

**ON INFANTILISM FROM CHRONIC  
INTESTINAL INFECTION. A STUDY OF THE  
CLINICAL COURSE, BACTERIOLOGY,  
CHEMISTRY AND THERAPEUTICS OF  
ARRESTED DEVELOPMENT IN INFANCY**

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**C. A. HERTER**

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# On Infantilism from Chronic Intestinal Infection

CHARACTERIZED BY THE OVER-  
GROWTH AND PERSISTENCE OF  
FLORA OF THE NURSING PERIOD

*A Study of the Clinical Course, Bacteriology, Chemistry and  
Therapeutics of Arrested Development in Infancy*

BY

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## INFANTILISM

I PROPOSE in this publication to describe some of the leading features of an obscure affection of childhood with the study of which I have been for several years engaged but of whose nature I have only recently been able to form a reasonably satisfactory conception. This pathological state is marked by a striking general retardation in the growth of the body implicating the skeleton, the muscles and the organs, while permitting a relatively fair development of the brain. The material on which the present description is based consists of five cases of intestinal infantilism which I regard as typical and fully developed examples of this distinctive state. And in addition to these cases I have studied five others of shorter duration and subacute course, which I am disposed to consider as instances of intestinal infection capable of giving rise to pronounced infantilism when the former condition has persisted through many months. With the exception of two of the cases comprising these two groups, I owe to Dr. L. E. Holt the opportunity to study these patients. He has helped me by freely placing at my disposal his full clinical notes and by

giving me access to his patients. In several instances the patients have been observed by Dr. Holt and myself conjointly during a period of years under varying dietetic conditions. The definite character of the symptom-complex about to be described has long been recognized by Dr. Holt, who has interested me in the present investigation.

I am also under obligations to the Rockefeller Institute for Medical Research, especially during the past year, for aiding me with facilities for engaging in the extremely complex bacteriological problems with which this study was beset. I am especially indebted to Mr. A. I. Kendall, Fellow of the Rockefeller Institute, for technical help.

It has not been possible to investigate with equal thoroughness all the cases of intestinal infantilism that constitute the basis of this publication. In some instances attention has been given especially to certain limited aspects of the pathological problem, while in other cases study has been especially focused on other features; but in three instances the investigations have had a wider and more representative aim. In two of these three instances the patients have been under my personal observation during periods of many months, and through close attention it has been possible to detect and to follow with unusual detail numerous manifestations of the morbid process. I shall

not undertake in the present publication to give full individual histories of the cases observed, but shall merely give very brief outlines embodying the chief clinical data, and to these outlines such references will be made from time to time as may serve to illustrate the various points under discussion.

CASE I. Male, aet. 8 years. Older sister in good health. Normal infancy with average growth. During third year reached weight of 31 lbs. At this time irregularities of digestion, especially periods of diarrhoea with mucus. Gradual loss of weight, increasing abdominal distension, carbohydrate intolerance and fat diarrhoea. Between third and seventh years weight did not exceed 31 lbs. Usually losses in summer, gains in winter, weight usually between 25 and 28 lbs. Moderate anaemia. Increasing lassitude. Drowsiness during day. Walking difficult. Rapid onset of fatigue. Peevishness, emotional instability, slight signs of rickets. Appetite nearly always keen. Many dietetic experiments tried between third and seventh years with little success. Movements several daily, soft, voluminous, gray, fatty, gaseous, odor indolic, reaction usually slightly acid or neutral. Mucus variable, at times very abundant, in masses on surface or mixed with faeces. Urine rich in indican and phenol. Aromatic oxyacids not markedly excessive. During last year gradual decrease in indican. Reactions for indolacetic acid very marked. November, 1907, weight, 25 lbs.; height, 36 ins. Careful dietetic and hygienic measures instituted. Next four months slight gains and losses in weight but no material improvement in weight though decided improvement in character and frequency of stools and diminution in signs of intoxication. From March, 1907, to July, 1908, uninterrupted somewhat uneven gain in weight to 31 lbs. Also gain in height (about  $1\frac{1}{2}$  inch). Movements became entirely normal in color, consistence and frequency. Urine shows striking reduction in putrefactive products. Mental and emotional condition greatly improved. Expression animated. Physical activity greatly increased, walking fair for considerable distances. Abdominal distension much diminished. During past six months there has been a radical alteration in the bacterial flora of the large intes-