# TYPHUS FEVER WITH A REPORT OF CASES.*

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Typhus fever in recent years has received little or no attention from medical men, the disease being considered one of the old world, and occurring very rarely in the United States.

A paper, entitled "An Acute Infectious Disease of Unknown Origin," by Dr. Nathan E. Brill of New York, published in the American Journal of the Medical Sciences, April, 1910, called attention to a disease which clinically resembled typhus fever in many respects, but differed markedly from it, in that there was a lack of contagion in his cases and an absence of mortality. He reported 221 cases observed from 1896 to 1909, without a single death. This disease has not received in the South the consideration it deserves, particularly since it has been demonstrated by Ander and Goldberger that Brill's disease is identical with Mexican typhus or tabaridllo, and with European typhus.

A great deal of work has been done within recent years by Anderson, Goldberger, Ricketts, Wilder, Nicolle, A. Conor and E. Conseil to elucidate the etiology of this curious disease. These observers produced typhus fever experimentally in monkeys by the intravenous, intraperitoneal or subcutaneous injection of blood from a human being infected with typhus. The monkeys so injected responded in much the same manner that the individual does to this infection, in that there is a sudden rise in temperature, which generally reaches its fastigium in forty-eight to seventy-two hours, and continues from one to five or more days, ending suddenly by crisis. In the monkey the characteristic eruption noted in the human being is absent. An infected monkey is refractory to subsequent injections of infected blood. It has been shown experimentally that the virus is present in the blood just before the beginning of the symptoms of the disease and for twenty-four or thirty-six hours after the crisis has taken place. The virus seems to be present in the greatest quantity, according to Nicolle, Conseil and Conor, in the white blood cells, although plasma of centrifugal blood was found by these same authors to be infectious.

Anderson and Goldberger have shown that the serum is infectious and that the red cells are capable of transmitting the disease after having been washed three times in normal salt solution. The virus present in the blood is not filterable through Berkfelt or Chamberlain's filters. Drying for twenty-four hours or heating to 55 degrees C. (131 degrees F.) for five minutes destroys the virus, although it resists prolonged freezing.

Nicolle, Conseil and Compte in 1909 were able to successfully transmit the disease from man to monkeys by means of the bites of infected body lice (pediculi vestimenti). This observation was confirmed by Ricketts and Wilder, Anderson and Goldberger. The few experiments made limit the infectivity of the louse from the fifth to the seventh day after its feeding. Anderson and Goldberger have been able to produce the disease in the monkey by inoculating crushed infected head lice.

The brilliant work of the above investigators, one of whom, Ricketts, lost his life in 1910 with this disease while working in Mexico City, should attract great attention, because of the fact that experimental medicine has cleared up many of the doubtful points regarding the etiology and mode of contagion in this disease.

Recently six cases of this disease have been observed in Atlanta; the first was seen in No-

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vember, 1910. but was not recognized at the time. and not until recently was the diagnosis clear in my mind.

Case I.—Miss S., aged 21 years, was taken suddenly ill on October 31. 1910, with chill, headache, pains over entire body, nausea, vomiting, and temperature of 102 3-5. For three or four days previous to onset she didn't feel particularly well. Physical examination, November 1, 1910. Patient looks quite sick and complains of intense headache for which she has taken grains ii of codein. Eyes are bright, tongue heavily coated, heart and lungs normal, no abdominal tenderness, spleen distinctly palpable. edge hard; temperature 103, pulse 110, respiration 20; leucocytes 10,900, no malarial parasites; Widal negative; urine, slight trace of albumin, no casts. November 5. blood culture and Widal negative. On this date a note reads: "Patient has today the most extensive and the greatest number of rose spots I have ever seen; they are all over the body." This young lady had a continuously high temperature until November 14, when it suddenly began to fall, and on November 15 it was normal. Throughout the entire course of the disease she complained greatly of headache and general body pains, so much so that codein was frequently given for relief. The eruption in this case attracted my attention on account of its extensiveness and the great number of spots; it did not occur to me at the time that I was dealing with typhus fever, although I was duly impressed with the "unusual case of typhoid."

Case II.—Unrecognized at time of the disease. I. H., aged 9 years. September 1. 1912, was taken suddenly ill with chill, headache, nausea and vomiting. For the first two or three days after onset his temperature varied from 104 2-5 to 102, pulse 110 to 120. When first seen child was listless and dull, complained of pain in head and abdomen; bowels had been freely moved with calomel and oil. Physical examination: Tongue heavily coated, cervical glands palpable, not tender; throat not inflamed, heart and lungs normal; abdomen was slightly rigid on palpation but no particular pain; spleen palpable; leucocytes 12,400, no malarial parasites. The temperature remained high for eight days and during the night of the eighth day it came to normal. There were never any rose spots, or other eruption. It is not unusual for the eruption to be absent in typhus fever in children.

The following cases were duly recognized and have occurred on the medical service of Dr. C. W. Strickler at the Grady Hospital, whom I thank for the privilege of reporting them.

Case III.—Hospital No. 39584. A. T. (Greek), aged 20 years; works in restaurant. Admitted October 5, 1912. Complain pain in back. Present illness began September 26, 1912, with chill lasting fifteen minutes; since this time has suffered with lassitude, anorexia, malaise, muscular pain and headache, pain in back quite severe at times. Confined to bed since October 2, 1912. Physical examination: Patient looks quite sick; cheeks flushed, eyes bright, pupils react to light and accommodation; tongue heavily coated, breath foul, heart and lungs normal, spleen palpable; pediculi capitis. Temperature 102 3-5, pulse 120; leucocytes 8,400; no malarial plasmodia.

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|---|---|
| Small mononuclears | 21% |
| Large mononuclears | 9% |
| Transitional | 2% |
| Polymorphonuclears | 68% |
| Urine, no albumin, no casts. | |

Patient ran a rather constant temperature varying from 104 to after bath temperature of 101, pulse ranging from 120 to 108.

On the third day in hospital, and his sixth day in bed, there appeared over the abdomen and chest a rather thick maculo-papular eruption, pinkish in color, partially disappearing on pressure. The next day the eruption had spread over the arms, neck, face, back, lower limbs and was very marked in the palms of the hands and soles of feet. The next day many of the spots were petechial. The eruption was quite extensive and the spots varied

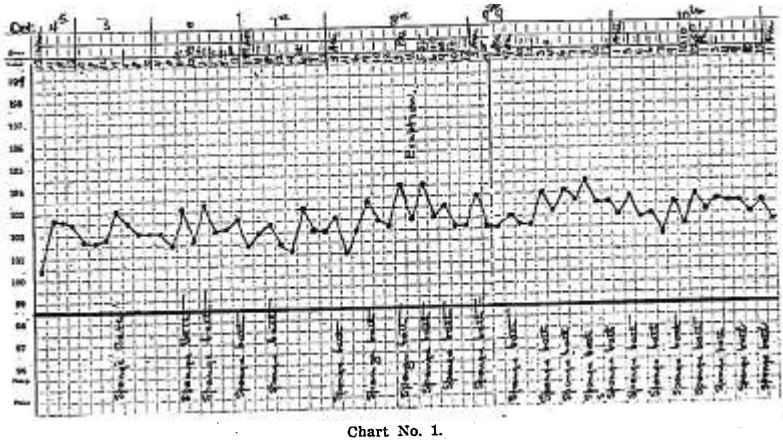

Chart No. 1.

in size from 1 mm. to 6 mm. in diameter. Patient was transferred to City Isolation Hospital October 12: on this date the rash had faded away decidedly and on October 14 had disappeared. On October 16 patient's temperature came down by slow lysis. Widal and blood culture negative.

Case IV.—E. M. (Italian). Hospital No. 39745; aged 23 years; laborer. Admitted October 19, 1912, complaining of headache, loss of appetite, backache. Present trouble began October 5, with loss of appetite, headache, backache; didn't go to bed until October 13; then had pain and aching over entire body, dizziness particularly on standing; no chill; bowels constipated, slight unproductive cough for past few days. Physical examination: Well developed man; pediculi capitis and pubis; cheeks flushed, tongue heavily coated, heart and lungs normal, abdomen slightly distended, no tenderness; spleen palpable one finger breadth below costal margin. Scattered over the abdomen chest, back, arms and legs there is a maculo-papular eruption which does not completely disappear on pressure; the lesions vary in size from 1 to 4 mm. in diameter; some few are decidedly petichial. Patient does not know how long he has had the eruption. Temperature 102.4, pulse 20, leucocytes 9,200; no malarial parasites; urine, no albumin, no sugar, no casts. Transferred to City Isolation Hospital October 21. Temperature came to normal and there remained on October 25.

Case V.—C. A. D. Hospital No. 39929, aged 39 years; house decorator. Admitted Oct. 28, 1912. Present illness began Oct. 18, with chill lasting twenty minutes followed by headache, very severe; during next forty-eight hours had six or eight chills; slight lumbar pain; nauseated, vomited once; slight cough. On fourth day of illness was delirious; had to be restrained in bed; temperature ranged from 104 to 102. On ninth day of illness light eruption on body. Physical examination: Patient complains of severe frontal headache, pain in throat, legs and back; slightly delirious; eyes bright, conjunctivae congested; tongue heavily coated, teeth fair; patient is covered over abdomen, back, chest, arms, forearms, neck, legs, palms, soles of feet, few on face, with a maculo-papular eruption, varying in size from 1 to 7 mm. in diameter; many of these spots are decidedly petechial; they do

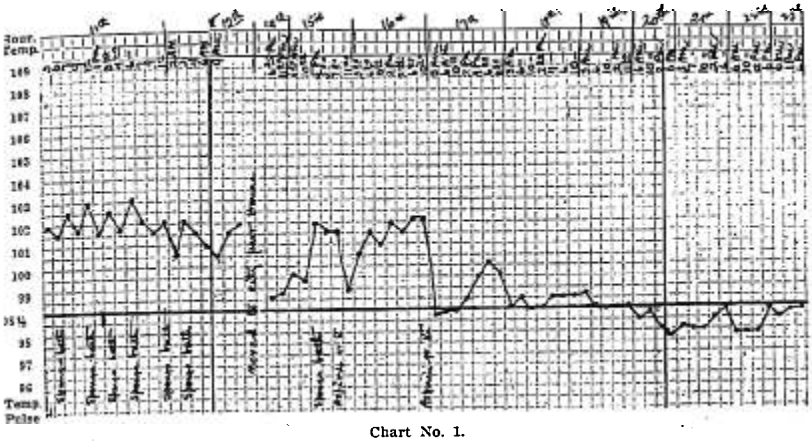

Chart No. 1.

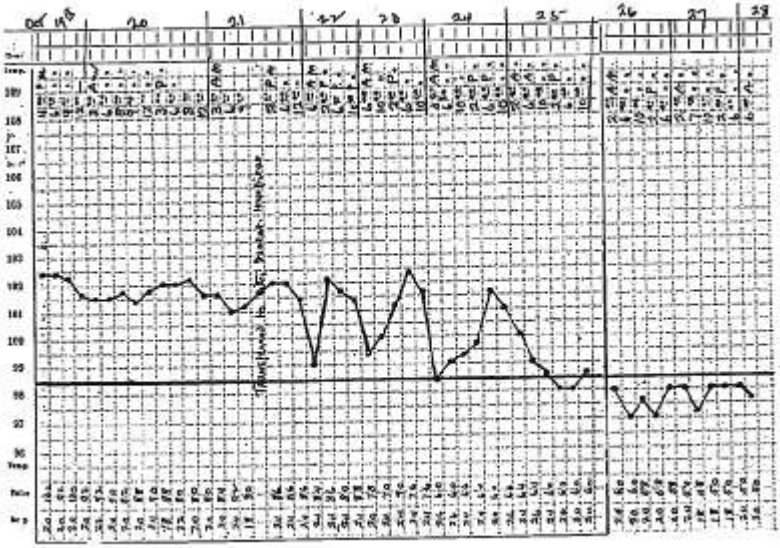

Chart No. 2.

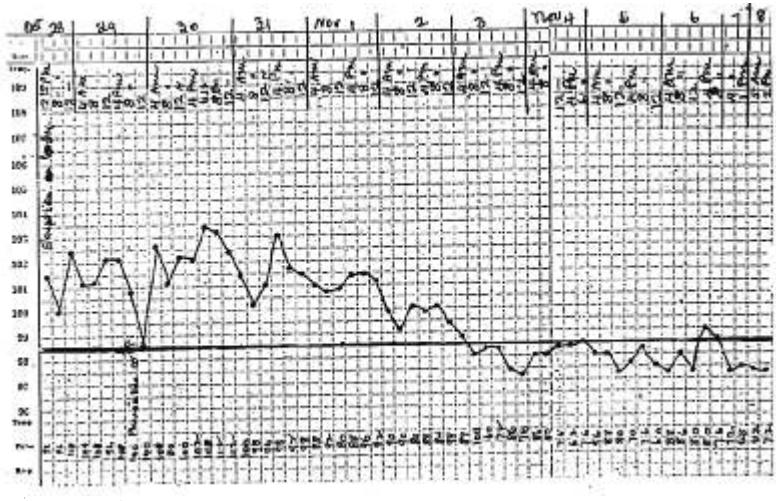

Chart No. 1—Continued.

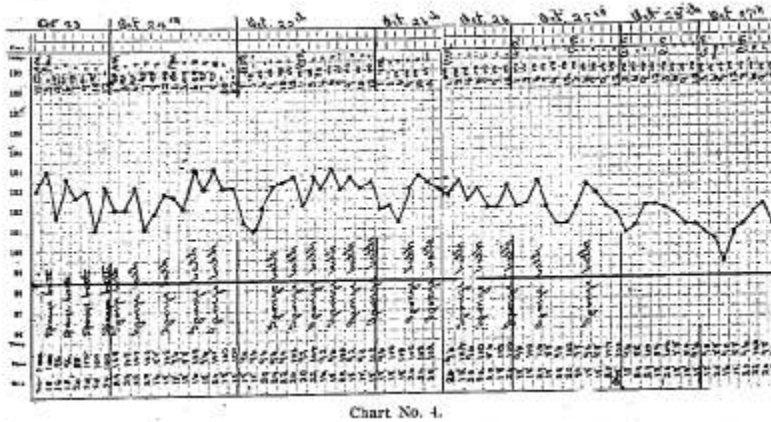

Chart No. 4.

not disappear on pressure. Spleen is just palpable; the abdominal walls are slightly rigid but no tenderness; temperature 101 2-5, pulse 92; pediculi capitis and pubis.

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|---|---|
| Leucocytes | 10,600 |
| Small mononuclear | 17% |
| Large mononuclear | 4% |
| Transitional | 2% |
| Polymorphonuclears | 77% |

No malaria plasmodia.
Widal and blood cultures negative.
Temperature came down by slow lysis.

Case VI.—Mr. C.; aged 32 years; superintendent office (private patient of Dr. C. W. Strickler); seen in consultation October 24, 1912. Complained of intense headache, backache, malaise. Onset October 18 with chill, nausea, vomiting; for several days previous hadn't felt well but kept at work. On physical examinatiton: Patient is quite dull and listless; eyes red, tongue covered with a thick, whitish coat; heart and lungs normal; abdomen tender on palpation, not localized; spleen palpable, 3 cm. below costal margin. Of all the cases yet seen this one has the thickest and most extensive maculo-papular eruption, no part of the skin is free; temperature 102.5, pulse 98, dicrotic; pediculi capitis; urine, no albumin, no sugar, no casts. Temperature came down by crisis on November 3, 1912.

Case VII.—(Greek) B. P., age 42 years; waiter in restaurant. Admitted November 1, 1912. Patient has been in United States four months. Present illness began October 24, 1912, with chill followed by severe headache. During next twenty-four hours had three or four chills, general muscular pains were very aggravating, but didn't go to bed until October 28, when he complained of intense headache and severe weakness. Has had slight unproductive cough. Bowels constipated. On admission over entire body except face there is a thick maculo-papular eruption, doesn't know how long this has been present, there are numerous petichia to be seen. Temperature 102, pulse 104, respiration 20. Numerous pediculi capitis and pubis. Leucocytes 7,000. Temperature came down by slow lysis to normal November 8, 1912.

To briefly summarize the features of these cases: onset has been sudden, with chills as a rule; intense aching pain in back, persistent headache, in two cases severely distressing to the patient, and remaining throughout the course of the disease; delirium was present in one case; prostration has been quite marked in all of the cases. The eyes are generally bright and shiny, the face flushed, tongue heavily coated; between the fifth and eighth

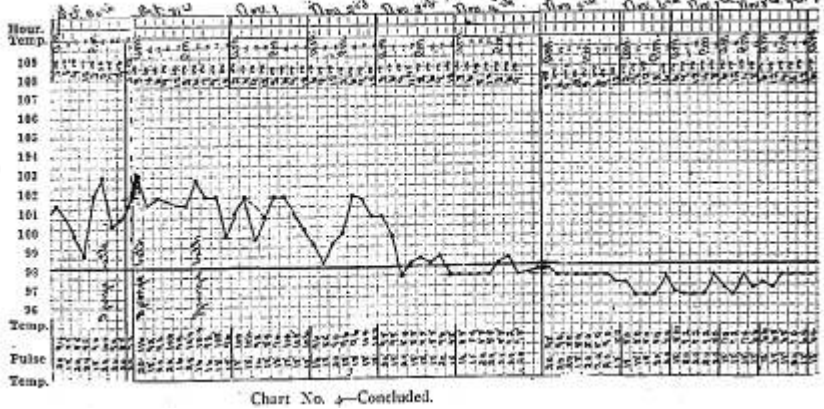


Chart No. 4—Concluded.

day of the disease the characteristic eruption appears first on the chest and abdomen rapidly spreading to the back, arms, forearms, hands, neck, face, legs and feet: although it is stated that frequently it is absent from the face. The rash resembles somewhat the typhoid roseola, it is more extensive and of a brighter color, maculo-papular, varying in size from 1 to 12 mm. in diameter, appearing rapidly over the body, becoming petechial in places and not its fastigium maintains this with very slight remission for ten to fifteen days, when it ends by lysis or crisis. With a normal temperature the patients feel well, and headache disappears. The pulse, as a rule, full, good volume, occasionally dicrotic; slow in comparison with the heighth of fever.

The spleen has been palpable at the first examination in all of the cases except one, the percussion area of splenic dullness is here

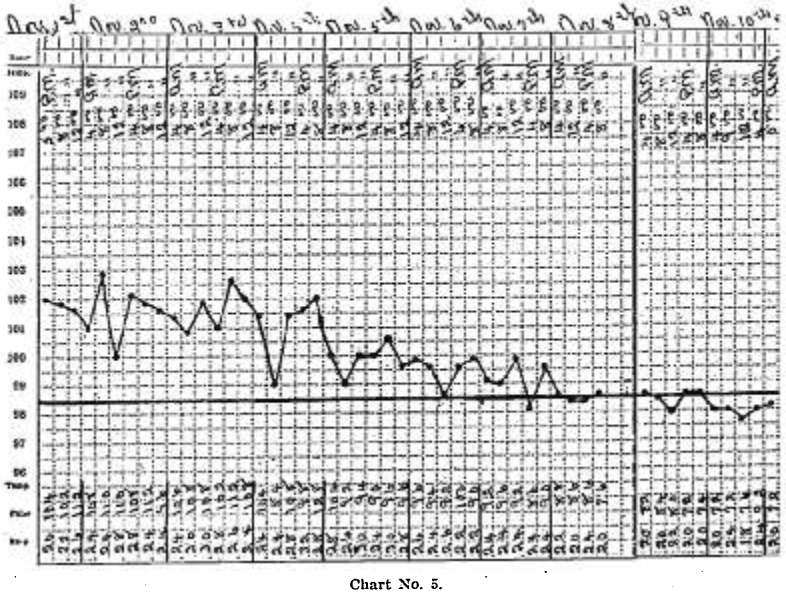

Chart No. 5.

completely disappearing under pressure. In these cases the rash had completely disappeared before the subsidence of the fever, leaving behind a darkish brown discoloration which soon disappears. The rash has not been observed on the buccal mucosa. No particular flushing has been noted in these cases.

The temperature is high from the onset and having within the first few days reached increased. The border is hard and firm. The largest spleen, CaseVI. extended 3.0 cm. below the costal margin. All the cases have shown a slight leucocytosis, the highest count 12.400, the lowest 8.000. Repeated Widals with the B. typhosus and B. paratyphosus have been negative. Blood cultures have been made on all cases except the first two; all remaining sterile.

Most patients have had a slight bronchitis at the beginning of the disease, and in two it persisted throughout its course.

There have been no relapses in these cases and no complications.

Treatment has been symptomatic, no specific is at present known for the disease.

In concluding I wish to thank Dr. C. W. Strickler for the privilege of reporting his case, and the use of the hospital cases, and Dr. A. Quillian for the further records of the cases sent to the Isolation Hospital.

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LITERATURE.

Brill, N. E. The Amer. J. Med. Sci. Vol. CXXXIX, No. 4, page 484.
Nicolle, C., Conseil, E., Conor, A., Compte, rend. Aca. Science, July 1909, Annals d L' Inst. Pasteur, 1910 April, ibid 1911, January, ibid 1912 April.
Ricketts and Dick, Infection and Immunity.
Ricketts and Wilder, J. A. M. A. LIV 463, LIV 1304, LIV 1373, LIV 309.
Anderson, J. F.—Goldberger, Public Health Reports, Dec. 24, 1909: Feb. 18, 1910: Feb. 2, 1912.
Journal Medical Research, 1910.
New York Medical Journal, March, 1912.
J. A. M. A. LIX 5514.
Anderson, J. F.—J. A. M. A., LVIII, 1748.

## THE TREATMENT OF ARTERIOSCLEROSIS BY PHYSIOLOGICAL METHODS.

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By arteriosclerosis I understand a progressive degeneration of the vascular system, characterized pathologically by thickening of the blood vessel walls, and clinically by increase of the blood pressure. The change in the walls of the arteries of all sizes varies from simple fatty degeneration of the intima (atheroma), through increased thickness in varying degree of the media and adventitia, to the deposition of lime salts.

The disease is chronic and progressive and invariably ends fatally. The symptoms may manifest themselves in the brain, the heart, the kidneys, the skin, or in any other organ depending upon the region in which the degenerative process is progressing with the greatest rapidity. They are vague, irregular and often the combination of complaints is such that the patient is forthwith written down as neurasthenic. Doctor Suter and I* found upon analysing the records of fifty-one cases of neurasthenia that ten gave evidence of arteriosclerosis with high blood pressure, 19.6 per cent. In addition, in this series of cases there were four which gave evidence of beginning interstitial nephritis, and, one which showed myocarditis and arteriosclerosis. If we include these, there were fifteen cases of neurasthenia associated with arteriosclerosis or 29.4 per cent.

The treatment of the condition by drugs is notoriously unsatisfactory, and it has been found that other methods give more relief than can be obtained by medicine. Perhaps the best results are obtained by a judicious combination of physiological methods and drugs. Of the latter this paper can take no account. The physiological methods that have been recommended in the treatment of this disease are (1) rest combined with massage; (2) diet; (3) hydrotherapy, the hot full bath, the tepid or neutral full bath, and carbonated brine (Nauheim) baths; (4) thermotherapy; the electric light bath, the vapor cabinet bath, and the Russian bath; (5) electricity, galvanism, faradism, high frequency electricity (autocondensation and ultra violet rays) and the crown breeze.

These measures have merely a symptomatic effect and in no way serve to cure the disease. In some instances it has appeared that the relief of the symptoms was accompanied by a less rapid advance of the change in the blood vessels; but of this one cannot be sure.

In the employment of rest and massage the best results are obtained when the patient is put to bed for a period of two or three weeks. The rest should be nearly absolute although there can be no objection to the patient going

*Read at the annual meeting of the Medical Society of the State of New York, held in Albany, April 26, 1912.