

CHAPTER X.

PUBLIC HEALTH AND VITAL STATISTICS.

Conditions in
the Maidān
Districts.

THE diversified physical features of the country as well as the comparatively wide range in the average annual rainfall and the temperature have not only left their mark on the religion and customs of the people but have also influenced to a notable degree the sanitation and public health of the various parts of the State. The plains of Tumkur, Kolar and Chitaldrug Districts with limited rainfall and absence of natural facilities for cultivation have given rise to a race of hardy peasants. The fertile plains of Bangalore and Mysore Districts with their more equable climate are, on the other hand, thickly studded with populous villages, inhabited by a prosperous peasantry, who are fairer in complexion, although perhaps not of a stronger constitution.

Conditions in
the Malnād
Districts.

The inaccessible Malnād tracts of the three western Districts of the State, *viz.*, Shimoga, Kadur and Hassan, with the extraordinary fertility of the soil, the heavy rainfall, the ranges of hills alternating with valleys covered with evergreen forests, the thousands of perennial springs flowing on the hill slopes, while possessing features of natural beauty and attraction, do not compare favourably with other parts of the State in regard to public health. Their inaccessibility and the absence of much external traffic confer on these regions a limited degree of immunity from the invasion of dangerous infectious diseases. Proximity to large masses of decaying vegetation and indulgence in foods of a kind incompatible with good health have, however, induced a low vitality in the

population and a consequent inability to withstand disease. Numerous kinds of animal and vegetable parasites abound in the tract. Malaria is widely prevalent all the year round. The facility with which the hill springs can be brought to the very door of dwellings renders them exceedingly liable to pollution, and a number of deaths occur from bowel complaints after the early rains. The isolated character of homesteads, at considerable distances from each other, has bred strange superstitions and customs. The difficulty of securing skilled assistance renders the period of accouchement one of considerable dread and is responsible for a heavy infant mortality and a large proportion of stillbirths.

The results of investigations carried out and observations recorded in connection with the inauguration of a scheme for the improvement of the Malnād go far towards corroborating the following conclusions:—

Results of investigations in Malnād.

- (1) The actual and natural population of the Malnād districts are both diminishing.
- (2) The diminution of population is due to an excess of deaths over births.
- (3) The death-rate of the Malnād districts is heavier and the birth-rate lower than that of the Maidān districts and of the State as a whole.
- (4) The largest number of deaths is due to an unusual prevalence of Malaria and water-borne diseases.

Among the causes underlying the depopulation in the Malnād, there are some that may be said to arise from a want of adaptation on the part of the people to changed economic conditions, others arising from the existence of injurious social customs and some due to the effect of climatic conditions and the geographic features of the country. In spite of the advantages which Nature has showered with a bountiful hand, man has not been able to thrive and multiply in the Malnād. On account of

Factors affecting the Malnād.

the configuration of the land, village sites have been located with greater regard to agricultural convenience than to sanitary fitness. Thus among various causes tending to depopulation, insanitation is a thing to be counted. Census figures show that a decline in the population of certain of the taluks situated in the Malnād region has been going on during the past five decades (*vide* Chapter IX). It would not be incorrect to say that this decline is due to a variety of causes operating on the people concerned. In some places, one factor more than another is in evidence, but the ultimate result appears to be the same throughout. Changed conditions of life, due to advancing civilization, may have something to do in producing a less hardy race. Whatever the reason may be, people of Nagar and Sagar taluks do certainly less agricultural work now than their forefathers did in the olden days and are obliged to import labourers from the South and North Kanara Districts. These men are fed well and in addition are given wages which are saved by them and taken to their homes, when the monsoon commences and field work stops. Thus, the wealth which formerly remained in the land to be spent there, is now taken away from it and spent elsewhere.

The staple articles of diet of the people of these taluks is rice, which is boiled and eaten with condiments, *e.g.*, chillies, salt and pickled mangoes, which do not go to form a perfect food to maintain health. Except in the case of a few well-to-do people, very little *dhall*, *ghee*, or oil is used. Rice washing and rice *conjee* are sometimes boiled with condiments and made into a sort of broth. Butter-milk is used occasionally. Milk as such is scarcely used. The dietary of the people is thus very poor in proteids and fats and it is not a matter for surprise that the people are poorly in health. Having low vitality, they have not the power of resistance to disease, and thus they fall easy victims to attacks of Malaria, Dysentery,

Pneumonia, etc. Persons whose general health and strength have deteriorated can have no pronounced sexual desires and such do not inherit sufficient vitality for a vigorous life. Perpetuation of the race under such conditions becomes increasingly difficult and a decline in the population is the natural result. Opinion is unanimous that the use of *ragi* is becoming more and more scarce. It has been remarked that such of the people as use *ragi* look certainly stronger and more healthy than those that confine themselves to rice. The people of typical Malnād villages depend for their water supply on small ponds. The water in them is generally much polluted by washings and manure and the rotting of leaves that fall into them. Water-borne diseases, *e.g.*, Diarrhoea, Dysentery and worms, are common.

Malaria however, as stated above, is the cause of the largest number of deaths in the Malnād. The average splenic index of a Malnād District is above 22·5 per cent, while that of a Maidān District averages 7·2 per cent. In other words, for every 100 children under 12 years examined, 7 children are found to have enlarged spleen in the Maidān and 22 children in the Malnād. *Malaria* prevails in the Malnād to thrice the extent that it does elsewhere.

There is some evidence to show that marriages are less fertile in the Malnād than in the Maidān. Each married couple has, on an average, about 4 children. If all the children born grow up to adult age, there would be no question of depopulation. But the general rule in these parts is for 50 per cent of the children to die in their infancy. Children born of none too strong parents have at birth low vitality. Their survival is due more to chance than to any attention bestowed upon them. Breast feeding in infancy appears to be a rarity. It is not that mothers are unwilling to suckle their children but they are incapable of doing so. The mothers surviving the

puerperum have not enough vitality to secrete good or sufficient milk. The insufficiently or badly fed infants are very liable to attacks of Bowel complaints, Convulsions, Septic Tonsillitis, Pneumonia, Bronchitis, and lastly Malaria. In parts of Sagar Taluk, numbers of infants are said to die of a disease called *Kanni Rōga*, the chief sign of which is want of union of skull bones leading to hydrocephalus—water head—which proves fatal in about two years.

Quite 40 per cent of the women die during the puerperal period after confinement. When one hears the details of the treatment accorded to these unfortunate women, it is a wonder that any of them survive at all. Kept in a dark, ill-ventilated room, generally the worst in the house, bathed in almost boiling water, starved for the first 48 hours, subsequently fed with rice and other non-nutritious food, dosed with pungent and irritating drugs called "*Khāra*," powerful carminatives, and receiving no treatment which can be called rational, the women that are lucky enough to survive have an intuitive horror of subsequent conceptions. How this treatment of women in confinement came to be evolved cannot be explained. Everything is laid at the door of custom. The terrible toll it claims from parturient women may, to some extent, explain the greater preponderance of males over females in parts of the Malnād Districts.

The excess of males over females results in about 25 per cent of men remaining unmarried, on account of the difficulty of procuring proper brides. In almost every community, the practice prevails of demanding anything from Rs. 50 to Rs. 500 for a bride. Consequently, a larger number of men than in the Maidān remain unmarried, forming an important factor in maintaining a low birth-rate. Concubinage is prevalent only in the towns and larger villages and the concubines are, as a rule, infertile on account of promiscuous intercourse.

In Mysore, as in other parts of India, early marriage prevails almost universally amongst the Brahmans and is also coming into vogue among some of the other Hindu castes. Marriage within a limited circle, without any opportunity for natural selection, would in itself have been a sufficiently powerful bar against physical development, but coupled with it is that of child-bearing at a tender age with all its disastrous consequences. The unusual prevalence of pulmonary tuberculosis amongst females in the Muhammadan community can only be ascribed to the *purdah* system under which women are deprived of fresh air and light.

The Malnād Improvement Committee, constituted in 1913, worked with the object of alleviating the conditions favourable to unhealthiness in the Malnād. Its activities were directed towards the opening of additional dispensaries, the provision of protected sources of water supply, the removal of rank vegetation, reclamation of pools and hollows and the entertainment of additional midwives. A judicious distribution of books and pamphlets on matters relating to public health was also carried out. It is, however, too early yet to offer any opinion with regard to the results attending these measures.

Amelioratory
methods
adopted in
the Malnād.

The statement given at the end of the chapter shows the percentages in the variations in population during the Censuses of 1901, 1911 and 1921.

Variation in
population
since 1901.

The registration of vital statistics in rural areas is vested in the *Patels*. The monthly statements prepared by them are compiled in the Taluk Office and a consolidated return for the whole District furnished to the Sanitary Commissioner. Except in the municipalities and larger unions, even where it is perfunctorily done, the record of births is still far from satisfactory; but this

Registration
of vital
statistics.

does not mean that these returns should be rejected as valueless. In rural areas, it is generally recognized that registration is not infrequently incomplete and unsatisfactory. But whatever may be their utility as reliable returns of any one particular year, they have nevertheless a distinctive value of their own for purposes of comparative study. These returns also enable one to distinguish generally the comparative birth-rate and death-rate, district by district, and the general causes of mortality, healthy and unhealthy seasons of the year, and also years of specially low and high mortality.

Factors
affecting
birth-rate in
Mysore.

The record of births would give the erroneous impression that the increase in the population during the decennial Censuses was due largely to immigration, which, however, is not the case. But it is nevertheless a fact that in some parts, notably in the Malnād regions, the birth-rate is much below or approximately the same as the death-rate, resulting in a decrease of the total population in spite of immigration of labourers from the surrounding British Districts.

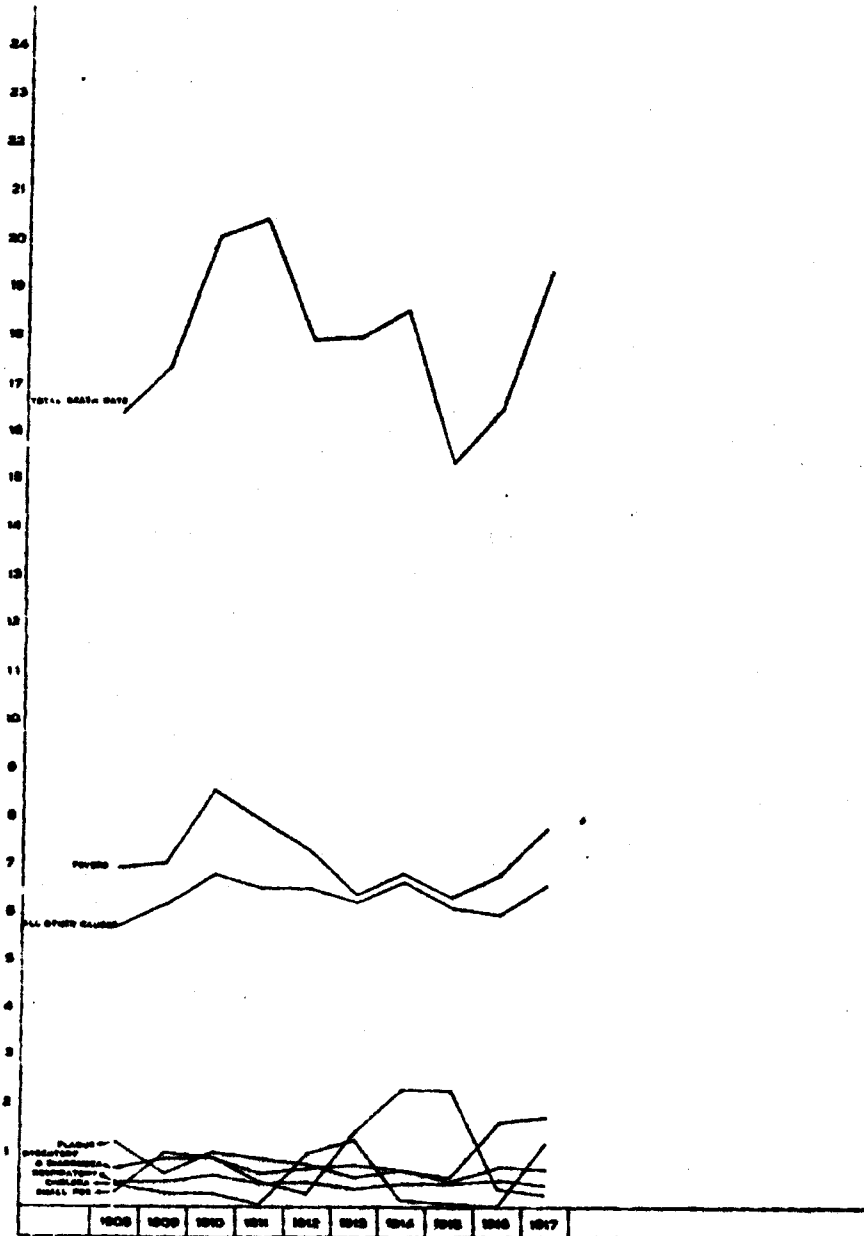
Average
birth-rate for
the State.

The average recorded birth-rate of the State worked out for twenty years as compared with the figures for the several Districts, calculated in the same manner, will be found in the following table:—

Birth per 1,000 of population.

MYSORE STATE	... 18·00	Hassan District	... 16·34
Bangalore District	... 17·80	Shimoga	... 18·46
Kolar	... 19·51	Kadur	... 13·66
Tumkur	... 23·21	Chitaldrug	... 21·33
Mysore	... 18·95		

While the accuracy of the average birth-rates given above is open to doubt, the figures serve to illustrate the rates of births per 1,000 of population in the Districts as compared one with another, as the margin of error in each may reasonably be expected to be similar. It should, however, be mentioned that considerable attention



has been paid, during the past few years, to the registration of vital statistics, as will be noticed from the following calculated birth-rate of the State for recent years :—

Birth-rate per 1,000 for the State, 1912-22.

1912	...	...	19.11		1918	...	...	17.11
1913	...	...	18.93		1919	...	...	14.47
1914	...	...	20.30		1920	...	...	16.95
1915	...	...	20.03		1921	...	...	16.46
1916	...	...	20.32		1922	...	...	17.91
1917	...	...	20.00					

In 1918, influenza pandemic prevailed widely over the the State and its effects are seen in the figures for that and the ensuing years.

In Districts which show a remarkably low birth-rate, the low rate is not common to all parts but only to the tracts that come under the category of Malnād or those that approximate the Malnād in natural conditions. There is no doubt that irrespective of seasons of agricultural prosperity or distress, severe malarial infection in a locality seriously reduces the birth-rate.

The proportion of male to female births worked out for a period of twenty years comes to 102 : 100. While the rate is fairly equal in other districts, the large excess of male over female births in the Mysore District, 111.77 : 100 and the reverse in the Malnād Districts of Kadur and Shimoga, 93.54 : 100, deserve mention. The latter is doubtless due to the increased severity of labour with a male child, including still-birth in women weakened by illness.

Proportion of male to female births.

The accompanying chart depicts, typically for a period of ten years, the relation of the principal causes of mortality to the total number of deaths returned for the State. It shows that the largest contribution to the total death-rate is made by the group of indeterminate diseases classed as "fevers" and the still more

Principal causes of mortality.

indeterminate set of causes designated as "all other causes." The other diseases take a subordinate place. Of epidemics, small-pox and cholera, although almost annual visitants to the State, are amenable to effective control. The only diseases which deserve to be dealt with at some length are Plague and Influenza.

Urban and rural birth-rates.

The average birth-rate in rural compared with the birth-rate in urban parts is 11·67 : 17·70. Industrial conditions, higher prices of food-stuffs in towns and the lower vitality of residents of urban areas might have been expected to produce the opposite result. But it should be noted that there are few places in Mysore with industrial conditions like those of European towns, while instead of only the males migrating into towns, as in Bengal, Bombay and other parts, it is common here for entire families to resort to urban areas in search of employment. The migration of young adults into towns, the comparative abundance and variety of food-stuffs, the greater purity of water supply and the facilities for obtaining medical aid during accouchement account for the increased birth-rate of towns, though allowance must, however, be made for errors in the registration of births in rural areas while corresponding vigilance should be expected in towns.

Factors affecting death-rate in Mysore.

The following statement shows the death-rates of the various districts as well as of the State as a whole compiled from statistics for the past 15 years:—

Deaths per 1,000 of population.

MYSORE STATE	...	18·80	Hassan District	...	18·68
Bangalore District	...	19·76	Shimoga	..	24·93
Kolar	..	16·65	Kadur	..	20·92
Tumkur	..	17·25	Chitaldrug	..	17·75
Mysore	..	17·68			

Deaths, unlike births, are registered more or less correctly even in rural parts and this should account for

the manner in which the two ratios approximate each other. The death-rate of urban, compared with rural, areas is 34·17 : 16·31. It should not, however, be assumed that this high rate prevails in the larger towns of the State. While in villages, measures against epidemics like Plague, Cholera, etc., are comparatively easy of adoption, the smaller towns, whose municipal resources are incommensurate with extraordinary demands, suffer proportionately more than the larger municipalities on the one hand and the villages on the other. As usual, the death-rate of males exceeds that of females thus:— 19·34 : 19·23. The death-rates of the Hindu and Muhammadan communities are 17·89 and 21·11, respectively, while the corresponding rate for the other classes is 45·68. The latter, however, is not of much value on account of the smallness of population from which it has been deduced.

It may be said that roughly one among five children born does not survive its first year of life. Judging from the experience gained in the Cities, it would be a fair estimate to put down the mortality from debility and diseases of the nervous and respiratory systems to nearly 75 per cent of total infant mortality. Generally speaking, these are a group of causes which have reference to the social environment and economic condition of the parents as regards the home and its surroundings, occupations of mothers entailing hard work, and habits of life and poverty, which affect the mother during pregnancy and influence the health of the child, before and after birth, and help to swell the number of those who come into the world only to die very soon. Ignorance, debility, exposure and defective feeding are the most potent causes of infant mortality and unfavourable economic conditions and poverty are just the factors which lead to unfavourable ante-natal and post-natal conditions.

Causes of
infantile
mortality.

Of factors that contribute to high infant mortality, the two most potent ones, ignorance and poverty, exist in plenty in the country and the evidence of statistics is hardly necessary to visibly demonstrate what is painfully familiar to every one. Moreover, so far as infant mortality is concerned, the rural returns are so hopelessly defective and unreliable that it is unsafe to base any conclusions on them alone. In any case, the poverty, the indebtedness and the ignorance of the mass of our agricultural population are too patent to be overlooked.

Apart from poverty, the following causes contribute generally to the unusually high rate of infantile mortality in rural areas :—

(1) General insanitary condition of villages and dwellings therein ; (2) extreme ignorance of the people in matters connected with pregnancy, child-birth and infant rearings ; (3) insufficient protection of infants against small-pox ; and (4) special circumstances, such as abnormal changes in the weather, rise in prices of staple food-stuffs and consequent low-living of the poorer classes, outbreaks of epidemics, prevalence of diseases like syphilis, malaria and the like.

One of the causes of high infantile mortality in Mysore is Malaria. This is certainly borne out by available statistics. The intimate relationship of infantile mortality to malaria is so fully recognized by all malarial experts that other things being equal, they look upon infant mortality rates as one of the safest and most reliable indices of the prevalence of malaria in any locality.

Midwifery is still in an elementary condition. It is the common habit and custom in almost all districts to entrust the women in labour to the care of a woman of the most backward, illiterate, ignorant and superstitious class, the barber-midwife. The result of this custom is untold misery and numerous preventable deaths among parturient women and infants. The employment of an

increasingly large number of trained midwives in urban and rural areas is, however, proving beneficial, but a great deal has yet to be done before the most potent cause of infant mortality—ignorance—is done away with.

The relation between infant mortality and general mortality is a very intimate one. It is strictly correct to say that a high infant mortality implies a high prevalence of the conditions which determine national inferiority. While it is quite true that there are certain special factors, which make for our excessive infant mortality, it cannot be too strongly emphasized that, in general, the causes that make for high general mortality also contribute to excessive infant mortality. Without, in any way, depreciating in the least the value of special measures directed towards the care of mother and child, it would be advisable to take a broad view of the general causes of mortality, and not be misled into the belief that infantile mortality is a condition apart from general mortality, to which it is but necessary to apply the usually accepted remedial measures to achieve ideal results. It has to be remembered that special efforts to reduce mortality among infants are directed towards reducing conditions inimical and peculiar to the earlier periods of life. These, however useful, will not control mortalities attributable to general causes which are always present, and associated with general insanitary conditions which operate prejudicially to all age-periods. It is but a fair inference that a marked decrease in infant deaths cannot be expected until the causes which are responsible for the general mortality are also dealt with and removed.

Infantile mortality an index of standard of Public Health.

At the same time, it is worthy of remark that if we rely upon improvement in the general sanitation to reduce the excessive mortality among infants, even the most sanguine must recognize that many generations will pass before

anything like a satisfactory result can be realized. On the other hand, events of recent years have demonstrated that special measures directed to individual infants have given results immediate and better than could have been anticipated. Not climate, not topography, not municipal sanitation but it is the lives, the care and the habits of the mothers in the homes which determinethe difference.

Epidemics :—
(a) *Plague.*

Of the many interesting epidemiological features which have characterized Plague during a period of over two decades, perhaps the two most noteworthy are:—

(1) The remarkable variation in intensity and diffusibility that have distinguished the outbreaks of different years ; and (2) the constancy of the seasonal prevalence of the disease in the worst infected areas.

Plague was introduced into Bombay City in August 1896. At first, diffusion was comparatively gradual, but by the middle of 1898, the disease had spread over the greater part of the Bombay Presidency, where it had been the reported cause of some 90,000 deaths. Infection was also carried to Mysore. Between July 1898 and June 1918, rather more than 224,476 deaths from plague have been recorded in the Mysore State—upwards of 11,000 deaths a year. Formidable as this total is, it certainly falls short of the truth. It is probably a closer approximation to the actual number, however, than is common in the case of other diseases. Bubonic plague is comparatively easy to diagnose and its symptoms are only too familiar in plague-stricken areas, even to the most ignorant.

The State has been persistently affected with plague during the whole of the twenty-year period and no month has been completely free from plague since July 1898. Altogether 224,476 plague deaths were reported for twenty years, 2·1 per cent of the All-India mortality and equivalent to a death-rate of 39·21, or a mean annual

rate of 2. The climate of the Mysore plateau is more equable and uniform than that of any other part of India and perhaps as a result of this climatic peculiarity, the annual incidence of plague has presented a lesser degree of variability in the State than elsewhere. No epidemic approaching in severity some of the outbreaks of Northern India, has ever been experienced in this State; but, on the other hand, no year has been so relatively plague-free as some of the more northern areas of India have been. The five most severe outbreaks were experienced during the first seven of the twenty years. The annual plague death-rate has varied between 5·37 in 1902-03 and 0·67 in 1905-06. Nine outbreaks of the twenty have been attended with mortality rates in excess of the mean. Most deaths were recorded in October. The months of maximum mortality were August, once; September, four times; October, five times; November, five times; December, twice; and January three times. In fifteen outbreaks, May was the month of minimum mortality; in three April; and in two June witnessed fewer plague deaths than either May or April. The mean daily number of plague deaths in May is 5; in October 54.

The climate of the State is always humid; in only four months of the twenty years has a humidity of less than 60 been recorded and there is less variation in the humidity from year to year than in other parts of India. In spite of this, it is interesting to note that the mean humidity of November and December of the nine years that have had a plague mortality in excess of the mean is 80 as compared with 74 and 72, the mean humidity of these two months of the remaining eleven years. It has been stated that humidity in excess of normal exercises its baneful influence on the spread of plague by producing conditions favourable to the rat flea. It is very probable that the indirect effects of excessive

humidity in the cold weather months, in those parts of India most exposed to cold weather rain storms from the West, are also of considerable importance.

Severe outbreaks of plague have been, more especially during the last decade, an expression of climatic conditions. Rainfall in defect of normal is inimical to plague.

Plague appears to have no predilection for the weak and unfit. Infants and young children appear to enjoy a certain degree of immunity from it. The female plague death-rate is generally slightly in excess of the male rate. Women are apparently somewhat more exposed to infection, but disparity in sex incidence is not very marked, though consistent.

**Anti-Plague
measures.**

As regards anti-plague measures, evacuation of infected dwellings and the protection of individuals by inoculation, find favour in the State and the two measures combined doubtless result in the saving of a great number of lives. Plague extorts a considerably greater toll from the urban population than it does from the rural. Allowance has to be made for the fact that the superior communications of towns naturally render them more liable than villages to infection.

In most of the severely plague-infected areas of India, there are signs that the disease is decreasing in virulence; this decrease is almost certainly due to the increasing degree of immunity to plague of the rat population, of which there is direct experimental evidence.

Improvements of markets and the grain-stores of towns, in which rat infestation at present is most excessive, and the not necessarily vexatious control over the movements of grain and the like merchandise from and through plague-infected centres, are matters that have received attention. The co-operation of Railway Companies has also done much; at the present time Goods sheds and railway sidings are not so frequently infested

with rats as they used to be at one time. Government have issued necessary orders in order to enlist such co-operation as the Railway authorities can give in minimising the chance of the spread of infection in the State. Schemes for better housing of the people, by providing properly laid-out extensions in all the bigger towns, have been receiving active attention and the policy pursued in this direction has doubtless had some effect in reducing the incidence of plague. Endeavour is also being made to secure, as far as possible, rat-free conditions in dwellings by enforcing the provisions of the Municipal Regulation.

The epidemic of Influenza started in the Mysore State at the commencement of October 1918. It was characterized by an almost simultaneous prevalence in all parts of the State and unlike plague and cholera, there was not a definitely ascertainable interval to account for the transmission and spread of the disease from one place to another or from one locality in the same place to another. (b) *Influenza.*

The meteorological data for Bangalore for seven months from June to December during each of the five years ending June 1918 appear to indicate that, as compared with the previous years—

- (1) the mean dry temperature during 1918 exceeded the normal from September onwards till the end of December;
- (2) the rainfall in October 1918 was deficient; and
- (3) the mean percentage of humidity was lower in September and October 1918 than during the same months in the preceding years.

It might have been that the deficiency in percentage of humidity afforded a condition in which the influenza bacillus could thrive. Or, perhaps, it was that the changed atmospheric conditions imposed a strain on the

lungs and increased their susceptibility to the invasion of pathogenic organisms.

After the outbreak of 1918, a total of 1,95,437 deaths from influenza was returned for the whole State, representing a ratio of 34.25 per thousand of the Census population. The mortality in the three cities in proportion to population was much lower (20.31) than in the rest of the State, with the exception of the Mysore District, which returned a death-rate equivalent to 17.79 per mille. Why the death-rate was lower in towns than in rural areas and relatively very low in only one among the districts, it is difficult to explain.

The registered total mortality from all causes for the last quarter of 1918 amounted to 264,235 as compared with 34,730 for the corresponding period of 1917. There were thus 7.60 times as many deaths between October and December in 1918 as during the same period in 1917.

The prevalence of the epidemic was so widespread and practically so simultaneous in all places that nothing short of an actual census of the sick taken weekly in every affected area could have been of any use in determining the actual number of attacks. A census taken in the Bangalore City on the 6th and 7th October 1918 revealed that the number ailing in the City on these dates was about 10,000. The City population, according to the previous census, was 88,651.

The highest mortality from the disease, both among males and females, occurred at the age-period 20 and 30. The female deaths preponderated at the age-periods 5-10, 10-15, 15-20 and 20-30, the largest excess (3,089) being between the ages 15 and 20. The highest death-rate among females appears significant and may mean that insanitary housing conditions may have had an effect

on the course of the disease. Judged from the recorded statistics, the epidemic exhibited three distinct phases:—

- (1) an initial mild type, that lasted during the first three weeks, with little or no complications;
- (2) a marked development of complications thereafter, resulting in a high mortality; and
- (3) a sudden decline in the number of deaths.

The type of the disease, the symptoms and the severity varied with individual constitution and age and to some extent according to the locality. In ~~Arsikere~~ (Hassan District), the disease was attended with diarrhoea and on the Kolar Gold Fields with vomiting also. The respiratory organs were chiefly affected and in many cases owing to mixed infection, pneumonia developed.

The disease was pandemic only during 1918. During previous and successive years, it prevailed only in a mild form, the case-mortality being insignificant.

This brief outline of the salient features of the vital statistics of the State gives rise to the reasonable enquiry as to what effect, if any, organized Sanitary Administration for the last forty years has produced on the natural average expectation of life of individuals. The recorded statistics being extremely defective, it would be futile to expect to build a correct life table on them. Considering, however, that special care is taken in particular areas, *e.g.*, Bangalore City, in the collection and compilation of vital statistics, it would be useful to compare the variations in the average duration of life revealed by the statistics recorded in these areas. It is also not unreasonable to take the figures for Bangalore City as approximating the corrected birth and death-rates for the whole State for purposes of the life table. On the basis of these figures, the mean duration of life was 25·3 years in 1910, 24·43 years in 1920 and 32·23 in 1922. The low figure for 1920 is accounted for by the

Conclusion.

devastating influences that had their origin in the pandemic of influenza of 1918. As compared with these figures, the average mean duration of life, calculated on the mean birth and death-rates for twenty years, is 26·32. The outlook is thus not without hope and the future appears to hold a promise of a steady improvement in the standard of Public Health, due to the increasingly efficient adaptation to the changing conditions of life in the State.

STATEMENT I—VARIATION IN POPULATION SINCE 1901.

Name of District or City	Population			Variation	
	1901	1911	1921	1901 to 1911	1911 to 1921
Bangalore City	69,447	88,651	118,556	19,204	29,905
Bangalore District	720,217	759,522	788,379	39,305	28,857
Kolar Gold Fields	70,874	83,743	87,682	12,869	3,939
Kolar District	652,726	696,410	704,657	43,684	8,247
Tumkur District	670,377	785,346	773,122	64,969	37,776
Mysore City	65,111	71,306	83,951	8,195	12,645
Mysore District	1,227,061	1,270,765	1,319,368	43,704	48,603
Chitaldrug District	511,062	564,243	574,179	53,181	9,936
Hassan District	568,919	580,200	583,960	11,281	3,760
Kadur District	369,270	338,457	333,538	20,813	4,919
Shimoga District	531,736	516,716	492,560	15,020	24,156
Total for Mysore State...	5,449,800	5,705,359	5,859,952	255,559	154,593

STATEMENT II—STATEMENT SHOWING THE BIRTH-RATES PER MILLE OF POPULATION FOR THE MYSORE STATE FROM THE YEAR 1913 TO THE END OF 1925.

No.	District	1913	1914	1915	1916
1	2	3	4	5	6
1	Bangalore	19·85	20·83	20·09	22·18
2	Kolar	21·60	23·42	22·28	25·04
3	Tumkur	24·62	24·68	24·35	26·23
4	Mysore	14·06	16·37	15·64	15·98
5	Hassan	16·40	16·43	17·62	16·44
6	Shimoga	20·26	21·73	24·30	19·04
7	Kadur	15·69	17·83	14·21	14·21
8	Chitaldrug	21·32	23·00	23·65	22·36
	Total for the State ...	18·98	20·80	20·03	20·32

STATEMENT II—STATEMENT SHOWING THE BIRTH-RATES
PER MILLE OF POPULATION FOR THE MYSORE STATE
FROM THE YEAR 1913 TO THE END OF 1925.—*concl'd.*

No.	District	1917	1918*	1919	1920	1921
		7	8	9	10	11
1	Bangalore	20·86	18·78	16·40	19·95	16·51
2	Kolar	24·99	21·41	15·09	18·53	18·28
3	Tumkur	24·92	20·52	16·96	21·74	18·92
4	Mysore	15·07	18·86	12·88	14·59	14·18
5	Hassan	16·30	14·21	12·88	12·27	14·69
6	Shimoga	20·15	17·26	15·58	16·25	17·92
7	Kadur	17·45	14·85	12·52	14·93	14·38
8	Chitaldrug	22·36	16·10	14·20	17·29	18·00
	Total for the State ...	20·00	17·11	14·47	16·95	16·46
No.	District	1922	1923	1924	1925	Re- marks
		12	13	14	15	16
1	Bangalore	18·49	18·42	18·82	19·48	*Influenza pandemic prevailed during the year.
2	Kolar	21·53	25·61	20·14	21·72	
3	Tumkur	19·77	20·16	19·72	17·90	
4	Mysore	14·40	16·07	15·63	15·20	
5	Hassan	16·36	15·67	14·72	13·72	
6	Shimoga	18·74	19·61	20·25	15·13	
7	Kadur	16·30	15·98	14·99	13·01	
8	Chitaldrug	19·86	17·87	20·88	20·92	
	Total for the State ...	17·91	18·04	18·05	17·16	

STATEMENT III—STATEMENT SHOWING THE DEATH-RATES PER MILLE OF POPULATION FOR THE MYSORE STATE FROM THE YEAR 1913 TO THE END OF THE YEAR 1925.

Year	Death-rate per mille of population	Year	Death-rate per mille of population
1913	18·07	1919	16·44
1914	18·66	1920	14·99
1915	15·53	1921	14·22
1916	16·63	1922	14·52
1917	19·54	1923	16·09
1918	60·28 (year of Influenza)	1924	21·18
		1925	17·44

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