TRANSACTIONS

OF THE

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF MEDICINE.

THE TREATMENT OF ENTERIC FEVER.

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[Read in the Section of Medicine, November 20, 1903.]

"*Sed quod præ cæteris animadverto, in nullo morborum genere, tantâ opus est patientiâ, expectatione, cunctatione-que, ad bene et feliciter medendum, tanquam ad bene curandum febres mesentericas.*" So wrote the Italian physician, Georgio Baglivi,[a] towards the close of the seventeenth century. His words are true for all time, and apply with special force to typhoid or enteric fever, for there is no other disease which so taxes to the uttermost the resources of the physician. Of every "turn" in enteric fever, of every day or hour which marks its course, it may truly be said: "*Latet anguis in herba.*" The attitude of the physician must day by day be one of "armed expectancy"—to borrow an expressive phrase given by Dujardin-Beaumetz in 1889 to that form of symptomatic treatment which has also b n called "the medication of indications."

In this paper I propose to touch briefly on only a few

[a] Opera Omnia. Rome, 1696. Ed. Sext. Lugduni, 1704, page 54.

points which have made a fixed impression upon my mind as a result of an experience extending over many years.

I.—THE SANITARY HOUSING OF THE PATIENT.

Enteric fever should never be treated in a house with defective, leaking drains, or in which the water-supply is open to the suspicion of being the source of the original poisoning. No other specific fever, perhaps, requires such close attention to the sanitary surroundings of the patient smitten with the disease. Nothing is more striking than the marvellous improvement which often follows an enteric fever patient's removal from the tainted atmosphere of a sewage-reeking dwelling to the airy, well-warmed, wholesome ward of a hospital. In the insanitary home, the patient lies day after day inhaling or swallowing repeated doses of the fever-poison. But, what is still more important, his vital powers are impaired by breathing stale and septic air, and so he goes under in the battle.

On September 30, 1903, I was called to see C. M., a fine, tall young man, aged twenty-seven, who was lying ill in an old, badly-drained house in Aungier-street, Dublin. He was on the 9th day of a well-marked attack of enteric fever. The axillary temperature was 103.2° F. There was considerable enlargement of the spleen, and a very few rose-spots were found on the chest and abdomen. He was removed on the next day (October) to the Epidemic Wing of the Meath Hospital. On admission he looked heavy and profoundly ill. The pulse-rate was only 92, but the respirations were 26, without any pulmonary trouble to account for the rapid breathing. The temperature was already falling, and continued to do so for eight days, when, on the 18th day of the attack, it became subnormal in the evening as well as in the morning. On October 16th (the 25th day) the Widal test gave a decided and positive reaction in a

dilution of 1 in 40. C. M. continued to progress most favourably and was apparently convalescent when, on Saturday, October 24th, he had a "chill" followed by headache, the axillary temperature rising to 100° in the evening. Next day a maximum of 102° was reached, and on Monday, October 26th, the average temperature was 102°, the range being only from 101.6° in the morning to 102.4° in the evening. A very few fresh rose-spots made their appearance on Wednesday, October 28th, when also the spleen was found to be enlarged. In a word, a true relapse had set in. It ran an even and uncomplicated course of 19 days, the temperature chart presenting marked morning remissions and evening exacerbations, and in general a typical example of defervescence by lysis.

One could not help attributing the rapid improvement in this man's state to his timely removal from an unhealthy dwelling-house to a clean and well-ventilated ward in the hospital. For the relapse it is difficult to account, since the circumstances remained unchanged. The absence of abdominal symptoms would suggest that the case was possibly one of "spleno-typhoid," a form of the disease in which, perhaps, secondary infection may be caused by the discharge into the circulation of tainted blood hitherto stored up in the engorged spleen.

II.—THE RELATION OF DIARRHŒA TO EARLY PURGATION.

Diarrhœa is too often accepted without question as one of the most constant symptoms of enteric fever. According to Murchison, diarrhœa was present in 93 out of 100 cases observed by him. There can be no doubt that the severity and danger of this form of fever are closely related to the intensity of the diarrhœa, understanding by the term not only frequent, but also copious, evacuations. On the other hand, the bowels are often even obstinately constipated,

and sometimes this is by no means a favourable indication. A tendency to constipation has of late years been observed in a majority of the enteric fever patients treated in the epidemic wing of the Meath Hospital, and the treatment of this condition often taxes the physician's ingenuity to the uttermost. To this subject I will afterwards refer in more detail.

But what I want to emphasise just now is the fact that in many instances troublesome diarrhœa is started by routine and unreflecting purgation at the beginning of the fever. For this bad practice the patient is frequently, the physician is occasionally, to blame. The onset of enteric fever is often mistaken for a mere "bilious attack." An aperient pill is taken, followed by a brisk saline cathartic. The bowels act freely, and continue to do so day after day. When a physician is called in to attend a "bilious attack" in a previously healthy individual, he should not lose sight of the possibility of enteric fever. Careful observations on the temperature, particularly in the afternoon or evening, will aid in the diagnosis. It is of course desirable that the intestinal tract should be swept and cleansed at the outset of enteric fever, but the process must be carried out with extreme caution, and all strong purgation should be "shunned like the plague"—to borrow Georgio Baglivi's expressive phrase.

III.—ANTIPYRESIS GENERALLY UNCALLED FOR.

Any physician who has had extensive experience of enteric fever must agree with Professor Arnaldo Cantani,[a] of Naples, in looking upon fever or "pyrexia" in the light of a general or essential, and—within definite limits—a beneficial reaction of the organism to changes in metabo-

[a] "Ueber Antipyrese." Transactions of the Tenth International Medical Congress. Berlin. 1890. Vol. I. Page 152.

lism and in the blood, due to the causative agent of the disease. This reaction is necessary to bring about cure, and pyrexia may be useful towards this end, so long as tissue-consumption does not rise to exhaustion, and the heart-muscle or the nervous system does not suffer from hyperpyrexia. Viewing the fever-process in this light, German writers now often speak of what they aptly call, "*das Heil-Fieber.*" Cantani himself quotes Boerhaave's question and answer—"*Quid est febris? Est Naturæ irritatæ conamen ad expellandum stimulum inconsuetum,*" as well as Borsieri's words—"*Quos interdum morbos remedia non curant, febris curat.*"

If we adopt this interpretation of the fever-process—and who can doubt its truth?—let us beware how we meddle with pyrexia in enteric fever. I am convinced that the wholesale exhibition of the fashionable antipyretics of the present day—acetanilid, phenacetin, phenazone, and so on—is fraught with risk. They open the floodgates of heat-discharge (thermolysis), while they seriously interfere with heat production (thermogenesis), and so dangerous collapse is induced. These drugs, of course, may serve a useful purpose, when administered in small or moderate doses, in the treatment of enteric fever. They assuage the toxæmic rheumatoid pains of the disease, and so allay cerebral excitement and invite sleep. This is a great gain to the fever-stricken patient. But pushed so as to reduce temperature, they imperil life.

In the "water treatment" alone have we a safe and certain means of controlling or even reducing body-temperature in the febrile state. It is necessary here only to enumerate the various ways in which this method of treatment may be carried into effect:—

1. *Tepid sponging*, or mopping the surface of the body with a sponge squeezed out of tepid or warm water. This

is usually grateful and refreshing to the patient, and reduces the surface-temperature from 1.5° to 2°.F. It stimulates the cutaneous circulation, and so promotes general antipyresis. I was curious to find out whether the reduction of temperature after tepid sponging was merely a local surface effect, or whether evidence was forthcoming of a general constitutional defervescence. To test the matter, I had a series of observations made in the mouth under the supervision of the Staff-Sister in charge of the epidemic wards of the Meath Hospital. Invariably the temperature fell in the mouth, as well as in the axilla, some 1.5° to 2°.

2. The *wet-pack,* as recommended and practised by Brand of Stettin.—Dr. Sydney Ringer advocates a modification of this method—namely, the continued application, from the chest downwards, of cloths wet with ice-cold water and wrung nearly dry. These are effectual means of reducing temperature with perfect safety.

3. *Immersion in cold baths* (temperature of the bath 70° to 50° F.) is practised on the Continent, and particularly in typhoid fever, unless intestinal hæmorrhage threatens or is taking place. A prudent modification of this method was suggested many years ago by von Ziemssen—the initial temperature of the bath should be only some 10° below that of the body, but after the patient's immersion the bath should be gradually cooled down to 68° F. by adding cold water.

4. The *ice-cradle,* introduced by Dr. Samuel Fenwick at the London Hospital, has been used there for many years with satisfactory results.

5. In 1787 *cold affusion* was proposed by Dr. Currie, of Liverpool, both for arresting and for mitigating continued fevers.

6. The *ingestion of small quantities of cold water* at

frequent intervals. Taken internally, as I have pointed out elsewhere,[a] water is the most effectual assuager of consuming thirst, the best and safest diuretic, diaphoretic, aperient, and eliminative we can prescribe. Cold water, sipped frequently, often allays delirium and induces sleep, in this way acting indirectly, as well as directly, as an antipyretic. Dr. H. C. Wood, in 1888, showed[b] that "while we cannot by water produce tissue-disintegration, we can by it wash out the retained products of tissue-change."

7. The *injection into the rectum* of small quantities of cold water will not only reduce temperature, but also overcome constipation during the earlier stages of enteric fever. In the sloughing stage of the "typhoid ulcer" the use of warm water enemata is safer, as they do not excite peristalsis when exhibited at blood-heat.

Akin to the water treatment of pyrexia is the method of reducing bodily temperature in fever, and especially in enteric fever, by means of the *ambient air*. Dr. A. de Souza communicated a paper on this subject to *El Monitor Medico* for September, 1886. In winter he would keep the sick-chamber at a temperature of from 8° to 10° C. (46.4° to 50° F.), the only bed-covering being a sheet and one blanket. Something extra is thrown over the feet towards dawn, should the temperature of the sick-room or of the patient fall considerably. In summer much may be done by proper ventilation and light bed-clothes.

In exceptional cases, quinine in full doses—5 or even 10 grains repeated at short intervals, until from 20 to 40 grains have been taken—is a favourite antipyretic, especially with German physicians. I have myself occasionally used it in this way, particularly in the later stages of the fever, when it assumes a remittent type. If the patient is

[a] Eruptive and Continued Fevers. Dublin: Fannin & Co. 1892. P. 10.
[b] Therapeutics: its Principles and Practice.

conscious and can swallow a cachet, this is the handiest way of giving the drug; or it may be exhibited, together with 3 or 5 grains of powdered camphor, in milk.

Should persistent high temperature go hand in hand with wakefulness—a condition which itself increases feverishness—a hypodermic injection of morphin ($\frac{1}{8}$ to $\frac{1}{6}$ grain), strychnin ($\frac{1}{30}$ grain), and digitalin ($\frac{1}{100}$ grain) often invites sleep and lowers temperature.

IV.—MANAGEMENT OF THE BOWELS, AND INTESTINAL ANTISEPSIS.

The treatment of constipation in enteric fever is, to my mind, more difficult than the control of diarrhœa. Allusion has already been made to the necessity for opening the bowels with caution in the early stages of the fever. This object is best achieved by a small dose—1 to 3 grains, or even only half a grain—of calomel given at bedtime, and followed next morning by $7\frac{1}{2}$ grains of salicylate of sodium, with a drachm of effervescent citrate of caffein in water; or a simple enema may be administered. Later on, and after the eighth day, calomel seems to be contra-indicated, and had better be withheld, because of its power to increase peristalsis. The safest and best aperient then is castor oil given in teaspoonful doses with glycerine (1 fluid drachm) and 2 ounces of milk—this dose being repeated at intervals of six hours until the bowels act regularly. An alternative would be tablespoonful doses of the "Mistura Olei Ricini" of the British Pharmacopœia of 1898.

Another mild and pleasant aperient is a flipped banana. It is easily prepared. A sound banana is peeled, placed in a small bowl or breakfast cup, crushed with a fork, and then whipped like an egg. Its cells are in this way broken, and a sweet, creamy emulsion is formed. Taken in the early morning, a flipped banana is an effective, yet gentle, laxative, and may safely be given at any stage of enteric

fever. A glycerine compress applied over the abdomen also helps in the treatment of constipation, and checks meteorism or tympanites—that ominous and dangerous symptom—or the bowels may be kept moving by a simple, or a turpentine, enema as required. When diarrhœa is present, diet should be revised. Beef-tea should be stopped, as well as strained mutton broth. Chicken broth may be thickened with a little isinglass, arrowroot, or Groult's tapioca. Milk should be boiled, and, when cold, given with one-fourth to one-half its bulk of lime-water, or an equivalent proportion of saccharated solution of lime; or peptonised milk may be substituted; or, better still, equal parts of white-wine whey and egg-water (*i.e.*, the whites of 2 eggs beaten to a foam and mixed with a pint of cold water and strained).

As to medicines, we may employ freshly-prepared chalk-mixture, to each half-ounce dose of which may be added 10 minims of the compound tincture of chloroform of the British Pharmacopœia of 1885, or—if the patient is in pain—a like quantity of tincture of chloroform and morphin. Half-an-ounce of the following mixture after each motion also soon checks diarrhœa, namely:—

℞. Tincturæ chloroformi et morphinæ compositæ,
Glycerini acidi carbolici, āā - - ʒij
Aquæ menthæ piperitæ (vel cinnamomi), ad ℥vj
M. Ft. mistura.

Salicylate of bismuth is an excellent remedy in the septic diarrhœa of the sloughing stage, and at any period in the fever small doses (10 minims) of turpentine given systematically every few hours control both diarrhœa and tympanites in a remarkable and most satisfactory fashion.

In this connection, let me recall a "Note on Salicylate of Quinine" which I communicated to the *Practitioner* for January, 1903. In enteric fever this drug seems to me

to be far superior to salol or any of the other so-called intestinal disinfectants, the invaluable salicylate of bismuth not excepted. Given early in the disease—perhaps after a moderate dose of calomel has scavenged and disinfected the intestinal canal—and continued throughout the fever-movement or even into convalescence, quinine salicylate has appeared to regulate the bowels, correct the fœtor of the evacuations, check tympanites, and control any tendency to vesical catarrh. Under this treatment, the fever has apparently run a mild and favourable course, the more serious complications of its later stages failing to appear, save in rare instances. It may be given in 3-grain tablets or in 5-grain doses in cachets. Occasionally symptoms of quinism have obliged us to stop the drug.

The last drug which I will mention is turpentine. It fulfils many indications in enteric fever. Not only is it an excellent diffusible stimulant and a valuable antiseptic, but it also relieves chest-complications, controls diarrhœa, checks meteorism, and stays intestinal hæmorrhage. Turpentine is, therefore, one of the best all-round remedies we possess for the treatment of enteric fever. It is conveniently prescribed in capsules or perles containing 5 or 10 minims of either turpentine or terebene. Another good way of prescribing it is with spirit of nitrous ether as follows:—

℞.	Spiritûs terebinthinæ - - -	ʒij
	Spiritûs ætheris nitrosi - - -	ʒij
	Spiritûs chloroformi - - -	ʒij
	Misturæ amygdalæ, ad - - -	℥vi

M. Ft. mistura. Signa: shake the bottle. Half an ounce for a dose.

Caution is necessary in the exhibition of turpentine in the presence of albuminuria, or when there is disease of the kidneys or bladder.

V.—INTESTINAL HÆMORRHAGE.

While it is always an alarming symptom, intestinal hæmorrhage is by no means necessarily followed by grave results. I have seen many cases of profuse intestinal hæmorrhage in enteric fever, and the impression left upon my mind is that an unexpected and surprising improvement in the patient's state sometimes follows a single copious bleeding, whereas repeated bleedings of less amount nearly always end in death. Should blood pass from the bowels in the third or fourth week, we naturally regard the symptom as a danger-signal, a warning of impending perforation; for the source of the hæmorrhage at that stage of enteric fever is almost certainly the blood-vessels running beneath the transverse muscular fibres of the intestine.

All authorities agree that the first and chief indication in intestinal hæmorrhage is *absolute rest.* This is secured by withholding food for several hours, or by giving only small quantities of whey and egg-water, and by the free exhibition of opium, preferably in the form of hypodermic injections of morphin. Ice may be sucked, and an ice-poultice, or a bladder containing broken pieces of ice, may be laid over the right side of the abdomen, as recommended by Murchison. The same excellent authority found the following mixture almost invariably effectual for stopping the bleeding:—

℞. Acidi tannici, gr. 10;
Tincturæ opii, min. x;
Spiritûs terebinthinæ, min. xv;
Mucilaginis acaciæ, ʒij;
Tinct. chloroformi comp., min. xx;
Aquæ menthæ piperitæ, ad ℥j.
M. Ft. haustus, secundâ quâque horâ sumendus.

I suggest that from 10 to 15 or even 20 minims of the

compound tincture of chloroform and morphin of the British Pharmacopœia of 1898 should take the place of the laudanum and compound tincture of chloroform in the above prescription.

When the hæmorrhage is so profuse or continuous as to endanger life, we may adopt von Ziemssen's recommendation of ice-water enemata and rectal injections of blood or of salt water. In such cases, also, twenty-grain doses of chloride of calcium every few hours will do good, or adrenalin or cornutin (Kobert) may be exhibited. The last-named is a powerful hæmostatic, but is said to raise blood-pressure. The dose is one-sixth to a quarter of a grain daily, given in divided doses. The hydrochloride of cornutin is more soluble than the alkaloid itself, while the dose is the same.

VI.—PERFORATION.

The treatment of this deadly complication of enteric fever is at best a forlorn hope. "Pin-hole" perforation naturally gives the patient a better chance of life than rupture properly so called, when a ragged rent or tear at the excavated base of an ulcerated Peyer's patch that has sloughed allows a wholesale extravasation of the septic bowel-contents into the peritoneum.

Of late years interest has centred in the surgical treatment of perforation. I am indebted to my colleague, Mr. William Taylor, F.R.C.S.I., for the following abstract account of his personal experience in intestinal perforation at Cork-street Fever Hospital and at the Meath Hospital and County Dublin Infirmary. The cases are five in number:—

Case I.—Mrs. C., aged about thirty-seven years, was admitted into Cork-street Fever Hospital early in July, 1899, suffering from typhoid fever. She had had an abortion about three weeks

prior to admission. Her attack was a severe one. Symptoms of intestinal obstruction developed during convalescence, for which the abdomen had to be opened on August 19. The condition found was a suppurating right ovary, and three localised deposits of pus in the mesentery from softening mesenteric glands. Relapse of the typhoid followed, with severe diarrhœa. On September 4 severe pain in the abdomen and vomiting again set in, with increasing rapidity of the pulse. Operation about eight hours later disclosed a perforation through the floor of a typhoid ulcer. This was closed with a single row of sutures. Death occurred fifteen days afterwards from fresh perforation. The necropsy showed that the sutured ulcer was healed.

Case II.—P. C., a man, aged fifty-two years, was admitted into the Meath Hospital under Dr. Lennon on June 11, 1901. He had been working as a cobbler until the day before admission; and, though feeling unwell for a fortnight before this, he ate a chop, some peas and potatoes, on the day before admission. Rose-spots were present. At 9 p.m. on the night after admission he complained of severe pain in the abdomen, which was followed by vomiting. When Dr. Lennon saw him the next morning, he diagnosticated perforation. Operation was performed at 12 noon, about fifteen hours after the onset of the pain. A perforation was found about 15 to 20 inches above the cæcum. This was closed with a purse-string suture, reinforced by a continuous Lembert suture. The abdomen was full of pus, and was washed out; and the wound was closed, a small gauze drain being left leading down to the sutured intestine. Death occurred about ten or eleven hours later.

Case III.—E. D., a woman, aged twenty-eight, a very bad syphilitic subject, was admitted into Cork-street Hospital on December 31, 1902. She had been ill for about two weeks. She went to the North Dublin Union owing to the onset of severe pain in the abdomen and vomiting on the morning of December 31, and was sent from that Institution to the Lock Hospital. From the latter she was sent to Cork-street, where she arrived late in the evening. She was seen by Mr. Taylor, after a telephoned message, on January 1, about 2 p.m. General peritonitis was evidently present; he thought it might be the result of appen-

dicitis. Operation was performed at 3 p.m. The abdomen was full of pus. A perforation of a typhoid ulcer was found about six inches from the cæcum. The opening was closed by a purse-string suture. The belly-cavity was irrigated and cleansed, and the wound closed, a tampon being placed in the pelvis and right iliac fossa. Anti-streptococcic serum was given. Death took place about 51 hours later. At the necropsy there was found extensive ulceration of the intestine: there was no fresh accumulation of pus, or evidence of further peritonitis.

Case IV.—J. H., a man, aged twenty-one years, was admitted into Cork-street Hospital on August 4, 1903, suffering from a severe attack of enteric fever. He had been ill for 12 days prior to admission. Symptoms of perforation were observed at 9 a.m. on the 6th. He was seen by Mr. Taylor at 3 p.m., his pulse was then 150 per minute, and very feeble. It seemed doubtful whether he could stand an operation, but at 3 30 the abdomen was opened, to give him a chance, under ether. A small perforation was found, 16 to 18 inches from the cæcum. This was closed by a purse-string suture, reinforced by a continuous Lembert. A second ulcer was just about to perforate, about 12 to 14 inches higher up; this was infolded by a purse-string suture. The abdomen, which was full of thin pus, was freely irrigated with saline solution, and the wound was closed without drainage. The operation lasted only 21 minutes. Except that the edges of the wound suppurated, the patient had no bad symptoms. His temperature remained normal after the first week, and he rapidly recovered. When completely convalescent, five weeks after the operation, this patient developed acute intestinal obstruction. He was seen by Mr. Taylor on the fourth day, and the abdomen was opened. There were extensive adhesions of the intestines to one another all over the abdomen. These were separated, the contents of the gut were evacuated, and the abdomen was closed. Death took place about 12 hours later. The necropsy showed complete healing of both the ulcers which had been sutured; the mucous membrane completely covered them in, and the only evidence of their sites consisted in the lines of silk sutures outside.

Case V.—F. B., a boy, aged twelve years, was admitted into

Cork-street Hospital on August 21, 1903. He had been ill for nine days before admission, and when seen was delirious, and suffering from a very severe attack. On September 15 at 9 p.m. he complained of pains in the abdomen, which was followed by vomiting. He was seen by Mr. Taylor for the first time at 1 45 a.m. on the 17th, 28½ hours after the onset of the pain. The abdomen was opened at 2 a.m. General peritonitis was found, the abdomen being full of pus; and a perforation was discovered in the appendix vermiformis. This was removed. Free irrigation was employed, and the abdomen was closed, a tampon being placed in the pelvis and a second in the right iliac region. Death occurred at 10 30 p.m. on the 18th—that is, about 44 hours after operation.

VII.—DIET IN THE CLOSING STAGES OF THE FEVER.

All physicians will agree that the management of the convalescent enteric fever patient in regard to diet is one of the most difficult problems in the whole range of the practice of medicine. "No solid food," said the late Dr. Hilton Fagge, "should be given for a fortnight after fever and diarrhœa have ceased. The patient will bitterly complain of the restriction; but if the physician has once lost a patient from perforation during convalescence, he will be inexorable ever after. Progress to health after this disease must be slow if it is to be sure."

"Notwithstanding the cravings of the patient's appetite," wrote Charles Murchison, "the diet must be at first restricted to such articles as milk, eggs, farinacea, custards, light puddings, beef-tea, chicken-tea, or calf's-foot jelly. Meat ought not to be allowed for at least seven days after the cessation of pyrexia, and not even then if there be any signs of intestinal disturbance; and before meat is given it is well to try for a day or two a piece of boiled sole, smelt, or whiting."

Even fish, however, does not always agree with a convalescent from enteric fever. It sometimes appears to pro-

duce poisonous effects, although apparently in good condition. I have known this to occur in more than one case, the fish eaten being a fresh sole, to all appearance perfectly sound.

In a case observed at the beginning of the present session, a very sparing meal of chicken on the forty-eighth day of the fever led to a rise of temperature to 102° F., abdominal pain, and the passage of motions containing small lumps of undigested chicken-flesh. The patient had not been entirely fever-free when she partook of the meal which so thoroughly disagreed with her, for her evening temperatures for six nights previously had been on the average 100.1°.

"Convalescents from typhoid fever," says William Osler, "frequently cause greater anxiety than patients in the attack. The question of food has to be met at once, as the patient acquires a ravenous appetite and clamours for a fuller diet. My custom has been not to allow solid food until the temperature has been normal for ten days. This is, I think, a safe rule, leaning, perhaps, to the side of extreme caution; but, after all, with eggs, milk toast, milk puddings, and jellies, the patient can take a fairly varied diet." Osler had "a lesson," as he himself says, in this matter which he has never forgotten. A young lad in the Montreal General Hospital passed through a tolerably sharp attack of enteric fever. Two weeks after the evening temperature had been normal, and only a day or two before his intended discharge he ate several mutton chops. Within twenty-four hours he was in a state of collapse from perforation. A small transverse rent was found at the bottom of an ulcer which was in process of healing.

A very pressing—though happily a rare—danger in convalescence is heart-failure, due to peripheral neuritis, as in diphtheria, or to hyaline degeneration of the cardiac

muscle, as in typhus. Strychnin, especially when administered hypodermically, is a sheet anchor in this emergency. The patients also must be kept in the recumbent posture. If they must needs get out of bed to the night-chair, a teaspoonful of whisky or brandy with three teaspoonfuls of warm water should first be given. Nor should they be left alone for an instant. It is in such circumstances that embolic infarction of the mesentery is likely to occur—an accident which is quickly followed by necrosis or gangrene of the intestine, paralytic arrest of peristalsis, and death.

In conclusion, may I claim the privilege of advancing years and a riper experience to warn young physicians against the perilous error of adopting a routine treatment of enteric fever, particularly in the matter of alcoholic stimulants. It is one thing to treat a disease, it is quite another thing to treat a patient suffering from that disease. As I have written elsewhere, "the attitude of the physician who is in attendance upon a patient in enteric fever should be that of watchful, intelligent, and armed expectancy."[a] I am of a truth convinced that great risk arises to many a fever patient from a fussy, nervous, over-zealous interference on the part of the physician. We should not forget that enteric fever is a self-limited disease, which in perhaps a majority of cases tends to run its appointed periodic course without mishap, the essential symptoms having "kept the noiseless tenor of their way." There is, in fact, no malady in which it is so desirable to avoid what has been well termed the "*nimia diligentia Medici.*"

[a] Eruptive and Continued Fevers. 1892. Page 449.