cating other diseases of the eyeball is determined by the presence of a thickened capsule, by its being liquefied, or by a greenish discoloration of the lens.

Treatment is operative. Each case is a law unto itself, and should be handled by the operative procedure most suited.

Prognosis is unsatisfactory. It is always less favorable than in uncomplicated cases.

The following cases are reported because of their similarity to senile cortical cataracts:

Case 1.—H. A. B., aet. 29, came "to get some glasses" on September 21, 1913. He gave a history of eye trouble five years ago. Vision has been good up until a few weeks ago. V. R.—20-200. V. L.—20-30. Ophthalmoscopic examination showed a large central choroidal spot in the right eye, while in the left several small inflammatory areas were seen. Under homatropine with a plus 2.25 S. vision was 20-70 in the right eye, and with a plus .25 cyl. axis 90 degrees vision was 20-20 in the left.

Diagnosis: Old choroiditis right eye; recent choroiditis, left.

Treatment: Mercury and potassium iodide in ascending doses; glasses and rest.

October 30, patient returned with vision right eye of fingers at two feet. He has tested his vision almost daily and first noticed a change about two weeks ago. I examined his eye and found him with a posterior cortical cataract, which instead of having the usual appearance of these posterior opacities, namely stellate, had the exact appearance of senile cataracts. The streaks, which were narrow and tapered, ran from the periphery to the center like the spokes of a wagon wheel. Thinking that possibly some systemic condition existed, two Wassermann tests were made,* both negative; urinalysis; negative for sugar; fecal examination: negative for hookworm. It was by exclusion that the diagnosis of cataract complicating choroiditis was made, in spite of the fact that it developed so rapidly.

December 22. Patient can count fingers at six inches. The lens is a greenish color, more swollen than before, and the streaks are somewhat broader. Tension is normal.

This cataract formed very rapidly. In less than six weeks vision was reduced from 20-200 to fingers at two feet. I can account for this in no other way save that of rapid degeneration.

Case 2.—Mrs. P. F. D., aet. 28, came to me for a change of glasses on December 3, 1913. She is a dressmaker, and says she is unable to sew with her present pair of glasses at night. She is wearing minus .50 S., right eye, and minus .75 S., left eye. Under homatropine her refraction was:

V. R.—20-100 w. minus 1.25 S. combined w. minus .50cyl. axis 160 degrees—20-20.

V. L.—20-200 w. minus 1.75 S. combined w. minus 25cyl. axis 180 degrees—20-20.

Ophthalmoscope: Characteristic choroiditis of myopia, with posterior cortical cataracts. The cataract was made up of very narrow streaks running from the periphery towards the center. They did not run to the center, however, but stopped two m.m. from it, leaving a clear lens of between 3 and 4 m.m in diameter, which accounts for the normal vision.

Examination of the urine was negative, as was examination of the feces.

Patient refused a Wassermann, so mercury and the iodide of potash were given in ascending doses as an alterative. Diagnosis of cataract complicating myopic choroiditis was made.

December 13. Patient sews with comfort at night. Ophthalmoscopic examination same as before. I have advised her to change her occupation with the hopes of keeping her myopia from progressing.

224-26 *Bunn Building.*

*These tests were made before the iodide was given.

TYPHUS FEVER: A REPORT OF FOUR CASES.*

By L. B. Newell, M. D.,
and
Wm. Allan, M. D.,
Charlotte, N. C.

FEVER STUDIES FROM THE PRESBYTERIAN HOSPITAL, II.

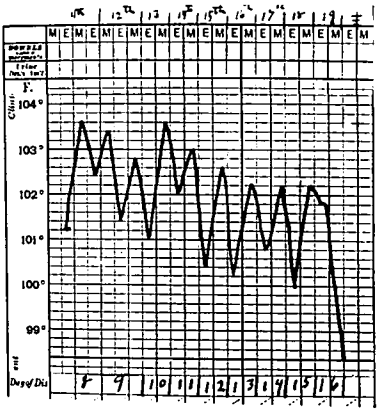
Two years ago we saw a case of continued fever with a profuse rose-spot eruption and leucocytosis of 12,500 in a young white man who had several months previously been inoculated against typhoid fever. We considered a blood culture for typhoid unnecessary, but could offer no satisfactory diagnosis.

In December, 1912, one of us (L. B. N.) attended a case of continued fever (Case I.) of fourteen days' duration, exhibiting a petechial rash and ending by crisis. The diagnosis of typhus fever was debated at the time, but did not seem justified on the evidence of a single case.

In December, 1913, one of us (W. A.) attended a case of continued fever, giving a history of anti-typhoid inoculation eighteen

months previously, exhibiting a general rose-spot rash with leucocytosis, and ending abruptly on the thirteenth day. The case was diagnosed an eruptive fever of undetermined etiology.

During the present year we have seen two more cases of continued fever of two weeks' duration, with general petechial eruption, with negative blood cultures and without abdominal symptoms, and ending abruptly. In view of Brill's (1) description of his fever cases in New York, of Friedmann's (2) remarks on their similarity to typhus fever, and of Paullin's (3) report of typhus fever in Atlanta, we

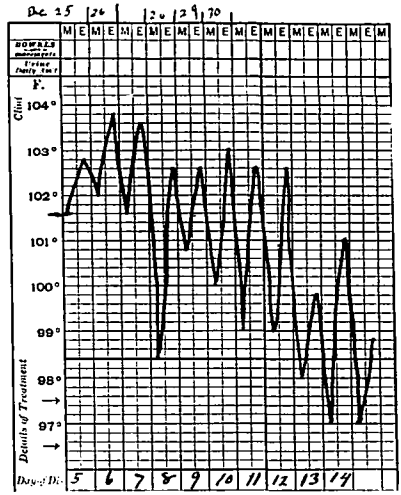


Case I.

have come to the conclusion that our cases should also be considered typhus fever.

For brevity, charts showing the daily variation of temperature are given, instead of the four-hour hospital record. In Cases II. and III. aspirin was given so freely for headache that the high-continued type of temperature curve was badly broken up and fails to show a typical crisis.

Case I. (L. B. N.) J. T. M., age 50, an American born policeman whose duties kept him about the police station where he came into more or less close contact with the wandering element, tramps, hoboes, etc.; became sick in December, 1912. Has always been well except for measles; never had typhoid. His present illness began rather suddenly with general aching, headache, slight cough, and loss of appetite. After three of four days he called the physician. When first seen the patient was complaining greatly of headache, general aching, weakness, and dizziness upon attempting to get out of bed. Appetite was lacking, bowels had been moved freely with salts. The face was flushed, eyes red, and he complained moderately of photophobia. The temperature was 103. He was seen once daily at his home for five days, during which time the temperature was constantly above 102. At this time the blood was negative for malarial parasites. No culture or Widal was made. On the fifth day he was removed to the Presbyterian Hospital. The fever curve from this date is seen in Chart I.



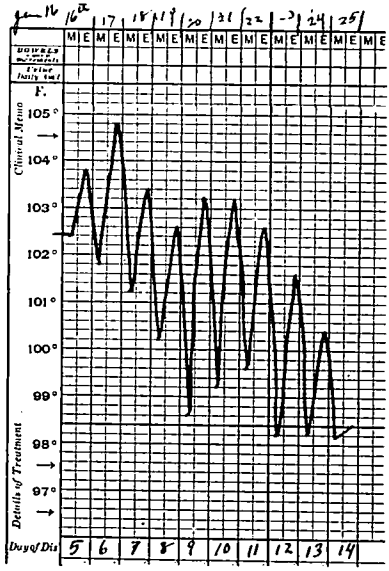
Case II.

Upon his arrival at the hospital, on the fifth or sixth day of his illness, there was noted upon the abdomen and chest a profuse rash very like the rose rash of typhoid fever. Soon, however, this rash had spread to the extremities and back. There were three distinct elements: A subcuticular mottling as if there were spots beneath the skin which had not yet become superficial; more or less typical rose spots, some of which disappeared under pressure, and a few petechiae. This rash came in a single crop and persisted until the crisis. Throughout headache was a prominent symptom; delirum was also marked. The suffusion of the face and conjunctivae was remarkable. There were no intestinal symptoms, the

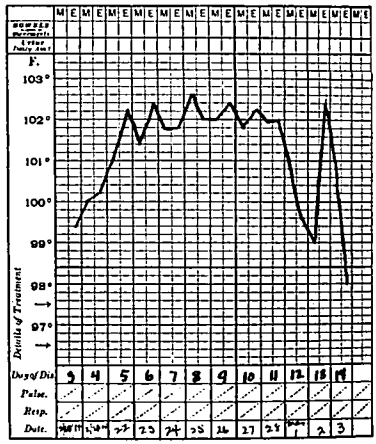
bowels being constipated and distension, tympanites and tenderness were absent. The spleen could not be felt. The fever curve shows the crisis which occurred on the fourteenth day, after which the patient had no further elevation of temperature. Convalescence was quite rapid. It is worthy of note that a brother officer became ill at the same time and died in the second week of his sickness, the diagnosis being "typhoid fever."

Case II. (W. A. 1128) M. R., white, male, native, age 34, single, cotton broker, was seen December 25, 1913, complaining of aching all over, especially headache. He had had measles, no typhoid, but had been inoculated against typhoid in July, 1911. Case had not been out of the city since November 25, 1913. Present illness started December 20, with aching and malaise. Took two C.C. pills and next afternoon walked uptown and vomited. December 22 took two more C.C. pills, stayed up all night, and the next day stayed in bed. Yesterday, December 24, felt bad all day, and today is too weak to get out of bed. Has severe temporal headache on right side only, without soreness of the eyeballs. Has not caught any cold with this illness. Temperature 100.6, pulse 90, tongue covered with fine white coat but does not tremble. Body covered with fine, discrete, macular rash, resembling measles, and fading on pressure. Throat clear, no Koplik's spots, physical examination negative throughout. Given aspirin, phenacetin and caffeine every four hours and asked for a temperature record. White blood count 7,500 with polynuclears 80 per cent, small mononuclears 18 per cent, large mononuclears 1 per cent, eosinophils 9 per cent, basophils 1 per cent; reds normal, no plasmodia.

December 26. Headache relieved by medication before night, but by midnight temperature reached 102.8. The right eye felt as though it had a cinder in it during the night and lacrimation from this eye was profuse. This morning both eyes are injected and the headache has returned. Temperature 101.8, pulse 108, respiration normal. Tongue coated as before, physical negative, face, arms, chest, back, and thighs covered with rose spots which face on pressure. Sent to St. Peter's Hospital and put on usual typhoid regime. Chart II shows the course of the fever curve, ending abruptly on the morning of the fifteenth day. A note was made that the man looked more spotted than ever for several days after admission to the hospital, the rash retaining its original characteristics of discrete rose spots, fading on pressure, never becoming petechial. It finally covered the whole skin surface except palms and soles, facing gradually by the end of the tenth day. The face and neck were deeply flushed until the 12th day, and the conjunctivae injected until the 14th day. There was no appetite during the fever,



Case III.



Case IV.

with nausea for several days. Bowels required enemata; no abdominal symptoms; spleen not palpable. No chest symptoms. Urine showed a small amount of albumin with granular casts while the fever lasted. On the 7th day of the disease the white blood count reached 15,600, on the 9th day 16,600, with 86 per cent polynuclears, and on the 14th day 16,000. The outstanding symptoms were a distressing insomnia, great restlessness, and continuous severe headache, which did not disappear until two days after the temperature had reached normal. There was mild delirium throughout several nights during the height of the fever, but never any meningeal symptoms. Appetite returned the day the fever subsided, and three days later the case was discharged.

Case III. (W. A. 1147). L. J., a Syrian, male, age 36, married, clothing merchant, was seen January 16, 1914, complaining of severe headache. Had typhoid fever for two months in 1900. Never had measles, but had been exposed several times when his children had it. Had not been out of the city in months. Present illness began January 11 with headache and a feeling of oppression over the front of the chest. Has taken salts and calomel and become steadily worse. Temperature 102.6, pulse 90, respiration 19. Tongue dirty grey with red tip. Physical examination negative. Covered thick over the trunk, arms and legs with rose spots that fade on pressure. Throat clear, no Koplik's spots. White blood count 5,400, with polynuclears 72 per cent, small mononuclears 24 per cent, large mononuclears 4 per cent, eosinophils 0 per cent; reds normal, no plasmodia. At 6 p.m. temperature 103.4, pulse 90.

January 17. Since yesterday has taken aspirin grs. 30, phenacetin grs. 9, caffeine grs 3, and has a temperature of 101.8 this morning, with pulse 90. Rose spots thicker on chest, back, abdomen, arms, legs, extending to backs of hands and feet. At 3 p.m. admitted to the Presbyterian Hospital with temperature of 104.4, pulse 108, respiration 30. Blood culture taken by Dr. Barrett, which proved to be negative. The temperature curve is shown in Chart III, falling abruptly on the 12th day, with a slight rise in the afternoon of the 13th day. During the last week of the fever the temperature reached its maximum in the morning. The rash covered the entire skin surface except palms and soles, giving the man a mottled look. Many of the spots became rose-red blotches, 1 cm. in diameter, always discrete without the ring formation or bran color of measles. On the 9th day some of the rose spots became petechial; by the end of the 11th day the spots had faded leaving the scattered petechiae, which disappeared by the 14th day. The face was deeply suffused and the inner canthus of each eye injected while the fever lasted. There was slight coryza and bronchitis. No appetite. Milk, which disagrees with him, caused slight diarrhea and vomiting at the end of the first day in the hospital. It was discontinued, and thereafter enemata were necessary. Spleen never palpable. Urine showed albumin and granular casts while the fever lasted. The white blood count reached 8,600 on the 7th day of the disease, 8,000 on the 9th day, 9,400 on the 11th day with polynuclears 83 per cent. As in Case II, the prominent features in the clinical picture were distressing insomnia and severe frontal headache, continuing until the end of the 13th day. For the last few days of the attack an attempt was made to withhold analgesics for the sake of a uniform temperature curve which would show a crisis, but the headache caused such suffering that aspirin was again freely given. There were never any meningeal symptoms and no delirium. The case was sent home on the 16th day and convalescence was very rapid.

Case IV. A lady of the highest social status, whose family history is unimportant, and who had in childhood all the exanthemata, and at 15 years of age "walking typhoid," began suffering greatly with headache. Within 36 hours she was seen by one of us (L. B. N.). At this time she was complaining bitterly of headache, her conjunctivae were injected and the whole face suffused and appeared swollen. Her temperature when first seen was 99.4, pulse 80, no cough, no nausea or vomiting, bowels constipated, no abdominal tenderness or distension, tongue coated. Physical examination of heart and lungs revealed no abnormality. There was no coryza.

After 24 hours the temperature was 100, pulse 84, the head pain intense, facies unchanged. Removed to the Presbyterian Hospital. Chart IV shows the course of the temperature curve. On the fourth day there appeared on the lower chest, abdomen and back a rather profuse crop of what appeared to be rose spots. Within 24 hours this rash showed on the extremities, hands and feet, and even the palms and soles showed a subcuticular mottling, an appearance which became very evident over most of the skin surface. Some of the spots were very like typical rose spots, disappearing under pressure. Others there were upon which pressure had no effect. Four or five petechial spots were found on the arms and trunk. The rash persisted for 7 or 8 days, gradually fad-

ing, so that by the middle of the second week it was very little in evidence, though still seen on the trunk. The headache persisted throughout. The spleen was not palpable. The urine showed no abnormalities other than the changes found in a mild cystitis, from which she had suffered a week or two previously. There were no abdominal symptoms other than anorexia. White blood count normal; blood cultures made by Dr. Barrett during the first week of illness were entirely negative. The fever curve shows a distinct crisis on the 14th day. After this the patient was perfectly comfortable, with rapid and uneventful convalescence.

In these case histories we wish to call attention to the past history of measles and typhoid, the duration and character of the fever curve, the early appearance of the eruption and its character and distribution, the blood picture with negative cultures, the prominence of nervous symptoms, especially headache, the lack of abdominal symptoms, nose bleed, or enlarged spleen, and finally the abrupt termination of this continued fever by crisis, with remarkably rapid convalescence.

Commercial Bank Building.

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PRACTICAL SANITATION FOR SMALL CITIES AND TOWNS.*

By R. L. Robertson, M. D.,
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In accepting the highly appreciated invitation to contribute a paper for this meeting of your association, I am actuated more by a desire to show my readiness to cooperate with your splendid work than by any feeling that I have anything new or valuable to suggest.

I come from a small city that lately is undergoing a great change, from a small country town it is fast becoming a modern city. Hence, when I invite your attention to "Practical Sanitation for Small Cities and Towns," I am speaking on a subject to which I have given my time and best thoughts for the past few years.

In approaching the subject of sanitation we can lay down as an axiom that an adequate supply of pure water is an absolute necessity —no amount of work will accomplish much for any town or city unless a pure and ample supply of water is procured. If this cannot be had, then it were better not to have the town. Having a water supply, perfect sewerage should follow as a natural and all important sequence.

With these two blessings the sanitary work of any town is easy, and is largely answered.

Unfortunately, a great many of our towns and small cities have very poor water supplies and nearly all very imperfect sewerage. This fact makes a hard task for health officers, the expense that has already been incurred for imperfect work makes an additional expenditure, generally requiring a bond issue, a most unpopular suggestion to the city authorities and the citizens at large. The opposition to incurring the necessary expense, though based in a great measure on ignorance and a lack of foresight, becomes very formidable when it happens that the city treasury is depleted. Health officers facing such a hopeless condition are too apt to become discouraged and cease to agitate a question which only tends to make them unpopular.

Just under such conditions communities need the services of practical health officers.

When we consider the dilapidated and unsanitary condition of earth closets in our towns and in the unsewered sections of our cities it is nothing less than an inexcusable disgrace to modern civilization.

*Read by title in the Section on Hygiene and Preventive Medicine of the Southern Medical Association, Seventh Annual meeting, Lexington, Ky., November 17-20, 1913.