

a committee of three, of which the president of the society shall be one, be appointed to consider and report at the next meeting of the Council what action, if any, it will recommend the Society to take in regard to defending its members in suits for malpractice.

The following were appointed to constitute the committee: Drs. G. W. Gay, F. G. Wheatley, C. H. Cook.

Attention was called to the request of the American Medical Association that the Society take action regarding the establishment of branch associations of the American Medical Association, the North Atlantic branch to consist of the State Medical societies of the New England states and of New York and New Jersey.

Voted, to refer the matter to the Committee on State and National Legislation to report thereon at the next meeting of the Council.

Correspondence.

LETTER FROM PARIS.

[From our Special Correspondent.]

RECENT PAPERS FROM PROFESSOR CHANTEMESSE.

Paris, Sept. 13, 1907.

Mr. Editor: The early summer months were marked this year in Paris by the appearance of an unusual series of interesting medical papers, of which I shall endeavor to give you the gist in these fall letters.

The most important one, Calmette's ophthalmic-reaction to tuberculin, I dealt with in my letter of a fortnight ago. To-day I shall consider two communications from Professor Chantemesse, one of the less-known members of the Paris Faculty, but a hard worker for all that. As one of these papers is a direct outcome of Calmette's experiments, we can suitably take it up first.

THE OPHTHALMO-REACTION TO THE TYPHOID TOXIN.

Chantemesse, as you probably have heard, is the author of a serum for the treatment of typhoid fever. This serum he has now employed for a number of years, and according to a statistical table published in 1904, it has in his hands given the following results: Whereas during a period of four and three quarters years in the fourteen largest general hospitals of Paris there were 3,595 cases of typhoid fever, with 753 deaths, an average rate of 17.3%, in Chantemesse's wards and for the same length of time (April 1, 1901, to Jan. 1, 1906) there were 712 cases, with 27 deaths, an average rate of 3.7%. This is a truly remarkable showing, when we bear in mind the length of the period it concerns, the fact that these are hospital patients and the efficiency of the Paris hospital nurse.

But there appears to be something mysterious about this serum, which would seem to be confined to the practice of Chantemesse and about three other physicians. If it really is efficacious, and certainly these figures indicate that it is, how comes it that the serum is not prepared for the profession at large and used by them, in so common and serious a disorder as typhoid fever?

Well, Chantemesse has been trying to adapt the ophthalmic-reaction method to typhoid fever, and the idea is an interesting one and may lead to developments. It is self-evident that in importance it is not to be mentioned in the same day with Calmette's affair, the early and visible diagnosis of a case of typhoid not being often a matter of any great moment — you have only to wait and you will find out all right! Still, curiously enough, it might be of considerable use to us physicians whose practice consists of traveling Americans. We are frequently called on to see patients just sailing for home, but presenting a doubtful condition, — headache, slight rise of temperature, furred tongue and constipation, a state of affairs having

existed already for several days. The question that then arises is whether the case is merely one due to much traveling and will yield to starvation and laxatives, or whether it is one of incipient typhoid, and the patient ought to be advised to give up sailing by a certain steamer, often a serious matter, especially at this time of year. In such instances a means of early diagnosis, otherwise I believe impossible, would unquestionably be of value.

Anyhow, Chantemesse proceeds just as Calmette does. He takes a strong solution of typhoid toxin, precipitates it by means of pure alcohol, and obtains a powder, which, at the dose of 1-50 mgm., dissolved in a drop of water and instilled in the eye, gives in suitable cases an ophthalmic-reaction just like Calmette's, and with all its characters, — rapidity, harmlessness, brief redness when no typhoid is present, more serious and prolonged reaction in positive cases, etc. The only troublesome point will be how to have the preparation always at our disposal!

However interesting these facts may be on purely scientific grounds, and as an example of what may prove to be a general law of pathology, it is difficult to believe that the method is destined to turn out to be of much value to the practising physician, unless in very exceptional instances.

ON THE PROPHYLAXIS AND TREATMENT OF PERITONEAL INFECTION AFTER TYPHOID PERFORATION, BY MEANS OF THE HYPERLEUCOCYTOSIS INDUCED BY HYPODERMIC INJECTIONS OF SODIUM NUCLEINATE.

This is the title of Professor Chantemesse's second paper, in which he begins by recalling the fact that the gravest danger to which typhoid patients are exposed is peritonitis following on perforation; the frequency of which accident, in a compilation of about 20,000 cases, he finds to be 2½%.

This complication, when abandoned to itself, is almost invariably fatal. It can only be cured by a surgical intervention, and this intervention must furthermore be immediate. Physicians and surgeons of all countries agree that after a lapse of eight or ten hours from the occurrence of perforation the patient's chance, even from surgery, is hopeless; the perforation can be closed, but the evolution of the peritoneal inflammation, to which it has given rise, will continue to a fatal issue.

The problem then is to diagnose perforation as soon as it occurs; are there signs that render this possible?

Going over the symptoms that have been described, Chantemesse observes that none of them is at all characteristic of actual perforation; they are all dependent on the peritoneal reaction the perforation has occasioned, and, as mentioned above, when peritoneal infection has once got under way, the time for intervention is past. In addition to this, the symptoms of peritoneal reaction may also be due to peritonitis by propagation, without perforation; or, they may either be very slight or be altogether wanting, at the early stage of a very small perforation.

The quandary then of the practitioner and his moral responsibility are very great; imperative necessity for certainty in diagnosis, a serious surgical intervention being the outcome; and no means of attaining this end!

In presence of this grave *impasse* Chantemesse has made an interesting attempt to at least improve the situation by increasing the patient's power of resistance to peritoneal infection; and he raises the question whether we may not be able to prevent, check, or at least moderate this peritoneal inflammation, to oblige it to develop less rapidly, to put the patient in a better posture against it, and to bring about a state of affairs such that the surgeon on opening the abdomen will find the serous membrane in a condition of vigorous defensive reaction.

Typhoid intestinal perforation, left to itself, carries off the patient in from two to five days; Chantemesse thinks that by inducing hyperleucocytosis in the blood and peritoneum by means of hypodermic injections of sodium nucleinate, the patient's resistance to peritoneal infection may be made to extend over a period of ten days or more, so as possibly, in some few cases, to admit of spontaneous recovery when the perforation is small and placed in such a way as to allow the omentum to obliterate it.

The human system defends itself against the invasion of germs by the natural function known as phagocytosis;

it is very probable that a number of remedies, whose efficacy has stood the test of time, such as quinine in malaria, antitoxin in diphtheria, collargol in pneumonia, act largely by the hyperleucocytosis they induce.

Now there is among the therapeutic agents that produce hyperleucocytosis, one, nuclein, that has attracted Chantemesse's attention, and which he has employed in sterile hypodermic injections of a 1% solution in artificial serum. Six to eight hours after such an injection, hyperleucocytosis of a mononuclear type is observed; this increases during about forty-eight hours, and then gradually disappears in four or five days. The increase in white globules is very considerable, their number doubling, or even more.

When a dose of 1 cg. is injected *into the vein* of an arm, the patient feels in two or three hours slight rigors, soon followed by a rise of temperature to 101°. This aseptic pyrexia, a defensive process, is of short duration, is accompanied by very manifest leucocytosis, and ends in the space of a few hours.

The preferable way of giving the remedy is *subcutaneously*. Forty centigrams of sodium nucleinate dissolved in 40 cc. of sterile normal saline solution and administered in one or two injections beneath the skin of the abdomen or external aspect of the thigh, produce in a few hours a slight degree of local pain. In twenty-four hours the region sometimes swells slightly and reddens, which signs all disappear in another twenty-four hours. Two or three days later a second injection can be given, and again a third, lessening the dose each time; hyperleucocytosis is in this way maintained and favors the system in the struggle in which it is engaged.

The opsonic index, or stimulating power of the patient's serum as regards his leucocytes, can be measured before and after each injection. In a case of intestinal perforation treated by sodium nucleinate, Chantemesse made this calculation, and found that in twenty-four hours the opsonic index passed from 1.60 to 2.50, while the peritoneal inflammation was found to have manifestly receded.

From a clinical point of view, here are the results of Chantemesse's observations: he has had several typhoid patients who, after intestinal hemorrhage, experienced severe pain in the abdomen, with reaction, muscular defense and disappearance of liver dullness. An injection of nucleinate, given as soon as possible after the appearance of pain, removed it almost completely in twenty-four hours; the day after the injection the abdomen was puffed up, but not painful, resisted palpation, and in some cases conveyed the impression of swollen and immobilized intestinal loops, as is seen in tubercular peritonitis. By repeating the nucleinate injections two or three days later, the peritoneal symptoms all gradually disappeared.

It is, of course, venturesome to claim that these were cases of small intestinal perforation. Still, the following instances that ended fatally seem to throw considerable light on the question.

In two cases, with large intestinal perforation seen at post-mortem, the patients who were not operated on lived *twelve days* after the perforation occurred, thanks to two or three nucleinate injections. And even in these cases the injections were not made at the beginning, but fifteen to eighteen hours later, when the classical signs of peritonitis by perforation were already present. Twenty-four hours after the injections, the patient's situation had noticeably improved to such an extent that an operation could have been undertaken with hopes of success; but this they declined. And when they died, at the end of twelve days, from slow peritonitis, having produced abdominal retraction, the peritoneum was found in a state of systematic defence, the perforations themselves, in spite of their size, being fairly well obliterated by the omentum and organized connective tissue.

By the side of the advantages connected with this powerful therapeutic agent, we must place its drawbacks.

The local pain has been already mentioned. In addition to this the sodium nucleinate puts the system to some strain. It produces in a short time, and in proportion to dose, a rise of temperature and general distress, which although lasting but a few hours, are not specially advantageous to a sick person.

In the case of a healthy person, about to undergo lapa-

rotomy the following day, an injection of 40 cg. will prepare the peritoneum admirably for possible operative infection, and without appreciable inconvenience to the patient. This would, however, no longer hold true, if with a very ill patient the operation and injection were to be carried out simultaneously, for then the double shock would be cumulative.

The difference between the action of intravenous injections of collargol in infectious disorders and the hypodermic use of sodium nucleinate appears to be solely one of *degree*, largely in favor of the latter.

The conclusions that Chantemesse has drawn are the following: sodium nucleinate seems to act by a temporary though quite prolonged increase of the phagocytic function; its effects are very marked, and its dose must be adapted to each individual case.

As a preventive it is an energetic remedy against infection. When infection already exists, the nucleinate is useful if applied at the beginning of this complication. Its benefit can be gauged by the degree of defensive reaction it induces, provided the patient be in a state to supply and stand a vigorous reaction.

The hyperleucocytosis it gives rise to is particularly useful in preventing or moderating the evolution of a case of peritonitis starting in the organs covered by that serous membrane, whether spontaneous or surgical. Even if it does not cure acute peritonitis, it increases the chance for a successful outcome to a consecutive surgical intervention.

"SPECTATOR."

TUBERCULOSIS AT THE LONG ISLAND HOSPITAL.

Boston, Oct. 6, 1907.

Mr. Editor: In the "Medical Notes" of last week was a statement regarding tuberculosis at Long Island Hospital, with a call on the trustees of the Consumptives' Hospital to do something to relieve the congestion there.

It seemed in reading the Note as though your reporter must have written the same in a hurry, and without much consideration of the facts in the case.

There is, consequent to the campaign of education that has been going on for years, a decided demand for beds in which tubercular patients may be cared for, but outside of the Long Island Hospital, the city has only been able to provide a few additional beds, mostly in the Holy Ghost Hospital in Cambridge. The trustees of the new Consumptives' Hospital are working as rapidly as possible to get their building started. But under the existing economic conditions they will be able to provide only a small part of the needed beds, and that not at once. Certainly, the Board of Trustees of Pauper Institutions must be prepared to care for all poor people presenting themselves, whatever the pathological condition with which they may be suffering. Consequently, it would seem as though a careful consideration of the field would show them that the Long Island Hospital must be prepared to treat in a proper manner many tuberculous patients for a long time to come, and that they must make arrangements so to do. Meantime the other board will doubtless do all in its power to build as large a hospital as possible for tuberculosis patients.

Very respectfully yours,

A. K. STONE, M.D.

[Dr. Stone has apparently read into our notice of tuberculosis at the Long Island Hospital a meaning which it was not our desire to convey. It is true that this hospital is overcrowded with tuberculous patients to the detriment of those suffering from other diseases, and it is no less true that it is desirable for the Consumptives' Hospital trustees to take as early measures as possible to provide for this class of cases unless separate buildings can be provided at Long Island. We recognize perfectly the duty of the Long Island Hospital in respect to tuberculosis, but the fact must not be lost sight of that if tuberculous patients are to be treated there, they must be properly provided for, both in their own interest and in that of patients suffering from other diseases. The present situation is altogether unfortunate. — Ed.]