d. Different susceptibility to various infections.
 e. Compensatory relations in the child are often peculiar to it, and entirely different from anything found in adult life, *e. g.*, reaction of the stomach and uric acid excretion.

2. Morbid entities of similar causation often present vast clinical differences in the two periods of life, notably, typhoid fever, rheumatism and tuberculosis.

3. Trifling pathologic conditions are more important in childhood, because of the impress which they make on developing organs, and because of their farther reaching influence over the long future life of the individual.

4. The dangerous plasticity of the growing organism also presents therapeutic possibilities not found in the adult, but of vast importance to the future adult.

5. The nutritional problems are numerous and comprehend many factors not to be considered in adults at all.

OVER-FED INFANTS; CAUSE, EFFECT, TREATMENT.

Read in the Section on Diseases of Children, at the Forty-fifth Annual Meeting of the American Medical Association, held at San Francisco, June 5-8, 1894.

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We can say properly, that an infant is over-fed when it fails to digest and assimilate the food furnished it. The natural food for the newborn babe, all things being equal, is the food sent with it—the mother's milk—which for the first two or three days after birth seems, to the inexperienced or unthinking mother or nurse very inadequate to the support of the child, but it is all that the little new creature can possibly, with certainty, digest and assimilate. Too often the mischief is played with the child during the initiatory period of its digestion. It is often difficult for the attendants in the nursery to realize or understand the untried weak condition of the whole digestive and correlative systems of the infant. In fact, we must consider that the whole new being with all its varied systems, both anatomic and physiologic is in a primary rudimentary condition. Thus we observe the simplest form of food which is naturally furnished it. Recognizing the foregoing fact we should act intelligently if we are called upon to advise in artificial feeding, and select that food for the unfortunate infant which most nearly simulates the mother's milk. Unless disease is present with the mother, which is transmissible by her milk to the child, we should use our utmost endeavor to have it nurse the mother; as we have the best interests of both mother and child in view.

Some young mothers do not possess the best facilities for furnishing this natural food to their offspring, but there are very few who can not be corrected in this respect by patient persistence. If the nipple is not drawn to dimensions sufficient to allow the babe to nurse well during the first two or three days after parturition, we may have to resort, unfortunately, to artificial feeding; for after lactation proper ensues there is usually such a turgescence of the mamma that satisfactory modification of the nipple then is impossible, and after the usual application of pumps, plasters, and various ointments to remove this gorged condition, the babe is virtually

weaned; and if the child is so fortunate as to get its natural food, unless regular habits of feeding during the initiatory stage are observed, it is in danger, when lactation proper ensues, of over-feeding or being over-fed. There is a great temptation often on the part of the mother, which is largely selfish, to make a breast pump of her child, and thus its stomach is impaired. If normal regular habits as to nursing are well established, on the part of the child, commencing immediately after birth, which habit we know can be attained within seventy-two hours by allowing the child its own undisturbed time to rest or sleep, after first attending to all its needs as to proper cleansing, clothing and food, if it demands it, before tucking it in its little bed in a warm properly ventilated nursery, allowing it to awake by force of hunger, or some other cause peculiar to itself—some dictate of nature. When it awakes give it such care as will make it comfortable for another period of rest, of from two to six hours, then put it to the breast again to its satisfaction. It may nurse itself asleep, then tuck it away again, and so on, and we can truly say it is a natural child, following natural habits of life. And, too, the mother by this habit of the child will find that the supply of food will adjust itself to the needs of the child, and by a little common sense on the part of all concerned in the care of the little one, there will be no danger of over-feeding and bringing on the invariable result, *viz.*, indigestion, bad assimilation and perchance cholera infantum.

The result of over-feeding is the leading factor in the very great mortality in infancy and childhood. It is true that quality of food plays an important part in the ailments of children. Even in considering the zymotic diseases of children, by which diseases so often fond hopes are blighted, we must admit that the mortality is largely due to over-feeding prior to the inception of the disease. The disease is severe or not, according to the fermented condition of contents of the alimentary tract. The decomposed contents of the *primæ viæ* is a fertile field for the rapid propagation of bacilli or disease germs. Thus the severe form of the disease.

The incontrovertible law of cause and effect holds good in the consideration of our subject as well as in all things else with which we have to do. Not long since I was called to the bedside of a child 20 months old, who was feverish, emaciated and debilitated, even to inability to close its eyes; could scarcely utter a cry, had frequent curdy stools and vomited sour curd occasionally. Disease had been denominated cholera infantum. On inquiry of the mother I learned that the child had been sick at intervals for twelve months, and suffered similarly, as at this time. Had employed four physicians during this period; child was weaned from its mother and I learned that she was instructed to give it all the cow's milk it wanted, and whenever it wanted it. The case required but little study to determine a diagnosis; cause, over-feeding; effect, the condition of child as above delineated. Before consenting to treat the case, I had the mother promise to follow my directions strictly. We all know how often a mother's sympathy or affections run away with her judgment and thus our directions are not followed, and the result is not satisfactory to either friends of patient or doctor. I ordered three teaspoonfuls of good fresh cow's milk (cow was in the barn near by)

every three hours, preceded by a weak solution of bicarb. potassium and followed by two or three grains of catalysin and carbon. This treatment was to continue for twelve hours, and if vomiting ceased and stools less frequent, or changed for the better, they were to give four teaspoonfuls at a time, and so on, as the child improved in its digestion and assimilation. We increased the amount of milk until twelve or fifteen drachms were given at a time which was enough to cause the child to improve so that in four days I pronounced it well, and only had to advise temperate feeding.

Over-feeding the infant and the result following *directly*, renders the system less resistant to the diseases of childhood and, in fact, may be a menace to its well being throughout even a long life. On the other hand, if wisdom is used in following the dictates of nature, (as God intended we should) in the feeding of infants, the foundation is laid, physically, for a long and useful life.

DIAGNOSIS OF PNEUMONIA IN CHILDREN.

Read in the Section on Diseases of Children at the Forty-fifth Annual Meeting of the American Medical Association, held at San Francisco, June 5-8, 1894.

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Pneumonia in children may be divided into two classes: croupous pneumonia and broncho-pneumonia. There has been a number of different names given to these two forms, viz., croupous, lobar and fibrinous pneumonia for the first; and catarrhal, lobular or insular pneumonia, bronchitis, capillary bronchitis and broncho-pneumonia for the second. A great deal of confusion has arisen on account of the various names applied to the second class. "Catarrhal" is not altogether correct, for other tissues than mucous membranes are greatly affected. Indeed, Neimyer says: "As no mucous membrane with mucous glands exist in the pulmonary vesicles, the name, catarrhal pneumonia, is not quite applicable to the disease in question." The name "lobular" or "insular" pneumonia "should not be used because it neither includes or suggests the bronchial inflammation which is always present." Neither "capillary bronchitis" nor "bronchiolitis" is an exact term, as inflammation of the capillary bronchi is rarely found without involvement of the lobular structures. "This term would mean a bronchitis which has reached its highest possible development without becoming a broncho-pneumonia—a condition which can not with certainty be recognized by either physical or rational signs." "Broncho-pneumonia" is by far the most descriptive term and the one which should be used.

"Croupous" and "lobar" are sufficiently descriptive. "Fibrinous" is the name the English use.

"Croupous pneumonia is an inflammation involving one or more lobes of the lung, or of both, attended with an exudation into the air-vesicles of the affected part, consisting of coagulated or coagulable fibrin with many red and white blood corpuscles from the surrounding blood vessels."—Pepper.

Broncho-pneumonia is an inflammation of the bronchial lining membrane, which by direct extension involves the connective tissue, bronchioles and air cells, attended with an exudation into the alveoli, principally of desquamated epithelium and leucocytes; or, according to Osler, "an inflammation of

the terminal branches and the air vesicles which make up a pulmonary lobule."

Pneumonia is now considered by most writers a specific infectious disease. The pneumococcus of Fraenkel is the most constant organism to be found, and is the exciting specific cause, although others are often seen in connection with it. This was first discovered through Pasteur in 1881. In 1886 Fraenkel obtained pure cultures of it, settled its specific character and pathogenic action and christened it pneumococcus. This may also be found in human saliva, the pleura, meninges, endocardium, or middle ear. It may invade these parts during a pneumonia, or it may be found in meningitis, pleurisy or otitis media when pneumonia is not present. Netter says it is a reminder of pneumonia, and is met with in persons who have had this disease. In France, bacteriologic investigations in a large number of cases of pneumonia in children showed the presence of the pneumococcus in all cases examined of croupous pneumonia and in 60 per cent. of broncho-pneumonia. It is often very difficult to find it in the latter, on account of its frequent association with other microorganisms.

Croupous pneumonia is almost always a primary affection, occurring at all ages and seasons. It occurs most frequently in the winter and spring, when children are most likely to catch cold. It occurs often in dwellings whose sanitary condition is bad, where there is defective plumbing, in filthy and ill-ventilated tenements, crowded jails and workhouses—these conditions furnish a nidus for the coccus.

Broncho-pneumonia is, on the contrary, a secondary affection. As a rule it is preceded by a bronchitis, and is often a complication or sequela of the infectious fevers: measles, whooping cough, scarlet fever, la grippe or diphtheria. In children it forms the most serious complication of these diseases and often causes more deaths than the fevers themselves. Cases are common after operations on the mouth and nose, after tracheotomy and intubation—the so-called aspiration or deglutition pneumonia, where particles of tissue slip through the larynx into the lungs, and induce such an intense broncho-pneumonia that suppuration, or even gangrene may develop. In infants it may arise from inspiration of the vaginal secretions. The bacillus tuberculosis often causes a fatal form of broncho-pneumonia.

It has been taught by many that croupous pneumonia occurs but rarely in children under three years of age. Jacobi says that about one-third of the cases at this time are croupous. Holt gives a list of 207 cases of pneumonia under three years of age, in which the diagnosis was undoubted, of which 160 or 77.3 per cent. were broncho-pneumonia, 47 or 22.7 per cent. were croupous. Baginski gives 151 cases under three years, with 76.2 per cent. broncho-pneumonia, and 23.8 per cent. croupous. After three years of age the number of cases of croupous pneumonia approach those of broncho-pneumonia.

Croupous pneumonia is a primary disease, coming on suddenly while the child is in good health. Recently I took part in a discussion on pneumonia in children, in which a number of cases of so-called broncho-pneumonia were related, which came on suddenly, without a preceding bronchitis, ran a favorable course of a few days with complete recovery. I think these cases were undoubtedly croupous