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## Original Articles

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### MEDICAL INSPECTION OF SCHOOLS AND THE PREVENTION OF SPREAD OF CONTAGIOUS DISEASES.\*

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By the term Medical Inspection, I understand the inspection of schools by a sanitary inspector under the direction of the Medical Health Officer, as well as inspection by the Medical Health Officer himself.

At the outset I may candidly state that I do not intend to follow closely either the official programme, or the preliminary announcement, but to broaden the subject so as to touch upon school sanitation from what should be the standpoint not only of local boards of health, but of all school boards, viz., the physical well-being of school children.

This ground I shall endeavor briefly to cover in the order in which experience generally comes to us (1) from the standpoint of cure, and (2) from the standpoint of prevention; or, in other words:

- (1) What can be done in the presence of an epidemic?
- (2) How can we minimize the danger of having one?

Under topic, or question, No. 1. I may be permitted to give in outline some experience gathered by the Berlin Board of Health in the years 1897 and 1898, at which time I had the honor to be connected with the Board in the capacity of chairman.

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\*Read at the annual meeting of Executive Health Officers of Ontario, at Brantford.

In May, 1897, scarlet fever made its appearance in the town. Then, and previously, we had a happy-go-lucky style of handling contagious diseases, and, consequently, it surprised no one that the month of June found matters getting worse.

That all the cases reported were confined to one ward, led to the manifest conclusion that the contagion came through the ward school. The Board discussed the advisability of closing this school, but the step was not taken, partly because we were at a loss to deal with the children that thus would be let loose on the streets, and partly because the proximity of the holiday season inspired the hope that somehow or other the sunlight of July and August would relieve the Board of any further anxiety and responsibility. Nor were we disappointed. But in the meantime diphtheria was cropping up in different parts of the town in a manner at once alarming and puzzling.

The many "sore-throat" cases that developed in sympathetic neighborhoods finally convinced the Board that the methods in vogue were either of no avail or were loosely carried out. It was also believed that many mild cases had occurred during the summer and spring that were not reported to the Board, and that some cases had occurred that were not even suspected as diphtheria until paralysis had set in.

Before the end of September it became more and more manifest that the town was simply full of the contagion, and that the time was come when rigorous action was an absolute necessity. After careful consideration as to the best means for overcoming the epidemic, we appointed assistant sanitary inspectors for the schools, and the following measures were adopted:

The sanitary inspectors daily visited the schools and obtained from the teachers a list of the absentees. The houses of the said absentees were at once visited to find the cause of the scholars' absence, and if there was any suspicion of sore throat, the family was advised (or instructed) to call in the family physician. The sanitary inspector at once put a notice in the school, temporarily keeping the children of such family from school until the case was decided. In nearly all cases this was done by the physician taking a swab from the patient's throat and sending it to Toronto for analysis, and the case was acted upon according to the reply telegraphed. If the reply came back "Diphtheria," the house was at once placarded and all precautionary measures possible adopted to prevent contagion. In all cases when the physician thought a case of diphtheria had recovered, a swab was taken from the patient's throat and sent to Toronto, and no case was declared free until such word was telegraphed to that effect.

When a case was declared free from disease the house and all clothing were disinfected with formaline.

During the epidemic a case broke out in the Orphans' Home. The patient was isolated, and the throats of the twenty-two others were regularly gargled and sprayed with formaline solution. About the same time another case was reported in a family of ten small children. At that time we had no hospital for contagious diseases, and there was little hope of carrying out any effective isolation in this case, but treatment similar to that adopted in the Orphans' Home was followed by the sanitary inspectors in charge, with the gratifying result that in neither place a second case occurred. These results encouraged the Board to continue the fight, but yet, in spite of all efforts, cases continued to develop with persistent regularity.

In one room of a ward school a swab was taken from the throat of each scholar present. The scholars were, to all appearances, in perfectly sound condition, but some were returned diphtheria, and one in the meantime had developed the disease.

This proved that not only were the mild cases prolonging the epidemic—a fact long recognized by the Board—but also that the contagion was carried around in the throats of perfectly healthy persons, ready to take effect whenever the vitality became impaired, or to be transmitted to others as chance and circumstance offered. The Board recommended, as a gargle and mouth-wash, the use of formaline solution—one part in from 50 to 100 parts of water—to be used three or four times daily by all persons exposed to contagion; and it was felt that, were it possible to bring about its general use in this way, the town could be freed from the scourge in two weeks' time.

The disease spread beyond our limits to the neighboring town of Waterloo, and to the township adjoining, but acting in concert with the local boards, and freely using our disinfecting apparatus, the disease was finally overcome. In all, we had for the year ending December 11th, 1897, nearly two hundred reported cases, the majority occurring in the last four months.

To the free use which was made of antitoxin was attributed the low death-rate of less than 9 per cent.

In December of the same year, a case of scarlet fever was reported. The family was quarantined, but in spite of all precautionary measures a case occurred next door. This was a puzzler to the Board, but it was eventually solved by the discovery that the culprit was a stray kitten belonging to the family in quarantine.

Later on another case broke out, and though the disease was

present all winter, it never became epidemic, and in all only four cases occurred. This, we believe, was due to the free use of formaline (1) as a spray on the clothing of persons coming in any way in contact with persons in attendance on patients; (2) as a gargle; (3) As a wash for attendants and also a body-wash for the patient during the desquamation period; (4) and lastly, in vapor form for final disinfection of the premises.

At no time during the fall of 1897 and the winter of 1897-8 was it deemed advisable by the Board to close any of the schools, for it was felt that, by continuing the schools in the usual manner a fairly positive, though not absolutely effective, method of tracing contagion was available. At intervals the various rooms were disinfected, so as to minimize the danger of disinfection.

But we did not go far enough, nor did we begin our systematic efforts soon enough. After an epidemic gathers way, such as it did with us, no measures are too stringent that will effectively stamp out the disease. Had we insisted upon a general daily use of prophylactics by all scholars, to be carried out, if found necessary under the inspection of an assistant sanitary officer appointed for the purpose, and to be continued so long as contagion manifested itself, bacteriologically or otherwise, I firmly believe that very positive results would have followed our efforts. As it was, we hardly realized, at the time, the difficulty of our task, but by persistent efforts along the lines indicated, success was finally assured.

The epidemic undoubtedly was aggravated, if not prolonged, by the wretched ventilation in some of the class-rooms. And this phase of the question brings me to the second, or preventative part, of the subject. Every school room should be ventilated in such a manner that the quantity of foul or vitiated air exhausted or removed shall be effected by methods at once positive and uniform.

The danger to health of foul air has been known for years, and for a generation at least the importance of well-ventilated schools has been insisted upon by all who have made education a subject for scientific study. But the officials whose duty it is to provide and to supervise the construction of our school buildings have in general regarded ventilation as a new-fangled fad, much as the Boer is said to regard a bath.

In the Province of Ontario children of school age are required to attend school. We compel them for five days in each week to occupy in common certain rooms, and we provide officers and penalties to enforce the law. Certainly this makes it our plain duty to know that the rooms are fit for occupation, and surely no

duty could have stronger argument for its performance than the thought that it applies to our children.

That the processes of nature are exact is conceded, and hence it follows that vitality can reach its maximum only by environing life with those exact relations necessary to its consummation.

A candle flame or a gas flame will drop 1-20th in luminosity if placed in air changed 1-500th in composition by the evolution of carbon dioxide; or, in other words, the impoverishment of the air in a room by the addition of 20 parts of carbon dioxide in 10,000—a proportion that has been found to exist in many badly ventilated rooms—will cause a reduction twenty-five times as great in the luminosity of the flame.

And if we consider physical energy or vitality as a chemical product in many respects similar to that going on in an ordinary flame, are we prepared to overlook the importance of maintaining the atmospheric factor as near the normal as possible?

If we apply to the question the test of filthy lucre, or more specifically, estimate the cost in filthy Dominion paper money, what do we find? Thirty weeks may be taken as the average school period requiring ventilation other than by the open window, hence a loss of 1-20th in vitality means a total loss of 1 1-2 weeks' work.

Now, at 1 lb of coal to 16,000 cubic feet, and allowing to each scholar the maximum of forty cubic feet of fresh warmed air per minute, it can be shown that this loss in time alone will more than heat three times the needful amount of air. But is it a question of cold cash?

Can we estimate the loss arising from lowered vitality, from increased liability to disease, and to its greater severity when it does come; and leaving out the additional expense of medical attendance and incidentals, should not the Provincial Board of Health press home, *not* the cheapness of fresh air, *but* the criminal costliness of bad air?

It has been said that past neglect was a folly, but would not further neglect be a crime?

Legislation should be enacted in regard to ventilation so as to require—what always ought to be required, but never will be without binding statute, to be enforced, say, by the local Board of Health—that a certain definite quantity of foul air be removed per head per minute; and further, that a like quantity of fresh, warm air be supplied. A law that speaks of proper ventilation without fixing the exact minimum is absolutely worthless. In the first place, it is not definite enough to possess any value, because, in the second place, it can and would admit of any interpretation to suit the circumstances.

Taking the percentage of carbon dioxide present as indicating the degree of *viciousness* of the atmosphere in a class room—but not because of any poisonous properties in the gas itself—seven parts in 10,000 may be regarded as the maximum allowable. But what are we to say of air containing 24 to 35 parts, or of that air in a city school which last year gave, on analysis, 44 parts? Would it not be better to placard it as dangerous?

A careful investigation will show that improper school ventilation has much to do with (1) Restlessness and inattention of pupils; (2) weariness and irritability of teachers; (3) headaches and colds; (4) *the spread of disease*. For are disease germs allowed to remain about the school room because they are not rushed out or rendered ineffective by proper ventilation?

In conclusion, permit me to add some expert opinions on School Sanitation:

a. School buildings should not be more than two stories high.  
b. All school rooms should contain certain air-space equal to 250 cubic feet per pupil.

c. All school rooms should contain floor-space equal to 20 square feet for each pupil.

d. The square feet of window surface should be at least one-fifth of the square feet of floor surface.

e. No pupil should be seated farther away from the window than one and one-half times the distance from the top of the window to the floor.

f. No school room should be heated by direct radiation.

g. Air from the outside should always be used to furnish fresh air for the rooms.

h. Quantities of fresh air moderately warm should be furnished, and in no case should fresh air be heated to high temperature, because it is thereby vitiated.

i. Pupils should be furnished at least 30 cubic feet of air per minute.

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## THE DIFFICULTIES IN THE DIAGNOSIS OF VARIOLA.\*

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The causes of such difficulties may be classed under two heads: (1) The nature of the disease; (2) its estimation by the public. The professional man in his efforts to make an early diag-

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\* Presented at the annual meeting of the Executive Health Officers of Ontario, held at Brantford.

nosis of a dangerous and highly contagious malady has, as it were, to steer his course between Scylla and Charybdis.

On the one hand the disease, commencing as it does with symptoms which are more or less common to half a dozen other diseases, is not one which definitely suggests a correct diagnosis at first. Then in many cases the symptoms all subside and the rash which appears is so slightly marked as to be unnoticed by the patient or his friends. And this, it may be noted, does not always occur in those who have been vaccinated. I recall two very marked cases—both with definite and fairly severe onset—occurring in a house where the disease existed in the semi-confluent form; one a girl of ten, the other a boy of twelve; neither had been vaccinated, yet the girl exhibited but two pustules situated on the side of her nose, and the boy not more than four scattered over his face. These cases were in every way similar to the ordinary cases of mild varioloid. As bearing on the question of the possibility of the occurrence of "variola sine exanthemata," another case which occurred with these may be mentioned. It was that of a young woman about twenty-five years of age, who was taken sick at the same time as the others in the family, and with similar symptoms: headache, backache, loss of appetite, fever, etc. These symptoms disappeared in about four days as in the others, but they were not followed by any rash whatever. This woman had, however, been successfully vaccinated two years previously.

On the other hand, the natural backwardness of the physician in making a diagnosis of variola, until absolutely forced to do so by the appearance of the patient, is not in any way lessened by the fear of popular disapproval in the event of a mistake being made, nor also by the ignorant prejudices of the vast majority of even the educated of our population, who practically refuse to believe the statements of the medical man, when such a diagnosis is made, and who apparently consider themselves as quite equal to the task of diagnosing the cases under consideration as anything but smallpox—most commonly chicken-pox is the conclusion arrived at, simply on hearsay evidence, that, for instance, the patient is not very sick, or, after the termination of the disease, that he is not frightfully scarred. On such ideas the doctor's diagnosis is laughed at, and he is promptly put down as being mistaken, if not something worse. And it seems unfortunate that cases occasionally occur about which there may be honest difference of opinion even among medical men, for these differences are taken up by the public and are made the evidences by which those in authority are convicted of being lamentably ignorant.

This much, however, can be said,—In its onset and mode of development of symptoms probably no other disease is more regular or shows a greater similarity between different cases. What conditions are necessary, then, for the diagnosis of the disease? Eugene Foster, in his article on "Smallpox" in the Reference Handbook of the Medical Sciences, gives it as his opinion that "Until the characteristic exanthem of the disease appears, it is impossible to make a positive diagnosis of smallpox," and later in the same article advises awaiting the vesicular stage of the eruption before expressing an opinion on the subject as the only prudent course. Other authorities, however, such as Osler, believe that "When the characteristic papules appear on the forehead and wrists" the diagnosis may be safely made. Welsh, in his article in the *American Text-Book of Practical Medicine*, states that "If in a given case it be found that the patient was seized with a chill, or had repeated rigors followed by a sudden rise of temperature to an unusually high degree, and that there is present epigastric tenderness, irritability of the stomach, and severe pain in the lumbar region, variola may be strongly suspected." The presence or absence of a vaccination scar, whether single or multiple, and their nature, evidence of the previous existence of the disease in the patient, and the existence of the disease in the community, all should be considered. From my own experience I would say that if a patient not recently vaccinated presented rigors, fever, anorexia or irritability of the stomach, headache and backache, especially lumbar, which symptoms commenced to improve on the evening of the third or morning of the fourth day, coincident with the appearance of shotty red papules on the forehead, cheeks, and nose, and on the wrists and extensor surfaces of the forearms, the diagnosis of variola would be justified.

Occasional difficulty may arise from the fact that in the hemorrhagic form the patient may die before the characteristic rash appears, although of twenty-seven cases referred to by Osler, in only one were the papules absent when death occurred.

The following diseases are referred to by different authors as presenting difficulties in differential diagnosis. In the initial stage: Pneumonia, ephemeral fever, intermittent fever, relapsing fever, typhoid, typhus, and scarlatina. I have seen one case which, even after the rash appeared was mistaken for typhoid. After the eruption appears: Measles, facial erysipelas, glanders, drug rashes, roseola, vaccinosa, some forms of secondary syphilis, and last but not least, varicella. Osler quotes a case mistaken for cerebro-spinal fever. Eugene Foster mentions febrile lichen. To this rather comprehensive list I would add one affection, prob-



ably more common than any of the above, but which I have seen very closely resembling variola on the fourth day, namely, the irritation of the skin caused by mosquito bites. I well remember seeing a child of six with hard shotty papules over face and backs of hands and arms, which at first sight looked extremely like variola. Enquiry for a history of sickness elicited the information that the child had been bitten by mosquitoes, but so suggestive was the appearance that I drove some ten miles the next day in order to be certain that such was the correct explanation.

Under certain circumstances difficulty might be met with in distinguishing from any of the above-mentioned diseases, but care in observing the onset, time until rash appears, and nature of rash, will greatly assist.

Varicella, as being so common, demands special attention. Many distinguishing points are enumerated by different authors, but in my own cases I have placed special dependence on the following:

| VARIOLA.   | VARICELLA.   |
|--|--|
| 1. Has a distinct period of invasion before rash appears.  | Rash appears on first day.   |
| 2. Rash is regularly papular, vesicular and pustular, latter stage longest.                            | Rash is chiefly vesicular. If pustular this feature is not prominent.                              |
| 3. Although papules on legs may be even a day or so behind those on face, distinct crops do not occur. | Distinct crops, so that on fourth to fifth day all stages may be seen up to crust formation.       |
| 4. Rash starts on face and arms.   | Generally appears on trunk.  |
| 5. Age no influence.   | Most frequently in children. Thomas, of Leipzig, says he never saw an adult suffer from varicella. |
| 6. Course of individual papule takes fully a week or ten days before dessication and crust formation.  | Dessication and crust formation by third or fourth day.  |
| 7. Recent vaccination or preceding variola preventive.   | No influence.  |
| 8. Umbilication distinct. Occurs in large number of the pocks.   | Absent or only in a few pocks.   |
| 9. Vaccinia cannot be produced after rash has occurred.  | Can be.  |
| 10. In anything but mildest attack constitutional disturbance quite marked.                            | Unimportant.   |
| 11. Numerous red scars left.   | Few or none.   |

It might be well to consider these points somewhat more fully, especially as regards their relative value.

On the first point, that regarding the distinct onset, I would place great dependence. If in a given case there is distinct history of sickness of two or three days' duration before the rash appears, that disease is not varicella.

The second point also is of value, though not of such extreme value as the first. A distinguishing feature often laid down is that the vesicles of varicella are unilocular, and hence collapse on puncture, whereas those of variola are multilocular, and hence do not collapse on single puncture. This is sometimes the case, but certainly not always, as I have seen both in mild discrete, and in severe semi-confluent variola vesicles which entirely collapsed on puncture. Again, although the pustular stage of variola is the longest and most distinctive, still, as in the instance which I shall give later on, it may never be reached, the vesicles rupturing and desiccating on the fourth or fifth day after the rash appears.

The third feature is of some value, and generally speaking, within twenty-four, or at most forty-eight, hours from the first appearance of the rash on any one part, all the papules which are to occur will be present.

The fourth point, again, is more important. The rash of variola in general, not only appears first on the face and extremities, especially near the joints, but it also is most abundant here, whereas that of varicella usually occurs on the trunk.

On the fifth point I believe great dependence can be placed. Without denying the possibility of varicella occurring in an adult, I believe that such occurrence must be rare. In one case, a woman of about thirty, I remember making the diagnosis of varicella, but later, from the occurrence of undoubted variola, following exposure to this case, I was forced to modify my opinion. The three points (Nos. 1, 4 and 5) I would group together into the dictum: If a rash of this character occurs chiefly on the face of an adult, after a distinct period of invasion, there can be no doubt as to the nature of the case.

The sixth feature, though important, will stand the same criticism as the second, namely, that in occasional mild cases desiccation occurs much earlier, owing to the absence of the pustular stage.

Point No. 7 would also be of value in general. It may, however, be of interest to note a few cases which I have seen, which would seem to show that occasionally, at least, even recent successful vaccination does not prevent smallpox.

In a family of four the mother was seen on the fourth day of the disease with papules just appearing on forehead and wrists. She was immediately taken to the hospital and the other three members were vaccinated (glycerinated lymph), and taken to the quarantine hospital, where they remained for three weeks. In each of the three the vaccination was apparently perfectly successful and ran the usual course. Four days after discharge the man was seen and was quite well, yet ten days later, or about five

weeks after the original exposure and vaccination, he was found in the early pustular stage of the disease, and ran through the ordinary course of mild discrete variola. It is almost impossible in this case to conclude that the explanation lies in a prolonged incubation period, yet otherwise we are forced to believe in the possibility of the disease occurring after recent vaccination.

Again, a family of eight was vaccinated; in the man there was considerable dermatitis and lymphangitis following; in one of the children the vaccination was unsuccessful, while in the rest it was successful. Yet three weeks later three of the eight were attacked, two with very mild, and one—the man himself—with severe semi-confluent variola.

Point No. 8 is also of some importance.

No. 9 is rather important from the scientific than any other aspect. The statement is generally laid down that after the rash appears in smallpox the patient is no longer susceptible to vaccinia. I know of no series of observations to show the exact moment at which this susceptibility to vaccinia disappears, but I do know of one instance where a man with a disease in every other particular resembling discrete variola, was vaccinated when the vesicles first began to become pustular, and where the vaccination ran an apparently normal course, leaving an ordinary crust which desiccated with the others, leaving the ordinary scar. After all, a consideration of the following points may enable us to see why this should be:

1. Variola is a disease in which certain toxins are produced in the blood, which cause the symptoms of the disease.

2. Recovery is rendered possible by the formation of anti-toxins which in some way neutralize the effect of the toxins, and allow the system to return to its normal state.

3. Immunity from future variola, as also from future vaccinia, is due to the presence in the body of this antitoxic influence, which acts either in the way that Metchnikoff suggests, or in some other.

4. The rash is only the indication of the toxine formation, and bears no relation to the antitoxine formation, hence the loss of susceptibility to vaccinia, which is dependent on the antitoxins, also bears no relation to the rash.

Points No. 10 and 11 are important according to their degree.

It would seem, then, that taking all these points into consideration, the diagnosis of variola from vaccinia ought to be as easy as the proverbial "rolling off a log," but such has been anything but the case in my experience. Thus, I one day saw a man of forty, previously successfully vaccinated, in the early stages of what was apparently a fairly severe attack of variola.

This diagnosis was amply borne out later on, when the vesicles became pustular by the confluence of large areas around both knees, on the backs of the hands, and on the face. At the time he was seen, there were two children in the bed with him, who were also slightly indisposed. These children had also been vaccinated, but only one successfully; they had been living with the man, subject to exactly similar influences, and had been taken sick at about the same time, but according to their statements the rash was the first thing noticed. Yet I doubt if on either of the children there were a dozen papules; what there were became vesicular and these vesicles collapsed on puncture, and all of them dried up either by rupture or absorption of their contents, at about the fourth day, leaving little brownish crusts, which disappeared without leaving any scars. The spots were probably most numerous on the arms and legs, but also occurred on the body. Had these two cases been seen alone, I doubt if any one would have considered the diagnosis of smallpox justifiable, yet what other conclusion could be arrived at under the circumstances? It must, then, it seems to me, be granted that not only may the eruption of variola be modified in quantity by influences, chief among which is vaccination, so that cases may be seen with only one or two pustules; or even if, as seems exceedingly probable, "variola sine exanthemata" may occur, without any eruption whatever; but that it may also be modified, as it were, in quality, so that the individual papule becomes, so to speak, abortive, and does not run the typical course, but stops short at the papular or vesicular stage: and if this occurrence be granted, then the difficulty in diagnosis between variola and varicella becomes a real and great one, and it would seem in some cases to be almost insurmountable.

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### ON THE IMPORTANCE OF AN EARLY RECOGNITION OF LOCOMOTOR ATAXIA.—DO THE EYE SYMPTOMS ASSIST US?\*

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*Mr. President, Ladies and Gentlemen,*—As physicians, we all wish to recognize, at the earliest possible moment, any disease which we may be called upon to treat. But in the case of locomotor ataxia—tabes dorsalis—it is of particular, I might almost

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say of supreme importance, to make an early diagnosis. Is there any special reason for making such a statement? I answer yes, because the earlier this disease can be brought under treatment, the more hope there is of success.

Some, however, would object to the term "success" as applied to the treatment of tabes. Practically, they hold treatment to be useless, except in so far as palliating the symptoms is concerned. If this be true, if treatment is useless, then it makes little difference how early or how late we recognize the disease. If we can but palliate some of the symptoms, such, for instance, as the lightning pains, we may wait until these appear, and allow the pathological process to progress until inco-ordination has so developed as to render the man a useless member of society. But this disease is not the hopeless one it is often supposed to be. The trend of modern medical thought is to consider the treatment of locomotor ataxia as hopeful, at least in its earlier stages.

As we are all aware, tabes dorsalis has three stages. 1st. Pre-ataxic, or the stage before the staggering gait comes on. 2nd. Ataxic, when inco-ordination has produced the staggering gait; and 3rd, Paralytic.

It is in the pre-ataxic stage that the greatest success may be looked for in treatment.

To emphasize this fact, let me quote from a great European authority, Babinski, a sentence giving the results of his own experience. He says: "I believe I do not exaggerate when I say that in my hospital practice I see from 200 to 300 cases of tabes each year, and of this number I do not see more than 15 to 20 who are clearly ataxic subjects. In my private practice I have numerous patients who have for many years been affected with tabes, as judged by its characteristic signs, and who, without retaining an absolutely perfect form of co-ordination, have continued at their usual employments, and have never passed the so-called pre-ataxic stage."

Judged by the older conceptions of this disease, when it was looked upon as almost hopeless, and reading such a statement as this, we may well say: How is it possible to attain such brilliant results? I answer, Because now the pre-ataxic stage can be recognized, and the case brought under treatment early. If we think for a moment of the morbid anatomy, we can see how hopeless, in the majority of instances, late treatment would be; although, even in late cases, arrestment of the disease can be accomplished. The principal morbid changes found, as we know, are sclerosis of the posterior columns of the cord, and foci of degeneration in the basal ganglia. Now, ataxy does not appear until the posterior columns have degenerated. If these columns are

destroyed, irreparable damage has been done. True success consists in preventing destruction of nerve tissue; to do this, we must be able to recognize the pre-ataxic stage. What are the symptoms of this stage?

Osler gives them as (1) pains, (2) ocular symptoms, (3) Loss of the knee-jerk. These are all pre-ataxic symptoms, but it has not yet been definitely ascertained which, in the majority of instances, is the earliest. I believe the ocular symptoms will be found to occupy that position. The eye symptoms are, of course, well known to all of us. Some of them are found in almost every case of locomotor ataxia.

But it will be well to get these symptoms clearly before our minds; then we shall endeavor to determine the question of their priority and of their value.

They are (1) strabismus, or squint; (2) ptosis, or drooping of the eyelid; (3) the *fixæd* pupil (Argyll Robertson pupil); (4) inequality of the pupils; (5) optic atrophy.

1. The strabismus of tabes has characters of its own. It often comes on suddenly. It is very likely to be temporary. It may last but for a few days or weeks, and may recover as suddenly as it came on. It may produce double vision. Any of the muscles may be paralyzed, therefore the squint may be in any direction. Although usually temporary, the squint may be permanent.

2. Ptosis.—The ptosis of tabes may be single or double; generally it is single, only one lid drooping. The ptosis, like the squint, may be temporary or permanent.

3. The *fixæd*, or immobile, pupil.—On looking at the pupils, no abnormality may be observed. Upon covering them with the hands, however, they do not dilate, nor on exposing them to a bright light do they contract. They are fixed—immovable. (They do diminish in size, however, on convergence; this is the Argyll Robertson pupil).

4. Another pupillary symptom is seen in tabes, namely, inequality. This is generally due to the contraction of one pupil. The vast majority of tabetic patients have one or other of these pupillary symptoms. Berger claims that 97 per cent. of cases of locomotor ataxia show some pupillary symptom.

5. Optic Atrophy.—This produces more or less failure of sight. The atrophy is "grey" and it is "primary." The retinal vessels are not affected in size.

These, then, are the eye symptoms which are encountered in tabes, viz.: Strabismus, ptosis, fixed pupils, unequal pupils, and optic atrophy. Are they the earliest indications of tabes? Osler puts "pains" as the first of the pre-ataxic symptoms. Unquestionably, the diagnosis of tabes is generally made first from the pains; but that is readily explained by the fact that pain speedily

drives a man to his physician, but fixed pupils do not. For a fixed pupil produces so little inconvenience, that it may exist for months before it is noticed. But even when pain sends the patient for advice, how often the doctor will find Argyll Robertson pupils existing at the same time? The same remark may be made in regard to loss of the knee-jerk. In such cases, then, the eye symptom has preceded the pain, although it was not noticed. And not infrequently this symptom (fixed pupil) is noticed long before the pains come on. So with the other ocular symptoms. A patient, in adult life, consults his physician for a suddenly-appearing squint, or ptosis, or for an optic atrophy; and he may have had no pains or other noticeable symptom of tabes. If no cause is discovered for these eye symptoms, we are certainly justified in suspecting locomotor ataxia. In such cases, the eye symptoms are the earliest indications of the disease.

Cases are on record making all these facts clear. Neurologists and ophthalmologists the world over are insisting more and more upon the importance of these ocular symptoms as being among the earliest indications of the disease. In this connection I would refer you to a paper recently published in the *British Medical Journal*, by C. O. Hawthorne, "A Clinical Study of Thirty Cases of Locomotor Ataxia." He says: "A step forward in our knowledge . . . of locomotor ataxia has been the recognition of the fact that ocular disturbance may precede the evidence of any spinal lesion;" and again, "the cases may be held to justify the view that an optic nerve atrophy, an ocular paralysis, or the Argyll Robertson pupil, must be regarded as affording a definite basis for suspicion . . . of locomotor ataxia." In view of what has been said, I think we may fairly admit that the eye symptoms will, in many cases, most materially assist in the early recognition of locomotor ataxia; but in order to this, these symptoms must be fully understood, carefully examined, and their indications never neglected. How often, in former years, has a patient, perhaps casually, mentioned to his physician that he had a squint, and had double vision, for a couple of weeks, but it passed away, and he thought little of it. Or that he had drooping of one of his eyelids; or that his sight had failed unaccountably of late? Any such statements now would rouse in the mind of the physician the gravest suspicions; he would look upon them as danger signals, and would act accordingly.

In endeavoring to sum up this matter, I would emphasize the following points:

1. The extreme importance of the early recognition and treatment of tabes.
2. That the eye symptoms, in a certain number of cases, precede all the others.

3. That if, especially in an adult male patient, any one of the ocular symptoms be discovered, the case should be thoroughly investigated, even if no other symptom be discerned, and kept under observation until clearly understood.

4. But that if, in the course of such investigation, even our other ocular symptoms be found, the case is probably one of locomotor ataxia.

5. That if such a case be left untreated, ataxia may be expected to appear after a longer or shorter time; but, if treatment be instituted, the patient may remain in the preataxic stage, and continue to be a useful member of society.

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## Clinical Reports

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### A CASE OF ACUTE ENDOCARDITIS.

BY R. D. RUDOLF, M.D. (EDIN.), M.R.C.P., LONDON.

The patient, a girl of seven years of age, was first admitted to the Sick Children's Hospital on August 3rd last, complaining of dyspnea and palpitation. The family history yielded nothing of interest. She had had measles some years before, followed by some doubtful rheumatic pains, and otherwise she had never been ill until six weeks before admission, when, without apparent cause, she commenced to complain of palpitation and shortness of breath; she also became very nervous, and slept badly.

On admission on August 3rd, the patient was found to be well grown and nourished; the pulse varied from 130 to 140; the notes say that the heart was "somewhat dilated, and there was a systolic murmur in the mitral area." Under rest and treatment she improved, and two months later the notes read that "she appears to be in good health, and has lost her cardiac symptoms, but the systolic murmur at the apex continues, and a presystolic one is heard." The pulse had come down to 108-118, and was regular. All along, however, the temperature kept zig-zagging between 98 and 99.6. She left the hospital on September 29th.

On November 2nd she was sent in again by Dr. McPhedran, with the history that she had been steadily getting worse since leaving the hospital. On re-admission, she was very short of breath on exertion, and frequently had attacks of dyspnea at night, occasionally also she would cough at night. The temperature was irregular, zig-zagging up to 101.6; the



pulse was 140; respiration 48. On examining the heart, pulsation was seen all over the precordia, and an occasional pre-systolic thrill was felt at the apex. The systolic and pre-systolic murmurs were present as before at the apex, and now a soft systolic bruit could be heard in the tricusped area. The liver was about two inches below the costal margin; there was some pitting on pressure over the tibiae, and the face was slightly puffy. The urine was alkaline, sp. gravity 1021; no albumin or sugar. On December 3rd, one month after readmission, it was noted that the patient had had spells of dyspnea and cough at night, and complained of pain in the precordia, and she occasionally vomited. Pericardial friction was now noticed for the first time. The temperature, ever since admission, had varied between 100 and 101, and occasionally went higher; the respiration averaged about 35, and the pulse between 120 and 150. From now on the respiration was above 50, and occasionally reached 70, the ratio of respiration to pulse being about 1 to 2, or 1 to 2 1-2. She could not lie horizontal. On December 18th she became worse, and died that night.

On examining her some eight hours before death, I found her propped up in bed, pale and cyanosed, with cold extremities, rapid breathing, and fast, irregular pulse. Nothing could be definitely made out on auscultation; the liver extended to below the umbilicus, and appeared to pulsate. The spleen could not be felt.

At the post mortem examination, held eleven hours after death, rigidity was found to be well marked, and post mortem lividity extremely so. On opening the abdomen, the most prominent thing noticed was the enlarged liver, which extended to the level of the umbilicus. There was no fluid in the peritoneal sac. On opening the chest, the pericardium was found to contain about eight ounces of straw-colored fluid, in which some flakes were floating. The plural sacs were empty, and there were no adhesions here. The heart was enlarged, and before being removed presented a markedly square appearance, the lower margin being moulded to the dome of the enlarged liver. There were signs of recent pericarditis around the base, but no adhesions. The empty heart weighed 7 3-4 ounces after it had been four days in alcohol, and presumably weighed rather more than that in the recent state. The organ, especially the right side, contained a large amount of dark fluid blood, a very tough white anti-mortem clot extended from the right auricle, where it was adherent, through the tricusped orifice, and thence into the pulmonary artery. A smaller and apparently more recent one occupied the same relation to the left heart. The left ventricle was considerably hypertrophied and somewhat dilated. The left

auricle was much dilated, and its walls a good deal thickened. The right ventricle was only a little dilated and hypertrophied, but the auricle was much enlarged into walls so thin that it was translucent in places. The tricusps were thickened and hard to the touch, and along the lines of contact was a row of little vegetations, of which many showed ulceration. The orifice admitted two fingers. The pulmonary valves were normal. The mitral cusps were in a similar condition to those of the tricusped valves, and the orifice admitted one finger. The aortic valves showed some opacity and thickening, and a few vegetations in their inner aspects where they came in contact.

The condition of the other viscera may be summed up in two words, viz., venous congestion. On microscopic examination, the liver was found to be the most profoundly affected, and the central cells of the lobules showed great atrophy, while the peripheral were in a state of fatty degeneration. The stomach was small and empty, and a section of the wall showed some of the veins to be enormously engorged with blood. Prof. J. J. MacKenzie very kindly took and examined cultures from the pericardial fluid, the heart-blood, and spleen. The pericardial one showed streptococci, while the others were sterile.

REMARKS.—The case appears to have primarily been one of endocarditis affecting the aortic, mitral and tricusped valves, and due probably to rheumatism. From the hypertrophied condition of the heart and the state of the liver, it seems probable that this condition was one of considerable duration and exacerbation, or probably a septic condition of the valves occurred last June, and continued until the time of death. According to Gibson, "Disease of the Heart and Aorta," page 395, primary valvular disease is a most potent predisposing cause of acute endocarditis. This was first observed by Paget, and Kelynack found it in eighty per cent. of cases.

Early in December the frequent spells of dyspnea and cough, with pain in the cardiac region, point to the onset of pericarditis and it was then that pericardial friction was first detected.

As regards the frequency of combined valvular endocarditis, it was found at the Berlin Pathological Institute that of 100 cases, 71 per cent. showed affection of the mitral and aortic valves; 16 per cent. the mitral aortic and tricusped (as in the present case), while the remaining 13 per cent. was made up of all the other possible combinations.

The case shows well what an amount of venous congestion of the organs from backward pressure may occasionally occur without any dropsy being present. I am much indebted to Professor McPhedran for the notes of the case while she was under his care.

## Special Selections

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### THE TREATMENT OF STAMMERING (AND "LALLING").

BY HAMILTON GRAHAM LANGWILL, M.D., F.R.C.P.E.,  
Physician to Leith Hospital.

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The following article has been written at the suggestion of Professor Wyllie, who did not see his way at the present time to comply with the request of the editor for a contribution upon the treatment of stammering. Written, therefore, by one of his former pupils, the greater portion of this article is based substantially upon Professor Wyllie's teaching on this subject; but the writer would not wish him in any way to be held as homologating all that is stated therein.

The condition of stammering or stuttering is so frequently met with amongst patients that it is somewhat extraordinary how little attention is given to the consideration of it in the ordinary textbooks. The amount and degree of mental suffering endured by the unfortunate stammerer can scarcely be estimated except by those who have experienced it; and yet, for various reasons, it comes about that parents, who may be ready enough to call in the services of their medical adviser for merely trifling and passing ailments in any member of their family, seldom bring their children to a doctor on account of this comparatively common and extremely important defect of speech. It thus unfortunately happens not infrequently that the habit of stammering, which is usually acquired during the years of childhood, has become so deeply rooted by the time the patient reaches an age at which he has to enter upon his future career, that he finds himself heavily handicapped; for it is a striking fact (though the question of the etiology of the condition is not under consideration at present) how much greater is the frequency of stammering amongst males than amongst females. What the writer aims at doing in the present article, therefore, is to draw attention to a method of treating this very important and frequent, but yet obstinate, defect of speech, which not only has proved eminently satisfactory in his own experience, but has the great merit of being applicable by any practitioner who has once carefully mastered the simple principles upon which it is based. Too often it happens, if the advice of the family practitioner is sought at all in reference to the condition, that he is unable, for want of any clear and precise methods of instruction on the subject in the

ordinary textbooks, either to undertake the treatment of the patient himself, or even suggest to the parents how to proceed in seeking advice. Of so-called "stammer-curers" there is no lack, but the secrecy of the methods adopted by the great majority of these is scarcely in their favor, even if the methods generally practised by them were more physiological than is usually the case. It is, therefore, with a view to endeavoring to meet such a want that the following summary is here given of the method which the writer himself was taught, and which he has since frequently practised with markedly satisfactory results. Those desiring a much fuller and more elaborate consideration of the principles upon which it is based will find it in Professor Wyllie's book on "Disorders of Speech."

#### GENERAL CONSIDERATIONS.

In commencing treatment, it is most important at the outset to explain clearly to the patient the mechanism normally employed in speaking, especially emphasizing the double nature of the process—vocalization and articulation, showing him the part played by the larynx in producing the sound, and that played by the tongue, lips, etc., in modifying the same. The stammerer should then be made to understand that his defect consists essentially in a want of the proper harmony between the working of those two mechanisms. In a very large majority of cases the main error lies in the fact that so much attention is directed by the patient to his articulation of words that their vocalization is neglected, and it is therefore to this (by far the commonest) type of stammering that attention will here be directed. Professor Wyllie's example of the violin player utilizing in his performance two co-ordinated but separate mechanisms—namely, the "bow hand" producing the sounds and the "string hand" modifying these—is one which can be understood by any patient, who can readily be made to see how effectually the player will "stammer" (or stick) if he concentrates so much attention upon the "string hand" (the "articulation," the common error of stammerers) that he neglects to produce the sound by the "bow hand" (the "vocal" mechanism). Moreover, the significance of the well-known fact that scarcely any one ever stammers in singing (where the "bow hand" is so much more in evidence than the [articulating] "string hand") is at once grasped by practically every pupil.

Should the stammerer have a "musical ear" the future treatment of his condition will be considerably facilitated, but the most unmusical patient will usually recognize that even *his* attempts at melodious (?) utterance are distinctly less difficult than speaking

in his ordinary conversational tone. If the patient is unfortunately destitute of any "ear for music" the teacher should endeavor to get him to adopt the method of intoning (for example, as in church services), not, of course, for permanent use in talking, but in order that he may thus have firmly stamped on his mind, by practical illustration, the all-important part played by the cultivation of the *vocal* element in the cure of stammering. In this connection it may be of interest to point out another method which the writer frequently found of the greatest practical value, especially in the earlier stages of treatment. This consists in adopting when speaking the style, but still more the *tones*, of some one with whose voice the learner is familiar, when even the most difficult stumbling blocks were found to be easily surmountable. This faculty of imitating the tone and style of others (for example, a teacher or friend), is, of course, not possessed by all, or in equal perfection, but where it can be utilized such a method of "getting out" a difficult word or phrase will be found, with a little practice, to be not only extremely easy and unobtrusive, but may even be made to appear quite natural in the circumstances. A similar advantage, of course, can be gained when the unfortunate patient is called upon to *read aloud*, if he adopts a "voice" different from his natural one. With his attention thus, as it were, constantly fixed upon the *sound* of the sentences, the *articulation* of them becomes much less of a difficulty than when he reads in his ordinary tones.

The general principle having thus been made clear to the patient of utilizing to the full every opportunity of calling into action the vocal as contrasted with the articulatory mechanism in speaking, he should then be taught how, in the light of such principles, each individual letter of the alphabet is to be dealt with. This question is very fully discussed by Wyllie in the work above referred to. Here it is only necessary to reproduce in tabular form—with his kind sanction—what he terms the "Physiological Alphabet," with its illustrative sentences. These sentences, which enable the teacher to retain easily in his memory the Physiological Alphabet, and illustrate the relative positions of the various component consonants, must be clearly distinguished from the sets of sentences (to be subsequently given) which are for use in *treating cases of stammering*. In explaining this "alphabet" to the stammerer, it will be sufficient for the teacher to go over, *seriatim*, the individual letters as therein arranged, and practically demonstrate to him not only the existence of the "stop positions," but the articulatory mechanism called into action in producing the various consonantal sounds.

## VOWELS.

The importance of calling the full voice into play in all vowel sounds should be strongly urged on the patient, and for teaching purposes the Latin sounds should be given to them. Wyllie points out that, *physiologically*, the order in which the vowels are produced in the oral mechanism is pronounced thus:

|    |    |    |    |    |
|----|----|----|----|----|
| i  | e  | a  | o  | u  |
| ēē | ēh | ah | oh | ōō |

namely, "in an order which will represent a gradual transition from the narrowest and tightest shape of the resonating chamber on to the hollowest and largest shapes" (p. 7). This is well shown by his illustrative sentence: "Even ancient elves are awed over oozing." Moreover, there are few more *practically* important points for the stammerer to recognize than the significance of the fact that the initial Y is phonetically practically equivalent to ee, there being merely a slightly fricative element added. For as initial Y pronounced as "yeh" is very frequently a source of great difficulty to stammerers, who are quite surprised at the ease with which they can utter the same word if only it is pronounced as if it began with "ee" thus: "ee-onder" instead of "yonder." The initial Y is therefore bracketed in the physiological alphabet along with the vowels. Similarly, the initial W except when followed by "h") is to be regarded by the pupil as a *vowel*, and pronounced, as Wyllie says, like "a tight oo" with a slight element of friction; for example, "oo-ill" instead of "will," "oo-ater" representing "water." Y and W are thus, to borrow Wyllie's phrase, "stepping stones between vowels and consonants," and such a frequently recurring phrase as "Will you?" (which has always contained a double difficulty for the stammerer) becomes quite easy to him if pronounced as though it were spelled "oo-ill ee-oo?"

## CONSONANTS.

[Each of these is considered here "as it is pronounced during the enunciation of a syllable containing it."] The table shows the consonants arranged in vertical and horizontal columns, the *vertical* columns containing (1) the *voiceless* oral, (2) the *voiced* oral consonants, and (3) those *voiced* consonants which have in addition a *nasal* element imparted to them. The *horizontal* grouping, on the other hand, has reference to the part of the oral mechanism at which they are produced.

The significance of the "stop-positions" (that is, positions in the oral chamber where the air current from the larynx can

be checked or modified) should of course be explained to the patient; but, what is far more essential, great stress must be laid upon the difference between the *voiceless* and the *voiced* consonants. The teacher should make perfectly certain that the pupil has firmly grasped the fact that some of the consonants have no voice in themselves, and from the outset he should see that the stammerer allows ample voice to all those consonants possessing it. It is in this that one of the greatest strides is made in gaining

| A PHYSIOLOGICAL ALPHABET. (WYLLIE.)  |                      |                      |                         | ILLUSTRATIVE SENTENCES.  |
|--|----------------------|----------------------|-------------------------|--|
| <p><i>I.—Vowels.</i><br/>                     Y — I E A O U — W.<br/>                     These should be pronounced in the Latin manner, as <i>ēē</i>, <i>eh</i>, <i>ah</i>, <i>oh</i>, <i>oo</i>; <i>y</i> and <i>w</i> are Consonants, not Vowels, but are placed here for reasons given in the text.</p> |                      |                      |                         | <p><i>I.—Vowels.</i><br/>                     "Even ancient elves are awed over oozing."</p> |
| <p><i>II.—Consonants.</i></p>  |                      |                      |                         | <p><i>II.—Consonants.</i></p>  |
|  | Voiceless Oral.      | Voiced Oral.         | Voiced Nasal Resonants. |  |
| Labials<br>(First stop position)   | P<br>(W)             | B<br>W               | M                       | Peter Brown made white wax.  |
| Labio-Dentals  | F                    | V                    |                         | Fine villages.   |
| Linguo-Dentals   | Th <sup>1</sup><br>S | Th <sup>2</sup><br>Z |                         | Thinkest thou so, zealot?  |
| Anterior<br>Linguo-Palatals<br>(Second stop position)  | Sh<br>T<br>(L)       | Zh<br>D<br>L<br>R    | N                       | She leisurely took down nine large roses.  |
| Posterior<br>Linguo-Palatals<br>(Third stop position)  | K<br>H or Ch         | G<br>Y<br>(R)        | Ng                      | Can Gilbert bring Loch Hourne youths?  |
| <p>The voiceless W and the voiced <i>ss</i> L have been given in brackets, the former being now almost confined to Scotland, the latter being peculiar to Wales. The uvular (burring) R is also in brackets.</p>   |                      |                      |                         |  |

the mastery over his difficulty. For probably the commonest error present in stammerers consists in the fact that they *omit* the voice from consonants which physiologically contain it, and endeavor to impart it to others into which it should not enter. Accordingly when the pupil has learned not merely to recognize clearly that the initial B is (so to speak) equal to P with "voice" added, and similarly D is a voiced T, but has also learned to emphasize these facts practically (by thus giving due value to the vocal element in these consonants) he will discover that he has

gained a large part of the victory. The stammerer should be taught to emphasize always (wherever possible) the voice element in consonants, whilst those which are physiologically voiceless are to be touched off in articulation as lightly as possible, the effort of the pupil being, as it were, directed to the ensuing vowel or voiced consonant. Thus in saying, for example, "*Bold Peter did fight*," the pupil should lay stress upon the letters as italicised, the voiceless "P" and "f" being merely formed, so to speak, in the articulatory mechanism, but in no way emphasized.

It is, perhaps, worthy of noting that in listening to the pupil trying his exercises, the teacher in many cases should be able (without knowing actually the word he is trying to enunciate) to tell whether it begins with a *voiced* consonant or not. Thus, in saying "Tom Pinch," no sound is audible during the formation of the voiceless T and P, so that no one could tell what letter the pupil was trying to produce; it is merely an explosive character that is being *silently* prepared for the ensuing vowel. On the other hand, in pronouncing, for example, "dog biscuit," the pupil should give *audible* evidence that he is producing a *voiced* consonant, almost as if it were spelt (phonetically) "*ud(-og) ub(-iscuit)*."

It is unnecessary here to go over individually each letter as arranged in Wyllie's table here reproduced; but the teacher should make clear to the patient the reason for the classification therein adopted, and not rest content with merely explaining the terms applied to the various groups of letters. It is sometimes well to insist upon the pupil learning by practical experiment how, and in what part of the articulatory mechanism, each of the consonants is produced, so that he may be able to state whether any given letter is, for example, a "linguo-palatal (voiced)" or a "voiceless labio-dental"—not merely from having learnt the place it occupies in the alphabetical table, but from *practical testing* of its production in his own articulatory mechanism. A few notes upon some of the less evident points in the table may be of service, and for convenience these may be grouped under the following headings:

#### (1) *Voiceless Consonants.*

The pupil's attention must, of course, be called to the difference between the *voiceless* "th," in the word "think" as contrasted with the *voiced* "thou." He should also be made to understand clearly that the "hard" c in the English language is really K; the "voiced" equivalent of which we shall see is G as in "got."

The aspirate "h," which has been the subject of considerable dispute amongst writers on this question, would appear to be



rightly described as a "voiceless fricative of the posterior stop position" by Wyllie, who also points out that the "soft" ch (as in the word "loch") is practically an exaggerated aspirate at the end of a syllable.

### (2) *Voiced Consonants.*

As mentioned above, W should be regarded by the pupil as practically equivalent to "oo," and therefore having all the "voice" of a vowel sound.

It may be well to insert here a few words with reference to the most satisfactory method of dealing with one of the common stumbling-blocks of stammerers, namely, words beginning with "wh." If, as is usually the case, it is found that the pupil attempts to pronounce the combined "wh" *voicelessly*, he will experience the greatest difficulty in uttering such words, but if he is taught to regard the initial letters as being really (phonetically) in the *reverse order* (namely, "hw"), and further that the "w" here represents the vowel sound ("a tight oo"), he will find with a little practice that such words as "when," "what," "whether," can be easily uttered if they are pronounced as if they were spelt "hoo-en," "hoo-awt," "hoo-ether."

Stammerers frequently experience a similar difficulty in pronouncing words beginning with "sw," for example, "swim," "sweet;" but this likewise they will easily surmount if they are taught to pronounce such words as if they were spelt (phonetically) thus—"soo-im," "soo-eet."

"Zh" of course is never spelt so in English, nor is it used at the beginning of a word, but, as pointed out by Wyllie, it is the equivalent of J in the French "Jean," etc. L and R, two initial letters that often give great trouble to stammerers, are both "voiced fricatives," and the pupil should be made to emphasize the vocal element in his practising, as his error commonly lies in attempting to pronounce them as "voiceless" consonants.

### (3) *Voiced Nasal Resonants.*

The two consonants under this heading are very frequently a source of great difficulty to the stammerer. The teacher should therefore specially see that his pupil bears constantly in mind the *voiced* character possessed by them both, for there is possibly no commoner error amongst such stammerers than that of attempting to pronounce, for example, "never mind," as though the first voiced letter in each word was the *vowel*. Instead of emitting the voice feebly and interruptedly, he should be taught to pronounce the initial letter strongly and with a continuous hum. These nasal resonants are pre-eminently two instances where the

teacher should be able (as previously mentioned) to foretell that it is a "voiced" consonant that the pupil is attempting to pronounce, from the fact that the *initial vocal element* is distinctly *audible*, as if it were pronounced thus (phonetically) "(un)never (um)mind."

It will be evident that some of the letters in the ordinary alphabet do not appear in the "physiological alphabet." The omissions, however, are readily accounted for: C if "hard" is equivalent to K, while if "soft" it becomes equal to S; again, J is phonetically really represented by "dzh" (for example, "Dzhoo" is the phonetic spelling of Jew), the same remark applying also to G when pronounced "soft," as in "George." These two letters, J and G (soft), occasion so much difficulty to stammerers from a failure to recognize the part played in their composition by the fully-voiced D, that the teacher should frequently recur to them in order to impress the solution of the difficulty clearly upon the pupil's mind. Names such as John, James, George, etc., are so common that the stammerer should constantly bear in mind the initial D that they all contain. It is interesting to note that, as is well pointed out by Wyllie, the corresponding *voiceless* compound sound is seen in our use of the soft "ch," as in "chew," which phonetically is really "tshoo."

Q, of course, is really "kw": for example, "quail" becomes "kwail," while similarly X is equivalent to "ks" (for example, "ksiphoid"). It is thus evident that while apparently incomplete, the physiological alphabet contains all the existing consonantal and vowel sounds in *li ry* use.

The requisite material having thus been supplied for the instruction of the stammerer, it is only necessary now to summarize here the method recommended by Wyllie in the management of such cases. Briefly it is as follows:

The important distinction between vocalization and articulation should first be made perfectly plain to the patient, and the example of the violin player clearly impressed upon his mind, so that he may distinctly understand that it is his "bow hand" which is at fault, and that no exaggerated action on the part of the *articulatory* mechanism can ever make up for deficiency of the *vocal element*.

He should be encouraged to speak with a full voice, and in specially difficult cases to practise speaking on a fixed key, or intoning, especially if he has a defective "musical ear."

He should then be taught the physiological alphabet very carefully, and more especially in connection with this the ("stammerer's") set of sentences here given.

This second set of sentences, reproduced here by Professor

Wyllie's kind sanction, is specially arranged for the *treatment* of stammering pupils, representing as they do the consonants as they are arranged in the *vertical* columns of the "Physiological Alphabet," thus bringing out clearly what is the all-important point in teaching the pupil—namely, the distinction between those that are "voiceless" and those that are "voiced." Thus:

A. *Initials that contain voice.*—(In pronouncing these the voice must be thrown boldly into the initial) :

1. "Even ancient elves are awed over oozing."
2. "We visit the Zulus like ramblers yearly."
3. "My nephew."
4. "Best gold dust."

B. *Initials that do not contain voice.*—(These must be touched off lightly, and the voice be promptly brought out in the succeeding vowel or voiced consonant) :

1. Far shores seem thinly hazy.
2. Two poor comrades.

With a view to greater practice upon some of the more difficult initials, the following sentences are also here reproduced :

A. *Those containing voice:*

Billy Button bought a buttered biscuit.

Davy Doldrum dreamt he drove a dragon.

Gaffer Gilpin got a goose and gander.

Mother, make more mustard: no, no, not now.

B. *Those that do not contain voice:*

Peter Piper picked a peck of pepper.

Tiptoe Tommy turned a Turk for twopence.

Kimboo Kemball kicked his kinsman's kettle.

In practising these the pupil should be told specially to notice what letters cause him the greatest difficulty, and after having had the physiological method of overcoming these explained carefully, by his teacher, he should be encouraged not only to practise repeatedly sentences containing these difficult letters, but also to draw up further illustrative ones. At first it is well to give the pupil only sentences that contain initial consonants that are of *similar character* (that is "voiceless" or "voiced"); but after one or two lessons he should be given sentences that contain words with initial consonants of *dissimilar* character, so that he may learn readily to emphasize the "voiced" and touch off the "voiceless" initials as is required. After the pupil has thoroughly grasped the principles of the "Physiological Alphabet," he can readily draw up for himself illustrative sentences, especially such as contain the letters that prove the greatest difficulty to himself.

He should be instructed to read aloud for ten or fifteen minutes daily, his lesson commencing always with the "stammerer's"

set of sentences given above, and after going carefully through those and the exercises upon the specially difficult consonants, he should proceed to read poetry and then prose.

In these daily lessons he must be told to notice always what letters give rise to difficulty, in order that he may have these explained to him by his teacher if the pupil himself is unable to discover from the "Alphabet" how they ought to be pronounced. If necessary such daily lessons should be continued for months. He should always speak and read (as Wyllie says) "with voice, making music with the voice, and *listening* to it as he speaks."

He must learn to take inspirations at short intervals, so that he may have ample breath for giving the full vocal element to all vowels and those consonants requiring it.

With a pupil of average intelligence it is usually sufficient if two or three lessons (at intervals of a few days) are given upon the main principles, and especially the "Physiological Alphabet" and the second set of sentences, after which time all that is necessary is an occasional visit from the pupil in order to see that he is carrying out the rules accurately.

In not a few cases stammering is associated with indications of a neurotic constitution, and in some with too great an emotional excitability; and as its persistence is apt to increase this excitability, an early cure of the condition is highly important.

It will be noticed that the writer has not in this article made any distinction between stammering and stuttering. Stammering is best used as the general term which should include two varieties: (1) That in which the patient *stutters* in his speech; (2) that in which he *silently sticks*, making compressive efforts with his oral articulatory mechanism without emitting audible sounds. Since some authors, however, have included under the term stammering the condition known as "lalling," a few words must here be said regarding this condition, and more especially its treatment.

#### LALLING.

The nature and varieties of this phenomenon are very fully discussed by Wyllie, to whose work the writer would refer any one seeking further information on the subject. Here it is sufficient to state that "lalling" is essentially "baby-speech," being presented in the speech of every child at its earliest stage of talking. It is a *morbid* phenomenon only when it persists for an unusually long time, as is the case in all children who are backward in mental development. Essentially it is a defect *not* in phonation, but in the *education of the oral articulatory mechanism*. The speech is (as Wyllie says) "scamped," the difficult articulatory movements being slurred over, so that the word may be made easy of

pronunciation, as in the speech of babies, the easier consonants being substituted for the more difficult ones.

In treating such cases, if the patient be an intelligent adult, the instruction should of course be given to him or herself; when it is a child, the parents must be taught how to remedy the defect. The first essential is to find out upon what particular letters the patient "lalls." For this purpose the patient should be made to pronounce after his teacher (1) each of the *vowels* given simply; (2) each of the *consonants*; but *these* must be given by the teacher in three different ways, the pupil attempting to imitate him exactly, namely, (a) as *initial*, (b) as *terminal*, (c) as *mid-letter*. The *whole* "Physiological Alphabet" must be gone through so that every defective letter may be detected by the teacher and noted down. Thus, for example, the letter P should be given to the pupil as Papa, apap, appa; similarly M as Mama, amam, amma, and so on.

The whole alphabet having been gone through in this fashion, the defectively pronounced letters being underlined, the teacher can afterwards concentrate his pupil's attention upon those on which he "lalls," and teach him, by demonstration in his own articulatory mechanism, how they ought to be pronounced. If the patient be intelligent and of sufficient age, careful instruction in this fashion will often effect a wonderfully rapid cure.—*Brit. Medical Journal*.

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## TREATMENT OF COMPLICATED DISLOCATIONS OF THE ELBOW WITHOUT IMMOBILIZING SPLINTS.\*

BY C. S. PARKHILL, M.D., HORNELLSVILLE, N. Y.,  
Surgeon to Erie Railway.

In presenting a report of the following cases of complicated injuries of the elbow-joint treated without immobilizing splints, it is, as far as I know, unique in the surgical treatment of such injuries. I was led to adopt this method solely from the belief that most of the bad results from joint injuries, when properly reduced after fracture or dislocation, were due to malnutrition of the bones and muscles comprising the joint and to pressure, and that rigid immobilizing appliances were unnecessary. The result being so satisfactory in the first of the series of cases, I was prompted to treat the following cases without splints.

Injuries of the elbow-joint are a source of perhaps greater anxiety and disappointment to the surgeon than any others.

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\* Read at the annual meeting of the Erie Railway Surgeons' Association, held at Victoria Hotel, New York City, Oct. 17th to 20th, 1900.

Recoveries are not common without some degree of deformity and impairment of motion, and many lose completely the function of the joint, no matter how carefully an immobilizing splint is applied.

The very fact that a joint is completely immobilized, and for too long a period, to my mind, is an important element in producing bad results. If a splint is applied sufficiently tight to completely immobilize a joint, the circulation is more or less interfered with, so that nutrition of the bone is impaired, to say nothing of the increased pressure caused by swelling.

The essential point is a perfect reduction, which should always be done under anesthesia, for in no other way can you get complete muscular relaxation, and the result of your efforts at reduction of a fracture or a dislocation.

I do not believe that all fractures can be safely dressed without splints, especially fractures of the long bones; even in these too much reliance is likely to be placed upon immobilizing apparatus, and too little upon an exact knowledge of the condition of the fracture when the first dressing is applied.

It is not my purpose to enter into the discussion of the different fractures of the elbow-joint, for that is fully described by all surgical text-books. However, the classification of Lloyd I believe to be the most comprehensive, which he considers under the varieties:

- 1st. Supra-condyloid fracture of the humerus.
- 2nd. Separation of the epiphysis.
- 3rd. T-fracture of the condyles.
- 4th. Fracture of the internal condyle.
- 5th. Fracture of the external condyle.
- 6th. Fracture of the epicondyle.
- 7th. Fracture of the olecranon process of the ulna.
- 8th. Fracture of the coronoid process of the ulna.
- 9th. Fracture of the head of the radius.
- 10th. Fracture of the neck of the radius.

Of the first he says: "Had I no dressings at hand, I could treat this fracture without any other dressing than a rubber bandage, by placing the hand across the chest with the fingers coming into the infraclavicular space of the opposite shoulder, and bandaged in this position, the result will be satisfactory." This is the only allusion he makes to the dressing of any fracture of the elbow without immobilizing splints.

In a letter received February 28th last from Dr. W. T. Manley, of New York, to whom I sent the notes of five cases treated without splints, he says:

"In your elbow cases, your first paragraph will imply that you are not acquainted with Championière's large work on fractures treated without splints, and you forgot to note that I have for ten years deprecated indiscriminate splinting." He also refers to a

paper read at Atlanta, Ga., before the Surgical Sections of the American Medical Association.

I confess ignorance of the existence of Champièriè's work, also of Dr. Manley's paper, but am glad to know that there is so good authority for treating fractures without immobilizing splints. It relieves the loneliness incident to the advocacy of a new theory, for the general practitioner will not be willing to risk his reputation by introducing a plan in opposition to the established teaching in the use of splints in the treatment of all fractures, no matter where located.

Lloyd, in his article, February, 1900, says, "that fractures in the vicinity of joints are dreaded by the general practitioner, even more than simple fractures along the shafts or bodies of bone. Fracture in the vicinity of the elbow being usually more common than fractures near or involving other joints, and always looked upon with special interest, it should be an invariable rule to warn the patient and his friends in the presence of witnesses, that there is a very decided risk of the motion of the joint being impaired, perhaps completely lost." Such a statement from so good authority is encouraging to the surgeon in attempting to make use of a new method, and the thought is consoling that he cannot do much worse than by following the old methods; and he is not running much risk in trying a method that may result in something better.

The use of manufactured splints and trying to fit the case to the splint is annoying, and is like fitting a shoe to any size foot; if it fits, it may answer the purpose, if not, the results are doubtful. Flexible splints of wood, wire, felt or plaster may be moulded to the fracture and fulfil a useful purpose.

In the method proposed, all that is required is to fit a splint to a fractured joint; if more is thought advisable, a crinolin bandage, dipped in hot water a few minutes, and applied over the cotton and gauze bandage, makes a beautiful immobilizing dressing, and fulfils every indication of the best-fitting splint.

This I have applied in Potts' fracture when the fractured bone was liable to accident from falling or otherwise. In a series of fifteen cases, a crinolin bandage was used in but two, and that simply as a precautionary measure. In a continuous series of fifteen cases, seven of the elbow, three of the ankle, one of the leg, one of the thigh, and three Colles', no other immobilizing dressing was used, and all made a satisfactory recovery.

Case 1. March 9th, 1899, F. F., while working with a circular saw, was struck by the saw in the back of his right hand, which drew the arm forward to the elbow and sawed the outer half of the ulna, producing a dislocation of both radius and ulna. The joint was opened and the olecranon process and the articulating surface of the ulna cut off with about three inches of the shaft. The wound was ragged, as the saw was running slowly, thus tearing the soft parts rather than cutting.

I removed the third finger and several fragments of bone along the track of the saw, reduced the dislocation, and closed the wound with about thirty stitches. At the first dressing I applied a Levis' angular splint, which I removed the following morning, and no splint was afterwards applied. The dressing consisted first of campho-phenique powder, bichloride gauze, a double layer of cotton, and a carefully applied bandage. The second bandage was applied in the form of a figure of eight, the arm resting in a well adjusted sling. Passive motion was kept up after the first week and the dressing re-applied the first two weeks about every alternate day, after that less frequently. No suppuration occurred, and the case was discharged April 5th, with almost perfect motion of the joint, and he returned to his work May 1st.

My assistant, July 31st, made measurements, and found the arm capable of flexion and extension from 45 to 135 degrees, which is nearly perfect.

Case 2. J. F. S., aged four years, while playing with other children, April 28th, was thrown violently forward on a brick sidewalk, producing a posterior dislocation of the ulna and an epiphyseal fracture of the end of the humerus at the right elbow.

I was called from the street, and having no splint, applied a dressing similar to that of case one. I reduced the fracture and dislocation under anesthesia, and wrapped the arm from the wrist to the shoulder with absorbent cotton and applied a bandage smoothly over it, dressing it with the hand pointing to the opposite shoulder. Then I applied a figure-of-eight bandage over the elbow, put the arm in a well adjusted sling, and did not disturb it for one week.

I then examined it and found it as when first reduced. It was re-dressed at the end of the second and third weeks, and recovery was complete at the end of the fourth week. I examined the arm July 21st, and found that the function of the elbow is perfectly restored and little evidence of the injury remains.

Case 3. J. D., aged four years, fell down stairs, June 21st, producing a dislocation of the left ulna and fracturing the internal condyle. Aided by my assistant I reduced the fracture and dislocation under anesthesia, and applied the same dressing as in case two.

I examined the elbow at the end of the first week and found no displacement. The arm was dressed each week, and the dressings entirely removed at the end of the fourth week. I examined the arm July 21st, and found extension complete, and with slight force, complete flexion. Without assistance he can touch the corresponding shoulder with the fingers as well as before the injury. No deformity exists, and he uses the arm with the same facility as before.

Case 4. H. W., aged twelve years, while picking cherries, some



miles in the country, fell from the tree, striking his right hand, producing a posterior dislocation of the radius and ulna, with a fracture of the coronoid process of the ulna.

This deformity was reduced under anesthesia and a dressing applied the same as in the preceding cases. The elbow was re-dressed at the end of each week, and the dressing removed at the end of the fourth week.

I examined the arm July 25th, and found the function of the elbow completely restored, without deformity.

W. P., on August 24th, 1899, was digging a well twenty feet from the surface, when a clump of dirt fell, striking his leg, producing a typical Potts' fracture, with the foot lying at right angles to the leg. I reduced the dislocation, and dressed the ankle with cotton and bandages, applying the bandage so as to produce inversion of the foot. As he was some distance from home, I applied over all a sole-leather splint on either side, which had been carefully fitted for another case some time before. The purpose for which they were applied was to prevent injury in transportation to his home.

The following morning he complained of pain, and I removed the dressings for the purpose of examination, and found blebs on either side of the leg where the leather splints had been applied. I did not re-apply them, and the patient made a good recovery without immobilizing splints.

E. S., aged fifty, sustained a Colles' fracture of her right wrist, March 26th, 1900. The fracture was reduced by my assistant, and the following morning the dressing was removed for examination, and the part re-dressed without immobilizing splints for a period of two weeks. At the end of that time she wished to spend some time from home, and I re-dressed the fracture in a similar manner as in the elbow case, then applied a crinolin bandage which was removed at the end of the fourth week and none re-applied. The result was as good as in any other similar case. There was no swelling and no deformity, except a slight depression of the carpal end of the ulna, which is common in these fractures, and is due to a rupture of the radio-ulnar ligament.

M. S. C., aged seven years, on July 4th, had his thigh caught between a falling platform and a curb stone, producing a compound fracture about three inches above the knee. All of the muscles were severed as well as the popliteal vein; there was serious hemorrhage and an immense gaping wound; the fracture was oblique and the shock extreme. I united the severed muscles with No. 1 catgut after cleaning the wound with 1-1000 bichloride solution, and applied a thick gauze compress wet with the same, then cotton and light gauze bandage.

The following morning I made a wire netting cradle and suspended it from the ceiling with a pulley and cord, thus allowing

free movement of the body without disturbing the thigh and leg. No immobilizing splint was used and no other extension applied, for the reason that the circulation in the leg being cut off, the slightest pressure would have caused an abrasion of the skin, and the only question to consider was that of saving the thigh from amputation, which was considered doubtful.

The wound was re-dressed July 5th, and a thick compress of gauze was applied saturated with a 5 per cent. solution of balsam of Peru with oleum ricini.

The leg was dressed daily in the same manner. August 4th, the use of the cradle was discontinued. Bony union has taken place, the wound closed without suppuration, and the function of the joint is normal; by measurement the thigh is an inch shorter than the other, which might have been less had the condition allowed of extension.

My way of digression permit me to say that the oil dressing, in my opinion, prevented extensive suppuration and absorbed all the broken-down tissue, which adhered to the gauze. A large surface of skin was destroyed at the time of the injury and separated, leaving healthy granulations which closed the surface rapidly.

This dressing for wounds was suggested by the late Dr. Van Arsdale, of Mt. Sinai Hospital, and was used by him there. I have used it as a dressing in nearly all of my cases of infected wounds when the tissues were lacerated; it is not sterile, as it is the ordinary cold pressed castor oil sold in drug stores. My only explanation of its utility in this class of cases is that bacteria, like boys, do not like castor oil. Van Arsdale's theory was that it allowed of free absorption of germs by the dressing, and promoted healthy granulation.

[Where Dr. Parkhill speaks of "infected wounds," he evidently means soiled wounds. In regard to the Van Arsdale mixture of castor oil 95 per cent. and balsam of Peru 5 per cent., it has a wonderful action in promoting healthy granulations, and dressings are removed with much less pain to the patient, but the mixture may become headquarters for bacteria in a doctor's office. It should never, never be used without first being sterilized, and when it is kept in the office or bag for general use, it should be sterilized at least once a month.—Ed.]

It is well known that injured joints not used, naturally become ankylosed, because motion is as much a stimulant to a joint as light to the eye. The ordinary lubricating fluid of the joint becomes dry, and the joint inflamed.

A healthy joint at rest for five weeks becomes stiff and painful. This is the greatest difficulty we have to contend with in the treatment of fractures, assuming that they have been properly reduced.

It has been the rule to completely immobilize fractures involving the joints, and by so doing there is likely to be a degree of ankylosis hard to overcome.—*International Journal of Surgery.*

## THE MEDICAL TREATMENT DURING THE ADOLESCENT PERIOD.

BY EDWIN ROSENTHAL, M.D., PHILADELPHIA,  
Chairman of the Section on Diseases of Children of the American Medical Association; Pediatricist  
to the Franklin Free Dispensary, etc.

The adolescent period in the female may be said to be as critical in results as the menopause, and by reason of the methods of our education may be said to be one of the best known conditions universally recognized, and, as such, the common property, not only of the profession, but also of the laity. For this reason, it is not an uncommon fact to witness, not only the diagnosis of this condition being made by the "officious meddler," but also treatment. And it is very often, when such treatments have failed, that the patient is brought to the doctor. In such instances great care and discernment must be the weapons of the doctor, for it will be noted that recourse to all the old well-known remedies had been applied before further advice is sought. The commonest symptom that presents itself is the one that refers to the menstruation; and it is in all probability that this disordered condition is the most conspicuous factor that needs correction.

Two classes of cases are most numerous, and may be divided into: 1st. That class that has never menstruated, and 2nd. That class that may have begun, shown a very slight discharge at infrequent intervals—once in six or nine months—but which has never grown to an extent at any time that may be termed a normal flow. The history of these cases are very generally of the same character, and may be briefly summarized: Digestive disorders, headaches, languor, flushing, sensations of fulness in the abdomen, disturbed or unnatural sleep, or sleepy conditions during the daytime; often some cutaneous affection—acne the most common. Whilst the symptoms may be present in some, frequently only part of them may be present in certain cases, as the skin affection. During the period that should be termed the "menstrual" period, the symptoms are generally aggravated. If the "acne" be present at this time, a fresh crop of pimples appear, and thus can be noted other symptoms.

In all cases of menstrual disorders in the young, the cause must be sought for, and if found corrected. This of certainty directs the treatment. In cases where the menstruation has never appeared, it should always be a certain rule to have the sufferer examined by the mother. In quite a number of instances anatomical reasons have shown the reason. In four cases an "impervious hymen" was the cause. In two cases the "uterus"

became the receptacle, and contained the result of numerous menstruations, becoming enlarged even above the pubic bones; the cervix being impervious. In several instances there was an entire absence of the uterus and ovaries. This I noted in two cases, both married, and were examined for the reason. In one case, an otherwise well-developed young woman, age 21, there was an absence of a vagina. Such cases are thus enumerated, nothing can be done in the line of medication, but judicious surgical procedures may, in indicated cases (impervious hymen or cervix), make a cure. Where, however, no necessary organs exist, nothing can be done, except such rules, as the regulation of the bowels, etc., at stated intervals, give much relief to the frequently present nervous symptoms. Where, however, no anatomical reasons exist, and the patient suffers from suppression of the menstruation, entire or in part, much can be done to aid a cure.

The question of age frequently enters as an answer to results. We have with us such a conglomeration of different nationalities that the "age" question is a very vital one. Inasmuch as frequently the treatment of menstrual disorders may be wrongly applied, as an example: To attempt treatment of a girl of 13 or 14 years, when her mother only began menstruation at twelve years. Experience has taught me that girls born in warmer countries, or descending from such parentage, begin to menstruate much earlier than those of colder climes. For instance, girls from Italy or Cuba begin at 12 or 13, where those from Norway or Sweden begin at 15 or 16 years. Again, in races I have seen some surprising differences. The colored race has presented a girl of 10 years, and often I have seen girls of Russian-Jewish parentage begin at 10 or 11 years. So that the question of age should always enter into the treatment.

Whilst the most common symptom of disordered menstruation is "anemia," and as the better known "chlorosis," or vulgarly "green-sickness," its absence need not preclude the use of the most common of all our remedies—iron. Anemia alone may be the cause of suppressed menstruation, and while its presence may be looked upon as a certain cause, its treatment is as essential for the appearance of the menstruation as it should be for the general health of the patient. That anemia in girls is most frequently found at this time leads to the common belief that anemia, green-sickness, or whatever name this blood condition may receive, is the chief factor in menstrual disorders.

The treatment of such conditions are numerous, and should divide itself into the causative factor first, and then, after this has been relieved, to the specific symptom. In other words, it will be

wrong to attempt by the use of specific remedies the appearance of the menstruation, if the physical condition of the patient is such that should not permit it.

Besides the condition of the blood as a cause of suppressed menstruation, other well-known conditions equally play a prominent part. Even if the patient should suffer from such diseases (tuberculosis as an example), the presence of a menstrual flow has such an encouraging influence upon the mind of the sufferer, that some attempt should be made, and as the method pursued by myself for many years can only be of benefit, such conditions are not contraindications for its use.

Iron is the chief remedy in menstrual disorders, and may be given at all times—before, after and during the flow. A certain time in the life of the patient should be set apart for active and specific treatment. The time chosen should be when the symptoms are most aggravated. The days, one, two or three, should be set apart, and our treatment should always culminate to this period. If we fail at the one, then we should begin again, and pursue our treatment until the second period, when the specific method should again be applied, and thus on. Even if failure should mar the first, second, or even the fifth period, the menstruation will appear, if the treatment be applied in a rational way.

Between the periods I always order the use of iron in three or four daily doses. I have used all forms and varieties, from the tincture of the chloride, which is so often objected to, to the different kinds the Pharmacopeia presents, in pill form, as the Blaud pill, simple or modified. My experience brings me back to Gude's Pepto-Mangan. Gude's Pepto-Mangan is now the most common in use, and there are so very many similar preparations in the apothecaries that care should be exercised in obtaining the genuine. I have a simple way of distinction. I always order Gude's Pepto-Mangan given with milk. If the mixture is clean, uncoagulated and palatable, then I know my patient has received what I ordered. For a further distinction, I invariably place on my prescription the name "Gude." My reasons are these: So very many so-called similar products are on the market that are inferior, and in a measure do not act in a manner you wish, clinically as well as physically. For my own defence, as I have been so frequently disappointed, I detect the fraud of substitution by mixing with liquids, especially milk; the "Gude" preparation always gives the palatable mixture.

I order of this preparation a teaspoonful in a wineglassful of milk every three or four hours, depending upon the patient's condition. - If she be very anemic, and with this very nervous, I place her upon the milk diet, and by the addition of Gude's Pepto-

Mangan I reach my object, giving the food as well as the medicine. I increase the dose until a tablespoonful, three or four times daily. This treatment is kept up, and even continued through each period, until the purpose is obtained, perfect health, as regards not only the menstrual flow, but also the general physical condition.

Medical treatment is never sufficient in these class of cases, and failure is apt to result if no attention be given to other conditions: the very common class, the school girl who desires to reach the head of her class, or who studies for a prize or the like. Take the following case:

CASE I.—E. L., age 17 years; large in growth, over five feet eight inches; reddish hair. A student of the Girls' Normal School, preparing for the teachers' certificate, which required two more years of study after the graduation. Complains of constipation and headache. Has acne on each cheek. Has occasional backache, and has an occasional attack of "nervousness," crying, etc. Her menstruation is scant, very irregular, and when it does appear, not more than one day, or probably one half the next. Appetite erratic, though spoiled by the method of eating, as buns, or cake, or pie for lunch, whilst the breakfast, hurriedly eaten, was only a cup of coffee or a roll. Her main food was the "supper-dinner," when she was "too tired or too long hungered" to eat. Once or twice I was called to quiet an hysterical attack. In this case the pimples were the bane of the young lady's life, and while she was not anemic in any sense, I placed her upon the (Gude's) Pepto-Mangan, telling my patient this medicine was for the pimples, and that I left the further treatment in her hands. This, with purgative pills of aloin with nux vomica, was the whole treatment. Vanity came to my assistance, as the patient desired to be rid of the eruption. Persistent use of the iron was the only medicine used, and whilst the schooling was persisted in, she passed through the period, and eventually recovered.

The second case is one that is too frequently met with, the child of the poor, who is sent too early to the "mill" or "store," and who has never been taught the commonest rules of hygiene; the girl who spends her time in work, and whose only outing, a dance or picnic, is equally as hard work.

CASE II.—Age 14 years. Attended school until 12 years, and then became a cash-girl in a department store. Rather large for her age. Flabby built, and of a distinct pallor. Complains of obstinate headache, relieved by the so-called bromos; indigestion, languor, sleepy during day-time, and at night a sleep that was heavy, unnatural, and disturbed by dreams; at intervals flushing with sensations of chilliness. Menstruation scanty, probably a

half of one day, and very light in color. In this case work was a necessity, as even proper food could not be obtained. However, milk was the easiest and cheapest food, and from one to two quarts daily was the constant supply. To this food I added a teaspoonful of Gude's Pepto-Mangan at each glassful, one every three hours, increasing until a tablespoonful dose was attained. This, with a purgative pill (the compound rhubarb pill of the Pharmacopœia), was the treatment persisted in for over eight months, with complete recovery. In this case the treatment was begun in the fall of the year, persisted in through the winter months, and during the following summer months a vacation of but two weeks was obtained, and the patient sent to the seashore by one of our charitable institutions. This patient was convinced of the utility of this method of treatment, as I found the following winter the same course was followed with a gratifying result, preventing any loss of time by reason of illness or otherwise.

I have also met with cases that the menstrual period came on correctly at a certain age, and continued so for a year or two, when, for some unknown reason, there was total suppression. There was no history of tubercular disease, nor could I obtain any certain cause. In one case marriage was undertaken as a hope for cure. This patient, aged 18 years, came to me with the following history:

CASE III.—Mrs. B.; began menstruation at the age of 13 years; regular intervals until 15 years, when the flow became scanty and scantier until only a half day, and then entirely disappeared. She had not seen a flow for two years. Examination revealed the uterus two inches in length, somewhat anteflexed. The ovaries on each side could be felt, the size of an almond; the tubes could also be felt. This patient had been under the care of many physicians, and had had several operations, even a laparotomy, for the abdominal scar was visible. Nothing had been removed, she assured me, and the examination showed this also. Dilatation of the uterus had been performed, as well as curettement, for what I was not informed. She had also undergone electrical treatment. I treated this patient constantly for six months before a flow of blood was in evidence. My sole treatment was the internal use of the Pepto-Mangan (Gude's) in tablespoonful doses in milk, and the use of a stem pessary for a period of nine months. After this time an examination revealed the uterus two and one-half inches in length, larger in size. The tube could be felt, and the ovaries on either side somewhat larger. Monthly flows have now been the rule for the last three months. This patient is still under treatment, and whilst the iron is still persisted in, the result of the treatment is uncertain. I am firmly

persuaded that many cases can be benefited by a correct application of our remedies, and when applied for a certain purpose.

This last patient appeared hopeless, and at the start I had little hope myself that much could be looked for. It appeared as a case of early menopause. I have seen such cases, with atrophy of the organs. Here, however, this was stopped, and I have still hope of seeing further improvement.

I have seen such good results in the use of Gude's Pepto-Mangan in septic diseases that I have applied it fearlessly in other conditions. None give better promise than those conditions that are coupled with the menstrual flow, especially when seen at the adolescent period.—*Medical Fortnightly*.

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### Reports of Societies

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#### AMERICAN ASSOCIATION OF ORIFICIAL SURGEONS.

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The American Association of Orificial Surgeons will hold its next annual meeting in Chicago, September 18th and 19th, 1901. Although quite separate, Professor Pratt's "Clinic" will be held the same week, beginning September 16th. To those familiar with orificial methods and their practical application to the cure of chronic diseases, no special appeal need be made other than to urge their presence or attendance at this meeting, as it promises to be one of the best held since the organization of the Association. Lectures and papers have been promised by some of the most prominent medical men of the country. The discussions will be lively and interesting, and one's knowledge of the work will be brightened and widened. To those who are not familiar with orificial ideas, theories and practices, we can say that there can be no more auspicious time to gain a practical knowledge of orificial surgery than at this meeting of the Association. The whole field will be brought within reach.

Due attention will be given to preparatory work and fundamental principles thoroughly expounded and illustrated by some of the brightest surgeons of this country. Due attention will be given to after-treatment, therapeutical and otherwise. Papers and discussions will embrace the whole idea and give the sum and substance of more than fifteen years work along lines that have yielded prodigious success to the surgeon and general practitioner. No live man can now afford to ignore orificial surgery or be absent from this meeting.

HENRY C. ALDRICH, M.D., Secy.,  
 Minneapolis, Minnesota.

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 Cincinnati, Ohio.



# DOMINION MEDICAL MONTHLY

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## DR. KOCH'S RECENT PRONOUNCEMENT.

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Dr. Koch has again succeeded in obtaining world-wide publicity, probably greater than has ever fallen to the lot of any physician, by his assertion that human and bovine tuberculosis are not identical, and that there is no possibility of communicating the disease from animals to man. To judge from the views expressed in the lay press, Koch has obtained in the eye of the public a position such as makes him incapable of error.

That tuberculosis in man and animals is not identical has been recognized before Koch issued his *ipse dixit*, but that he has sufficient grounds for the broad statement that infection with tuberculosis from meat and milk is impossible in man, will, we believe, be denied by the great majority of those whose opinions are most valued in this connection. The effect of the promulgation of such views, if not substantiated by future investigation, may do almost incalculable harm, and we would think that with his previous errors before him he should have been absolutely sure of his ground, or withheld his statement until such time as his experiments had removed any reasonable doubt. Koch's scientific standing has not been strengthened by his most recent promulgation, and, in view of his failure with tuberculin R., and his erroneous views on

malaria, it is possible that, should his statements before the Tuberculosis Congress prove incorrect, he may drop as rapidly in scientific estimation as he rose after his discovery of the bacillus tuberculosis.

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### A NEWSPAPER ESTIMATE OF THE PHYSICIAN.

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An editorial in the *Star* of recent date complains that the Medical Council is exercising so arbitrarily the powers delegated to it by the Legislature, that it will yet be necessary for the State to step in in order to protect from its persecutions persons guilty of slight breaches of the Medical Act, who, in the opinion of the *Star*, may be legally wrong, but in reality are doing no public harm.

As the *Star* very properly states, the public good was the object of the Medical Act, rather than the protection of the practitioner; and we believe that the practitioners of Ontario, and their representatives—the Medical Council—so regard it. Surely the editor of the *Star* has slight knowledge of the members of the profession of which he speaks when he accuses them of acting through selfish motives. We can readily believe that isolated instances may be cited in which prosecutions have been undertaken which better might have not been instituted, but it is scarcely fair to found an opinion of the tendency of the profession on such cases.

In the same issue, in an editorial note referring to a complaint that persons well able to pay for treatment are attended free at the Emergency Hospital, and that down-town medical men are thus deprived of a portion of their income, it adds, "If it is only the doctors who are complaining of loss of income, the public can bear with it." Why should they not complain? Do they not already do enough for nothing? The fact that they do not shout about it makes the public sometimes forgetful of their good works. How much advertising space, we would like to ask, does the *Star* give daily, free, for charitable enterprises? How much time do the members of its staff spend daily educating the public without expecting remuneration for it? Does the *Star* editor know any class of men less likely to be animated by selfish

motives than a class who almost without exception give at least one-fourth of their daily labor without fee or hope of reward? What proportion of the population of the city does the editor of the *Star* think incapable of paying for medical attendance? Who attends them? There is no municipal staff of physicians—the men whom the *Star* thinks are so jealously pushing everybody off their preserves do it; and we feel safe in stating that in most cases these patients are looked after as conscientiously and attentively as are those claiming services payable in cash instead of “God-bless-you’s.” We do not like to write in this strain, but it is sometimes necessary. “He that humbleth himself shall be walked upon.”

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### CANADIAN MEDICAL ASSOCIATION.

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The General Secretary has received a letter from Dr. A. S. McCaig, of Sault Ste. Marie, on behalf of the medical men of that place, extending an invitation to members of the Association, from eastern points, to stop over a day and a night at the “Soo” as guests of the medical men there.

The Soo is a growing place, and alive with industry, so that any who can will be wise to accept this kindly hospitality, and spend a most pleasant day and an evening’s entertainment there. Members intending to do this should communicate at once with Dr. McCaig.

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### Editorial Notes

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ECTOPIC GESTATION.—Dr. A. F. McKenzie, Monckton, Ont., writes to the editors in reference to the report of his remarks in the discussion on Ectopic Gestation at the recent meeting of the Ontario Medical Association. The case referred to by him was not, as one would naturally think by reading the report, a case of estopic gestation, but was a case of normal pregnancy at the second month, complicated by the presence of an ovarian cyst. The symptoms in many respects resembled those attending ectopic gestation, and it was only after the abdomen was opened that a

positive diagnosis was made. At the request of the patient and her husband, made previous to the operation, the sound ovary, as well as the diseased one, was removed. Dr. McKenzie thought the case worthy of mention in the discussion as an illustration of (1) the difficulties of diagnosis; and (2) the fact that the presence of ovarian tissue does not appear to be essential for the continuance of gestation nor the performance of lactation, as the pregnancy in this case went on to full term, the child being larger than any previously born of the same mother. At the time of writing (July 30th) it is a little over four months since it was born, and it is healthy and still being nourished by the mother's milk.

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THE HON. DAVID MILLS AND THE BIRTH-RATE IN NEW ENGLAND.—A high Canadian official, the Hon. David Mills, Minister of Justice for the Dominion, has indulged in some remarks on the degeneracy of the New Englanders. The head and front of his accusation is that they do not raise large families, and he thinks the United States has a serious problem before it in this decrease, or rather lessened increase, of its population. The amount of misinformation, or, to put it more plainly, gross ignorance, at the bottom of his jeremiad is remarkable. It is true that there has been a decreasing birth-rate in New England, but this is not so wonderful or alarming when one considers the facts. There are plenty of towns in that section where the birth-rate is low simply because there are few of the population of the productive age; they are kept up largely by the return of old people to their former homes, by summer residents from the cities, who do not count in their statistics, and to a certain extent by immigrants from the outside. The young people very largely leave home before marriage, some at the time of marriage. It is not an ideal state of affairs, but it is better than it looks in official vital statistics. The New England blood has permeated the whole country, and still in its present condition that section sends out a quota of energetic vitality that makes its mark in every way.

As regards other portions of the country which this critic seems also to include in his condemnation, it should be remarked that birth-returns are almost everywhere defective; in only a few

of the older sections can they be relied on as approximately accurate, and the errors are altogether in omissions. The problem of school accommodation for the rising generation is a perpetual one in many of our cities, and yet the birth-rate is practically non-existent according to the returns. There is also in nearly every prosperous community a tendency to a decreasing birth-rate, and this seems to be enhanced by some conditions of modern civilization.

Take the United States as a whole and it would probably be found, were the true figures available, that it is not much worse off than most other countries and better off than some. Among these last we have to reckon Canada, and more particularly that portion of it that claims the Hon. David Mills, namely, Ontario. According to the Registrar-General's report last year, the birth-rate of that province was lower than that of any state in the Union, being only 19.9 per 1,000. It seems, therefore, a little gratuitous, to say the least, for this Canadian cabinet minister to send out such utterances. If they were justified by the facts, the case would be bettered, but they would seem to show a prejudice causing him to ignore his own vulnerable glass house. As it is, we have to consider them the result of either prejudice or inexcusable ignorance.—Edit. in *Jour. Amer. Med. Ass'n.*

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CAN ANY OF OUR YOUNG MEN SECURE THIS PLUM?—The chair of pathology in the University of Sydney, New South Wales, is vacant, and applications for it are invited. According to an "annotation" in *The Lancet* of July 20th, the salary, a fixed one, is £900 per annum, and a pension of £400 per annum is allowed on certain conditions after twenty years' service. The sum of £100 will be allowed for passage expenses from Europe or America. The successful applicant is to begin his duties on March 1st, 1902. Further particulars may be obtained from the Agent-General for New South Wales, 9 Victoria Street, London, S.W., to whom applications, stating applicant's age (which must not be more than forty years) and qualifications, and accompanied by four copies of each testimonial submitted, should be sent not later than September 14th, 1901.

### News Items.

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DR. MEMBURY has returned to Toronto from West Africa.

ANTHRAX is prevalent among cattle in the county of Stormount.

OTTAWA'S Contagious Diseases Hospital is a long time in coming.

DR. HUNTER ROBB, Cleveland, is spending his holidays at Murray Bay.

DRS. McPhedran, Palmer, and Stevenson, of Toronto, have gone to England.

MCGILL will present a gorgeous appearance both day and night when the Duke comes to town.

A HOSPITAL will be built at Shoal Lake, Man., \$1,000 having been voted from the funds of the Victorian Order of Nurses.

DR. ETHIER, late Superintendent of the Notre Dame Hospital, Montreal, has gone to Paris for a two-years' course in study.

DRS. W. E. Deeks, W. G. Reilly, and R. H. Craig, have been elected to positions on the medical staff of the Montreal Western Hospital.

DR. CHARLES DOHERTY, Superintendent of the Kootenay Lake Hospital, Nelson, B.C., is on a short vacation visiting friends in Toronto.

So far as medical health officers are concerned, the recent cases of smallpox in Toronto and Burlington have emanated from the Niagara Camp.

THE *Canada Lancet* has passed into the hands of the Ontario Publishing Company. It is not expected that there will be any change in the editorial management.

QUEBEC has had 337 cases of smallpox since the 1st of January. Thirty-four municipalities have now a clean bill of health. There are still seven centres of infection.

DR. F. A. CAWTHORNE has returned to Toronto from the Michipicoten District, where he had charge of the smallpox outbreak for the Provincial Health Department.

THE Protestant Hospital for the Insane at Verdun, Quebec, will erect two new wings, one an isolation wing with forty private wards. The total cost is estimated at \$70,000.

INFANT mortality in Montreal has taken a slump. There were only fifty-six deaths amongst infants for the last week in June. During that week 118 deaths were reported.

DR. HEISER, the representative of the United States Marine Hospital Service at Quebec, is detaining on an average eight immigrants a week destined for United States points.

THE Provincial Board of Health of Ontario has adopted new special regulations for the 400 unorganized townships in New Ontario. There is a population of 100,000 in these districts.

THE Faculty of Medicine in McGill University is making extensive alterations in its library. When completed, it will occupy much more commodious quarters than it does at present.

DR. W. T. MCARTHUR, of Los Angeles, Cal., on his way home from Edinburgh, where he recently had conferred upon him the degree of F.R.C.S., stayed over in Toronto for a few days to visit friends.

DR. BRYCE reports that the cottagers in Muskoka are exhibiting an ever-increasing vigilance with regard to sanitary matters, and the careless disposal of refuse into the lakes, with resulting typhoid, has been largely overcome.

DR. LABERGE, Health Officer of Montreal, states that his department will still continue to guard against the spread of tuberculosis from animals to human beings, in spite of the recent announcements of Professor Koch.

THE barbers of the Province of Quebec are up in arms against the Barbers' Association, which was incorporated by the Local Legislature in 1899. They object to medical inspection and examination, and the \$2.00 fee for same.

IT is rumored in political circles that Dr. Daniel Clark is to retire from the superintendency of the Asylum for the Insane, Toronto, on a handsome allowance, and that he will be succeeded by Dr. McKay, M.P.P., for South Oxford.

THE health of Toronto in July was the best in eight years. There were only three cases of typhoid reported; and the drinking water has not been surpassed since 1894. There are now only 104 colonies of bacteria to the cubic centimeter.

THE total number of deaths reported in the province of Ontario during the month of June, 95 per cent. of the population reporting, was 1,608, as against 1,752 for the previous June. There were 174 deaths from tuberculosis, as against 200 for June of 1900.

FOR the seven months of this year, Toronto has had 148 less births than for the corresponding period last year. There were 521 marriages in June and July, nearly 50 per cent. more than for the corresponding time last year. There is great promise for the future.

THE Pharmaceutical Association of Manitoba will in future refuse to recognize Ontario diplomas. This will mean that the Ontario graduates cannot practise in the western province. It is thought that the Ontario body will retaliate by barring Manitoba men from practising in this province.

THE Executive Committee of the National Sanitarium Association met in Gravenhurst, August 7th. The site of the Gravenhurst Free Hospital for Consumptives was visited. The mason work is well advanced, and from all appearances the building will be ready for patients by November 1st next.

TORONTO has fifteen maternity homes and thirty-five baby-farms. There were 130 babies born in the maternity homes last year. Fourteen of them died; thirteen were adopted into good homes; three were retained by, and the same number were forsaken by, the mother, while the rest remained in the homes.

SHERBROOKE, July 13th.—The regular meeting of the District of St. Francis Medical Association was held in Sherbrooke lately. Dr. Brown, of Richmond, presided, and there was a good attendance of members. Dr. Russell Thomas, Lennoxville, was appointed to represent the Association at the annual meeting of the Canadian Medical Association at Winnipeg, and was authorized to bring before that Association the scheme of medical defence union, which was started by the St. Francis Association, the scheme which is already in working order, so that it may be put into operation at once, instead of having to wait for some years, as they would have to do if the matter was left to a committee scattered all over the Dominion. A resolution favoring Dr. Roddick's Registration Bill was passed unanimously by the Association.



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**Obituaries**

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**DR. OVERTON S. MACDONALD, TORONTO.**

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On the afternoon of the 8th inst. Dr. O. S. Macdonald, of this city, ended his life by shooting himself through the heart with a shot-gun. He is said not to have been in his usual state of health, owing to the after-effects of a very recent attack of la grippe; and this condition of ill-health was no doubt the cause of his rash act. Dr. Macdonald was graduated several years ago from the Cleveland Homeopathic College, and had been in the active practice of his profession for some years in Toronto. He was thirty-nine years of age, and counted many friends amongst the regular profession.

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**DR. JOHN BARNHART, TORONTO.**

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The death was announced on the 9th inst. of Dr. John Barnhart, at Toronto, at the age of 88 years. Dr. Barnhart received his medical education in New York, under able professors, one of them being Dr. Valentine Mott. He was also a student of the late Dr. Widmer, of Toronto. He formerly resided at Owen Sound, and was one of Canada's pioneer medical men.

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**DR. EDWIN R. BISHOP.**

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Dr. Bishop graduated from Trinity Medical College in 1888, and died from pulmonary tuberculosis at Brantford, July 24th, aged 44 years. He was on the staff of the Willard (N.Y.) State Hospital for eight years, and up to a few months ago practised at Geneva, N.Y.

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**MR. JOHN C. CARLAW, TORONTO.**

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John C. Carlaw, son of Major John A. Carlaw, who was at one time treasurer of the Grand Trunk Railway at Parkdale, Toronto, was drowned on the morning of the 9th inst. in Lake Ontario, a short distance from his own home. Deceased was in his third year at Trinity Medical College, was a bright and painstaking student, and very popular with his fellows. He anchored a boat a short distance from the shore and plunged in for a bathe, but apparently got too far away from his boat.

## Abstracts

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### PERNICIOUS ANEMIA, WITH AN ANALYSIS OF EIGHTY-SEVEN PUBLISHED CASES, AND AN ENQUIRY INTO THE AFTER HISTORY OF TWENTY-TWO REPORTED CASES.

Dr. Colman (*The Edinburgh Medical Journal*) reviews at some length the physiology of the blood, especially those views which refer to the normal blood destruction, and concludes that there is a normal active destruction of red corpuscles going on in the liver. In pernicious anemia this destruction is increased. The amount of increase determines the severity of the case. There is yet no adequate explanation of the cause determining this increased destruction in pernicious anemia. The suggestion of Mott, that there is an exaggerated "ferrogenic function" of the liver; of Jones and Brunton, that it is possible that some abnormal product of digestion, or even some digestive ferment itself, may act as a poison; of William Hunter, that there is produced in the gastro-intestinal tract a poison of cadaveric nature in small quantity and not constantly; of Gowland Hopkins, that the poison is of bacterial origin; and, lastly, of Hunter again, in a more recent article, in which he further develops his theory, concluding from the stomatitis, gastritis, and diarrhea present, that one has to do with a "chronic infective disease localized to the alimentary tract, caused by a definite infection of certain parts of the mucosa of the alimentary tract chiefly of the stomach and occasionally also of the mouth and intestines;" all are set forth.

Dr. Colman does not include the views of those who hold that pernicious anemia is merely an advanced stage, which may be reached by any anemia. He has no doubt of the existence of a *distinct* disease, which we call pernicious anemia. The prognosis in cases of pernicious anemia is shown in this paper to be fully in accord with that given by Addison fifty years and more ago; resisting all remedial efforts, sooner or later they terminate fatally. It is interesting, however, in this connection, to note the subsequent events in the history of 22 reported cases. All these were cured. Arsenic was used in fifteen cases, arsenic and salol in two cases, bone marrow in two cases, iron, phosphorus and betanaphthol in one case each. Ten of these died subsequently; three were lost sight of, doubtless many of them died. Two only were known to be living.

There appears to be nothing new in the matter of treatment. Generally speaking, it may be said that milk and farinaceous food suit better. This point finds but little if any emphasis in recent text-books on medicine. It has been shown that nitrogenous diet

increases the normal blood destruction. Transfusion is not recommended. Intestinal antiseptics, as salol, salicylic acid, betanaphthol, etc., seem to be much in vogue at present, and some go as far as to attribute to its antiseptic action the good effects following the use of arsenic. Others teach that it stimulates red bone marrow. Iron has been sometimes found advantageous, especially in cases where destruction is not excessive, and even in such cases after the arsenic had initiated the improvement.—*Montreal Medical Journal*.

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#### THE RECOGNITION OF TABES DORSALIS.

After giving a brief description of the history of the disease and the pathological changes which are met with, Theodore Diller (*American Medicine*) takes up and considers briefly, though carefully, the various symptoms met with in this disease.

He especially insists that although the lost knee-jerks, ataxia, the various paresthesias, anesthetics, analgesias, and painful sensations, due to the involvement of the peripheral sensory neurons, are met with generally in the majority of cases, too much insistence should not be laid on their presence in every case, for there is a considerable number in which some of the so-called typical symptoms are wanting, as the ataxic gait, the absent knee-jerks, and the Argyll Robertson pupil. According to Diller, the three chief symptoms which lead the patient to seek medical aid are: (1) lightning pains in the legs, (2) loss of function of the bladder and sexual organs, and (3) double vision or failure of vision. The lightning pains, usually appearing in the legs or around the waist, but occasionally in the arms, was the first symptom to appear in nine of twenty-four of Diller's cases; ocular symptoms were the first to appear in six of the twenty-four cases (in four cases as transient diplopia, in two as optic atrophy), while in two other cases optic atrophy was an early, although not the first, symptom to appear. "In the presence of a transient and recurrent diplopia, or ptosis, or an unexplained optic atrophy, one should always suspect tabes and seek other signs of the disease, and should he fail to find them or any other adequate explanation of the symptoms (as, e.g., paralytic dementia, brain tumor, disseminated sclerosis, or cerebral syphilis), the patient should be regarded as a 'suspect,' that when optic atrophy appears as an early symptom the other symptoms are late in their appearance, or may never appear."

Cystic weakness, or sexual impotence, or both, were the first symptoms complained of in three of Diller's twenty-four cases. At some time in the course of the disease ten suffered from vesi-

cal weakness, nine from impotence, and two from defective control of the anal sphincter; generally cystic and sexual weakness were present in the same patient; two patients complained of weakness of the legs at the first symptom, while in five others this symptom appeared at some time during the course of the disease. Paresthesia was present in eight of Diller's twenty-four cases, while Limbach recorded its presence in 64.5 per cent. of his 400 cases. Girdle sensation was present in eight of the twenty-four cases, and gastric crises in two of the cases, it being the first symptom to appear in these cases. Among the trophic disturbances of tabes, Diller mentions various changes in the bones, rendering fracture liable to occur, the Charcot joint, perforating ulcer, and herpes zoster. Diller concludes as follows:

"Upon the presence of how few symptoms may the diagnosis be made? The following symptoms, I believe, may be said to be the cardinal ones of tabes, and are named in the order of their importance: 1. Failure of knee-jerks; 2. Romberg symptoms (swaying with eyes closed); (3) Argyll-Robertson pupil; (4) Lightning pains; 5. Loss of functions of the bladder or sexual organs.

"With the presence of any three of these symptoms I believe the diagnosis may with certainty (and in the presence of any two with probability) be made when evidence pointing to multiple neuritis, paralytic dementia, or cerebro-spinal syphilis is absent.

"Among the important secondary symptoms or signs are: (a) paresthesia, anesthesia, or analgesia of the legs; (b) locomotor ataxia; (c) transient ocular palsies; (d) parasthesia in the ulnar distribution; (e) optic atrophy. With the presence of two of the cardinal signs of tabes and one of the secondary signs, I believe the diagnosis may be made with certainty, and made as most of the primary symptoms, and, indeed, it may be made with certainty in the absence of all the cardinal symptoms. Many combinations of symptoms are, of course, seen in tabes, and the evidence presented by each case should be carefully weighed. When this is done it will happen but rarely that the diagnosis cannot be made with certainty or probability."—*Maryland Medical Journal*.

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#### ERRORS IN THE DIAGNOSIS OF APPENDICITIS.

Brewer (*Annals of Surgery*), in a recent communication to the New York Surgical Society, alluded to the frequency with which errors are made in the diagnosis of intra-abdominal inflammations, and to the fact that in the majority of instances of this kind the error has consisted in mistaking atypical forms of appen-

dicitis for other morbid conditions. Full reports are given of 11 cases in which, in the course of eighteen months, Brewer made the mistake of regarding as appendicitis conditions which, upon operation or necropsy, were shown to be other and unsuspected pathological processes. These cases are classified as follows: In 2 the symptoms were found to be due to renal calculus; in 4 to diseases of the uterine appendages; in 1 to sarcoma of the ileum; in 1 to cholecystitis; in 1 to acute suppurative pancreatitis; and in 2 to general sepsis. In the discussion in this paper, McCosh stated that those engaged in gynecological work are often much puzzled to distinguish between suppurative conditions of the tubes and ovaries and those of the appendix. Sometimes it was asserted, it is quite impossible to make a correct diagnosis before the abdomen has been opened, and even then it may be difficult to determine the primary seat of the trouble. It was pointed out by this speaker that in cases of general suppurative peritonitis the appendix is usually presumed to be the origin of the infective mischief. In male subjects this, in his opinion, is probably the case in 19 instances out of 20; but in the female there is not this almost constant relation, as the pelvic organs or the stomach are at times found to be at fault.—*Brit. Med. Jour.*

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#### A NEW METHOD OF DISTINGUISHING HUMAN BLOOD FROM THAT OF ANIMALS.

C. Tarchetti (*Gazz. degli Osped.*) describes a new procedure for this purpose: If into an animal (*a*) the blood of a different species (*b*) is injected, then after a certain time the blood of the animal (*a*) is found to be toxic towards the blood of the species (*b*). Thus, by repeated injections into rabbits of human blood—10 c.cm. on four or five occasions at intervals of about a week—Uhlenhuth and Wassermann got from the blood of the rabbit a serum which exhibits hemotoxic powers to human blood, not only in a fresh state, but also when dried and redissolved in normal saline solution. Ape's blood was the only other one which behaved like human blood. Wassermann and Schultze proceed thus: Dissolve the spot of blood to be examined in a little normal saline solution; filter; place 4 or 5 c.cm. in two small test tubes, to one of which (*a*) add 0.5 c.cm. of rabbit's blood made hemotoxic as above; to the other (*b*) add 0.5 c.cm. of normal rabbit's blood. A third control tube (*c*) may be made with 4 or 5 c.cm. of solution of the blood of any animal save ape or man in distilled water. Place the solutions in a thermostat at 37 degrees C.; if the spot of blood be human, in an hour's time the tube (*a*) will show a turbidity or a flocculent precipitate, while (*b*) and

(c) will be perfectly limpid. Tarchetti carried out similar experiments with human blood and that of animals, both fresh and dried, for more than two months on cloth, wool, and knife blades, and found the method reliable. The reaction occurs almost as well at the air temperature as at 37 degrees C. The solutions must be absolutely clear to begin with, and he finds distilled water better for this purpose than normal saline fluid, for it brings all the hemoglobin out of the corpuscles. He has found that the diagnosis can be at once made with the greatest certainty in a hanging drop under the microscope; a slight uniform precipitate is at once formed, and in a few minutes is seen as islets united in a reticulate pattern much resembling the arrangement of Eberth's bacillus agglutinated by typhoid serum. The same thing is observed in filtered aqueous solutions of dried blood. It is only after a long time (twelve or twenty-four hours) that a similar appearance is seen in blood of other animals.—*British Medical Journal*.

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#### ACUTE CARDIAC FAILURE.

Richard Douglas Powell (*The Lancet*), in the Cavendish Lecture, mentions among the causes of this accident direct injury, as when a healthy man ruptures, during a violent exertion, one of his aortic cusps, the displacement of a clot from a systemic vein, and cardiac failure from over-taxation. There are always two factors at work, direct fatigue of the nervo-muscular tissue and a poisoning of the blood from an auto-metabolic source. Among the concomitants of heart distress or failure during violent exercise, as running, vomiting is one of the most common. One of the most constant after-effects is anemia. Gastro-intestinal attacks, vomiting, and diarrhea are not uncommon occurrences in those who, habitually leading a sedentary life, suddenly take to exhausting exercise. The heart of a child between six and twelve is, according to the author, relatively hypertrophied, which is to be ascribed to the ceaseless activity at this age. A point often forgotten in the case of young children is their special aptitude for short spells of active exercise, but their complete unfitness for prolonged monotonous exertion. The treatment of acute cardiac failure from overstrain involves a few weeks of rest and many months of careful supervision. In many there is a feeble lung capacity, and for such cases well-ordered respiratory exercises are of great utility.

The following are the special factors in acute cardiac impairment in acute disease: (1) maloxxygenated and otherwise con-

taminated blood-supply to heart, muscle and nerve; (2) excessive weight of blood burdening the heart; (3) exhausted innervation from sleeplessness and physical cardiac fatigue; (4) positive obstruction to the flow of blood through the lungs; and (5) changes in the texture of the heart muscle incidental to the disease and especially to the pyrexia. Now, the first two indications are undoubtedly met by depleting the blood volume from the venous side by attention to secretions, the occasional use of mercurials, careful limitation of the food taken in place of the overfeeding often to be observed, and in some cases a small blood-letting.

Oxygen inhalations are also of service. For the third and fourth indications in the foregoing list we possess no better remedy than strychnine, which is best given by syringe in case there is much abdominal distention. The fever should be kept within bounds by any well-approved method.—*Medical Record*.

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#### THE ROLE OF INFECTIONS AND INTOXICATIONS IN DISEASES OF THE SPINAL CORD.

Alfred Gordon (*Philadelphia Medical Journal*) believes that intoxications produce more deleterious effects on the spinal cord than on any other organ. An acute infectious intoxication of the spinal cord is characterized by a primitive alteration of the nervous tissue, consisting of congestion, but with a toxic vascular exudation, the contact with which is sufficient to produce foci of necrosis and hemorrhages; sclerosis follows almost inevitably. The difference between a new and an old inflammation is that in the first case there is an immediate and rapid reaction, whereas in toxic lesions, due to an old inflammation, we find no general reaction and less rapid involvement—but the result will always be the same. Various observations tend to prove that microorganisms with their chemical products are apt to produce a disseminated sclerosis. Cases of multiple sclerosis have been reported as a result of intoxication with carbonic acid gas. Multiple sclerosis, with symptoms of progressive muscular atrophy, has followed influenza. In Landry's paralysis we always find a history of infection. The whole clinical picture of anterior poliomyelitis points to the presence of an infectious element. In muscular atrophies of spinal type, we often find a history of some acute infection or chronic intoxication. Cases of ataxia of spinal character have been reported after various infectious diseases. The infectious origin of myelitis seems to be an established fact. Transverse lesions of the spinal cord have been reported after infections. Amyotrophic lateral sclerosis due to lead intoxica-

tion has been reported. The nervous system in general, and the spinal cord in particular, can be attacked by infections secondarily and primarily. The writer believes that infections and intoxications of various character constitute the most frequent and the most active causative element in diseases of the cord. The day is not far distant when orrhoterapy will be used extensively in diseases of the nervous system.—*Medical Record*.

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#### THE ETIOLOGY OF WHOOPING-COUGH.

As a result of their investigations into this subject, Drs. Jochmann and Krause have made a communication to the *Zeit. f. Hug. und Infectious Krankheiten*, Bd. 36, H. 2. The summary is as follows:

1. In the sputum of whooping-cough an influenza-like bacillus is found in the majority of cases.

2. These bacilli, morphologically alike, do not belong to one species, but there are three distinct kinds, which can be distinguished from each other either by their biological or their staining properties.

3. This accounts for the difference of views of different investigators.

4. The authors do not consider Czaplewski and Hensel's bacillus to be the originator of the disease, as they have found it in the sputum only four times, and because those investigators did not carry their investigations far enough.

5. In eighteen cases, and among them were three post-mortem examinations, an influenza-like bacillus was isolated which thrived exclusively on a soil containing hemoglobin, and which the authors have named the "Bacillus Pertussis Eppendorf."—*Medical Age*.

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#### MORTALITY AFTER GALL-STONE OPERATION.

H. Kehr (*Munch. med. Woch.*, June 4, 1901), the well-known specialist, reviews 100 operations for gall-stones done by him during the last year and concludes that the mortality of the present day is very low if the operation is performed before pathological changes have set in to an advanced degree, but that it is high if such conditions as carcinoma and purulent cholangitis are encountered. Of the 16 patients that were lost, 4 died of cholemic hemorrhages, in 5 the stomach or intestines were involved in the operative procedure, and four cases were complicated by purulent inflammation and cancer. Only one died as a



result of operation, an extremely emaciated woman, sixty-two years of age, who developed pneumonia five days after a systectomy and drainage of hepatic duct. The mortality was considerably higher among males than females, which may be due to many causes; thus, cancer of the pancreas is more frequent in men, they often stand narcosis and manipulation of the peritoneal cavity less well than women, and their general condition often is less satisfactory. Pneumonias generally are right-sided, and are often embolic or a result of direct infection by way of the lymphatic channels. In conclusion, the author draws a comparison between the medical and surgical treatment of cholelithiasis; the former cures 40 per cent of cases; the latter 95-98 per cent.—*Medical News*.

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#### THERAPEUTIC INDICATIONS FOR KEFIR.

L. Hallion (*Presse Medicale*).—In Russia a course of kefir is considered extremely beneficial for the treatment of pulmonary phthisis, as it affords a nourishing article of food, digested and assimilated with extreme ease, and even a specific action on the disease is ascribed to it. In other affections it will be found useful whenever a milk diet is indicated, substituting or combined with the milk. It is particularly valuable in case of defective digestion, in biliary and renal lithiasis, in chronic rheumatism and affections retarding nutrition, anemia, chlorosis, convalescence from acute diseases, etc. Hallion considers it contra-indicated in heart disease, stasis of the portal system, rachitis and obesity. Besides possessing the physiological properties of milk, with superior digestibility, it also contains micro-organisms and diastases to counteract bacteria and pathogenic toxins. The therapeutic indications have been established on this basis, and have been confirmed by experience.—*Jour. Amer. Med. Asso.*

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#### CEREMONIES AT BIRTH AND PUBERTY AMONG THE HOTTENTOTS.

At the onset of labor, says Dr. Girard de Rialle (*La Rev. Medic.*) the women of the neighborhood assemble in the hut and the husband is rigorously excluded. Usually parturition is rapid and easy, but in case of difficulty the mother is given a decoction of tobacco in milk to drink. Immediately after birth the child is first bathed in cow's urine, then rubbed with suet and the juice of the fig-tree, and lastly dusted with a fragrant powder. The event is generally hailed with joy, and it is celebrated by the sacrifice of an ox or sheep for a feast. The birth of twins, far from casting gloom on the father, causes great rejoicing and pride. Only in

cases of profound misery, or where the mother is unable to nurse both children, do the Hottentots regretfully decide on the sacrifice of one of them.

The mother always nurses her child, from whom she is never separated, even while at work. She carries it on her back. Labor pains are an inducement for incessant smoking, and children are taught the habit from earliest childhood.

Once past the need of the breast, children are permitted to romp about and to develop at liberty. Hence there are no infantile cripples among the Hottentots.

The age of puberty is an occasion for a copious feast, partaken of by both sexes.

Among certain tribes the young people must submit to a curious procedure, accompanied by ceremonies both strange and disgusting to our eyes. Young girls, who are naked during childhood, are now required to wear a skirt of the skin of an animal. After being on exhibition at the door of the hut for three days, a young calf is killed in their honor; an unmarried relative now presents his compliments, and placing the lungs of the beast on the head of the young girl, wishes her that she may grow to be as fruitful as the cow.—*The Post-Graduate*.

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#### DIACETIC ACID IN THE URINE.

S. Lipliawsky's (*Deutsche med. Woch.*, No. 10, 1901) modification of Arnold's test eliminates some of the fallacies open to this and to Gerhardt's method. Two solutions are required, one containing 1 per cent. of paramidoacetophenon, made more soluble by the addition of 2 c.c. of concentrated hydrochloric acid, and a 1 per cent. solution of potassium nitrite. Six c.c. of the first solution and 3 c.c. of the second are mixed with the same amount of urine; a drop of ammonia is added and the whole well shaken. Ten drops to 2 c.c. of this mixture, according to the amount of diacetic acid present, are then added to 10 to 15 c.c. of sulphuric acid, 3 c.c. of chloroform and 2 to 4 drops of ferric chloride. After one-half to one minute of careful agitation the presence of diacetic acid is shown by a violet tinge to the chloroform, while in the absence of this substance it becomes yellowish or reddish. The salicylates or other drugs do not affect the delicacy of the reaction, which responds to 1-40,000 of diacetic acid.—*Medical News*.