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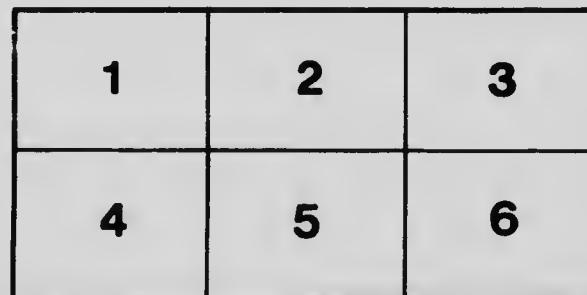
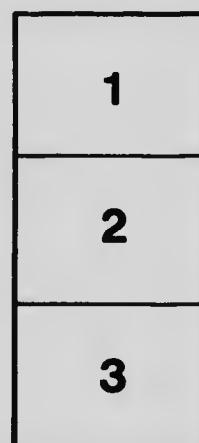
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MARMOREK'S ANTI-TUBERCULAR SERUM IN THE TREATMENT
OF PULMONARY TUBERCULOSIS.

BY

ARTHUR J. RICHER, M.D.,
Montreal.

Reprinted from the Montreal Medical Journal, September, 1904.

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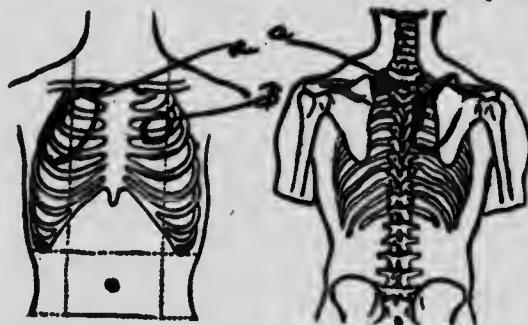
Since the communication made before the Academy of Medicine in Paris by Marmorek relative to the preparation and the uses of his tubercular anti-toxine, a deal has been written, against it at first, but recently of a more favourable nature. We know of the attack made upon this product by no less an authority than Dieulafoy, and the stir it caused at the time of its publication. It is evident that on the one hand the claims of Marmorek had been misunderstood, while on the other hand the results obtained in Dr. Dieulafoy's clinic must have been misinterpreted. If we look up the documents, the few that are available, we find that at the outset two reasons contributed largely to these unfavourable results. In the first place the immunisation of the animals had not been carried to its full extent, giving a serum not sufficiently potent, which necessitated injections of very large quantities of serum, up to adding to the already depressing disease by super-imposing symptoms. In the second place, at the request of Marmorek, ed and hopeless cases were treated, so that should there have any improvements noted, little doubt would have been left as to the therapeutic value of the serum. Now it seems to me, judging from past experience with anti-toxic serums, notably that of diphtheria, that anti-toxines exercise a toxic influence if given too late in the disease. In dealing with tuberculosis, we are dealing with a disease in which the types manifestly differ. We have, for instance, numbers of invalids with localized or discreet lesions who never show any effect of toxine absorption. Again, it is not unusual to find exacerbations during the course of chronic tuberculosis, in which the influence of the serum seems limited to the recent involvements.

We here offer a small number of observations of various types of the disease treated with Marmorek's serum; and while it is but fair to allow us to draw some conclusions, these observations are not sufficiently complete to make the results final.

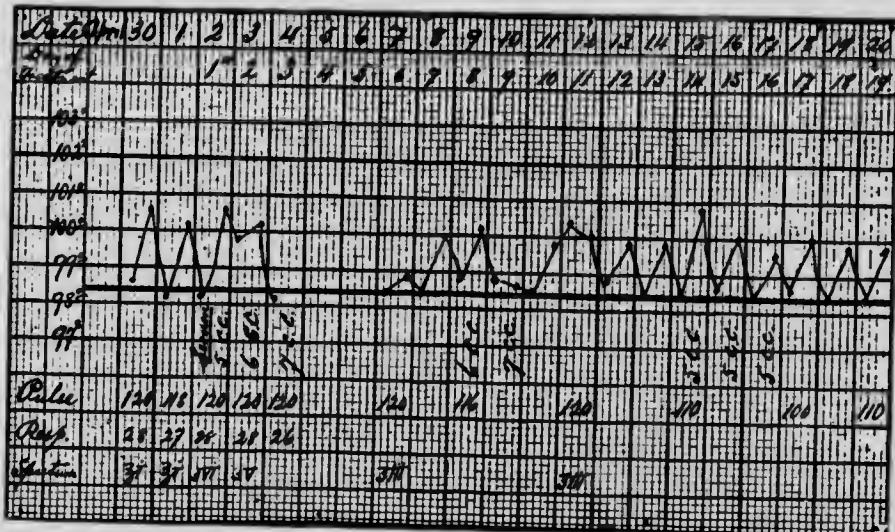
Does Marmorek's anti-tubercular serum possess bactericidal powers? This at the present time is a question very difficult to answer, yet I feel positive, as a result of clinical tests, that it is truly an anti-toxine, and that it does possess the power of inhibiting the growth of the tubercle bacillus, but as with all anti-toxines, this power is ephemeral.

CASE No. I.

A single woman aged thirty-seven. Family history negative. Illness began in the summer of 1899. She was then treated in a sanatorium, and returned to her former occupation the following summer, and kept fairly well until the early fall of 1903, when she relapsed, went to the

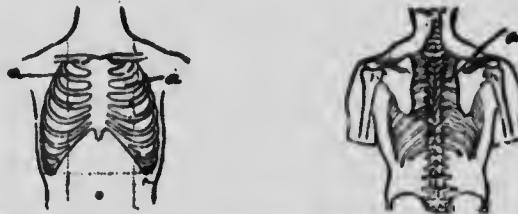


CASE I. FIG. 1. a. Percussion, cracked-pot, mucous and crackling râles; b. Percussion impaired, few crepitations.

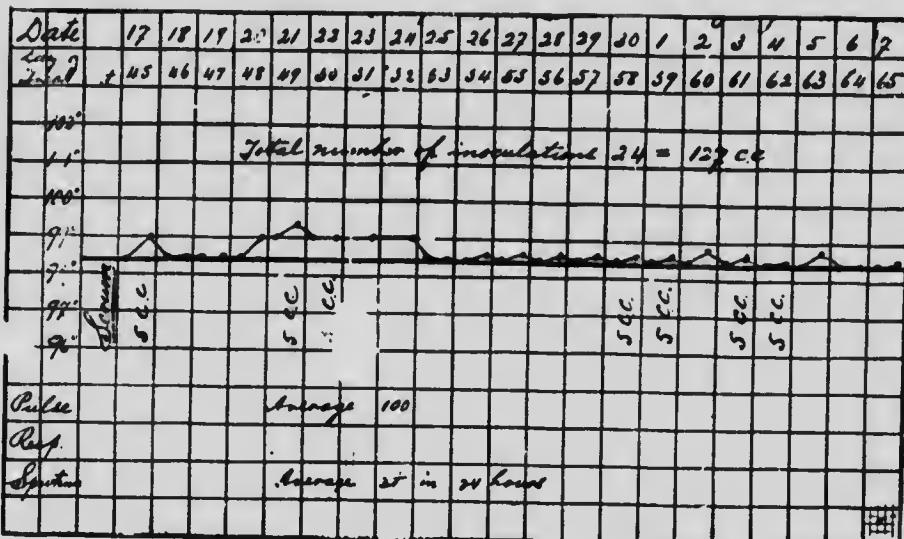


CASE I. CHART No. 1.

country, where she lived with relatives during the whole winter, and was examined on the 2nd May this year, the extent of the disease being noted on the accompanying Fig. No 1. The condition at this time was distinctly *caseous*, and the amount of expectoration sometimes



CASE I FIG. 2 - *a.* Impaired resonance; no rales. July 16th, 1904.



CASE I. CHART No. 2.

exceeded one ounce in the twenty-four hours. Temperature and pulse may be noted on the chart. This patient, who had during the previous six months been steadily losing in weight, in spite of the fact that she was living in the best surroundings, has in addition to the improvement in her symptoms since serum treatment, added nearly three pounds to her weight. Chart and Fig. No. 2 illustrating this case, give her condition at the time of writing (July 20th).

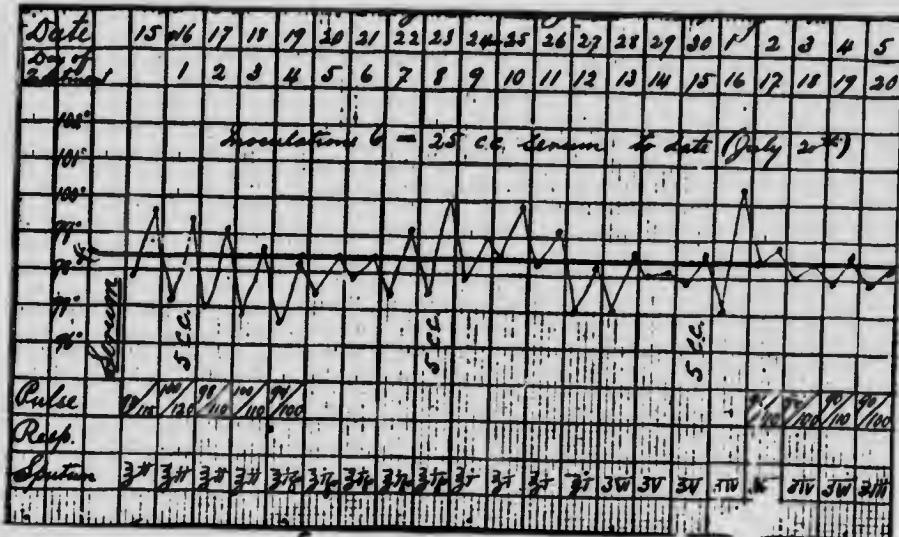
CASE NO. II.

A single woman twenty-one years of age. Family history negative. This patient's illness dates back five years, when it started as a

fibrosis. It is now fibro-caseous and progressive. The patient was first examined June 14th, 1904, and the result noted in the present chart (No. 3). The most notable improvements in this case have been the almost total disappearance of the night-sweats, improved appetite, increase in weight, and the decrease in the quantity of the sputum from two ounces to four drms. This patient



CASE II. FIG. 3.—*a.* Fibro-caseous; p. . 118; temperature, 100°, Time 3.30 p.m. June 14th, 1904.



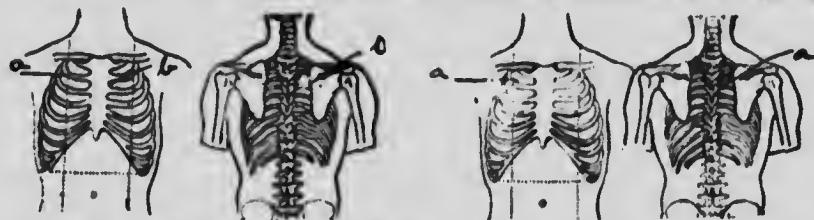
CASE II. CHART 3.

is still being treated, and while the case does not promise an eventual good result, the fact that a really hopeless condition has been somewhat improved is gratifying.

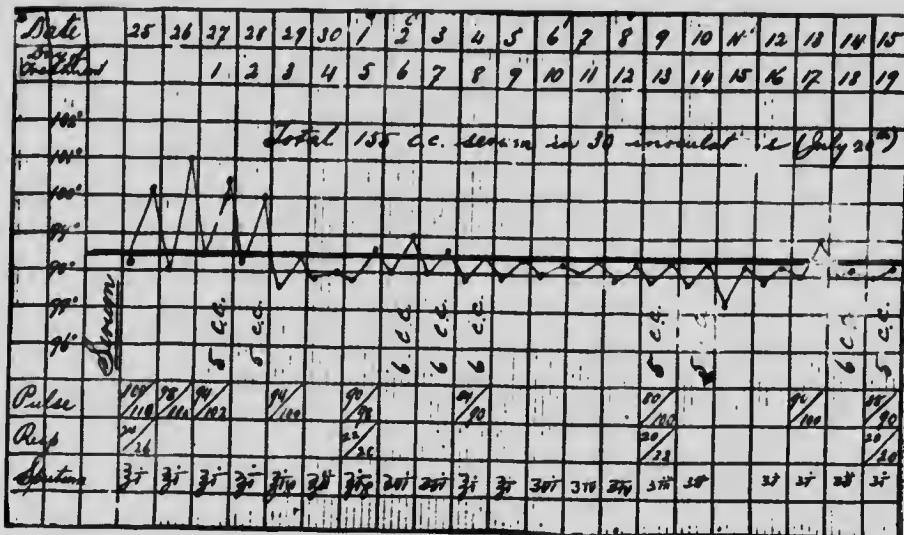
CASE NO. III.

This observation is rather interesting because of the fact that this patient was to all appearances developing an acute disseminated tuberculosis, extending from a pre-existing lesion dating back nearly two years. This patient is a man aged twenty-five. He has had the early

diseases of childhood, whooping-cough, measles, chicken-pox. Family history negative. Three years ago this patient had an ischio-rectal abscess, which was then opened, but left a fistula which still discharges. He has had two small abscesses in the same region since, which broke of themselves. This patient had a pretty profuse haemorrhage about fifteen months since, which kept him in bed for about three weeks. He was gradually allowed to work, and evidently did not always feel well for his task, for he consulted a physician in his own country (Ireland) in March, and this physician advised that he should come to Canada



CASE III. FIG. 4.—*a*, Fibroid condition; *b*, disseminated condition. Left figures, April 27th, 1901. Right figures, July 11th, 1904.



CASE III. CHART 4.

in order to regain his health. The condition shown on his chart shows well the extent of the old fibrous lesion and also the more recent infiltration of a disseminated nature; but in addition to that the effects of beginning infiltration in the left lung are also shown. At the present time he still has a few bacilli in his expectoration, which, by the way, as will be noted, has diminished from one ounce to about half a dram in the twenty-four hours, while the

pulse has materially improved and the temperature remains normal. The chest examination reveals the presence of the fibrous focus, while all the signs of recent infiltration have disappeared.

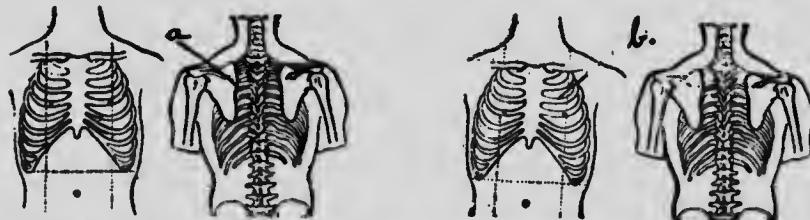
CASE NO. IV.

This is a lad fourteen years of age, whose personal antecedents show that he had pneumonia at three, whooping-cough at four, and measles at six years of age. As a very young infant, about eighteen months of age, he had suppurating ear disease, which was followed by some breakdown of the cervical glands. His father is living, in very good health; his mother has coughed for the last ten years, and has during that period of time had recurring haemoptyses. A number of brothers and sisters died in early infancy, does not remember how many, but all of them died of marasmus. He has two brothers and two sisters living, and in very fair health. His present illness commenced in February of this year, when he had a persistent cough which in March resulted in a very profuse haemoptysis. He was three days in the hospital and was discharged in a fair condition. He came under our observation in June, 1904, when he complained of persistent cough, emaciation and night-sweats. This patient has had but one inoculation, as a result of which all his symptoms rapidly improved, and instead of presenting himself for a second inoculation a week following the first, he was not seen again until a few days ago, and when asked as to why he had not returned for more inoculations, he simply answered that he felt so well that he thought he was cured, and he had only come to know whether he could take up some light work. He was examined, and the physical signs certainly showed a deal of improvement, while his afternoon temperature, which had always been 99 and over, was then normal, and his pulse 76 instead of 90 as it had usually been at this time of day. This patient will naturally receive a number of inoculations, and will be reported upon later.

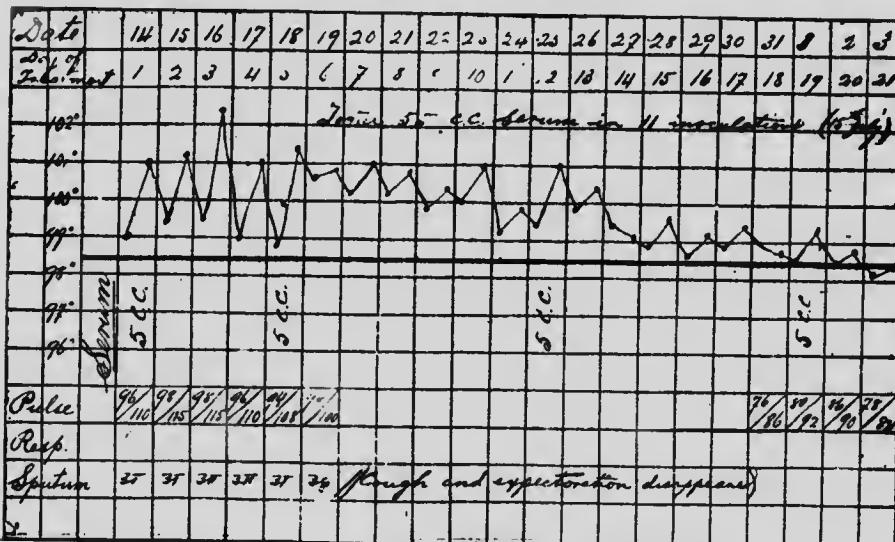
CASE NO. V.

A married woman aged forty-four years. No children. No history of early tuberculosis. Family history negative. Husband in splendid health. This woman enjoyed really very excellent health until about three years ago, when she noticed the glands of the right side of her neck swelling. These were treated at different times, but were never really much modified by treatment. She was told about a year ago that they were tubercular, and some mention made about their being removed. However, this was not done by her attending physician, and last fall she developed a cough, which was soon accompanied by emacia-

tion and almost an absolute distaste for solid foods. She managed to keep together during the winter, although feeling very miserable, and she came under our observation about the beginning of May, in a very pitiable condition. Pulse 120, temperature 101, chest examination revealed the presence of a focus posteriorly in the upper lobe, shown in the accompanying Fig., cervical glands on the right side standing out like a bunch of grapes, and the left cervical glands, while not



CASE V. FIG. 5.—*a.* Impaired resonance and sub-crepitant râles; *b.* cleared. Left figures, May 9th, 1904. Right figures, July 15th, 1904.



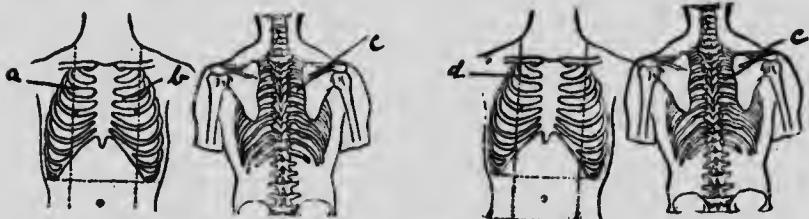
CASE V. CHART 5.

distinctly visible, were all quite the size of beans and easily felt. The bronchial glands on both sides were infiltrated. The study of her chart will give a better idea of what was done and what progressively resulted (Fig. and Chart 5). She was examined again on the 13th July, exactly two months after the serum treatment was commenced, and her lungs were then perfectly clear, while the glands had markedly diminished in size, were not at all painful, and

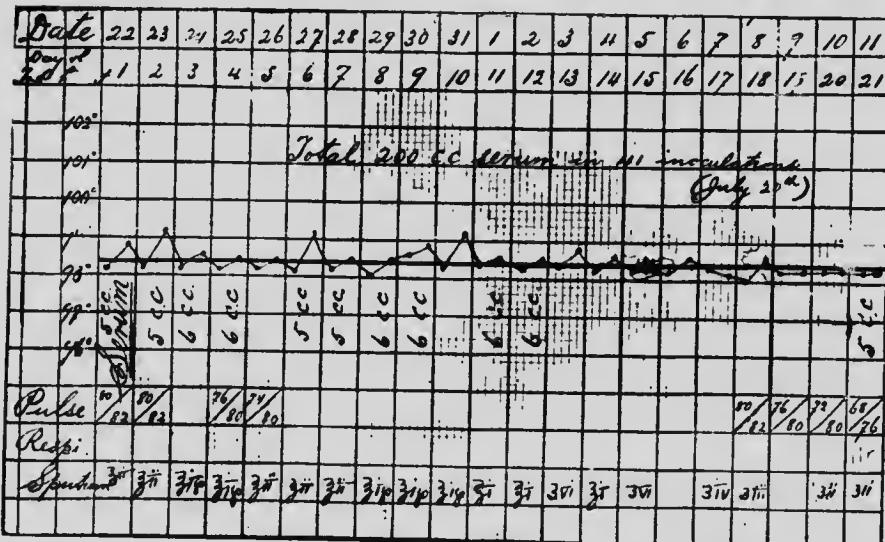
the pulse and temperature both normal. During these two months this woman has increased in weight a little over ten pounds, in fact the most notable effect of the serum was the voracious appetite it immediately developed in this patient.

CASE NO. VI.

This is a lady fifty-four years of age, suffering from broncho-pneumonic tuberculosis, whose husband died some ten years ago with laryngeal tuberculosis. She lost one sister about fifteen years ago with lung



CASE VI. FIG. 6.—a. Percussion ; "cracked pot;" b. percussion slightly impaired and expiratory crepitant rales ; c. fibroid change. Date March 22nd, 1904. d. Percussion unchanged ; no rales ; e. Unchanged. Date July 16th, 1904.



CASE VI. CHART 6.

disease. Never had any children. Enjoyed very good health until about five years ago; she then started to lose flesh, but picked up a little under tonic medication. However, about four years ago an examination of the chest revealed involvement of the right lung. She was treated for some time in a sanatorium, from which she was discharged about

nine months later with arrested disease. She kept very fairly well until the fall of 1902, when a relapse resulted during the winter, about February, in haemoptysis, which was the second she had had. It was then discovered that the left side was also involved. She, however, recovered very fairly well, even while living in the city, but in March it was noticed that her cough and expectoration very materially increased, while there was then some rise in temperature. The condition up to this time had been practically apyretic. The accompanying chart shows the extent of the lesions about the end of March, and also the temperature curve (Chart 6). By comparing the two charts in this case one will readily see that there has been very material improvement. The patient still coughs a little in the morning, raises rarely more than a spoonful, has no fever, eats well, and has every appearance of excellent health, in spite of the fact that she has been given over forty inoculations of Marmorek's serum.

CASE NO. VII.

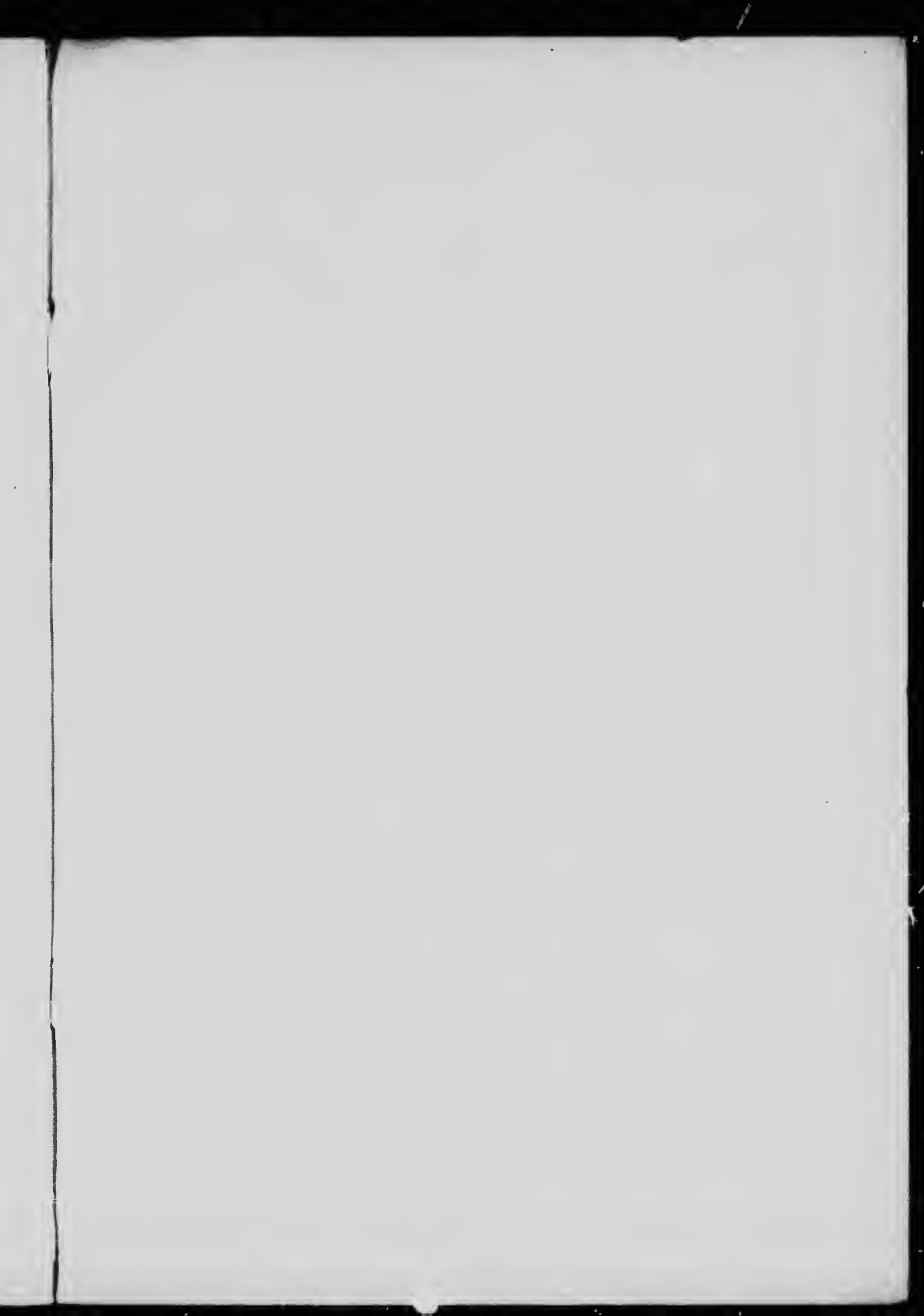
A woman aged twenty, confined on the 24th April, did fairly well until about the sixth day after parturition, when her temperature started to rise while nothing could be found in the lochia or about the genitals to account for the rise of temperature. She developed a very slight cough about the twenty-sixth day after confinement, her sputum was examined on three different occasions, and found to contain tubercle bacilli upon the third examination only, the thirty-first day after confinement. She had all this time been running very high temperatures, and had a very rapid pulse. She was examined upon the thirty-second day after confinement, and her right lung was uniformly involved throughout with miliary disease, while the left base was also quite extensively infiltrated. It was then evident that the disease was at the declining stage, and the woman's condition quite hopeless. The opinion was expressed, however, that she would likely live for a couple of weeks and perhaps more, and her permission was asked as to the use of the anti-toxic serum, as her condition offered but little hope. She consented, and was given an inoculation of five c.c. Marmorek's serum on the thirty-fourth day after confinement, and another the next day, neither of which seemed to exercise any effect upon the symptoms. This woman died thirty-six hours after the second inoculation with what seemed to be super-intoxication. There was no exaggeration of the cough, no very material increase of respirations; and in fact no symptoms whatever to show that anything had complicated the disease outside of that which could be attributed to the influence of the serum. In this case there seems but little doubt that this patient's death was accelerated by

the use of the serum. However, this would be but another argument in favour of the powerful anti-toxic properties of the serum, for as we know, when we use the very potent anti-diphtheritic serum too late in the disease, undoubted symptoms of super-intoxication assert themselves.

ARE THE EFFECTS OF THE SERUM LASTING?

Our observations do not extend over a sufficiently long period of time to be able to answer this question definitely, but we may refer to a case reported early in May,¹ in which the physical signs had entirely disappeared after 30 inoculations, while what little expectoration still persisted was free from bacilli, yet this patient two months after we reported upon her condition as being tantamount to an absolute cure, reveals to us the presence of bacilli in the sputum and some slight indication of the return of the disease at the original spot. This observation almost has the value of a controlled experiment, and we intend to further watch the symptoms, treat this patient again with the serum, note and publish the results. A valuable inference may be drawn also from this, and it is that now that we have fair evidence that we possess an anti-toxic serum capable of conferring passive immunity, we have every reason to believe that it can be further made use of to protect human beings while under treatment with bacillary extracts of the tuberculin group in attempting to make the human organism under treatment produce its own anti-toxine, as well as its bactericidal humours. We are now attempting that form of treatment, and may be able to publish some interesting observations in the near future.

¹ Lemieux and Richer, *L'Union Médicale*, May, 1904.





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