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Cases of starvation fever.

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CASES OF STARVATION FEVER.

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I DESIRE to lay before the College a remarkable group of cases, which happened in the practice of Dr. Julius Schrotz; and it was with him that I had an opportunity, in two of them, of witnessing the strange phenomena.

CASE I. A little girl, three years of age, for some time pale, weakly, and irritable, was seized on the night of January 1, with vomiting. It became so frequent that Dr. Schrotz was sent for; and he found her very feeble, unable to sit up in bed, and complaining of giddiness. The next day the same symptoms persisted, and the pulse was small and very rapid. Subsequently a marked fever was observed, and the vomiting lessened; indeed, under quinine, beef-tea, brandy, and milk, the gastric symptoms disappeared. The fever was unattended with sore throat, eruption, or diarrhœa, was not of long duration, and by the ninth day from the beginning of the attack, the little patient, in good spirits, with appetite fully returned, was sitting up in bed playing, seemingly quite convalescent. On the evening of the 10th of January, vomiting returned; henceforth nothing was retained on the stomach; the child complained of not being able to see, became weaker and weaker, and expired exhausted on the evening of the 13th.



An *autopsy* was made the next day. In the thorax, yellowish serous effusion was found in both pleural sacs. There was no evidence of lymphic exudation on the pleura; the amount of fluid was sufficient to have compressed the lower lobes of both lungs, which were carnified over a limited extent; the upper lobes were healthy. The heart presented nothing abnormal, except that it was flabby. The stomach was empty, its mucous membrane dryish and very pale; the intestines exhibited no swelling of any of the glands, either in the small or large bowel; the walls were thin; the large intestine contained a small amount of hard dry feces. The spleen was slightly enlarged; the liver had a nutmeg appearance; the kidneys were normal. On opening the skull, the dura mater was found to be somewhat congested, but free from adhesions; the pia mater was opaque; the cortical portions of the brain were œdematous; the convolutions were deep. A section of the upper part of the brain showed punctiform injection; the lateral ventricles were dry; but there was some effusion in the fourth ventricle.

CASE II. A brother, four months of age, also a pallid, ill-nourished child, was seized with convulsions on the 10th of January. There was no retraction of the head, the urine was passed, and was not albuminous. He had had a convulsive seizure two months previously, leaving apparently no trace. The convulsions of the 10th of January lasted until nearly evening, and some hours afterwards death took place. In the afternoon a few dark spots, like very small petechiæ, were noticed on the neck, and shortly before death similar spots were detected in the hypogastric region.

The *autopsy* gave results very similar to those in the first case. In all the thoracic and abdominal organs, evidences of profound anæmia; some serous effusion in the pleural sacs; stomach pale, containing a small plug of casein; absence of signs of glandular enlargement in the pale intestines, and a rather fluid blood, were the points specially noticed. Permission to examine the head was not obtained.

CASE III. A little girl a year and a half old was now the patient, and this case I watched with Dr. Schrotz. She, too, appeared ill nourished, and was far from a vigorous child. She was on the eighth of January attacked with fever, which was soon found to be associated with an acute bronchitis, and subsequently with a circumscribed broncho-pneumonia. There was no sore throat, no eruption, no albuminous urine. The child was well sustained, and under quinine and stimulating expectorants she slowly recovered in two weeks, having been very ill.

What are we to call these strange cases? What explanation can be given of them? That they were not cases of scarlet fever, or diphtheria, or typhoid fever, was self-evident, though it was equally evident that in some general cause producing profound alteration of nutrition, or in some blood poison, was to be sought the explanation. The convulsions, the eruption, the speedy termination in the second case, suggested cerebro-spinal fever; but spinal symptoms were wanting; and the phenomena in the other cases were not at all those of this disease. The question of poisoning from bad drainage was carefully considered; the drains were all thoroughly examined; they were everywhere in good order, and there was no water-closet or stationary wash-stand near the rooms in which the children played and slept. The supply of water in the house was good, and none of the adults suffered in the least from its free use. Attention was then directed to the food of the children, and here a clue was obtained, which led to an unexpected discovery. The children lived almost entirely on cow's milk; the two youngest, exclusively; the eldest, almost exclusively. They had been always well cared for by their parents, although, perhaps, not made

to pass as much time in the fresh air as would have been good for them; yet, though taking large quantities of nourishment, they did not thrive. While the cases just described were in progress, at all events before the first and the last had terminated, the milk which served as their food was analyzed by Prof. Maisch, and another specimen was procured, as it came directly from the milkman, but without its having passed first through the kitchen. This is the report of the distinguished chemist on milk sent him Jan. 13.

DR. SCHROTZ,

DEAR SIR: The result of the milk analysis is as follows:—

No. 1. Milk from pot.—10 grammes left 1.498 grm. dry residue, containing 0.436 butter.

No. 2. Milk from nursing bottle.—10 grammes left 0.42 grm. dry residue, containing 0.021 butter.

The percentage of fat in No. 1 is 4.36.

“ “ “ “ 2 “ 0.21.

It is evident, therefore, that skimmed milk, or partly skimmed milk, was diluted with one and a half parts of water.

This is further proven by the amount of cream separated from both milks on standing.

No. 1 has separated a thick layer of cream.

No. 2 “ “ a mere film of cream.

Both milks are free from metallic poisons.

Very respectfully,

JOHN M. MAISCH.

Here, then, was the food on which these children had been nourished almost from their birth; here the cause of their lax tissues, their want of resistance. And while they had been growing wanner and paler, a stout maid servant in the kitchen had been growing

fatter and more ruddy. She had been, day in and day out, drinking the milk intended for the children, and diluting the miserable remnant on which they lived. When the doctor's suspicion had been aroused some months before, at casual visits, and he had asked on two occasions to see the milk, she had taken good care to send up to him the milk as it came, fairly good, into the house; and, finally, when the true state of things was detected, confessed to her love of milk and her iniquities.

The cases are now clear enough. In the anomalous fever, the local congestions, the vomiting, the stains on the skin, the convulsions, the ready collapse; in the collection of fluids within the serous sacs, the thinness and pallor of the mucous membranes, we have the phenomena of inanition or starvation, as they have been experimentally demonstrated. To call these cases "Starvation Fever," would, I think, be fully justified. Yet the question remains, whether some cause, in itself of little importance, did not act as an exciting cause to bring about the crash; some cause like a passing influenza, which, throwing the least weight on functions and organs incapable of resistance, broke them down at once. The fact of all the cases happening about the same time, and the catarrhal symptoms in Case III., favor this view.

In concluding this paper, it seems incumbent to dwell on the source of danger to little children it lays bare, and this in a class of society where want does not exist, and where starvation with its fatal consequences would not be looked for. But no words can enforce it better than the histories read before you to-night; the facts themselves speak far more eloquently than I can.

