

BURR (A. H.)

## INFANTILE SCORBUTUS.

---

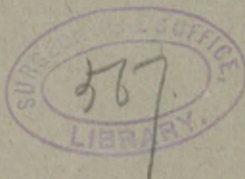
Read in the Section on Diseases of Children, at the Forty-seventh  
Annual Meeting of the American Medical Association, held  
at Atlanta, Ga., May 5-8, 1896.

---

BY ALBERT H. BURR, PH.B., M.D.  
CHICAGO.

---

REPRINTED FROM  
THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION  
NOVEMBER 7, 1896.



---

CHICAGO:  
AMERICAN MEDICAL ASSOCIATION PRESS.  
1896.



## INFANTILE SCORBUTUS.

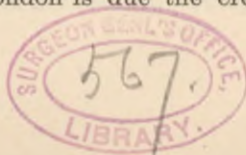
---

BY ALBERT H. BURR, PH.B., M.D.

---

Dr. William P. Northrup, editor of the chapter on Scorbutus in the "American Text-book of the Diseases of Children" (1895), says: "The reader will find in this book for the first time scurvy put down as a disease occurring in the United States." It is barely two years since he tabulated some twenty-six American cases, and directed attention to a disease of infancy hitherto overlooked in this country because of its rarity or because of failure in differentiating it from the somewhat kindred disease of rickets; since that time the interest awakened by the discussion of Northrup's papers has brought out reports of a number of cases from observers in different parts of the country. From this it would seem that the disease is assuming greater importance by reason of its increasing frequency in these days of degenerate mammæ, supplemented by the growing indisposition of American mothers to suckle their young, on the one hand, and on the other by the commercial enterprise and ingenuity of man in devising sterilizers and proprietary foods to meet a long-felt want in the failing maternal fluid and motherly instincts. Between these physical and mental degenerates and the chromo-advertised infant foods, represented as perfect(?) substitutes for mother's milk, the coming baby must run fearful odds in its unequal struggle for existence. Authorities tell us that 25 out of every 100 babies die before the end of the first year, and of these 25 only 4 die at the breast while 21 perish at the bottle. What sadder comment is to be found on modern civilization?

To W. B. Cheadle of London is due the credit of





first recognizing infantile scorbutus on clinical grounds. In 1878 he published three cases on account of spongy gums, and obscure symptoms referred to the lower limbs, which he maintained were cases of true scurvy. Soon after this, Thomas Barlow commenced his postmortem investigations and immortalized his name by establishing a pathologic basis for the disorder, which German writers had described as acute rickets. The results of these valuable and conclusive labors he published in 1883 and confirmed the views of Cheadle. Barlow's classic review of the disease in his Bradshaw lecture of November, 1894, leaves but little to be added to our knowledge of this, now inexcusable and easily prevented, disease.

Etiology.—Briefly stated, he says: "The prolonged use of a defective diet induces the symptoms."

Pathology.—"The essential lesions are subperiosteal blood extravasation and its secondary sequences;" hemorrhages into the center of the shafts of the bones, producing absorption of the trabeculae and leaving them brittle and easily fractured; effusions of blood into surrounding muscles and cutaneous tissues, with progressive anemia resulting from these multiple hemorrhages.

Diagnosis.—The diagnostic differentials between scorbutus and rickets are of chief interest and consist in the hemorrhagic phenomena and their sequelae; the pseudo-paralysis; spongy gums where teeth are present and the rapid, almost magical improvement under antiscorbutic diet.

The following case came under my care Dec. 12, 1895:

Dorothy R., thirteen and a half months old, had been brought to Chicago from a distant State by the advice of the family physician to be treated for a supposed spinal trouble. She was placed under the care of one of our best orthopedists. The diagnosis was rachitis, with slight spinal curvature. As the child was too weak for any corrective appliances the specialist addressed himself to general tonics and restoratives with the view of improving the anemia and malnutrition. At the end of six weeks the child, which at first seemed to be materially improved, was found to be decidedly worse, and for two

weeks had not been able to lift its head from the pillow. Emaciation was progressive and the specialist expressed the opinion that the case was hopeless and the child must soon die from marasmus.

The history as given by the mother was this: Up to eight months of age the child appeared well nourished and in the the best of health. About this time it became fretful, grew pale and began to lose flesh. Purple spots appeared over its shoulders, back and thighs, which suppurated and many of them were lanced, leaving marks similar to the pitting of smallpox. The lower extremities were painful on being handled and the child ceased to move them voluntarily. Its diet from birth had been Mellin's food exclusively. The mother had lost her ability to nurse on account of multiple abscesses of her breasts at a previous birth.

At this time the child was very anemic and much emaciated, weighing but thirteen and a half pounds. It could not lift its head nor move its body or thighs, and was handled on a pillow. The right femur and left scapula were perceptibly swollen. Dentition was delayed. The upper and lower middle incisors only were erupted and these were almost hidden by spongy ecchymotic gums. In the roof of the mouth was a purplish tumor with an eroded apex. The fetor of its breath was marked. The body was bathed in sweat. The stools were hard and variegated in light drab and dark slate colors, with an offensive odor like those of a carnivorous animal. The child cried with pain on being handled and was fretful and wakeful during the nights. This array of symptoms completed a picture of pitiful distress.

Treatment.—The food was changed at once to fresh cow's milk and barley flour as a basis. Orange juice and raw scraped beef were given daily, which the child took with the greatest avidity. Scraped apple and tender sprigs of fresh lettuce and cabbage were also allowed by way of variety. A cool sponge bath at 75 degrees with gentle friction was given every morning for its tonic effect. To change the character of the stools and disinfect as far as possible the intestinal tract, calomel tablets, one-tenth grain, every two hours, and a powder composed of guaiacol carbonate, one-sixth grain, and protonuclein, one grain every four hours, were ordered given. Hydrolein was administered three times daily, for its alterative and reconstructive properties. The improvement even in so short a time as twenty-four hours was gratifying and astonishing.

At the end of forty-eight hours the character of the stools were changed and the fetor of the breath had disappeared and the child was inclined to amuse itself. After the fourth day it could lift its head and its nights were restful. At the end of the first week all traces of spongy gums and sore mouth had disappeared and it began to laugh and crow and exercise its legs and thighs and no longer dreaded handling. At the end of the second week it had gained one pound, could lift its feet above its head for the first time in several months. All remedies, except hydro-lein and occasional doses of mild chlorid, were now discontinued. A soft-boiled egg with rolled cracker was allowed every other day alternating the scraped beef. Third week, anemia has disappeared. Can sit alone. Has erupted upper lateral incisors. Three weeks ago there was no sign of these teeth. Is taken out daily for exercise. Fourth week, has gained in weight, rolls about on the rug and tries to creep. Discharged cured and returned home at end of six weeks. A change like this after six months of helplessness and untold suffering seems little less than magical.

The points of interest in this case are: The sup-puration of the hemorrhagic cutaneous lesions, which the family physician diagnosed and treated as eczema; the swelling of the femur and scapula and slight curvature of lumbar region, diagnosed and treated for six weeks by a noted orthopedist as rickets, and lastly the rapid recovery under antiscorbutic treatment.

The foremost problem in the consideration of every disease is how to prevent it. Scorbutus is a preventable disease. How shall we guard against and limit this recently diagnosed and apparently increasing disorder? We will not find it in the homes of the poor, or among the laboring classes, so often as among the well to do and in the houses of affluence, for the mothers in the commoner walks of life more uniformly suckle their babes, and this is prophylaxis. Barlow says: "In no single case at the time of the malady has the child been breast fed."



1. Woman herself should be physically prepared for better motherhood so that she may be capable of yielding her offspring the only food nature intended for it.

2. Mothers should be impressed with the fact that there is no perfect substitute for breast milk, and that next to the right of being well born, the babe has an inalienable right to nature's food, and no trivial excuse or surmountable difficulty should hazard its life or health.

3. Where for any reason the breast milk is inadequate, or has entirely failed, the nearest approach to it is to be found in the modified cow's milk of our modern laboratories, or the home modification of cow's milk after the plans given by Rotch in his most valuable recent work on pediatrics.

4. Above all, *no continuous* administration of any sterilized, Pasteurized, peptonized or condensed milk, or any dry commercial foods should be given to the *exclusion of fresh or raw elements of diet*. In what this antiscorbutic property consists, which is found in fresh foods, and lacking in the artificially prepared and manipulated foods, is not yet determined, but it is more than likely that the important offices performed by the normal germs of the gastro-intestinal tract in the complicated processes of digestion are incapable of being completed with artificial food, and thus putrefactive changes in imperfectly digested pabulum, lead to auto-infection and malnutrition.

There is a "borderland condition," as Barlow terms it, without detected lesions, a sort of *scorbutic malnutrition*, which the physician should be on the look-out for in every artificially fed infant. I believe scorbutus exists in incipient forms of malnutrition to a greater degree than is commonly apprehended. The causes must be in operation for a more or less prolonged period to produce apparent lesions. In its typical form it is rarely seen before the latter third of the first year. Happily for most bottle fed infants they are saved from the active stages of the disease by the timely admission of certain elements of anti-

scorbutic diet. It is to this class I would call especial attention. The physical condition of the child during the first eighteen months of its existence is of the utmost importance to its future. It is the period of most active and rapid development, and malnutrition now will weaken its vital powers of resistance for its whole life.

Some of the premonitory symptoms are fretfulness, aversion to being handled, crying out as if in pain when lifted, tenderness of the lower limbs and indisposition to move them, and progressive anemia. The diet should be investigated and appropriately regulated and the parents or others having the care of the child should be instructed as to the necessities of the case for intelligent coöperation.

If every artificially nourished babe could be carefully inspected and its diet harmonized with the cardinal principle pointed out by Barlow, Northrup, Rotch and others, a great army could be saved from premonitory malnutrition, of which the fully developed scorbutic forms but a small contingent.

2036 Indiana Avenue.

#### DISCUSSION.

Dr. BURR, in closing—I believe with Dr. Bell that irrigation of the stomach and colon is of the utmost importance in all these cases of malnutrition and indigestion, which are almost synonymous terms. But I have found the application of cold water externally and internally to be far more stimulating than hot water. I would use the cold water in colonic flushings because you can get up peristalsis better with it. The peristalsis better empties the bowel, perhaps, than the flushing itself. The peristaltic action brings matter away from far up the colon. It is a question whether you often get these tubes above one of the flexures of the colon or rectum. Now, if you have infantile convulsions, which are in a large majority of cases induced by indigestion and autoinfection and its explosive effects on the nerve centers, which are so unstable in infancy, then the cold water is doubly important. I know nothing more irrational than what I find day after day of the method of plunging the child into a hot mustard bath and



putting something on the abdomen, but neglecting the important feature of first emptying the colon. The first step in my mind is a full cool bath if there is pyrexia, and pyrexia you will often find is the cause of the convulsions. The over-heated blood, of course, is another effect of the poison. We have the poison first, pyrexia next and convulsions third, following the effects upon the nerve centers. We should use the cold bath to reduce the temperature first, then the colonic flushing and then the stomach irrigation, and if we think there is something irritating left we should give a good old-fashioned dose of castor oil. With the other process we may have convulsion after convulsion. I have found sometimes the attending physician present, who has assured me the child has had bath after bath, and I would find the hot water there colored with mustard in evidence, and still the convulsions continued. Fifteen minutes after rational measures were used the child would be asleep.

The paper I presented on "Infantile Scorbutus," was intended to emphasize the fact that we have a great deal of incipient scorbutus which does not arrive at the point of characteristic appearances, so that it can not be recognized as scorbutus but only as a tendency toward it; the child will eventually, perhaps, become scorbutic unless attention is paid to change in its diet. The question of feeding children in the city and in the country are two different questions. Our city born, city fed and bred children labor under many disadvantages the country children know nothing about. The majority of country mothers are far beyond the city mothers in the point of health. When I say a child must be breast fed, I pre-suppose a healthy mother. I would not advise breast feeding from a mother suffering from tuberculosis, syphilis, or other constitutional disease. But I believe we should make the healthy mother feel she is a criminal if she denies the child nature's food, unless there are, as I stated in the paper, unsurmountable difficulties. The question of getting pure milk in cities is one of the most difficult problems. In our city we have found necessary a well-enforced ordinance, fining milk men for furnishing bad milk, and every month some of them are brought up and fined. As to the remarks of Dr. Chesbro, about the expression of fear and timidity on the part of the child, I mentioned that in the paper. What is the cause of the fear? The child dreads to be

touched. Why? Because its little joints are sore; perhaps there is hemorrhage already under the periosteum. When you find that expression, you should look out for scorbutus. Let that be one of your early symptoms or warnings with reference to the condition of the child's nourishment. Malnutrition is an omnibus word; in one child it may lead to rickets, one form of malnutrition; in another scorbutus, another form of malnutrition; in another to petit mal or epilepsy, in which the malnutrition gives expression in another way; in another it may predispose to tuberculosis. Anything which lowers the power of vital resistance will lead into one of these numerous roads from health to invalidism. I do not wish to emphasize the medical treatment of scorbutus. Undoubtedly the orange juice, raw milk and meat would have worked a wonderful change in the child. I did believe the calomel and guaiacol of value in the first few days. With reference to what Dr. Cotton said about fads, the diagnosis of the condition in this child was not a fad. The child was under the care of a physician from eight until twelve months of age, before it was brought to Chicago. A number of scars were found over the body, from the breaking down and formation of little abscesses in numerous places. But while the commercial men are distributing more and more their chromo advertisements of artificial foods, and the mothers get recommendations from their family, friends and neighbors, as well as from the press and even some physicians, scorbutus will continue to increase. The tendency is a wrong one and we ought to call a halt with all the emphasis possible.

As to colonic flushing, I have repeatedly found my rectal tube or one of these large catheters, which serves the purpose admirably, doubled up and extruded forcibly from the bowel. It is often utterly impossible to pass it beyond the sigmoid flexure. A little postural change may assist matters very much. For instance, by having the hips elevated you may facilitate the accumulation of water in the colon and assist the peristalsis. I prefer cool water, at 80 or 75 degrees.





