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## EDITORIAL

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### THE CARE OF THE FEEBLE-MINDED.

Mr. Justice Hodgins, after hearing a great deal of evidence and giving much earnest thought to the question, has reported upon the care of the feeble-minded, and the best methods of finding out how many there are of this class and where they are located. He emphasizes the following important truth:

“That if the cardinal fact could be assimilated that the elimination of the mental defective from the school and from the street and from the agencies engaged in reforming character would render the efforts of teachers and social workers comparatively easy and empty the jails of over half their inmates, and that these unfortunates can, if taken in time, be made comparatively happy and useful, there would be little time lost in bringing about that desired result.”

The commissioner then goes on to state that the work of finding out the number and location of the feeble-minded should begin in the schools, the jails, the reformatories, and other institutions. All female defectives of child bearing age, and male repeaters of crime, should be kept under permanent observation. The opinion is advanced that many of these feeble-minded persons, if placed under proper care when quite young, may be made happy and rendered capable of governing their own conduct.

Mr. Justice Hodgins calls attention to five of the above matters as specially urgent:

- (1) Special classes in the public schools for the mentally defective.
- (2) To transfer to Orillia all “admitted defectives” from other institutions.
- (3) Removal from the Juvenile Court and the Children’s Aid Society of all mental defectives to a proper institution.



(4) The establishment of a new and properly-equipped Psychopathic Hospital in Toronto.

(5) The provision of proper temporary quarters in order to gain immediate relief from the conditions referred to above.

The report continues: "I have, therefore, the honor to recommend:

"(1) A systematic detailed survey; a plan of registration covering the Province, by which the mentally defective will be identified and classified; the adoption of a plan for the above, and the detention in permanent homes or refuges, preferably of the colony type, of mentally defective women who are of child-bearing age, and for segregation in institutions and colonies of both male and female feeble-minded delinquents whose anti-social qualities or criminal tendencies show a necessity for permanent restraint.

"(2) The formation of a Board of Control or a Departmental Committee under the general control of the Provincial Secretary. I further recommended the appointment at once of an Inspector of Mental Defectives or for the Feeble-minded, who should be regarded as an independent official in the Provincial Secretary's Department.

"(3) The erection of a properly-equipped Psychopathic Hospital, to be followed by others in suitable centres.

"(4) The enlargement of the scheme of Juvenile Courts.

"(5) The opening of a parent institution, similar to that at Orillia, in the northern part of the Province, to which the colony system, as outlined in this report, could be applied in due course, and the extension of the colony system in connection with the Orillia Institute.

"(6) More adequate provision for the permanent segregation of feeble-minded women of child-bearing age.

"(7) The amendment of the present legislation, both Federal and Provincial, in the direction set forth in this report with regard to Juvenile Courts, public institutions and other matters.

"(8) The compulsory establishment by Boards of Education and School Trustees of special training classes for mental defectives as part of the Provincial scheme of education, and provision for the training of teachers so as to specially equip them for this work.

"(9) Recognition of the need of skilled medical advice in regard to mental defectives in dealing with all criminal cases, and the establishment of all proper clinics attached to or available for the courts administering criminal justice.

"(10) The establishment of suitable mental clinics.

"(11) The prompt dealing with degenerate settlements."



The remaining recommendations, nine in number, deal with the necessary legislation, especially in regard to immigration, marriage laws, juvenile courts, legal definition, licensing of homes, provision for idiots and imbeciles, periodical inspection of all institutions, medical education and criminal trials.

Regarding marriage laws Mr. Justice Hodgins says: "There is no reason why our marriage laws should not contain some provision upon the subject. Given a proper system of survey and registration, there is no sensible reason why those registered as feeble-minded should marry without let or hindrance.

"In Ontario there is a great need for a consolidation of the various statutes dealing with lunatics, hospitals, private sanitarium, reformatories and refuges, and for the simplification of procedure dealing with administrations, detention, parole and discharge."

The commission thinks that the provision regarding the declaration of lunacy as found in the Ontario Lunacy Act might apply to all cases of mental defect and incompetence, including epilepsy.

He finds that the Provincial Secretary should be the authority to discharge from an institution in all cases, and parole should not be left to the discretion of the Inspector of Prisons and Public Charities, or to any other single official, except with the consent of the Provincial Secretary or a departmental committee or board of control, if established.

"This last point I regard as most important. If parole can be granted to the female mental defectives from refuges by direction of the Inspector only, as done recently in some cases mentioned before me, then there is no real security."

With the evidence now before us, there can be no excuse for further delay. The Province will readily spend \$20,000 to bring a criminal to trial. It would be much better to take charge of such a person when young, and spend some money on him with the object of preventing crime. His suggestions that males of recidivist character, and females of child-bearing age, should be retained indefinitely, will meet with the approval of all. When this class of the community has been located, there should be proper safeguards thrown around their marrying. The report is to be very warmly commended. Action should follow.

#### VACCINATION.

We start out with the statement that vaccination is the same infection as smallpox, and, therefore, is capable of establishing protection. If a child has a mild attack of scarlet fever, that child is just



as perfectly protected as if it had passed through a severe attack. So it is with smallpox. If one is fortunate enough to contract the disease in a mild form, he secures immunity against a virulent form of the disease. In bovine animals smallpox assumes a mild type, which it retains when introduced into the human system.

The operation of vaccination does not cause death. There are some who are very sensitive and in such cases the arm may be quite painful for a few days, and there may be sufficient constitutional disturbances to compel the person to remain at rest or even in bed. This is, however, a simple affair to smallpox even in a mild form. All the scare talk about loss of arms and loss of life is pure unadulterated falsehood. The records of vaccination for the past one hundred years prove that it is a perfectly safe operation.

Now, grant that a person has a mild attack of the disease, he will be quarantined in his home or in a hospital for an average of six weeks. With vaccination in the vast majority of cases he will lose no time, and will not be deprived of his liberty. If he is quarantined at home, all his family are imprisoned with him, and the family is cut off from the outer world until the patient has made a recovery, and is free from infection.

But turn for a moment to the death-rate from smallpox. There have been epidemics that ranged all the way from 25 per cent. to 58 per cent. mortality. If the people were dying in Toronto at the rate of even one in one hundred cases there would be a perfect stampede to be vaccinated. Many years ago there was an epidemic in the State of Pennsylvania and the City of Philadelphia with a death-rate of 58.6 per cent. Among those who contracted the disease, and who had never been vaccinated. Such a death-rate would strike terror into the hearts of our most ardent anti-vaccinationists.

The stock and trade argument that it is wrong to introduce any disease into the system and the shout that vaccine is pus fall to the ground. When a doctor is called to attend a child with diphtheria he forthwith gives the patient a dose of antidiphtheritic serum, obtained from the horse. But he goes further, and gives a protecting dose to the other children in the house who have been exposed. If we had a vaccine that would immunize against tuberculosis there would be few indeed who would neglect to take advantage of the protection. It is perfectly sound practice to introduce into the body a mild and safe infection in order that a severe and often fatal one may be escaped. The use of the term pus is only to scare the ignorant and play upon prejudice.



Another thing that has come out during the present agitation is that some claim to vaccinate by giving a "vaccine pill." To teach and practise such views should be made a criminal offense, as it misleads those who do not know any better, and thus they lose the protection they might have had. Such practice is just as wrong as to knowingly put a piece of decayed timber in a portion of a vessel where there will be great strain, and then send the vessel to sea with a human freight on board. There is no such thing as vaccination by the way of the stomach, and it should be made a crime to attempt to secure immunity in this way.

We have read the circulars the Antis have sent broadcast and also the large advertisements they have inserted in the public press. These things do not in the slightest degree shake the faith of those who know better; but they do mislead the uninformed. Not long ago we were conversing with a well informed working man who said that the Antis were putting up a good case. A remark like this shows that the distribution of false teachings may do harm. The Antis take pride in quoting some doctors who do not believe in vaccination. Not long ago we met with a clergyman, preaching in a Toronto church, who believed that the earth is flat. Not long ago we conversed with a doctor who did not think that the antitoxine for diphtheria was of any use, indeed, he thought it was harmful. We have persons who call themselves "doctors," but who declare that there is not merit in drugs, and that all any sick person requires is to have their spinal column punched. When such things are possible then there is no marvel that an odd doctor may still be groping in the dark. Or as the Scripture says: "He loveth the darkness rather than the light."

Then another of the statements made in the advertisements of the "Antis" is that diphtheria follows vaccination. There is a vast difference between accompanying or following another condition, and being caused by that other condition. Smallpox or vaccination cannot cause diphtheria. A million cases of vaccination could not give rise to one diphtheria bacillus. But when one disease is prevalent others may also be prevalent. There is nothing to cause wonder to notice that in the same season when smallpox prevails, there may also be a considerable number of cases of diphtheria. This is merely coincidence and not cause and effect. Normal calf lymph for vaccination purposes cannot introduce into the vaccinated person any disease other than cowpox, or in other words the mildest known form of smallpox. This wild statement, made by the ignorant, or by design, falls to the ground.



Enough has been said to show that the statements of the "Antis" are of such a character as to mislead; and there is often no lie more dangerous than a half-truth.

Does vaccination protect? The answer is "Yes, a thousand times, yes." One only needs to look around for his proof. Here in Toronto doctors and nurses are immune. In a few cases a person who had been vaccinated when young may contract smallpox in adult life. But many say they were vaccinated, when in reality they never were. Not long ago, we attended a family where the daughter, who did not believe in vaccination fell ill with smallpox. In due time her father became ill, and he said he had been vaccinated, no mark could be found. His wife who had good marks from a vaccination when a child, did not contract the disease, though she attended both patients. Such cases could be multiplied without limit. Nurses, with no other protection than that obtained from vaccination, will serve in a hospital for smallpox cases, and remain well throughout.

What shall we say of the governing body of the city, which is not complying with the law, and thereby endangering lives, and doing great damage to the business interests of the city? That Toronto is a large city is no reason why it should set the law at defiance, any more than a murderer should put in the defence that because he was a very large man he should be allowed to do as he pleased and go unpunished. Should the present epidemic change its type, as did the epidemic in Montreal in 1885, and become virulent there would be many deaths. In Montreal in 10,000 cases there were 3,160 deaths. It would not be difficult to prove who were guilty should such a disaster occur. The city is threatened by a most dangerous enemy, and we have a perfect shield of defence, that is both simple and safe. Let the people listen to reason and experience, and turn a deaf ear to false preachers, and those who make a wrong use of the sacred word "Liberty."

There are only two ways of controlling an epidemic of smallpox, namely, general vaccination, or permitting the disease to spread until it has exhausted its field by attacking all who have not had the disease or been vaccinated. In time, a number of those attacked recover and become immune, and can safely attend those who become ill. This is a very poor way to control an epidemic, and in a severe form of the disease would be accompanied by a fearful mortality.



## ORIGINAL CONTRIBUTIONS

MENTAL AND NERVOUS STATES IN CONNECTION WITH THE  
WAR AND THEIR MECHANISM.

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IT has been customary to state, that an analysis of one's own mind by introspection enables one to affirm that the elements of consciousness may be conveniently arranged into three categories, viz.: cognition, under which comes knowledge; feeling, which includes pleasure and pain; and thirdly, the will, or conation, which is the tendency to act. These may be illustrated by a person approaching a picture, who, on becoming conscious of it, perceives it to be a composition of a certain color and form. This is cognition. He then experiences certain feelings, either of gratification, if the picture is a masterpiece, or of the opposite feeling if it be of indifferent merit; thirdly, there would be the desire to possess the picture if it pleased, and the will would tend toward its acquisition.

These three groups of elementary mental units have been compared to the red, yellow, and blue rays of the solar spectrum with their three separate special qualities: the red associated with heat, the yellow with light, and the blue with the chemical effects. Although each of these acted its part, yet it was the unified whole that operated as active light. The red rays are at one end of the spectrum, the blue are at the other, whilst the yellow is in the middle; and the analogy may then be carried further, giving feeling as predominant at one end of life and during the period of childhood; desire, with its impetuosity and passion in middle youth; whilst intelligence, tended to control and direct the autumn of life. Such an analysis recognizes that the building up of the mind from these elements occurs through the laws of mental association, and much stress was formerly laid upon this law by its discoverer Hobbes, as well as by Hartley, who was the first to make use of the law by its application to the whole intellectual system. Thus the varied operations of the intellectual life, of memory, of imagination, of the emotions, and under the law of association.

It is held that these various ideas group themselves into "complexes," some of which conflict with others and tend to become repressed, when they may become opposed to the personality or ego finding an outward expression, being thus sublimated, as the term is, into a sensory, motor,



sympathetic, or even a menal outlet. Normally, the complexes balance each other and tend to equilibrium, or if an emotion is prominent, it tends in a normal person to become neutralized by the varied and complicated associations of the daily life. Not so with the susceptible person, who is disposed to break down from overstrain; the emotions then become motives to action, and bring new ones in their train, each connected with some of the natural instincts or some new desire. The strongest desire in human beings, and therefore the most forceful as motives to action, are those based upon the instincts, and the most dominant instincts are those of self-preservation, which help to avoid danger; those related to the feelings of hunger and thirst, to the search for warmth, and to that of sex. Associated with these deep-rooted instincts are special feelings and emotions which are themselves springs to action. It is a fact that foreign psychologists tend to base all human action upon those emotions that are connected with sex, a view which is contrary to general experience in this country.

In the normal person the development of the Will is acknowledged to be a process of great complexity, yet of growing definiteness. It probably begins with an act of attention, and extends gradually so as to exercise a control over bodily movements, and side by side with its growth is that of the reason and the imagination, so that acts may be brought into rational order, and in this way the individual comes to exercise his conduct for permanent ends, and to act from fixed principles, thus developing his definite permanent character. In disease or under some great overwhelming strain, or through a stress of lesser severity if long continued, from fatigue or exhaustion there may be, and often is, a tendency for groups of ideas or "complexes," as they are called, to become dissociated, such a dissociation or repression tending to occur chiefly and mainly in connection with some past painful idea. These ideas tend to carry with them certain definite emotions, which, however, cannot be ascertained, because it is believed that they are only unconsciously active, never themselves arising into consciousness, but being transferred or "sublimated" into some other form of expression, the difficulty experienced in identifying these causative emotions being due to what has been described as the mental "resistance" of the individual, which prevents the hidden links between conscious and unconscious processes from being reached.

One special method of discovering these hidden links of association is stated by its advocates to be by "psycho-analysis," which discovers, through the free association of ideas in the mind, what the hidden emotion may be and whence it proceeds. This is practised by presenting a series of words to the patient, such as the word *Europe*, for example,



to which he responds by calling out what occurs to his mind immediately and without thought—say he replies *Germany*; then the word *activity*, to which he replies *war*; and *battle*, to which he replies *Ypres*; then *sound*, to which he says *shell-explosion*. From these replies the questioner, who has measured the reaction-time, concludes that the patient has in his mind the fear experienced at the effect of high explosives in the battle of Ypres. This is only a crude illustration, for psycho-analysis includes many other points, among them the interpretation of dreams and the exploration of hidden desires lying in the unconscious mind. In this way is discovered the connection between outward symptoms and their inner, deeper meaning with their proximate cause or causes, which, when realized, are brought before the patient's conscious mind and then reasoned with and put out of the mind so that they cease to act as the unconscious cause of his nervous or mental state. This is the explanation of the psycho-analysis, but neither the method nor its justification are universally accepted. There is a very strong opposing school, and we shall refer to the subject later.

It will be seen from the description given above, that Mind implies the sum total of all conscious processes experienced by any person; but there are, in addition, in every individual mind certain tendencies or dispositions which are inherited, and certain others that are acquired through past experiences during infantile and child life. Two aspects therefore enter into the conception of Mind: first, the immediate conscious processes; and, secondly, the various conative tendencies to act. The latter may not involve actual consciousness, so that we have, broadly speaking, subjective consciousness, when everything is conscious, and objective consciousness, viz., things realized by the mind, which include the dispositions, inclinations and tendencies that are unconscious, yet which definitely affect the flow of mind, and without which the mind would not be what it is. This part of the mind has, of late years, received unusual attention at the hands of those who practise what is described as psycho-therapeutics.

It may be added that the theologians have further and extended views of the Mind, insomuch as they add to it the soul or spirit. The former they regard as a permanent immaterial something, some kind of unity behind the phenomena of mind which may be compared to the ether, and through which mental processes act, or something like a chair or table, yet immaterial, upon which mental processes rest. The word spirit is used either as synonymous with soul or as some higher part of the mind, which permits the expression of the religious faculty or the higher ethical ideals and aspirations; but we have no proof of these, and so far as we know, speaking psychologically, there are before us



only "mental processes," which are the result of or are dependent upon bodily conditions.

For the student interested in mental problems, the simile has been advanced that the Mind is a constant running stream of consciousness, like a mighty river, which occasionally flows in a narrow channel, when the current runs faster; this is the case sometimes with the active human mind. If we could picture for one moment the river Thames as frozen solid from its source to its outlet, and we were to divide it across, say, at Blackfriars Bridge, then if we could turn up each divided end and look at it, we should get a view of our consciousness at a particular time and place; but if we were to contemplate the whole course of the river, then we should have the whole human mind during any one lifetime. This analogy, however, leaves out the tendencies of the mind, but from the above remarks it will be noted that consciousness may not be coextensive with mind, because there are unconscious phenomena that must also be included in the term. The psycho-analytic school of physicians appeals, in treatment, exclusively to the unconscious factors of the Mind, and neglects entirely any bodily condition, any emotional or any cognitive factors, nor does it make any appeal to the conscious Will; whilst the other school, and may I add, in my judgment, the more reasonable, base their treatment upon an appeal to all of the three elementary units through suggestion, persuasion, and re-education.

In order to throw some further light upon the treatment of mental and nervous disorders, an appeal has been made to philosophy—which is the science that unifies all the others—to explain, if possible, *the ultimate* nature of the Mind and its relation to the body; but this, unfortunately, is the proverbial appeal to the blind man to look for a black hat in a dark room, the hat in question not being there. At any rate, philosophy merely states that mind is something opposed to matter, that it is something outside matter yet able to exercise power over it. Leibnitz believed there were particles of mind (physical monads) acting everywhere upon material atoms, so that mental states were ultimate units analogous to material atoms—hence the terms mind-dust and mind-stuff formerly in use.

In recent philosophy, the tendency has been towards an idealistic use of the term mind, to consider action as caused by physical antecedents, and that mind was something transcending matter and apart from it yet in it. As to the relationship between mind and body, this has always excited curiosity and wonder, and several theories have been propounded to account for the phenomena. One theory is the dualistic, which assumes that mind and matter are two real forms of existence, yet connected either through an interaction of one upon the other or as cause and



effect; or as a case of pre-established harmony which cannot be further explained. Another theory is the monistic; that mind and body interact as a unity, but in regard to which the ultimate reality may be either mental (idealistic) or material, and the term psycho-physical parallelism has been brought in to explain that the brain or the nervous system is the outer form of the inner unity of consciousness, the world of matter and the world of consciousness being parallel manifestations of one underlying substance.

It is thus seen that we get little help from an appeal to philosophy, there is merely offered to us the statement of a fact, but no explanation of the phenomenon, so that we are left in some confusion.

A like confusion attends the terminology of the many disorders that result from affections of the nervous system. Even the term *psychosis* is misunderstood and misapplied. In an elementary textbook upon psychology, we find the expression "no psychosis without neurosis," by which the author means to imply that there is no mental action without its corresponding nervous action; in other words, that there is a neural process corresponding to every mental phenomenon. Yet, as we know it in neurological medicine, the term psychosis has only one meaning, viz., some functional disorder or disease of the mind in contradiction to the term *neurosis*, generally applied to a functional disorder of the nervous system not dependent upon any discoverable lesion, and not associated with mental symptoms; although, in frequent instances the term is erroneously applied to mental states, as, for instance, when fixed ideas present themselves to consciousness, and are described as compulsion "neurosis." The two terms neuroses and psychoses are frequently employed indiscriminately, the one for the other. Neurasthenia is the most typical form of the neuroses as psychasthenia is of the psychoses. Epilepsy, chorea, and probably ex-ophthalmic goitre are other neuroses. It is not the ætiology, but the clinical picture or the form which should be the determining factor, yet in the use of the terms psychosis and neurosis an emotional origin is predicated, hence the difficulty in separating form from cause.

Of the psychoses we meet with two in particular that are common under war conditions, one (*a*) is described as *anxiety psychosis* (often called anxiety neurosis) which is a functional mental disorder, characterized by depression and mental restlessness brought about by anxiety or continued depression, and (*b*) *exhaustion psychosis*, or *psychasthenia*, which results from long continued insomnia, fatigue, strain, alcohol or other toxins; the only distinction between them is the agitation and restlessness connected with the one as compared with the more profound asthenia in the other, yet both may have the same factors of causation—an operation, for instance.



Again, students are greatly puzzled by the term *psycho-neurosis*, which should be confined to functional nervous diseases, with predominantly mental symptoms, caused by emotional disturbances. The term is mainly applied to hysteria and the various hysterical conditions, which are characterized by lack of control over the emotions and actions. They are generally disease of mental origin caused by some prolonged mental strain in predisposed persons. There is a tendency for any abnormal mental experience to be reproduced, with all its original mental and physical phenomena, when any idea or emotion related to the original experience is brought back to the mind by association; hence the terms *association psychosis* and *association neurosis*. For instance, I have known eight successive occurrences of puerperal mania in the same person to result mainly from the recollection of a painful experience connected with the first occurrence, and I have known a repetition of shell-shock to occur each time the sufferer was sent to the front after his convalescence, owing to the revival of former associations or a reproduction of the original conditions.

*Psycho-pathetic* is a term with a double if not a multiple meaning. Strictly speaking, it should only relate to mental disorders; a psycho-pathetic family history is one with a record of insanity or some of the psychoses in one of its members. But a psycho-path has been described, not only as a person who is or has been suffering from mental disease, but as a person who has an inborn tendency to develop insanity, or who has an instinctive or inherited aptitude to commit grossly immoral or perverted acts. The term *neuropath* should likewise be limited to those who have a history in their family, or who themselves have suffered or tend to suffer from functional nervous disease.

I have been greatly struck with the ignorance, or perhaps I should say the lack of knowledge that the senior student exhibits in relation to *hysteria* and considering its protean symptoms, this is not surprising, because the term hysteria is as wide in its connotation as there are functions in the body. It practically covers the whole field of the psycho-neuroses, and may be considered to be synonymous with it. It is no help for the student to say that hysteria is a disease characterized by the domination of submerged memory complexes. Few even of the "high priests" of the cult of psycho-therapeutics actually realize what this means, and there is no satisfactory definition of hysteria because it can only be investigated through psychical phenomena which are the interaction of feeling, cognition, and conation; nor does its etymology explain its nature or origin (*hysteria*, the womb), because it affected more men during the war than women. However, it is the simplest and the easiest disease to cure by suggestion, which is moral and psychical per-



suasion—hence the name pithiatism (*peitho* to persuade) invented for it by Babinski—yet it may become the most difficult, distorting, deforming, intractable and permanent condition, as may be appreciated when it is known that one in seven of soldiers invalided from the army was discharged through it, and further when it is known to be one of the standing difficulties of the pensions ministry.

Hysteria, or rather the hysterias, are better described than defined; they show themselves primarily in a lack of self-control, there is a morbid self-consciousness, and there is either a deficiency, an exaggeration, or a perversion of sensation, motion, of the special senses, of the vaso-motor system and of the mind—each or all of them may be disturbed. In regard to sensation there may be hyperæsthesia or anæsthesia; hyperalgesia (increased pain) or analgesia (painless areas), there may be dimness of the vision and contraction of the field; deafness, mutism and aphonia. In regard to motion there is tonic spasm or contractures—the latter being difficult to cure—paralysis, tremor or convulsions, and also vaso-motor changes, the hand (especially if previously injured) may swell, the circulation is impeded and the limb becomes blue and cold (acrocyanosis), and there may be fainting, choking, hallucinations, and trance-like catalepsy.

Hysteria only occurs in the temperamentally emotional, viz., in those soldiers who were easily open to suggestibility—70 per cent. of these (Wolfsohn) had a neuropathic tendency or family history, and it is essentially a disease marked by a “dissociation” of consciousness. Charcot described it as a disease of simulation. Janet, his pupil, regarded it as a weakening of the normal mental synthesis through some overwhelming cause or continuous stress resulting in a “splitting off” of certain factors from the Mind; a system of ideas or “complexes” (which are a group of ideas) break away, as it were, from the personality, carrying with it certain sensory or motor symptoms. It may be an idea only, but whether it is an arm or a leg or a feeling of fear, anger, or disgust, it is a distinct area, so to speak, of the personality, and the dissociation is reflected in the part “split off” as well as in the Mind which has lost it.

Freud, another pupil of Charcot, gives as the psychological explanation of hysteria, the principle of mental conflict which occurs when the mind and body are exhausted and weakened through fatigue; repression then takes place, and in the process of some of the “floating” nervous energy in the higher mental processes attaches itself to a senseless fear, which then becomes an obsession, or it is converted into a motor inhibition, with loss of power over the arm or leg, or both; hence the term conversion hysteria, because the dissociated element is thus “converted.” It may also be “converted” into sensory loss, no feeling being elicited on



light touch or deep pressure; or deafness may result through the conflict of emotions connected with the sense of hearing when those connected with danger to self are repressed, and it is a recognized fact that emotions can become separated from a consciousness of their objects and "float loose" for a time, either to appear as bodily symptoms by suggestion, or directed to some consciously remembered object. Feelings can persist when their cause has dropped out of the mind. As to the "floating mental energy" referred to, the dynamic view of consciousness assumes that any conscious state is the sum total of this energy, but that any new stimulus from within or from without can shift the total equilibrium from one centre of activity to another.

The modern French school, represented by Babinski, attributes all hysterias (and most shell-shock cases come under the category) to increased suggestibility; the ideo-motor theory that either from within (auto-suggestion) or from without—by seeing others or hearing others talk (hetero-suggestion)—some suggestion gets full play, *e.g.*, the thought of loss of power in the legs may take place, and they give way or become paralysed. Dr. Rivers, if I interpret him correctly, believes the psycho-neuroses arise from "suggestion," for he refers to the training of the soldier as entirely preparing him to react quickly to suggestion.

Babinski states that all hysteria being caused by suggestion may only be cured by the same means, and we have witnessed many sudden "miracles" in this way, suggestion being either direct, such as the word of command, or indirect by way of persuasion. It is through the practice of suggestion that light hypnosis has proved helpful, and all hysterical subjects are easily hypnotized. Dejerine offers a very different picture of hysteria, and states that suggestion has very little to do with it; everybody is suggestible, and he believes that the neurasthenic patient is much more suggestible than the hysterical, whose condition, he states, is entirely due to an emotional shock, and he asserts that unless suggestion is re-enforced by emotion it cannot produce hysteria. These are the theories advanced at the present moment, and the present-day view of the pathology of hysteria is a compromise, for it has its origin in emotions, whilst its treatment is based upon suggestion. As is well known, shell-shock does not occur in the front lines, but mostly at the base or at home and in the military hospitals.

As illustrating its emotional origin, as well as the contagiousness of an hysterical emotion, may be mentioned the result of fear in the case of soldiers suffering from so-called "shell-shock," which occurred at one of the large military hospitals some three miles from Silvertown at the time of the great explosion of 1917. An entertainment was proceeding at this hospital when the sudden appalling detonations were heard, and



were believed to be enemy air-raids. Out of about thirty patients thus affected, many of them ran out of the hall, some fled down the corridors, others tried to conceal themselves under chairs and tables, whilst a few of the men stood their ground but gave way to violent motor convulsions of the *major crisis* type, in which "it took five or six men to hold one down." I saw several of these men afterwards, who said they could not help themselves.

Hysteria is no light complaint. It is a pathological mental complaint, and it needs the strongest mind to deal with it, and to prevent the fixation of the emotional reaction from becoming a habit, which then means that the stigma or outward expression has passed from conscious control into the unconscious part of the mind, whence it is most difficult to be ejected. I have not referred to the dreams of hysterical persons, for it has been shown, without doubt, that all dreams have an emotional association, and it is assumed that in the soldier they are mostly connected with fear or some other failure of the defensive reactions of self-preservation, but the key of interpretation of dreams presented by the psycho-analyst does not accord with my experience.

In regard to the classification of the psycho-neuroses, this is not easy, because the symptoms of one class merge into those of another, and only marked types are definite. Some have suggested (i) a scheme based upon the condition of their occurrence, *i.e.*, whether on mobilization, or active service, and if so whether in the firing line or at the base; at rest, or as a prisoner; some also have suggested (ii) a classification according to the clinical form, and others base their classification (iii) upon aetiology. The latter recognizes, in brief, three causes, first, a psycho-neurosis from an actual shell explosion or "a true commotion," but if there is an organic lesion, the term psycho-neurosis no longer applies, so that this group forms a special class, to which reference will be made; secondly, the effect of a strong emotion connected with the instincts, and mainly that of self-preservation; and thirdly, exposure, fatigue, strain, terrific sounds and horrible sights, irregular meals, toxins, either of infectious diseases or of alcohol, and insomnia, yet many of these are not without their emotions. The classification based upon conditions of service and upon causation are rejected in favor of the form of the disorder.

A clinical picture of the psycho-neuroses, of necessity functional, involves two presentations: (a) the psychoses on the one hand, *viz.*, abnormal mental states which have no definitely ascertained organic basis; mania, melancholia, psychasthenia (which Janet separated from hysteria), confusional and obtusional states, dementia precox, paranoia, and the rhythmic or alternating types, the so-called manic-depressive mental types, and (b) the neuroses on the other. Epilepsy has been



included among the neuroses, but the two main groups of the neuroses are (i) the great class of neurasthenics, most of them showing preoccupation and anxiety, and the (ii) still larger class of hysterical cases, characterized mainly by sensori-motor disturbances and mental heedlessness when contrasted with the neurasthenics; indeed, so pronounced have the opposed mental states been that the hysterical patient has been called the optimist, and the neurasthenic the pessimist. The now disused term "shell-shock," without any clear connotation, forms a wedge between the two with its point in the neurasthenic class and its base well into the hysteric.

The neurasthenic person gives the immediate impression that he has no storage of nervous energy, mentally and bodily he is readily fatigued on the slightest effort. His nervous storage either leaks or is used up as soon as made, *i.e.*, latent is immediately converted into kinetic energy, and so rapidly, it was assumed by some, that "diathermic oil" was applied to prevent its evaporating and diffusing; also electricity was vicariously substituted to keep up the storage and presumably prevent tremors, fatigue, palpitation, and headache. It is a curious fact that, although neurasthenic is a disease of civilization and evolution, the officer suffered less than the private from it. Probably his responsibility for order saved his suffering from the pent-up and repressed mental or vaso-motor form of hysteria. A true or physical commotion-shock rarely had mental symptoms alone without some motor symptoms; but if mental symptoms were present, constituting a psychosis, then headache was fairly constant, there was decided sensory hyperæsthesia, insomnia was frequent symptom with dreams, but there was often great depression, and the patient readily cried, his will-power seemed to have gone, and he jumped up at any unusual sound.

It is hysteria which is all-pervading and sensational psycho-neurosis characteristic of the war, and in delimiting it as a clinical concept, one must remember its tripartite symptoms expressed (*a*) in the voluntary system as sensori-motor disturbances, (*b*) in the involuntary system as trophic, vaso-motor, and secretory disturbances, and (*c*) in the psychological system as amnesias, suggestibility, emotional instability, and loss of will power. These are described to the student as the stigmata of hysteria, which have been regarded by some as symptoms of exhaustion, and by others merely as exaggerated normal reactions, the hysterical person being regarded as in a chronic state of auto-hypnosis ready to be acted upon by any suggestion.

It may be interesting to discuss very briefly how hysterical symptoms arise. It will have been seen how "suggestibility" and "sub-consciousness" play the chief *role* in the production of hysteria, and, as



is well known, repressed and unconscious wishes colour and control our normal acts; much more is this the case in hysteria, which is really closely allied to hypnotism. In hypnotism, a person is sent into a light sleep by suggestion. He is told for instance, to gaze and attend to a small fixed object, such as a ring or the head of a large bright pin, thus limiting his consciousness to the narrowest possible point. His mind is in this way withdrawn from all other objects, no environmental stimuli come in from without, and the suggestion to sleep causes him at once to obey. Any fresh order or suggestion now given enters directly into his conscious mind, to which he gives expression and makes an immediate reaction, uninhibited by the conscious mind. Hypnotism is thus a complete dissociation of the personality, hysteria an incomplete one, for in this disease the conscious mind is not asleep.

Some repressed idea or a group of ideas (complex) with its emotional side occurs to the conscious mind from within (auto-suggestion) or from without (hetero-suggestion), but it is rejected, repressed, or submerged into the unconscious mind because it is unconventional, unethical, or disapproved of. There, after an interval (latent period, period of incubation, meditative period, contemplative period), it begins to give rise to a reaction and forces itself in an outward expression, again uninhibited by the conscious mind. This outward expression is the hysterical stigma, and it is an epiphenomenon or an accident of the emotional feeling. The father of a family earning good wages is conscripted, and joins his depot. He is inoculated twice against typhoid, the second time followed by severe cellulitis, and he is invalided. He realizes that if he is in impaired health he need not be sent out, and may not have to serve, and moreover may get a pension. He develops paraplegia, secures a pension, gets considerable sympathy, is supplied by friends with a perambulator and crutches, and the disease, which is functional, becomes fixed; but he is persuaded he will get better if he attends a special hospital. He does this and rapidly improves. The idea of the disability enters his conscious mind, but is repressed because it is unethical and wrong and even dishonest to receive a pension and stay at home whilst others are serving; so the group of ideas is repressed and relegated to the unconscious mind, where it causes the symptoms which result in paraplegia, thus fulfilling a repressed wish which the conscious mind refused to accept as wrong and immoral and dishonest. The man is unconsciously deceived, the wish to obtain sympathy and be excused military service was originally a conscious one, but was repressed on being disapproved of, but in the unconscious mind it became elaborated, and after a time crystalized out so that he obtained unconsciously the end desired and wished for—although the conscious mind rejected it.



When the symptoms observed fulfilled the desired wish, they were regarded as a "defence mechanism" against the condition feared in the mind, and the method of securing them unconsciously then became the "defence reaction." The same mechanism is at work when a man loses the use of a hand, an arm, a leg, or a foot, as also when he is mute, or deaf, or becomes temporarily blind. The paralysis is a dissociation from consciousness of the power to move a limb, in the same way that blindness is a dissociation of the power to see retinal impressions, and aphonia a dissociation of the faculty of vocal expression. It is most difficult to discover in many hysterical cases the origin of the stigma, and it is often a hard task to ascertain the nature of the wish the patient desires to fulfil; hence the use of what has been described as the process of psycho-analysis in order to reach the "submerged memory complex." If a sufficiently strong emotion can be introduced to consciousness, the symptoms may disappear like magic, and I have seen reasoning and persuasion and suggestion to fail when the faradic current at once effected a cure. I have seen wonderful results from hypnotic suggestion, but I have seen equally striking cures without it, so that no one method can command success, so much depends upon the personality and individuality of the physician and the suggestibility or impressionability of the patient.

Perhaps a word or two more may be permitted about psycho-analysis. First, from the standpoint of its advocates, psycho-analysis purports to deal with the cause of the neurosis, and not with its symptoms; it thus deals with the deep fundamental conditions of the mind, which are analysed, and the analysis alone constitutes the treatment. It is believed by its disciples that psycho-analysis discovers the "unfulfilled desires," which they state are at the root of every psycho-neurosis, and out of which they all rise. The contrast between the psycho-analyst and the ordinary physician is that the replies given by the patient to the physician are only a part of the history; the other part, which is essential, is concealed, and only the psycho-analyst is able to reach this. It is concealed, owing to the fact that it represents painful experiences which are forgotten and remain in the unconscious mind, which only the psycho-analyst can reach. It is these experiences, which are active forces in the unconscious mind, that are the real cause of the hysteria, and if they can only be revived into consciousness with their emotional accompanying state, and thus worked off the mind (*ab-reaction* and *catharsis*), relief is obtained. To some extent hypnosis can effect this revival, because, as was seen, an appeal in this state is made directly to the unconscious mind; but suggestion is no part of psycho-analysis, and hypnosis is never used in the procedure.



The opponents of psycho-analysis assert that the theory which regards all the psycho-neuroses as arising from a sexual cause, is not correct; they deny that the chief repression relates to sexual matters, nor do they believe it is ignorance of sexual matters which need to be enlightened, that is at the root of the neurosis. They assert that this practice is injurious to the patient, and they deny that the conclusions and records of cases presented by the psycho-analyst are either logical or correct. Finally, they deny the "œdipus complex," and assert that the nursery is not noted for admonitions and rebukes as to incest, and they are struck with the failures of psycho-analysis, a process which has taken many months to carry out and should have been abandoned if reason, and not prejudice, had governed the treatment. They resent the excuse given for failures, viz., the mental resistance of the patient and inadequate "transference." Also they attribute the improvement to the belief afforded by auricular confession and the unburdening of the mind, which always occurs in the hysteric.

The psychoses of the war are usually divided into (i) those which have been actually caused by stress, strain, fatigue or exhaustion consequent upon active service; and (ii) those which were latent but have been kindled into activity on account of the war, such are general paralysis, dementia precox, some of the milder forms of amentia, ordinary mania, melancholia, for some of these and epileptics, having been previously ill, were passed on recovery into the army, where the strain only aggravated their previous mental weakness.

As to the incidence of mental and nervous conditions during the war, it has been enormous. Before the armistice the number of cases presenting mental symptoms numbered over 20,000, and every form of mental disorder, except those incident to sensibility, has been met with. In particular may be mentioned the milder confusional type, with sluggish ideation, mental torpor, and forgetfulness. The chief symptom in these mild cases has been inability to fix the attention (a-prosexia), associated with loss of memory, which is probably the next most common symptom, and is of the anterograde amnesia or recent loss, and rarely a loss for remote events or the retrograde type.

Some cases of mental confusion when disorientated both in time and place were described as suffering from obtusion—an aggravated form of confusion. Some of the milder cases of delirium, which wandered into danger and had a loss of the sense of reality, were described as suffering from oneiric delirium. They resembled those in the somnabulistic state, they acted their hallucinations, as if carrying out a dream. Both these types recover quickly with rest, quietness, and isolation, with regular food. My experience of these cases has been limited to those presenting



symptoms of bodily disease in this country, such as pneumonia, malaria, dysentery, and influenza.

Alcohol, both overseas and in this country, was the cause of delirium and mental confusion in some of the cases I saw. General paralysis has been less common, in my experience in the London Command and Alder-shot, than I should have anticipated; mainly, no doubt, because there are now exact methods of diagnosis, and because also specific instructions were issued as to their disposal, so that I would not be consulted in clear cases of this disease. My opinion is that there have been more remissions than usual resulting in their discharge from the military hospitals sooner than would be effected, if they had been resident in the different county or borough asylums. Not only have the remissions been more frequent, but they were of longer duration, again probably because there was less reason to worry about financial affairs under the Army pension than in civil life. The duration of the disease, certainly in the older cases, appeared to be longer than among civilians.

Some cases of "shell-shock" had many symptoms in common with general paralysis and sometimes an Argyll-Robertson pupil. The form dementia precox became a favourite diagnosis when in doubt about the mental state of a young soldier, and some of the psycho-neuroses were so labelled and *vice versa*. In one instance, in the case of an officer, who was not suffering from it, the proceedings and records had to be expunged after a special court of enquiry. I found the passivity of the limbs, the dilated pupil, the absence of tachycardia, and mental neutrality to be the most constant signs of true dementia precox, but in several instances—a fair percentage—the symptoms improved. A careful diagnosis had to be made from some cases of "shell-shock."

Melancholia was more frequent in my experience than the excited form, and I regret to say I am aware of several suicides. The depression was so acute and sudden, and the attention of the hospital-trained nurse to mental cases was most helpful, but in the ordinary sick wards such cases, when they occur, throw a great responsibility upon the staff as well as terrifying the other patients. Their removal, even when urgent, was not always immediately possible owing to the great pressure upon the accommodation provided.

Cases of paranoia were always very difficult to manage, for they were so logical and did not generally convince those in charge of them that they were insane. They were found first in one hospital and then in another before final disposal to the military mental hospital, but the chief difficulty was in deciding what was epilepsy, more especially as



I was not able to see the patients in an attack. Many were doubtless examples of hysterical "fugues," temporary convulsive attacks without, in most instances, complete loss of consciousness.

I should like to conclude this paper by stating that the care and treatment of mental cases without incurring the stigma of certification has been of priceless value to the sick soldier, who broke down in the service of his country, and to his family.

—From *The Practitioner*, November, 1919.

### SODIUM CITRATE IN THE TREATMENT OF PNEUMONIA.\*

By W. H. Weaver, M.D., New Orleans, La.

**I**N a paper on this subject published in the *New Orleans Medical and Surgical Journal*, September, 1912, we showed that a crisis or rapid lysis could be induced in pneumonia by the administration of full doses of sodium citrate in from twenty-four to forty-eight hours, occasionally running to the fourth day. Ten cases were reported at that time, all successful.

Our continued success with this method of treatment in thirty-five additional cases, which were reported in a paper read before the Louisiana State Medical Society, session of 1918, in New Orleans, has impelled us to make further investigations in order to establish a scientific basis for its action.

In order to remove any suspicion of empiricism in its use, and place it within the domain of scientific medicine, the history of its first application should be given. While doing some laboratory work on the blood, a sodium citrate solution was used in its preparation for making blood counts. Its action in maintaining, if not increasing, the fluidity of the blood was a demonstrated fact.

In a case of pneumonia in a girl nine years of age, with a solid lower lobe, sodium citrate was given for the sole purpose of testing its fluidifying power and thus facilitating the circulation of blood in the diseased lobe. The temperature was 103.5°; pulse, 140; respiration, forty-five, at the morning visit. Sodium citrate was given in ten grain doses every three hours night and day. The following morning the temperature was 98.6°; respiration, twenty-five; pulse, 100; lung apparently clear. Diagnosis was doubted, and medicine reduced one half. The following morning's visit showed decided consolidation, temperature, 102°; pulse, 120; respiration, thirty-seven; confirming the original diagnosis. Ordered

\* From the *New York Medical Journal*, November, 1919.



medicine given in the original dose. At the next morning's visit, the lung was clearing, only a few subcrepitant râles remaining; temperature, respiration, and pulse normal. While this was evidently a mild case, it served to show what an active remedy we were using, and encouraged its further trial.

Forty-seven cases have been reported, forty-five of which have been successful; "success" meaning that recovery ensued within about forty-eight hours as a rule, after the correct dose was given. A case that goes on to recovery in the usual time is not a compact success, the correct dose being probably misjudged and inadequate. Complications, of course, may interfere with a complete success.

Two unsuccessful cases were reported, one occurring in an alcoholic at the age of sixty-five years and the other a terminal pneumonia in a woman aged ninety-one years. In these cases nothing was expected of the treatment, except to determine its limitations. These cases have not run the usual course of five to eleven days, with recovery in the usual way, but have been cut short in every instance. A new treatment which will not bring about an immediate change for the better, with recovery inside of four days at the most, would hardly be worth while discussing, and would take many hundreds of successful cases to establish its claim to our attention. On the contrary, the uniformity of recovery in forty-five successive cases by an induced crisis is convincing. According to all the rules of prognosis, at least six of the forty-five patients should have died. One case complicated with pleurisy with effusion and severe cardiac disease; two cases of postoperative pneumonia after severe surgical operations, both patients very greatly prostrated by previous disease; and four almost hopeless cases of bronchopneumonia in children.

Microscopic examination of the exudate in pneumonia shows air spaces filled with clotted fibrin, in whose meshes are held red blood corpuscles, pus cells, and changed alveolar epithelium. The interlobular connective tissue may be infiltrated with leucocytes and fibrillated fibrin, but the bloodvessels in the walls of the alveoli remain pervious though collapsed by pressure. Osler says that if the lung is removed before the heart, it is not uncommon to find solid molds of clot filling the bloodvessels. This condition of the bloodvessels constitutes a greatly increased resistance to the flow of blood through that particular lobe or lobule, and the result is that there is no circulation in it, the blood taking the path of least resistance through the other healthy lobes. At least blood of high viscosity will not find its way through those collapsed capillaries any more than glycerine can be forced through a fine hypodermic needle. Hence, the degree of viscosity of the blood in pneumonia is a matter of



the greatest importance, as it constitutes the internal resistance to the blood current in contradistinction to external resistance due to the small size of the capillary bloodvessels and pressure on them and the larger bloodvessels exerted by the inflammatory exudate surrounding them. As a result of these conditions, the leucocytes and antitoxins with which the blood is charged do not gain access to the diseased tissues. This stagnation persists until the exudate or coagulum in the hepatized area undergoes some change of its own through contraction of the fibrin, its solution or digestion by the alexin in the blood serum, when the circulation is suddenly restored and the leucocytes and antitoxins as rapidly destroy and carry away the products of the primary inflammation; that is, the crisis occurs and there is an uneventful recovery.

Anders says (1): "Peteresco has found that large doses of digitalis administered at the onset will jugulate the pneumonia. His experience covered 1,192 cases, and showed the surprisingly low mortality range of 1.22 to 2.66 per cent. This plan of treatment is rational, since it aims at meeting the chief pathogenic indication of pneumonia by passing through the lung tissue an adequate proportion of leucocytes and thus re-establishing the cardiopulmonary circulation." This is quoted only to show what Professor Anders considers to be the chief indication in pneumonia—"restoration of the cardiopulmonary circulation," without which there can be no recovery from this disease. Our knowledge of the peculiar condition of the affected lobe or lobes compels that conclusion as to the rational indication.

In lobular or bronchopneumonia, patches of consolidated lobules are scattered here and there through the lungs. The pathology of the lobular inflammation is much the same as in lobar pneumonia, save that the plugs of exudate are more mucous than fibrinous. We have the same urgent necessity for the restoration of the circulation and practically the same treatment has been successful in all our cases.

After many years of conscientious labor, by the most approved scientific methods, by the very best workers in those lines, there has been no antitoxic serum produced that has been successful, or has appreciably reduced the mortality rate, or the morbidity of this disease. In the light of what Professor Anders considers the chief pathogenic indication, we ask the question, is it possible for antitoxins to reach the diseased tissues without previous restoration of circulation in those tissues? Where there is no circulation of blood there can be no antitoxic or restorative action.

Restoration of the cardiopulmonary circulation is largely a problem in mechanics or hemodynamics. The volume of the flow depends upon three elementary conditions. First, blood pressure; second, fluidity of the blood or viscosity; third, size and length of the bloodvessels. The



degree of viscosity of the various liquids has been measured by instruments of precision, and is based on the viscosity of water as the unit, and stated as the coefficient of viscosity.

Mathematically considered, the volume of the flow varies inversely as the coefficient of viscosity, other factors remaining the same, that is, pressure, and length and diameter of tube or capillary. The coefficient of viscosity of human blood has been found by Ewald, Nicholls, R. Burton Opitz, and others to be "about five times that of water." Alcohol is one ninth that of water; ether one fourth that of water; glycerine eight hundred times that of water, in C. G. S. units.

Hence, the blood pressure remaining the same, one fifth as much blood as water would flow, and, if the viscosity of the blood is reduced more nearly to that of water, it will necessarily flow that much more freely. Conversely, if viscosity is increased, the flow is reduced. Carbon dioxide, ether, and chloral have been found to increase viscosity. Opitz demonstrated that the infusion of large quantities of normal saline solution, and of distilled water, reduces viscosity; also, "that viscosity reacts sharply to heat and cold." Warm water baths decreased viscosity very considerably, while cold water had the opposite effect. Loss of water which the body suffers from any cause, such as drinking an insufficient amount of water, dry hot air, and high temperature, increases the viscosity of the blood, rendering recovery more difficult. Opitz concludes "that, other factors remaining constant, the magnitude of the flow must become greater the less the viscous resistance."

Regarding the relationship existing between viscosity and coagulability, it should be stated that viscosity is due to internal or molecular friction. As this molecular friction increases, the fluid becomes gradually less fluid, approaching and finally becoming thick, semisolid, then solid. This may be brought about by heat or cold, or by some chemical change in the molecular constitution of the substance—cold solidifies pitch, heat coagulates egg albumen, chemical change coagulates the fibrin of the blood without heat: internal or molecular friction has arrived at its highest point and the substance no longer flows, but solidifies.

Reliable observations made by Lee and Dochez (2) seem to show that "the coagulation time of the blood in pneumonia is delayed." This delay in the coagulation time and the resultant reduction of viscosity makes it easier for the blood to find its way through the obstructed bloodvessels of the lung. During hepatization of the affected lobe, there is a deposit of a considerable portion of the fibrin forming elements of the blood and prolonged coagulation time and increased fluidity would be the natural



result. High viscosity and coagulability at this time would certainly not conduce to restoration of the cardiopulmonary circulation and recovery.

The action of the sodium ion on coagulation is discussed by Lyle (4) who says that "the calcium ion appears to exert an action the reverse of that of the sodium ion. In blood clotting the calcium activates the thrombokinase and so the inactive thrombogen is converted into active thrombin, or fibrin enzyme. If the blood clots too quickly, it may be partly decalcified by administering sodium citrate. A milk diet may predispose to thrombosis in virtue of the large amounts of calcium salts it contains. This may be counteracted by adding citrate of sodium to the milk. This fibrin formation may be prevented by the addition of a certain quantity of a salt, such as magnesium sulphate or sodium citrate which forms a double salt with calcium which according to Martin is not available for the clotting of blood. Blood so treated is known as "salted blood." Now, this condition of salted blood can be established by the administration of sodium citrate until the calcium of the blood has been saturated—sufficient for the prevention of clot formation—with probably solution of recently and loosely formed clots in bloodvessels, such as Osler says are found in pneumonia.

Wewisohn (3) in his original paper on transfusion of blood says: "We can introduce five grams of sodium citrate into an adult without any risk of toxic effect. The .2 per cent. dose therefore allows us to transfuse as much as 2,500 c.c. of blood at one time. The slightest error under .15 per cent. would allow rapid coagulation."

"Ottenberg has reported a most interesting study of the effects of a citrate transfusion on a hemophiliac. After injection of 150 c.c. of citrated blood (.2 per cent.) the coagulation time dropped within ten minutes from one hour and twenty minutes to seventeen minutes, after twenty-four hours, the coagulation time had gone back to one hour, fifteen minutes." "Ottenberg injected twenty c.c. of a three per cent. citrate solution into patients, and noted a sudden drop in the coagulation time in the same manner referred to above. Forty-eight hours after the injection, however, the coagulation time had nearly doubled." Thus in the hemophiliac, there seems to be a temporary reversal of the usual action of sodium citrate, possibly due to some other condition.

This peculiar property of sodium citrate in preventing coagulation and reducing viscosity of the blood is recognized and in use today as a scientific fact, and should need no further proof. There are some points in favor of the use of sodium citrate that make it doubly valuable in the treatment of this disease.



While alkaline salts are necessary for the reasons mentioned above, these salts are rapidly eliminated and are not replaced from the restricted diet upon which most fever patients place themselves by loss of appetite and other causes. The degree of alkalinity of normal blood expressed in terms of sodium hydrate is equivalent to from 182 to 275 milligrams to 100 c.c. of blood, so that a wide variation is not incompatible with health.

Löwy and Richter (8) and others maintain that a medium degree of alkalinity of the blood is necessary in order that it may exert its normal antitoxic power. They have shown that "leucocytes increase in numbers in proportion as the alkalinity of the blood becomes more marked." Acidosis gives the opposite effect.

A number of experimenters have also observed that immunity to infection increased with the increased alkalinity of the blood and diminished when the alkalinity was reduced. Metchnikoff (9) states that alexin (the active principle of which is a trypsin like ferment) acts only in the presence of alkaline salts, and when relieved of the salts by dialysis, the serum loses its hemolytic power, but is instantly restored on the addition of the salts. Hence, with increased alkalinity of the blood must come increased antitoxic power, an active leucocytosis, and its greatest possible fluidity, all of which are necessary in order to meet the chief pathogenic indication in pneumonia.

In order to meet the indications as outlined, we give sodium citrate in large doses with plenty of water at the rate of fifteen to twenty grains an hour, or forty grains every two hours, sometimes more, to a full sized adult, continued night and day until the result is attained. Occasionally, this dose will act as a purge, and the salt passes off through the bowels. This should be checked by a few doses of an opiate. The medicine should be continued into the second or third day, after the crisis, to assure complete resolution. It should be firmly insisted upon that small doses have no effect and will be dissappointing.

It is understood that citrates are converted into carbonates in the blood in the ordinary doses in which they are given; but with the larger doses, certainly some of it may go over into the blood as citrate, and when the point of saturation of the calcium ion is reached, the blood will not coagulate so readily and is of the highest possible fluidity; then it begins to find its way through the pervious but collapsed bloodvessels of the hepatized lobe. If the blood pressure is low from cardiac disease, old age or other causes, and the pulse rapid, digitalis and strychnine should not be forgotten. In our most severe cases of pneumonia and bronchopneumonia, recovery has not been delayed beyond the fourth day.



Since this article was written, we have passed through one of the most severe pandemics in the history of civilization—influenza—with many forms and degrees of mixed infections, the most important of which were two peculiar and often fatal forms of pneumonia. The pathology of influenzal pneumonia, as given by Douglas Symmers and others, shows that it is not an ordinary pneumococcus or croupous pneumonia, but is characterized by a mixture of several different pathological processes, the result of mixed infections.

Influenzal bronchopneumonia, is due to hemolytic streptococcus, usually fatal, and influenzal lobar pneumonia, is due to the combined infection of the influenza bacillus with the pneumococcus. No treatment seems to have been of much avail in the streptococcic pneumonias. In the lobar form, sodium citrate would reduce temperature when other measures failed; but the consolidated lobe cleared up only after the lapse of from one to three weeks. Its action was proved in some of my cases by omitting it for a day or two and iodide of potassium given in its stead, when the temperature would run two or three degrees higher. Upon resuming the sodium citrate, the temperature would again subside to or below its former level, with recovery somewhat slow, but sure. In all our cases of lobar pneumonia of influenzal origin the patients treated with sodium citrate recovered, but not by crisis, as in the noninfluenzal pneumonia concerning which this paper was written.

#### CONCLUSION.

The method of treating pneumonia by full doses of sodium citrate has led to a marked reduction in morbidity as well as in mortality. In lobar pneumonia it is almost specific. No comparable results have been obtained by any other method.

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## CURRENT MEDICAL LITERATURE

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### ABSENCE OF CANCER IN THE ARCTIC REGIONS

Ross, in *The London Lancet*, on the authority of Vilhjalmur Stefansson, the Arctic explorer, who has returned recently from an expedition to Far North that cancer does not exist among the Esquimaux. Moreover, Ross has been told also by Sir William MacGregor, Dr. W. T. Grenfell, Mr. Frank Benzley, and Rear Admiral Peary that they had never seen a case of cancer among the native tribes of the Far North. If it may be assumed that cancer is absent from the Arctic regions, and the assumption seems justifiable, the fact, Ross says, gives rise to some interesting reflections. In the first instance, the Esquimaux are perhaps the most carnivorous race of human beings in the world, and consume few vegetable; therefore, the non-existence of cancer among them would appear to weaken one of the dietetic theories of the cause of this disease. There seems to be no racial or physiological difference which would exempt the Esquimaux from cancer, and, in addition, the observations of Panum, fifty years or so ago, that cancer either was extremely rare or did not exist in Iceland or Greenland, in the settlements peopled by Europeans, would imply that race does not enter into the question. Consequently, as Ross points out, the climatic explanation is the most plausible, and this tends to revive the parasitic theory of origin.

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### RED CROSS CITED BY SERBIAN ARMY

The American Red Cross has been cited for meritorious service in the general orders of the Serbian army. A copy of the orders was only recently received at the Paris headquarters of the American Red Cross, although the act which won the honor was performed more than a year ago.

At the time of the rapid advance of the Serbian army in their last great offensive against the Bulgarian troops, it was only through the help of the Red Cross that thousands of wounded soldiers were given the treatment which saved their lives. Equipped only with ox-carts, the Serbian army hospital units were unable to keep pace with the advance. No faster transportation could be obtained and the gap between doctors and the fighting line grew wider and wider.

At last, in desperation, the authorities appealed to the American Red Cross. Trucks filled with doctors and nurses, and carrying medicines and emergency hospital equipment, were rushed over narrow mountain roads and across the desolate battlefields to Uskub. A hospital was hastily set up and operating rooms arranged out of the materials at hand. For days both doctors and nurses worked day and night caring for the wounded



that were brought in. At last the army hospital units arrived, and the work was turned over to them.

The Americans returned to their own hospitals for the relief of the civilian population around Belgrade. No official recognition of their work was received until the general orders from Serbian headquarters arrived in Paris.—*Red Cross Bulletin*.

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### VISCEROPTOSIS

Roland Hazen, Paris, Ill. (*Journal A. M. A.*, Dec. 6, 1919), describes the condition and surgical treatment of visceroptosis, which, in the vast majority of cases, he says, is congenital. He describes the abnormalities in the position and relation of the viscera, and claims that the position of the hepatic flexure is the vital point in the treatment. He mentions the various clinical types and conditions that they simulate, such as chronic appendicitis, gallbladder or liver trouble, gastric or duodenal ulcer or cancer, and general physical asthenia and neurasthenia, and points out the characteristic symptoms which distinguish visceroptosis from them. Its gradual and progressive onset and pain on exertion, which is experienced by the patient, the characteristic position in bed, the easy fatigue, and sallow or muddy complexion and atonic tissues, are some of these. An illustrative case is reported, and a detailed description of the operation, as Hazen performs it, given. These are too full to exactly favor abstracting. His results, as shown by seventy-seven replies to a questionnaire sent out, were highly favorable. Seventy-eight per cent. of the patients considered themselves improved by the operation; thirteen were stationary, and none any the worse for it.

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### NEPHRITIS IN RELATION TO THE RECENT EPIDEMIC OF INFLUENZA

Symonds, in *The London Lancet*, gave a history of previous nephritis or of scarlet fever. The average age was 25.3 years. The average physique in the series was good.

In only one case of the series was marked edema observed, the distribution of the fluid in this case being general and the amount extreme.

The most constant feature of the nephritic cases was the early onset of an acute confusional mental state, progressing rapidly to noisy and active delirium, with incontinence of urine and feces, and every appearance of profound toxemia.

The volume of urine in each 24 hours was seldom diminished more than might have been expected with the high fever and pneumonia, the lowest average daily output for the first two days being 30 oz. per 24 hours, the highest 65 oz.



Microscopical examination of the centrifugal urine showed an abundance of casts, both granular and hyaline, with a striking absence of blood cells.

The postmortem examinations showed in most cases an enlarged and firm spleen. Microscopical examination of the kidneys showed in at least four cases (possibly also in four others) evidence of pre-existing renal disease.

The present observations seem to show that persons whose kidneys are previously damaged by disease are especially prone to die from bronchopneumonia in this epidemic.—*Charlotte Med. Jour.*

### TRENCH FEVER

This disease is not recognized in America. It was, however, a serious disease in the Allied Armies. A British Commission and an American Commission headed by Col. Richard P. Strong, M.C., investigated the cause of the disease and apparently solved the problem of prevention. Major W. Byam, R.A.M.C., thus summarizes the modes of infection, immunity and treatment.

*Transmission.*—By lice—through the excreta—scratching promotes the introduction of the virus; bites without scratching may become infected by the fluid excreta.

Open wounds give easy access to infection. Louse excreta will infect through the conjunctiva, but not by mouth or inhalation. There is some evidence that the urine of a trench fever patient may be infective.

*Incubation period.*—Eight days—extremes six to sixteen days—infection by bites alone have resulted after sixteen to thirty-five days—infectious by louse feeding.

*Infectivity of the louse.*—A high percentage of lice become infected. The excreta of such lice do not become infective for five to eight days after the lice have sucked trench fever blood. They remain infective till the twenty-third day, and probably for life. The infection is not passed to the offspring.

*Viability of the virus.*—In the excreta it will withstand drying at room temperature for four months—sunlight—heating dry to 80 degrees Centigrade for twenty minutes.

It is destroyed by moist heat at 60 degrees Centigrade for twenty minutes—dry heat 100 degrees Centigrade (212°F.) for twenty minutes 2% lysol or 2% cresol for twenty minutes.

*Virus in the blood.*—Usually in the plasma during both febrile and afebrile periods. Lice have been infected as late as the seventy-ninth day of disease, and possibly in one case the 300th day. Trench fever blood applied to the broken skin does not convey the disease.



*Immunity.*—Following an attack is short lived. Re-infections or relapses have been induced by louse excreta from the fiftieth day onwards from onset of first attack. Such re-infections have not been produced by blood inoculations.

*Treatment of the disease.*—The following have been proved to have no curative effect:—quinine—salicylates—mercury—arsenical compounds—acriflavine—eusol—foreign protein injections—colloidal manganese, silver rhodium, iodine, and sulphur—methylene blue. Disodolurargol-tartar emetic injections are on trial. Injections of serum from recovered patients gave no appreciable results in doses up to 50 c.c. intravenously.”

The above brief summary of the developments in our knowledge of certain communicable diseases leads us to believe that the day is not far distant when our weapons for fighting these diseases will be much more effective. The rapid progress made should stimulate public health workers to even greater achievement.—*Health News.*

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### PROTEOSOTHERAPY

P. Nolf, Brussels, Belgium (*Journal A. M. A.*, Nov. 22, 1919), describes an intravenous method of proteosotherapy, the characteristic feature of which is the administration of the protein or proteose by a route that avoids the action of the digestive juices. Nolf first used this method successfully in 1908 in the treatment of noninfectious diseases, and during the war he used it in infectious diseases with intravenous injections of peptone. He describes the mechanism of experimental shock produced by injection of proteins, and says that he avoids it in his method by producing a mild reaction which he has called the “peptone” effect. The intravenous injection of a very small dose of peptone can be safely performed only by a physician who knows its dangers. The injection must take many minutes and the pulse be carefully watched so as to interrupt or slow down in case the pulse becomes too rapid, as this indicates lowering of blood pressure. If one is prudent the procedure is without accident. There may be a little transitory tachycardia, headache and dyspnea, all this passing off in a few minutes, but after the lapse of half an hour there is often an acute rigor followed by defervescence and sweating. The patient feels and seems better. His fallen temperature may last until the next day. Nolf repeats the injection only every other day, and improvement is common after one or two injections, but they are continued by him until complete cure, to avoid a relapse. He first used the method in typhoid fever, and later in numerous cases of septicemia, and has had good results in acute rheumatism, erysipelas and arthritis. The theory of it is that it stimulates the assimilation of antigens and aug-



ments the destruction of the microbes. It is a non-specific treatment, and therefore can be used in connection with other methods. It differs from vaccino-therapy in that the latter is specific, but the author has had equally good results in selected cases by that method in very small doses, about a thousand times smaller than those given subcutaneously.

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#### WAR HEADACHE AND ITS SURGICAL TREATMENT

Rawling (*British Medical Journal*) urges that in the treatment of war headache the following steps should be taken: 1. That all other measures should be given free and fair trial with a probationary period of about three months, unless urgency prevails. 2. That operation should be reserved for the more acute cases and for those more severe chronic cases where the patient is rendered miserable by reason of headache and associated incapacity. 3. That the operation should be so conducted as to provide adequate decompression effect, and that the trephining should be carried out under cover of the temporal muscle. There should be such removal of bone and such dural incision as shall allow the escape into the temporal tissues of the excess cerebrospinal fluid, sufficing to lower adequately the intracranial pressure.—*Charlotte Med. Jour.*

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#### ON THE TREATMENT OF PNEUMONIA

Dickson, in *The British Medical Journal*, in speaking of the slight progress made in the treatment of pneumonia, says that enough stress cannot be laid on the "enormous importance of rest." Cardiac weakness is so pronounced that the patient can actually die from the effort of sitting up in bed.

Following the doctrine of Prof. Greenfield, Dr. Dickson considers that there are two essential parts in the treatment.

- (1) Absolute rest—the value of which cannot be over-estimated.
- (2) All cases are given tincture of strophanthus, from the time the diagnosis is made, in sufficient doses to keep the pulse satisfactory. Early dosage is extremely important; it is absolutely wrong to wait for signs of heart failure.

The dose of strophanthus varies with individual reaction to the pneumotoxin.

Strychnin the author considers as positively harmful. Heroin, 1-6 grain hypodermically, is beneficial. It quiets the cough and induces sleep.

It should be remembered that the active principle of strophanthin readily undergoes decomposition when diluted in water, so it should be prescribed as the tincture alone, and not made up with water in bulk.—*Charlotte Med. Jour.*



## PERSONAL AND NEWS ITEMS

Two deaths occurred recently at Hamilton, one at the city hospital and one at Fruitland, which have been attributed to Lethargica encephalitis, or so-called sleeping sickness, gave intimation that the malady which has scourged the west is getting a foothold in this section of Ontario. Acting upon instructions from Dr. McCullough, provincial health officer, local physicians will not report cases of sleeping sickness to Dr. Robert Roberts, M.O.H. The case at Fruitland was that of a school girl. The attack came on with a violent headache and the girl became drowsy. She then fell into a deep sleep, which ended in death.

The main building of the University of Montreal, better known as the Laval University, containing the medical departments, was destroyed by fire on 22nd November. The damage is estimated at \$400,000, and covered by insurance. The cause of the fire has not been definitely settled, but a smoking concert was held in the building in the early part of the evening, and it is thought by the firemen that lighted cigar butts may have been left around after it.

Prof. G. N. Stewart, Director of the Department of Experimental Medicine at the Western Reserve University, Cleveland, Ohio, gave a very able address recently in Toronto, on the value of research in medicine. He pointed out the great advances that had been made as the result of methodical and painstaking investigation.

A case of sleeping sickness was reported at Point Edward in Lambton Country on 9th December.

Dr. Edgar Rae, of Toronto, was fined \$500 for not being present to attend an obstetric patient during delivery. The child died. The doctor appealed the case.

According to some research done in London, England, influenza germs tend to recur every thirty-three weeks.

It is stated that about \$750,000 is required to place the Toronto General Hospital on a sound financial basis. There has been a large deficit on account of operation and maintenance in addition to an accumulation of overhead charges, amounting to about \$50,000 per annum. It is very probable the city will be asked to provide at least one-third of the amount needed.



Dr. L. E. Pollack has resigned his position in charge of the milk supply department of the laboratories division of the City Medical Department, and has accepted a position with the City Dairy Company, of Toronto.

Dr. W. J. Dobbie, in charge of the Sanitarium for Tuberculosis at Weston, has pointed out the urgent need for financial aid to the various institutions taking care of the consumptives.

The majority of the inmates of Byron Sanitarium are satisfied with conditions, according to a report made by the Grand Jury to Judge MacBeth. The jury reports that the sanitarium is clean and well conducted, and that regulations are no more rigorous than is necessary in order to protect the public from infection.

Dr. J. C. Connell, Dean of the Medical Faculty of Queen's University, who is the president of the Medical Council of Canada, has been invited by the Government of the United States to join a medical commission from Great Britain and France next April. The object of the commission is to further inter-allied reciprocity in registration. The commission will meet in Washington, and then attend the annual meeting of the American Medical Association in New Orleans. Afterwards they will visit a number of medical schools in the States and attend an examination conducted by the National Board of Medical Examiners in Philadelphia.

A presentation and address was made this evening to Dr. D. E. Kelly, who is leaving Peterboro to reside in Bobcaygeon and is to be married shortly. The presentation, which was made on behalf of the Peterboro Medical Society, took the form of a silver tea service and tray. Dr. Kelly recently returned from overseas, where he served as a major in the Army Medical Corps. He won the D.S.O. and the Croix de Guerre. Prior to going overseas early in the war, Dr. Kelly practiced in Peterboro, and upon his return a few months ago resumed his practice here. Almost the entire medical profession of the city was represented at the banquet.

Brig.-Gen. A. E. Ross, M.P.P. for Kingston, has been appointed administrator of the Federated Unemployment Fund for Returned Soldiers. General Ross, who will be entrusted with the disbursement of a maximum sum of \$40,000,000, returned from overseas several months ago after five years' service. He was taken into the Hearst Government as Minister without portfolio just before the general election. He was elected by acclamation in Kingston.



Dr. C. E. Wilson has been re-elected president of Great War Veterans Association for Toronto.

Interesting figures supplied by the Department of Public Health regarding the import of harmful drugs for the six months ending Nov. 30, reveal the fact that since the coming into force of the restrictions in May last, the use of narcotic drugs in Canada has been reduced over 50 per cent.

Commencing Tuesday, January 6th, 1920, the Laboratory of the Department of Public Health, City Hall, will make the Wasserman Test twice weekly, every Tuesday and Friday. Reports will be mailed on Wednesday and Saturday. For obvious reasons no reports will be given by telephone.

There are six new buildings which are most urgently required by the University of Toronto, chief of which is a building for the women students, which will supply the place that Hart House fills for the men students. A new medical building is a necessity as well as an addition to the buildings of the Faculty of Education, and additional drafting room for the engineering and science students. The two other special requirements are a new building for the botany branch of biology, and an addition to the central heating plant which now supplies most of the buildings around the campus as well as some on Bloor Street.

Opticians or alleged eye specialists who practise their trade by peddling glasses from house to house must cease doing so at once. At the last session of the Legislature on "Optometry Act" was passed, but it was not to become effective until a proclamation was issued by the Lieutenant-Governor. This proclamation was published in *Ontario Gazette*, and the act was brought into force as from November 1.

A clean house with plenty of fresh air and sunshine is a long step in the direction of health, says the United States Public Health Service.

The kitchen is the most important room in the house from a health standpoint, says the United States Public Health Service. Keep everything about it and every one in it scrupulously clean.

Beauty is more than skin deep, according to the United States Public Health Service. Natural beauty is usually a sign of health that comes from keeping the body clean and getting plenty of outdoor exercise.

A decayed tooth is far more dangerous to the health than a fly in the soup, says the United States Public Health Service. Visit the dentist regularly. Keep the teeth clean.



Thousands of children are killed every year because parents say, "They will have it anyway", and permit the little ones to expose themselves to whooping cough, measles and scarlet fever, says the United States Public Health Service.

Dr. R. R. Montgomery wishes to announce that he has opened an office at 79 Bloor Street, East, and will confine his practice to Diseases of the Ear, Nose and Throat. Phone, North 4842.

Industrial accidents killed 3,400 persons and seriously injured 50,000 in the State of Pennsylvania in 1918, according to reports reaching the United States Public Health Service. Most of such accidents are preventable; many the result of carelessness. Safety First.

Cultivate the habit of walking with head up and the shoulders thrown back. It is cheaper and better than bottled tonics, says the United States Public Health Service.

Germ diseases kill off more people than the deadliest wars, says the United States Public Health Service. In 1917 pneumonia and tuberculosis killed 223,000 Americans, more than seven times the number killed in action in France.

Heart diseases caused more deaths in 1917 than any other ailment (115,337), says the United States Public Health Service. Right living would materially reduce this. Don't wait for the disease to develop before you see your physician.

Carelessness with the hands and teeth causes more deaths in America every year than carelessness with motor vehicles, says the United States Public Health Service. Keep the hands clean, free from germs, away from the mouth and visit the dentist regularly.

Do not take drugs to cure the headache, says the United States Public Health Service. Consult a physician, a dentist or an oculist, to see if the cause can be located. Often the eyes or the teeth may be at fault.

A person can live weeks without food, days without water, but only a few minutes without air, says the United States Public Health Service. Persons who pay but little attention to the purity of the air they breathe are not careful as to drinking water and food. Become a fresh air crank. Raise the office windows.

Dr. A. G. Lochhead, of Toronto, was married to Miss Helena Vanwart, of Fredericton, N.B., whom he met in Germany. Dr. Lochhead was in Germany studying bacteriology, and Miss Vanwart was in the same country, in 1914, when the war broke out.



Dr. W. H. Carveth desires to announce that he will devote his attention to the administration Anaesthetics. His office is at the corner of College and Huron Streets.

The Ontario Hospital at Orpington, near London, has been sold to the British Ministry of Pensions for \$400,000. It will be used as a central depot for cripples and permanently wounded men of the Imperial army. The Ontario Government is also absolved from the lease obligation requiring conversion of the site to its original state, which means approximately an additional fifty thousand dollars benefit on the transaction. The hospital was opened in 1916 with one thousand beds, the accommodation being doubled a year later. Col. MacPherson of Toronto was commandant from the start to finish, Orpington being the last Canadian general hospital to close.

Capt. J. L. Robinson, the M. O. in charge of the officer patients at Christie Street Orthopaedic Hospital, Toronto, was given a pleasant surprise last night at a concert and supper arranged by his ward, who, in appreciation of his valuable service, presented him with a solid silver salver as a little Christmas gift. The presentation was made in behalf of the donors by Lieut-Col. J. Keiller McKay, a patient. Short addresses were made by Major Geo. W. Stoddart and J. R. Maxwell, Dr. Robinson making a suitable response. Musical number were rendered by two well-known artists visiting the institution, Messrs. Stanbury and Curtiss, Lieut. V. C. Binks acting as the accompanist.

Dr. E. E. Cleaver wishes to announce to the profession that he will devote his attention to the investigation of Gastro-Intestinal Diseases, including Laboratory and X-Ray Methods. 155 Bloor Street East, Toronto. Phone: Office North 7461; Residence Park. 4555.

Twenty doctors have been suspended by the Ontario License Board as far as having their prescriptions honored at the Government vendors in the province. Two are in Toronto.

The Weston Sanitarium Club has been active during the recent weeks in raising funds for Christmas cheer and garments for the children of the Queen Mary Hospital, Weston. On December 4 a tea and sale of home-made cooking were held at the home of Mrs. W. G. Wright, 311 Sunnyside Avenue. This was very successful, the sum of \$185 being realized. On December 10 a musicale was held at the home of the secretary of the club, when Lady Falconer gave a very interesting address on "Woman's Place in the World." The combined proceeds amounted to over \$200.



It is reported that there have been three cases of sleeping sickness in Toronto. There has been one death.

The Senate of Queen's University has advised the students to be vaccinated but did not go as far as to make it compulsory.

The late Dr. Luke Teskey, of Toronto, left an estate valued at \$94,575. It is divided among his family.

Dr. Arthur B. James has opened an office at 48 College Street, Toronto, and confine his practice to urology and syphilology.

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## OBITUARY

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### E. B. ECHLIN, M.D.

Dr. Echlin, well known in Ottawa as a practising physician and surgeon, died there on the 12th December, after a lengthy illness. He had been in practice since 1894.

### J. H. HAMILTON, M.D.

Dr. Hamilton died at his home in Vineland in October, and was buried at Erin.

### J. N. WILKINSON, M.D.

Dr. Wilkinson, of Dundas, Ontario, died there on 4th October last.

### J. K. HIGH, M.D.

Dr. High, who had lived at Preston for many years, died recently in the Galt Hospital at the age of 79 years.

### L. B. DE LA BRUERE, M.D.

Dr. De La Bruere, of Shawinigan Falls, was drowned in Lake St. Charles, as the result of a canoe accident.

### WILLIAM W. WALKEM, M.D.

Dr. Walkem had resided in Victoria and Vancouver, B.C., for about fifty years. He had been engaged in practice in Vancouver, Victoria and Nanaimo. He went to British Columbia as Secretary to his Brother who was Prime Minister of the Province. He was elected to the Legislature in 1894. He was 69 years of age.

### RITCHIE, M.D.

Dr. Ritchie was a graduate of Edinburgh, and located west. He met with a motor accident at Banff, and died in Calgary Hospital.

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## BOOK REVIEWS

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### INTERNATIONAL CLINICS

A quarterly of Illustrated Clinical Lectures and Especially prepared Original Articles on Treatment, Medicine, Surgery, Neurology, Pardiatics, Obstetrics, Gynaecology, Orthopaedics, Pathology, Dermatology, Ophthalmogy, Otology, Rhinology, Laryngology, Hygiene, and other topics of interest to students and practitioners, by leading members of the medical profession throughout the world. Edited by H. R. M. Landis, M.D., Philadelphia, U.S.A., and Chas. H. Mayo, M.D., Rochester, etc. Vol. II, 1919, and vol. III, 1919, of the 29th series. Philadelphia and London, J. B. Lippincott Company, 1919. Charles Roberts, 201 Unity Building, Montreal, Manager for Canada. Price \$9 per year.

These are very excellent volumes of this superior series. It is always a pleasure to review International Clinics, as it is one of the very best of our medical publications. Any one who reads regularly these volumes as they appear will keep himself well abreast of modern medical thought, and acquire a splendid reference library. Much praise is due the editor for his efforts in securing high class articles for the publication, and for the good judgment shown in the distribution of topics. The publishers have ever done their part well; and have made a commendable effort to keep up quality and keep down price during these costly times. This series should find its way into most doctor's offices.

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### NERVE LESIONS.

Treatment and Restoration of Injured Nerves, by Athanassio-Bemsty, formerly Interne of the Hospitals of Paris. The Library of Masson and Co., 120 Boulevard Saint-Germain, Paris, 1916. Price, 4 francs, 40 centimes, net.

This is a very useful small book of 156 pages, on a most important subject. The book is freely illustrated with excellent original pictures setting forth the clinical feature of these injuries, such as regions of paralyses and areas of onæsthesia. The treatment is covered very fully, and much attention is devoted to the mechanical appliances for these cases. We can recommend very highly the work.

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### QUARTERLY MEDICAL CLINICS.

A Series of Consecutive Clinical Demonstrations and Lectures by Frank Smithies, M.D., at Augustana Hospital, Chicago, vol. I., No. 2, for April. Medicine and Surgery Publishing Company, St. Louis, Mo. Annual subscription, \$5 in paper, \$8 in cloth, single number, \$1.50 and \$2.50 in paper and cloth respectively.

This number contains 220 pages, and covers an exhaustive study of thirteen cases. Among these are encephalitis lethargica, thrombosis



causing epilepsy, tachycardia, lues, tetrary lues, anæmia, malnutrition, obstructilon of bile-duct, obstruction of sygmoid portion of colon, deep urethral obstruction, enterocolitis from parasites, general arterio-sebrosis, and perincious anæmia. The author's methods or analysing the cases that come under his care for these studies are to be commended to every teacher and practitioner. Though one feels that he is reading a careful and scientific study of each case, yet there is an entire absence of obtruseness and that heaviness of expression that weary the reader. Dr. Smithies has a happy and lecar style, and selects his case with care so that the series make an interesting number. We wish him success in his efforts to lay before the profession these valuable studies.

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### MORTALITY STATISTICS

Department of Commerce. Bureau of the Embers, Mortality Statistics by Sam. L. Rogers, 1917. Eighteenth annual report Washington, Government Printing Office, 1919.

This large volume contains a vast amount of information regarding the vital statistics in the United States. To those who have occassion to look into such matters, this work will prove very valuable.

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### MATHEMATICS OF HYGIENE.

Aids to the Methematics of Hygiene, by R. Bruce Ferguson, M.A., M.D., B.C., Street, Covent Garden, 1919; Price, 3s. 6d. net.

A very careful perusal of this small volume enables us to speak of its merits. To those who are engaged in sanitary science this book will prove most useful. It takes up the laws of gases, hygrometry, hydrostatics and heat, ventilation, rainfall, sewege, energy, exercise, diet, hospital wards, alcohol, chemical calculations, logariths, vital statistics, life tables, weights, measures, atmospheric pressure, boiling, vapors. The author shows a perfect master of his subject.

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### CHILD WELFARE.

The Teachings of Certain Dentists, School Medical Officers, Medical Officers of Health and other medical men, by J. Sim Wallace, D.Ds., M.D., L.D.S., formerly Dental Surgeon and Lecturer on Dental Surgery, London Hospital, London: Bailtiere, Tindall and Cox, 8 Henrietta Street, Covent Garden, W.C., 1919. Price, 5s. net.

The book takes up prophylaxis at different ages, the principles of dietetics, child welfare and the teaching s of specialists, the duty of the State towards the environment of hte child, and oral hygiene and physiological secretions. Among a great deal that is being written at present on child welfare this small book deserves to take a prominent place. The author has devoted many years to this subject and deserves a hearing at the hands of all who are working in the field of child betterment.



## MISCELLANEOUS

## FRENCH LEGISLATION FOR EXPECTANT MOTHERS

Consequent on the marked decline of their birth-rate, the French people have been making a great effort to save the babies.

The "Loi Strauss" came into force in the month of June, 1913, but it has been modified by the Act of December, 1917, and has for its object the securing of a time of rest to women during the latter part of pregnancy and the beginning of the nursing period.

This law makes three wise provisions:

(1) The pregnant woman has the right to leave her work at any time during pregnancy without having to pay an indemnity for breach of contract.

(2) Employers are forbidden to employ a woman during the first four weeks following confinement.

(3) Every woman without sufficient means of support has the right to an allowance during the four weeks preceding and the four weeks following her confinement.

The applicant must be a French woman and must have no other source of income than her own wages. The form of claim must be sent to the Mayor of the Commune and, accompanying the request, there must be a medical certificate stating that she cannot continue working without risk to herself and her child. The claim is usually made during the seventh month.

Upon receipt of this request, the "Bureau de bienfaisance" makes all due inquiry and, according to the information obtained, the assistance is either granted or refused.

The grant during pregnancy varies from 50 centimes to 1.50 francs a day, the municipal council fixing the sum between these two figures. In Paris, the grant is the maximum amount with 25 centimes added by the Council.

After confinement, the grant is the same, except that where the mother breast-feeds her child, she receives an addition sum of 50 centimes. If, however, the woman is in hospital, the allowance is reduced by half, provided she has no other child under the age of thirteen years.

The funds to meet this charge are provided by the town, the department and the state in varying proportions, the proportions in Paris being about half by the department and state and half by the city.

It is required that a woman in receipt of the grant must remain at rest, giving up her regular employment and taking as much rest as her ordinary domestic duties will permit. Failure to conform with these



regulations forfeits the allowance. The inspection of the mothers is performed by women visitors, whose duty it is to give all necessary instructions in hygiene.

With the object of still further assisting the working mother, the French Chamber enacted a law in August, 1917, whereby in every commercial and industrial establishment a woman nursing her infant has the right, for the period of one year, to spend an hour daily in attending to her child, the time being taken in two half-hour periods.

The adoption of these very wise measures by the Government cannot fail to prove of benefit to both mother and child, as they are common sense and practical.—*C. A. H.*

#### • AMERICAN RED CROSS HOME AT AIRDRIE-COATBRIDGE.

The American Red Cross Maternity Home Hospital at Coatbridge, Scotland, was dedicated with impressive ceremonies, under the auspices of the Town Councils of Coatbridge and Airdrie, a few weeks ago. This home was established through a gift of two thousand pounds (\$10,000) from the American Red Cross, and is one of the five similar institutions founded in Great Britain as a result of contributions from the same source. The infant death rate in England and Scotland has been appalling, due largely to housing conditions which make it impossible for mothers to give proper care to their children. Impressive statistics bearing on the matter were given by Sir Lester Mackenzie, D.S.O., at the opening of the Airdrie-Coatbridge Home, and Lady Mackenzie, in an address on the same occasion, declared that the Red Cross of both America and the United Kingdom could not give their surplus funds to a better movement than that of helping the mothers and children of Great Britain.

#### EXTENSION COURSES AND LECTURES FOR GRADUATES IN MEDICINE.

The Faculty of Medicine of the University of Toronto recognizes that the practitioners of the Province are anxious to keep closely in touch with the advances in Medicine, and that they have a claim on the Provincial University to aid them in doing so. The Faculty considers this duty as being second only to the instruction of the undergraduate.

At the moment the rapid advances in knowledge and the many changes due to the war make it impossible for the Faculty to offer set courses of sufficient variety to meet all the needs of those who seek further study. It further considers that the method which is the usual one in England and on the continent will meet the needs if it be administered in a personal and sympathetic way through an advisory committee.



Those who have studied abroad know that the routine method is for the graduate to attend the instruction given to the students of the senior years in Medicine, to follow the ward rounds and to go to the out-patient department picking up what he can. If special instruction is required in order to enable him to follow the clinical work, this is obtained privately from a tutor. The University hopes to improve on this method.

A standing committee has been appointed whose duty it is to give any graduate interested, advice as to the clinics and lectures which should be taken and to confer with the heads of departments and individual teachers so as to arrange a course in advance for each applicant. Such a course may be modified by the committee if it does not prove suitable.

The Fifth Year student in Medicine is now receiving the most advanced type of clinical instruction, and his teachers often take advantage of the modern laboratory training given in the junior years and may thus make their instruction somewhat difficult to follow by those who have not had this preliminary training. The teacher will, however, be prepared to explain privately any difficulties, to recommend such books as will clear away these difficulties or through the Committee to arrange for some special laboratory instruction.

All the library facilities of the University will be open to any post graduate student under the usual conditions.

The staff fully realizes that every effort must be made to render the visit of each post-graduate student both pleasant and of real value. Instruction may be obtained as outlined above in the following:

Medicine  
Surgery  
Obstetrics and Gynæcology  
Pædiatrics  
Otology, Rhinology, Laryngology  
Ophthalmology  
Preventive Medicine  
Pathology and Bacteriology.

Applicants for courses should remember that the shorter and the more general a course they desire the more difficult it will be to arrange to meet their needs and the more superficial the training that they receive is likely to be, while the longer the period they can devote and the narrower the field, the easier the committee will find it to meet their requirements and the more thorough will be the training.

The University will impose a minimum fee of \$10 per month. This will be imposed for any course of less than a month as a registration fee.



In such cases where extended work and attention is required, a special fee to cover the same will be arranged by the committee.

In order to aid medical societies or groups of physicians to keep up-to-date, the committee is prepared to arrange lectures for such societies.

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#### A CALL FOR NATION-WIDE HEALTH CONSERVATION

Preventable disease cost the United States four billion dollars less in 1917 than it would had the health conditions of 20 years ago prevailed in 1917.

Four hundred thousand less deaths occurred in 1917 than would have had the 1900 death rate prevailed.

Annau illness of workers still costs this country two billion dollars each year.

One man in every three called by the Army was found to be physically unfit.

These figures were given out to-day by Surgeon-General Rupert Blue of the United States Public Health Service, in urging a plan for nation-wide conservation of health and calling on all health agencies to co-operate in a carefully prepared program.

Surgeon General Blue has sent a letter to State and City Health Officers, to the head of the American Red Cross, The American Public Health Association, the American Medical Association, the National Tuberculosis Association, the International Health Commission, the National Safety Council, the American Child Hygiene Association, and other health agencies, suggesting a conference in Washington to consider a health program prepared by the Public Health Service.

The Surgeon General points out that practically all of these agencies have under consideration some plan of health conservation and that unless the work can be co-ordinated and properly directed, little will be accomplished and there will be much over-lapping of effort and waste of funds.

It is emphasized that the success of the plan will be determined by its direct applicability to the conditions in the different local communities and for this reason Federal, State and local health officers must co-operate most closely in order to direct the campaign in each community and set a definite objective.

For instance, a Southern city would be more interested in a campaign against the mosquito and malaria than it would be in Rocky Mountain to-date, the committee is prepared to arrange lectures for such societies. control of pneumonia and respiratory diseases. All, however, have cancer, tuberculosis and venereal diseases; all would be benefited by public health nursing, medical supervision of school children, conservation of the lives of mothers and children, adequate sewage disposal, the provision of pure



water and pure milk. So, while each city and rural community will have as a definite objective the most vital need in that particular place, the various health agencies will have definite objectives according to the particular problem they set for themselves to solve.

The health program to be submitted to the conference has been in preparation for months, experts of the Public Health Service long having foreseen the need of such a nation-wide effort. A preliminary announcement of the plan was made at New Orleans at the recent meeting of the American Public Health Association which gave unanimous endorsement.

Few realize what has already been accomplished in the field of preventive medicine or what can be done by a carefully executed health program which is cumulative and continuous rather than spasmodic and desultory in character.

In 1900 the general death rate from all causes in the United States was 17.8;—in 1917, the latest figures available, it had been reduced to 14.2. Had the 1900 death rate prevailed in 1917 there would have been in the United States, with an estimated population of 110 million, 396,000 more deaths than actually occurred.

The record of other years leaves little room to doubt what may be done in saving life. In 1900 typhoid fever caused a death rate of 33.8 per 100,000 population. In 1917 the rate had been reduced to 13.4. Diphtheria was reduced from 35.4 to 16.5 in the same period. Tuberculosis declined from 190.5 deaths per 100,000 of population in 1900 to 146.4 in 1917. Had the 1900 rate prevailed in typhoid fever, diphtheria and tuberculosis, in 1917 these three diseases alone would have caused 91,740 more deaths than actually occurred.

The Public Health Service is led to believe that its health program is feasible owing to the fortunate co-operation and successful termination of the extra cantonment work which was carried on so efficiently by the American Red Cross, State and local health authorities and the U. S. Public Health Service. The lesson taught by this splendid demonstration of team work should not be lost to the country. For this reason, the American Red Cross, which has set aside millions of dollars for health work in the United States, has been asked to take an active part in translating the health program into action. Its thousands of local chapters are counted on to arouse and maintain interest in health work and actively co-operate with Federal, State and local health officers in accordance with the announced policy of the American Red Cross to co-operate with existing health agencies.

(What is true of the United States is very largely true for Canada. Prevention is always the most important thing to aim for.—Ed. *Lancet*).



## FROM A CHILD'S TOY

Just one hundred years ago Rene Theophile Hyacinthe Laennec, one of the pioneers of modern medicine, observing some children playing in the gardens of the Louvre, listening to the transmission of sounds along pieces of wood, conceived the idea of utilizing this method for listening to breath sounds in examining a patient's lungs. He went home, fashioned a tube by rolling up some glued paper and then experimented with this in his ward at the Neckar Hospital. From this incident in the garden dates the modern "stethoscope", an instrument well nigh indispensable in the modern practice of medicine.

The early stethoscopes contrived by Laennec, were unlike those generally in use in this country at the present time for they were constructed to be used by one ear only. Nevertheless the original Laennec type is still widely used in European countries. To us, who are accustomed to the scrupulous cleanliness of everything about the modern hospital, it is curious indeed, to learn that the filthy condition of the patients in the hospitals in Laennec's time made it repugnant to physicians to listen to the sounds in the lungs by placing the ear directly on the chest of the patient.

Laennec gave his invention the name by which the device is still known, deriving the word stethoscope from two Greek roots, one meaning the "chest" and the other "to observe" or "regard".

In using the stethoscope the instrument should be placed on the bare chest wall. For this reason a satisfactory examination of the lungs can only be made when the patient is stripped to the waist. Careless physicians sometimes attempt to examine a patient's chest through the clothing. Such an examination is worthless. If you want reliable information concerning the condition of your lungs, do not go to a doctor who attempts such careless work. It is time and money wasted.

Dr. Laennec was born at Quimper in Brittany on February 17, 1781, growing to manhood during some of the most troublous years in the history of France. He studied medicine at Paris, receiving his degree of doctor in 1804. He died on August 13th, 1826, at the early age of 45, in quaint old town of Brittany in which he first saw the light.

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FACULTY OF MEDICINE, PARIS.

The Faculty of Medicine, of the University of Paris, has issued a handsome Announcement, beautifully illustrated. It stated that the Faculty has been completely reorganized, and resumes its teaching and opens its clinics and laboratories. It is very gratifying to learn that this fine old seat of medical education is recovering so completely and so soon after the war. We wish the Medical Faculty of Paris all success.



## Home Life Observation

often tells husband or wife that coffee is disagreeing with the other.

When nerve irritation or digestion ailment becomes apparent, it's a good idea to quit coffee and use

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## PROPOSED BRITISH LEGISLATION FOR THE CHILD OF THE UNMARRIED MOTHER

As the legal position of the unmarried mother and her child is worse in England than in any other country in Europe, several societies interested have combined their forces for the purpose of obtaining legislation.

The principal provisions of the draft Bill are: that every illegitimate child should be made a ward of court; that the mother, on notifying the birth of the child, should name to the registrar the man alleged to be the father.

The registrar would then communicate with the clerk of the court, and a notice would be served on the putative father, inviting him to call upon the collecting office. If he admits paternity, the child will be registered in the name of the father, as well as that of the mother.

In respect to this proposed legislation, Mr. Parr, in his recent speech at the Kingsway Hall, London, said that, in his opinion, "the passing of such bill would do more than anything else to educate public opinion in the matter."

As indicating the views of the Local Government Board on the question of the maintenance of the illegitimate infant, the following statement recently sent to the Ilford District Council, is of interest:

"In the Board's view it is important for the health and welfare both of the mother and the child that the child should be kept with the mother if practicable, and the Board would be glad to know whether the child could be kept with the mother at home in this case instead of being placed with a foster-mother, if the Council contributed to its support."—*C.A.H.*

### CALCIUM CHLORIDE AS A HEMOSTATIC

Editor, *The Canada Lancet*,

DEAR SIR,—Hemorrhage after tonsilectomy is a very annoying incident and one which is difficult to control. The same remark applies to bleeding after the removal of polypi of the nose. I have used calcium chloride on many occasions, sometimes before operation as a preventive and occasionally after operation. The results have been uniformly satisfactory but I have often wished for some quicker mode of administration than by the mouth. I notice the report of a case of tonsillar bleeding after operation in the *British Medical Journal* of Nov. 8th in which the operator injected hypodermically in the gluteous muscle four grains of calcium chloride, 1 part in 4, and repeated the dose in half an hour with excellent results. This is a clinical fact worth noting.

Yours faithfully,

G. Sterling Ryerson

2 College St., Toronto,  
Dec. 9th, 1919.



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in which tobacco  
can be smoked”

*Lancet.*

**SOLD**

**EVERYWHERE**





## DR. J. K. M. DICKIE

Dr. J. K. Milne Dickie, F.R.S.C.E., formerly Ear, Nose and Throat Surgeon to Leith Hospital, Edingburgh has recently come to Toronto and opened an office at 47 Grosvenor Street where he will commence a practise limited to Diseases of the Ear, Nose and Throat.

Dr. Dickie was for some years on the Staff of the Anatomy Department of the University of Edingburgh where he was engaged on the study of the development of the upper air passages and of the ear. He received most of his special training in Edinburgh where he worked under Dr. Logan Turner and Dr. J. S. Fraser for several years.

Dr. Dickie was four years on active service and in 19 was appointed specialist in Oto-Laryngology to the Second Army B.E.F. and was O.C. Second Army Ear, Nose and Throat Centre.

At various times Dr. Dickie has contributed a number of papers to the literature of the ear, nose and throat and particularly to the minute anatomy of the ear principally by means of the reconstruction method.

## VITAL STATISTICS OF TORONTO

Diseases	Nov. 1919		Nov. 1918	
	Cases	Deaths	Cases	Deaths
Smallpox .....	1673	0	6	0
Scarlet fever .....	438	7	157	9
Diphtheria .....	621	48	167	30
Measles .....	412	2	68	8
Whooping cough .....	127	7	60	23
Typhoid fever .....	53	24	46	13
Cerebro-spinal meningitis .....	11	8	8	5
Tuberculosis .....	157	124	159	124
Infantile paralysis .....	2	0	1	0
Influenza .....	16	9	..	..
Acute influenzal pneumonia ...	..	3	..	..
Acute primary pneumonia .....	..	163	..	..
Relapsing fever and dysentery..	..	1	..	..
	3510	395	672	212

NOTE.—Cases and deaths of the last four diseases were not reported in 1918.