

## TRENDS OF FERTILITY AND MORTALITY IN LOWER MYANMAR (1852-1941); MEASURING THE DEMOGRAPHIC CHANGES

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### Abstract

The vital registration system started in India in 1864 was first introduced to some parts of Lower Myanmar and extended to other parts of the country in the late nineteenth century. By 1897, vital registration had been introduced into eight major towns in Upper Myanmar, but there were still pockets in Lower Myanmar. In Myanmar, as in most nations of the region, the registration of births and deaths has remained incomplete even in areas covered by the registration system. Censuses have shed light on the extent of under-registration. Despite these defects, the vital statistics of Myanmar under certain conditions can provide valuable information about fertility and mortality trends.

**Keywords;** Demography, Census, vital statistics, fertility, mortality

### Introduction

This paper deals mainly with the calculation of birth and death rates for Lower Myanmar during the colonial period. It will look at the setting up of the Sanitary Commission and the introduction of the registration of vital events, followed by an assessment of the accuracy of, and problems in registration. The simplest source of the statistics of birth and death in a community are the registers of vital events. Births and deaths are conventionally measured as the ratios of the numbers of these vital events in a calendar year to the average population in that period. Changes in these vital rates affect not only the gross numbers but also the structure of the population. Some demographic information about the births and deaths of people is very useful as a guide to study the progress of the people. Therefore, an attempt will be made to get a rough estimate of the birth and death rates for Lower Myanmar during the years 1872 and 1941.

### Research Question

To analyze the importance of vital statistics in the population changes in Lower Myanmar.

### Literature Reviews

Regarding the birth rates and death rates in Lower Myanmar, some historians have attempted a detailed examination of Myanmar population records. *Disease and Demography in Colonial Burma* written by Judith. L. Richell emphasizes the demographic change in Myanmar between 1891 and 1941. Although this entails an examination of birth rates and death rates for the whole country, it is not focused for Lower Myanmar. R. M. Sundrum, whose paper. *Population Statistics of Burma* contains important historical references for the birth rates and death rates. M. Ismael Khin Maung, *The Population of Burma; An Analysis of the 1973 Census*. However, these papers did not cover the entire colonial period.

### Data and Method

Based on the Sanitary Reports, this paper will be presented. An analytical method and interpretation method will be used.

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## Aim and Objective

The purpose of this paper is to examine the birth rates and death rates in Lower Myanmar during the colonial period.

## Structure of the Paper

The vital registration system, started in India in 1864 was first introduced to some parts of Lower Myanmar and then extended to other parts of the country in the late nineteenth century.<sup>1</sup> The system was gradually extended to all districts in Lower Myanmar in 1872. By 1897, although vital registration had been introduced into eight major towns in Upper Myanmar, there were still pockets in Lower Myanmar, such as parts of the districts of Sittway, Patheingyi, Taungtha and Thabeikkyin where registration was not enforced. No attempt had been made to introduce the system to the hill areas, such as Northern Rakhine.<sup>2</sup> By 1907, it covered over eighty percent of the population. It had been in force in the principal towns of British-Burma since 1864-65, but there had been no census and estimates of population were made based on capitation tax collection.<sup>3</sup> The percentage of the population under registration improved greatly between 1872 and 1935. In 1872, the census population was reported to be 2,747,148 but the number under registration was only 2,663,110 (95 percent). In 1931, the population figures were 7,964,855 by census and 7,688,962 (97 percent) registered.

In Myanmar, as in most nations of the region, the registration of births and deaths has remained in-complete even in areas covered by the registration system. Censuses have shed light on the extent of under-registration. It was estimated in 1911, for example, that as many as 20 percent of the births in the city of Mandalay were unregistered.<sup>4</sup> Moreover, the types of information on births and deaths are grossly inadequate for any in-depth analysis of fertility and mortality.<sup>5</sup> In rural areas, it is probable that the registration of births and deaths is equally neglected. A study of vital statistics during the decennium 1911-1921 points to more deaths having escaped registration than births but it is probable that during the influenza pandemic there was wholesale neglect of death registration. It was stated in the Report on the Public Health Administration of Burma for the year 1922 that more than two-thirds of the deaths occurring in villages are recorded. In towns on the other hand, deaths are more accurately registered than births owing to the by-laws regulating cremation and crematorium grounds.<sup>6</sup> In spite of these defects, the vital statistics of Myanmar under certain conditions can provide valuable information about fertility and mortality trends.

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<sup>1</sup> R.M. Sundrum, "Population Statistics of Burma", *Economic Research Project, Statistical Paper, No.3, December, 1957*, University of Rangoon, p. 7 (Hereafter cited as, Sundrum, *Population Statistics of Burma*)

<sup>2</sup> *Report on the Sanitary Administration of Burma for the Year 1898*, Rangoon, Superintendent, Government Printing, Burma, 1899, p. 1

These reports were issued yearly by the Government Press of Rangoon. From 1870 to 1889, their title was *Report on the Sanitary Administration of British-Burma (RSABB)*. From 1890 to 1920 their title was as *Report on the Sanitary Administration of Burma (RSAB)*. From 1921 to 1936 these Reports were titled *Report on the Public Health Administration of Burma (RPHAB)*. Finally in 1937, the title was changed to *Report on the State of Public Health in Burma (RSPHB)*

<sup>3</sup> *Report on the Public Health Administration of Burma for the Year 1922*, Rangoon, Superintendent, Government Printing, Burma, 1923, p. 2 (Hereafter cited as *RPHAB, 1922*)

<sup>4</sup> *Census of India, 1911, Volume IX, Burma, Part I, Report*, Rangoon Office of the Superintendent Government Printing, Burma, 1912, p. 43 (Hereafter cited as *Census of India, 1911, Burma, Report*)

<sup>5</sup> M. Ismael Khin Maung, *The Population of Burma; An Analysis of the 1973 Census*, Papers of the East-West Population Institute, Number 97, April, 1986

<sup>6</sup> *RPHAB, 1922*, p. 8

Some demographic information about the births and deaths of people is very useful as a guide to study the progress of the people. Therefore, an attempt will be made to get a rough estimate of the birth and death rates for Lower Myanmar during the years 1872-1941. The death rates in Lower Myanmar rose slowly during the years 1872 and 1919. The death rate was highest during the years 1906 and 1910. The rate of reported deaths in Lower Myanmar declined steadily after 1918, the year of great epidemic. In 1919, it stood at 30 per-thousand inhabitants, but after that time it was never above 30. The average rate during the 1901-1910 was 25.11 per-thousand, as contrasted to 25.03 during the next decade and 19.42 during the 1921-1930.<sup>1</sup> The high mortality during the years is chiefly to be ascribed to cholera, small-pox, fevers and plague. The death rate rose 12.48 percent in 1872 to 17.44 percent in 1877. The excess of death rate over previous five years has been caused by a slight improvement in registration but principally by the greater prevalence of cholera, fevers and bowel-complaints.<sup>2</sup>

The greatest number of deaths took place among infants, next among children, one and five years of age. The smallest number of deaths occurred among persons between 10 and 20 years of age. At all age periods, the male exceeded the female deaths.<sup>3</sup> Defective registration and incomplete collection of counterfoils are believed to be the chief causes of low death rates, reported in many districts. The following table gives births, infant deaths and infant mortality rate for selected years.

**Table 1 Infant Mortality for selected years<sup>4</sup> (1872-1931)**

Year	Reported Births	Infant-Deaths			Rates
		Male	Female	Total	
1877	61,878	3415	2737	6152	99
1880	72,121	5651	4245	9896	137
1885	93,222	7643	5491	13134	141
1890	84,769	6213	4734	10947	129
1895	131,147	12631	9358	21989	168
1900	166,388	18977	13984	32961	198
1905	191,226	21652	15943	37595	197
1910	197,240	24935	18306	43241	219
1915	204,822	23587	18480	42067	205
1921	181,607	16957	14069	31026	171
1926	174,666	17911	15479	33390	191
1931	184,306	17348	14460	31808	173

<sup>1</sup> (a) RSAB, 1895, 1899, 1900-1901 to 1915-1916

(b) *Report on the Administration of Burma for the Year 1916-17 to 1920-21*, Rangoon, Supdt. Government Printing and Stationery, Burma, (Hereafter cited as *Reports on the Administration of Burma, 1916-17 to 1920-21*)

(c) RPHAB, 1920-1921 to 1935-1936

<sup>2</sup> *Report on the Sanitary Administration of British-Burma for the Year 1877*, Rangoon, Government Press, 1878, p. 26

<sup>3</sup> *Report on the Sanitary Administration of Burma for the Year 1904*, Resolution, Rangoon, Superintendent, Government Printing, Burma, 1905, p. 10 ( Hereafter cited as RSAB, 1904 )

<sup>4</sup> (a) RSAB, 1895, 1899, 1900-1901 to 1915-1916

(b) *Reports on the Administration of Burma, 1916-17 to 1920-1921*

(c) RPHAB, 1920-1921 to 1935-36

The above table shows that the infant mortality rate has varied considerably during the selected years. The reported births increased continuously, and infant mortality rate declined after 1921. But the officially reported infant mortality rates as exhibited in the above table also reveal a high point in 1910 and a gradual decline thereafter. A comparison of these figures with those for general mortality reveals one surprising fact that the percentage decline in infant mortality has not been as great as that in general mortality. The fall in the infant mortality rate has of course contributed a major share to the reduction in general mortality, because there are so many more infants and infant deaths in the population as compared to any others age, but the percentage decline has not been as great as for the rest of the population. But infant mortality has nevertheless been reduced substantially since 1910, according to the official returns. The fluctuations in infant mortality contributed the growth of population to a certain extent.

The officially reported births and the calculated rates for Lower Myanmar since 1872 can be made. The fertility in Lower Myanmar had risen steadily and the range of variation is not so great. The lowest annual rate of fertility was 18.67 and the highest 34.72. It can be made three conclusions. First, fertility in Lower Myanmar is high. The rate slowly rose and since 1919 dropped below thirty and has generally remained above 24 per thousand except 1924. Second, the range of variation is not so great. The lowest annual rate was 18.67 and the highest 34.72. Third and most important, there is a slight suggestion of long-run downward trend since 1918. It is possible that there has been a real drop since 1918.<sup>1</sup> The lowest rates were attributed to defective registration, prevalence of venereal disease and disparity in sex population. The high rates in some cases are believed to be due to the adoption of model registration by laws and the more efficient administration.

Regarding the birth rates, the number of female births registered is always less than that of male by about 5 percent. It can also be noted that the number of female deaths registered is less than the number of male deaths, but this is at least partly due to the fact that there were a larger number of males among the immigrant population in Lower Myanmar.<sup>2</sup> For example, there were registered in Lower Myanmar during the ten years 1891-1900, the births of 707,223 males and of 658,052 females. Of the deaths registered during the same decade 589,558 were those of males and 470,551 those of females. During the decade 1891-1900, the preponderance of male births is in accordance with the practically universal rule that in the aggregate more boys than girls are born into the world.<sup>3</sup> The recorded birth rate has been steadily decreased from the year 1918. The main reason for the decline of birth rate is most probably incomplete registration. The low birth rates of a number of towns particularly of those in Lower Myanmar are due to a disparity of the sexes resulting from a floating population of adventitious male labour.<sup>4</sup> It can be observed that there has been a slow but steady improvement in the registration of vital statistics in towns until 1937 when there has been a slight falling off. There is no doubt that registration has been very badly neglected in certain towns. The registered birth and mortality rates from 1875 to 1935 are also shown in the following graph.

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<sup>1</sup> (a) *RSAB, 1895, 1899, 1900-1901 to 1915-1916*

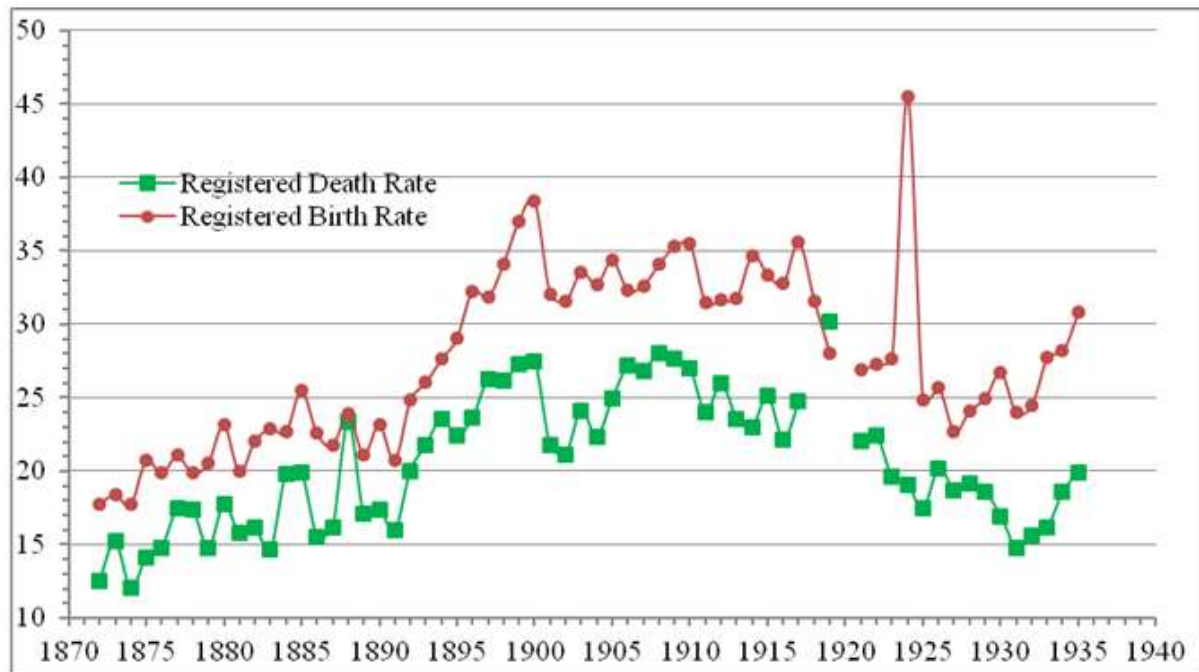
(b) *Reports on the Administration of Burma, 1916-17 to 1920-1921*

(c) *RPHAB, 1920-1921 to 1935-1936*

<sup>2</sup> Sundrum, *Population Statistics of Burma*, pp. 16-17

<sup>3</sup> *Census of India, 1901, Volume XII, Burma, Report, Part I, Report*, Rangoon, Office of the Superintendent of Government Printing, Burma, 1902, p. 53

<sup>4</sup> *Report on the Public Health Administration of Burma for the Year 1927*, Rangoon, Superintendent, Government Printing, Burma, 1928, pp. 6-7



**Figure 1** Lower Myanmar registered birth rate and registered death rate (Per 1,000 Populations)

From 1875, the birth and death rates rose slowly from a very low base until 1900. It can be assumed that the underlying upward trend almost certainly reflected the gradual improvement in the registration system rather than increased mortality and fertility. From 1911, the registered mortality rate was approximately 22 to 27 per thousand, until the flu pandemic of 1918 caused the number of deaths to soar. But in the 1920s, the registered death rate slumped to below 20 per 1000, rose briefly at the end of the decade and then dropped sharply again in 1931. In 1935, the death rate rose to the levels registered in 1885 and 1892.

The sanitary commissioners frankly disbelieved many of the returns and the commissioners also made their own calculation of the probable vital rates from the census returns. In 1885, D. Sinclair, the sanitary commissioner, estimated the rural birth rates as 40 per 1,000 and the death rate at somewhere over thirty.<sup>1</sup> In 1901, C.C. Little said that the sanitary commission was looking for the birth rate of 42 per, 1,000.<sup>2</sup> In 1905, the birth rate was estimated at 45 per, 1,000.<sup>3</sup> By comparing the commissioners' estimate and the official registration, the differences between the commissioners' calculations and the recorded rates can be seen clearly. This comparison reveals differences of 20 to 40 percent between the commissioners' estimates and official registration. It was abundantly clear to most of the sanitary commissioners that the registration was inadequate. They checked the average rates for Myanmar against their calculations on census data. They compared the convict death rate to the registered mortality, and they recognized the failure to register the birth of some female. The problem that the commissioners faced was that, with no special agency appointed for the task of the registration, the system lacked overall supervision and fundamental control.<sup>4</sup>

<sup>1</sup> *Report on the Sanitary Administration of British-Burma for the Year 1885*, Rangoon, Superintendent, Government Press, 1886, p. 4

<sup>2</sup> *Report on the Sanitary Administration of Burma for the Year 1901*, Rangoon, Superintendent, Government Printing, Burma, 1902, p. 3

<sup>3</sup> *Report on the Sanitary Administration of Burma for the Year 1905*, Rangoon, Superintendent, Government Printing, Burma, 1906, p. 2

<sup>4</sup> *Report on the Sanitary Administration of Burma for the Year 1906*, Rangoon, Superintendent, Government Printing, Burma, 1907, p.2 (Hereafter cited as RSAB, 1907 )

These problems of inefficiency and inaccuracy were recorded year after year in the annual reports. In 1879, it was stated that no attempts had been made to ensure that the headmen had a sufficient supply of book.<sup>1</sup> In 1892, a District Commissioner was reported as saying that it is necessary to say plainly that these rural vital statistics are not, and in no reasonable time likely to be, worth anything.<sup>2</sup> Therefore the problem ran throughout the system. The government had failed to convince the Myanmar people of the desirability or necessity of registering vital events, despite using a system of fines, punishments and warnings. Many and varied efforts were made to create and enforce a supervisory agency for the registration, but within different results. In 1882, the annual report stated that the police surgeons, the head constable, the township officer, the inspector and assistant superintendent of police, the sub-divisional officer and the deputy commissioner are all required by standing orders to examine the village registers.<sup>3</sup> Twenty-five years later, it was admitted in the annual report that verification was probably very perfunctory, as the district officers and civil surgeons did not have the time to do it, nor presumably the will to enforce their subordinates to do it for them.<sup>4</sup>

Up to this point, births and deaths have been treated separately. But they must be considered together that they are not independent of each other and that the difference between them (the natural increase) is capable of refined measurement of population. The most obvious method of obtaining reliable figures for the natural increase of population by the excess of births over deaths is an examination of the actual records of births and deaths for the whole province. But there exists no complete record of births and death for the whole of Lower Myanmar. The extension of registration does not extend to the whole of Lower Myanmar and on the date of 1911 census, the Thanlwin and the Northern Rakhine districts were still without any records of births and deaths. Any examination of the vital statistics must therefore be partial and can refer to only a portion of Lower Myanmar.<sup>5</sup>

The growth of population in Lower Myanmar has been governed not only by fluctuations in the birth rates but by wide variations in the death rates. With the information on the number of births and deaths, the Department of Public Health, formerly sanitary commissioner, calculated the crude birth and death rates. In order to calculate the birth and death rates of population, the population was most commonly taken as the population of the registration area at the last census.<sup>6</sup> The crude rate of natural increase, obtained by subtracting the death rate from the birth rate, has fluctuated sharply in Lower Myanmar because of fluctuations in the death rate. It is also clear from the five years average rates as follows.

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<sup>1</sup> *Report on the Sanitary Administration of British-Burma for the Year 1879*, Rangoon, Government Press, 1880, p. 1

<sup>2</sup> *Report on the Sanitary Administration of Burma for the Year 1892*, Rangoon, Government Press, 1893, p. 1

<sup>3</sup> *RSABB*, 1882, p. 2

<sup>4</sup> *RSAB*, 1907, p. 3

<sup>5</sup> *Census of India, 1911, Burma Report*, p. 42.

<sup>6</sup> Sundrum, *Population Statistics of Burma*, pp. 7-8

**Table 2 Birth Rates and Death Rates (1872-1941)<sup>1</sup>**

<b>Year</b>	<b>BR (5-year Avg)</b>	<b>DR (5-year Avg)</b>	<b>Natural Increase</b>
1872-1876	18.91	13.71	5.2
1877-1881	20.94	16.60	4.34
1882-1886	23.15	17.04	6.11
1887-1891	25.15	18.00	7.15
1892-1896	27.96	22.27	5.69
1897-1901	36.07	25.79	10.28
1902-1906	32.90	23.95	8.95
1907-1911	33.78	26.72	7.06
1912-1916	32.85	23.97	8.88
1917-1921	30.54	25.67	4.87
1922-1926	30.20	19.75	10.45
1927-1931	24.50	17.62	6.88
1932-1935	27.81	17.58	10.23

The above table shows that the birth and death rates in Lower Myanmar rose slowly during the years 1872 and 1935. The birth and death rates are highest during the years of 1897-1901 and 1907-1911. But, as the excess of birth rates over death rates, the population of Lower Myanmar increased steadily during the years 1872 and 1935. The natural increase in Lower Myanmar has not been exceptionally high because her birth rate has been almost matched by her death rates. It has been generally found that the birth reporting is less complete than death reporting. In a note of the Director of Public Health cited in the Census Report of 1931, it is said, birth registration is, of course, much more likely to be inaccurate than death registration, for while village or village tract known of a death, a birth is regarded as a matter of much less consequence and can more easily escape being known by the headman.<sup>2</sup> In the towns, a death certificate is usually necessary for cremation or internment of the remains.<sup>3</sup>

All these known deficiencies make the use of the registered birth and death figures to produce crude rates difficult to justify. The fluctuations shown in the graph represent administrative change and crisis. On some occasions, the magnitude of the mortality crisis overcame the inadequacy of the registration. This is shown on the graph by, for example, the rise in mortality in 1888, when a cholera epidemic occurred. The death from the flu pandemic in 1918, took the recorded mortality to nearly 239,000 in that year and the arrival of plague and its epidemic nature between 1907 and 1911 is also clearly visible on the graph. However, other apparent drops in the mortality and the birth rate are due to change or crises in the administration. It was decided in 1923, that the headmen themselves should be responsible for taking or sending the figures to the civil surgeons instead of the statistics being collected by the monthly police patrols. This change was imposed on the sanitary commission, and the probable result was predicted in the annual reports with some accuracy. By 1925, the recorded mortality rate had dropped to 17.45 and the birth rate

<sup>1</sup> (a) RSAB, 1895, 1899, 1900-1901 to 1915-1916

(b) RAB, 1916-1917 to 1920-1921

(c) RPHAB, 1920-1921 to 1935-1936

<sup>2</sup> *Census of India, 1931, Vol. XI, Burma, Part I, Report*, Rangoon, Superintendent, Government Printing and Stationery, Burma, 1933, p. 17

<sup>3</sup> Sundrum, *Population Statistics of Burma*, pp. 8-9

to 24.82, the lowest rates since 1891. G.Jolly, the officiating sanitary commissioner described that the whole system of collection of vital statistics has been seriously disorganized.<sup>1</sup>

Further evidence of the difference between the official rates and the actual rates of vital events appeared in the last decade of the study period. This evidence confirms that approximately one-quarter to one third of the vital events were not recorded. In 1929, with the aid of a grant from the Rockefeller Foundation, a Health Unit was set up in Hlegu Township.<sup>2</sup> A great deal of emphasis was placed on the collection of vital statistics within the Hlegu Unit area. During the ten-year period 1930 to 1939, the average recorded death rate at Hlegu was 21 per thousand and the birth rate was 35 per thousand. Compared to the estimates of the sanitary commissioners, these figures are still low, and it is notable that in the three years 1937, 1938 and 1939, the birth rate rose to nearly 37 per thousand. It can be suggested that this probably indicates improved registration rather than a rising birth rate because the health officials were still detecting a high rate of omissions by 1939.<sup>3</sup> In addition to detected omissions, it is probable that a number of stillbirths and the births and deaths of early neonates were still escaping registration. The registration data from the Hlegu health centers confirmed the former estimates of the sanitary commissioners that between 25 and 33 percent of vital events were not registered. Indeed, the Hlegu figures implied that nearly 50 percent of the vital events in that township had formerly not been registered and this was in an area where at least partial registration had started 70 years previously.

## Conclusion

The discussion of the history and the quality of the registration in Myanmar leads to the conclusion that between one quarter and one third of the vital events were not recorded. It is difficult to make the most basic demographic deductions as the levels of inaccuracy varied from district to district and town to town. The other possible source of data is the census material. The census statistics of Myanmar provide more exact data than the registration figures. It can be used as the more accurate source of crude birth rates and crude death rates. When used in combination with the census data and the registration figures, they can provide useful insights into the salient features of Myanmar historical demography.

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<sup>1</sup> *Report on the Public Health Administration of Burma for the Year 1923*, Rangoon, Superintendent, Government Printing, Burma, 1924, p. 3

<sup>2</sup> *Report on the Public Health Administration of Burma for the Year 1930*, Rangoon, Superintendent, Government Printing, Burma, 1931 p. 50

<sup>3</sup> *Report on the State of Public Health Administration of Burma, During 1939, Vol. I, Report*, Rangoon, Supdt, Government Printing and Stationery, Burma, 1940, p. 3



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