

roduced into the cerebrospinal fluid. Meningeal lesions, however, would be readily accessible and it is interesting to find that Dana<sup>4</sup> discovered the presence of "chronic leptomeningitis of the convexity of the brain, slight meningitis of the upper part of the spinal cord . . . diplococci in the proliferating tissue between the meninges and the brain"; and that Poynton and Paine<sup>5,6</sup> in four autopsies of chorea found congestion, thrombosis and perivascular infiltration with small cells and streptococci in the pia mater, as well as in the brain itself. Preobrachensky's<sup>7</sup> autopsy also revealed a severe pachy- and leptomeningitis. We have, therefore, at least the beginning of a rational explanation, but it is perhaps best, at the present, to take the treatment on an empirical basis. Its clinical effects seem to be unquestionably good in a considerable proportion of cases and it is certainly worthy of a further trial.

I hope to be able to report a larger series of cases with more extended observations in a later communication.

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## TYPHUS EXANTHEMATICUS IN SAN FRANCISCO.

By I. C. BRILL, A. B., M. D., San Francisco, Cal.

This case is reported not because of its unusual features but rather because of its rare occurrence in this part of the country.

History: Peter P., 26 years old, single, Italian, owner of fruit and vegetable store, first consulted a physician on June 4 complaining of "severe headache" and "fever." His family and past history is negative. He has always been well up to the present illness. His habits are good and he usually sleeps at home in excellent surroundings. But nine or ten days before he took ill he slept in a rooming house of questionable cleanliness. Six days later his head began to feel heavy and would constantly draw back; and his neck felt stiff.

Three or four days later (June 2) he had a definite chill and the next day he took to bed. On June 4 when first seen by a physician his temperature was 102°.

Examination: On June 4 when I first saw him his temperature varied between 102° and 103°. Face was flushed, tongue coated, conjunctivae slightly injected, pupils normal, throat red and congested. On the skin of the abdomen there were numerous dull pink spots from 2 to 5 m.m. in diameter, disappearing on pressure. Heart and lungs were negative. Abdomen slightly tender. Spleen readily felt about 4 c.m. below costal margin, firm, slightly tender. Reflexes normal, neck not rigid. No Kernig, no Babinski.

Laboratory findings: Leukocytes 7000, polymorphonuclears 64%, lymphocytes 34%, Diazo negative, Widal negative with both typhoid and para-

typhoid cultures. Blood-culture (aerobic) remained sterile at the end of seven days.

The next day (June 8) the patient complained of severe headache and sore throat. Examination revealed a very marked injection of the conjunctivae. Throat was red and congested and there were a few pustules and vesicles on the soft palate (enan-thema). The entire abdomen was mottled with a maculo-papular eruption of irregularly-shaped spots, 2 to 6 m.m. in diameter, rose colored, disappearing on pressure. On the sides of the chest and his back there was a purpuric eruption of spots similar in shape and size to those on the abdomen, but of dark red color and not disappearing on pressure. There was a very faint subcuticular mottling on the extremities.

Laboratory findings: Leukocytes 17,000, Widal negative, Diazo negative. An anaerobic blood culture on ascitic glucose agar was taken on the same day; but no growth was obtained.

During the following seven days the patient's temperature ranged between 101° and 104° with rather marked morning remissions. The chief symptom was severe headache; but there were no other marked cerebral symptoms. The average leukocyte count was about 14,000. The urine was examined daily for the Diazo reaction, and the blood for the Widal reaction (with typhoid and paratyphoid cultures), both with negative results. Several blood cultures were taken, all remaining sterile. The stools were cultured for typhoid and paratyphoid with negative results. On June 13, the 12th day of the disease, the temperature fell by crisis to 99°, and after a single rise of one degree on the next day it remained normal for the rest of the time during which the patient was under observation (two weeks after the crisis). Since the day of the crisis the rash faded very rapidly with considerable scaling of the skin of the chest (over the purpuric spots). The hemorrhagic areas left a dull red, brownish pigmentation still present at the time the patient was discharged (two weeks after the crisis).

The clinical picture just described corresponds more to the type of disease endemic in New York to which the attention of the profession was called in 1910 by N. E. Brill,<sup>1,2</sup> and which was conclusively proved by the cross immunity experiments of Anderson and Goldberger<sup>3</sup> to be a mild form of typhus exanthematicus. The most interesting recent development in connection with this disease is the discovery by Harry Plotz in 1914 of an anaerobic, gram negative bacillus in the blood of patients suffering from this disease, the same organism being isolated from both the mild and the severe epidemic type of typhus. The medium employed by Plotz is an ascitic glucose (.5 to 2%) agar. With this medium under strict anaerobic conditions, he was able to isolate the organism in all of seven cases of epidemic typhus studied during the febrile period of the disease, and in 18 out of 34 cases (53%) of the mild endemic type.<sup>5</sup> The blood culture in our case was negative although the technic advised by Plotz was carefully followed. This, however, is not at all surprising if we recall the fact that our case was definitely of the mild type, and that in this form of the disease the blood cultures were positive in only about 53% of the cases reported by Plotz.

The work of Plotz has been confirmed recently by his co-workers in Mexico, Olitzky, Denzer and Husk.<sup>6</sup> These investigations were about to supply the finishing touches in establishing the relationship between the "bacillus typhi exanthematici" and typhus fever when, unfortunately, their work was interrupted by the recent disturbances in Mexico. The difficulty in finally establishing the direct causative relationship between this organism and typhus fever lies in the fact that the injection of large quantities of the bacillus does not induce the typical typhus reaction in susceptible animals (the monkey and the guinea pig),<sup>7</sup> even though

such reactions are comparatively readily induced with typhus blood.\* Baehr, Plotz and Olitzky<sup>5</sup> explain this fact by the assumption that the bacilli rapidly lose their virulence when grown artificially, even in the original culture taken directly from the blood of the typhus patient. There is another explanation which suggests itself; namely, that in typhus blood the bacilli, though few in number, are fortified with anti-immune bodies (probably present in large quantities before the crisis), which protect the organisms against the natural immunity forces in the new host and thus enables them to multiply and cause the disease. On the other hand, a suspension of bacilli taken from an artificial culture, being free from anti-immune bodies, are quite rapidly destroyed by the natural immunity of the new host. The fact that the organisms disappear from the blood of a patient within 24 to 36 hours after the crisis speaks in favor of this theory, as it illustrates the rapidity with which the bacilli are destroyed when the balance of immunity is on the side of the host. It is probable that if the bacilli were suspended in filtered typhus blood taken at the height of the disease and then injected into a susceptible animal, they might then cause the typical typhus reaction with greater regularity, the bacilli now being protected by the anti-immune bodies in the filtered serum. This suggestion is made with the hope that workers who have an opportunity to study typhus cases may try this simple experiment and thus possibly help finally to solve the important problem of the etiology of typhus exanthematicus.

\* In two instances Baehr, Plotz and Olitzky were successful in obtaining a reaction in guinea pigs following the injection of cultures of bacillus typhi exanthematici obtained from two epidemic cases (Jour. Infect. Dis. 1915, 17, 1, pp. 52-56). Unfortunately both of these animals died before the exact nature of these reactions could be determined by immunity studies. Olitzky, Denzer and Husk,<sup>6</sup> in their more recent studies in Mexico, found that "the injection into a guinea pig of a colony taken directly from the blood culture tube proved the organism to be pathogenic." But in this instance, too, apparently no immunity studies were possible on account of the sudden interruption of the work.

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University of Oregon, Department of Medicine, Portland, Oregon.

### SULPHUR AS A REMEDY FOR RHEUMATISM.

By W. F. McNUTT, Sr., M. D., San Francisco.

According to the London Lancet, February 6th, 1915, Sir Lauder Brunton made a discovery, accidentally, however, viz: that sulphur is a potent remedy in rheumatism. Sir Lauder had a patient with rheumatism in the hand which his remedies failed to cure. A friend of the patient's, a kindly old lady of course, told her to put sulphur in her stockings, which she did, and her rheumatism was completely cured. Sir Lauder expressed surprise, not only that the sulphur in her stockings cured the patient, but that the silver bangles that the patient wore on her arms turned black.

Verily there is nothing new under the sun. If Sir Lauder had consulted Dr. H. W. Fuller's old work, London Edition, 1825, on rheumatism, rheumatic gout and sciatica, he would have found sulphur highly recommended for these diseases. Fuller states that it was then an old domestic

remedy in the north of England for the diseases. I have many times used it with excellent results in sciatica, by taking a long flannel bandage, rubbing the sulphur into it as one would plaster of paris in a mesh bandage, and wrapping the whole leg. Any silver article in the pocket or ornament worn by the patient will be blackened in 48 hours. The absorbed sulphur eliminated by the skin and bowels is the sulphide; that eliminated by the kidneys is the sulphate.

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### SOCIETY REPORTS

#### ALAMEDA COUNTY.

Following is a report of meetings held during November:

##### November 10th.

Dr. Bowles, chairman.

I. Diagnosis and treatment of acidosis, especially in diabetes. Dr. Albert H. Rowe.

II. Management of eclampsia cases. Dr. Edward N. Ewer.

III. The care of the breasts. Dr. Dudley Smith.

##### November 20th.

Regular monthly meeting. Program arranged by Dr. Dudley Smith.

I. The relief of pain in labor. Dr. Dudley Smith.

II. Present status of gas-oxygen anesthesia and twilight sleep. Dr. F. W. Lynch, San Francisco.

III. Technic of gas-oxygen administration in labor. Dr. Florence Sylvester.

IV. The application of anoci-association to obstetrics. Dr. Carl L. Hoag, San Francisco.

E. E. BRINCKERHOFF, Secretary.