POVERTY AND DISEASE

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INTRODUCTION

In making a study of the co-relation of Poverty and Disease one is forced to consider the great breadth of its boundaries. But more so even than this, one is brought face to face with the extreme limitations of the available facts. As a ship-wrecked sailor alone in an open boat at sea is surrounded by the very substance which he craves most and dares not partake of, so is the student whose search is for poverty of the tangible type-class and classes, which he can not only identify and separate, but which can be definitely pigeon-holed and used as proofs positive of the truths which are as old as economic studies. Who would be so bold as to deny the fact that poverty is the great ally of disease? On the other hand, where is the prevaricator who would dare to face the world and declare that disease could not exist except for poverty? Either is a separate entity, but both know an intimate relationship. Which is to be held most accountable for the co-respondence? Such is the question which has puzzled many. After much thought we revert to philosophy and seek a Socrates who can answer the time worn question, - "Which came first, then hen or the egg"?

Apparently the relationship of the great allies, poverty and disease, has been so evident that it has been accepted as such by learned men in every walk of life. No one seems to question for a moment such a universally accepted fact. The literature is crowded with references to the inter-locking of these factors in human life, but tabulated statistics on the subject are rare.

It is fair, however, to perhaps explain this not on a basis of ambitionless economists but rather on inaccurate and unsatisfactory methods for the measurement of the individual and group economic statis.

The efforts and life-time ambitions of many men and women have been directed against the combination, poverty and disease. Many a fatal blow has been dealt. Enormous sums of money, private, state and institutional have been and are being spent in the great effort to tear down the entente. The medical profession, while perhaps always foremost in many respects, has not been alone in its battle with disease. Many disasters have befallen disease through the actions of economists and educationalists against poverty. Still we are confronted by the dilemma of poor protoplasm and bad environment, which supplement each other in a vicious circle, making up the greater portion of the foundation upon which poverty and disease ride in a high-handed fashion.

In the pages which follow an effort has been made, through review of the literature and through personal observation, to set forth the strongholds of poverty and disease as existencies which must be forever banished if we will successfully disband the forces which are strongest in causing unhappiness for mankind.

GENERAL DISCUSSION

Of the great illnesses to which the human being is heir practically all are or may be influenced by the presence of poverty. This applies to adults as well as children, although the child is unquestionably the greater sufferer. This latter, perhaps, is because of the greater dependency of the child.

The very fact of poverty brings about economies. These may be compulsory or voluntary. Those of a voluntary nature are usually negligible with reference to disease because the economies of this class are of the luxury, or near luxury, group. The compulsory economies are those which can hardly be called economies. They are truly deprivations - the lack of the so-called necessities of life. It is here that poverty joins hands with disease.

Naturally, as various factors influence various illnesses, so each of these factors plays a varying role in different diseases. This is true in poverty, also. There are some diseases which are more greatly influenced by poverty than others. We may divide those most greatly affected into two great groups - infectious and non-infectious or the diseases of malnutrition.

The diseases of malnutrition are seen most frequently among the infants and children, although not limited to them. Rickets may be considered as chief in this class. Acrodynia, Scurvy, Beri Beri, Infantile Tetany or Spasmophilia, and Pellagra are other important members of this group. The disturbances of the gastro intestinal tract of infants - due to faulty, improper or defi-

cient feeding - are often caused by lack of the means to provide proper food rather than the lack of proper administration of diet.

Poverty is a contributing factor in all acute and chronic infectious diseases. Here, again, it may be a direct predisposing factor through malnutrition, exposure, poor housing conditions, and filth, or it may be a contributing factor alone, largely depending on the disease.

One fact is accepted regardless of the group in which a disease may fall, and that established fact is that among the lowest classes, economically speaking, the incidence of disease is highest. As an example of the influence of poverty on an infectious disease, tuberculosis may be cited. Here the relationship is quite clearly defined, and will be discussed as such later.

There are other phases of influence which poverty has upon human life. Just whether poverty is to be credited with the existence of feeble-mindedness is to be questioned. It is true, however, that poverty enters as a strong link in the vicious cycle of poor protoplasm and environment. Many authors have commented upon this, most of them feeling that much can be done to disrupt this circle but a few are discouragingly pessimistic in their comments. Chawry Muther believes that poverty is decidedly a factor in insanity and suicide.(1) C. E. A. Winslow states that, "As the great public health problem is gone into, such as infant mor-

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(1) A Discussion on Poverty in Relation to Disease and Degeneration. British Medical Journal. 2:939, 1905.

tality, tuberculosis, or mental disease, it is found that after health organization and health education have done their best, there is still poverty to be reckoned with as a causative factor in disease."(1) Without question, feeblemindedness plays a major part in poverty and its continuance.

Scott E. W. Bedford in his article on "Mental Difficulties and Poverty" states that, "The family in which one or both of the parents are feebleminded, is laboring under an especially heavy handicap in the attempt to organize its life. How heavy the handicap may be seen from the fact that among the 184 families with a feebleminded mother and father studied, this deficiency formed the 'major problem' of the family in 130 instances."(2) Obviously, the "major problem" which was encountered and not successfully coped with by these 130 families in the large city studied, was one of providing the essentials of a healthy livelihood. This is necessarily done through making social and economic adjustments. This is not as simple a task as one would think, and further studies revealed how complex such a problem is in an environment such as Chicago affords. The inadequacy of feebleminded persons to meet this adjustment is really not surprising when one truly stops to consider. The outcome of the inability of these persons to meet their major problem is the continuance of poverty in the immediate family and in the families to be formed by its stunted and handicapped offspring.

It is not always the feebleminded or otherwise handi-

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(1) Poverty as a Factor in Disease. The Public Health Journal of Canada. 11:612, 1920.
(2) Mental Difficulties and Poverty. Hospital Social Service No.1, 15:308, 1927.

capped family which cannot provide the necessities of a healthy existence. Many apparently normal families cannot adjust themselves adequately. This is often due to poor adjustments of the foreign born, but also occurs frequently among our native born Americans. The latter cases can usually be traced to a lack of educational training and, therefore, limited opportunity. No normal individual or group of individuals will choose the slums to an outlying district in which to live. Food may be poorly chosen with reference to the correct requirements, through ignorance, but sufficient quantities will be acquired if the means are adequate. This, also, applies to clothing - people will not be exposed to the elements if they have the wherewithal to provide protection for their children and themselves. But still the fact remains that families which are perfectly normal mentally are subjected to under-nourishment, exposure and poor housing environment due to their inability to provide otherwise. A purely sociological aspect of poverty is apparently the problem here. C.E.A. Winslow in his article in Modern Medicine on "The Co-Relation Between Poverty and Disease" speaks of this subject in the following manner. "If an initially normal family cannot gain a livelihood adequate for its minimum physical needs there is evidently a problem of social readjustment which our nation should face as a fundamental of post-war reconstruction."(1)

The American people are prone to give the United States credit for better living conditions, higher wages, greater luxuries,

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(1) The Co-Relation Between Poverty and Disease, Modern Medicine. 1:223, 1919.

and a higher general standard of living than is found in any other civilized nation in the world today. This may be a proven and an undisputed fact. However, we cannot afford to rest on such laurels. There are many groups of persons found in every state of the Union whose living wage is one of necessarily gross poverty from the standpoint of a healthy existence. Proof of this has been compiled by Dr. Sydenstricker and his associates in their report to the United States Public Health Service concerning the relation between disabling sickness and family income among cotton mill operators in South Carolina.(1) The results of which are compiled in graphic form elsewhere in this paper. Such a report serves well as an indicator of conditions existing not only in southern manufacturing communities but in other districts of wage earners throughout the United States of America. It further acts as a stimulus toward more extensive and more thorough study in sociological and economical realms, which will ultimately result in reforms and, therefore, a lowering of poverty conditions and the incidence of disease and death ratio in general. (See chart on relationship of family income to incidence of disease).

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(1) Relation between Disabling sickness and cotton mill operatives in Seven Cotton mill towns of South Carolina. U.S.Public Health Reports. Reprint # 492, Gov. Printing Office, Washington, 1919.

THE RELATION OF POVERTY

A. To Rickets, as an example of Poverty and a Non-infectious Disease.

Nature in her generosity to mankind starts all her children equally, rich and poor alike, but the evil conditions of poverty create and foster great inequalities of opportunity and physique. Such workings of poverty are brought about by the inability to provide proper food, insufficient clothing, and poor and crowded housing conditions - not to speak of filth and ignorance and the lements incidental to the fore-going through direct results of impoverished conditions.

For nearly half a century Rickets has been known as the disease of the children of the poor. It has been so called ever since Sir William Jenner noticed that after the first two births, in the average poor family, the children began to show characteristics which were considered symptoms of rickets. Nor was this always found in the third and fourth and succeeding children. Often times it was manifested in the first born - depending upon the degree of poverty and, therefore, the ability of the family to support more than the adult members adequately. Careful investigation revealed that the condition was due to the fact that the mothers were unable to nurse their children properly because they themselves were undernourished. Often times the mothers were unable to add to the family resources and still nurse the infant. The result being either border-line starvation and the resulting undernourishment of the child through faulty milk production, or irregular and insuf-

ficient nursing with inadequate and improper artificial feeding, or wholly inadequate artificial feeding without an attempt at nursing the infant. Rickets was notoriously the disease of the poorer working classes fifty years ago, and sadly is still perhaps the most common disease from which children of this class suffer.

Spargo[1] says that were our vital statistics purposely so designed, they could not more thoroughly hide the relation of poverty to diseases of malnutrition such as Rickets,and death, than they do at present. It is impossible to determine from the elaborate records what the cause of death or the condition preceding it was with reference to associations of poverty. No one who has made a study along such lines will doubt that many infant deaths are primarily due to defective nutrition. The same holds true for such malnutritive conditions such as Rickets, not in itself being considered a cause of death, though often being an associated factor at the fatal termination.

In this respect, although seldom if ever fatal by itself, Rickets is indirectly responsible for a tremendous quota of the infantile death rate. In epidemics of childhood diseases, such as measles, whooping cough, chicken pox, etc., the "rickety" child falls an easy victim. The death rate in these diseases among "rickety" children is far higher than among other youngsters. This

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(1) The Bitter Cry of the Children. Mac Millan & Company, 1907.

also hold true for such diseases as pneumonia, bronchitis, convulsions, and infectious diarrhoeas. The weakening of the general constitution and the lowering of resistance in infancy through poverty and underfeeding cannot be remedied in later years, and as a result such diseases as tuberculosis finds easy prey among those whose childhood and baby days had laid upon it the curse of poverty in the form of rickets.

B. The Relation of Poverty to Tuberculosis, as an Example of Poverty and an Infectious Disease.

Among the diseases of an infectious nature, which are unquestionably associated with poverty, tuberculosis undoubtedly ranks first. It has been said that poverty is phtisogenetic.

Priestly,[1] in his article on Public Health and Tuberculosis, says that untreated and unrecognized early cases cause ill-health with a consequent lowering of the capacity for work, which is followed by irregular employment and encroaching poverty. This in turn results in poor and less nourishing food and greater susceptibility to the disease.

A. A. Stevens[2] states: "The poor, owing to overcrowding and insufficient food and clothing, suffer in greater proportion than the rich." This fact is almost unanimously undisputed by authors who mention economics and tuberculosis. T. R. R. Todd,[3] who recently (1926) made a very complete study of environment and tuberculosis in Edinburgh, has come to call the one room tenement homes "tuberculosis nests". He emphasizes the greater spread because of the closer contacts of the tenants of such homes.

It is a disputed fact that poverty is a direct cause of tuberculosis - that is, many authors aver that the incidence of

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(1) Priestly. Public Health & Tuberculosis. The Practitioner. 90:355, 1913.
(2) A. A. Stevens. The Practice of Medicine. 1:19, W.B.Saunders & Co., 1926.
(3) T.R.R.Todd. Tuberculosis: Prevention and Control. Nelson's Loose-Leaf Medicine. Vol.VII:212.

tuberculosis if it could be fairly measured, would show the same high percentage of infection, among the rich as among the poor. That the presence of tuberculosis is a contributing factor, or even a direct cause in poverty is a statement which finds little ground for argument. Many family groups have been reduced from a station of well being and adequate support to one of dependency through the activities of the tubercle bacillus in the provider of the family. This is so evident that Jamieson Hurry (1) in his study of"Poverty and Its Vicious Circles" makes the following assertion. "Probably the most pauperising of all diseases is tuberculosis, which both results from and aggravates insanitation and want. No less than 1/7 of all England's pauperism is attributed to this one malady". We must accept poverty as both a cause and a result of sickness, such as tuberculosis. No one knows just how many families of workingmen, through the cause of ill-health alone, are brought to distressing poverty and even to miserable pauperism.

The subject of the prevention of tuberculosis is one which necessarily involves the problem of poverty. Many of the measures of prevention and control curtail the expenditure of considerable sums of money. This is impossible among the poor or in groups wherein the presence of tuberculosis, or its threatened presence, cuts off (or sadly diminishes)the family income. An adequate system of free treatment, education, and general aid is highly essential. A few of the problems met with here were experienced by the American

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(1) Jamieson Hurry. Poverty and Its Vicious Circles. P.123-124. J. & A. Church, London. 1917.

Red Cross in France following the World War. Trained workers were sent to introduce "The American Plan" for Tuberculosis Curtailment. This is essentially one of financial aid both for treatment of those already infected and also for prevention of infection of other members of the family during the treatment period. Although this has been called "The American Plan" there is no such system generally found in this country. Where it has been tried, it has been found successful in cutting down the incidence of tuberculosis.

In no instance are the allies of poverty and disease more closely associated than in tuberculosis. The condition of malnutrition, inadequate clothing, close contacts with other persons during twenty-four hours of the day, houses in which dampness and insanitary conditions exist, an environment which has little fresh air and no opportunity for sun light to penetrate, the dusty atmosphere of slum districts, add to this the prevalence of upper respiratory infections and the general ignorance and filth of such districts and the situation is quite clear. The "children of poverty" are by predelection the fertile soil upon which the tubercle bacillus vents its wrath.

C. The Relation of Poverty to The Number of Stillbirths.

Although it is exceptionally difficult to determine definitely the influence of poverty upon the incidence of stillbirths, yet on going over various records one is continuously reminded that the children of the poor are oftentimes affected by their parents economic status before they enter this world as individuals.

In 1907 there were more than 6,000 tragedies of stillbirths in New York alone, and the number in the whole country was probably not less than 80,000. Six physicians of large obstetrical practice were asked to estimate what percentage of the stillbirths should be ascribed to the influence of poverty. The average of their replies was 60 per cent. Whatever the number may be, it is certain that a great many are still-born because of the fatigue and over-exertion of the mothers in the critical periods of pregnancy. Many more are fatally injured or suffocated in their passage down the birth canal because of the employment of untrained and unskilled midwives. This is especially true when the "midwife" is only a kindly neighbor called in because of the destitution of the family to which the child comes. In our larger cities such happenings are becoming fewer through the activities of free dispensaries from which trained attaches operate. Then, too, the mother is advised pre- and post-natally as to the care of herself and her infant. Nevertheless even with such exceptionally fine institutions as exist in some communities at present, we are still confronted with a great number of children born dead in poverty stricken families. This is just another instance of the workmanship of

poverty - it cannot be considered a disease, and still no study of the affects of poverty can be considered complete which does not at least mention the relationship to stillbirths.

CONCLUSIONS

1. There is a definite relationship between poverty and infectious and non-infectious diseases.

2. Poverty, in itself, is an elusive, difficult to define, and poorly measured factor.

3. The influence of poverty is wide -spread through the lives of human beings and as such is worthy of more thorough general studies.

4. Much can be done to alleviate poverty through a fixed, minimum, health living wage - based on the adult male unit as calculated by Dr. Sydenstricker and his co-workers in their South Carolina surveys.

5. Efforts should be made by welfare associations to better the environmental adjustments of persons handicapped through foreign birth, and physical and mental shortcomings.

6. Educational efforts, not as a measure toward the eradication of poverty directly but as a blow at poverty through the prevention of disease.

7. Institution of a system of world-wide periodic health examination.

8. A better systematized method of caring, medically and surgically, for indigents.

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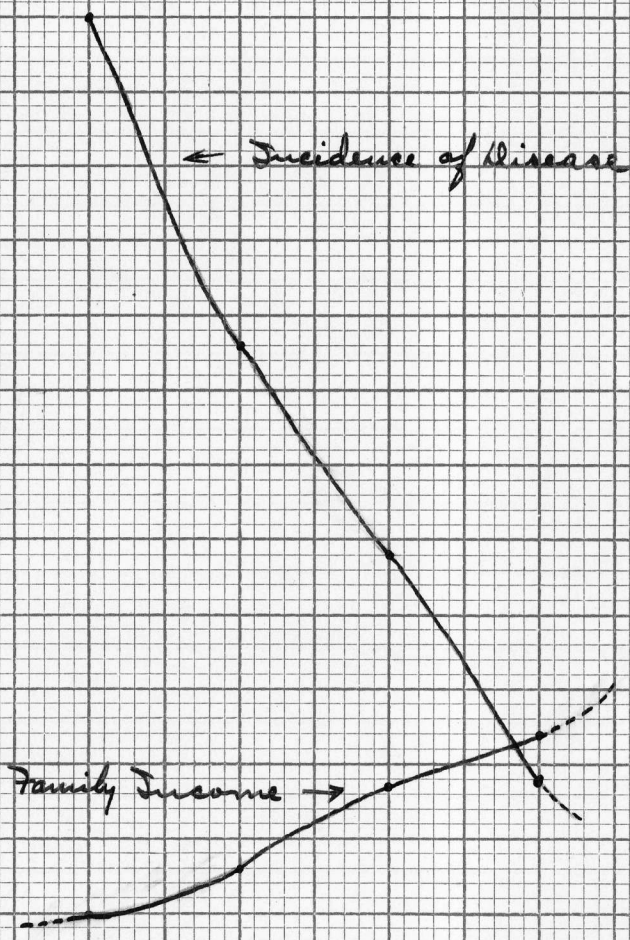
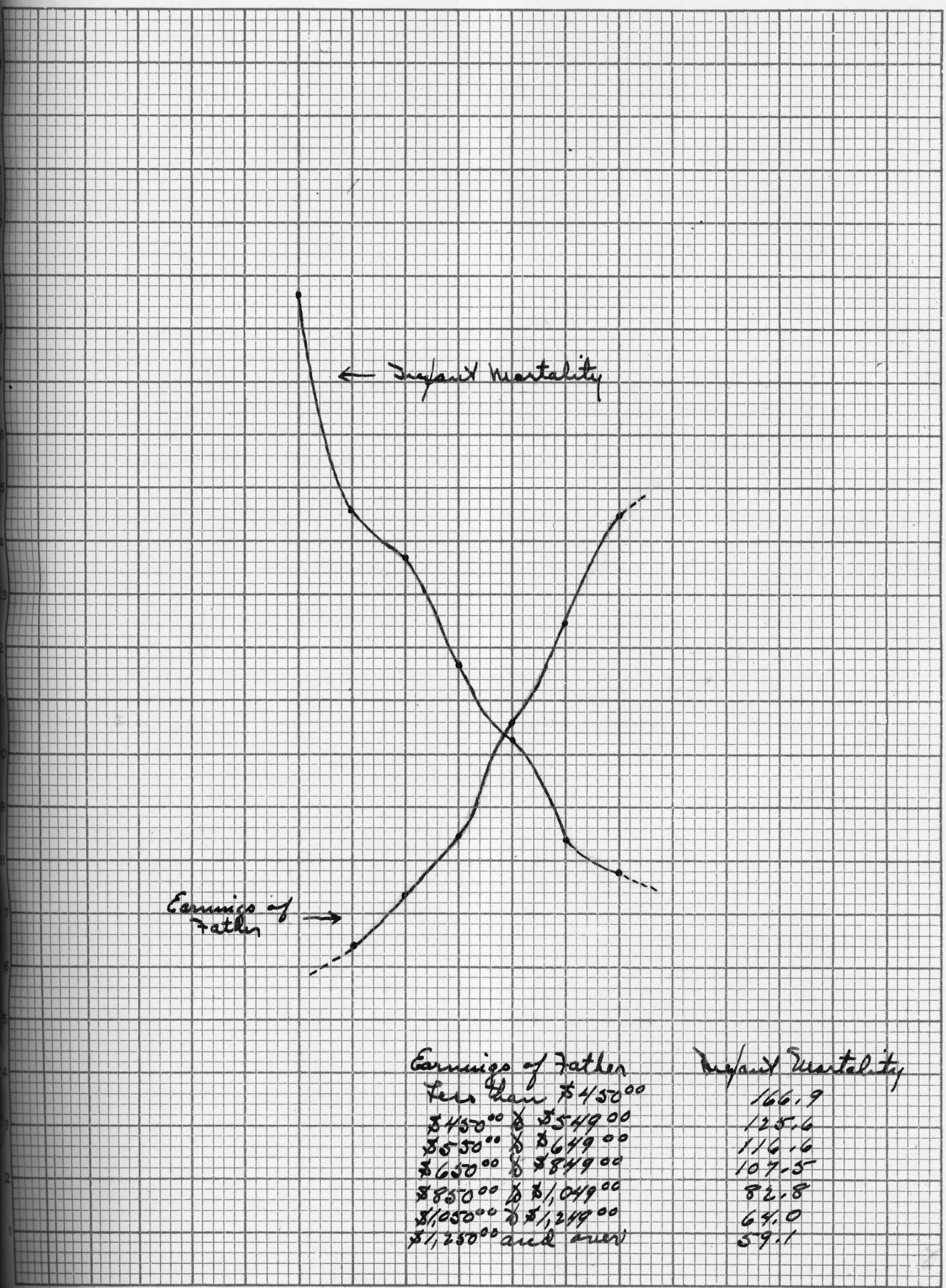


Family Income	Disease Incidence
Less than $1/2 per person	70.1 per 1,000
Between $1/2 & $1/4	48.2 " "
" $1/6 & $20	34.4 " "
Over $20	18.5 "

Figures based on the adult male scale.
Income per month per person.



Earnings of Father	Infant Mortality
Less than $450.00	166.9
$450.00 & $549.00	125.6
$550.00 & $649.00	116.6
$650.00 & $849.00	107.5
$850.00 & $1,049.00	82.8
$1,050.00 & $1,249.00	64.0
$1,250.00 and over	59.1

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