered." (2) Three cases were classed "quiescent." (3) Five were classed as "active." (4) Nine were classed "miscellaneous." With but four exceptions in the first three classes, coxalgia and spinal caries were the diseases suffered from.

*General Observations.*—A slight irritation at the point of injection of the tuberculin, lasting for three or four days, was observed, always without suppuration, the deeper injections usually being followed by more marked irritation. The constitutional effects in but three cases made the patients distinctly uncomfortable. The elevation of the temperature, where a positive reaction was obtained, depended upon the amount of tuberculin administered. *There was no uniform variation in the degree of reaction obtained from injections given during different hours of the day.* The highest point in the reaction was usually reached in twenty-two hours, the return to normal after the temperature began to decline being made in twenty-three hours. A sharp rise followed by a sudden drop to normal was seen in a few cases. There was observed a tendency towards subnormal temperature after reaction to the test. There were no subjective or objective symptoms indicating that the condition of the lesion of active or former disease was affected by the tuberculin, and so far as could be ascertained on careful investigation, the patient did not sustain any injurious effects.

The positive reactions in the first three classes averaged 86 per cent., being in class 1, "recovered cases," 75 per cent.; 2, "quiescent cases," 100 per cent.; class 3, "active cases," 80 per cent.; while class 4, the "miscellaneous cases" reacted in 70 per cent. of the total. The longest period after injection before the highest temperature was reached was thirty-two hours, the shortest six hours. The longest duration of fever after the maximum was reached was forty-five hours, the shortest duration was three hours. A few examinations were made upon the blood of several of the cases. No changes to any degree were found in the red cells. The leucocytes showed a tendency to increase about five hours after injection.

*Conclusions.*—The authors wish this communication to be regarded in the light of a preliminary report, and direct special attention to the

positive reactions in the various classes already described. In those cases, let it be understood, where for periods varying from one to seven years there had been no clinical evidence of active tuberculosis, the reaction appeared with the same relative frequency as those in which there was every reason to believe the tuberculous process was active. Some of these patients had been operated upon and the affected area of bone removed. They ask what is the interpretation of the figures with which we are confronted. It is not (1) the unreliability of the test, it might be (2) misinterpretation of clinical phenomena, for where tuberculous disease had been known to exist and had been operated upon there yet might remain some portions of tissue in which the bacilli of tuberculosis were at present dormant, and (3) in these subjects there may yet exist other tuberculous foci.

### Enteroptosis.

ARNEILL. "Enteroptosis." *Amer. Jour. of the Med. Sciences*, April, 1901.

Arneill remarks that his experience has convinced him that this is a remarkably common disease. He analysed eighty such cases, sixty-nine of which were found in women and eleven in men. In twenty-four cases both kidneys were dislocated, the right usually greater than the left. In thirty-three cases the right kidney alone was dislocated.

Concerning Stille's phenomenon of the floating tenth rib, Dr. Arneill states that only lately has he been paying attention to it. In eight cases the tenth ribs were distinctly floating. This, however, gives not relativeness of proportion, as the great majority of the patients were not examined for the sign. The stomach was displaced downward in sixty-nine instances, in twenty-eight of these this organ was found below the naval. A few showed dilatation.

The stomach contents analysed in forty-eight cases showed but slight evidences of altered acidity; the results were those of normal findings in the great majority of cases; rarely was the acidity above 70. The blood condition in twenty-three cases examined showed hæmoglobin below 70 in ten instances and above that percentage in thirteen.

Neither child-bearing nor tight-lacing appeared to have been an etiological factor in these cases, and a congenital predisposition is believed to exist in many. The symptoms were of that varied type common to this condition and recently so frequently described.

The author fails to suggest anything very new in the treatment. Many cases have been remarkably improved under the use of tincture of nux vomica. It is recommended to give it in doses of ten to fifteen drops (U. S. Ph.) before each meal, and increase one drop daily until as high as seventy or eighty drops are taken, and to combine with over-feeding.



# Gynaecology.

UNDER THE CHARGE OF WILLIAM GARDNER.

## Carcinoma of the Female Genitalia.

OLIVER THOS. M., M.D., F.R.C.P. "A Clinical Lecture on Malignant Disease of the Female Genitalia." *Brit. Med. Jour.*, Jan. 19, 1901.

*Vulva.* The form of malignant disease infecting the vulva is usually either epithelioma or sarcoma. It occurs as an ulceration, or, when seen early, as reddish, flat, elevated and circumscribed nodules, which tend to infect by contact the parts touching them. An irritating discharge, often having an unpleasant odour, is frequently observed exuding from them.

They are to be distinguished from, (a) caruncle of the urethra, by the caruncle being situated within the meatus urinarius and by its being soft, bright red, and exquisitely tender; (b) hard chancre, which is followed by the typical rash; and (c) soft venereal sore, which has no hard indurated base or edges, and is accompanied by a tendency to the formation of buboes.

The prognosis is bad even after extensive removal.

*Vagina.* Here the disease may be primary but is usually secondary. When primary, it is seen on either the anterior or posterior wall of the vagina and has the characteristics of epithelioma. It is most often caused by irritation, as by a pessary.

The symptoms are hæmorrhage, pain, especially on locomotion or intercourse, and an offensive discharge.

The prognosis is bad, as, on account of its being situated in soft tissue, it rapidly spreads.

*Uterus.* The cause of carcinoma is still *sub judice*, but Mr. D'Arcy Power's experiments seem to indicate irritation of the epithelial cells as a pre-requisite. The disease is primarily a local one, "as shown by the success which follows early removal."

Unfortunately there is no one symptom which is pathognomonic. The earliest and most characteristic sign is either bleeding or a thin watery discharge, which may be offensive. This latter is especially liable to be present when the patient is beyond the climacteric. The

hæmorrhage may only follow coitus, or the periods may gradually become increased in length. Where hæmorrhage appears after the climacteric, it is almost always due to carcinoma; and where a local examination is made and no disease found, the uterine cavity should be explored by the curette, which will bring away soft, gray, cheesy material, if malignant disease is present.

Early removal of a uterus which is the seat of a carcinoma which has not invaded the surrounding parts to too great an extent, cannot be too strongly urged. When this cannot be done the patient may be made much more comfortable by thoroughly curretting away all the diseased tissue and then applying a strong solution of chloride of zinc. The duration of the disease varies from six to eighteen months, but patients usually die within one year from the time of its discovery.

### Ovarian Pregnancy.

ANNING and LITTLEWOOD. "Ovarian Pregnancy." *British Med. Jour.*, Jan. 12, 1901.

Drs. Anning and Littlewood reported before the Obstetrical Society of London an undoubted case of this rare form of ectopic gestation, the possibility of the existence of which has long been denied by most observers.

The patient was 28 years of age and had never been pregnant before. Rupture had occurred about thirty-six hours before operation, and a quantity of blood clot was removed from the abdominal cavity. A small ovum about the size of a Barcelona nut was found. This fitted into an envelope composed of laminated blood clot; and the sac containing the ovum exactly corresponded to a cavity which existed in the right ovary, it having escaped through a rent. The right tube was removed and showed no signs of rupture, nor did the left, which was examined and allowed to remain *in situ*.

The specimen was shown with microscopical sections of the ovum, the sac, and a portion of the ovarian wall.

In the discussion which followed, Bland Sutton remarked that a careful examination of specimens reported as ovarian pregnancy showed that they were in many cases nothing but small dermoids or else a lithopædion in the broad ligament. Dr. Farre had concluded, that while a spermatozoon could enter an ovarian follicle, ovarian pregnancy did not exist, but this specimen proved that it could take place. He also stated that he had recently gone to Amsterdam where he had seen and examined an undoubted case.

### Hysterectomy for Carcinoma.

BOLD, H. J., M.D. "Vaginal versus Abdominal Hysterectomy for Cancer of the Uterus." *Amer. Gyn. and Obstet. Jour.*, Dec., 1901.

Neither method is suitable for all cases, although the German and some American operators think that if it is classified according to its liability to affect the neighbouring parts, uterine carcinoma may be divided into that affecting the infra-vaginal portion of the cervix, that affecting the supra-vaginal portion, and lastly, cancer of the fundus, the disease spreading to the vaginal mucosa and the parametrium, respectively, for the first two forms. ;

The disease spreads by the lymphatics to a great extent, the blood vessels only becoming infected later on in the disease, and the glands are only infected when the cancer has been present for some time, numerous post-mortem examinations having shown glandular involvement in only about fifty per cent. of the cases.

Vaginal hysterectomy takes time and involves a smaller peritoneal opening than the abdominal route; convalescence is more rapid; the direct mortality is smaller; and the unpleasantness of a wound in the anterior abdominal wall is obviated. To be highly successful, however, one must cut as wide of the uterus as possible. The only advantage of the abdominal route over the vaginal is that by it the lymphatics of the pelvis can be better seen and removed.

"The only cases in which the abdominal operation is indicated with my present views, are those in which the uterus is too large or too adherent from inflammatory processes to be removed per vaginam without marcellation, and those where the diagnosis of glandular enlargement is made."

### Nocturnal Incontinence of Urine.

NOBLE, GEORGE H., M.D. "Seventeen Years of Nocturnal Incontinence of Urine Cured by Operation." *Amer. Gyn. and Obstet. Jour.*, Feb., 1901.

The patient in whom this condition was observed was an overgrown girl of seventeen. During the day she could control the function but at night was unable to do so. The cause was hard to discover, as she was not of a neurotic temperament, and there was neither constipation nor rectal irritation. The interior of the bladder was examined and found to be normal. The only local abnormality about the external genitalia was a thickened and inflamed annular hymen, which was intimately connected with the urethral meatus, upon which it was thought to have considerable influence. For this reason it was decided to operate.

The hymen was divided to its base on each side of the urethra. A circular incision was made around the meatus and the urethra, together with the adjacent part of the hymen, was dissected free of its attachments for some distance, thus dividing all nervous connection between it and the hymen. Two sutures fastened this latter to the pelvic arch, by which means the urethra was supported in place.

For some time after the operation the patient was wakened every two hours during the night to empty her bladder. The intervals were gradually lengthened, until she was enabled to remain all night without voiding her urine, and she is now and has for some time been perfectly well.

*F. A. L. Lockhart.*

# Ophthalmology.

UNDER THE CHARGE OF F. BULLER.

## Syphilis.

VICTOR KLINGMÜLLER. "The present Status of Syphilis Therapy."  
*Klinische Monatsblätter f. Augenheilkunde, December, 1900.*

Klingmüller, the first assistant in Neisser's clinic in Breslau, has written a very interesting résumé of the present therapy of syphilis. Neisser, Lang, Lesser, and others, hold that syphilis is due to a form of bacterium, the syphilis bacterium, and that the secondary and tertiary symptoms are due to outbreaks of bacterial activity, not to the toxins evolved by the bacteria.

Syphilis is a chronic disease and the treatment must be essentially chronic in character. Mercury is a specific for these syphilitic processes, and hence should be used in all stages of the disease. The iodine salts are merely eliminants of the products of the bacterial action.

The treatment should be conducted in courses, at intervals spread over four years or more, without at any period awaiting the outbreak of special symptoms calling for treatment. Neisser prefers inunction treatment alternately with subcutaneous injections, the inunction being preferable in winter and the injections in summer. Treatment is started with energetic inunction of one drachm of blue ointment, repeated thirty or thirty-five times, or else by ten injections. Internal administration of mercury is avoided if possible, mainly on account of the disturbing action on the intestinal tract. One has to be on the lookout for a mercurial idiosyncrasy, which is most frequently found in alcoholics and anæmic individuals. One has to be careful if there is a tuberculous dyscrasia, and the minimum dose has to be followed out in these cases.

From a series of investigations conducted in Neisser's clinic and elsewhere, it would seem that in the inunction treatment the main absorption of the mercury is by the lungs, only comparatively little mercury being absorbed through the skin. The great point in favour of inunction is that the amount absorbed into the system can be readily governed, and the appearance of unpleasant symptoms avoided. The chief drawback is the occurrence of a mercurial dermatitis.

As to the subcutaneous injections, two forms of mercurial salts are used, the soluble and insoluble. The soluble salts, the cyanate of mer-

cury, oxycyanate, and sublimate, are rapidly absorbed, and hence have to be injected daily; whereas the insoluble salts form, as it were, a subcutaneous deposit, from which there is a slow, continuous absorption, and the injections are accordingly made only every four or five days. The insoluble salts used are:—Salicylate of mercury, which is the mildest in action; then follows the thymol-acetate of calomel, a little stronger; and finally the yellow oxide, which is the strongest.

As to the iodine treatment, the iodides of potassium, sodium, or rubidium, preferably in large doses, are used mainly in the tertiary stage. Neisser uses iodipin, an oily, 10 to 20 per cent. compound of iodine. It is administered in capsules by the mouth, but preferably subcutaneously in the gluteal region, dosage being 20 cc. for ten days, or on every second or third day. It does not cause iodism and is safe, energetic, and lasting. The iodine appears in the urine and sputum in from two to five days, and can be detected for weeks after.

#### Iodine for Corneal Ulcers.

FRIEDENWALD. "Treatment of Dendritic Keratitis and Marginal Ulcer of Cornea with Tincture of Iodine." *Am. Jour. of Ophthalm.*, July, 1900.

Having cocainised the eye and instilled fluorescein to delimit the ulcer, Friedenwald freely swabs tincture of iodine over the ulcer and rubs it well into all infiltrated edges. It is never necessary to repeat it more than once. The eye is bandaged, after applying an antiseptic ointment, and but little pain follows.

#### Ophthalmic Migraine.

NENSTÄTTER. (Munich). "Validol in Scotoma Scintillans." *Die Ophthalm. Klinik*, June 20th, 1900.

Nenstätter administers twenty drop doses of validol at onset, and after a few minutes the symptoms suddenly disappear not to recur. It was rarely necessary to give a second dose. The validol is taken on a lump of sugar.

#### Development of Colour Perception in the Child.

WARD HOLDEN and K. K. BOSSE. *Archives of Ophthalm.*, May, 1900.

The results of a series of investigations by these two gentlemen are very interesting. Before the age of six months, definite results were not obtained, but precocious infants of six months and average ones of seven or eight months, showed a marked reaction to red, orange or yellow, but not marked as regards green, blue, or violet. At nine months there was a sluggish reaction to green, blue, and violet, and at eleven and twelve months a prompt reaction to all colours. The colours at the

red end of the spectrum are thus reacted to sooner than those at the violet end.

A further investigation as to the preference for colours at different ages, from seven months to thirteen years, showed that as the psychical development advanced and the mental processes dominated the earlier physiological actions, there was at first indifference to all colours, succeeded a little later by a dislike to the more exciting reds and yellows, and a preference for the less exciting colours of the violet end of the spectrum.

### **Connection between Ocular and Dental Affections.**

DESPAGNET (Paris). *Recueil d'Ophthalmologie, July, 1900.*

As the eyes and teeth are anatomically so intimately connected, it is apparent that pathologically there should be a close connection. The same periosteum which lines the orbital cavity extends to the alveolar border of the upper jaw; the mucous membrane of the mouth is in direct continuity with the conjunctiva. The roots of the teeth extend often into the antrum of Highmore, and disease extends from here into the orbit. The angular artery and certain veins run almost directly from one region to the other. There is the same nervous supply from the fifth nerve and the sympathetic.

Despagnet holds that amblyopia, amaurosis, keratitis, corneal ulcers, conjunctivitis, strabismus, cycloplegia, etc., have occasionally been clearly traced to dental causes. Generally the teeth of the upper jaw are at fault, but sometimes those of the lower jaw.

### **Optic Atrophy Due to Mumps.**

DOR (Lyons). "Post-Neuritic Optic Atrophy due to Mumps." *La Clinique Ophthalm, August 25th, 1900.*

Ocular disturbances following mumps have been reported and are generally complaints of foggy vision, but in a few cases optic atrophy has been observed. Dor's case was a military man with optic neuritis, which went on to partial atrophy despite energetic treatment. The vision finally was limited to the counting of fingers at a few feet. Dor considers the optic neuritis as due to toxæmia.

### **Ocular Hysteria.**

KOENIG (Paris). "Hysterical Ocular Syndromes." *Recueil d'Ophthalmologie, July, 1900.*

Hysteria may simulate any disease of the ocular apparatus. Hysterical amblyopia generally appears as concentric contraction of the fields. Hysterical amaurosis is often difficult to distinguish from the true form, as in both the onset may be sudden and amaurosis, due to

disease of the two occipital lobes, often begins with symmetrical scotomata in the form of horizontal or vertical hemianopsia. Hysterical amblyopia is often associated with spasm of the lids. Hysterical amaurosis gives the patient but little trouble and, moreover, the amaurotic eye is blind only when monocular vision is attempted, or is shown by prism tests. In hysterical blindness the patient sees without being aware of it. Reversal of the fields for colour is common.

Hysterical ptosis is due to spasm of the orbicularis, the eyebrow is drawn down; whereas in true paralytic ptosis the eyebrow is elevated. False ptosis may be accompanied by paralysis of the members of the opposite side of the body. No case of hysterical paralysis of the ocular muscles has been reported, the disease being of the nature of a contracture or spasm. The external recti muscles are always affected, one only may be involved, when the internal rectus of the other eye may also be troubled. The external rectus may be in a condition of associated spasm with the orbicularis. All the extrinsic muscles may yield to the disease.

Hysterical nystagmus is characterised by rapid oscillations, separated by short intervals of repose. The oscillations increase when the patient's attention is drawn to them, and they may be banished by suggestion.

Mydriasis and myosis have been observed. The pupil generally reacts to light, but sometimes does not. The nature of associated symptoms are of importance in the diagnosis.

#### **Retrobular Neuritis.**

SANTOS FERNANDEZ. "Amblyopia due to lack of proper nutrition."

*La Clin. Ophthal.*, August 25th, 1900.

INOUE (Japan). "Toxic Amblyopia due to Santonin." *Die Ophthalm. Klinik*, Aug. 20th, 1900.

Fernandez noticed many typical cases among the unfortunate, half-starved reconcentrados in Cuba. A complete or partial cure resulted on their return home, when plenty of good food was obtained.

Inoue's case was a man, 33 years old, who took santonin on retiring. The next morning everything looked yellow, which lasted three days, and on disappearing left behind a central amblyopia in the right eye. The patient was ordered salicylate of soda. Six weeks later all unpleasant symptoms had disappeared. Inoue considered the later condition as retrobulbar neuritis due to santonin.

*J. W. Stirling.*



# Obstetrics.

UNDER THE CHARGE OF WILLIAM GARDNER.

## Symphysiotomy.

CARR, WILLIAM P.—“The objections to Symphysiotomy and How to Overcome them.” *The Amer. Jour. of Obstetrics, Oct., 1900.*

Of late little has been written of the operation of symphysiotomy in America. Dr. Carr seems to be a firm advocate of the operation in suitable cases. He believes that the tedious and painful convalescence, which has been the rule in these cases, can be avoided by proper care in the selection of cases for operation, and by the employment of a proper technique.

While not considering pelvimetry useless, he questions its accuracy and prefers to depend upon a digital examination and the knowledge to be gained by a careful use of the forceps. He prefers to apply the forceps to the head, which is then drawn down to the brim where it is held, while a finger is swept around its circumference. He considers that in this way a better idea can be obtained of its relative size in comparison to the pelvis than can be obtained in any other way.

To avoid dangers, he prefers the open operation, the skin wound being made as far above the vulva as possible. The wound can then be drawn down by means of a retractor and the joint laid bare. He strongly objects to the subcutaneous method suggested by Ayers on account of the dangers of laceration and hæmorrhage.

In order to avoid hæmorrhage, he prefers to carefully dissect away the tissues behind the joint for three-quarters of an inch on either side with a blunt director and the finger. A long narrow gauze sponge is then placed behind the joint before it is opened.

Carr always employs silver wire to suture the bones together. In this way he avoids the use of adhesive plaster and the tight abdominal and hip binder. The advantage he claims is that the patient can then turn about in bed and her convalescence is shortened considerably, as in his experience the bones have always firmly united by the end of three weeks.

## Symphysiotomy on Occipito-Posterior Cases.

FRY, HENRY D. “An Indication for Symphysiotomy with Report of a Case.” *The Amer. Jour. of Obstetrics, Oct., 1900.*

In occipito-posterior positions when normal rotation has failed, and where moderate traction with the forceps applied to the child's head

does not succeed, the author of this paper considers that symphysiotomy is the next alternative.

He prefers the Ayer's operation on account of the ease and simplicity with which the joints can be separated by this method. He then reports a case where symphysiotomy was performed, the Ayer's method being employed. The joint was opened without difficulty. Very little hæmorrhage occurred during the operation or after delivery. The bones were held in place after the child had been delivered by means of a broad band of adhesive plaster placed tightly around the pelvis, and this was reinforced by a firm binder. A retention catheter was left in position. The patient made an uneventful recovery, being kept in bed for three weeks. On leaving the hospital examination showed fibrous union of the joint.

In conclusion, he gives his opinion that in cases of unrotated occipito-posterior positions of the head, symphysiotomy is indicated in preference to forcible extraction with forceps or version.

#### **Treatment of Occipito-posterior Positions.**

BRODHEAD, GEO. L. "The Treatment of Persistent Occipito-Posterior Positions of the Vertex." *Amer. Jour. of Obstetrics, Dec., 1900.*

In an interesting paper read before the New York Obstetrical Society, Dr. Brodhead advocates the instrumental rotation of the occiput forward in suitable cases of persistent occipito-posterior positions of the vertex.

He divides the cases into three classes in considering the treatment. (1) Cases in which the vertex is above the brim. (2) Those cases in which the vertex is engaged in the brim or occupies the pelvic cavity. (3) Cases in which the vertex has reached the outlet and is pressing upon the perineum.

In the first class he considers the choice of treatment lies between forceps and internal podalic version, the choice of operation depending upon the skill and experience of the physician. The foetal mortality is higher with version than with forceps rightly used. Version is a safer operation for the mother. He considers on the whole that forceps in posterior, as well as in anterior positions above the brim, will give better results than version, as far as the child is concerned, and results equally as good for the mother.

In the second class of cases he considers the proper treatment is the restoration of flexion by pressure on the sinciput from below. If further assistance is indicated the forceps is to be used; if the vertex is merely engaged, a pelvic application of the forceps should be employed; if the vertex is in the cavity the blades should be applied to the child's head. Rotation of the occiput forward is to be favoured by traction forward in the axis of the pelvic cavity.

In the third class of cases where the occiput remains persistently posterior at the outlet, he contends that it is desirable and indeed necessary, in the best interests of the mother and child, to bring about forward rotation of the occiput, which can best be done by the use of forceps. Before the rotation is undertaken the following conditions must be fulfilled:—The head must be well flexed as possible; the vertex should be well down in the pelvis and preferably at the vulvar outlet; the membranes should be ruptured; the cervix as dilated as dilatable; and the diagnosis of position positive.

To perform the rotation he prefers the Tucker solid-bladed forceps, for the reasons that they are more easily introduced, more easily applied to the sides of the child's head, are removed with greater ease, and mark the child less than any others. The patient being in the dorsal position the blades are applied to the sides of the child's head with the concavity of the pelvic curve looking forward. The fingers of one hand are kept in contact with the sagittal suture, to note whether the head rotates with the forceps. The handles are then seized with the other hand and a firm grasp of the head secured, then during a pain the head is rotated from a posterior to an anterior position. Before rotating the head, the handles should be carried well over towards the thigh of the patient towards which the pelvic curve of the blades is directed. In rotating the handles are carried downward and backward. When the concavity of the pelvic curve of the forceps passes the lateral wall of the pelvis, the head will have been rotated into a transverse position, where it is held until several contractions and relaxations of the uterus have taken place, during which time the shoulders and body rotate and become adapted to the position of the head. The operation is then completed by further rotating the handles backwards and downwards, so as to bring the occiput into the oblique anterior position, where it is held for several contractions. The blades are then removed and the rest of the delivery left to the natural forces, though as a rule it is better to reapply the blades in the usual manner and deliver the child.

The operation should be done easily. If force is necessary to bring about rotation, it should not be attempted, but delivery should be completed with the occiput posterior.

The paper closes with the report of eight cases operated on by the author, who employed this method to effect delivery of the child.

In the discussion which followed the reading of the paper, the general opinion seemed to be that the method described by Dr. Brodhead had proved satisfactory, as several speakers had employed the forceps in rotation with the greatest success. Some expressed the opinion that the axis-traction forceps applied to the child's head had rendered rotation easier than when the ordinary forceps were used.

**Indentations in the Skulls of the New-Born.**

MUNRO-KERR, J. M. "Spoon-shaped Indentations in the Skull of the New-Born." *Brit. Med. Jour.*, Jan., 19, 1901.

A new method of treatment is suggested in this paper, by which the spoon-shaped indentations not infrequently met with in the skulls of the new-born, can be relieved without operation.

The method suggested consists in the application of firm pressure, exerted by compressing the child's head in the antero-posterior diameter between the hands. The authors reports three cases where this simple method succeeded in removing the deformity. In each case on the application of pressure in the antero-posterior diameter of the head, "the depression came out, producing a sound as when a dent in a felt hat is removed." He has tried the effect of compression in artificially induced depressions in still-born infants, and in every case where he could produce such depression, he found it could be removed by compression applied in the antero-posterior diameter of the head.

*D. J. Evans.*

## Reviews and Notices of Books.

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A TEXT-BOOK OF PRACTICAL OBSTETRICS. By **EGBERT H. GRANDIN**, M.D., Gynæcologist to the Columbus Hospital, etc., and **GEORGE W. JARMAN**, M.D., Gynæcologist to the Cancer Hospital, New York, etc. Third Edition, Revised and Enlarged. F. A. Davis Company, Philadelphia, New York and Chicago, 1901.

That this work has gone into its third edition since its first appearance in 1896 is evidence of its value and popularity. The third edition has been enlarged by the addition of a chapter dealing with the anatomy of the female organs of generation and with embryology. In our opinion this chapter fails to add anything to the practical value of the book as the subjects are presented in a sketchy outline and merely serve to confuse instead of adding to the reader's knowledge.

The book has been reviewed in these columns before, and the opinion there expressed as to its value to the practitioner and student as a valuable guide to practical obstetrics, still holds.

*D. J. E.*

OBSTETRIC CLINIC. By **DENSLOW LEWIS**, Ph.C., M.D., Professor of Gynæcology in the Chicago Polyclinic, etc., etc. Octavo, pp. 640. E. H. Colgrove, Chicago, 1901.

Professor Denslow Lewis has published in book form the stenographic reports of thirty-nine clinical lectures which he has delivered in Cook County Hospital since 1887. No attempt at a systematic and orderly arrangement of the subject matter has been made, but the author discusses the management of obstetric cases and their complications in a style which shows wide reading, careful thought and extensive observation.

Medico-sociologic topics such as the regulation of prostitution, criminal abortion, infanticide, and the restriction of venereal diseases, are touched upon. The author's remarks on these subjects are most interesting and instructive, and give evidence of considerable reading and investigation.

We must take exception to his remarks in Lecture 14, in which he recommends the employment of a prophylactic douche of bichloride solution in all cases of labour. Chloroform anæsthesia he employs in all cases and states that "there never has been a death from chloroform when administered judiciously to a healthy parturient woman."

He considers that at present we have but vague ideas of the etiological relationship of the staphylococci to puerperal infection, and that therefore not much is to be expected from the employment of anti-toxines in these cases. He places chief reliance on local and constitutional treatment, but suggests that if possible when immediate amelioration does not take place, the injection of 20 cc. of anti-streptococcic serum in doses of 5 cc. will never do harm, and very often will be of decided benefit.

The publisher's work leaves much to be desired as the paper is poor and the illustrations worse. The book will be useful chiefly to obstetric teachers as affording many valuable suggestions.

*D. J. E.*

## Society Proceedings.

### MONTREAL MEDICO-CHIRURGICAL SOCIETY.

*Stated Meeting, February 22, 1901.*

JAMES PERRIGO, M.D., PRESIDENT, IN THE CHAIR.

#### **Excision of the Elbow and Myeloid Sarcoma of the Ulna.**

DR. J. ALEX. HUTCHISON showed a patient on whom he had performed an excision of the elbow with a very satisfactory result. The full report will be found at page 267. Dr. Hutchison also exhibited a sarcoma of the ulna which he had removed, and Dr. McCrae demonstrated the specimen. For the report see page 268.

#### **Gall Stones.**

DR. JAMES BELL exhibited a collection of gall stones numbering 3,367. There were two distinct kinds of stones, 8 or 10 large faceted stones found in the neck of the gall bladder and the remainder much smaller in size. This led to the inference that the smaller ones were of later formation. The stones were removed by operation from a woman 58 years of age, who gave a history of illness beginning in 1899. Since Christmas, 1900, she had had attacks of colic about every second day. At the operation about four ounces of pus was found in the gall bladder, then came the small stones, and in the neck of the bladder the large stones were found.

DR. SHEPHERD had removed as many as 600 stones from one case. He referred also to a case which had come under notice in the dissecting room, a woman who had evidently not died from any trouble in connection with the gall bladder, yet on opening up the bladder the contained stones filled a skull cap.

### OTTAWA MEDICAL SOCIETY.

The Society met in St. Luke's Hospital on Friday, March 15, 1901, Dr. J. L. Chabot, President, in the chair.

DR. PREVOST reported a case of *Atrophic Scirrhus of the Breast* of four years duration, in an unmarried woman of 52 years of age, two years past the menopause. The breast was shrunken to the size of a silver dollar, and there was one enlarged gland in the axilla. Although in favour of leaving such cases alone, he had consented to operate at the patient's earnest wish.

Discussion followed as to the merits of operation and expectancy in atrophic cases.

DR. COUSENS showed a *Tubercular Testis* removed from a patient aged forty years, from whom the other had to be taken nine months previ-

ously. He also reported a case of fulminating recurrent *Appendicitis* following a severe attack of grippe. The prognosis was serious.

#### Hernia.

DR. COUSENS read a paper on this subject, reporting six cases of operation during the year. These consisted of one femoral, one umbilical (fatal owing to fæcal fistula and exhaustion after apparent healing of the wound), and four inguinal.

After reviewing the history of the operation from the time of Celsus, Dr. Cousens discussed the modern methods, of which he recommended that of Bassini. It was best to use strong and slowly absorbable sutures, and to use no method that might interfere with the primary and strong union of the wound.

Discussion followed, most speakers preferring the method of Bassini and several advising the use of a truss for some months after recovery. The possibility of reduction of old standing irreducible hernia in the aged by repeated massage and taxis was urged and cases cited in point. In one such reduction was accomplished after taxis had been used night and morning for a month.

The Society met at Water Street Hospital on Friday, March 22, 1901, Dr. J. L. Chabot, President, in the chair.

#### Fracture Dislocation of the Dorsal Vertebrae.

DR. KIRLEY reported a case of fracture dislocation between the tenth and eleventh dorsal vertebrae in which operation was declined, and the case treated by extension, manipulation, and plaster for six weeks, followed by a corset for a week.

Three months later the patient can walk well with slight spastic gait and is able for some work. There is a marked projection of the spine at the site of fracture.

#### Case Reports.

DR. GIBSON reported a case of *Dropsy and Copious Albuminuria* without tube casts in a puerperal woman, in which lactate of strontium appeared to have had much to do with a rapid recovery. Fifteen grains four times daily were given.

DR. CHABOT reported a case of *Appendicitis* in which operation was postponed at first owing to symptoms of right pneumonia with hæmoptysis. At the operation, a week later, the sigmoid was found on the right of the sacrum, and the cæcum and appendix high up under the liver. Double pneumonia followed the operation and death ensued.

DR. A. T. SHILLINGTON reported three cases of *Imperforate Anus in the New-born*. One died in thirteen days and another in five days after refusing operation. The last was operated on and recovered.

DR. VALADE also reported resuscitation of a case of *Asphyxia Neonatorum* by prolonged rhythmic traction on the tongue.



THE

# Montreal Medical Journal.

*A Monthly Record of the Progress of Medical and Surgical Science.*

EDITED BY

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## HIGH SCHOOL METHODS.

The work accomplished in our public schools would naturally be a matter of some interest to all those members of the community who are called upon to pay school-taxes, but may justly be regarded as of vital importance to the parents who not only contribute to the support of the schools but also look to these institutions as the main factor in fitting their children to become intelligent and useful men and women.

Our High Schools of course occupy the first rank in this respect and as public institutions are a fair mark for friendly criticism.

That an efficient mental training adds greatly to the intelligence and possible usefulness of the individual is a postulate which everyone may safely accept, and if this were all, the high schools would undoubtedly fulfil their functions to the satisfaction of all concerned, but there are unfortunately other considerations in regard to which the present system of instruction signally fails. The tendency to cram pupils with a multitude of studies to the detriment of their physical development must be patent to all who have given the subject serious thought and in this we see a serious defect which urgently calls for reform. A child who grows up with a weak constitution and an overwrought nervous

system cannot be expected to develop into a healthy and useful man or woman.

The pre-requisites for normal and healthy physical development are (1) Fresh air, (2) good food taken at proper intervals, and (3) the avoidance of excessive strain, either mental or physical. In regard to the first of these we may admit there is, in our Montreal High School, not much amiss except that the hours in school are more than should be and thus somewhat curtail the opportunity for out-door amusement, which should form a considerable element in the life of every growing person. As for the second it may be said that the school hours, for some classes at least, are such that the children cannot possibly take their mid-day meal, the most important one of all, at anything like the proper time. For example:—the girls in the classes ranging from 12 to 16 years of age, in order to be at school on time, must breakfast about eight or half-past eight o'clock. About twelve o'clock, a short time before the act of digestion is completed, there is 30 minutes recess, during which it is found necessary to give them a sort of luncheon; this because they are kept in their classes until two or sometimes half-past two o'clock, which means their mid-day meal is not taken until 2.30 or 3 p.m., and this again before the digestive organs have had a proper rest. The same fault is again committed at the evening meal three or four hours later. Could anything be more unreasonable, more at variance with the physiology of digestion? It is amazing that parents continue to put up with such an atrocious arrangement. Ask any intelligent physician if he does not think it a wrong that young girls at an age which demands the greatest care in all matters relating to their physical welfare should be subjected to regulations which are of a character so utterly unhygienic and positively harmful in their effects.

The third pre-requisite confronts the combined wisdom of the High School authorities with a cry for reform no less strenuous than that of the second.

First, with regard to the order of their lessons. If children became fatigued as older persons do by continuous application, it would seem obvious that they should not be set to do their most difficult work towards the end of long school hours; on the contrary, the most difficult subjects should as far as possible be gotten through in the forenoon. How does it stand with the unfortunate class of young girls already alluded to? It is this way:—they take their arithmetic, their most difficult study, about the last thing, at the end of a weary four or five hours; and so it is all through, the time-table is arranged without a due regard to the physical and mental necessities of the pupils. If all the children were likely to have the same aims and objects in life there might be

some sense in putting them through exactly the same course of training. If all were being fitted to go through a University or a Normal School after their High School course, it might be thought essential that they all follow the same hard and fast curriculum of studies, including as it does some 12 or 14 different subjects, but since the vast majority have no such intentions, and many wish to pursue certain subjects through outside tuition, why should there not be a compulsory course including certain essential subjects and making others such as science, geography, music and drawing optional, and taken towards the end of the school hours? This would allow probably more than half the class to get out at 12.30 or 1 o'clock, to their great advantage in shortening the school hours and giving them time for more out-door amusement or for private tuition in music and perhaps other subjects that can be better taught outside the school room.

Let us hope that the additional year recently added to the course will not be utilized in adding further burdens to our young people, of whom already too much book work is exacted, but that it will be made the means of materially shortening the school hours and so doing away with the existing defects which we believe are the cause of much more injury to the pupils than their teachers are aware of, to say nothing of the annoyance and inconvenience the continuous five hour attendance in school carries into their home lives.

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Yale Medical School is to have a new building to cost \$100,000, the gift of an anonymous donor.

Dr. Henry Jellet has been appointed editor of the *Medical Press and Circular* rendered vacant by the death of Dr. Jacob. Dr. Foy will be assistant editor.

At the Pan-American Exposition to be held in Buffalo this year, there is to be a fully equipped hospital on the grounds under the directorship of Dr. Roswell Park.

The Society of Italian Agriculturists has awarded the Golden Crown, bestowed upon those who have deserved well of agriculture, upon Prof. Giambattista Grassi for the valuable services which he has rendered agriculture by his investigations in malaria.

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Dr. A. N. Worthington, McGill '86, Surgeon-Major of the Second Canadian Mounted Rifles, and Dr. C. B. Keenan, McGill, '97, of the Strathcona Horse, are mentioned for meritorious service in South Africa by Lord Roberts in a recently issued report.

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King Edward has made Sir William Henry Broadbent, M.D., a Knight Commander of the Royal Victorian Order, and Dr. A. R. Manley, who has been for many years surgeon-apothecary to the Prince of Wales, a member of the fourth class of the same order.

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The State Senate of Minnesota has passed a bill prohibiting the marriage of insane, epileptic and idiotic persons, and requiring a medical certificate for all applicants for marriage licenses. The marriage of any feeble-minded person over forty-five is permitted by the bill.

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A bill has been introduced and is expected to become law in the State of New York to compel all persons professing to practice hypnotic treatment to take out a license. The passage of a successful examination after four years of study will be the qualification for the license.

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On Friday, April 5th, the New York Academy of Medicine celebrated the fiftieth anniversary of Dr. Abraham Jacobi's graduation in medicine. A large number of physicians assembled to congratulate Dr. Jacobi on the attainment of his jubilee and it was a cause for gladness to all that his mental and bodily powers are as yet unabated. The address delivered by the guest of the evening was entitled "German Text-Books Half a Century Ago: History and Reminiscences," published in the *New York Medical Journal* of April 13th, makes most interesting reading at the opening of the new century.

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A crusade against promiscuous expectoration in public buildings and street cars has been instituted in New York. A number of inspectors were told to watch for invasions of the law and arrested a goodly number of offenders, many of whom are said to have looked upon their arrest as a joke until fined for indulging their filthy and indecent habit. It is to be regretted that the regulations of the Montreal Street Railway against spitting in the cars are not better enforced. Many of the conductors on lines where the majority of their passengers are not in sym-

pathy with such, to them, unnecessary refinements, entirely ignore the rule, although it is posted conspicuously in every car.

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As a consequence of the recent wholesale poisoning in Great Britain by arsenic contamination in beer, a bill has passed its second reading in the House of Commons, on which the *Lancet* makes the following comments. "Put shortly the bill is intended to enable the consumer to know what he is not drinking. Beer is divided into two classes, somewhat on the logical process of dichotomy—namely, malt beer and part malt beer. Malt beer means that which is brewed from barley, malt, yeast, hops and water. Part malt beer does not mean this. These are admirable provisions in our mind and we would fain see them extended to all classes of food. Substitutes are generally harmless and often palatable, but the consumer should know what he is getting. If, for instance, he likes to use cotton-seed oil for a salad, let him do so, but he should not have cotton-seed oil palmed off upon him under the impression that he is buying olive oil."

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S. H. Monell, M.D., chairman on the committee on standards of the Roentgen Society, in order to standardize the methods of x-ray work, has invited experts to send to him their suggestions on something over a score of points. Included among these are:—Standard x-ray examination table, adjustable for all parts of the body; method of posturing each part of the body for a standard picture; means of fixing parts immovably during a standard exposure; complete definition of what a "standard exposure" should be (of medico-legal value); standard landmarks to be pictured in the negative as inherent proof that a standard exposure was made (a medico-legal necessity); standard technique for picturing correct relations of bones and joints, technique for picturing contrast for diagnosis of soft parts; standard technique for picturing the different calculi, vesical and renal, and gall stones, etc., and standard technique for therapeutic administration of x-rays with proper precautions.

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The first meeting of the Canadian Medical Association in the new century will take place at Winnipeg on August 28, 29, 30, and 31, 1901. From present prospects it will be most successful both in point of numbers and in scientific work.

Large numbers of physicians from the East are arranging their holiday trip so as to be present at the meeting, the opportunity afforded by the railways of a cheap trip through to the coast adding much to the attractiveness of the meeting.

The Address in Medicine will be delivered by Dr. J. R. Jones of



Winnipeg and the one in Surgery by Mr. O. M. Jones, F.R.C.S.Eng., of Vancouver. An evening will be devoted to a discussion on Tuberculosis and another to some surgical topic.

By way of entertainment an excursion to Fort Garry, and on Saturday, August 31st, a trip to Brandon, with a luncheon, returning through Southern Manitoba, have been already arranged.

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The Faculty of Medicine of McGill University has recommended to the Corporation and Matriculation Board of the University that a considerable increase in the standard of general education for admission to the study of medicine, be enforced in the session of 1902-03. The requirements for the present matriculation are:—

(1) Latin, including Latin prose, sight translation, grammar and a knowledge of two or three texts, Cæsar and Virgil being required for the coming session.

(2) Mathematics, arithmetic, algebra, including quadratic equations, Euclid, books 1, 2 and 3.

(3) English, a knowledge of one or two English classics, a sound knowledge of English grammar, composition, and dictation.

(4) And one of the following optional subjects:—Greek, French, German, or Science (Chemistry and Physics).

After 1902 the requirements of English, Latin and mathematics will remain the same, but in addition to that Science, viz., the elements of chemistry and physics, will be made compulsory, and the candidate will be required in addition to take one of the following languages—French, German or Greek.

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It is announced that the Second Annual Meeting of the American Congress of Tuberculosis will be held at the Grand Central Palace, in the city of New York, on the 15th and 16th days of May, 1901, in joint session with the Medical-Legal Society of New York. It is proposed to open a Museum of pathology, bacteriology and public health, with an exposition of electrical and other instruments; with the use of the power furnished at the building, which it is intended to be made most complete, educating and attractive; of all appliances used in any way in arrest or treatment of the disease.

The medical profession of all countries will be invited to contribute papers to be read before this Congress, in their behalf by a committee selected for that purpose, in case of the inability of the author to attend, and to enable those who could not hope or expect to be present, to participate in the work and usefulness of the body. As the questions to be discussed involve remedial legislation, legislators, lawyers,

judges, and all publicists, who take an interest in the subject, are also invited, both to enroll and contribute papers.

The papers should be forwarded to the Secretary on or before the 15th day of April next, and the title of the papers forthwith, to facilitate classification, as the time is short. The enrolling fee will be \$3, entitling the member to the Bulletin of the Transactions free.

The complete list of officers and committees will be announced as early as possible. The preliminary announcement is now made to obtain the names of those who will co-operate in the Congress, and an early classification of the subjects and titles.

Proceedings of the McGill Medical Society of  
Undergraduates.

THE ETIOLOGY AND GENERAL TREATMENT OF SKIN  
DISEASES.

BY

W. L. TAYLOR, '01.

The subject which I have chosen for this evening is so vast, that I cannot hope, within the limits of a paper of this nature, to give more than a brief outline, but I hope I may be able to bring to your notice some points which may be of interest, and possibly of use to you.

Diseases of the skin have been known from time immemorial, but it is only within the last few years that they have been studied with care and system, so that, for this reason, as they have become better known, and treated in a systematic manner, the prognosis is much better than it was formerly.

Diseases of the skin are produced by a variety of causes. A great number are secondary to morbid changes and functional disorders in other organs and tissues, but many are the result of processes affecting the skin alone. The former are termed symptomatic, or sympathetic affections, and are illustrated by urticaria, erythema nodosum and various exanthemata. The latter are termed idiopathic diseases, and may be produced by either internal or external causes. They are typically represented by the erythemas of heat and cold, and various local hypertrophies. The relation between the skin and other organs of the body, is so intimate however, that the distinction between these two classes cannot always be made.

In some cases the local causes predominate, while in others, the constitutional changes are the most important. A proper appreciation of the etiological value of each can be obtained only by a comprehensive review of the origin and development of the eruption. The causes concerned in the production of diseases of the skin may be conveniently divided into predisposing and exciting.

**Predisposing Causes** are those which produce certain alterations or conditions of the general system, or the cutaneous surface, by which the individual liability to the development of certain diseases is increased. They do not produce disease, but render liability to it greater. The

most important predisposing causes of cutaneous diseases are age, sex, diathesis, occupation, seasons, climate, plethora, debility and heredity.

*Age.*—Many cutaneous diseases occur only during certain periods of life. Thus, ichthyosis, congenital syphilodermata, etc., appear at birth, or within a short time afterwards. Erythema, urticaria, and eczema capitis are frequently observed during dentition. Acne, psoriasis, etc., rarely appear before the age of puberty. Carcinoma, etc., and nearly all cases of pruritus, are affections of advanced life.

*Sex.*—Some cutaneous diseases occur more frequently or exclusively in the male sex, while others are more often observed in the female. For instance:—Chloasma and lupus occur more frequently in women, epithelioma and herpes in men.

*Diathesis.*—Many diseases of the skin can be traced to a diathesis, for example, psoriasis, erythema nodosum, etc., to a gouty or rheumatic diathesis. Persons of a lymphatic temperament are liable to recurrent attacks of impetigo, pustular acne and eczema. Lupus and scrofuloderma are common in those of a strumous diathesis.

*Occupation.*—Various occupations are prolific predisposing causes of cutaneous diseases. Blacksmiths, brick-layers and firemen frequently suffer from erythema and dermatitis. Fissured eczema of the hands from the use of strong soap is often observed among washerwomen. Confectioners are liable to a form of onychia produced by the action of sugar, acids and heat. Eczema occurs in grocers and sugar warehousemen from handling raw sugar. Butchers, tanners and wool sorters are liable to ecthyma and anthrax.

*Seasons.*—Many cutaneous diseases are affected by particular seasons of the year. Erythema multiforme and furuncles are more frequent in the spring and autumn months. Pruritus is usually most severe in winter. Eczema and psoriasis have been frequently observed to disappear in summer, only to re-appear with the first week of cold weather.

*Climate.*—The influence exerted by climate is analogous to that of the various seasons. Some diseases are peculiar to cold climates, others to temperate, and still others almost exclusively are limited to tropical regions.

The relative dryness or humidity of the atmosphere is also an important factor, and the clothing, diet, hygiene and habits of the people in the different climates must also be taken into consideration as exercising more or less influence upon the origin and progress of the prevalent disease.

*Plethora.*—Plethoric patients are peculiarly liable to be attacked by a superficial inflammation of the skin. Erythema, eczema, etc., develop in them upon the slightest cause and in many cases prove rebellious to treatment.

*Debility* is an essential predisposing cause of a number of skin diseases. Furuncles and carbuncles are more severe in the debilitated than in the robust.

*Heredity* exercises an important influence in the production of many skin diseases. The peculiar liability of some persons to be attacked by a variety of cutaneous diseases while enjoying good health in every other respect, can be most satisfactorily explained by the supposition that they inherited a weak or susceptible skin. Among the diseases directly transmitted from parents to children are, scrofula, syphilis, leprosy and ichthyosis. Psoriasis and eczema frequently appear to be hereditary also.

**Exciting Causes** are those which directly or indirectly produce the disease. They may be divided into internal and external.

*Internal Exciting Causes* are those which act from within the body. They are varied and numerous and at times are so obscure as to escape recognition.

They may be seated in the affected portion of the surface, but more often they are to be found in disorders of distant organs and tissues, or in some derangements of the general system. The most prominent of the internal causes of skin diseases are the systemic disturbances produced by pregnancy, dentition, vaccination and certain medicinal substances; dietetic errors, neurotic disturbances, constitutional diseases and disorders of internal organs.

*Pregnancy.*—Many women suffer during the latter months of pregnancy from eczema or pruritus, for which no other cause can be observed than the physiological alterations in the blood and other tissues. Patches of chloasma are also often developed at the same time. The treatment in these cases should be merely palliative in character, as all the symptoms usually disappear spontaneously as soon as the pregnancy is ended. It is a curious fact that psoriasis and other chronic affections frequently disappear during pregnancy, or are lessened in extent and severity.

*Lactation* also exerts considerable influence on the progress of psoriasis, eczema, acne, and other disorders of the sebaceous glands. In some cases, these affections are aggravated by lactation, but in the great majority of cases, marked improvement is noticed.

*Dentition.*—The systemic irritation produced by dentition is frequently the only observable cause of urticaria, eczema capitis, etc., but its importance must not be exaggerated. Investigation will often result in the discovery of other and more important disorders.

*Vaccination* is occasionally followed by the appearance of extensive erythematous or inflammatory eruptions. They are usually benign in

character and disappear in a few days. Sometimes, however, owing to the use of impure lymph, or to the depraved state of the patient's constitution, deep seated crysipelatous inflammation may be developed and run a tedious course which is difficult to cure.

*Medicines.*—Various cutaneous disorders have been observed to follow the use of certain medicinal substances. It is well known, that an obstinate form of acne is produced by the prolonged administration of either the bromides or iodides of potassium. Antipyrine, copaiba, cubeb and santonine often give rise to an urticarial eruption, while turpentine, belladonna, etc., sometimes produce an erythema resembling the eruption of scarlet fever.

*Dietetic Errors.*—A great number of cutaneous diseases are produced by errors of diet, either by the food habitually taken being too rich and highly seasoned, or too poor in quality to furnish adequate nourishment for the tissues. Many persons have an idiosyncrasy for special articles of food. Urticaria is often produced by fish, oysters or strawberries. Pruritus, erythema and eczema are known to be due to a diet of oatmeal or buckwheat.

*Neurotic Disturbances* are the principal factors in the production of many skin diseases. In some cases the morbid process is seated in the central nervous system, in others, it involves only the peripheral terminations of the nerves of the affected part. Among the principal affections which are due to disturbances of innervation are urticaria, herpes, pruritus and a number of hypertrophies, atrophies and new formations. As indicative of this nervous origin, Mr. Jonathan Hutchinson points to the corymbiform or branched disposition of the lesions, as corresponding to the distribution of cutaneous nerve fibres. Moreover, a neurotic affection does not propagate itself by direct extension or infection or adjacent parts, and the malady develops itself fully in the first instance.

From the same cause the glands and the appendages of the skin may become diseased. Grayness or baldness, and loss or deformity of the nails, not infrequently depend upon lesion of some portion of the nervous system. Functional nervous disorders; reflex excitation, and strong emotion, often occasion eruptions upon the skin.

*Constitutional Diseases.*—Next to be mentioned as having an etiological significance in skin diseases are constitutional diseases. Among those which produce cutaneous disorders are pyæmia, scrofula, syphilis, scurvy and the various exanthemata.

*Functional and organic disturbances* of internal organs are the exciting causes of a number of cutaneous eruptions. Derangements of the alimentary canal are the most frequent causes of all cutaneous diseases

of an erythematous or inflammatory type and should be invariably sought for and relieved.

Pruritus and eczema of the lower extremities are frequently due to cardiac degeneration or valvular disease. Acne, eczema and urticaria are often dependent upon some genito-urinary disorder. Hutchinson says acne is caused by genito-urinary trouble in 90 per cent. of the cases and disappears when it is removed.

Uridrosis is the result of complete suppression of the urinary secretion.

**The External Exciting Causes** of disease of the skin are those which act from without the body. They are varied and numerous. The most important are improper clothing, extremes of heat and cold, mechanical and chemical irritation, personal habits, parasites and contagion.

*Improper Clothing* is a common cause of cutaneous diseases. Erythema, eczema, pruritus, etc., are often developed and perpetuated by the use of flannel under-clothing. Coloured stockings, dyed with impure or irritating materials often produce severe and extensive cutaneous inflammations. Dr. J. Leslie Foley, in a paper read before the Medico-Chirurgical Society of Montreal, has enumerated a number of modes by which skin diseases are excited by the clothing.

Silk underwear may disturb or excite the electricity of the skin and has been known to set up a dermatitis. Tight garters may cause varicose veins, chilblains, etc.

According to Hutchinson, the irritation of new woolen underclothes may bring out an eruption upon the trunk of a syphilitic subject. A non-specific eruption resembling syphilis may be produced by a like cause. Hence the necessity of being on one's guard against errors in making an examination of a suspected case. The receptivity of various kinds of underwear for micro-organisms has also been investigated. These bodies reach the underwear by means of particles of dust, and are caught in the interstices of the cloth, or adhere to its surfaces. The closer the material, the more readily are the microbes retained. Smooth and finely woven linen and cotton materials retain fewer organisms and can be most thoroughly cleansed by boiling. Under ordinary circumstances the germs do not develop and multiply in the clothing.

*Heat and Cold* are also important factors in the production of cutaneous disease. Exposure to intense heat—whether artificial or that of the sun—is a frequent cause of erythema, eczema, dermatitis, etc. Exposure to cold often results in a variety of fissured eczema, commonly known as “chapping of the hands.” If the cold be more intense, it may be followed by chilblains or death of the exposed part.

*Mechanical and Chemical Irritants.*—Many cutaneous diseases are the

result of mechanical irritation. Tight shoes and stockings produce corns and various excoriations and ulcerations of the feet. Extensive erythemas and eczemas are sometimes caused by ill-fitting clothing.

Various callosities and other hypertrophies are developed in carpenters, stonecutters and other artisans by the pressure and friction to which certain portions of the integument are subjected during working hours. Chemical irritation is a more frequent and more serious cause of cutaneous disorders. The use of the arsenical and depilatories often causes severe inflammations.

Artificial flower-makers, manufacturers of wall paper and workers in acids, alkalis and other chemicals are subject to various eruptions which are due to the irritating action of these materials on the skin. Severe cutaneous inflammations may also be caused by the incautious application of any of the ordinary rubifacients or epispastics or by contact with various poisonous plants. Eruptions may also result from the external use of arnica or the sulphur and mercurial preparations.

*Personal Habits* are important factors. Acne and eczema are often the result of alcoholic indulgence. Acne may also be due to excessive smoking.

Personal uncleanliness is also a cause of cutaneous disease in some cases, but, on the other hand, too much attention may be given to cleanliness and the skin injured by the too frequent use of strong soaps.

*Parasites.*—A number of skin diseases are produced by animal and vegetable parasites. The hair and nails also suffer from their ravages. Numerous microbes are constantly present upon the general surface. Of these some are incapable of thriving upon the human skin, others are pathogenic under favorable conditions. When the proper conditions are lacking they are unable to multiply and remain innocuous.

*Contagion* is a prolific source of cutaneous disease. Smallpox, measles, scarlet fever, etc., are frequently communicated by direct contact.

Many of the cutaneous lesions of syphilis are contagious, likewise the parasitic diseases, but some are more readily transmitted than others.

Individual susceptibility is an important factor in the propagation of all diseases of this nature; some persons are readily affected by the poisonous germs or spores, while others may be exposed to them with impunity. Many diseases of the skin are brought to this country by immigrants, as they are readily contracted on shipboard. To prevent the spread of these so far as possible, the persons and clothing should be scrupulously cleansed upon arrival.

With this rough sketch of the etiology of cutaneous diseases, I will now say a few words on the treatment. In the short space at my dis-



posal, it will be impossible for me to give more than a brief *résumé*. The methods tried are legion, some have been proved to be of no value, and so have been discarded, while others still remain. The adaptation of the proper treatment to diseases of the skin requires, on the part of the physician, a thorough knowledge of general medicine. The previous history, including any idiosyncrasies which the patient may have the present condition, the nature of the affection and its cause if apparent, should all be looked into from the standpoint of general medicine and rational deductions drawn from these considerations as to the proper method of treatment. As a rule, the deductions after careful inquiry into all the circumstances just briefly recounted, will lead the physician in the majority of cases to employ both constitutional and local remedies. The most decided, rapid, and certain results are generally obtained from constitutional treatment, which assists frequently the action of topical remedies which may be employed.

In some affections it alone may be demanded, or simple local treatment will suffice, while still in others it becomes necessary to employ both at the same time. Again, constitutional and local in conjunction may be necessary at one stage of the disease and should only be used singly at another. Also, the remedy or remedies employed, whether for systemic or local action, may be proper at one period and useless or harmful at another. Great care must therefore be exercised to be able to know from a general knowledge of medicine, just what to do at the proper time.

**Constitutional Treatment.**—The general health should be examined and if deranged in the least, should be corrected by suitable constitutional treatment.

The principal means employed may be briefly referred to as follows:

**Hygiene.**—The observance of the commonly accepted hygienic laws in diseases of the skin is all important, especially after the eruption is developed, or has become chronic. Most essential measures are ventilation and bathing. The latter is contra-indicated in some acute affections, while in those of a sub-acute or chronic nature, has very good effects.

Rest and exercise are important, the former being beneficial in the beginning of some inflammatory diseases and the latter in the later stages, or in chronic forms. Outdoor exercise should be taken if possible, or, if not, passive exercise, or massage may be resorted to. Climate has an undoubted influence on the health of the skin, and a change is often beneficial.

**Diet.**—Attention to diet is often more beneficial than the administration of remedies. Each case requires to be carefully looked into by the

physician, and the amount and the character of the food regulated as may seem suitable. The beneficial effect of an appropriate and regulated diet upon diseases of the skin, is not always justly appreciated. Unless the general health is obviously impaired, close inquiry concerning the state of the digestive functions is apt to be neglected.

In diseases of the skin, alimentation is indeed but another mode of medication. The mineral substances contained in foods are identical with those demanded for the composition of the blood and tissues. As far as they are absorbed from the food, to that extent are drugs to be regarded as merely supplementary.

Cod-liver oil acts both as a food and a valuable remedy in disease of the skin. It is the remedy above all to employ in those cases in which the health has become affected through faulty assimilation, as in eczema, syphilis, etc., it is also serviceable in many chronic forms of skin diseases. If the oil cannot be retained or assimilated in the stomach, it may be given hypodermatically. Dr. Shoemaker has proved its absorption and assimilation when administered in this manner. Phosphorus is of value in cutaneous diseases depending on nerve debility. It is also prepared as the syrup of lactophosphate of lime and other combinations. These preparations are especially useful in eczema of children depending upon malnutrition, and in boils, carbuncles, etc. Iron and its preparations are indicated in all skin eruptions, as eczema, syphilis, scrofula, etc., which are due to a depraved state of the system. Many cutaneous affections due to anæmia and chlorosis are favorably influenced by iron. Iron may be advantageously combined with strychnine, arsenic, quinine, etc., or administered in the form of a chalybeate water. Quinine is a valuable remedy owing to its action upon various inflammatory diseases of the skin. In variola, scarlatina and typhoid fever it can be used with advantage in reducing excessive fever. It is an appropriate remedy to employ in diseases arising from malaria or from an impoverished state of the system. Arsenic is useful in some affections of the skin, and useless in others. It is also valuable in some stages of eruption and absolutely injurious in others. The disease as well as the stage of the eruption must be carefully considered before it is employed. It is especially beneficial in diseases involving the epidermis. Administered for its effect upon the skin, the action of arsenic is usually slow, often requiring sometime before a given result is obtained. When an impression has resulted from its use, it should be continued, but in smaller doses, for a time after all symptoms of the eruption have vanished. It is contraindicated in the inflammatory or acute stage of all eruptions, and if employed then, may be followed by injurious effects from its stimulating action on the

epidermis. In other words, it should not be used in active cell proliferation, but during the stage of decline, or chronic period of eruption, in which the affection is situated in the superficial portion of the skin.

Some persons have an idiosyncrasy for arsenic, being quickly and easily affected by small doses. Prof. Jas. Stewart reports a case of erythema multiforme after the sixth dose of arsenic. In another case which he had, wart-like excrescences formed upon the dorsal surfaces of the hands and fingers, in these, the deeper layers of the skin were affected and the arsenical course had been continued for some time. Some people also will not tolerate its internal administration. If arsenic is not tolerated by the stomach, the same physiological and therapeutic effects may be obtained by administering it hypodermically. This fact was fully demonstrated by Dr. C. B. Radcliffe in 1866. Since that time the method has been used and commended in various parts of the world. It is, however, to be regretted that this method is so little used by physicians. It is to be regarded as being the best manner for producing a speedy, powerful and effective impression upon the diseased skin. The arsenic is not altered or lessened in its action and consequently its therapeutic effects are produced to the fullest degree.

This method is especially adapted to the treatment of obstinate cases of psoriasis and eczema. It will spare the digestive organs and will abridge very much the duration of treatment. The physician should bear in mind the fact that in exceptional cases arsenic gives rise to certain cutaneous manifestations. A brown pigmentation occasionally develops in consequence of an arsenical course. It may appear on any portion of the body, may exist in patches, or, may be so generalized as to resemble Addison's disease. This pigmentation gradually disappears after the remedy has been suspended. Recently Mr. Jonathan Hutchinson has attempted to prove that arsenic may if continued for years, bring about a cancer of the skin. The cases which he narrated as sustaining this statement were few in number and were far from conclusive in the evidence they presented of the truth of this assertion. It is, however, the bounden duty of everyone who prescribes this agent, to bear in mind the possibility of its being able to induce epithelial cancer.

Mercury is an effective antiphlogistic agent. In small doses, it improves the quality of the blood, especially increasing the red corpuscles. By this action, it forms a powerful agent for combating and treating syphilis, for which it is chiefly used. It may also be employed in the treatment of inflammatory affections of the skin, as eczema, lupus, scrofula, psoriasis, etc. Mercury may be given alone, or combined with other substances, the best example of which is the liquor of the iodide

of arsenic and mercury, which is of service in syphilis, sycosis and various forms of cancer. The best method, however, of using mercury is by inunction.

*Iodine and its Preparations* have a large range of usefulness in treatment of diseases of the skin. They are said to influence the elimination of waste products from the system. Iodine is effective in small doses in the treatment of scrofula and lupus. Iodide of potassium is one of the most effective remedies in the tertiary stage of syphilis. Iodine and its preparations may produce a variety of cutaneous eruptions, therefore should be cautiously used. Turpentine, sulphur, tar, creosote, etc., may also be mentioned as having been used in the treatment of skin diseases.

*Local Treatment.*—The external means which have been employed for relieving or curing cutaneous diseases are innumerable. Some have value, while others are useless and hardly worth mentioning. Among those which have been found effective are the following:—

*Baths.*—Baths are essential for the preservation of the health, as well as to prevent and assist in eradicating disease, by drawing from the system effete products which are often the active factors in many cutaneous affections. They also have a local action in removing from the skin all abnormal products, such as irritating discharges, scales, etc.; they thus assist both the constitutional and additional local treatment employed.

There are various forms of baths used in medicine, among them being the water, medicated water, hot air, vapour, simple and medicated, and the electro-vapour.

These are so well known and so fully treated of in various text-books, that I shall not do more than mention them.

*Oils.*—The oils employed locally in the treatment of cutaneous affections are either bland or stimulating. Among the former are olive oil, linseed oil, cod-liver oil, etc. They are valuable for softening and removing scales, crusts, etc., from the surface.

They are also useful for protecting and soothing the irritated and inflamed skin in the eruptive fevers. The tar oils, as the oil of cade, oil of juniper and oil of ergot, are examples of the stimulating varieties.

*Dusting Powders* are employed alone, or, combined, to protect the skin and, at times, to produce soothing, stimulating or a stringent action upon the parts.

The most useful are starch, zinc-oxide, boracic acid, oleate of zinc and prepared earth. The two latter are especially valuable; the oleate of zinc being particularly affective in many inflammatory cutaneous diseases.

*Ointments.*—They may be made from various fatty substances, but lard, suet, lanoline and petroleum jelly are usually employed. In reference to the proper base to employ for ointments, I will quote Dr. Shoemaker, who says: "The fatty vehicles intended for ointment bases are a matter of choice according to the indications of the case. While no doubt the most elegant preparations can be made with the petroleum fats, they form, in my opinion and in that of others, the least desirable substances for such use. I also consider them to possess a feebler penetrative power, if any at all, than animal fats, which have more affinity for the integument. They usually contain some irritating constituent, which lessens or destroys their emollient action and constitutes a great source of hinderance to their use as external remedies in active inflammation." Numerous instances are also cited by Mayo Robson in the London "*Lancet*" of severe irritation and erythema following the application of vaseline to the skin as a surgical dressing. It is probable that certain persons have an idiosyncrasy for vaseline used in this manner, but one should always be on one's guard in prescribing it. The substance to employ as a basis for ointments, therefore, should possess the power of penetrating the integument and not irritating it. Lard, suet and lanoline are all animal fats which are therefore best adapted for this purpose. In reference to the strength of ointments, it is obvious that no absolute rule can be laid down. The skin of individuals differs normally in sensibility and this difference becomes more marked when the integument is the seat of disease. In beginning the treatment of a case therefore, it is advisable to use mild preparations which can be gradually strengthened if necessary.

*Oleates* are another class of remedies employed in diseases of the skin. They differ in preparation from the ointments but their mode of application is similar.

Numerous medicaments have been prepared in the form of oleates and of late years have been largely employed and found very effective. They are recommended for their active solvent powers; deep penetration; freedom from rancidity; economy and antiseptic properties.

*Ichthyol.*—This was brought to the notice of the profession by Unna of Hamburg. It is procured from a bituminous rock in the Tyrol, which is said to contain decomposed animal matter and also contains among other things a large percentage of sulphur. It has a similar effect to that of both sulphur and tar, with often a more decided and beneficial action. In a 5 to 30 per cent. ointment, it is serviceable in psoriasis, eczema, acne, etc. It is also a good dressing in erysipelas, either in the form of an ointment, or dissolved in a mixture of ether and glycerine, or in collodion. It is of especial value in burns, which

so treated, present no vesication; pain invariably disappears soon after the application of ichthyol and the affected part soon heals up.

*Iodoform.*—The antiseptic and anæsthetic properties of iodoform render it a very valuable application in many diseases of the skin. This substance is efficient, not by destroying the micro-organisms of disease but by rendering the tissue upon which it is spread an unfavourable soil for bacterial development. It probably also counteracts the effect of the toxic products. Iodoform is a decidedly beneficial remedy in various inflammatory conditions especially after suppuration or ulceration has occurred. Ulcerated bubo, chronic ulcers of the leg, scrofuloderma and bedsores are markedly improved by its use.

It is a valuable remedy also in burns. The exposed surface is protected from the attacks of microbes, while at the same time the dressing acts as a local anæsthetic and reduces suffering. There are two serious objections to its use, however, viz.:—Its penetrating and disagreeable odour, and a more grave objection, its toxicity. Caution, therefore, should always be observed in the employment of this potent drug.

*Peroxide of Hydrogen.*—This is a very efficient oxidizing and antiseptic agent. Its special value consists in its power of decomposing pus. In the management of many diseases of the skin, attended by suppuration and destruction of tissue, lotions of hydrogen peroxide are of decided service, as in the suppuration stage of acne, in ecthyma, carbuncles. In scarlatina the nose and throat may be disinfected by a spray of hydrogen peroxide.

*Antiseptics.*—The therapeutical resources of dermatology have been greatly enlarged by the introduction of many substances belonging to this class, which have the power either of destroying the specific organisms of disease, or of neutralizing their effects. As is well known at the present day, many cutaneous affections are due to the action of microbes. Abraded, blistered or burned surface furnish an excellent medium for the growth of many forms of bacteria. The problem of topical medication therefore, is to destroy the bacteria *in situ*, or at least, inhibit their further development and prevent the absorption of their toxic products. In lupus vulgaris an effective plan consists in destroying the nodules, and sprinkling the surface of the artificial ulcer with naphthol or iodoform. Carbolic acid has been widely employed in absorbing the progress of boils. It has been used in the form of a spray, of compresses soaked in a solution of suitable strength and kept in contact with the inflamed area, and by injection into the interior of the boil.

Similar measures are employed in the treatment of carbuncles. In the treatment of erysipelas also, great value is laid upon the use of such

substances as resorcin, corrosive sublimate, salol, etc., which are efficacious in limiting the extent and severity of the disease.

*Mechanical Measures.*—The following mechanical remedies can be employed for their systemic or local actions, or both, or as an assistant to topical medication.

*Massage.*—As a general remedy, massage has been long and favorably known, but has been seldom employed as a method of treating disease of the skin. In certain morbid states of the integument, it is, when properly used, most beneficial and often results in restoring the surface to its natural condition.

The functions of the skin are roused into full activity. The volume and rapidity of the cutaneous circulation are increased. The secretions of the skin are augmented and cutaneous respiration is promoted. From the sensory and tactile end-organs, a beneficial effect is produced upon the central nervous system.

Massage is a most important and valuable adjuvant in promoting and increasing oxidation in psoriasis and scrofuloderma. In these and similar pathological conditions the skin is rendered more active by its use, the effete products are removed and the red corpuscles of the blood are increased. It is especially advantageous in neuralgia in perverted sensibility, and trophic disturbance of the skin. In these neuroses, it relieves the pain and has also a tonic action upon the nervous system.

In chronic cases of eczema, where the integument is deeply infiltrated, rough, hard and dry, the application of massage breaks up the exudation, stimulates the absorbents, and removes the inflammatory products from the parts and restores them to their natural condition.

*Electricity.*—In the treatment of diseases of the skin electricity has an extensive and interesting field of application, and also, all the usual forms in which this agent is employed in general medicine and surgery have been utilized, to a greater or less extent in dermatology. The faradic or induced currents are more frequently employed than the currents of high potential from the static apparatus, but the most useful of all forms is the galvanic or voltaic current, which is of comparatively low potential, but of large volume. The moist structures of the human body are as a rule good conductors of electricity, but the dry skin, on the contrary, is a very poor conductor.

It is customary, therefore, to moisten the part to which electricity is to be applied and this is accomplished best by having the electrodes in the form of sponges set on handles, which may be then dipped in saline solution, as this forms a better conductor than pure water.

Electricity not only acts when properly applied, as a nerve stimulant, and to some extent as a vital energizer of growing cells, but also as an

alternative, when cell-action is abnormal. In some disorders of the skin the blood supply and sensation are deficient, and in these, electricity is beneficial, by notably increasing both. Not only are motor and sensory nerves stimulated, but the trophic and vaso-motor fibres have their functions likewise increased, so that in atrophic affections and disorders of the sensation, paræsthesia, etc., electricity is often of advantage. Static electricity is beneficial in many nervous affections of the skin, and the psychological effect of the sparks probably contributes to the curative action.

Paræsthesia is frequently relieved by it, especially where it is a symptom of senile or other changes in the skin. Neuralgia of the scalp, soles of feet, and other parts of the body are sometimes benefitted by it.

Corns, warts and other hypertrophic developments of the skin are often removed by the daily applications; while a similar result follows in cases of the tendency to repeated eruptions of blind boils, acne marks and sluggish lymphatic glands.

Faradic electricity is useful for about the same class of cases as static electricity. In acne lesions, papular and chronic eczema, psoriasis, etc., faradism often relieves the itching and redness and reduces the infiltration that may be present. Mild currents are needed, and if there is liver or stomach disorder, the positive pole is to be placed over the affected organ and the negative applied to the lesions upon the skin.

Galvanism is required for thorough epilation, and is unequalled as a stimulant in alopecia, if the hair-bulbs are still living. Antiparasitic applications are more efficient when applied by the electrodes and a moderately strong current employed to drive them into the skin. In chronic ulcers of the leg good results may be obtained by driving in weak solutions of corrosive sublimate in this way. Discolorations of the skin, freckles, chloasma, acne and birth-marks are generally amenable to galvanic treatment, combined in the latter affection with galvanopuncture if necessary.

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