

# The Canada Lancet

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## EDITORIAL.

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### THE SPREADING PLAGUE.

In 1894 the bubonic plague appeared in Hong Kong. From thence it spread to Bombay. During the next twelve years it had caused the death of at least 6,000,000 persons.

For a few years past it had been somewhat quiescent, when it appeared in a very virulent form in Manchuria, and has caused terrible ravages in and around Harbin.

Some two years ago the disease made its appearance in the State of California, and was only kept in check by the most vigorous efforts. Quite lately the disease has made its appearance at several points on the east coast of England. From time to time it makes its appearance in various places in Europe. A few years ago it became seriously prevalent in Holland.

Until 1906 very little was known as to the real method by which the infection was spread. The discovery was made that a certain variety of flea, called the *pulex cheops*, was the real factor in spreading the disease from infected rats to man. Since then it has been observed that the common rat flea, as well as the *pulex cheops*, acts as a carrier of the infection.

For some time it was also thought that the black rat was the only variety that was liable to the disease. This view has been set aside, and it is now well known that the brown rat is a host for the *bacillus pestis*. If the flea sucks blood from an infected rat the flea may infect a human being for a period of three weeks thereafter.

The plague assumes two main types—the bubonic and the pulmonic. In the former the lymphatic glands suppurate. It is on this type that the rat and the flea play the chief part in the spread of the disease, though it may be spread through cracks and abrasions in the skin, such as the feet of the natives going about where the infection is prevalent.

The pulmonic form is spread directly. This renders it by far the most dangerous type of the disease, as it may be conveyed from the sick

to the well by coming into close contact. Like smallpox, it may be carried by the air a short distance.

These facts reveal the need for the utmost care, when one bears in mind the conditions that govern modern trade and travel. The history of the world has given records of some fearful epidemics of the plague, and may do so again unless the utmost vigilance is exercised in preventing its spread.

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### SOME LESSONS FROM THE VITAL STATISTICS OF COUNTRIES.

Year by year there is a steady tendency to a falling in the marriage and birth rates of the civilized countries. Many remain single that formerly would have married. Further, there is a tendency to marry later in life, and, thereby, reduce the number of children.

On the other hand, the effect of preventive medicine and sanitation is being felt. The death rate per 1,000 is gradually becoming less, and, as a contra to this, the duration of life is steadily lengthening.

In the case of infant mortality very marked improvement is observed. In England and Wales last year it has fallen to 100 per 1,000, or a reduction of 26.

There is a close connection between these figures and the rate of wages and the cost of living. In Germany the rate of wages is decreasing and the cost of living increasing. With these changes the marriage and birth rates in Germany are declining. France has been for some years in the stationary stage, or even declining, with the death rate higher than the birth rate.

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### THE PROBLEM OF CRIME, ONE OF CHILDHOOD.

There is much truth in the old saying, "As the twig is bent so is the tree inclined"; or that other one, "The child is father to the man." The culture of the race comes very largely to be one of heredity and environment. With the subject of heredity we do not at present intend to deal, but would say a few words on environment.

This may be ante-natal or post-natal. In the case of the unborn child, the environment is that of the mother. This comes to be one simply of nourishment for the child in utero. We do not give the slightest weight to maternal impressions as a means of affecting the child, unless these impressions have the effect of lowering the mother's health, and, thereby, the nutrition of the child.

Post-natal environment is of the utmost moment. It is while the child's brain is young and in the formative stage that it can be moulded as the potter thumbs his soft clay. In Omar Khayyam we read:

None answered this; but, after silence, spake,  
A vessel of a more ungainly make:  
"They sneer at me for leaning all awry;  
What! did the hand, then, of the potter shake?"

The child is the damp clay and the parent or guardian the potter; and we can again say, with Omar:

In that old potter's shop I stood alone,  
With the clay population round in rows.

Judge Rosalsky, of the General Sessions of New York, said, a short time ago, that the problem of the criminal comes largely to be one of the child. He said that 40 per cent. of the crimes in New York were committed by people under 20 years of age. Dr. Travis, a high authority on this subject in the United States, contends that 95 per cent. of youthful wrong-doers are normal mentally. Their normal nature is warped by bad environments while they are in the soft-clay stage.

Judge Rosalsky was very severe in his condemnation of placing children among criminals or committing them to reformatories. He held that of those placed on probation only 5 per cent. came back to the courts, while of those sent to reformatories 25 per cent. returned as wrong-doers, and of those sent to prisons no less than 40 per cent. became second offenders.

The poor tenement houses and the slums are powerful missionary agencies in the production of the future criminals of the country. To cure moral obliquity you must get them while young, as Dr. G. M. Gould said of Squint.

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#### SOME MEDICAL PROBLEMS.

Sir James Barr, of Liverpool, is noted for his outspoken frankness. At the recent meeting of the Canadian Medical Association in Montreal he gave out a number of clear-cut and dogmatic assertions.

He contended that if the money that is now being spent in the treatment of disease was spent in its prevention there would not be the need for so many large hospitals.

He dwelt at length on the necessity for more care in the matter of children. The country that had a careful, selective death rate, but paid

no attention to the birth rate, would come to grief, and, like many of the ancient countries, pass away. People with bad heredity should not be permitted to raise children. It was a very good thing to care for the insane, but a still better thing to give them to understand that they must not become parents.

He took strong ground that tuberculosis was a hereditary disease in the true sense. It is quite true that the bacillus is not in the child at its birth, but the conditions of soil may be there, or may be acquired. This phase must be kept in mind in our dealings with the disease.

Some diseases were good from the race point of view, as they killed the weaklings. Of this class of disease pneumonia takes a first place.

Appendicitis could be prevented to a great extent by not having the intestinal canal a miserable cesspool. It was this neglect that made the colon bacillus virulent.

Ill fares the state to hastening ills a prey,  
Where wealth accumulates and men decay.

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### THE UNITED STATES PURE FOOD AND DRUG LAW.

It appears that this act of 1906 does not protect the people against fraud, and that the remark of Daniel O'Connell, that one can drive a coach and six through most of such acts, proves true in this case.

Some time ago a man was arrested for selling a cancer cure which was worthless. He had it labeled as guaranteed under the Pure Food and Drugs Acts. The district court quashed the indictment, on the ground that the act only calls for the statement of the contents, and covers misstatements in this regard only. Misstatements regarding the curative properties of the "cure" did not come within the meaning of the act. The Supreme Court has upheld this decision.

Under this decision a person may put on the market a mixture of salt and water and call it a cure of consumption, and escape punishment under the Pure Food and Drug Act, so long as he says it contains salt and water.

This renders the act quite worthless, and many of the leading newspapers in the Republic are demanding a revision of the act so as to make it cover misstatements regarding the curative properties as well as the composition of the proprietary remedies on the market. President W. H. Taft has sent to Congress a special message, advising that the act be amended so as to cover this sort of fraud. Congressman Sherley, of Kentucky, has introduced a bill into Congress that bids fair to become law

that covers this question. It may, however, not find its way through the Senate this session.

We need very much a similar act in this country. The Canadian act dealing with proprietary medicines is quite worthless as a means of protecting the public. Our newspapers have a great deal to say when the "individual cup," "the intake pipe," "the slums of our large cities," "infant mortality," "the destruction of flies," or such subjects, are up before the public eye; but, then, these questions are not advertised. No one pays large advertising bills in behalf of the good qualities and many uses of the common house fly, so the fly must submit to all that is said against it.

Not so in the case of a fake cure for consumption. A few years ago the Legislature of Nova Scotia had a bill before it with the object of curtailing the patent medicine man, but the newspapers came out with the war cry, "Kill this bill!" and the bill was killed. We will await with interest the fate of the proposed further legislation in the States.

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#### AN APPARENT SURRENDER.

We have advocated a sanatorium for consumptives, under the control of the city. It looked at one time as if Dr. Hastings might succeed in this direction. At a recent conference held at the City Hall it appears that the idea of a civic institution was practically abandoned.

We are firmly convinced that the true policy for Toronto to follow is to own its sanatorium for consumptives. The institution should be located of easy access by the people and the medical men of the city. In the end the cost would not be greater than by subsidising some other institution. Many of the patients could pay all, or a part, of the cost of their maintenance.

Before this matter is finally disposed of we hope the medical men of the city will ask to be heard. Toronto is only beginning to grow. The time is not far distant when there will be one million people finding homes and occupations in it. No matter what is done now, the time will come when this great city must own and control its municipal sanatorium for the cure of consumptive patients.

This being the inevitable, we think the beginning should be made now. In this we have not a word but praise for the National Sanitarium Association. There is ample work for the Weston institution to look after those that come to it from many parts other than Toronto. Our only desire is to see Toronto in possession of its own sanatorium for tubercular patients. This we are satisfied, in the end, will prove the

true solution to this very important question. We do not for a moment say that if the city aids the Weston Sanatorium good work would not be done for the city by it.

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### THE INFANTICIDE BILL IN BRITAIN.

An effort is 'being made in Britain to have a law enacted that will give the judges some discretion in trials for infanticide. At present if a woman is convicted of infanticide the judge has no alternative but to pass the sentence 'of hanging.

This is never carried out. The object of the proposed legislation is to give the judge some freedom of action when all the evidence is heard and the infant 'under one year of age. The judge may, in lieu of the death sentence, impose imprisonment for a term of not less than three years.

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### CAPITAL PUNISHMENT.

The trend of opinion is very clearly in the direction of getting away from the death penalty. In this country recently three out of four 'convictions have been commuted in imprisonment. The case of Jardine appealed to us as one specially for executive 'clemency. There was enough to show that he was of low mental organization. The crime of which he was convicted was revolting in the highest 'degree; but this is true in most murders. The death of the victim is the main thing to be considered; and not that it was 'caused by one or twenty stabs of a knife, or that the remains were mutilated. Such events only go to show the brutality of the murderer, and, if of any moment, rather plead 'for merciful consideration, as indicating an abnormal mind.

Murders may be done in self-defence, in 'the heat of temper, from revenge, for the greed of gain, or because of mental defects of some sort. It is quite impossible to appraise all these conditions 'justly; and yet the death penalty is the same punishment for all. A certain number of years in keeping with the nature of the crime 'would be more in keeping with the real ends of justice.

Many argue that it is necessary to adhere to the 'death penalty to restrain people from killing each other. This has been argued out and found to have no foundation in fact. The 'murder rate per million is lower in Italy than in the United States. People that act under the impulse of the moment or in temper never 'think of the law. Those who are abnormal do not consider the consequences. Whereas those who kill

from revenge or for gain have planned their escape, as they think, so as to defeat the law.

But the main point of what we wish to say at present is that three out of four convictions are reprieved, and the one who was hanged was no doubt a mental pervert of practically no responsibility for his actions, however revolting they may seem. Shakespeare said—

To kill, I grant, is sin's extremest gust;  
But in defence, by heaven, it is most just.

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#### WORK AMONG LEPERS.

With the advance of the knowledge of what a disease really is the power to deal with it increases. It is now known that leprosy is not hereditary, and is very rarely communicated to white people.

The efforts that are now being made to segregate the lepers and remove from leper parents their children is rapidly reducing the number of those suffering from the disease.

The establishment of leper stations in countries where the disease prevailed is doing a vast amount of good.

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#### THE TREATMENT OF INEBRIATES.

Mayor Gaynor, of New York, has taken a decided step onwards in the management of persons addicted to the periodical or occasional use of alcohol in any form, or drugs, so as to render himself unfit to manage himself or to be dangerous to the public. A board has been appointed, with two physicians as members, to look after such cases. The board has power to establish a hospital or a colony for such cases, and keep them under observation.

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#### THE ONTARIO MEDICAL COUNCIL.

As we are arranging our final proofs, the Ontario Medical Council is in session. It looks as if the session might prove a memorable one in several respects. It would seem as if the Medical Council would seriously set itself to work to put into operation a number of much needed reforms which have been frequently urged by the CANADA LANCET. We will give a full report in our next issue.

## ORIGINAL CONTRIBUTIONS.

AN ISOLATION HOSPITAL, BUILT AND OPERATED BY A  
CITY DEPARTMENT OF HEALTH.

By ROBERT E. WODEHOUSE, M.D., Medical Health Officer of Fort William, Ont.

Late Medical Superintendent of Isolation Hospital, Toronto, Ontario; Fellow Toronto Academy of Medicine; Fellow Thunder Bay Medical Association; Member of the Alumni of the Society of the Lying-in Hospital, New York.

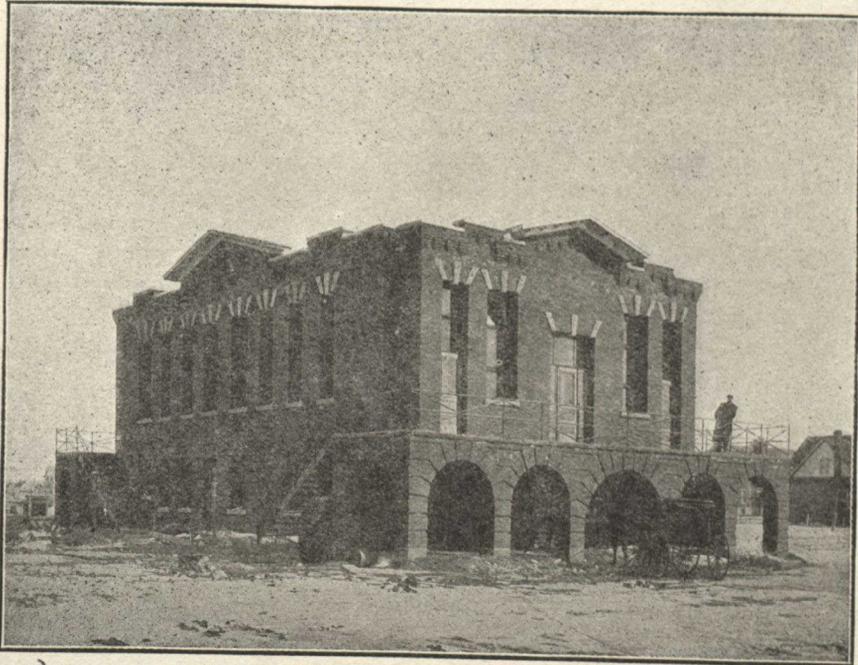
ISOLATION hospitals are a most important part of the equipment of a city department of health. The facilities of such hospitals to effectively quarantine all people suffering from communicable diseases, and also isolate perfectly one form of infection from another, is their first requisite. This second feature of perfect isolation of its compound parts, one from another, thus avoiding cross-infection, is a most important one. In small cities of 30,000 population and under it is a difficult proposition to have a perfect hospital and staff equal to all emergencies, and yet one whose upkeep is within the rational bounds of the layman's present-day conception. It is this feature of city ownership and management which makes the operation more difficult, because all health departments in Ontario depend primarily upon the board of health, a body of laymen, and finally upon the city council, for the acceptance of its estimates for current expenses and the granting of sufficient funds to meet the same. When the population of your city is from 20,000 to 30,000 you should have isolation hospital accommodation for one bed for every 1,000 population. This capacity is only required in time of epidemic, but your upkeep is constant. It is difficult to impress such boards of the advisability of such apparent over-investment, and only will they grant the same upon your convincing them of the feasibility of plans to keep down current expenses. I am of the opinion that the building I have had constructed in Fort William and the plan of management of the same accomplishes all the above-mentioned features of municipal ownership.

The Fort William Isolation Hospital is planned, as per cuts shown: A basement, whose floor is two feet above the level of the ground surface; a first and second hospital ward floor, both reached by stairways and balconies exposed entirely to air and sunlight, being built of iron and cement. Only the first hospital floor has yet been constructed, plumbing, heating, gas and electric conduits being already laid in reinforced concrete ceiling of first floor for supply of second floor.

The basement contains the heating apparatus for the entire building, the laundry and compressed air plant. The remainder of the basement is devoted to living quarters for the nurses when their side of the hospital is free of patients. When a nurse is attending a case she never leaves her ward day or night till the case is discharged from the hospi-

tal. She is effectively quarantined from any other part of the building for the three to six weeks.

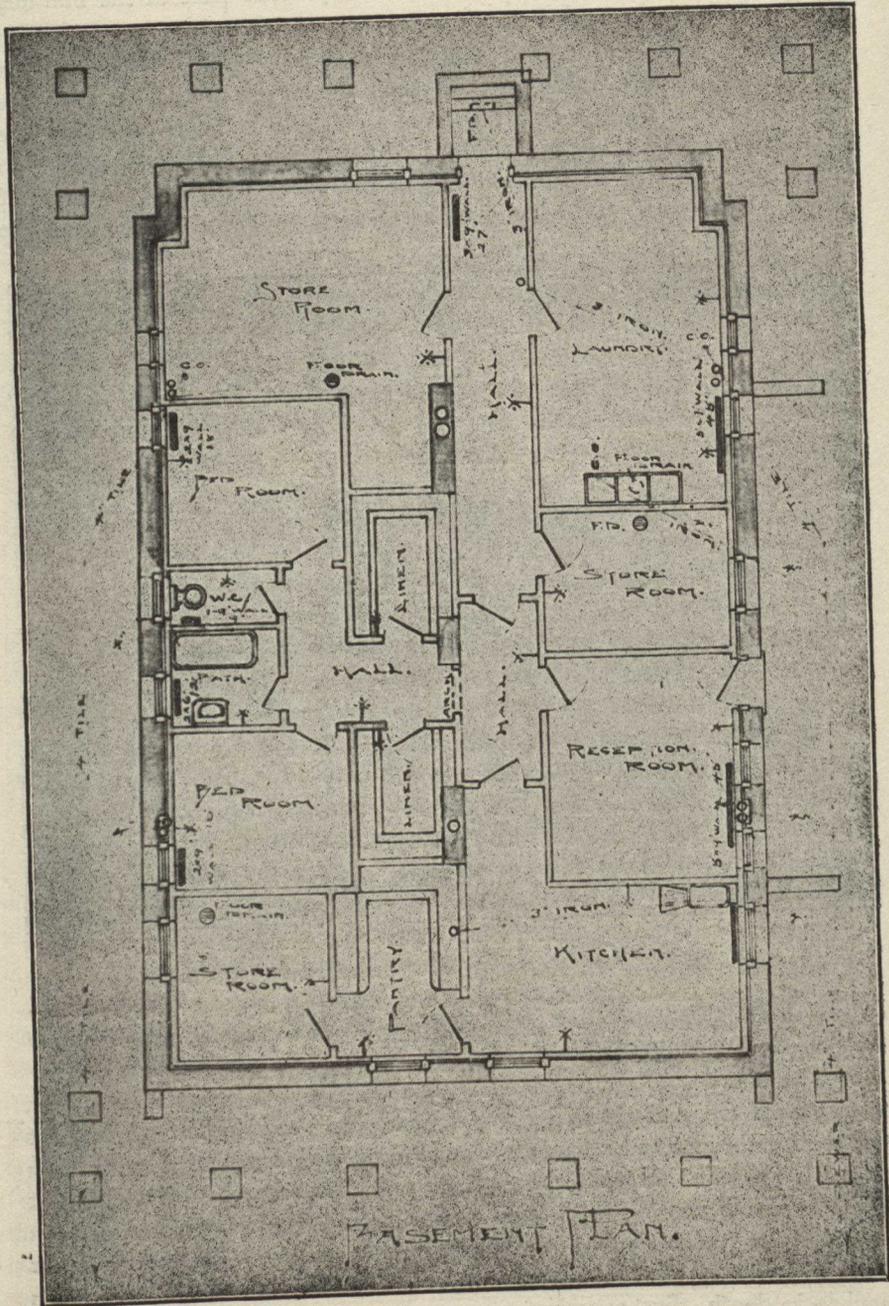
The hospital ward floors are planned exactly alike. There are six wards on each floor and two diet kitchens, one large ward of six beds, one ward of two beds, single-bed ward, and a diet kitchen being on either side of a dividing wall running the length of the building. It is impossible to pass from one side of the building to the other without going out of doors. Each small ward has a separate entrance from outside, and the



Isolation Hospital, Francis Lock, Fort William.

inside door communicating with the other ward can be hermetically sealed, thus giving complete isolation.

The six wards are provided with a bath and lavatory each. Gas, compressed air, and electricity are delivered to the side of each bed for heating, lighting, and atomizer use. Telephone connection with each ward is provided through the city central. There are no electric light fixtures in the wards on the wall or ceiling; all fixtures are portable, on stands four feet high from the floor, having a flexible twelve inches at top, with metal shades, funnel shape, six inches in diameter and ten inches in depth, thus covering rays on area required, and not illuminating the rest of the ward, disturbing patients at night.





All plumbing and heating fixtures are of latest hospital design, being very accessible to cleaning, or are absolutely dustproof, being tiled in. All walls and ceilings are enamelled over with cement; the floors are of polished cement, painted, with levels favoring drainage to central sewer traps; thus wards can be flushed out with hose and running water. All angles and corners are eliminated and no ledges have been permitted. The windows, doors, and casings are flush with inside surface of wall; no panels have been allowed in doors. The windows are in three sections, a lower and upper fanlight, hinged at the lower edge, opening to the inside of the ward, with metal side sheets directing air currents to the ceiling, and making direct air currents upon patients impossible. The centre section of the window is laterally hinged, opening into the ward. Canvas blinds are placed on the outside of the windows. The surface are of glass provided for the wards makes them practically sun-rooms.

There are no air conduits in the building; it is steam heated, windows providing the entire source for ventilation. The outside walls are of solid brick; an air space of two inches intervenes between this and the inside lining of hollow four-inch tile. Plaster, with cement covering, is surfaced over the tile. The partitions are all of the same tile. The ceiling is of reinforced concrete, thus making the building practically fire-proof.

The diet kitchens are each provided with a sink, electric range and oven, refrigerator, and kitchen cabinet. It is a complete working kitchen, in which the nurse provides food for the patients and herself. An incinerator at either end of the building, outside, is provided for the nurse to convey all refuse accumulating from her ward and destroying the same. She has an independent unit hospital, requiring no assistance from without. She orders her own supplies, which are delivered direct to her ward, which is numbered. She is thus interested in her ward expenses, and can demonstrate by her good management her ability to cut down costs per capital per day. The principal items of upkeep are interest and sinking fund on cost of construction, capital account being \$18,000; salary per annum of first nurse, \$720; salary per annum of second nurse, \$600; salary per annum of fireman and caretaker, \$300; salary per annum of laundress, \$100.

The total number of hospital days last year were 600. This was a year extremely free of epidemics or even isolated cases of infectious diseases. This year it will be much heavier. The second nurse is placed on duty only when two cases differing in infection are quarantined at the same time. Her services at other times are utilized as a school nurse and for general health visiting; thus she more than repays the department for her salary. I find this service of the health department equal

to all emergencies for a city of 25,000 population, even to smallpox, its nursing, and the conducting of public vaccination stations. The principal features which I find advantageous in such a plant are:

1. The ability to hold one able person responsible for entire expenses accruing to the work in her charge. I find, owing to six beds usually being occupied by two sick patients and four convalescents, a single nurse, with the assistance of the convalescents, requires no extra help.

2. The preparation of food on the ward and the distribution of supplies direct to the ward removes all possible necessity of freedom of movement from one part of the building to another of materials or people.

3. Economy in food supplies from use of separate kitchens where all returns from the table, where possible, can be utilized; no wasteful maids or high-salaried cooks; electric stoves, being fireproof, without odor, and cheap, averaging at 4 cents per kilowatt, 1 cent a meal per capita, all contribute to this.

4. The small wards make excellent retention wards for the first three days. New patients are admitted, awaiting development of any cross-infection, before entering the large ward.

5. Six-bed ward is largest I would favor, owing to reduced number of patients exposed in case of cross-infection developing.

I am inclined to favor this method of management for isolation hospitals of any capacity, composed of units independent of one another, containing two or more small wards and one other no larger than six beds.

Francis lock, Fort William.

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### \*THE TREATMENT OF OTITIS MEDIA PURULENTA CHRONICA.

By Dr. J. PRICE BROWN, Toronto.

**G**EORGES MAHU, of Paris, divides chronic non-deaf otorrhœics into two classes—those in which the only important symptom is purulent discharge, and those showing disturbing signs which indicate labyrinthine or cerebral complications. In the latter he says that our hands are forced, and we must scrupulously practice an extensive excitation, while in the former we have leisure to reflect longer, in order to completely elucidate the case. He adds that no patient suffering from simple chronic purulent otorrhœa should be operated upon without first receiving careful and persistent treatment of the tympanum and attic by the meatal route for a considerable length of time.

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\* Read at the annual meeting of the Ontario Medical Association, Niagara Falls, May 31, 1911.

Jacob and Körner and Schiebe, all present-day European otologists, state positively that otorrhœa, without complications, can always be cured by treatment applied through the natural passages, provided that they are treated long enough by sufficiently expert hands, and Mahu joins with these writers in condemning "the abuses which have occurred of late years from premature petro-mastoid operations." Sohler Bryant, an enthusiastic supporter of the same views, affirms that a large majority of cases of both acute and chronic suppuration of the middle ear will yield to cleansing treatment, the recovery being of a permanent character.

It is well, however, to note that experienced writers sometimes express diametrically opposite views. For instance, Botey, a well-recognized European authority, affirms very positively that "the older an otorrhœa is the more localized are its lesions," while Ballenger, with equal emphasis, says that "the more chronic the otorrhœa the greater the danger of intra-cranial or other extension of the infective process."

In these days when the radical operation is often done for the cure of obstinate otorrhœa, it is encouraging to note that so many otologists of eminence believe that a favorable result may be obtained even in difficult and complicated cases by more conservative methods.

In many old cases the lesions extend from the tympanum to the attic and antrum; and yet some of these will go on from childhood to old age, the patients dying of other diseases. (Mahu) the petrous throughout remaining unaffected, positive symptoms of involvement never appearing.

Unless the perforation is very large, so that an adequate examination can be made, it is often impossible to tell to what parts the lesion has extended; and it is better in all cases in which serious mastoid, labyrinthine and cerebral symptoms are absent, even in the most chronic cases, to endeavor to control the disease by systematic and local treatment before proceeding further.

Prior to this, however, as infection of the tympanum usually occurs through the eustachian tube, it is necessary to carefully examine the nose and throat, particularly the naso-pharynx, and to remove any adenoid tissue, or obstructions in the nose, that may have had a causative influence in producing the disease.

The importance of a careful examination of the perforations in the drum membrane can scarcely be too emphatically dwelt upon, as their situation has much to do with the location of the tympanic lesions, and not a little with the length of time required for treatment and the ultimate prognosis.

In the large majority of acute cases the perforation, whether large or small, is in the neighborhood of the centre of the drum-membrane. The reason for this would seem to be that the infection being through

the eustachian tube, and the centre of the drum-membrane being slightly below the tubal orifice, the infection would first be at that point. Hence when the purulent accumulation became sufficient to rupture the membrane, it would occur at the point of least resistance—the one most deeply affected.

In the same way, as chronic suppurative otitis media is frequently a continuation of the acute form, or the result of a series of previous attacks, the same central part of the drum membrane suffers the first lesion, the opening occurring in like manner. In these cases there is little likelihood of serious bone involvement.

On the other hand, when the perforations are marginal, more or less caries or necrosis of the adjacent bone occurs. At the inferior margin it is the inferior wall or floor of the tympanum. At the superior margin a perforation of the membrane flaccida might indicate caries of the head of the malleus. At the margin a little more posteriorly the incus might be involved. Minute perforations on the anterior margin are usually indicative of tubercular otitis media. The entire absence of the drum membrane is significant of marginal bone disease.

The importance of all these points lies in the fact that in all marginal perforations cure by medical treatment, while not at all hopeless, may be much more prolonged, and may call for more continuous and strenuous effort than in cases of simple central perforation.

Coming now to the treatment of these cases, take, first, those in which, from marginal perforations, together with other evidences, we are convinced that nothing but a radical operation will produce a cure; it may still be our duty in the meantime to promote free drainage. For these two things are required—first, a sufficiently large opening into the middle ear; and, second, judicious and regular irrigation. For the latter almost any mild alkaline solution would do, or one of boracic acid, the chief requirements in its use being the proper temperature of 110 degrees to 120 degrees Fah., appropriate amount of one to three pints, and evenness of flow by the douche method. This is much preferable to the old plan of syringing, the force being regulated by the height above the patient's head at which the tank is placed.

After irrigation the meatus should be thoroughly mopped out by pledgets of absorbent cotton, the treatment to be repeated as frequently as the surgeon may deem necessary.

In the treatment of that larger class of cases in which we expect by our efforts to obtain permanent cures the commencement of the treatment should be upon similar lines.

Having removed any adenoids and enlarged or diseased faucial tonsils, and likewise secured, as far as possible, a normal condition of

the nasal passages, we should also attend to the condition of the digestive tract, giving cathartics and tonics as required.

Next comes the additional local treatment. Although Bryant gives a history of thirty cases of chronic purulent otitis media, the majority of which he cured by simple cleansing, the cure of the balance being completed by the additional use of peroxide of hydrogen and solutions of nitrate of silver, such has not been my experience with the use of these drugs.

I have faithfully followed the hot irrigation at regular intervals in both acute and chronic cases, supplementing the former by the use of an adjustable ice-bag around the ear when necessary—in the acute with fair success, in the chronic with indifferent success, unless other adjuncts were used.

To explain: For many years in the treatment of impacted cerumen, instead of trying to soften the mass by using alkaline drops or warm oil, I have used warm undiluted glycerine. By reason of its affinity for water it promotes secretion from the lining membrane of the external auditory canal and loosens the crust, preparing the way for effectual irrigation.

Latterly, as glycerine is a triatomic alcohol and aseptic, I have used it in purulent ear cases also. The procedure would be, first, to irrigate the tympanum well with warm boracic solution; next dry the meatus thoroughly with absorbent cotton; then drop in several minims of warm glycerine while the patient was lying on the opposite side.

In treating these cases two points were noted—first, that although boracic solution has a taste and entered the drum with considerable force, yet in no case was its presence perceived in the throat by the patient; but the warm glycerine, simply dropped in, was felt and tasted by the patient, on snuffing forcibly backwards through the nostrils.

Ballenger recommends in some of these cases trying the instillation of alcohol into the drum, commencing with 25 per cent. and increasing gradually to 100 per cent.

If pure glycerine could be borne with impunity I thought that pure alcohol might also, so I followed the use of glycerine with the instillation of 95 per cent. alcohol. One of the first cases upon which I tried it was a little girl of 6 years, suffering from very chronic otorrhoea, so I preceded it by the use of cocaine on the first two or three treatments. After that it was used pure. In her case the result was complete cure.

The penetrating power of alcohol is even greater than that of glycerine. In every instance it would not only fill the drum, but it would pass down the eustachian tube, and the patient, after a brief interval, would perceive it in the throat. Thus not only would the lining membrane of the tympanum be bathed with one of the best antiseptic astrin-

gents, but the eustachian canal, through which the infection of the drum had occurred, would also be subjected in the simplest manner possible to the same curative treatment.

When the patient lies on the side the central perforation is almost in a line with the tympanic opening of the eustachian tube, thus forcing the passage of the alcohol from the one to the other. Not only so, but when we remember that the eustachian opening into the tympanum is in the anterior superior quadrant, the drum being filled with alcohol, a change of position would insure its application to all parts of the cavity, including the attic and even the antrum. Effectual treatment of the eustachian tube is thus easier of accomplishment than by the direct method, while the positive treatment of the tympanum is at the same time secured.

I will not burden the section by a report of cases, but will close by stating that in many instances I have followed out the line of treatment indicated, and in both chronic cases and subacute I have found it eminently successful. In nearly every instance the discharge of pus has ceased. In all the hearing has improved with the arrest of the leakage, and odor has passed away, and the general health has been restored. The longest period of suppuration was eight years; the shortest, two months. The oldest patient was 50 years of age; the youngest, only 6; yet all were benefited by the treatment.

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## PROFESSIONAL AND PUBLIC ASPECT OF THE PNEUMONIA QUESTION.\*

WILLIAM CHARLES WHITE, M.D., Pittsburg, Pa.

**P**NEUMONIA heads the list of those diseases before which our profession humbly bows in recognition of conquest. With an ever-increasing mortality confronting us, especially in large centres, nothing has been offered which is in any degree comforting as suggesting that the tables will soon turn in favor of the human element which is forced to submit annually to this infection.

Primarily interested for the last five years in the great sister lung infection, "tuberculosis," I have been constantly struck with the fact that pneumonia frequently doubles tuberculosis in the number of deaths it claims per month. Naturally, such a condition of affairs suggests the striking contrast existing between the vast amount of money raised and spent upon the control of one lung disease while a much more fatal infection is almost wholly neglected. This state of affairs is largely due to our lack of positive knowledge of the conditions surrounding the onset of this infection, the changes by which the body strives to resist the

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\* Read at the meeting of Ontario Medical Association, Niagara Falls, May 31st.

micro-organism, and the factors which co-operate in finally providing so graphic a conclusion as the crisis with which we are all familiar.

We have, however, certain knowledge of a positive character which has been very slow to secure a position in what should be the everyday thought of our profession—certain underlying principles which should govern the handling of every case of pneumonia, and which would go far not only to reduce the mortality, but also to prevent the incidence of pneumonia in other subjects.

Before entering upon this phase I am desirous of calling your attention to some of the difficulties which beset the research worker in advancing in his quest of relief from our present condition of subservience to this disease.

I have yet to meet a laboratory worker in this field who feels enthusiastic in his outlook on the pneumonia problem. Why is this the case? The first great difficulty is our inability to produce in laboratory animals lobar pneumonia as we see it in man. Our common laboratory animals are susceptible to infection with the commonly accepted pathogenic organism of this disease, *i.e.*, the pneumococcus; but they react to artificial inoculation in widely varying degree from total immunity, such as is found in the pigeon, to severe septicæmia, such as occurs in the rabbit, guinea pig, mouse, and rat. We are able to produce, it is true, fibrinous exudate at the site of inoculation accompanied by hæmorrhage and œdema, with occasionally increased peritoneal and pleuritic fluid; but this does not mean a lobar pneumonia. One animal, the dog, if the work of Meltzer be confirmed, responds to intrabronchial infection of broth suspensions of pneumococci by a lobar condition similar to the natural condition in the human patient suffering from pneumonia. This may establish a confirmation of the belief based upon bacteriologic studies on pneumonic lungs that the pneumococcus is the main organism responsible for pneumonia in man, and may lead to an experimental basis which will permit of a study of the underlying physiological and biological principles of the onset, progress, and cure of lobar pneumonia infection.

A second great difficulty lies in the symbiotic action of micro-organisms which surrounds the relation of the pneumococcus infection of the human body. The pneumococcus is so continuously associated with other organisms in the normal mouths and so frequently in pneumonic lungs that more than a suspicion is justified that the secondary organisms have some relation to the virulence of the infection. In this connection I would call your attention to the experiments of Park and Williams (1), who found that mass culture results in more virulent strains of pneumococcus and more frequent entrance of these into the blood strain. Mass culture is obtained by inoculating sputum into broth, allowing this to

grow at 36 degrees C. for 24 hours, and inoculating the resulting culture into the animals chosen for experimentation. In this connection the reports of Norris and Pappenheimer (2), of Duval and Lewis (3), and of Buerger (4), on the relation of allied and associated organisms are of great interest. It is possible that the question of symbiosis must be solved before our difficulties concerning lobar pneumonia have cleared away.

The symbiotic organisms are *Streptococcus pyogenes*, Friedlander pneumo-bacillus, *staphylococcus aureus* and *albus*, influenza bacillus, pseudo-diphtheria bacillus, and *streptococcus mucosus capsulatus*. Anyone who has worked at the isolation and segregation of pure cultures will realize how gigantic is the task here represented.

A third difficulty lies in the relation of the leucocytes to this infection. One of the most striking clinical phenomena in lobar pneumonia is the polynuclear leucocytosis, carrying with it good prognosis varying directly with its degree, and yet a glance at some of the haze surrounding it shows how little we understand it. For instance: In spite of the favorable aspect of a leucocytosis in these cases there is grave doubt that this favorable influence is due to the phagocytic power to which we usually ascribe it, for Rosenow (5) found that 75 strains of pneumococci from the blood in pneumonia were insusceptible to phagocytosis when first isolated, a point associated, as he and others have shown, with virulence of the organism. Rosenow (*Loc. cit.*) ascribes much of the difficulty in obtaining phagocytosis of virulent pneumococci to a substance contained in the organism which he calls "virulin." This he is able to extract by autolysis in salt solution. Hiss and Zrisser (6), on the other hand, have laid great stress on the attitude of the leucocytes themselves in this infection, and have endeavored to solve some of the difficulties by the use of leucocytic extracts, and, within a month or two, Ruth Tunnicliffe (7) has published results of experiments from which she draws the following conclusions:

1. There is an increase in phagocytic power of leucocytes in mild cases of pneumonia.
2. In sever cases the power of phagocytosis is diminished until the patient improves, when it rises above normal.
3. There is no specificity in the phagocytic power of the leucocytes.

I must not enter this discussion further, but what I have said will serve to indicate how uncertain is our knowledge on this side of the question.

A fourth difficulty arises from lack of knowledge of the chemical processes which occur in the lobe of the lung which bears the assault of the infection and passes through the stages of congestion, red and grey hepatization, and resolution. In this field our knowledge has within the past few years gained some headway. Most interesting, probably, is the

work of Lamar (8) in the laboratory of the Rockefeller Institute, on the influence of certain alkaline soaps of oleic acid in producing in conjunction with certain sera lysis of the pneumococcus.

We have known for some years that the pneumonic lung under sterile conditions in the thermostat would undergo marked lysis. We have known, also, that the soaps are abundantly present during this lytic process; also that the soaps are bactericidal for certain bacteria. Lamar has made use of these facts, and has found that pneumococci treated with dilute solutions of sodium oleate undergo autolysis much more rapidly and completely, and in the presence of immune sera undergo rapid and complete destruction. Further, that the inhibition which the action of soaps ordinarily suffers in the presence of protein can be prevented by such chemical substance as boric acid. Such mixtures of soaped pneumococci serum and boric acid not only prevent infection, but confer immunity on experimental animals. No increase in phagocytosis is produced. This work throws much light on the lytic processes going on during resolution, but still adds no new light to the question of treatment.

A further question is aroused by the frequent finding of pneumococci in the healthy portions of lungs of those dying from lobar pneumonia. Why, for instance, does one lobe succumb while the others survive, even though the organism is present also in the latter? The whole problem of lung chemistry is a negative and rather dark field; but that the lung tissue has some definite and peculiar chemical composition can no longer be doubted.

One of Hektoen's (9) students, working in his laboratory, thought that lung tissue should form an excellent medium for the growth of tubercle bacilli since these organisms developed in this organ so readily during life. To his surprise he found that no growth could be obtained, and that the lung tissue evidently had some baneful influence on tubercle bacilli in vitro. In our own laboratory during the past year we have been studying the influence of autolysed lung extract on tuberculous infection, and find in the extract of autolysed lung some compound, probably a soapy element, which is inimical to the tubercle bacillus, and when injected with tubercle bacillus into an animal confers protection on that animal. So that a better understanding of lung constitution and chemistry will doubtless aid in elucidating many of the problems connected with its peculiar infections.

Again we are confronted by a lack of knowledge of the composition of the serum of pneumonia patients and of those animals which have been rendered immune to this organism. Evidently, as you have all convinced yourselves, the immune sera are questionable in efficacy in those suffering from pneumonia. On the other hand, as Lamar (*Loc. cit.*) and Tunni-

cliffe (*Loc. cit.*) have shown, there is something in the immune serum which is not in normal sera, and also in the serum of the pneumonia patients. We are perhaps nearer a solution of what this substance is from Lamar's studies with soaps and inhibitory substances, such as boracic acid.

Let me now call your attention to certain positive knowledge concerning the pneumococcus which has accrued during the past few years, and follow this with certain suggestions which seem well founded, at least for the suppression, if not the cure, of the disease for which the organism is held responsible.

The most striking bit of positive knowledge is the uniform presence of this micro-organism in the nasal discharges and buccal cavity of practically every city dweller during many months of the year. This is the more striking when we consider that the organisms isolated from these sources in those apparently well are often of as high virulence as those organisms obtained from the lungs of those who have succumbed to lobar pneumonia. Park and Williams (10) found typical pneumococci present in the throat secretions of a large percentage of healthy individuals in city and country. Longcope and Fox (11) found that during certain months, *i.e.*, December to February—in other words, those months which precede the great prevalence of pneumonia, a large percentage of normal persons harbor virulent pneumococci in their buccal cavities. Leo Burger (*Loc. cit.*) found that about the same proportion of non-virulent pneumococci are to be found in the mouths of patients suffering from pneumonia as in the mouths of normal individuals, and that practically no differences were to be noted in the percentage of virulent organisms in the mouths of normal individuals and pneumonia cases—79 per cent. in the former and 77 per cent. in the latter.

Secondly, we know that the pneumococcus can live (12) in the dark in dried sputum for 35 days or more in diffuse light for 30 days, and in sunlight only a few hours. On cloth it will live longer. We are positive, further, that pneumococcus-free persons may acquire pneumococci from positive cases; that handkerchiefs and dishes, drinking cups, etc., used by positive cases, *i.e.*, those harboring pneumococci, are capable of transferring this organism. Cases of house infection of pneumonia are so common to-day that I need only call your attention to it to convince you of the dangers arising from rooms and houses in which pneumonia has occurred.

One of the first gleams of intelligence I had in medicine was a house infection of pneumonia in Toronto, in which a mother and two children living in one room succumbed in succession to a very graphic and virulent pneumonia.

A fact, however, with which all of us are not so familiar is the casual relation which the pneumococcus has to certain of our chronic heart and joint cases. Rosenow, who has made the pneumococcus group especially his field of study, has lately again called attention to the chronic endocarditis cases that result from pneumococcus-infection, and the persistence of these organisms in the blood; and I have lately seen a case of malignant endocarditis in which we were able to isolate pure pneumococcus by blood culture. These cases—chronic pneumococcus, endocarditis, and arthritis—take this organism out of the field of acute diseases and enter against it the more serious charge of responsibility for many of our chronic maladies of formerly unknown origin.

Coupled with this phase of the question is the mutability of this organism both in vitro and in vivo. It changes not only in virulence easily, but also in morphology and cultural characteristics by artificial cultivation and animal passage, and this very elusiveness of its nature has contributed not a little to our progress in appreciation of its power against us.

In general it may be said that the pneumococcus has the whole body for its field since it sails with great freedom wherever the blood stream travels, and for this reason is frequently described as a septicæmia, but its manifestations are local, and, in addition to endocarditis and arthritis deposits, every specialist who deals with the serous structure sooner or later comes in contact with it in such serious maladies as otitis media, meningitis, bronchitis, conjunctivitis, etc.

Where such facts as these stare us constantly in the face, is it not strange that we are so slow to utilize the knowledge which we already possess of means for suppression. With the results of concerted action by means of education, segregation, and fumigation in tuberculosis work before us, it seems probable that we could at least accomplish something by these means in pneumonia. It is commonly objected to this proposition that the two infections are so different that they cannot be handled in any similar manner. This objection, however, does not seem to be valid when one compares the two maladies in the following way:

Both are mainly pulmonary diseases; both the result of organisms constantly present (1, 2, 3, 4, 5, 8) within and outside of the human body; both infections are contracted mainly by inhalation and hastened to their maturity by bad housing, food, and hygienic conditions (6); both are accompanied by cough and sputum containing myriads of the infecting agent; both infective through droplet (7) and air-dried sputum (7); both often the result of unconscious carriers (9, 10) of infection; both are house diseases; both have no specific cure, and rely on hygienic conditions for improvement; both are characterized by relapses (11); both produce sickness (8) in lower animals both germs become more

virulent by animal passage (12) both germs are capable of life outside the body for hours to weeks (7) dependent upon environment; both remain quiescent in the body for varying lengths of time; both are responsible for secondary chronic conditions (12).

It is very likely that we cannot utilize many of the more bizarre attachments of the tuberculosis campaign, or even of the more useful methods of this work, such as the dispensary, and yet it seems to me that even the dispensary might be so modified that its visiting agents could afford the greatest service among the poorer classes by education and nursing of even so rapid and graphic a sickness as pneumonia.

Even if such adaptation seems impossible there still remain many things which stand forth with the label of neglected duty tacked upon them:

First, our neglect in educating the public on the positive knowledge we possess of the infective nature of this sickness, the means of preventing its spread, the means of raising the resistance to it, in fact, while we ourselves have known these facts for many years we have not yet grouped pneumonia in the public mind with our other reportable and preventable diseases.

Second, our present methods of handling such patients in hospital wards without segregation of patients and utensils, and without special instruction on its infective nature to our students, house officers, and nurses, are most responsible.

This is the more striking in that we have totally excluded tuberculosis, a less infective disease, from our general hospitals, where, as a matter of education, it properly belongs in specially constructed wards, and have retained pneumonia, which is more infective, mainly because the patient is so unable by reason of his severe illness to exercise any precaution. I trust the day will soon come when the constant shutting out from our general hospitals of each malady as it comes into the limelight as a preventable disease will cease, and that we will make proper provision for all classes of cases, so that those who receive instruction in these institutions—nurses, students, doctors, and the public—will have the full benefit of the knowledge generated there. So long as we persist in the lopping system of the past few years, and send out such partially trained members of the backbone of our public health restrictions, so long will we fail in our desired end, and our hospitals will become more and more great surgical amphitheatres.

As a plan of procedure, then, I would suggest, first of all, the proper segregation of pneumonia patients and their utensils in hospitals; cleaning by sprays and washes of the noses and throats of all who nurse and come in contact with these patients; careful hand-washing of nurses and attendants after handling; careful destruction of sputum and other dis-

charges; sterilization of linen of patients; fumigation of rooms after occupancy; and the use of gauze, which can be burned, instead of handkerchiefs. This will be the centre of the educational crusade.

Second.—Attached to our dispensaries certain nurses who have received special instruction on nursing and preventing the spread of pneumonia, to be sent to all pneumonia cases in home nursing work.

Third.—The reporting of all such cases to the health department governing the district where the disease exists, and the fumigation of the quarters in which the disease has occurred by the department after the death or recovery of the patient.

Fourth.—The instruction of the public by pamphlets and school lectures on the necessity for keeping the noses and throats cleansed, especially during winter months; the necessity for controlling the dust of streets by better sprinkling and night sweeping; the evils of bad ventilation in house, public building, and school; of alcohol; of badly cooked and poor food; of lack of rest; of worry; of the handkerchief; of the bearing of spitting on pneumonia as well as other diseases; of the increased resistance generated by open-air sleeping; and similar knowledge. This, I am sure, can best be engrafted on the child's mind rather than on that of the adult.

I have merely sketched to you the outline of preventive measures which are demanded by present positive knowledge of a disease for which we have no cure, and which is at present our most mortal enemy.

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## EXTRA-UTERINE PREGNANCY: PATHOLOGY AND TREATMENT.\*

By W. KRUPP, M.B. (Tor.), M.R.C.S. (Eng.), L.R.C.P. (Lond.).

**B**Y extra-uterine pregnancy we mean that form of pregnancy in which the fertilized ovum develops outside of the uterine cavity. It occurs in about 2 per cent. of all pregnancies. Clinically no subdivision is required, but anatomically we recognize two varieties—ovarian and tubal.

Ovarian pregnancy is a rare occurrence, the first authentic case being described twelve years ago by Madam Van Tussenbreck, in 1899. Her findings were corroborated by Bland Sutton, who examined the specimen in January, 1901. Generally the spermatazoon enters the ruptured Graafian follicle, and fertilizes the ovum which has not been discharged along with the fluid contents of the follicle. The ovum finds a nidus in the lutean cells lining the follicle, and, after developing here, ruptures in a majority of cases in two or three weeks, the early rupture being due to the small amount of resistance offered by the already broken follicle and the ovarian tissue to the rapidly growing trophoblast.

Fertilization of the ovum takes place, normally, in the Fallopian tube, after which it passes onward into the uterine cavity, every pregnancy being, therefore, primarily tubal. Knowing this, we naturally look for the cause of the downward movement of the ovum. This, in absence of any pathological condition, is due to the current caused by the movement of the ciliated epithelium with which the tube is lined, and which is in a direction toward the uterus. The ovum may be arrested in the ampullar, isthmic, or interstitial portion of the tube, but most frequently it lodges in the ampulla. Chipperfield, of Montreal, found in thirty-six cases twenty-eight were ampullar, two isthmic, four interstitial, and two indefinite.

The cause of the arrest of the ovum on its downward course is a matter of dispute, but seems to vary with different cases. The salpingitis theory—that is, that it is due to gonorrhoeal, tubercular, or pyogenic origin in the pelvic region—has stood the test for years. It is a well-known fact that tubal gestation is common after a long period of sterility. This may be due to a salpingitis, which has caused thickening of the tube, destruction of the mucous membrane with its cilia, possibly partial blocking of the lumen of the tube, and hence interference with the downward passage of the ovum to the uterine cavity.

Eden and his associates have abandoned the salpingitis theory because their study of the morbid anatomy failed to show any inflammatory change in the gravid tube, except at the point of implantation of the

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ovum. We must look for other causes. When we study the structure of the tube we ascertain the important fact that there exist pockets, or diverticula, which have a minute opening into the lumen of the tube, and which run into the underlying fibro-muscular tissue; and it is, therefore, easy to believe that in certain cases the fertilized ovum drops into and develops in one of these pockets. This view is supported by the fact that in many cases there is no history of any inflammatory condition existing previously; also the preceding pregnancies were uneventful, complete recovery having in each case been made. Then we must always remember that in a few cases tumors may press on and obliterate the lumen, or that a foetal type of tube may exist.

Under the influence of the implantation of the fertilized ovum in the tube certain well marked and definite changes result. The uterus always shows a certain amount of enlargement, accompanied by softening of its walls and cervix. The endometrium shows a sympathetic reaction, which results in its hypertrophy. It rapidly softens, while large connective tissue cells develop which are characteristic of the decidua, and are called "decidual cells." Thus a decidual cast is formed of the uterine cavity which in a small percentage of cases is shed in toto—13 per cent., according to Chipperfield. In other instances it comes away in fragments. This is of great diagnostic value, so much so that in doubtful cases the uterus may be curetted and the scrapings examined microscopically for decidual cells. This should only be done in very doubtful cases, and then only when uterine pregnancy can be excluded. Then, also, we must remember that this procedure may set up fresh bleeding at the place of rupture.

In the healthy tube no true decidua is formed, although several decidual cells have been demonstrated in the mucous membrane of the affected and unaffected tube. Typical decidual cells do not exist apart from pregnancy.

A young ovum may engraft itself upon any protected and sufficiently vascular surface, and certain changes are always resultant; but the only safe response to this attachment is a true uterine decidua, whose function it is to offer protection, nutrition, and support to the growing ovum. As there is no distinct decidua to separate the growing ovum from the underlying muscular tissue in the tube and ovary, the rapidly proliferating trophoblast comes at once into contact with the tube wall, through which it burrows; necrosis and thinning take place, followed by rupture. The maternal tissues are opened rapidly and severe internal bleeding is the result. This takes place from the fifth to the twelfth week. In the uterus, on the other hand, the decidua develops, *pari passu*, with the embryo, and so forms a strong barrier against the eroding action of the trophoblast.

Sometimes the ovum is destroyed, *in situ*, by hæmorrhage, forming a tubal mole, or it may be detached from its base and be expelled from the tubal ostium—tubal abortion—or it may burrow through the tubal wall and cause rupture, as previously described.

The causes of rupture are varied, but we must always bear in mind that the eroding action of the trophoblast is of primary importance. These cells eat their way through the tube wall, and very frequently it happens that the patient is seized with acute pain while in bed; more often, however, there are certain immediate causes. Special attention should always be taken of such statements as "I slipped on the ice," "I was turning the washing machine," or "I was running for the car," when the pain came on. The extra amount of pressure caused by these acts are sufficient to break the few remaining cells which were not eaten away by the trophoblast; pain and hæmorrhage are the inevitable result.

The direction of the rupture is an important question. This may be either intra or extra-tubal, the former being merely a rupture of the capsularis, which had enclosed the embryo. In this case, which is most common in the ampullar type, the ovum escapes into the lumen of the tube, accompanied by a certain amount of blood. This is usually followed by a process which constitutes a miniature labor—that is, the ostium dilates; this is followed by a stage of expulsion, and this by a stage of retraction. Hence the embryo and blood are poured out into the peritoneal cavity, through the dilated ostium. Frequently a blood clot forms, closing or partly closing the ostium, in which case we get the so-called "chronic dribbler" type of case.

The extra-tubal variety may be either intra or extra-peritoneal, the former being the classic type of rupture, and it gives rise to the classic symptoms of great intra-abdominal hæmorrhage. In these cases free fluid can often be detected, or it may collect in Douglas' pouch and form a hæmatocele. In the extra-peritoneal type the rupture takes place in the floor of the tube, the peritoneum escaping. The blood and ovum make their way between the two layers of the broad ligament, forming a hæmatoma. This is termed the encysted type.

In the majority of cases the ovum is destroyed by previous hæmorrhage. Sometimes, however, it continues to develop, in which case the amnion remains intact and the chorion escapes injury, and what is known as "secondary abdominal pregnancy" takes place.

The treatment of this condition is essentially surgical; and if the case has not been diagnosed till the time of rupture, we are face to face with one of the most anxious conditions with which a medical man has to deal. All cases fall into one of four groups, namely:

1. Diagnosis has been made before rupture or abortion.

2. Rupture, or abortion, has just taken place.

3. Some time has elapsed since the rupture, or abortion, and the patient has recovered from the shock, the foetus being dead.

4. Rupture has occurred, but gestation is going on.

In the first case our course is clear, for an immediate operation should always be undertaken—that is, as soon as proper surgical surroundings can be secured, and the affected tube removed by abdominal section.

It is at the time when rupture has occurred, bleeding is going on, and shock exists that surgeons differ as to the proper course to pursue. The question which is paramount is: "Should we operate at once or should we temporize and treat the case expectantly, until she has rallied from the immediate shock?" The amount of shock which follows rupture varies greatly, and is dependent on two conditions, namely, the amount of blood lost and a predisposing nervous temperament; and these two factors must determine our course of treatment. Therefore, it is our first duty to determine, if possible, the amount of blood lost. This is best done by observing the pulse, decreasing tension and volume, becoming thready, and difficult to palpate are most important, pallor, thirst, restlessness, and dyspnoea increase rapidly. These points can usually be determined within an hour, which, in view of Parry's findings that patients live from ten to forty-eight hours, is justifiable.

During this time the patient should be given morphine gr.  $\frac{1}{4}$  hypodermically, and kept absolutely at rest in bed, the foot of which should be raised 10 to 18 inches, to keep the heart and vital centres in the brain well supplied with blood; if the case is desperate, the arms and legs should be firmly bandaged from the tips of the fingers and toes to the trunk. Stimulants had better be avoided, especially digitalis, as it acts primarily on the heart and tends to deplete the body of its fluids by being a strong diuretic. Strychnia gr. 1-40 is less dangerous, as it stimulates all the vital centres and tones them up, so as to overcome the paralytic condition without directly stimulating the heart's action. It tends to overcome the paralysis by acting on the motor centres in the cord and brain. Whiskey may be given by mouth, but our sheet-anchor before operation is the infusion of normal saline—one drachm of NaCl to the pint of water—at the rate of one pint an hour under each breast. Twenty to thirty minims of adrenalin chlorids—1 in 1,000—should be added to the saline, as it is a strong vaso-motor tonic. If after doing all this we have no indication that the patient is rallying in an hour or two an operation should be immediately undertaken, as to temporize decreases her chances of recovery. In all cases after having given the above medical treatment surgical arrangements should be made, so that no time

is lost. Where it is inconvenient to give saline interstitially it should be given as a high rectal enema, just so fast that it does not return.

In the other type of case—that is, where the shock is out of proportion to the amount of blood lost, symptoms are at their maximum immediately after rupture. The shock may be so extreme that we get flaccid extremities, dilated pupils, and partial unconsciousness. To operate in this condition would be fatal, and it is in this type of case that by giving morphine and carrying out the above indicated line of treatment that we get marked improvement in the pulse in an hour or two, in which case we can temporize a little longer—three or four hours—when a laparotomy must in all cases be undertaken.

In the third type of case—that is, when the shock has passed off before the patient is seen, we should operate as soon as proper surgical surroundings can be obtained.

The operative technique is simple, the abdominal route being preferred. The rule, "only to remove diseased organs," must be strictly adhered to. Our first duty is to deal with the bleeding point, which, if difficult to find, better first locate the attachment of the tube and broad ligament to the uterus, and there put on a clamp to save further loss of blood; then you can deliberately scoop out the blood clot and debris with the hand, assisted by a large gauze sponge and a copious stream of normal saline, at a temperature of 110 degrees F. In cases where the shock is severe, or where there is much oozing, this should be increased to 120, or even 140, degrees. Now deal with the diseased organ, and, after having removed it, see that all bleeding has ceased and that all raw surfaces are covered. Before closing the abdomen it should be filled with saline at 110 degrees; the incision is then closed without drainage. It is only justifiable to drain in cases where oozing cannot be stopped or where there is decomposition; and, even in these cases, it is probably better to close the abdomen and let the peritoneum deal with the condition than to take chances of any outside infection getting in through the opening.

In the fourth case, where secondary abdominal pregnancy is going on, and the case has reached the fifth month, it is only safe to remove the foetus, as the hæmorrhage, if we removed the placenta, would be uncontrollable, and therefore the safer plan is to leave the placenta, establish gauze drainage for two or three weeks, during which time its circulation will have ceased, the placenta becomes a foreign body, disintegrates, and drains away as debris. This process is tedious, and may take months.

In conclusion, let me repeat, in order to emphasize what is, in my opinion, the nucleus of treatment in the second class of case; and that is, whenever the shock is out of proportion to the amount of blood lost, we must temporize and treat her medicinally, as above indicated, until she

has rallied from it; then operate; while in the other case, where the shock is directly proportional to the amount of blood lost, and bleeding is going on, it is our duty to operate without delay, as waiting means time lost, and directly decreases the patient's chances of recovery.

### INFANTILE ECZEMA.

By W. H. MOOREHOUSE, London.

**B**EFORE taking up the subject of my paper I shall briefly discuss eczema in a general manner, and then shall endeavor to apply these few observations to the subject in hand.

What is the meaning of the term eczema? I ask this question for the reason that there appears to be considerable confusion at times in diagnosing eczema. Dr. Norman Walker defines it as follows:

"Eczema is the term commonly applied to any wet or scaly inflammation of the skin of the cause or nature of which the observer is ignorant."

As the word eczema implies, it is an eruption—that is, a bursting out, or "boiling over"—hence it is usually applied to any rash upon the skin. He goes farther, and tells us that to those who have not made a study of diseases of the skin "most eruptions are eczema, but as knowledge increases one is able to identify in certain cases either a definite, recognizable cause or a definite sequence of events which enables him to arrange certain diseases under more instructive headings." In other words, he wishes distinctly to impress upon us the vagueness of the term eczema, as ordinarily used; also the fact that, as our knowledge of skin diseases, and especially of eczema and its causative factors, become extended, the less numerous will our cases of eczema become—that is, we shall be able the more readily to allocate the skin affections which we now, through ignorance, classify under the head of eczema.

At the present time eczema, in our climate, embraces more than one-half of the skin affections met by the ordinary practitioner.

*Etiology.*—Dr. Tillbury Fox claimed that eczema was the analogue of catarrhal inflammation of the mucous membrane. In fact, he declared the disease to be a catarrhal inflammation of the skin, and we also know that inflammation, in some form, is always necessary for the production of a catarrhal condition, no matter upon what membrane of the body it may be situated. These external irritants may be certain chemical substances, such as many of the dyes in common use, many forms of dust, pollen of plants, and certain occupations, such as grocers, millers, where the hands and arms are constantly coming in contact with particles of irritating substances.

Is the inflammatory irritation of the skin set up through the presence of some micro-organism, or is it the mere mechanical act of the irritant? Or, still farther, is it the presence of some underlying constitutional tendency in the system of the patient?

There are three views held as to the part played by germs in the production of skin diseases, and eczema in particular.

1. That they are the direct cause.
2. That they act as the exciting cause.
3. That they merely aggravate existing eruptions through inoculations.

The French school is the great exponent of the view that eczema is primarily and essentially amicrobial, and they have demonstrated that the initial microscopical vesicle is sterile, and that the later microbial infections are due to secondary contamination of the surface.

Without doubt, then, the effect of micro-organisms takes place after the minute vesicular lesions occur, through inoculation, producing pustular lesions of various types, with scabs and scaly incrustations, all of which are so common in infantile eczema.

The most important factor is the diathetic, predisposing, or internal causation. Brocq tells us that "we must investigate hereditary pathological states, individual idiosyncrasies, defective alimentation, defective assimilation and excretion, troubles of the venous system, troubles of the circulatory system, troubles of the lungs, kidneys, genital apparatus, ductless glands."

Dr. Crocker also tells us "that the eczema patient is seldom in a state of well-being at the time of supervention of eczema. He is dull and heavy and "out of sorts." Often he is anemic and much run-down, either through anxiety and worry from overwork of body or mind on the one hand or disease on the other. Where any such cause can be identified treatment must be directed to its removal. It has been conceded by many eminent authorities that there is a direct tendency to transmission of any hereditary taint of eczema from parent to child, as also any individual idiosyncrasy.

Derangement of the alimentary canal is the chief of internal causes. Here we have auto-intoxication produced through faulty metabolism, as also through imperfect elimination of the waste products of the body. Urticaria furnishes a good instance of the effect produced by gastrointestinal derangement, through faulty diet, over-eating, and constipation, along with a gastro-intestinal idiosyncrasy. Metabolism represents the series of chemico-physiological changes occurring by means of which (1) nutritive material and oxygen are converted into an integral part of living tissues; (2) the means whereby their potential energy is expended

in living force and heat. The products of the physiological disintegration of tissue are rejected in altered form, and appear in the excreta.

When we think of the multiplicity and the wonderful intricacy of the metabolic processes, and then look at the manner in which nature is abused and thwarted in its operations, through indulgence in unsuitable foods in excessive amounts, the neglect of the calls of nature, ending in constipation and its resulting train of evils through absorption of the decomposing elements of fecal matter, surely we cannot wonder at the various forms of disease! For example, gout, rheumatism, urticaria, acne, eczema, and erythematous diseases are all considered to be due to some perverted condition of metabolism.

The evil effects of the underlying cause of gout and rheumatism are not confined solely to the joints and ligamentous structures, but are widespread. The poisons which are either due to faulty metabolism or imperfect excretion, circulate in the blood through all the tissues, and particularly the skin, and there give rise to eczema or other skin affections peculiar to the idiosyncrasy of the patient.

Anemia is also another frequent predisposing factor, probably acting through producing a weakened and unstable condition of the nerve centres. A very common cause of anemia is that of certain trying periods of life, by which vitality becomes lowered, such as the menopause, at which period we often meet cases of obstinate eczema or psoriasis; in like manner we meet many cases of eczema of a severe character in both sexes, due to prolonged mental worry and anxiety.

The eczema of old people, which is very common, often appearing in the form of pruritus, or suppressed eczema, is due to weak and faulty metabolism, along with sluggish excretion of the waste products. The blood current becomes loaded with this effete and poisonous material, which, circulating through the sensitive skin, produces the effects already alluded to.

Having thus briefly touched upon the chief causative factors of eczema in general, I shall now proceed to discuss more minutely the subject of infantile eczema.

Eczema is common in infants and young children. All cases occurring up to the sixth year are usually included in the term infantile eczema. It does not often appear before the fifth or sixth month, and in those cases where it has been quite severe and persistent in the first three years of life it tends to decline spontaneously, not later than the fifth or sixth year, and possibly earlier. It then becomes milder in degree, and yields readily to ordinary treatment. Eczema in the infant is more inflammatory in character at the onset than in the adult, later becoming markedly pustular.

In the majority of cases the face or the face and scalp are the parts chiefly affected. Sabourand says that "the natural orifices—the eyelids, nostrils, and mouth—and their immediate neighborhood are nearly always exempt. It comes out in the form of a crop of red points, which are histologically vesicles, excoriated by scratching. Their number increases and finally coalesce. There is usually more or less exudation, and, when abundant, forms dark or amber-colored opalescent crusts, sometimes tinged with blood, due to rubbing. Eczema in the region of the genitalia, buttocks, and anus is often met. Occasionally it may be found extending over the entire body."

The vesicular, vesiculo-papular, the moist or crusted inflammatory—the so-called eczema rubrum—appears to be the most frequent type in the young, often running into the seborrhœic form. Infantile eczema, like many of the other forms in older subjects, is often treated locally, to the neglect of the real, underlying cause.

*Etiology.*—The infant, like the older subject, is liable to many internal derangements, and particularly is it liable to intestinal affections, both acute, subacute, and chronic, with all the errors of metabolism. The various intestinal toxins are absorbed into the blood in like manner to the older subject. These toxins may act directly or reflexly upon the nerve centres and produce dilatation of the capillaries in the region affected. Crocker says: "In infantile eczema irritation and consequent catarrh of the alimentary canal are even more common as cause of eczema in infants than in the older subjects. The imperfect feeding, of which infants are too often the victims, is a fertile cause of the skin troubles, and is much more often the *fons et origo mali* than teething."

The constitutional causes are similar to those found in the adult. Gout and rheumatism, of an hereditary taint in character, are among the chief.

The uric acid diathesis, through defective kidney elimination, in consequence of which the over-produced uric acid is locked up and then becomes an important added element.

Digestive debility and its very frequent accompaniment—constipation—are very prominent indeed in the production of this diathesis, and also in that of eczema, through errors of metabolism.

Diet and the condition of the digestive tract, and the proper performance of its functions are of prime importance in infantile eczema.

External causative factors, among the chief of which are the too frequent and improper use of water, alone or with the addition of irritating soaps, exposure to cold, or to the actinic rays of the sun, certain dyestuffs, especially the aniline dyes. Eczema of the genitalia in infants is largely due to the repeated wettings of urine as well as the irritating action of the decomposing products.

*Prognosis.*—Is usually good, although the progress is commonly slow, and for the first two or three years recurrences are apt to take place, but after three and a half or four years the eczema tends to get well spontaneously. In many cases where the disease has come on from the fourth to the sixth month the lesions gradually begin to disappear from the tenth to the twelfth month. I have in mind two cases which I had under my care some years ago, of the most severe type, the lesions extending over the entire body. It began between the fourth and sixth months in each case. The agony was so intense that the little sufferers died when about one year old. We were unable to assign any other cause for death than eczema and the great exhaustion produced by the constant, unceasing irritation, due to the very great extent of skin involvement. One of these cases I referred to the late Dr. A. I. Graham, of Toronto, under whose care it remained for six weeks.

*Treatment.*—First, I would like to allude to the fact that the practitioner is apt to look upon cases of infantile eczema as due to teething. He will find faithful allies in the support of this theory among many of the old nurses and family attendants. I would warn against adopting such a view until one has carefully investigated. It is well to remember that many eminent authorities deny the existence of such a factor, as also that of rickets and other infantile disorders as probable factors in the production of skin diseases. On the other hand, we find a number of earnest workers questioning the safety of curing the cases of so-called reflex eczema, as they assert that the eczematous discharge in such cases acts like a seton, in checking internal inflammation and that dangerous internal complications may ensue upon a too swift cessation of the discharge. Others maintain equally as stoutly that there is no risk involved in curing this condition as speedily as possible, even though it be due to reflex action, which latter view I have always held, believing that any aggravation of the eczema is due to derangement of the alimentary canal, which is so apt to take place through the nervous depression caused by the irritation of teething.

An essential part of the treatment consists in protecting the child from all external irritants and exposure to cold. Hall has demonstrated that the most important cause of the infantile form of eczema is exposure to cold. Dirt in all its forms must be removed. Avoid the use of hard water and strong soap. Instantly remove wet and soiled napkins. Scabies differs in its distribution in the infant to that in older cases, and, as a result, it often remains undiagnosed. Secondary eczema arising from scratching or the use of irritating applications is quite common.

Pediculi on the scalp, in a certain class of children, in weakly subjects, produce a characteristic pustular eczema, chiefly affecting the occipital region. Discharges from a purulent otorrhœa often set up a pustular

lar eczema in the region of the ear and side of the head and neck. Careful investigation should take place and all these factors detected and combatted as far as possible. It is surprising to how small a number the unexplained cases can be reduced. Carefully protect the child from cold and chilling drafts of air on the one hand and, on the other, avoid too great an extreme of heat. To prevent scratching, which is often almost uncontrollable, it is well to bind around the arm, at the elbow-joint, a cylinder of corrugated cardboard, such as is used for wrapping bottles. In this way flexion of the arm is prevented and the scratching effectually stopped.

Cotton, linen, or silk underclothing are the least irritating fabrics to come in contact with the diseased parts. Woollen is apt to increase the irritation.

*Local Treatment.*—At the outset it is well to bear in mind that there is no specific medication, neither external nor internal, in infantile eczema, but that our efforts, external as well as internal, should be in the direction of ameliorating the condition of the little sufferer. The external applications should all, as far as possible, be of a soothing character, so as to allay the terrible irritation and suffering of the inflamed parts. The treatment must be largely symptomatic. In the early, acute stage, where there are redness and swelling, with watery exudation, Sabourand says that “at this age no dressing is tolerated, and no topical applications are of any value except protective pastes, such as oxide of zinc and fresh vaseline or lard. Cleanse daily without soap, with sweet oil of almonds.” He also says: “The proper treatment of this form of eczema is dietetic; all external treatment is symptomatic.”

I have always avoided all oleaginous applications in the acute stage where there are much redness and swelling with watery exudations, more particularly the animal and vegetable fats and oils, on account of the liability to decomposition, when in contact with the pustular discharge on the heated skin surface.

Mineral oils and fats are not so objectionable. The following formula I have usually found to answer my purpose in the early, acute stage:

R	Pulv. Zinci Oxidi.....	
	“ Calaminae A. A.....	ʒ ii. gs.
	(Finely levigated)	
	Pulv. Tragacanthi.....	xx. gr.
	Glycerinae, Oph.....	ʒ ii.
	Liq. Carb. Detergens.....	ʒ i.
	Aquae Dest. q.s. ad.....	ʒ iv.

*Sig.*—Apply once or twice daily by painting on the affected parts, so as to form a protective coating. In this application we have a combination of the zinc salts, which are admitted to be the most soothing to

the tender skin, leaving the least irritating after-effects, while the tragacanth, combining with the zinc, forms a coating over the irritable, raw surface, excluding the air, which, in the acute stage, serves to keep up the irritation.

The next indication is to free the skin from all dried exudates which, in time, accumulate. This can be done in several ways. First, light poultices of bread and water, kept moistened with weak boracic acid solutions, ʒi to OI boiling water. This not only loosens the dried scales and scabs, but soothes the swollen and inflamed integument. Bran poultices act equally well. Gauze compresses, soaked in boiled water, or the boracic solutions, are also useful. In the Seborrhoeic variety—"the eczema capitis" of the older writers—sterilized oil can be used. At the end of several hours the crusts are sufficiently softened so as to be easily removed with absorbent cotton soaked in oil or vaseline.

In simple eczema antiseptics are useless, and may be even harmful; but in impetiginous eczema, which is always due to some form of germ propagation, the use of antiseptics becomes imperative, but should always be used in a weak form. The Ung. Hyd. Am., diluted with Ung. Zinc Oxidi, I have always found to act efficiently. Carbolic acid should never be used, as it is irritating and liable to cause systemic poisoning through absorption by the raw surface; hence infants bear it badly, having a marked sensitiveness to it. When antiseptic solutions are necessary, use solutions of Hyd. Cyanide 1 in 4,000, or Hyd. Bichloridi 1 in 10,000 to 1 in 5,000, without the addition of alcohol.

Once the eczematous part has been well cleansed some soothing, non-irritating salve should be applied, which will relieve the pruritus. Zinc oxide, as before mentioned, is one of the most suitable at this stage, when the part has become somewhat dry and scaly, combined with vaseline, 1 part to 10 of vaseline.

In the Seborrhoeic variety good results may be obtained by the addition of salicylic acid, according to the formula of Dr. Rocaz:

℞	Acidi Salicylaci .....	.05 to 1 centigrammes
	Zinci Oxidi .....	3 grammes
	Vasalinae .....	30 "
Or		
℞	Resorcini .....	.5 to gramme
	Vasalinae .....	30 "

These preparations should be thinly spread on soft pieces of sterilized gauze and carefully adjusted to the affected parts. They should be renewed from time to time, according to the amount of displacement, or as they become dry, or covered with discharges.

Should the lesions become irritated and return to the wet stage, which so frequently occurs, I return to the calamine and tragacanth lotion, or the following powder:

R	Talc.....	30 parts
	Bismuthi Subnit. ....	10 "
	Zinci Oxidi.....	5 "

(Finely levigated).

*Sig.*—Thoroughly cover the affected parts with a layer of the powder, so as to effectually exclude the air.

In the dry eczemas, with a tendency to become chronic, especially where the trunk and limbs are affected, more active or stimulating applications are necessary, such as ichthyol, oil of cade, etc., coal tar, in the form of Liq. Carb. detergeus, is sometimes of use, but is more useful in the moist than the dry forms.

The Roentgen rays have been successfully used to modify old standing cases, by first soothing the pruritus, then the lesions gradually begin to disappear. This form of treatment is more applicable in chronic cases.

Washing and bathing are considered by all authorities to be harmful, unless properly directed. In simple eczema much use of water increases the dermatitis, and in impetiginous eczema washing and bathing has a tendency to spread the infection over the whole skin surface. Distilled water, which is free from metallic and other irritants, is the least irritating; next comes good, clean rain water, which has been well boiled; and, lastly, spring water, which has been well boiled and allowed to stand some time, so as to precipitate all particles of lime and mineral matter. Use no strongly alkaline or irritating soaps. Let the duration of the ablutions be as short as possible, in order to accomplish the purpose, and not too frequent. Dry thoroughly, and as rapidly as possible, by sopping the part with absorbent cotton, gauze, or soft linen napkin. With these precautions, washing and bathing, for purposes of cleanliness and asepsis, may be resorted to, in any case of eczema, and at any stage.

The general, internal treatment of infantile eczema—as, indeed, in all cases of eczema—must first of all be occupied with the alimentary canal and its hygiene. It is certain, in every case of infantile eczema, no matter what may be the cause, that every disturbance of this apparatus has a bad effect on this skin affection. Over-feeding is the chief evil. The number and times of feeding, even when fed from the breast, should be regulated. For an infant 5 to 6 months old the intervals should be from three to three and a half hours between each feeding. The person who suckles an eczematous infant must be subjected to the same diet as though she herself were affected. Her diet should consist of fatty foods, such as pork rather than beef, cream, milk, butter, and cheese, with fruits

and vegetables. Tea and coffee must be used sparingly, as also acids and sweets. Avoid constipation. Where the infant is fed artificially the supervision of the food and feeding is even more necessary. The time, the amount, and the quality of feeding should all be rigorously supervised. Look after the feeding bottle, and especially the rubber nipple, as also the purity of the milk, even to the minutest particular, so as to reduce to a minimum the chances of infection or intoxication of the alimentary canal, which inevitably ends in gastro-enteritis. When the infant digests the milk badly, the addition of sodium citrate sometimes gives good results. Give from 1 to 2 grs. to each ounce of milk. So, also, the substitution of raw for sterilized milk has had good effect.

Some authorities recommend the use of a milk deprived in large measure of the salts in the whey. The milk is coagulated by means of rennet; a part of the whey is thrown away and replaced by barley water. The precipitated casein is repeatedly washed, and, when broken up by passing through a sieve, is added to the liquid.

Good, hygienic surroundings are as highly essential in these cases as any other part of the treatment, as is also climatic conditions, dry, inland air, in an elevated region, being better than warm, moist air.

Great care should be exercised in guarding the eczematous infant from contact with surrounding objects which have not been thoroughly cleansed and rendered aseptic as far as possible, so as to prevent the entrance of infection.

Internal medication is an important part of the treatment, and consist chiefly in paying strict attention to the alimentary tract. Constipation is to be combatted. Mild purgatives are to be given from time to time. Castor oil for very young infants, up to 6 or 10 months; after that age calomel may be given where sluggish action of the liver is suspected. Given in fractional doses of 1-10 gr., either alone or in combination with soda bicarb gr. 1 every two hours until the bowels are freely moved, is a valuable alternative. It should be followed by some gentle laxative, acting as a corrective, such as the Elixir Rhei Co., and along with it may be combined some aromatic bitter, or the following:

R	Sodae Bicarb.....	1 gr.
	Ol. Ment. Pip.....	1-16 m.
	Spts. Chloroform.....	2 m.
	Infus. Rhei.....	15 m.
	“ Gent.....	1 3

Thrice daily.

The uric acid tendency is, without doubt, transmitted to these little sufferers. In such cases the alkalis are indicated, citrate of sodium, bicarbonate of sodium and in older children, say from 3 to 6 years, Liq. Pot. often renders excellent service, but requires to be given in compara-

tively small doses and for a long period of time. Dr. Rocaz, in a paper recently published in the *Annales de Médecine et Chirurgie Infantiles*, thus alludes to thyroid opotherapy: "Monssous was the first to make use of this treatment. This gentleman having remarked how seborrhœa and seborrhœic eczema of the scalp, so frequently met in myxedematous subjects, disappeared under the influence of thyroid medication, had the idea of treating, by this method, seborrhœic eczema in infants who did not present any other symptom of thyroid inadequacy. He had two successful cases. After chronic gastro-enteritis thyroid opotherapy is, as a rule, ineffective.

Dr. Rocaz found that in stout, obese subjects, of arthritic diathesis, in whom the cutaneous affection is not ameliorated by a change in the diet, thyroid medication often gave excellent results, especially noteworthy because previous remedies had been exhibited without benefit. At the commencement of his investigations he believed that seborrhœic eczema alone justified thyroid medication, as in this form of eczema the results of this treatment have been the best, but he has since seen the other varieties of eczema in nurslings do well with this treatment. He, therefore, believes that as often as one meets with eczema in the young infant which fails to respond to the usual therapeutic measures, one ought to try thyroid medication, which very often affords unexpected successes. He also affirms that this treatment is without danger, and administers to his little patients a small initial dose 5 centigrammes per diem; then the dose is gradually increased to 10 and 15 centigrammes per diem. In this way he has not observed any accident in the course of this treatment, which in certain intractable cases has been employed for long periods of time.

Dr. Graham Little has found calcium lactate of great benefit, especially in children, where there is much œdematous infiltration into the skin, with vivid redness and itching. He gives it either in small doses—5 to 15 grains—three times a day before meals, or in large doses, 3j, two or three times a week. In the latter method he finds it a convenient way to administer it by suspending it in milk. Calcium lactate should be continued only until the symptoms of œdema and itching have subsided.

The condition of any patient, young or old, during an attack of eczema is not one of prime health, and we must not lose sight of this fact; hence, after correcting the various secretions and excretions and regulating the action of the *prima viæ*, and removing all causal factors, so far as we are able, we should direct our attention to the general health of the child. There is always a great strain upon the nervous system in these cases owing to the increasing irritation.

Fatty foods and oily substances are usually well borne, unless there is some special idiosyncrasy. We will, therefore, prescribe cod liver oil,

either pure or some of its preparations; tonics, such as the milder preparations of iron and bark; hypophosphites and phosphates, etc., along with change of air and scene.

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## THE RELATION OF THE LABORATORY TO MEDICINE.\*

By NORMAN L. HARRIS,  
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**I**N addressing so representative a body as this association I cannot but feel that I am almost engaged in a work of supererogation when I presume to speak upon a topic so familiar to you all. Despite this feeling on my part, I am led to believe that upon occasion an oft-told tale, if palatably redressed, may prove appetizing enough. I will venture an experiment.

A careful perusal of the pages of the history of medicine plainly demonstrates the long and tortuous path pursued from the ages of earliest record down to relatively recent times. We can see how at one time the noble art was held in the clutches of superstition, its acts governed by a deep-rooted primal belief in demonology; at another time religious doctrines dominated and intimidated progress; and at other periods metaphysical discussions held back advance and even wrecked discoveries. The history of this struggle onwards towards the light of knowledge, marked as it has been by errors and lapses, is fascinatingly punctuated by epoch-making contributions here and there along the line by an occasional genius or hard-headed thinker. It is not to be doubted, however, that had it not been for the wonderful development of the sciences the modern status of medicine would have been held back for an indefinite period. Our debt to the pioneers in chemistry, physics, and biology, and to their successors down to the present moment, is enormous, and we must realize that from being considered as a thing apart, medicine actually shares in or belongs to all of the sciences.

The development of the laboratory and its final establishment as an aid in the furtherance of medical teaching and study has been so ably presented by such an eminent authority as Prof. William H. Welch, in his address on the "Evolution of Modern Scientific Laboratories," that I will not attempt the foolish task of gilding gold; but I need only emphasize how the invaluable researches of such as Harvey, Magendi, Hunter, Bichat, Laennec, Claude, Bernard, Virchow, Pasteur, and Koch paved the way for the founding of places where ideas may be tested, problems solved, and enquiring minds trained.

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\* Read at the meeting of the Ontario Medical Association, Niagara Falls, May 30th and 31st and June 1st, 1911.

What a powerful stimulus, emanating from such places has medicine received in these latter days! In fact, the laboratory constitutes the very foundation upon which medicine of to-day rests. It is the very powerful lever resting upon the fulcrum of ascertained facts that has elevated medicine from the dust of empiricism to the cloud-level of science, along which runs a road perhaps none the less rough and long to a goal of ultimate success.

At this point I may seem to some of you to be carried away with the greatness of the importance of the science of the laboratory at the expense of the practice of medicine. I am not. I am conscious of the great importance of both sides of medical advance and teaching. I think that we scarcely yet realize the extent of the tremendous revolution in medical thought and practice the laboratory has introduced. We are yet involved in the process; and, although some of us feel that in the training of students far too much time is expended in laboratory work—profitless it may, in part, appear—and too little time spent in preparation for practice, I do not doubt but that proper adjustment will come about when the evolution in progress becomes clearer to us.

Turning now to a more critical analysis of the relation of the laboratory to medicine, I will attempt to put before you in concrete fashion what I believe to be its chief functions.

In the first instance, the laboratory occupies the very fundamental position of being the place, par excellence, of the inductive method of impartation of knowledge; in the second, it is, or ought to be, the place of sound mental training and of cultivation of powers of observation; in the third, it represents applied science; and in the fourth instance, it is the place of research and experiment. Taking these up seriatim:

1. Gone forever are the days of medical instruction wherein the didactic lecture played the entire role as the imparter of knowledge in the medical school! The lecture will, of course, continue to hold a place in the curriculum of studies, but not so lofty or important a one as in pre-laboratory days. It has now almost assumed the humble duties of handmaid to the laboratory course, particularly in those instances wherein the text-book in use in a class has developed out of the yearly lectures of the head of the department.

As a place of instruction the work of the laboratory in a department requires delicate adjustment to the medical courses. I do not now purpose to enter into a discussion of the relative number of hours to be assigned to lectures and laboratory, nor of the time given to one subject of instruction relative to that of other subjects in the curriculum. At the present juncture they are irrelevant, though interesting, questions. Taking into consideration as granted that a laboratory is well manned and equipped, the courses should be planned to conform to the best

usage of university scientific standards. Instruction should be amply afforded both in routine work, advanced work, and research—all under the immediate supervision of either the head of the department or of one or other competent assistants.

In the medical courses, to properly assign and regulate the advanced work and research is sometimes a matter of no small difficulty. The number of properly qualified students, their mental calibre, their fitness for the lines of work, the time at their disposal, are some of the many points that have to be taken into consideration in establishing and carrying on such courses. Of the two that of advanced work is the more easily susceptible of solution. Courses may be designed throughout the year wherein work may be assigned, for a few hours a week—say, five—and the nature of the topic may be so planned as to throw the student, in part, upon his own resources, and thus encourage in him a necessary initiative. In this work the instructor can also train the student in the best ways to gain access to the literature of the subject in hand, and even demand of him a short thesis relative to the topic assigned. By a properly balanced plan of advanced work we can foster a spirit for investigation, and perhaps gain a recruit for a task of serious research.

Within the limits of our ordinarily organized four-year course in medicine it seems to me to be an almost hopeless task to carry successfully through a piece of work worthy the name of research, even with our most promising students. The curriculum is so crowded and the routine so oppressive that they impose both a mental and a physical strain upon the individual, no matter how full of enthusiasm he be, that attempting research seems unjustifiable and indefensible.

True, research among our students should be encouraged, but let it be inaugurated at the termination of the periods of the scientific and clinical courses, when the burden of routine may be abolished or mitigated for nine months or a year or two. If such a plan were carried out a better choice could be made of candidates upon the basis of fitness, and would lead to the performance of investigation of a sound and creditable character, not masquerading under the name "research." By the encouragement of properly conducted research we also may be able to develop men and conserve their services at a later date to scientific pursuit and teaching who might otherwise pass on to the great and alluring field of active practice. For I would have you remember that the future will make even greater demands upon us than has the past for suitable assistants and worthier successors in the fundamental branches of our profession.

2. For affording a sound mental training and for cultivating the powers of observation among a body of students it goes without saying that the laboratory must be officered by capable persons, who, in addition to being well versed in their subject, ought to be selected also for their

ability to impart knowledge. Examples can be recalled by most of us when, as students, we sat under men noted for their erudition, but displaying an alarming innocence of an even moderate pedagogical ability, which to some of us may have proved a stumbling-block to progress and implanted in us perhaps a veritable dislike for our studies. Or classes may be handled by instructors who are "unfaithful servants," regarding the students collectively as an intolerable burden, feeling that their duty is done if they dispense knowledge after the perfunctory manner of the "quick lunch" counter.

On the contrary, no better reward can come to the conscientious instructor than in the very apparent, although verbally unexpressed, appreciativeness on the part of the class of his efforts to give the best that is in him. This success may be attained by giving the greatest amount of personal attention to the class as individuals, combined with general criticism, demonstration, and sharp questioning concerning the occurrence of phenomena in the course of close objective study.

It is quite remarkable how frequently a class of seeming mediocrity may be spurred on to good and reasonable endeavor by carefully applied methods for stimulating mental processes and awakening the latent powers of observation. This leads usually to the development of a healthy independence of mind which is far removed from that mental type which is content with a senseless cramming up of oftentimes dissociated bookish statements of facts.

Of the utmost importance is the open manifestation of the fruits of a careful laboratory training in the students when they enter the clinical period of study. For then it is that they need the ready aid of an alert and reasoning mind and a keen power of observation if they are to successfully solve the thousand and one enigmas to be met daily in the dispensary classes and ward rounds. Such a training is destined to last the student throughout his career either as an investigator or a practising physician.

There may be some present who will be inclined to disagree with me on this statement; who already feel that our students are so crammed full of science" that the laboratory training unfits them for acquiring a due appreciation of clinical viewpoints and methods. In fact, I have time and again heard it expressed, "We don't want to turn out scientists, but practitioners of medicine." Then, in Heaven's name, O Clinicians, go to! Turn our youthful, so-called "scientists" into practitioners! The matter of so doing lies in your hands, not ours. To fail is to proclaim your own inefficiency as teachers. For I can assure you, out of an experience of some length of service, that the bulk of student material is to-day not worse than formerly, but better—more alert, more discriminating, and more enquiring. He who would be their teacher must himself arise with the lark.

Another point redounding to the credit of careful laboratory instruction is worthy of note. By the very processes used to develop mentally robust students those to whom nature with niggard bounty has allotted the amount or quality of nervous gray matter are with sureness eliminated from the race.

I maintain, then, that the laboratory justifies most thoroughly the high place it now occupies in the teaching of medicine, not merely from the fact that it is one of the great dispensators of knowledge, but largely, if wisely conducted, is the strongest of developmental forces in the successful making of future disciples of Aesculapius.

3. It is almost needless for me to lay emphasis on the importance of the laboratory as the place of applied science. I need only mention the almost daily use in hospital service of the microscope, polariscope, the X-ray, radium emanations, the many clinical bacteriological and biological tests, and at times even the procedure of the physiologist, to prove the value of the laboratory as an indispensable adjunct to the practice of clinical medicine.

This appreciation of practical science is again shown in the establishment by city, provincial, and state authorities of laboratories more or less well equipped for aiding the busy practitioner in his problems of service to his patients. Private laboratories for the same purpose exist in many places, where, for reasonable remuneration, all sorts of tests and examinations are carried out. In not a few instances men with large practices employ in their offices of consultation skillful persons usually recent graduates, who render prompt and efficient service in clinical diagnosis.

4. As a place of experiment and research I feel that in the highest degree the laboratory more than justifies its existence. It constitutes the great testing-shop of ideas and theories, either generated within its walls as the result, perhaps, of previous experiment or of those coming to it from beyond, the results of which are at once made available to application in the clinical field. As previously pointed out, medicine is no longer confined within narrow bounds, but constitutes a field of activity so wide as to demand the assistance of the other sciences to help solve its problems. And, realizing full well that in this day and generation of progress in knowledge, no one man is capable of becoming an expert in all of the sciences, we are, in consequence, witnessing medical research develop in complex form, where laboratories are established for research in physiology, pathology, chemistry sanitary science, and the like, attached to or entirely apart from the organization of medical school or university.

And so profoundly has the development of the laboratory affected the course of medicine abroad, particularly in Germany, that that "holy of holies" of the clinicians—the hospital ward—is regarded as a labora-

tory of research, as it essentially is and properly should be. There the professor of medicine and his chief assistants are both excellent clinicians and excellent laboratory workers; their duties to the hospital markedly limit or abolish private practice and leave ample time for instruction and research. In the United States the same development has begun—witness the establishment of the hospital in connection with the Rockefeller Institute for Medical Research, where diseases of all sorts may be studied intensively, with the assistance of scientific methods and keen clinical observations, the right of remunerative practice being denied the staff. At the present moment the authorities of the Johns Hopkins University, appreciating the great value of this movement in medicine, are formulating plans whereby the heads of all of the clinical departments be denied the right of private practice, and confine their whole attention to the development of ward material for purposes of instruction and research.

Reading, then, the signs of the times correctly, it appears that medicine has now entered upon a new and profitable era—upon a period of development wherein the scientific or laboratory idea is effecting a cleavage in the clinical field, both in its methods and its personnel. Revolutionary as it may now appear, the clinical branches in our teaching institutions will in the future be most largely filled by those who are at the same time competent clinicians and carefully trained workers in one or other line of scientific research, devoting most of their time to instruction and investigation and less or none to the distractions of private practice.

At this juncture I do not wish to be adjudged as one who is engaged in belittling the efforts of the clinical professor, past or present; that would be wickedly unjust, but I do believe that the time has come when not to acknowledge this evolutionary trend in clinical medicine is to deny rational progress towards the solution of the innumerable and weighty problems confronting us.

Let me say, in conclusion, that it is my firm belief that in the untrammelled, concentrated study of the phenomena of disease, with the ward as the laboratory, will medicine become truly scientific (in the best sense of that word), therefore truly rational, with hopes of conquest its best endeavor and success its ultimate goal. The numbers of those who practice or pursue the "art" of medicine will yet increase and reap larger and more abundant rewards in satisfaction of work well done than has hitherto been dreamed of. The change will evolve a man better taught, better trained, and, possibly, possessed of better judgment. For the new era will demand the survival of the fittest to survive, and the practice of the profession of medicine will in even greater degree be counted the most honorable of all professions.

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## CURRENT MEDICAL LITERATURE.

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### MEDICINE.

Under the charge of A. J. MACKENZIE, B.A., M.B., Toronto.

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#### DISEASES EARLIEST DESCRIBED BY AMERICANS.

1. *Dermatitis Herpetiformis*.—This receives the European term, *Morbus Duhringi*. An authoritative article may be consulted in Louis A. Duhring's *Cutaneous Medicine*, 1898 (now out of print, the plates having been destroyed in a fire, after one edition was partly issued). 'Duhring insists upon the designation *herpetiformis*, and objects to the use of the word *multiformis*, as he believes the eruption 'assumes a form governed by nerve distribution.

2. *Neurasthenia*.—An ailment made distinct in the writings of Beard. *Neurasthenia* is 'losing some of the elementary significance which he gave it. In the studies of S. Weir Mitchell and others the primary character of one group so characterized is separated by the secondary or symptomatic *neurasthenias*. Dana carefully 'distinguishes *neurasthenia*, in and of itself, from the *neurasthenic syndromes* of paresis, and toxic conditions.

3. *Wet Brain* (alcoholic cerebral oedema).—Charles 'Loomis Dana reported a series of such cases. A cerebrospinal fluid cell-count is useful in diagnosis. A Wasserman may indicate syphilis, which of itself is not causative.

4. *Phrenasthenia* (psychasthenia).—Under the former head early cases were first described by Dana. *Psychasthenia* has recently assumed an important aspect. The idiopathic or primary instances of *phrenasthenia* constitute a pathologic entity of great importance.

5. *Heat Exhaustion* (opposed to insolation, or sunstroke).—Horatio C. Wood described these cases and in 1876 treated a great series of them. The surface of the body becomes 'cool and moist; prostration is extreme.

6. *Malaria*.—John K. Mitchell, in 1849, first scientifically distinguished this ailment, although Hippocrates, in the fifth century B.C., had written of the fever contracted from swamps 'or marshes.

7. *Athetosis*.—W. A. Hammond first described these movements in 1871.

8. *Post-Paralytic Chorea*.—S. Weir Mitchell, in 1874, gave us the earliest recognition of this condition.

9. *Adiposis Dolorosa*.—F. X. Dercum described this condition first.

10. *Bell's Mania*.—Bell, of the McLean Asylum, first recognized this ailment.

11. *Eye-Strain*.—George M. Gould deserves the credit for separating this syndrome so clearly and emphatically as to constitute one single and effective entity.

12. *Thermic Fever of the South*.—John Guitéras described this, and is quoted by Tyson as giving his belief in its infectious nature, occurring in different members of one family.

13. *Starvation Fever*, of Da Costa.

14. *A-typical Continued Fever of Nashville*.—Cain, according to James Tyson, has described this.

15. *Simple Continued Fever*.—J. M. Da Costa, 1896, and Baumgarten (St. Louis, Mo.), in 1893.

16. *"The Slows"*.—A Western ailment called Puking fever, according to Tyson.

Of these sixteen morbid processes it is interesting how many are the result of the work of neurologists, viz.: Dana, S. Weir Mitchell, F. X. Dercum, H. C. Wood, and Beard.—*The Medical Times*, July, 1911.

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### MEDICINE IN MEDIAEVAL EGYPT.

An interesting article by M. Paul Tribier, which appeared in the *Presse Médicale d'Égypte* last January, throws some curious sidelights on the state of the medical profession in Egypt before the introduction of European doctors during the reign of Mehemet Ali. For many centuries previously there seems to have been no regularly organized profession in Egypt. The medical knowledge of the Arabs had disappeared almost completely under the Mamelukes, and at the time of Napoleon's occupation of Egypt the French army found the country entirely destitute of properly trained and qualified physicians. Their place was filled by a horde of unqualified practitioners, who were controlled by a state official called the mohteceb, whose duty it was to enforce the observance of certain rules and regulations upon the members of the different trades and professions.

One of the most important duties of this functionary, whose office seems to have come into being somewhere about the twelfth century, consisted of a close supervision of all matters relating to public hygiene. For instance, all who wished to practise medicine were obliged to bind themselves by oath before the mohteceb never to prescribe such medicines as might be injurious to the health of a patient, nor to tell people about poisons, and never to show a pregnant woman the way to procure an abortion, or a man how to destroy the powers of procreation. Moreover, the oculist had to prove his knowledge of the writings of Honein, and the bonesetter his acquaintance with anatomy and the art of massage

before the mochteceb would allow them to prey upon an ignorant public. Herbalists and sellers of lotus leaves were under police supervision, whilst the proprietors of public baths were forbidden to admit any sick person into their establishments, and the most stringent rules were made to ensure the purity of all provisions sold to the public.

Wise as these rules undoubtedly were, in too many instances they were treated as a dead letter, and at the beginning of the nineteenth century the mochteceb was little more than an examiner of weights and measures, who carried out his task with all the cruelty of an Eastern despot. Practitioners of the healing art were divided into two principal groups—hakims and djerrahs. The former, corresponding to physicians, usually acquired such knowledge as they possessed from tradition, only the most learned amongst them having read the Canon of Avicenna, and other ancient authorities. They classed all human ills under four headings—hot and cold, moist and dry—and divided temperaments into the fat and the thin. Their diagnosis was usually made from the state of the patient's pulse, and their treatment consisted of tonics, purgatives, and cooling and heating draughts. The djerrahs, who practised surgery, were barbers, who formed themselves into a corporation, at the head of which was the djerrah-bachi; apparently they learnt their trade by the simple process of experimenting on the public. They performed the operations of cupping, bleeding, and scarifying; treated fractures, bruises, and dislocations; drew teeth, opened abscesses, mutilated eunuchs, and circumcised male children. Matrons circumcised little girls and stitched up the vulvar orifice in black slaves. They also acted as midwives and attended women in sickness. The djerrahs attempted the treatment of hernia, though with little success; they had fairly good results in cutting for stone. They sometimes, though seldom, performed amputations in a rough and ready way; they operated for cataract and treated diseases of the eye. Besides the hakims and djerrahs, there were bonesetters or mougabbers, who confined themselves to the treatment of fractures and dislocations.

It is hardly necessary to add that the Egyptians in those ages appear to have placed as great faith in the efficacy of charms and incantations as in the prescriptions of their doctors. Dust from the tomb of Mahomet, or water from the sacred spring at Zem-Zem, at Mecca, were firmly believed to avert disease, whilst another favorite superstition was to drink the water in which had been washed a text copied from the Koran. A certain cure for eye trouble was to take a piece of dry earth from the right bank of the Nile at Boulac and cross the river to deposit it at Embabeh, on the opposite side; whilst barren women were wont to walk seven times under the stone slab on which the bodies of beheaded criminals were placed, and then bathe the face in the water in which the corpses had been washed. The essential part of this treatment consisted

in its being carried out in unbroken silence, a task of some difficulty if the ladies of ancient Egypt suffered from weak nerves.

These superstitions are all the more remarkable inasmuch as we learn from M. Tribier that the Egyptians, who frequently relied on home treatment instead of calling in a doctor, were not without a certain amount of real therapeutic knowledge, such as the usefulness of diet in cases of fever and the efficacy of baths in inducing perspiration. This was the state of things when European medicine was introduced into Egypt by Clot-Bey and other Frenchmen about 1830. That the innovation was not welcomed with enthusiasm is only what might have been expected. The attitude of the conservative Egyptian is shown in the following fragment of a song of Hassan, a soldier who, after campaigning in Arabia for three years, returns to Egypt: "And forthwith fever seizes me and I am taken to the great hospital of Abou-Zabel, and the frendgi (French or European) doctors, more unbearable than my disease, forbade me to eat in order that they might sell my rations. God damn them!" At this his betrothed, Fatma, comes on the scene. As soon as he hears her voice, he says: "I throw the cup in the nurse's face; strength comes back to me and flows in my blood; I get up cured and the stupid doctors fancy it is their remedies that have made me well." But there is nothing in this specially characteristic of Egypt in its pre-European state. Hassan's opinion of medicine would be echoed by many in the countries that call themselves enlightened at the present day.—*British Medical Journal*.

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### FLIES IN THE TRANSMISSION OF POLIOMYELITIS.

Flexner and Clark, in *J. A. M. A.*, report the following very interesting experiments on the question of the transmission of the virus of poliomyelitis. Laboratory-bred flies have been permitted to feed on the fresh spinal cord removed from monkeys inoculated with the virus of poliomyelitis and recently paralyzed. After feeding, the flies are removed to a fresh receptacle, from which certain numbers are removed at intervals, killed with ether, then comminuted with sand and extracted with saline solution, from which a bacteria-free filtrate was obtained by means of a Berkefeld filter. Two monkeys were injected intra-cerebrally with 3 ccm. of this filtrate; the first monkey with a filtrate prepared from seven flies which had lived on clean surroundings for twenty-four hours after having fed on spinal cord, and the second from ten flies forty-eight hours in clean surroundings. Both monkeys developed lesions which at autopsy were found to be typical of experimental poliomyelitis. The authors make this conservative statement: "The experiments recorded merely show that flies contaminated with the virus of poliomyelitis harbor the

virus in a living and infectious state for at least forty-eight hours. They do not show that this is the limit of the period of survival and they throw no light on the question whether the virus is retained merely as a superficial contamination or whether it can survive in the gastro-intestinal tract."—*Boston Medical and Surgical Journal*.

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### HYPOPITUITARISM.

By Ernest S. Cross, M.D. (*New York Medical Journal*, 15th October, 1910).—The writer considers that certain anomalies of growth connected with pituitary gland disease, the relations of which have so far been obscure, seem now to be in a fair way to be cleared up, thanks to the recent work which recognizes the pituitary as a secreting gland, liable to functional over-activity and under-activity, analogous to the conditions possible in the other ductless glands.

The work of various investigators shows (1) that removal of the posterior lobe causes very little bodily disturbance, (2) that the products of the posterior lobe possess diuretic and blood-pressure raising properties; (3) that the removal of the anterior lobe in experiments on animals causes a definite alteration in the structure and functions of various parts of the body, so that this portion of the gland seems chiefly to be associated with the metabolism of fat, the growth of the body, the sexual activities, and to be bound up in some obscure way with the functions of all the other ductless glands.

This gives ground for believing in the possibility of the following theories:

1. That hypersecretion begun in foetal or early life leads to gigantism.
2. That later, when only circumferential increase in size of the bones is possible, it leads to acromegaly.
3. That defective secretion from an early period produces a peculiar lack of physical development associated with adiposity, and known as "dystrophia adiposo-genitalis."
4. Defective secretion developing in later life gives rise to varying clinical pictures of adiposity and genital atrophy.

The writer emphasises the general infantilism so common in the third class, and cites the following case as an example of it:

P. Y., æt. 22. Family history unimportant. She was a premature child, but fat and healthy. Growth very slow; anterior fontanelle open till age of 16, at about which time second dentition also took place. Menstruation never established. General health excellent; bright, cheerful, but preferring the society of children. Physical examination showed

the following abnormalities: Measures 4 feet 2½ inches in height; much adipose tissue all over the body, the breasts in particular being very large; complete absence of hair in pubic and axillary regions; teeth infantile, widely spaced in places, and crowded in others; pelvic organs and external genitalia infantile; beyond some immaturity, mentally normal.

A skiagram taken to determine, if possible, the condition of the pituitary body, showed the sella turcica of relatively small size.—*Glasgow Medical Journal*.

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### THE PRESENT STATUS OF INOCULATION THERAPY.

Martin J. Synnott, Montclair, N.J., describes the department of therapeutic inoculation at St. Mary's Hospital, London, where Sir Almroth Wright has developed the field of preventive inoculation and curative vaccination against infectious diseases. This is the best place to go for instruction in these lines. By inoculating a patient with a bacterial vaccine one may create a state of resistance against infections, and assist him after he has contracted a disease to resist the attack of the microorganisms. Opsonins are protective substances in the blood serum which unite with bacteria and prepare them for the attack of the leucocytes. Without these substances the leucocytes cannot attack the bacteria. The opsonic index is the measure of a patient's resisting power against the microbe in question. A vaccine is a standardized suspension of killed bacteria in physiological salt solution, preserved in lysol or carbolic acid. Inoculations with a vaccine raise the opsonic power of the blood, increase phagocytosis, and strengthen the resistance of the blood to the disease. The dose should be so regulated as to avoid a severe negative phase; this should last not more than twenty-four hours. The positive phase will make the patient feel better, and should last three to ten days, at the end of which another inoculation should be given. With absent negative and with a short positive phase the dose has been too small; a severe negative phase means a dose too large; an excessive dose may produce a severe and fatal negative phase. Inoculations should be given twice a week. Tuberculin vaccine is of the utmost value in localized tuberculosis. In pulmonary tuberculosis, to obtain benefit it must be used early. Inoculations are contraindicated in diffuse generalized processes, with fever and systemic infection and in acute infections like pneumonia and typhoid. In convalescence recovery may be hastened by vaccines. Prophylactic inoculations have prevented typhoid and some other diseases. Inoculations should be given by a man accustomed to their use, and under the control of the opsonic index. Autogenous freshly-prepared vaccines are to be preferred, but stock vaccines may be useful.

Inoculation offers a boundless and as yet little explored field in therapeutics.—*Medical Record*, June 3, 1911.

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### FROCHLICH'S SYNDROME IN CASES OF PITUITARY TUMOR.

R. Ottenberg, M.D. (*New York Medical Journal*, 17th December, 1910), commences his paper with a full history and a pathological report of a case, the outlines of which are as follows:

Patient, aged 64, admitted in moribund condition. He died almost at once, but in the ante-mortem clinical note he is described as very fat, with a nearly female swelling form, and a striking absence of hair growth. One of his relatives stated that he had been corpulent all his life; he had been married twenty years, but was childless; he had been impotent and his marital relations most unhappy; eyesight had been bad, and recently he had worn glasses; latterly he had frequent attacks of dyspnoea, in one of which he had died.

*Post-mortem Examination.*—Body of very fat man, weighing about 19 stones, and measuring 5 feet 3 inches in height. Neck organs very congested. Thyroid, very large; left lobe, 100 grammes; right lobe, 50 grammes; microscopically, a simple colloid goitre. Flat, firm, circular tumor, 5 cm. in diameter, in region of hepatic flexure of colon; on cross-section total infiltration of intestinal wall; microscopically, adenocarcinoma. Adrenals enlarged and microscopically thickening of cortex and medulla.

*Genitals.*—Penis only slightly atrophic. Prostate very small and hard; seminal vesicles small; testes atrophic, brownish on section, and microscopically showed a picture of advanced atrophy, with no traces of spermatogenesis.

*Brain.*—Sella turcica greatly dilated by a hard tumor, about size of a large plum, attached by a thick pedicle to its anterior wall, and projecting into the brain like a mushroom. The whole tumor was calcified, except several superficial parts; anteriorly it pressed on both optic nerves, posteriorly on the optic chiasma, and on the left side touched the tip of temporo-sphenoidal lobe. Microscopically it had all the appearances of a benign fibro-adenoma. The hypophysis was pushed to one side, and weighed 0.57 gramme (normal weight in males between 60 and 70 is 0.6 gramme). Microscopically the anterior lobe showed a marked increase of connective tissue stroma, with enormous reduction of the parenchyma; no marked changes in the posterior lobe.

The writer considers that this case must be classed with those showing Frochlich's syndrome characterized by (1) adiposity; (2) loss of

genital functions; (3) loss of secondary sexual characteristics, particularly of hair on face, axillæ, and pubes, which generally occurs in cases in which the hypophysis is injured or destroyed.

Our present knowledge of the physiology of the pituitary gland and its literature is fully discussed, and then shortly summed up in the fact that there is some relation between the pituitary body and the functions of the sexual glands, of the thyroid, of the growth of bone, skin, and hair, and the deposits of fat. Thirty-six cases showing this syndrome are tabulated, and the theories as to its etiology discussed.

In conclusion, the writer states that a consideration of the present case, and of the other cases which have been reviewed, leaves him with the opinion that Erdheim's view as to the nervous origin of Frochlich's syndrome requires further proof, and that for the present the theory of an internal secretion should be retained.—*Glasgow Medical Journal*.

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## SURGERY.

Under the charge of H. A. BEATTY, M.B., M.R.C.S., Eng., and A. H. PERFECT, M.D., C.M.,  
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### GASTRO-INTESTINAL SURGERY.

J. M. T. Finney, Baltimore (*Journal A. M. A.*, June 3), discusses certain problems of gastro-intestinal surgery, and says that the progress that has been made and the perfection of the technic lead to a certain danger. Because, on the one hand, the diagnosis is often so difficult, and requires special training for many of the tests, and superior knowledge in their interpretation, while, on the other hand, the operation has become so much more safe and exact. Therefore, the temptation to slur over the examination and history and rely on an easy exploratory operation is becoming more difficult to resist. To avoid the performance of an unnecessary operation and to prevent unpleasant results, at least four things kept in mind: (1) a correct diagnosis should be made; (2) every care and detail should be observed to make the operation technically perfect; (3) existing conditions should be accurately observed and properly interpreted; (4) the results of operative procedures should be carefully watched and recorded in sufficient numbers and covering long enough periods of time to enable one to judge of the end-results of a given line of treatment. If there was more co-operation between surgeons and physicians in observation there would be more success. Finney points out and illustrates by cases reported some of the difficulties which are met with. For example, gastro-intestinal neurasthenics, so-called, where operation does not reveal a state of affairs readily comprehensible. Two

cases of this sort are reported, and he calls attention particularly to certain pathologic conditions found. These were (1) a greatly dilated upper duodenum and patent pylorus, and (2) the great redundancy of the colon, especially the transverse portion, and its malposition. The first of these he is as yet unable to explain. With it are associated almost invariably changes in the pancreas similar to what has been called chronic pancreatitis by Mayo Robson, and Finney thinks that the two are in some way connected, but just how he does not say. The colonic conditions he is inclined to think will be explained ultimately by the absorption of bacterial toxins. Every case of stomach trouble, he says, is a difficult problem, requiring careful consideration of not only a long list of abdominal disorders, but of some extra-abdominal ones also, and it may at times be most misleading. Great latitude has to be given in interpreting the operative findings, and he reports illustrative cases in addition to those already reported. His summary of the paper is given as follows: "1. Problems of diagnosis present greater difficulties, and are further from solution than those of treatment. 2. Certain operative procedures, gastro-enterostomy, *e. g.*, have reached such a state of perfection that the ease of performance renders them a possible menace, and calls for greater care in the proper selection of cases. 3. The tendency to dogmatize on too little evidence in matters pertaining to the causation and treatment of the so-called functional intestinal neuroses should be discouraged, and a more scientific observation, interpretation, collection, and record of established facts substituted therefor. 4. As a result of the knowledge gained by such comprehensive and exhaustive study of the intricate problems involved, it is not unreasonable to hope that, ultimately, in carefully selected cases, surgery may offer relief to this unfortunate group of gastro-intestinal neurasthenics."

### INFLAMED JOINTS.

The *American Journal of Clinical Medicine* gives the following mixture for this affection:

Acidi Salycili, dr. iij.  
 Tinct. Opii, dr. jss.  
 Ol. Terebinthinæ, dr. j.  
 Ol. Caryophilli, oz. iij.  
 Alcoholis, q.s. oz. xij.

Rub on the affected parts every two or three hours. Chloroform may be substituted for the oil of cloves if desired.—*St. Louis Medical Review.*

## SALVARSAN AND MERCURY.

French (*Lancet*) is not impressed with the case reports on Salvarsan in syphilis, and considers that in forming an opinion on the relative value of different drugs in treating syphilis the following canons may prove useful: Firstly, the drug must be first tried alone and judged on its own merits. Secondly, the manifestations of early syphilis, more especially marked glandular enlargements, when they exist, must be rapidly reduced and removed in three months from contagion. Induration in the chancre must be reduced in from four to six weeks. Mercury can do this. Thirdly, the result of Wassermann tests should be recorded at three, six, and nine months from the commencement of treatment in early case, if this test, when the technique is standardized, is later accepted as conclusive evidence of syphilis. Fourthly, the recurrence of symptoms or relapse within the first six to twelve months from contagion must be noted, bearing in mind that a large number of cases of syphilis are very mild, and often do not relapse even when encouraged to do so by an entire absence of treatment until parasyphilis occurs. Fifthly, the later occurrence, or otherwise, of tertiary manifestations and parasyphilis recorded. Tabes only occurs in one-fifth per cent. of all persons who contract syphilis (Ferrier). Sixthly, the mortality. Judged by the foregoing canons, Salvarsan is far inferior to mercury, and will never supplant it. In the present experimental state of our knowledge, and judging by the literature, it is, French considers, quite unjustifiable to use Salvarsan in place of the judicious use of mercury within the first six months from the date of contagion in average cases of syphilis. By judicious use, he means an intensive course of mercurial inunctions with hydrotherapeutics, in the hands of skilled persons who understand the limitations of use of mercury and are accustomed to treat syphilis. Syphilis, unlike cancer, sleeping sickness, and kala azar, is not a fatal disease, and safer, cheaper, and infinitely better remedies, which are conclusively supported by clinical experience and recent, modern research, lie ready to hand. This is not a statement of case for the prosecution of Salvarsan, but a defence of mercury, which has stood the test of centuries. The other side of the question will probably receive further recognition at a later date, since five out of six of the new organic preparations of arsenic have not stood the test of one year's trial.—*New York Medical Journal*.

## CONTRIBUTION TO BRAIN SURGERY.

During the last six years Professor Hildebrandt (*Deut. Med. Wochensch.*, No. 49, 1910) has performed about one hundred operations

on the brain for the treatment of tumors and the tumor-like manifestations of serious meningitis, epilepsy, and cerebral abscess. Of the cases of malignant tumors only one could be considered as probably permanently cured, although no positive statement in this respect is warranted, as only two years have elapsed since the operation. From his experience the author concludes that a more favorable prognosis is permissible in the case of benign neoplasms of the brain when accessible, although these are much more rare. In view of the fact, however, that the nature of the growth can be only exceptionally determined, and it is frequently doubtful whether a tumor, cyst, or serious meningitis is present, operation is indicated under these circumstances. Owing to the present development of cerebral surgery and its freedom from danger in many instances, it would be a serious sin of omission if an accessible tumor were not subjected to operation, the more so since such patients frequently suffer from severe headaches, and the optic atrophy, if present, tends to constantly increase to complete blindness. To remove the results of the increased cerebral pressure due to the tumor, at least palliative trephining should be done, which may be followed by extirpation of the growth if its nature and character permit.

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#### OPERATIVE TREATMENT OF CANCER OF THE BREAST.

M. H. Richardson, Boston (*Journal of the American Medical Association*, Feb. 4, 1911), says that the only assurance of permanent cure of breast cancer is thorough operation; non-operative methods should be reserved for hopeless cases. Another cause of failure is inadequate operation. He emphasizes the importance of correct diagnosis, and gives illustrations of failures which have occurred, even with experienced surgeons, and unnecessary operations performed. In other cases, and probably a much greater number, the mistake has been the other way. Age should be considered in diagnosis, and when the patient is of cancer age a reasonably certain diagnosis of malignancy is not strong enough to postpone operation unless there are contraindications other than the tumor itself. There are possible exceptions to this rule. There may be a reasonable doubt of any diagnosis in patients of cancer age. In all cases of importance a consultation is advisable, and a single dissenting vote should create a reasonable doubt. The broadest and firmest foundation on which to base a reasonable doubt of the nature of the growth is that of experience, and with those of small experience, and especially physicians, there is chance for a much greater doubt than would be called reasonable. The first consideration in the radical operation for cancer is reasonable thoroughness of extirpation so as to remove all the disease.

The more extensive the operation the better the result, provided the dissection is extended in the same direction as the disease, *i.e.*, along the line of the lymphatics and the great vessels. Richardson describes his own technic, acknowledging his indebtedness to Halsted. He never cut through the clavicles, and seldom subjects to any but palliative operations patients showing the disease above them. The operative mortality is practically *nil*. Indications to operation recognized by him are the presence of and deaths from shock are unknown in his statistics. The contrametastases above the clavicle, beginning skin infiltrations, and beginning chest wall growths. The difficulties of prognosis are reviewed. He would include in the statistics to determine this point, only those cases which have about the same characteristics, and the surgeon must be the judge. He is not impressed with the value of statistics in any case, and does not collect his own in cases of cancer. He thinks they are about the same as those of other operators. He does not establish a definite limit of time of absence of recurrence which we can call permanent cure. Neither five years nor ten years of perfect health means absolute assurance against recurrence. Slowly growing tumors with few perceptible glands in the axilla, and those small, are the most favorable, especially after middle life. Rapid growth or any sign of infiltration or œdema of the breast or axilla makes the case practically hopeless. Only freely movable growths without infiltration or attachments can be called favorable.—*American Journal of Surgery*, April, 1911.

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#### SURGICAL TREATMENT OF BASEDOW'S DISEASE.

In a paper read before the recent French Surgical Congress, Dr. X. Delore (*Münch. med. Wochensch.*, No. 47, 1910) expressed the view that operation, preferably intra-glandular enucleation, was always called for in cases of goitre complicated with Basedow's disease. On the other hand, in true exophthalmic goitre the chief methods that have survived are thyroidectomy and sympathectomy. Kocher's method of preliminary ligature of the arteries, followed by unilateral thyroidectomy, is of value in advanced cases. Ordinarily it is preferable at the beginning to perform a unilateral thyroidectomy combined with ligature of the superior thyroid artery on the opposite side, although the most perfect operation is a subcapsular resection of the posterior surface of the affected lobe. While occasionally complications of toxic character set in after this operation, the results are usually favorable, with relief of the excitement and tachycardia. Complete cures are rare, and a certain amount of exophthalmus and enlargement of the gland persist, the patient suffering also from mild recurrences. Operations upon the cervical sympathetic

should be chiefly confined to resection of the upper cervical ganglion and a portion of the nerve immediately beneath. The result of this procedure usually satisfactory, particularly as regards the exophthalmus, and hence it is especially indicated in cases of moderate goitre with decided exophthalmus.

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## OBSTETRICS AND DISEASES OF CHILDREN.

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### FATAL MERCURIAL POISONING DUE TO VAGINAL INTRODUCTION OF BICHLORIDE TABLETS.

C. B. Schildecker, Pittsburg (*American Journal of Obstetrics*, March, 1911), reports three cases in which patients had been instructed to "use" the ordinary bichloride tablets. Each of them inserted one tablet in the vagina, and, although medical assistance was obtained within twenty to thirty-five minutes, the patients died of general mercurial poisoning enterocolitis, degeneration of the viscera, etc.) respectively four, fourteen, and seven days later. It would appear that a fatal amount can be absorbed from the vagina within twenty minutes. The patients were unable to remove the tablets themselves because of severe spasm and pain.—*American Journal of Surgery*, April, 1911.

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### OVARIAN PREGNANCY.

E. B. Young and L. J. Rhea (*Boston Medical Surgical Joournal*, 1911, clxiv., 264) record a case of apparently ovarian pregnancy in a single woman of 27 years who had flowed irregularly for eight months. Aside from the flowing, the only significant feature was symmetrical enlargement of the left ovary. Operation revealed evidence of an old pelvic peritonitis, a small amount of black fluid blood, and a large recent blood clot completely surrounding the left ovary which contained what appeared to be a large corpus hemorrhagicum. The fimbriated end of the left tube was closed and adherent to the bottom of the pelvis. The sac in the ovary was ruptured. When opened it was found to contain a small embryo. The ovary showed no abnormal adhesions. The right tube and ovary were normal, excepting for evidences of the old pelvic peritonitis. The Fallopian tube of the left side was free from blood clot, and contained no chorionic villi or decidual cells. The cyst wall consisted of ovarian tissue, and it contained chorionic villi.—*American Journal of Obstetrics and Diseases of Women and Children*, April, 1911.

## PUERPERAL INFECTION : CLINICAL VARIETIES AND TREATMENT.

Hassar (*Amer. Journ. Obs.*, lxii., 4) reports 225 cases in which either streptococci, staphylococci, gonococci, or colon bacilli were found. Gonococci may be found on cervical spread slides from the second to the fifth day. This early clinical type will often resolve into a simple toxæmia; a second type develops from the fifth to the seventh day with a sudden rise of temperature and severe pain and tenderness across the lower abdomen. This class includes the greater number of adnexal complications. In 28 per cent. of such cases the infection is not limited to the uterus, but shows itself by remote lesions such as arthritis. The most conservative treatment proved itself best in gonococcal infection. The colon bacillus showed itself from the second to the fifth day by sharp rise of temperature, prostration, and chills. Twelve cases were treated by intra-uterine douching with normal saline, and responded well, usually within twenty-four hours. With streptococci intra-uterine douching and manual cleansing did not meet with success. Those that cleared up quickly did so without treatment, and the cases which developed pelvic exudates, peritonitis, and bacteriæmia, usually had been treated by douching or curettage. The best treatment to be adopted is general and drainage by posture. Staphylococcal toxæmia without complications is rare and usually mild, and is best left alone. When no organisms are found in twenty-four hours' laboratory examination, if the temperature remain up the uterus should be cleaned out manually and by douching. Fifty-seven cases of pelvic exudate are recorded with a variety of organisms which seemed to make little difference in the course of resolution. Streptococci were most frequently found in the typical extra-peritoneal broad ligament abscess. Gonococcus was always intra-peritoneal or tubal in location. The convalescence is hastened in all cases where pus is found, and liberated, but incision of cellulitic masses showed no advantage. Resolution is the rule, and is hastened by hot vaginal douching and ice-bags externally. Pelvic thrombophlebitis was invariably successfully treated by rest, elevation, protection, and ice-bags. Nineteen cases of puerperal peritonitis were most unsatisfactory. Ten were subjected to laparotomy and nine died; the one recovering was from staphylococcal infection. Bacteriæmia was a frequent find in these cases. Of twenty-eight cases with bacteria free in the blood only three recovered.—*Medical Press and Circular*.

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## PERSONAL AND NEWS ITEMS.

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ONTARIO.

Dr. C. A. Cline, of London, was thrown from his buggy and injured quite severely.

Drs. G. Sterling Ryerson and A. W. Mayburry, of Toronto, have gone to Europe for a trip.

The friends of Dr. G. A. Bingham, of Toronto, will be glad to learn that he is steadily improving from the effects of his serious accident.

Dr. Alan G. Brown, of Toronto, has been chosen out of a long list of applicants for the position of resident physician at the Babies' Hospital, New York.

Dr. Caulfield, resident pathologist to the Muskoka Free Hospital for Consumptives, is in Europe studying the subject of tuberculosis. He took part in the discussion on this topic at the meeting of the British Medical Association.

Mr. David B. Mills, of Montclair, N.J., has sent to the General and Marine Hospital, in St. Catharines, a check for \$1,000 in connection with the "Fair of Nations," which was held for the purpose of raising funds for the new hospital.

The Board of Education for Kingston has appointed Miss Jean McCallum, a nurse, to inspect school children, at a salary of \$600 a year. Thus following up the scheme of medical inspection which the board had already adopted.

Dr. Helen MacMurchy, of Toronto, has received a good deal of praise for her investigations into the causes and prevalency of infantile mortality. Dr. James Kerr, of London, and Dr. John Thomson, of Edinburgh, state that it is the best work of its kind they have seen.

Dr. R. E. Wodehouse, of Fort William, and Miss Keefer, of Port Arthur, were married 26th June. Miss Keefer graduated B. A. from Trinity University in 1904 and was the winner of the Governor-General's medal. Dr. Wodehouse was interne at the Hospital for Sick Children, and for a time had charge of the Isolation Hospital.

The Ontario Provincial Board of Health laboratories will in future be located at No. 5 Queen's Park, Toronto, which has been fitted up suitably for the work. Dr. Amyot is in charge, with Mr. Lancaster as his chemical assistant. Attention can be given to bacterial tests and analyses of water, etc.

Since February, 1910, there have been treated in Toronto 80 cases of persons bitten by rabid dogs. After deducting the cost of the treatment the outlay to the province is \$13,140 less than it would have been

by sending these cases to New York. A boy was bitten recently in Toronto and was successfully treated, though symptoms had set in.

Dr. Harry McPherson and wife of Fort Hope, on the Rainy River, 200 miles north of Nepigon, had a very trying experience. She was taken ill with acute appendicitis. The doctor felt the case demanded an operation, which he performed with what appliances he had. Ten Indians were engaged to transport the patient the 200-mile journey. Day after day they journeyed on till the patient reached McKellar Hospital. This rivals the case of Dr. McDowell and Mrs. Crawford in the wilds of Kentucky, more than a hundred years ago.

### QUEBEC.

Smallpox has appeared in Berthier and Drummond Counties, Quebec.

Dr. J. R. Goodall, of Montreal, has been elected a fellow of the American Society of Gynæcologists, to fill one of two vacancies.

Dr. J. George Adami has been elected president of the Association of American Physicians.

There is said to be two thousand cases of tuberculosis in Montreal. During the first four months of this year there were 323 deaths.

Dr. J. A. Ouimet, of Hull, who was arrested a short time ago on the charge of performing an illegal operation, was acquitted by Magistrate Coyette.

There has been such a severe outbreak of smallpox at Lac au Saumon, in the County of Matane, that the Quebec Board of Health ordered the Intercolonial Railway to discontinue all train services to that place.

Dr. Alexander Pirie, who had charge of the X-ray work at St. Bartholomew's Hospital, London, has assumed the same duties at the Royal Victoria, Montreal.

By the death of Gustave Murling a bequest of \$100,000 for the poor of Montreal falls in. Many years ago Gustave Murling lived in Montreal, and received considerable kindness from a number of citizens, including Senator Forget. He has remembered the city for this.

The foundation stone of one of the new buildings for the Montreal General Hospital was laid by Earl Grey on 6th June. It is now ninety years since the foundation stone of the same hospital was placed in position by Sir John Johnson.

Lord Strathcona has given \$100,000 for the proper equipment of the McGill medical buildings. Dr. James Douglas, of New York, gave \$25,000 to encourage medical research work. Dr. F. J. Sheppard was appointed dean of the Medical School for another period of two years. Dr. D. J. Evans was appointed assistant professor of obstetrics, and Drs.

Gruner and Rhea were appointed assistant pathologists. Dr. Wilkins has resigned the chair of jurisprudence.

### WESTERN PROVINCES.

Dr. G. H. Ramsay, of Pense, Sask., will sell his practice for a cash consideration, and his houses, auto, and stables.

A short time ago there was a sharp outbreak of smallpox at Port Alexander, on the Red River, and at Mapleton, in the Selkirk District. Dr. Grain, M.P.P., Provincial Health Officer, prohibited passenger traffic to and from Lac du Bonnet and Point du Bois.

The directors of the Kootenay Lake Hospital have decided to erect new buildings, at a cost of \$60,000, to replace the old and inadequate structure. The friends of the hospital must raise \$30,000 of this sum, as the Government has promised to give an equal amount.

### FROM ABROAD.

The plague in India this year, so far, has caused 650,690 deaths. It has been very virulent this year.

The Berlin Academy of Science has acquired Dr. Otto Hahu's method of preparing radium. It is expected that the supply will be increased by this action on the part of the Academy.

Dr. Alexander Bruce, lecturer on medicine to the Edinburgh School of Medicine and physician to the Royal Infirmary, died, at the age of 57, on 4th June.

The Colonial Medical Council, South Africa, passed a unanimous request that a renewal of the patent for Mr. Steyn's cancer cure be not granted.

Some of the medical societies in South Africa are agitating for a union of all the medical societies. The opinion is expressed that better work could be done.

A signal honor was done Dr. Abraham Jacobi, of New York, by his election to the presidency of the American Medical Association. He is now in his eighty-first year, and full of activity.

Dr. H. S. Tanner, who many years ago fasted forty days, wrote to the Governor-General offering himself as a substitute for Angelina Napolitana. Dr. Tanner is now 82 years of age. It was a safe offer to make.

The death rate in the German Empire is 22.4 per 1,000; in Britain it is 17.7. The infantile mortality in Germany is 192 and in Britain 136 per 1,000. The German birth is a little higher than that of Britain, but it is gradually falling.

The trade in the Indian hemp is growing rapidly with some portions of China, now that the trade in opium is being curtailed. It is claimed that the effects of the hemp are more injurious than those of the opium plant. There is no check on the sale of the Indian hemp.

Many will regret to learn of the death of Sir Robert W. Boyce, professor of pathology, Liverpool University, on 16th June. He did splendid work on tropical diseases. The magnificent laboratories of the university were the gift of Mr. Johnston, his father-in-law.

The Royal Commission that was appointed ten years ago to investigate the question of human and bovine tuberculosis has issued its report, to the effect that man and bovine animals can infect each other. Children are readily infected through cow's milk, but not so in the case of adults. Great care should be taken over the milk supply for children.

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## OBITUARY.

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### G. HAEMACKER, M.D.

Dr. Haemacker, of Elmira, died suddenly, June 26. He was 24 years of age. He was buried in Preston.

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### A. T. WATSON, M.D.

Dr. Watson, who had practised at Leamington, died recently in the Victoria Hospital, London.

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### D. L. McALPINE, M.D.

Dr. McAlpine died in Vancouver, B.C. He was born in Scotland in 1834, and graduated in Toronto in 1863. For many years he followed his professional work in London, Ont. In 1884 he went to British Columbia, where he was surgeon to the construction camps for the Canadian Pacific Railway. Three sons are doctors—Dr. J. A. L. McAlpine, London, Ont.; Dr. K. K. McAlpine, Seattle, and Dr. Thomas McAlpine, on the staff of the General Hospital in St. Louis, Mo.

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## BOOK REVIEWS.

## THE APOLLINARIS SPRING: ITS PHARMACOLOGICAL AND THERAPEUTIC PROPERTIES.

By Professors Dr. Kionka, of Jena ; Dr. E. Hintz, of Wiesbaden ; and Dr. G. Frank, of Wiesbaden (a). A translation has been published, in pamphlet form, of an interesting report of the recent investigations of this well-known spring by the eminent German scientists named above.

These investigations were made in order to be presented to the Prussian Government, who, in 1908, had been appealed to by the proprietors of Prussian mineral springs to pass an act for the better protection of these springs. Accordingly, an act for this purpose came into force on January 1, 1909. This act enables owners of mineral springs to petition the ministers charged with such matters to establish protected areas around such springs, provided the authorities are satisfied that the nature of the spring in question justifies such state protection. The proprietors of the Apollinaris spring, in order to establish this point, and the claim that the spring is of adequate value to the public, instructed the well-known German scientists named above to carry out the necessary investigations, and to furnish the information required by the Prussian Government. Satisfied with these reports, the Prussian Government has declared the Apollinaris spring to be of "public utility," and accorded the protection asked for. Only now have these reports thus become available for publication, and they have been accordingly translated and presented to the medical profession as of much practical interest.

Prof. Kionka states that, after a minute and detailed investigation, he was satisfied that the Apollinaris water was not in any way altered by the manipulations necessarily associated with its collection from the spring, its storage, bottling and exportation. He was also convinced that, from a hygienic point of view, every care was taken, even to the minutest detail.

He next proceeds to estimate the therapeutic value of Apollinaris water in the form in which it is sold to the consumer. As an "alkaline acidulate" water it possesses the therapeutic properties of that group of mineral springs. The carbonic acid contained in the water, or which is set free in the stomach under the influence of the acid juices of the latter, exercises its well-known beneficial effects on the digestive and motile functions of that organ. Accordingly, the use of Apollinaris is to be recommended in all those diseases of the stomach which entail depression of the processes of digestion, especially those which are connected with more or less pronounced gastric atrophy. The alkalinity will serve to reduce gastric hyperacidity, a common symptom in such diseases. It

also exerts a certain beneficial influence on all mucous membranes by promoting secretions. It is, therefore, useful in all cases of slight catarrh of the bowel, and particularly so in similar affections of the respiratory organs.

The relatively large amount of earthy alkalies it contains further commends its use in these slight cases of catarrh of the bowel.

For gouty subjects, and pre-eminently for diabetics, its alkalinity and other properties render it most especially useful.

In certain kidney affections the diuretic effect of these alkaline waters proves very valuable, and in these cases those alkaline waters which contain, like Apollinaris, a considerable quantity also of earthy alkalies have always been preferred.

In addition to Prof. Kionka's report there is one by Prof. Dr. E. Hintz, of the Fresenius Laboratory, Wiesbaden, who was associated with Prof. Dr. Frank, also of Wiesbaden, a bacteriological expert. These two eminent scientists, by personal inspection, made themselves fully acquainted with the method and the whole circumstances attending the working of the Apollinaris spring. They describe fully the method of collecting the water as it issues from the spring and its subsequent supersaturation with carbonic acid gas, only the natural gas, arising from the ground around the spring being used, the purity of which is controlled by continual examination. They also bear testimony to the extreme care and severe supervision with which the bottling is carried out.

They agree with Prof. Kionka that Apollinaris belongs to the group of "warm, alkaline acidulate" waters, that it contains hydrocarbonate of soda to a predominant degree. The constancy of its composition has been proved by repeated analysis at varying intervals during half a century.

Bacteriological examination satisfied them that the water was of exceptional purity, and their general conclusions, based on personal investigations at the spring, are that the mineral water of the Apollinaris spring, as exported, "fulfils all the requirements which can be demanded of a pure, alkaline acidulated water, and that the methods established at the spring may be described as perfect."—*Medical Press and Circular*, London.

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#### THOUGHTS OF A CATHOLIC ANATOMIST.

By Thomas Dwight, M.D., LL.D., Parkman Professor of Anatomy at Harvard. Longmans, Green and Co., London, New York, Bombay, and Calcutta.

This little volume is intended to set forth what catholics of scientific attainments believe on matters of evolution and such topics where science and dogma conflict. The case is well stated, and affords much useful

information on the steady growth of opinion. We congratulate the author on this frank statement.

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### INTERNATIONAL CLINICIS.

Volumes I. and II. for 1911 are just to hand. They bear the evidence of careful preparation, and will be fully noticed in our next issue.

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### THE COMMISSION OF CONSERVATION OF CANADA.

This commission is doing good work. It is bringing to the front what we have long contended for, that the leading asset of the country is a healthy population.

One of the recent publications under this commission deals with insanitary housing. The information is quite timely and useful.

Another publication takes up the Ottawa epidemic of typhoid fever. It is clearly shown that sewage-polluted water was the cause. We object to "unsanitary" for "insanitary."

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### MISCELLANEOUS MEDICAL NEWS.

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TO THE MEMBERS OF THE MEDICAL PROFESSION IN THE  
COUNTIES OF HURON AND PERTH—DIVISION NO. 4.

Dear Doctor,—I desire to place before you a very important matter for your consideration, and I shall be pleased to receive your opinion regarding it, viz., the Council examinations.

There is so much opposition to the present system that it is imperative it be changed, and it is not an easy task to decide how best to make the change, hence I wish to get suggestions from as many of this division as possible. It may not be amiss, in order that you might the better advise, to place before you, briefly, the course pursued by other councils in our provinces.

In British Columbia, Alberta, and Saskatchewan there are no universities, and the councils are the sole examining boards.

In Manitoba the Council has a representative on all examination committees of the university medical examinations, except in physics, chemistry, and zoology; and the university also has one, the two acting conjointly, and thus have but one set of examinations.

In the Maritime Provinces their method is somewhat similar.

In Quebec the College of Physicians and Surgeons appoints one examiner and the university two for each subject. English students are examined at McGill and French students at Laval.

The medical councils in all the provinces have control, and set the minimum of qualification for receiving a license. The universities, of course, have the power to say whether this standard be high enough to entitle to their degree. So far as I can ascertain, all parties work harmoniously, are satisfied, and believe their system to be superior to ours, our province being the only one that has dual examinations.

It does seem to be that if, after full discussion, Council representatives were appointed to meet representatives from the universities a system of but one set of examinations could be devised that would be mutually acceptable to all concerned, the Council retaining its present powers and, in addition, the good-will of the various parties interested.

I realize that any change should be made only after careful consideration, and the views of the members of this division would, I am persuaded, very materially assist in coming to wise conclusions.

I will also be pleased to hear from you regarding other matters in the interests of the profession.

I am, yours very truly,

A. T. EMMERSON.

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### SEASICKNESS.

To the victims of *mal de mer* the world over, greeting:

Being fond of sailing, yet unusually susceptible to seasickness, I have frequently paid dearly for the whistle. After having tried "remedies" galore, nostrums, quack and otherwise, *ad nauseam*, I have at last found a remedy so simple that the seafaring man, though a fool, may not err in the administration thereof. It is by no means a specific, but it has contributed so much to the comfort of so many passengers that a more extended trial is deserving. It is simply gum camphor, a grain or two every hour, or oftener when the conditions favor seasickness. Of course, regular meals, light diet, a free alimentary tract, well ventilated state-rooms, and as much exercise as is possible on deck, are not to be neglected.

There is one remedy which is said to be even more efficacious than camphor, but it has, in my experience, been very difficult of application—get out and lie under a tree—but even liars are not exempt from seasickness on the Pacific Coast Steamship Company's boats.

ERNEST A. HALL.

## TO COMBAT TUBERCULOSIS.

The resolutions of the International Congress on Tuberculosis are not exciting reading matter, but the following recommendations contained therein merit favorable consideration:

1. That health authorities should be notified of every case of tuberculosis.
2. That all means should be used to prevent contagion from man to man, which is the most important source of the disease.
3. That all means should be used to prevent contagion through infected milk supplies.
4. That the public and all governments be urged to establish free hospitals, sanatoria, and camps.
5. That well considered factory laws, child labor laws, laws regarding women's work, etc., be insisted on.
6. That instruction in personal hygiene be given in all the schools.
7. That colleges require for entrance and for graduation studies in hygiene and sanitation.

When these ideas are applied on a comprehensive scale the number of consumptives will be reduced fully two-thirds.

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 THE MCGILL REUNION.

This event was very successful. There was a large and enthusiastic gathering of former graduates, and the grand old University of McGill will gain by the reunion.

All went well till the evening of the banquet, when a most unseemly event occurred. A number of the so-called friends of Dr. G. E. Armstrong took it in to their heads to "toss" the doctor. They did so, and with the result that he was made very ill. Such "sport" was a disgrace to the occasion.

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 ONTARIO MEDICAL EXAMINATIONS.

The following candidates have passed the Medical Council final examination:

Final—Frederick Adams, Coboconk; Edward B. Alport, Orillia; Walter Clifford, Arnold, Zephyr; Duncan Allison, Belgrave.

Edgar Sherell Bissell, Row's Corners; Frederick Boyd, Kingston; Francis Arthur Brewster, Beeton; Frederick Herbert Buck, Norwood; George Edward Butterwick, Aylmer; Robert W. Breuls, Toronto; James Campbell Byers, Evanville.

John George Alexander Campbell, Toronto; Roscoe Campbell, Gravenhurst; Clarence Moffatt Crawford, Kingston; William Wilson

Cruise, Port Dover; Harry William Chamberlain, Aylmer West; Paul O. Colombe, Montreal, Que.

William Frederick Dey, Simcoe; Ivan W. Dickson, Toronto; Ulysses Joseph Durocher, Ojibwa.

Frederick Etherington, Kingston; Herbert Henry Eyres, Lindsay.

Matthew Norman Faris, Bradford; Rosslyn Montague Fergusson, Smith's Falls; Gerald J. Forster, Toronto.

Percy Newby Gardner, Toronto; William Geiger, Hensall; George J. Gillam, Woodstock; Andrew Taylor Gillespie, Galt; Roscoe Reid Graham, Lobo; John Nelles McKim Gardiner, Kingston; George Anthony Joseph Glionna, Toronto.

Walter Lett Hackett, Belfast; George Harold Ross Hamilton, Guelph; Gordon McClelland Hanna, Brantford; Thomas Richard Hanley, Midland; Frederick Samuel Harper, Hamilton; Howard D. Harrison, Toronto; Francis Rudd Harvey, Arthur; Shirley Morell Holmes, Chatham; Elijah Maitland Horton, Roblin; Edward Walton Huxtable, Sunderland.

Hewey Lee Jackes, Toronto; Ross Alexander Jamieson, Mount Forest; Robert Edmund Johnston, Toronto; Gordon Leigh Jepson, London; Herbert Jones, Toronto; David Bradshaw Jamieson, Durham.

Alexander Douglas Wallace 'Kay, Windsor; Perry Orr King, St. Thomas.

Allan Victor Laing, Dundas; Robert Tarswell Lane, Sault Ste. Marie; Alexander Smirle Lawson, Guelph; Arthur Baker LeMeseuer, Toronto; Harry Drummond Livingstone, Listowel; Garretson Linscott, Brantford; Andrew Lowrie, Tillsonburg; John Milton Livingstone, Baden.

John Burrirt Mann, Bridgenorth; R. Russell Montgomery, Wroxe-ter; Robert Lindsay Morrison, Toronto; Neil Alexander Morrison, Elm- vale; Arthur Irvine McCalla, St. Catharines; Ray Vance McCarley, Brockville; William Langton McCullough, Port Arthur; William Henry McFarlane, London; Robert Alexander McKay, Ingersoll; Kenneth Arthur McLaren, Ottawa; Sarah Georgina McVean, Dresden; John Duncan McPhee, Brechin; Samuel McMurrich McLay, Woodstock; Charles James McPherson, Metcalfe; Herbert Bayne Moffatt, Ottawa.

Archibald Enos Naylor, Essex; William Freeman Nicholson, Dun- das; Otto Wilmot Niemeier, West Toronto.

Alfred Pain, Hamilton; Frank Stewart Park, Toronto; James Pater- son Paton, Merritton; Claude Allison Patterson, Forest; Frank Ernest Pettman, Southend; John Leo Poirier, St. Catharines; George Wesley Pringle, Madoc.

George Alexander Ramsay, West London; Elmer Freeman Rich- ardson, Aurora.

Harry James Shields, Toronto; Harry Gray Smith, Port Dover; Leslie Ord Campbell Skeeles, Toronto; William Oliver Stephenson, Hamilton; Samuel J. Streight, Oxford Mills.

Franklin John Thompson, Lucknow; William Clair Toll, Carbon, Alta.; Emerson James Trow, Stratford; Harry Alfred Turofsky, Toronto.

Edward Gladstone Vernon, St. Mary's.

Guy Halifax Wallace, Toronto; Thomas Moffatt Weir, Rayside; John Cameron Wilson, London; Charles Stewart Wright, Campbellford.

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#### DR. HAMILL'S EXCHANGE.

Physicians are often asked by recent graduates where there is a good opening to start practice, and they can pilot those in search of practices to a short-cut thereto by putting them in touch with the Canadian Medical Exchange, conducted by Dr. Hamill, 75 Yonge Street, Toronto, as he always has from twenty to thirty practices for sale in the different provinces, besides many openings where there is no doctor and where the people desire one to locate and would be loyal to him.

See his list of offers among our advertising columns.

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#### MEDICAL PREPARATIONS, ETC.

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##### SUMMER CASES.

Conditions peculiar to the season now with us will present themselves for your consideration, and a reference to the fact that Antiphlogistine has proven of particular service in sunburn, bee stings, insect bites, sprains, bruises, etc., will offer you a ready and satisfactory dressing, and is procurable in all drug stores.

In those severe cases of dermatitis following undue exposure to the sun's ray Antiphlogistine will quickly reduce the inflammation and the accompanying swelling and pain.

In all cases it should be applied thick and hot, and well protected by ample covering.

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#### AGAIN THE HAY FEVER PROBLEM.

Whatever else happens, or fails to happen, here is something that always bobs up at the appointed time. Taxes are not more certain and

insistent. Sooner or later every physician has this problem to solve. The trouble is it doesn't stay solved. The long-looked for hay fever specific has not yet arrived.

Undoubtedly the most successful way to treat hay fever is to send the patient where he will not be exposed to the particular pollen to which he may be susceptible—to prescribe a sea voyage, for instance, or a change of climate. In this manner temporary immunity, at least, is obtainable. Unfortunately very few patients, comparatively, have at their disposal the necessary time and means for travel. In nineteen cases out of twenty the physician must fight the intractable disease with such weapons as pharmacology and pharmacy have placed in his hands.

Of the remedial agents in the possession of the medical profession the suprarenal substance has proved itself by far the most efficient. While not attaining to the dignity of a specific, it is at least a satisfactory palliative. It successfully antagonizes the symptoms of the disorder, and gives the patient a temporary comfort that is not to be despised. It is probably best used in the forms of adrenalin chloride solution, adrenalin inhalant, and anesthene cream.

The two preparations first named—the former diluted with four to five times its volume of physiological salt solution, the latter with three or four times its volume of olive oil—are sprayed into the nares and pharynx. Any good atomizer that is adapted to oily or aqueous liquids (preferably, however, one that throws a fine spray) may be used. As to the comparative value of the preparations for the purpose named, it may be said that the solution "takes hold" more promptly, while the astringent effect of the inhalant is more lasting.

Anesthene Cream is a much newer product, having been introduced to the profession, if we mistake not, in the early months of 1910. Nevertheless, it made a great record for itself during the hay fever season of last year. Few medicinal preparations, indeed, make their debut so auspiciously. The formula came from a prominent practitioner of The Hague, Holland, and combines adrenalin chloride and para-amido-ethylbenzoate in a bland oil base. Right here some reader may enquire: "What is Para-amido-ethylbenzoate?" Ask Parke, Davis & Co. They have printed matter which answers this very question. Write for it. Write the company, too, for its literature on hay fever, addressing your request to the home offices in Walkerville, Ont., and mentioning this journal. You will get some useful and interesting information.

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### RELIEF IN NEURALGIA AND GIRDLE PAIN.

The efficiency of antikamnia tablets in neuralgia is beyond dispute, and is well illustrated by the following case: An old nurse who had suf-

ferred from severe neuralgia at intervals for many years and whose hair had become gray on one side of her head from this cause, expressed herself as having gained more relief from antikamnia tablets than from all of the many medicines which had been prescribed for her. For pain about the head from almost any cause, antikamnia tablets always have undoubted preference over all other remedies. They are a useful adjunct in the treatment of migraine.

For the pain in cases of organic spinal disease, antikamnia and codeine tablets proved of great value. A woman of 52, with transverse myelitis (complete paraplegia) found these tables reliable for controlling the very annoying girdle pain. Two or three doses of two tablets each, within twenty-four hours, were sufficient to make the pain endurable. In another case, where there was the girdle sensation connected with its earlier history, and numbness and paraesthesia of the lower extremities existed, one antikamnia and codeine tablet was given three times a day, along with a regular potassium iodide treatment. The observation of this case has extended over 18 months and at no time has the progress been so satisfactory as during the last six weeks, in which she has taken antikamnia and codeine tablets regularly.

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### POST-GRIPPAL COMPLICATIONS.

If there is one particular feature which characterizes the genuine influenzal attack it is the decided and sometimes intense prostration that remains after the subsidence of the acute symptoms of the disease. This general vital "set back" is oftentimes entirely out of proportion to the severity of the original grippal attack, and the most robust patients are sometimes the most severely prostrated. In addition to the general devitalization, la grippe is extremely likely to be accompanied with or followed by such troublesome complications as otitis, neuritis, sinus inflammations, gastro-intestinal derangements, resistant and obstinate bronchial catarrhs and, more dangerous than all, peculiar, more or less characteristic, asthenic, form of lobular pneumonia. The skill of the physician and the vital resistance of the patient are often taxed to the utmost in a combined effort to induce final recovery. Anæmia, to some degree, is almost always brought about by the combined devitalizing power of the disease and its complications, and convalescence is likely to be tardy and tedious. An easily borne, readily assimilable hematinic does much to hasten recovery, and Pepto-Mangan (Gude) is an especially eligible method of introducing the much-needed ferric and manganic elements, without producing or increasing digestive difficulty. In no condition does this well-tried hematic remedy evidence its undoubted reconstructive power more certainly than in the treatment of post-grippal convalescence.