

**NOTES ON SOME OF THE MORE  
COMMON DISEASES IN  
QUEENSLAND IN RELATION TO  
ATMOSPHERIC CONDITIONS,  
1887-1891**

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Notes on Some of the More Common Diseases in Queensland in Relation to Atmospheric Conditions, 1887-1891 by David Hardie

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**DAVID HARDIE**

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NOTES  
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DISEASES IN QUEENSLAND  
IN RELATION TO  
ATMOSPHERIC CONDITIONS.  
1887-1891.

ILLUSTRATED BY CHARTS PREPARED FROM INFORMATION SUPPLIED BY THE REGISTRAR-  
GENERAL'S DEPARTMENT AND CHIEF WEATHER BUREAU, BRISBANE, INCLUDING  
RETURNS FROM THE HOSPITALS OF THE COLONY.

By

DAVID HARDIE, M.D.,

HON. PHYSICIAN, HOSPITAL FOR SICK CHILDREN AND LADY BOWEN MATERNITY  
HOSPITAL, BRISBANE.

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## PREFACE.

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IN the following pages I have endeavoured to supply the missing link between the Mortality Statistics and Meteorological Observations in Queensland, for the quinquennial period 1887-91. From time to time we have received valuable reports from both the Registrar-General's Department and Chief Weather Bureau, Brisbane, but as yet no systematic attempt has been made to connect the one with the other. The subject is one which, I am convinced, deserves more attention than it has hitherto received, not only in Australia but in many parts of the Old World.

My main object has been to establish, on a more or less certain basis, the connection between the condition of the weather as represented by the various meteorological readings, with a few of the more common diseases. If this once be attained, a reliable forecast of the weather, such as our able meteorologist regularly provides, might at the same time supply us with a tolerably fair means of estimating the class of disease that may be expected, and directly or indirectly associated therewith. Should seasonal forecasts be also given, as proposed by the Postmaster-General, their importance in this connection can hardly be over-estimated. Lauder Brunton says—<sup>1</sup> "We may well fancy that the day is not far distant when warnings will be published in the newspapers, not only to seamen of approaching storms, but to invalids and people in general of the meteorological changes which will induce pain in some and nervous excitability in others, with perhaps an added hint that extra flannel should be worn by the former, and bromide of potassium or some other nervine sedative taken freely by the latter."

It is well to bear in mind that the conclusions arrived at, based as they are on mortality statistics, are only approximately correct as far as the condition of the atmosphere bears on the *causation* of disease, and that this can be but fairly ascertained even when supplemented by returns from the hospitals of the colony. In order to determine this

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<sup>1</sup>"British Medical Journal," Jan. 2, 1892. "Lancet," Jan. 2, 1892.

more accurately, it would be necessary to have all cases of illness occurring within certain areas reported regularly to the State authorities, as is done in Norway and Sweden. Perhaps the time will arrive when the public will see the advisability of insisting not only upon the compulsory notification of all infectious diseases, but upon the weekly or monthly *registration of sickness*, in the interests of preventive medicine as well as for purposes of scientific investigation.

I must record my obligations to the Chief Secretary and the Colonial Secretary for the support they have given me in the matter, and for the liberality of the Government in authorising the necessary expenditure; to the Under Colonial Secretary and the Assistant Under Colonial Secretary, to the Registrar-General, and to the Government Meteorologist, for their courtesy in supplying me with all available information and for generally assisting me; and to the photo-lithographic departments for kindly reproducing the charts illustrating the paper.

The following Minute by the Colonial Secretary on my request for statistical information, well illustrates the liberal and scientific spirit of the Government, and deserves special acknowledgment:—  
“Let the work be carried out as originally suggested. The investigations are in the cause of progress and, I feel sure, will justify the outlay.” I can only hope that such is the case. Having had comparatively little to guide me in previous similar investigations, the remarks made may in some cases be unjustifiable, but with all my shortcomings in the matter, I may fairly say that the attempt has at least been an honest one to ascertain the truth.

The Notes on Typhoid Fever for Queensland as a whole were read before the Health Section of the Intercolonial Medical Congress held in Sydney in September last, and those on Diphtheria in Brisbane and Moreton District, before the Queensland Medical Society in October, and I trust that the publication of the whole, incomplete as it is, may induce others more competent than I am, to throw some fresh light on this uninviting though most interesting subject.

Wickham Terrace,  
Brisbane, February, 1892.



## INTRODUCTION.

It is the common experience of all of us that every now and then we have a run of some special class of disease. At one time we may have under our care an unusual number of enteric diseases, at another time laryngeal diseases, and at another time acute diseases of the lungs. In some instances we are unable to account for this particular rush, whereas in others, and with a certain amount of exactitude, we put it down to a more definite cause. Should we have a great number of cases of diarrhoea in November, December, and January, we think it is due to the excessive heat of summer, and if on the other hand we have an epidemic of pneumonia in the winter months, we attribute it to the cold and dry westerly winds that usually prevail at that time of the year.

It may be said in the case of alimentary diseases, especially in children, that the matter of diet is of more importance in point of causation than any seasonal atmospheric condition. We must bear in mind, however, that in general our diet is pretty much the same from one season to another, and almost certainly the same from one year to another; that in the former case if there is any difference it is one in the right direction and calculated to act rather as a preventive than an increased causative agent, and that in any case any change made is not sufficient to account either for the large percentage of cases of gastritis, enteritis, and dysentery met with during the hot months of late spring or early summer, or for the difference in mortality between one year and another. It is not impossible—it is rather probable—that the condition of the atmosphere in summer may be such as to effect some important changes in our food, and consequently the latter may be the *medium* through which some of these seasonal diseases are contracted. Although, however, our food may thus be the immediate cause of some diseases, the condition of the air has been the direct means of the change, and so has indirectly played the primary and essential part.

The same applies, and perhaps in even a more direct manner, to typhoid fever. Here we have a disease that is universally, and with truth, believed to be due to what is called an insanitary condition of our towns, villages, or districts as the case may be; the specific germs being introduced either with our food or water supply through the stomach or from some foul-smelling sewer or cesspit through the lungs. But these are conditions—if not affected by some other agent—that would certainly remain with us with very little variation all the year round. Our water supply comes from the same source, and our food continues absolutely the same from one year to another. We have the same earth-closet, sewerage, or cesspit system, and the same nature of soil all round us. If during the summer there is any noxious effluvium arising from some drain, or rubbish heap, or cesspit, that does not exist in winter, it can hardly be due primarily to the habits of the occupants of the town or district, for here again we have conditions—whatever these may be—characteristic of the individual all the year round, and that probably never change

during a whole lifetime. A person whose backyard is untidy or uncleanly in summer does not usually show more intelligent interest in matters pertaining to sanitation during the winter months, or, if so, the difference is not sufficient to account for the prevalence of typhoid fever at one time more than at another. Should he luckily escape the disease in winter, it surely is not because of extra care or good management on his part, but rather because nature has not supplied him with atmospheric conditions, either in temperature or rainfall, or perhaps both, favourable to the propagation of those bacilli that are known to be the immediate cause of typhoid fever. It is quite possible that his constitution may be more robust during the winter months, and therefore more able to successfully resist the influence of these germs; but here again we have more evidence in the same direction, for if there be increased resistive power in winter it must be due to the stimulating properties of the weather, and therefore to difference in atmospheric conditions between the various seasons of the year.

So also in the case of phthisis. It is certain that conditions favourable to outdoor exercise—dry, bracing, and pure air, and plenty of sunshine—act a more important part, not only in the treatment but prevention of this disease, than all the active germicides we know of.

For many years the question of climate in the treatment and prevention of disease, notably chest affections, has created a great amount of interest, and several good authors, in almost every country, have given us the benefit of their experience and study in this particular direction. At the same time the very important matter of geographical pathology has been fully examined and has developed from an investigation into the distribution of disease in localised areas such as that made by Haviland, in 1875, on cancer, phthisis, and heart disease in England and Wales, until the question has become of world-wide interest, as evidenced by the work of Hirsch,<sup>1</sup> Felkin,<sup>2</sup> and Davidson,<sup>3</sup> and now embraces, in a systematic manner, both hemispheres. In many cases certain meteorological readings are given, chiefly regarding temperature and rainfall, as bearing on the cure, causation, and distribution of disease, but on account of differences in latitude and longitude, in soil, and physical conformation of the country between one place and another, it cannot be said that these observations in themselves, and with any certainty, have the same relation to health and disease as they may appear to possess. We know that although the meteorological observations of one district may be not unlike those of another it does not follow that we may meet with similar diseases, nor in the matter of treatment that the effects on disease are the same in both places. Neither does it follow that because the atmospheric conditions are different between one place and another they may not both present the same diseases, and be equally effectual in mitigating the symptoms of and perhaps in curing the disease. No

<sup>1</sup> "Geographical and Historical Pathology."

<sup>2</sup> "Geographical Distribution of Tropical Diseases."

<sup>3</sup> "Geographical Pathology."

matter, then, how carefully described by authors these meteorological readings may be, they can give us at best but an approximate estimate of their real value *per se* in relation to disease.

In forming a more accurate estimate of this connection between the two it will be necessary to compare the meteorological observations and mortality of one particular town or district, not with those in another part of the world where the configuration of the country may be very different, but with those obtainable in the same place—where local conditions are a constant quantity—from one month to another, one year to another, or perhaps for longer periods of time. Even here the relation shown can at present be but an approximate one, for, with the exception of temperature and rainfall, the remaining elements that together with these go to constitute what is ordinarily called the “weather” have not received by workers in this particular line of study the attention they possibly deserve. Consequently many mistakes will be made before an absolutely accurate idea of these matters can be formed, and before we can safely predict that certain diseases may possibly be expected in consequence of, or in connection with, certain conditions of the atmosphere; but that it is the method most likely to give a faithful interpretation there can be little doubt.

With this object in view I have divided Queensland into eight large districts or divisions, and, through the liberality of our Government and the kind assistance rendered me by the Registrar-General's Department, obtained the mortality statistics for each separate division for the years 1887-91 inclusive.<sup>1</sup> At the same time I have received a record of meteorological observations for the same districts and for the same period of time, from Mr. Wragge, our enthusiastic meteorologist, who has taken great interest in the matter and assisted me in every possible manner. I have also obtained, through the Government, returns from nearly all the hospitals in Queensland, and have thus been able to compare these observations, not only with the death-rate but with the rate of admission to hospitals, for certain diseases for each division of the colony.<sup>2</sup>

It must be remembered that the results obtained are only approximately correct as far as meteorology bears on the *causation* of disease, for the illness might have been of several weeks' and in the case of chronic diseases of several months' duration, while hospital admissions, although showing a more direct connection, have the disadvantage of giving but a partial return of the diseases that prevail at any particular time or place. Moreover a still greater objection lies in the fact that in many inland districts in Queensland

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<sup>1</sup> In the “Vital Statistics” published yearly the death-rate of Queensland as a whole and of Brisbane alone is given. In order to supply me with returns for the various divisions of the colony the Department was put to a considerable amount of trouble and expense.

<sup>2</sup> It is well to bear in mind that, while the “admission rate” applies to cases admitted into hospital, the “mortality” or “death-rate” includes not only those deaths that occur in hospital, but those also that take place in private practice outside the hospital, or, in other words, the general mortality of the district as given in the Registrar-General's reports.