Both for convenience and owing to an exaggerated fear of injury to the pelvis, as well as for the purpose of arranging the clothes tastefully, it is the custom in dressing children to throw the weight of the garments upon the shoulders, fastening the skirts, and in many instances stockings, to the waist. These waists are made of various shapes, but usually have a narrow shoulder-strap, which presses upon the upper portion of the trapezius, and upon the clavicles to the inner side of the head of the humerus. They also exert pressure, if pulled downward, upon the upper portion of the sternum. Where, as is usually the case, the skirts are buttoned to the front of this waist, a considerable drag is exerted, and in this way pressure falls upon the trapezius and the sternum, the head is thrown forward, the shoulders drop forward, and the chest is contracted. The amount of weight of the clothing is not inconsiderable, making the erect position less easily borne, the child naturally seeking the position of greatest comfort. Where stocking-sup-

FIG. 6 Side view, shoulders falling forward from weakened trapezius.

porters are added, the downward drag may become more than would be supposed. Where a faulty position is assumed a greater part of the day, the soft tissues adapt themselves, and a faulty attitude becomes habitual, the ligaments adapting themselves to such a shape. It is not probable that any pressure upon clavicles is exerted, which would not cause a marked distortion, as these are particularly strong bones, though this may occur in rachitic children. Fortunately, however, in rachitic children, when rickets is most prevalent, the weight of the garments is not great. Somewhat the same effect may result from the use of suspenders or from the straps of an antero-posterior support in Pott's disease. Suspenders, fortunately, are not worn ordinarily until the figure assumes its shape.

The prevention of this deformity is more important than the cure, which must necessarily involve a long-continued treatment, designed to stretch the ligaments and strengthen the muscles. It is important to bear in mind that the clothing should be so arranged that

none of the weight of the skirt or underwear should drag upon the front of the waist. As far as possible, where any weight is thrown upon the shoulders, it should be a force that would pull the shoulders back. The waist should be so constructed as to make no pressure upon the sternum. The shoulder-straps should not bear upon the middle of the clavicles, but upon the tip of the acromion. In young, growing children, most of the weight of the underwear should be borne upon the hips, lessening the load upon the shoulders.

A RECORD OF THE TREATMENT OF FOUR CASES OF PULMONARY TUBERCULOSIS WITH KOCH'S NEW TUBERCULIN T. R.

[BY HENRY F. HEWES, M.D., BOSTON.]

I HAVE recently completed the treatment of four cases of pulmonary tuberculosis with Koch's tuberculin T. R.

The tuberculin used was manufactured by Lucius & Brüning. It is known commercially as "The New Tuberculin, Koch." In the administration of the tuberculin the plan outlined by Koch was followed.¹

The treatment was given on every second day. Each patient received an initial dose of one-five-hundredth of a milligramme, solid substance. At each treatment the dose of the preceding treatment was doubled, unless untoward symptoms occurred. The treatment was continued until the patient received a dose of 20 mg. without reaction. In the fourth case the treatment was pushed more rapidly. In the second case the doses were run up to 30 mg. The symptoms which were taken as signals for a halt in the treatment were, a rise of temperature of over .9° F. (one-half degree Centigrade), extreme malaise of the patient, or other evidence of marked constitutional disturbance. Where such symptoms occurred and appeared to be due to the treatment, the succeeding dose was omitted or made smaller than the rule called for, in accordance with the severity of the symptoms.

Where no untoward symptoms interfere the period of treatment should extend over 28 days. In the three cases which were treated by the rule the periods of treatment were 30 days, 40 days, 30 days, respectively. The fourth case was treated in 25 days. The total number of injections given was 64; the least number in a case 13, the greatest 21. The total amount of tuberculin given in the four cases (omitting the extra dose of 30 mg. in Case II) was 157.66 mg. The total cost of tuberculin for the four cases was \$49. The amount of tuberculin by cases was as follows: Case I, 39.02 mg.; Case II, 43.98 mg. (up to 20 mg.); Case III, 38.53 mg.; Case IV, 38.13 mg. The lowest cost by case was \$11.71, the highest \$13.47.

The tuberculin was given by injection into the muscular tissue. An ordinary hypodermic syringe was used. This was washed out with boiling water before using. For doses of 2 mg. solid substance and less the tuberculin was diluted with .6 per cent. salt solution, and, where necessary, preserved in 20 per cent. glycerine. The larger doses were given straight. The largest amount of fluid injected at one injection was one cubic centimetre. The first 20 mg. of tuberculin used was of the April manufacture, the next 20

¹ Deutsche med. Woch., 1897, No. 14.

mg. of the May manufacture. The remaining 117 mg. were of the July manufacture.

The temperature, pulse and respiration were taken in each case at least every second day, when the patient came for treatment, and as much oftener as possible. In one case the temperature was recorded three times daily. The other three patients worked throughout the treatment, and it was impossible to get as accurate a record as was desirable. All drugs were discontinued during treatment except cod-liver oil. The diagnosis was by bacillary finding in each case. The cases were in no sense picked cases. None of them were incipient in the strict sense of the term.

My idea in reporting the cases at this time is to give a record of the action of four cases under the tuberculin treatment. No conclusions as to the therapeutic results of the treatment can be drawn after so short an interval.

CASE I. Female, age 23, white, sewing-girl. Family history, good. Duration of symptoms, eight months.

October, 1896. Pleurisy of right chest. Acute attack lasted three weeks. Since that time a constant cough, at first hacking, of late loose, with profuse expectoration. For two months has been losing flesh and strength rapidly. Cough keeps her from sleep. Much shortness of breath with exertion.

Vomits on every morning with cough. No night-sweats. Weight last December 135 pounds.

Patient came to me May 1, 1897. Symptoms at that time were those described above.

Examination. Face thin, cheeks flushed. Respiration 28. Chest: both sides moved equally; at right apex fine explosive râles on inspiration; slightly increased respiratory and voice sounds; throughout right upper lobe scattered râles of a rattling, moist character. In the left chest, just below clavicle, an area (extending from the outer half of the clavicle to the third rib) of dulness; bronchial breathing and fine râles; moist and rattling râles at base. Heart normal. Abdomen normal. Trunk very thin. Throat: chronic follicular pharyngitis. Sputum consisted of leucocytes and epithelial cells. Tubercle bacilli present in large numbers. Urine contained no albumin. Weight 115 pounds. Temperature 99.8° F., pulse 100, respiration 28.

Patient was treated with inhalations of oil of peppermint and administration of cod-liver oil and oil of turpentine.

June 1st. Reported by letter. Feels much better. Cough much less frequent. No cough nights. No vomiting. Weight 117 pounds.

June 24th. Patient has taken no medicine since June 1st. She felt so much better that she thought she did not need it. Cough is getting worse again; growing weaker. Weight 114 pounds. Temperature 99.2° F.

June 28th. Examination of chest gave same results as on May 10th. Temperature at 11 A. M. 99° F.; at 4 P. M. 99.5° F. Sputum: tubercle bacilli present. At 4 P. M. $\frac{1}{800}$ mg. tuberculin T. R. injected to upper arm. Injections after this given at 1 P. M.

June 30th. Temperature 99° F. No malaise. T. R. $\frac{1}{800}$ mg.

July 2d. Temperature 99.2°. T. R. $\frac{1}{125}$ mg.

July 4th. Temperature 99.9°. Soreness and slight redness at point of injection. Much lassitude of a character which she has not experienced before. No T. R.

July 6th. Temperature 99.5°, pulse 98, respiration 28. Feels better; no soreness. T. R. $\frac{1}{100}$ mg.

July 8th. Temperature 99.5°. T. R. $\frac{1}{50}$ mg.

July 10th. Temperature 99.2°. T. R. $\frac{1}{25}$ mg.

July 12th. Temperature 99.4°. Slight nausea and general malaise last night at 7. No soreness of injection focus. T. R. $\frac{1}{15}$ mg.

July 14th. Temperature 99.4°. No malaise. T. R. $\frac{1}{8}$ mg.

July 16th. Temperature 99.2°, pulse 94, respiration 26. Examination of chest: Signs as before, but râles less marked. Weight 115 pounds. T. R. $\frac{1}{4}$ mg.

July 18th. Temperature 98°. T. R. $\frac{1}{4}$ mg.

July 20th. Temperature 98.8°. Slight nausea last night at 7. T. R. 1 mg., injected into thigh.

July 22d. Temperature 98.8°. No soreness or redness over area of injection. Weight 114 pounds. T. R. 2 mg.

July 24th. Temperature 98°. No malaise. Thinks that cough is much looser than at any time. Does not cough at all at night, but raises much sputum in day. Appetite good. Feels much better than at start of treatment, stronger and less easily tired. Some lameness for twenty-four hours after injection. T. R. 5 mg.

July 26th. Temperature 99°, pulse 94. Feels better than ever. Some redness about point of last injection still visible. Much soreness for twenty-four hours. Extreme lameness in walking. T. R. 10 mg.

July 27th. Temperature 98.7°, pulse 96, respiration 28. Very dull and tired yesterday afternoon. Much lameness after injection. No chill or collapse; no redness over injection. Feels all right to-day.

July 29th. Temperature 98.8°. Feels first rate. Examination of urine gives same results as before. Cough very loose. Sputum of a lighter green color, consistency not creamy as before, but tenacious. T. R. 20 mg.

August 1st. Temperature 99°. No malaise from last dose, but has felt well as usual ever since. Some lameness, but no redness over point of injection.

Examination of chest. Fine crackling râles at right apex. Fine râles and slight bronchial breathing at left apex. Râles at both bases. The râles everywhere are of a coarser, looser character than formerly. Weight 112 pounds.

Sputum: viscid, tenacious character; contains many cells as before. Tubercle bacilli present in fair number. The bacilli stain less brightly than before, many of them showing but a faint shell. I mention this difference in the staining of the bacilli simply as a fact, without intending to attach any significance to it.

Summary of Case.—Patient has felt better and stronger during and at the end of treatment than at any time during the month previous. Has worked throughout in a factory. Appetite excellent. Cough looser and less troublesome. No change of a definite character in local signs of lungs. Slight loss of weight. No reaction and very few untoward symptoms experienced as result of injections. Lameness for twenty-four hours after injection the principal discomfort. The treatment in this case could, in all probability, have been carried through in the 28 days without reaction.

CASE II. Male, white, age 48. Family history good.

Symptoms date from September, 1896. Cough, weakness, loss of flesh, all progressive up to February, 1897. At this time cough, with profuse green and yellow expectoration; drenching night-sweats; fever; vomiting; extreme emaciation; utter prostration; soreness of throat. Confined to bed from February to April. Took no medicines except stimulants. April 20th went to South Carolina. Improved rapidly in the South. Returned to Boston in June, at which time I first saw him.

June 6th. Symptoms: Constant cough, with much yellow sputum; constant soreness in throat, localized subjectively in region of left tonsil; weakness and shortness of breath. The weakness was much less than before his trip South. The weight, which had decreased 40 pounds from September to April, had regained 20 pounds. The night-sweats and stomach trouble had disappeared.

Examination. Very thin, skin sallow, cheeks slightly flushed, cervical glands enlarged. Respiration 26. Right chest moved much more than left. Over apex of left lung, just above the scapula, was an area of comparative dulness; bronchial respiration, and fine explosive râles at end of expiration. Back and front an area (corresponding to upper lobe of lung) of dulness; bronchial breathing and voice, but with no râles. At base of lung some moist râles, but no dulness or abnormal breathing. Right lung showed no signs of disease. Heart normal. Abdomen normal.

Much emaciation of trunk and limbs. The throat showed some chronic follicular pharyngitis, with anemia of membrane. Superficial ulceration of the left ventricular band of larynx. Ulceration of indolent appearance with much muco-purulent exudation.

Sputum was yellow and creamy; consisted of leucocytes and epithelial cells in large numbers. Tubercle bacilli present in large numbers. Temperature 100.8° F. at 2 P. M., pulse 100. Weight 121 pounds.

From June 6th to June 22d the patient was seen every third day, and the pulse, temperature and respiration recorded at these intervals. The pulse record varied between 90 and 100, the temperature between 100.8° F. and 99° F., the respiration from 24 to 28. The treatment during this time consisted of inhalation of oil of peppermint, menthol spray to larynx, and administration of cod-liver oil and nux vomica.

Urine examined twice. Contained slightest possible trace of albumin; specific gravity 1.028; few hyaline casts in sediment.

June 22d. Patient felt better than for months. Cough much less frequent; none nights. Pain in throat less. Appetite excellent. Bacilli present in sputum. Temperature 99° F., pulse 94, respiration 26. Weight 119 pounds. At 2 P. M. given injection of $\frac{1}{100}$ mg. tuberculin T. R. in upper arm. All other medicines discontinued.

June 23d. Temperature 98.8°. T. R. $\frac{1}{100}$ mg.

June 25th. Temperature 100°. No malaise. No dose owing to temperature.

June 26th. Temperature 100.4°. No malaise. T. R. $\frac{1}{100}$ mg.

June 28th. Temperature 99°. T. R. $\frac{1}{100}$ mg.

June 29th. Temperature 100.2°. No malaise. No dose.

June 30th. Temperature 99.8°, pulse 100, respiration 28. Weight 120 pounds. Throat appearances same. Lung signs unchanged. T. R. $\frac{1}{100}$ mg.

July 2d. Temperature 99°. T. R. $\frac{1}{100}$ mg. Much smarting after injection.

July 4th. Temperature 99.8°. T. R. $\frac{1}{100}$ mg.

July 6th. Temperature 99.8°. Lassitude and weakness. No T. R. given.

July 7th. Temperature 99.8°, pulse 100. Feels thoroughly ill.

July 8th. Temperature 100.2°. Does not feel well; lassitude; no appetite; pains in legs. It seems doubtful whether this off spell is due to treatment.

July 10th. Temperature 99°. Still feels listless. T. R. $\frac{1}{100}$ mg.

July 11th. Temperature 98.8°.

July 12th. Temperature 98°. Feels better. T. R. $\frac{1}{100}$ mg.

July 14th. Temperature 98.8°. T. R. $\frac{1}{100}$ mg. Severe pain with dose.

July 16th. Temperature 99.4°. T. R. $\frac{1}{100}$ mg.

July 19th. Temperature 99°. T. R. $\frac{1}{200}$ mg. Injection painful.

The doses were increased thus gradually, with the purpose of avoiding, if possible, the extreme malaise which was experienced from the 6th to the 12th. It is quite probable, however, that this malaise was due to the variation in his condition independent of the treatment, as it lasted one week after the tuberculin was discontinued.

July 21st. Temperature 100°. Seems better. Appetite good. Weight 117½ pounds. Pain in throat is worse. Examination of throat shows some spreading of ulceration to aretynoid; same indolent appearance.

From this date the ulceration was treated twice a week by application of 50-per cent. lactic acid. T. R. $\frac{1}{100}$ mg.

July 23d. Temperature 99.8°. T. R. $\frac{1}{100}$ mg.

July 25th. Temperature 100°. T. R. $\frac{1}{100}$ mg.

July 27th. Temperature 99.8°. T. R. 1 mg.

From this time on temperature taken three times a day. Injections now made in loins.

July 28th. Temperature 99.8°, 99°, 99.4°. Lassitude and pains in legs.

July 29th. Temperature 99°, 99°, 99.8°. Some sore-

ness at point of injection. Up to this time the soreness has never been troublesome, and has not lasted over twenty-four hours.

July 30th. Temperature 99°. T. R. 2 mg.

August 1st. Temperature has varied from 99.9°, six hours after injection, to 98° now. T. R. 4 mg.

August 3d. Temperature on 1st, at 6 P. M., 99.8°; on 2d, 99° at 7 A. M., 99.4° at night; now 99°. Much lassitude; pains in legs; feels very poorly. Much weaker and thinner than one week ago. Appetite poor. T. R. 6 mg. in back.

August 5th. Temperature from 100° to 99° since injection. Much lassitude. Weight 112 pounds. Pulse 90, respiration 26. Lung signs unchanged. Throat ulcerations cleaner, but still spreading a little. T. R. 10 mg. in loin.

August 7th. Temperature 98.8°, pulse 88. Feels very ill and weak. Some local soreness and slight redness for first time. T. R. 20 mg. in loin.

August 8th. Temperature 99.4° in morning, 99° at noon, 99.8° at night. Injection caused pain at point of insertion for half an hour; none since. Feels better than last week.

August 12th. Temperature has not been over 99.4° since injection; now 99.4°. No constitutional discomfort from dose. Appetite improving. Throat lesions holding their own; no spreading; no definite healing. Lung signs unchanged. Weight 112 pounds. Thinks cough much less frequent and entirely from throat. Character of sputum the same. Tubercle bacilli present in less number than before. Stain less brightly. Urine as before.

After the last three doses patient noted that the urine passed during twenty-four hours was full of urates. The throat examination and treatment in this case was made by Dr. J. L. Goodale, who has kindly given me his report.

Summary of Case.—It is very difficult to distinguish the changes in condition due to variations in the disease from the changes due to treatment in this case. The patient suffered from almost constant lassitude, loss of appetite and mental apathy during the second and third weeks of treatment. He certainly felt much worse than during the month before treatment. Symptoms unchanged. Physical signs unchanged. Loss of 10 pounds in weight. Much immediate discomfort from injections, especially the later ones. No definite reaction during treatment, but continual discomfort. Strength less than at start. The lassitude most marked, as a rule, about 6 P. M., four to five hours after a dose.

CASE III. Female, age thirty-eight, colored, domestic. Family history showed that mother died of phthisis. Patient first came to me September 21, 1896.

Duration of symptoms three years. Cough for three years, at the start dry and hacking, later loose with green expectoration. Except for cough has been very well until within six months. Since March, 1896, cough has been much worse; keeps her awake at night. Sputum occasionally blood-streaked. Steady loss of flesh and strength. Cold night-sweats. Dyspnea on exertion. Unable to work. Weight in December last 123 pounds.

Examination. Thin, exhausted appearance. Large glands in cervical region. Trunk very thin. Over both apices fine explosive râles at end of inspiration; no dullness or bronchial breathing. At left base behind, fine moist râles throughout lower lobe; no dullness. Heart normal. Sputum consists of leucocytes, epithelial cells and elastic fibres. Tubercle bacilli present in small number. Temperature 98°, pulse 90, respiration 24. Weight 103 pounds.

Treatment. Inhalations of oil of peppermint, administration of cod-liver oil and oil of peppermint.

During the winter patient improved very much. Cough became much less frequent, none at night. Sputum diminished in amount. Night-sweats disappeared. Strength returned. Returned to work. Weight in January 120 pounds.

January 10th. Examination. Very few râles at both apices; none elsewhere. No bacilli found in sputum. Peppermint inhalations discontinued.

February 20th. Cough worse again. Strength failing. Weight 108 pounds. Peppermint resumed.

May 20th. Weight 121 pounds. Feels much better again. Signs in chest as in January. Peppermint discontinued.

June 28th. Weakness and cough returned. Weight 113 pounds. No tubercle bacilli in sputum.

July 2d. Examination. Thin and exhausted appearance. Fine râles at both apices, of explosive character; no dulness. At bases of both lungs moist, bubbling râles in abundance. Weight 112½ pounds. Sputum characteristic of phthisis, but no tubercle bacilli found. Slight trace of albumin in the urine. Temperature 98° F., pulse 90, respiration 26. Given $\frac{1}{100}$ mg. of tuberculin T. R. by injection into left upper arm; injection given at 9 A. M.

July 4th. Temperature 99°. No malaise. T. R. $\frac{1}{50}$ mg.

July 6th. Temperature 98°. T. R. $\frac{1}{25}$ mg.

July 8th. Temperature 98.6°. T. R. $\frac{1}{25}$ mg. No soreness.

July 9th. At 6 P. M. in night, taken with a severe rigor, followed by fever. Felt as if she were going to die. Much palpitation and dyspnea; extreme weakness; profuse sweating. To-day feels very weak and ill. Pain in head and in bones. Temperature 100° F., pulse 104, respiration 30.

Examination. No change of signs in lungs except that the râles are less abundant than formerly. Urine: slightest possible trace of albumin. Sediment as before. No redness or soreness at point of injection. Weight 108 pounds. No T. R.

July 10th. Temperature 99°. Feels better but still weak. No dose. The patient had an attack similar to this one in character and in consequences on June 17th, two weeks before the beginning of the tubercular treatment. In view of this fact it is difficult to fasten the blame for this attack of July 8th upon the tuberculin. However, I increased the doses more gradually for a time.

July 11th. Temperature 98°. Still weak. T. R. $\frac{1}{40}$ mg.

July 13th. Temperature 98.8. No malaise. Some soreness over point of last injection and a lump distinctly felt. T. R. $\frac{1}{25}$ mg.

July 15th. Temperature 98.7°. Much lassitude and weakness; worse at 4 P. M. Nausea and dizziness. T. R. $\frac{1}{25}$ mg.

July 17th. Temperature 98°. Better. T. R. $\frac{1}{8}$ mg. in thigh.

July 19th. Temperature 98°. T. R. $\frac{1}{4}$ mg.

July 21st. Temperature 98°. T. R. $\frac{1}{2}$ mg.

July 23d. Temperature 98°. Feels much better. T. R. 1 mg. in thigh.

July 25th. Temperature 98.7°. Pulse 90. Stronger and looks better. Weight 112 pounds. T. R. 2 mg. in thigh.

July 27th. Temperature 98°. Some pain throughout whole leg for three hours after injection. No tenderness now. Thinks cough is much lessened. Appetite very poor. Much general lassitude. T. R. $\frac{4}{3}$ mg. in loin.

July 29th. At 4 P. M. on 27th a sinking spell; palpitation and dyspnea followed by sweating and much weakness. Pains in limbs. No chill. Felt better but weak next morning. Now feels fairly well. Temperature 97°. No dose.

July 30th. Feels all right. Temperature 98°. Appetite poor. T. R. 10 mg.

August 1st. Temperature 98°. Felt dead and lifeless after dose of July 30th, but no collapse. Still weak. Lameness in leg for twenty-four hours after dose.

August 2d. Temperature 98°. Feels better. T. R. 20 mg.

August 3d. Temperature 99°. No reaction of any kind except general lassitude. Weight 109 pounds.

August 5th. Temperature 98°, pulse 90, respiration 24. On examination, signs of lungs unchanged. Looks thoroughly worn out. Thinks that cough is less frequent. Has noted that cough is more frequent on the afternoon

after treatment, and expectoration more profuse, especially with last four treatments. Thinks color of sputum has changed. Is weaker than at start, and suffers much from shortness of breath on exertion. Weight 107 pounds.

Sputum more tenacious and of clearer green color than formerly. No bacilli found.

Urine as before. Patient noted that for 24 hours after each of last two doses the urine was of high reddish color and cloudy. Examination showed that this was due to urates.

Summary of Case.—Patient has undoubtedly felt worse during treatment than at any time during eight months under observation. Has lost weight and strength. No appetite. Has complained of lassitude and weakness throughout. Physical signs unchanged. Patient experienced two distinct spells suggesting a reaction during treatment. That of July 9th did not appear to be due to treatment. That of July 29th did appear to result from treatment. Much lameness from injections in thigh.

CASE IV. Female, age thirty-four, colored, home, family history good.

Patient first came to me June 20th. History of a hacking cough for seven months. Two weeks before, sharp pain in the left chest, fever, chills, vomiting, extreme prostration. Constant cough, with profuse green expectoration, since. No night-sweats. No hemoptysis. Temperature 102°, pulse 120, respiration 36. Tubercle bacilli present in sputum.

Examination. Over left apex, extending to fourth interspace, an area of dulness, with bronchial respiration and voice sounds. Fine explosive and bubbling râles abundant. Few scattered râles at left base. Right lung normal. Heart normal.

After two weeks of treatment in bed patient returned on July 5th. Signs in lung unchanged. Patient still weak. Weight 99 pounds (weight in May was 125 pounds). Temperature 100° F., pulse 100, respiration 30. Tubercle bacilli numerous in sputum. Many cocci present.

July 6th. Given $\frac{1}{100}$ mg. Tuberculin T. R. by injection in arm. Temperature 100° F. Injections at 10 A. M.

July 8th. Temperature 99°. No malaise. T. R. $\frac{1}{200}$ mg.

July 10th. Temperature 98.7°. Arm sore. T. R. $\frac{1}{100}$ mg.

July 12th. Temperature 99.4°. Cough troublesome. Feeling better than at start. T. R. $\frac{1}{50}$ mg.

July 14th. Temperature 99.5°. Felt ill all day yesterday; headache, lassitude, pain in limbs. T. R. $\frac{1}{50}$ mg.

July 17th. Temperature 99°. No malaise. Patient here went into the country for a week.

July 26th. Treatment resumed. Patient not very well in country. Signs in chest same. Weight 100 pounds. Temperature 99°. T. R. $\frac{1}{10}$ mg.

July 28th. On the night of the 26th was very chilly, and then very hot towards morning; weakness for half the day; but since then has felt better than usual. Temperature 98.8°, pulse 98°. T. R. $\frac{1}{4}$ mg.

July 30th. Temperature 98.8°. T. R. $\frac{3}{4}$ mg.

August 1st. Temperature 98.8°. Soreness in leg at point of injection. A firm mass felt beneath skin, not tender. General feeling of lassitude for four hours after dose, then feels better than usual. T. R. 2 mg.

August 3d. Temperature 99.4°. Same experiences with dose as with others. Weight 102 pounds. T. R. 5 mg.

August 5th. Temperature 99.2°. Slight malaise of six hours. T. R. 10 mg.

August 7th. Temperature 99.2°. Eight hours after dose much lassitude. Chilly all evening, then very hot and sweat much. Felt fairly well next day, and now first rate. Extreme lameness all yesterday. T. R. 20 mg.

August 9th. Temperature 99.2°. Same lassitude and sense of impending illness in afternoon and evening. Physical signs unchanged. Râles perhaps less numerous. Feels stronger. Weight 99 pounds. Coughs much less. Urine as at start of treatment. Character of sputum the same. Tubercle bacilli present in the same number as

before. Stain with same brightness, but the contrast between the nodes and the spaces between is more marked than I have seen in any case. Noted passage of high-colored, cloudy urine after last two doses.

Summary of Case.—Patient felt better on the average during treatment than during the month before. Feels much stronger. Has gained weight. Showed a marked susceptibility to the tuberculin doses, which showed itself regularly about six hours after a dose, lasted six to twelve hours, and left her feeling brighter than before.

GENERAL SUMMARY.

The greatest difficulty in connection with the treatment arises from the impossibility of distinguishing in a given case whether the untoward symptoms are a result of an overdose or an accident of the case. In no one of the four cases was treatment completed without some discomfort to the patient. The principal untoward symptoms experienced were lassitude, weakness, loss of appetite, general sense of an impending illness, pain in the limbs. These symptoms where present reached their acme at from four to twelve hours after the injection. In two cases the untoward symptoms did not entirely disappear in the interval between treatments. In two cases they cleared up within a few hours.

No reaction of an alarming character, clearly connected with the treatment, was experienced. Two cases gained in strength and spirits during the treatment. Two cases lost decidedly in both. All four cases lost weight. No definite change in the physical signs was demonstrable at the end of treatment. The injections into the thigh caused much less pain at the time than those into the loins. The injections into the thigh, however, caused much greater subsequent lameness.

Reports of Societies.

HARVARD MEDICAL ALUMNI ASSOCIATION.

SEVENTH ANNUAL MEETING, JUNE 29, 1897.

THE PRESIDENT'S ADDRESS.

FELLOW-MEMBERS OF THE HARVARD MEDICAL ALUMNI ASSOCIATION, GENTLEMEN:—We have reached the age of seven years; and, although from the earliest times there has always been held to be something mystic about that number, there is nothing to show that we are any the worse or that we even feel queer for indulging in it.

For details as to the present status of the Association, I refer you to the last Bulletin, No. 10, which is in the hands of all, and will not detain you by repetition or elaboration. Some facts not therein contained or occurring since its publication it is my function to refer to.

By the death of Doctor, the chevalier, O. Robitaille, of Quebec, the Association loses one of its most distinguished members and one of the oldest graduates of the Medical School. He was born in December, 1811, in Quebec, took his medical degree at the Harvard Medical School in 1838, and died in November, 1896. He practised his profession in Quebec for nearly fifty years. He was a member of the city council, mayor of the city of Quebec, and a founder and governor of the two most important financial institutions of the province. His son, a practising physician in Quebec,

writes, "He spoke to me very often of his Alma Mater, Harvard."

An Alumnus in Iowa writes to your Treasurer in answer to a request for personal information and for attention to annual dues: "I enclose your note with post-office order. This note suggests several questions. How old am I? Seventy-seven last Friday. Not dead. Not much sign of old age about me except my white old head. I rode twenty miles in the country to-day without fatigue. Not an ache or a pain about me. Never drank any liquor, never had a chew of tobacco. Was I too poor to send the money due? By no means. Why have I neglected it? Damfino. Please accept this as my excuse."

An Alumnus in a distant town, who has been unable to practise his profession for some years on account of illness, finding it necessary to withdraw from the Association, writes: "I love the old spot Harvard and all of the associations. I may never see her again; but, when on my bed, I frequently think of and cherish the old names and friendships." Those who hold that graduates of the professional schools form no ties and have no sentiment for or interest in Harvard, and are not to be trusted with a vote for the members of the Board of Overseers, should talk with some of these Alumni. By vote of your council the tie which binds your sick brother to Harvard will not be severed.

The class graduating in 1893 has this year set the excellent example of having a class dinner, which it is proposed to make periodical. To judge from the dinner programme prepared for this festivity, neither the school training nor the subsequent stern realities of active life have been able to rob these devotees of an arduous profession of a capacity for relaxation.

The conception of such class reunions is a virtuous and praiseworthy one. May they increase and multiply, bringing forth much fruit in due season, and never forgetting the veneration due to the Faculty and to the School!

Since the last Catalogue, Bulletin No. 10, was issued in February, eight members have died, among these Dr. B. E. Cotting, of Roxbury, an honorary member by election, and an ex-president of the Massachusetts Medical Society. He died in May, at the age of eighty-five. The others were Dr. H. Blanchard, an old practitioner in Dorchester; G. W. Burdett, of Clinton; C. W. Cooper, of Northampton; J. W. Cushing, of Brookline; A. H. Nickerson, of Central Falls, R. I.; J. P. Walker, of Manchester, N. H.; and F. W. Whittemore, of Cambridge.

Since the last annual meeting seventy enrolment cards have been received by the Treasurer, ten of these coming from members of the Class of 1897.

There are seven new life-members since the first of last May. The list of life-members now numbers forty-four. I would again emphasize the desirability of this form of membership, especially for those who anticipate length of years, and who would escape the annoyance or inconvenience of remitting the small annual due. The Treasurer continues to suffer from the forgetfulness of some and the negligence of others, who, in remitting, omit to sign their names to the card which is sent them, and therefore cannot be credited. It seems necessary to remind the Association that the annual due is not used to defray the expenses of the annual dinner, which some attend, and others, on account of distance or more pressing duties, cannot enjoy,