

## **Quarterly report of the Mysore Department of Health.**

### **Contributors**

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Public Health is Purchasable. Within Natural Limitations any Community  
can Determine its own Death-rate.

Vol. IX]

[No. 3

# QUARTERLY REPORT

OF THE

MYSORE STATE DEPARTMENT OF HEALTH

JULY—SEPTEMBER, 1937

P. PARTHASARATHY, L.M.S., B.S.Sc., L.R.C.P.,  
L.R.C.S., D.T.M., D.P.H.,  
*Director of Public Health.*



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1938



**"Search for the Truth is the noblest occupation  
of Mankind, its publication a Duty."**



# QUARTERLY REPORT

OF THE  
MYSORE STATE DEPARTMENT OF HEALTH.

## GENERAL.

The state of public health in the State was satisfactory in the quarter under report. The incidence of the epidemic diseases was sporadic, a total of 366 deaths from plague, 37 from small-pox and 148 from cholera being reported.

During the quarter the Director of Public Health was out of headquarters for 2 months and 10 days, one month and 20 days being spent in deputation in connection with the Inter-Governmental Conference of Far Eastern Countries on Rural Hygiene, Bandoeng. He toured in Hassan and Mysore Districts for 20 days in connection with water supply, sanitation and vaccination inspection work. He also inspected the hookworm work and bore-hole latrine work in Periyapatna Taluk.

The provisions of the Food Adulteration Regulation were extended to the Nanjangud Town Municipality in Government Order No. G. 859-6—P. H. 128-36-2, dated August 5, 1937.

In their Order No. G. 2990-3016—P. H. 154-36-4, dated October 7, 1937, Government have approved of the Report of the Mysore Committee on Vital Statistics and sanctioned the introduction of the new system of registration and compilation of vital statistics in Shimoga and Bangalore Districts from January 1, 1938.

In Notification No. G. 3067—P. H. 40-37-2, dated October 29, 1937, Government are pleased to direct that the "Director of Health" be hereafter designated "Director of Public Health."

Dr. W. R. Aycroyd, Director of Nutrition Research, Coonoor, Dr. D. D. Sharma, Medical Officer of Health, Najafgarh Health Unit, Delhi Province, Mr. R. G. Rajwode, Revenue Secretary, Gwalior, and Lt. Col. Loganathan, I.M.S., Assistant Director of Public Health, Delhi Province, visited the department in the quarter under report.



**BUREAU OF ADMINISTRATION.****(a) City Health Organisations.****BANGALORE CITY.**

M. G. SRINIVASA PEIDPET, L.M.S., B.S.SC.,  
*Health Officer.*

In the quarter under report 2,063 births were reported and the number of deaths registered in the same period was 1,237. Of these 265 deaths were of infants under one year of age.

Four attacks with 4 deaths were reported from plague and as a preventive measure 1,081 anti-plague inoculations were done.

Only one fatal case of small-pox was registered. The number of anti-small-pox vaccinations done during the quarter was 1,905 primary and 433 re-vaccinations.

The city was free from cholera during the quarter.

Typhoid deaths reported numbered 28 and 132 anti-typhoid inoculations were done.

During the quarter one death from hydrophobia was reported. A total of 940 stray-dogs were destroyed.

One cinema show was arranged during the quarter.

Seventy eating houses, 7 aerated water factories, 173 coffee-clubs and sweetmeat shops and 20 bakeries were inspected. A total of 1,347 notices were issued against sanitary offences, of which 528 were complied with and the rest were pending disposal.

**MYSORE CITY.**

S. SESHAGIRI RAO, B.SC., M.B.B.S., D.P.H.,  
*Health Officer.*

A total of 1,172 births and 802 deaths were reported during the quarter as compared with 992 births and 723 deaths in the previous quarter. Of the deaths reported 149 were of infants under one year of age.

During the quarter 33 attacks and 22 deaths from plague were reported, of which 3 deaths occurred among 6 imported cases. As a preventive measure as many as 10,965 anti-plague inoculations were performed.

There was no case of small-pox reported during the quarter. As a routine preventive measure 1,289 vaccinations were done.



The city was free from cholera in the period under report.

One fatal case of influenza was reported.

During the quarter 18 deaths were reported under typhoid and 87 anti-typhoid inoculations were performed.

Three cases of dog-bite were reported. A total of 843 stray-dogs were destroyed.

Samples examined at the Laboratory :—

<i>Particulars</i>	<i>Number</i>
Water for bacteriological analysis ...	170
Water for chemical examination ...	46
Water for free chlorine test ...	80
Milk for bacteriological test ...	2
Rice for do analysis ...	1
Sample of urine examined ...	1
Rodents examined for plague (Rodents found positive to plague 4).	32

During the quarter 106 visits were paid to hotels, 254 to coffee clubs, 76 to aerated water factories, 57 to bakeries and 217 to mutton stalls. Of 1,673 notices issued 169 were complied with and the rest were pending disposal.

Four coolies and a maistry were employed in September 1927 to distribute rat-traps in a portion of Devaraj Mohalla. A total of 1,110 traps were thus distributed to 874 houses and 1,374 rats were captured.

Particulars of samples of food-stuffs analysed at the Health Office Laboratory, Mysore.--

No.	Samples	Number of samples examined	Number of samples found genuine	Number of samples adulterated	Number of cases prosecuted	Number of cases convicted
1	Cow's milk ...	36	22	14	8	7
2	Buffalo's milk ...	25	14	11	14	13
3	Mixed milk (cow and buffalo's.)	7	6	1	1	1
4	Pasteurised milk ...	2	2	...	...	...
5	Ghee ...	8	2	6	2	2
6	Butter ...	4	3	1	1	1
7	Coffee powder ...	2	...	2	1	1
	Total ...	84	49	35	27	25



## KOLAR GOLD FIELDS.

M. RAMACHANDRA RAO, B.A., M.B.B.S., C.P.H.,

*Health Officer.*

During the quarter 1,224 births and 583 deaths were reported, of which 159 deaths were of infants under one year of age.

One fatal case of plague was reported and as a preventive measure 244 inoculations were performed.

Five attacks of small-pox were reported. As a routine preventive measure 889 primary and 444 re-vaccinations were done.

The area was free from cholera in the period under review.

One fatal case of hydrophobia was reported. A total of 900 stray dogs were destroyed.

Three attacks and 3 deaths from typhoid were reported.

During the quarter 5,682 rats were destroyed.

At the office laboratory the following samples were examined :—

<i>Particulars</i>	<i>Number</i>
Water examination	7
Sputum for T.B.	31
Blood smear for malaria	31
Cervix smear for G.C.	42
Motion for hookworm	21
Spleen and liver for anthrax	21
Urine for albumin and sugar	42
Persons advised for anti-rabic treatment	4
Free chlorine test	3
Rats examined for plague	2
Blood smear for plague	1
Motion for ova	6

During the quarter 351 visits were paid to hotels, 285 to mutton and fish stalls, 309 to chakna stalls, 312 to coffee clubs, 251 to aerated water factories, 266 to bakeries, 34 to markets and 34 to slaughter houses.

## MYSORE DISTRICT.

**(b) District. Health Organisations.**

C. V. NATARAJAN, B.Sc., M.B.B.S., Dr. P.H.,

*Health Officer.*

During the quarter the incidence of all the three epidemic diseases was in evidence. A total of 174 attacks



with 98 deaths from plague, 53 attacks with 15 deaths from small-pox and 92 attacks with 44 deaths from cholera were reported. As a preventive measure 11,825 anti-plague inoculations, 314 anti-cholera inoculations and 7,347 primary and 1,659 re-vaccinations were performed.

The District Health Officer visited 44 villages and 21 towns in connection with the control of epidemic diseases.

The borehole latrine work was continued in this quarter also and 175 latrines were constructed in 33 villages.

#### SHIMOGA DISTRICT.

G. N. SESHADRI, L.M.S, D.P.H. (Cal.),

*Health Officer.*

The incidence of epidemic diseases was slight during the quarter and 65 attacks with 35 deaths from plague, 3 attacks from small-pox and 48 attacks with 30 deaths from cholera were reported. The number of anti-plague inoculations done was 4,222 and anti-cholera inoculations numbered 321. A total of 4,264 primary and 1,662 re-vaccinations were done.

The number of villages that were infected with cholera was nine whilst plague prevailed in three villages and one town. Smallpox appeared in only one village. The District Health Officer toured in all the infected localities.

The District Health Officer visited four schools and examined 146 children.

Lectures on maternity and child welfare were delivered in 2 places. 'Mysore Arogya' was read to the pupils and the public in 3 schools and 2 shandies. Leaflets on cholera were freely distributed.

### BUREAU OF MATERNITY AND CHILD WELFARE.

#### (a) State Organization.

ERIKA DEUSSEN ROSENTHAL, M.D.,

*Organiser.*

The Organiser was on tour for 45 days in Bangalore, Kolar, Mysore, Tumkur and Chitaldrug Districts and visited the following 35 places: Bangalore, Yelahanka,



Vadigenahalli, Devanhalli, Dodballapur, Channapatna, Yanaganahalli, Anekal, Jigani, Nelamangala in Bangalore District; Koratagere, Midigesi, Sira, Madhugiri, Kunigal in Tumkur District; Chikballapur, Manchanahalli, Basalhalli, Votadahosahalli, Goribidnur, Alipur, Kolar Gold Fields, Kolar Town and Bowringpet in Kolar District; Vajamangala, French-rocks, Sivasamudram, Nanjangud in Mysore District; Chitaldrug Town, Challakere, Thalak, Jagalur, Davangere, Maradihalli and Hiriyr in Chitaldrug District.

She delivered 12 lectures in the following places: Women's Intermediate College, Bangalore, Dodballapur, Manchanahalli, Goribidnur, Channapatna, Chitaldrug, Davangere, Maharaja's College, Mysore, Binny Mills, Bangalore, Gajasala and Devaraja Centres, Mysore.

She visited 22 maternity and child welfare centres, the centres in Mysore being inspected several times. There is an urgent need for trained workers in most of these centres. The contrast between the centres which are fortunate enough to have trained workers with constant supervision, and the others is remarkable. The Centres in Kolar Gold Fields (run by a fully qualified Lady Health Visitor) turn out very satisfactory work. The Mysore Centres have improved remarkably since constant supervision by a full-time Lady Doctor is given. Among the new items taken up by the Mysore Centres are the working out of food values for babies. Food for babies that are being weaned is prepared in the Centres.

The Gunamba Trust has constructed quarters for the Nurses in some of the Centres. The cost price of these quarters which are sufficient for a small family and well built is Rs. 790. Probably quarters of the same design could be erected in rural parts at a cheaper rate.

The Child Welfare Centre at Channapatna is being revived. The Welfare Centre at Tumkur is under construction.

Maternity homes and wards were inspected in Koratagere, Midagesi, Vadigenahalli, Votahosahalli, Alipur, French-Rocks, Nandidroog, Henry Shaft Mines, Oorgaum Mines, Mysore Mines and Champion Reefs.

The work of the midwives was supervised in the following places, especially in respect of the ante-natal work carried out: Koratagere, Midagesi, Madhugiri, Kunigal, Yelahanka, Manchanahalli, Goribidnur, Anekal, Chitaldrug, Challakere, Jagalur, Davangere, Hiriyr and Jigani.



The following five Nursery Schools were inspected during the quarter under review: Methodist Mission Normal School (Toddler's School), Bangalore, Gajasala Centre Nursery School, Mysore, Jagalur Nursery School, Chitaldrug Nursery School and Davangere Nursery School.

In the following places a number of private houses were visited, *viz.*, Manchanahalli six private houses, Sivasamudram 20 private houses, several houses in the Oriental Lines (Kolar Gold Field) and Vajamangala and individual advice was given to the women living there.

Five factories were visited during the quarter: Sivasamudram Electrical Works, Binny Mills, Bangalore, Gold Thread Factory, Minerva Mills and Maharaja Mills. Maternity benefit is being carried out according to Government regulation in the factories which employ a large number of women. In other factories, for instance electrical work, the women employed are engaged by a contractor so that the Government regulation is not applicable to them.

The Organiser attended the following meetings during the quarter: Red Cross Society, Tumkur Branch, two meetings of the Mysore Medical Association, Doctors' Sub-Committee of Gunamba Trust, the Moral and Social Hygiene Association in Bangalore, Red Cross State Branch Meeting, Maternity and Child Welfare Sub-Committee of the Red Cross Society, Mysore State Branch, Gunamba Trust Meeting, Meeting of the Sub-Committee of the Child Welfare Centre, Channapatna.

#### (b) Voluntary Organisations.

##### RED CROSS SOCIETY.

The Executive Committee of the State Branch met on August 14th, 1937.

*Propaganda.*—To popularise the work of the Society and raise standards of Public Health, arrangements are being made to take good photographs of the propaganda work done by the Department of Health and slides prepared with a view to the same being exhibited at different places in the State on suitable occasions.

*Junior Red Cross.*—A scheme prepared by Mr. Sultan Mohiyuddin, M.A., M.E.D., Hon. Secretary, Junior Red Cross, for the more rapid development of the Junior Red Cross movement in the State, has been considered by the



Committee and the same submitted to the Government for consideration.

*Baby Weeks.*—(a) *Vani-Vilas Shield.*—The Shield was awarded to the Bangalore City Branch for the year 1936, for the best Baby Week campaign successfully conducted and the high level of excellence attained in its celebrations.

(b) *Imperial Baby Week Challenge Shield.*—The State's entry for this competition was highly commended by the National Baby Week Council, London.

*Maternity and Child Welfare.*—(a) The Government were pleased to approve the arrangement in deputing the Lady Sub-Assistant Surgeons at Tiptur and Chikballapur to pay weekly visits to the Maternity and Child Welfare Centres at Chiknaikanhalli and Vadigenahalli respectively during the year 1937-38 also.

(b) A meeting of the Maternity and Child Welfare Sub-Committee was held on the 17th of August 1937 and considered proposals for the better co-ordination of the Maternity and Child Welfare work undertaken by various bodies, *i.e.*, Health Department, Medical Department and the Mysore State Branch of the Indian Red Cross Society.

*Grants to Maternity Homes.*—The following grants to the Maternity Homes noted below were sanctioned :—

		Sanctioned equip- ment grant	Sanctioned recur- ring grant
		Rs.	Rs.
Maternity Home at Bellur	...	350	25
Do Nagamangala	...	200	20
Do Dodbelavangala	...	600 (building grant).	
Do Bilikere	...	300	...
Do Seelaneri	...	250	...
Do Jayachamarajapura.	250 (towards the con- struction of Mid- wives' quarters).		
Do Hagare	...	85	...
Do Robertsonpet	...	450	...
Do Nonavinakere	...	300	20

*Relief Operations.*—A further sum of Rs. 100 was paid towards the relief operations in Spain, the sum previously paid towards the same purpose being Rs. 150.

*Headquarters' Grant.*—A sum of Rs. 360 was received and paid to the Nursery School at Mysore.



A sum of Rs. 313 to Kolar Gold Field Centre and a sum of Rs. 757 to the State Branch respectively was made over by the Headquarters.

*Ambulance.*—(a) An important change that took place in the personnel of the administration of the Ambulance Centre was the handing over of the charge of the Office of the Hon. Secretary, St. John Ambulance Association, Mysore State Centre, by Mr. H. R. Abdul Gaffar, B.A., to Captain Y. V. Iyya, L. M. S., Bangalore.

(b) A grant of Rs. 125 was sanctioned towards meeting the conveyance charges of the lecturers in the matter of starting First Aid and Home Nursing courses in the various Girls' High Schools in Bangalore.

(c) A grant of Rs. 300 was sanctioned towards the maintenance of an Ambulance Car in Chikmagalur for use both in and outside the town.

*Distinguished Visitors.*—Lord Scarborough, the Sub-Prior of the Order of St. John of Jerusalem, London, in a letter addressed to His Highness the Maharaja of Mysore, has expressed his appreciation of the excellent arrangements made and the generous hospitality extended to Col. J. L. Sleeman, during his visit to the State.

Major-General E. W. C. Bradfield, C.I.E. & etc., Chairman of the Anti-Tuberculosis Fund Committee, and Dr. B. K. Sikand, M.B., D.P.H., Secretary, Anti-Tuberculosis Fund Committee, Headquarters, Simla, inspected the Ambulance work in this district, in the last week of September, during their stay here, as State Guests. They were greatly pleased with the general advance made in the Ambulance work in our area.

*Donations.*—The Bangalore Race Club, as usual, generously donated a sum of Rs. 750 towards the State Branch for the year 1937.

*Members of the Society.*—An application with the prescribed fee of Rs. 12 has been received from Doddballapur Municipal Council, for being enrolled as an Annual Member of the State Branch.

#### OTHER CENTRES.

The work done in the centres doing maternity and child welfare work is detailed below in a tabular statement:—



*Maternity and Child Welfare Work done*

No	Place	Name of Centre	No. of Clinics held		
			Ante-natal	Post-natal	Children
1	Bangalore ...	Beli-mut Creche ...	...	...	...
2	Do ...	Civic and Social Progress Association, Chamarajpet.	8	7	10
3	Do ...	Deena Seva Sangha, Malleswaram	...	...	...
4	Do ...	Mahila Seva Samaj, Basavangudi	...	...	...
5	Do ...	Child Welfare Centre, Military Area, Hebbal.	4	2	13
6	Do ...	Welfare Centre (Bangalore Woollen, Cotton and Silk Mills).	8	...	8
7	Channapatna ...	Maternity and Child Welfare Centre	...	...	...
8	Chitaldrug ...	Do do	...	...	...
9	Chikballapur ...	Do do	...	...	...
10	Chikmagalur ...	Do do	12	...	12
11	Devanhalli ...	Do do	...	...	...
12	French-Rocks ...	Do do	4	4	4
13	Hassan ...	Do do	...	...	...
14	Kolar Gold Fields	Do do	13	15	13
15	Mysore ...	Civic and Social Progress Association	4	...	13
16	Do ...	Vani Vilas Maternity and Child Welfare Centre, Vani Vilas Hospital.	22	...	13
17	Do ...	Gajasala Maternity and Child Welfare Centre.	...	...	...
18	Do ...	Sri Krishnarajendra Mills' Creche	...	...	...
19	Do ...	Sisuvihar (Toddler's School)	...	...	...
20	Do ...	Vocational Institute for Women (Toddler's School).	...	...	...
21	Do ...	Toddler's School in Gajasala Centre	...	...	...
22	Do ...	Do in Nanjaraja Bahadur Chattram.	...	...	...
23	Do ...	Do in Kantharaj Urs Chowk.	...	...	...
24	Do ...	Mallamma's Maternity and Child Welfare Centre.	...	...	...
25	Do ...	Devaraja Centre	...	...	...
26	Do ...	Savoy Maternity and Child Welfare Centre	...	...	...
27	Do ...	Subramanyam Centre	...	...	...
28	Do ...	Sri Vani Vilas Milk Centre	...	...	...
29	Mandagadde ...	Mission Centre	...	...	...
30	Nanjangud ...	Maternity and Child Welfare Centre.	114	30	133
31	Shimoga ...	Ante-natal and Baby Clinic, Methodist Mission.	13	13	13
32	Do ...	Lady Mirza Ismail Milk Centre	...	...	3
33	Sivasamudram	Maternity and Child Welfare Centre	6	9	7
34	Tirthahalli ...	Mission Centre	...	...	...
35	Tumkur ...	Bathlur Baby Clinic, Methodist Mission.	...	...	10
Total (Mysore State) ...			203	80	252



during the quarter ended September 30, 1937.

No. of Cases examined								No. of Children that were			No. of House Visits paid			Remarks
Pregnant women				Children				Weighed	Bathed	Given milk	First visit	Re-visits	No. of deliveries attended	
First Examination	Re-Examination	No. treated	No. referred to Hospital	First Examination	Re-Examination	No. treated	No. referred to Hospital							
...	...	...	...	25	25	23	...	24	25	25	...	...	...	
8	7	...	...	8	...	...	...	41	41	41	300	300	7	
...	...	...	...	3,189	1,321	...	3,189	...	1280	...	3,926	3,926	...	
93	45	87	2	94	86	87	2	94	...	...	92	74	29	
29	71	25	...	82	250	40	...	250	...	82	222	1,312	22	
13	10	...	2	12	12	...	...	12	12	12	8	...	...	
...	Not	received.	...	...	...	...	...	...	...	...	...	...	...	
...	Do	...	...	...	...	...	...	...	...	...	...	...	...	
...	Do	...	...	...	...	...	...	...	...	...	...	...	...	
49	79	128	15	17	120	137	100	17	26	26	67	177	...	
...	Not	received.	...	...	...	...	...	...	...	...	...	...	...	
20	7	27	27	22	9	17	17	22	...	4	...	...	17	
...	Not	received.	...	...	...	...	...	...	...	...	...	...	...	
20	23	8	12	8	18	15	12	51	51	51	184	232	23	
8	5	8	2	27	20	...	2	27	27	27	5	7	5	
470	354	824	...	77	21	98	...	98	...	...	...	...	482	
...	Not	received.	...	...	...	...	...	...	...	...	...	...	...	
...	Do	...	...	...	...	...	...	...	...	...	...	...	...	
...	Do	...	...	...	...	...	...	...	...	...	...	...	...	
...	Do	...	...	...	...	...	...	...	...	...	...	...	...	
...	Do	...	...	...	...	...	...	...	...	...	...	...	...	
...	Do	...	...	...	...	...	...	...	...	...	...	...	...	
...	Do	...	...	...	...	...	...	...	...	...	...	...	...	
...	Do	...	...	...	...	...	...	...	...	...	...	...	...	
...	Do	...	...	...	...	...	...	...	...	...	...	...	...	
...	Do	...	...	...	...	...	...	...	...	...	...	...	...	
...	...	...	...	...	...	...	...	3	3	3	...	...	...	
88	26	114	66	98	40	112	...	40	40	40	...	...	53	
...	...	533	5	...	...	260	...	140	...	...	...	...	...	
...	...	...	...	10	40	25	10	50	...	50	...	...	...	
30	22	15	15	39	29	24	24	68	...	...	49	30	17	
...	Not	received.	...	...	...	...	...	...	...	...	...	...	...	
...	...	...	...	2	17	17	1	9	...	...	...	...	...	
828	654	1,769	146	3,710	2,008	855	3,357	946	1505	361	4,798	6,058	655	



**BUREAU OF EPIDEMIOLOGY.**

B. ANANTHASWAMI RAO, B.Sc., M.B.B.S., M.P.H.,

*Superintendent.*

The Superintendent visited 15 places in five districts for routine inspection of anti-malaria work, fresh malaria surveys and investigation of an epidemic of typhoid. He visited Vizagapatam for studying the anti-malaria work, on his way to attend the Symposium on Malaria at Calcutta where he read a paper on "Control of Anophe-line Breeding in Irrigation Channels by Paris Green" and took part in the discussions.

The lectures on Epidemiology to the Sanitary Inspectors' Training Class were continued throughout the quarter.

Approval of Government for conducting preliminary malaria survey of the area to be irrigated by the proposed Bhadra Project was conveyed in letter No. 680—S. dated 19th August 1937 from the Secretary to Government, Public Works Department, Bangalore.

Dr. Barber of the Rockefeller Foundation visited the State on a malaria inspection tour and the Superintendent accompanied him with Dr. Sweet during his visit to Mysore, Nagenhalli, Mandya, Bangalore, Hiriya and Marconahalli.

Anti-malaria work was started in Bhadravati Old Town and Marconahalli during the quarter.

**Malaria Stations.**

The quarterly spleen and parasite surveys of the three Study Stations and the annual spleen and parasite survey of Bangalore City were done during the quarter. Statements giving the spleen and parasite rates for the places surveyed are given in the appendix.

An attempt at clearing the weeds in the valley behind the dispensary in Hiriya and a similar experiment by the use of manual labour in the tank margin at Mandya were reported during the last quarter. Fresh and vigorous shoots of these weeds have come up in both the places indicating that either of the methods adopted do not offer a permanent solution of this problem of weed growth.

It is felt that the growth of weeds in the tanks in Mandya area is favoured by two conditions, viz., (1) the



shallowness of the tanks, and (2) the washing in of silt rich in manure from the fields above into the tank. It is now proposed to prevent the seepage and washing in of silt by constructing pick-up channels and deepening the water margins of the tank. These measures are proposed to be given effect to for the Mandya tank, in pursuance of the proposal to keep the Mandya tank bed dry during the summer months. It is felt that the combined effect of the above two measures in addition to drying the bed for six months of the year will effectively solve the problem of weeds.

The grading and stone revetting the sides of the valleys and hallas within the two furlong zone in Kyathangere near Mandya was started during the quarter. Arrangements have been made for collecting regular data on the intensity of anopheline breeding in these places before and after treatment. The effect of this treatment on the local malaria will be studied.

Arrangements have been made for starting experimental flushing of irrigation channels for larval control and also the erection of De Viller's type syphon for flushing the waste weir valley of one of the tanks in the Mandya area. The records of intensity of anopheline breeding before and after installing the flushing arrangement will be studied to determine the efficacy of this method of automatic control and also the effective range of the two devices.

A length of channel in Hiriyr has been packed with green cocoanut leaves to study the effect of herbage cover suggested by Williamson on anopheline breeding.

*Bangalore City.*—The annual spleen and parasite survey of the city was done during the first month of the quarter as usual. The results of the spleen examination are given in appendix. The blood smears are under examination and the results will be furnished as soon as they are available. The spleen rates for the city as a whole was found to be 0·31 as against 0·3 last year and 8·7 in 1929. The city has continued to be practically free from malaria.

The control of *anopheles stephensi* breeding in wells by *Gambusia* fish continued to be satisfactory. During the routine inspection, the staff examined 2,531 wells and restocked 2,142 wells with fish during the quarter.

The collection of anopheline mosquitoes in the catching stations compared very favourably with corres-



ponding figures for the same quarter last year, though there was considerable increase in the culicines. The collections during this year were 126 anophelines and 714 culicines as against 384 and 529 respectively last year. The mosquito gangs will have to be more vigilant in locating all culicine breeding places and treat them with oil promptly.

*Mysore City.*—Anti-mosquito work was continued during the quarter in the city. The collection of anophelines in the catching stations was 179 during this quarter as against 307 in the corresponding quarter last year. The staff inspected and restocked with fish 648 wells and 50 ponds.

#### Central Laboratory.

The study of *A. stephensi* was continued during the quarter. Two papers on the work done so far have been prepared and sent for publication. The study was confined mainly to the eggs, and to the development of a proper technique for the cage rearing of *A. stephensi* to establish a permanent colony. Experiments on the best methods for feeding the mosquitoes in the breeding cages are also in progress.

Routine examination of blood slides from the stations were done.

#### Spleen Surveys.

*Paper Mill Area, Bhadravati.*—A malaria survey of the proposed paper mill colony in Bhadravati was done during the quarter. A summary of the recommendations made is given below :—

- (1) Mass treatment of all the labour and staff with Totaquina and Plasmoguinine as per directions given to the Assistant Surgeon in charge. All fresh entrants should be given a complete course of treatment and all fresh attacks should be put through a second course of treatment.
- (2) All burrow-pits should be immediately cut and graded off wherever possible so as to allow no stagnation of water. Where this is not possible arrangements should be made for filling and levelling the ground.
- (3) No fresh excavation within a half mile of the factory and colony premises should be permitted.
- (4) The two kattes behind the coolie and staff lines should be breached and the valleys properly graded.
- (5) A scheme for the subsoil drainage of the whole colony should be got prepared in consultation with the Bureau of Sanitary Engineering and the work completed as early as possible.



- (6) A recurring expenditure of Rs. 1,900 for anti-larval work should be provided for the prevention of malaria with an extra provision of Rs. 200 for equipment in the first year.

In this connection, it is felt desirable to point out that excluding the present suggested anti-malaria unit, there are already two other units working in the locality closely adjoining each other. Each unit is under the immediate charge of an Assistant Sanitary Inspector trained in anti-malaria work. In view of the importance of the area under control and the necessity for close co-operation and co-ordination of the work of the three units as also to look after the general sanitation and the special health problems of a developing factory area, the necessity for a qualified full-time Health Officer cannot be overstressed.

*Sakrepatna.*—Malaria survey of Sakrepatna in Kadur Taluk was done in the month of August. The measures suggested for the control of malaria are :—

- (1) Certain permanent improvements by engineering ;
- (2) Anti-larval work at an annual recurring cost of Rs. 1,900 plus Rs. 200 the first year for equipment ;
- (3) A course of blanket treatment with totaquina and plasmoquine at an estimated cost of Rs. 700.

#### **Hookworm Campaign.**

The treatment campaign for Hookworm was temporarily stopped during the quarter. The construction of latrines in the treated villages was continued in charge of two Assistant Sanitary Inspectors working under the supervision of the District Health officer. During the quarter 175 latrines of the Hagevu type were constructed in 33 villages.

#### **Guineaworm Unit.**

The Guineaworm staff visited 302 villages and examined 184 stepwells. The staff treated 11 active cases and restocked 51 stepwells with fish.

#### **Fly Survey.**

A detailed survey of all fly breeding places in Wards I and II of Davangere Town was done during the quarter by one of the officers of the Bureau. In all 1,549 likely places were searched and of these 1,144 showed of egg, larvæ or pupæ of the fly indicating that 74 per cent of the potential places were actually breeding at the time of



the survey. It was found that house and street refuse and dung heaps accounted for the major portion of fly breeding in the area surveyed.

### Control of Epidemics.

*Cholera.*—Cases of cholera were practically confined to three Districts with a few stray cases in two other Districts. The total number of attacks and deaths from cholera during the quarter was 337 and 148 respectively in 38 villages as against 1,528 attacks and 830 deaths during the last quarter. Chitaldrug District had the largest number of cases with 182 attacks and 66 deaths.

*Plague.*—Plague showed signs of increase during the quarter. Infection was reported from 98 villages in five Districts, the other three Chitaldrug, Kadur and Tumkur remaining free. There were in all 664 attacks and 375 deaths as against 194 attacks and 118 deaths in the previous quarter.

*Small-pox.*—The State was practically free from Small-pox during the quarter. There were 152 attacks and 37 deaths from Small-pox in 24 villages, distributed in six Districts.



TABLE 1.

*Spleen and Blood Examinations in Experimental Malaria Stations during the quarter ended September 30, 1937.*

Spleens	0-9			10-19			20 and over			All ages		
	No. Ex.	No. Inf.	% Inf.	No. Ex.	No. Inf.	% Inf.	No. Ex.	No. Inf.	% Inf.	No. Ex.	No. Inf.	% Inf.
Spleens not examined	...	...	...	...	...	...	...	...	...	...	...	...
Spleen Negative	153	5	3.3	23	...	...	10	...	...	185	5	2.7
Spleen Palpable	10	1	10.0	5	1	20.0	2	...	...	17	2	11.8
1	19	3	15.8	9	...	...	3	1	33.3	31	4	12.9
2	9	1	11.1	8	1	12.5	...	...	...	17	2	11.8
3	5	...	...	1	...	...	...	...	...	6	...	...
4	...	...	...	...	...	...	...	...	...	...	...	...
5	...	...	...	...	...	...	...	...	...	...	...	...
All persons with palpable Spleen.	43	5	11.6	23	2	8.7	5	1	20.0	71	8	11.3
Grand Total—All Spleens ...	196	10	5.1	46	2	4.3	15	1	6.7	256	13	5.1
Spleen Rate ...	196	43	21.9	46	23	50.0	15	5	33.3	256	71	27.7



TABLE 2.  
*Adult Catches in Control and Peripheval Areas.*

Species	Nagenhalli		Mudgere		Hiriyur		Nagoonhalli	
	Pd. zn.	Pl. zn.	Pd. zn.	Pl. zn.	Pd. zn.	Pl. zn.	Pd. zn.	Pl. zn.
<i>A. aconitus</i>	1	16	...	2	21	12	...	...
<i>A. aithenii</i>	...	...	...	...	...	...	...	...
<i>A. annularis</i>	26	221	1	...	22	26	57	...
<i>A. barbirostris</i>	...	...	2	1	...	...	...	...
<i>A. culicifacies</i>	113	1,086	5	12	53	203	167	...
<i>A. fluvialilis</i>	4	192	3	3	39	115	8	...
<i>A. byrcanus</i>	6	4	1	1	...	...	3	...
<i>A. jamesii</i>	2	18	3	47	2	1	5	...
<i>A. jeyporiensis</i>	1	6	178	1,172	...	...	...	...
<i>A. karwari</i>	...	...	4	1	...	...	...	...
<i>A. lencosphyros</i>	...	...	...	2	...	...	...	...
<i>A. maculatus</i>	...	...	...	1	...	...	...	...
<i>A. minimus</i>	...	...	...	...	...	...	...	...
<i>A. majidi</i>	...	...	...	1	...	...	...	...
<i>A. pallidus</i>	3	2	...	...	3	1	...	...
<i>A. splendendus</i>	2	9	...	...	...	...	...	...
<i>A. stephensi</i>	...	8	...	...	45	140	1	...
<i>A. subpictus</i>	363	1,106	3	14	150	404	420	...
<i>A. tessallatus</i>	8	19	2	16	8	35	...	...
<i>A. turkudi</i>	...	1	...	...	1	3	...	...
<i>A. vagus</i>	130	322	32	88	46	76	87	...
<i>A. vamna</i>	...	...	...	1	...	...	...	...



TABLE 3.  
*Species of Malaria Parasites.*

Age	Nagenhalli								Nagoonahalli							
	Total No. Inf.	B. T.		M. T.		Q.		Total No. Inf.	B. F.		M. T.		Q.			
		No. Inf.	% Inf.	No. Inf.	% Inf.	No. Inf.	% Inf.		No. Inf.	% Inf.	No. Inf.	% Inf.	No. Inf.	% Inf.		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		
0-9	3	1	33.3	1	33.3	1	33.3	3	...	...	3	100.0	...	...		
10-19	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
20 and over	1	...	...	...	...	1	100.0	...	...	...	...	...	...	...		
All ages	4	1	25.0	1	25.0	2	50.0	3	...	...	3	100.0	...	...		
Age	Mudgere								Hiriyur							
	Total No. Inf.	B. T.		M. T.		Q.		Total No. Inf.	B. T.		M. T.		Q.			
		No. Inf.	% Inf.	No. Inf.	% Inf.	No. Inf.	% Inf.		No. Inf.	% Inf.	No. Inf.	% Inf.	No. Inf.	% Inf.		
0-9	16	17	18	19	20	21	22	23	24	25	26	27	28	29		
10-19	2	...	...	1	50.0	1	50.0	2	...	...	1	50.0	1	50.0		
20 and over	1	...	...	...	...	1	100.0	1	...	...	1	100.0	...	...		
All ages	3	...	...	1	33.3	2	66.6	3	...	...	2	66.6	1	33.3		



## SPLEEN SURVEYS IN BANGALORE CITY.

1927 (1933—1937.)

Serial No.	Areas	1927			1933			1934			1935			1936			1937		
		No. Ex.	Spl. R.	P. R.	No. Ex.	Spl. R.	P. R.	No. Ex.	Spl. R.	P. R.	No. Ex.	Spl. R.	P. R.	No. Ex.	Spl. R.	P. R.	No. Ex.	Spl. R.	P. R.
1	Lal-Bagh area	152	37.5	...	290	2.4	12.9	304	1.9	...	341	0.3	5.2	334	0.0	0.0	336	0.58	*
2	Malleswaram area	221	31.2	...	439	1.1	5.0	551	1.3	...	499	0.0	0.0	517	0.4	0.8	501	0.0	*
3	Chamarajapet area	156	21.8	...	274	0.7	2.3	287	2.0	...	357	0.6	4.2	367	0.0	0.0	358	0.55	*
4	Basavanagudi area	164	15.2	...	345	0.8	3.3	375	0.8	...	382	0.3	5.2	369	0.8	1.5	381	0.52	*
5	City area	166	8.4	...	526	1.3	6.5	512	1.4	...	551	0.4	4.7	614	0.3	1.8	634	0.16	*
	Total	859	23.2	...	1,874	1.2	5.6	2,029	1.4	...	2,130	0.3	3.3	2,201	0.3	0.8	2,210	0.31	*

\*Figures not available.



## BUREAU OF LABORATORIES.

## (a) Public Health Institute.

G. M. DOMINICK, M.R.C.S., D.P.H.,

*Superintendent.*

1. *Bacteriological Section.*—Two thousand four hundred and twenty-seven specimens were examined as follows:—

No.	Particulars	Number Positive	Number Negative	Special samples	Total
1	Blood for Wassermann test ...	520	1,204	...	1,724
2	Do   Widal test ...	70	37	..	107
3	Do   Malarial Parasites ...	...	7	...	7
4	Do   Blood count ...	...	...	1	1
5	Do   L. D. Bodies ...	...	1	...	1
6	Motion for cholera ...	1	4	...	5
7	Do   ova ...	...	5	...	5
8	Do   Amœbæ ...	9	3	...	12
9	Do   Dysentery ...	1	5	...	6
10	Do   Typhoid ...	...	1	...	1
11	Smear for G. C. ...	5	6	...	11
12	Do   B. Pestis ...	1	3	...	4
13	Urine ...	...	...	12	12
14	Urine for typhoid ...	...	6	...	6
15	Urine for B. Coli ...	1	...	...	1
16	Sputum for T. B. ...	5	6	...	11
17	Disinfectants ...	...	...	31	31
18	C. S. Fluid ...	...	...	2	2
19	Water for Typhoid ...	...	22	...	22
20	Do   Cholera ...	...	4	...	4
21	Do   general ...	...	...	388	388
22	Vomit for Cholera ...	...	1	...	1
23	Vaccine from Vaccine Institute. ...	...	...	65	65
Total ...		613	1,315	499	2,427



2. *Chemical Section.*—During the quarter 389 specimens were examined as detailed below :—

No.	Item	July to Sept. 1937
1	Pyridine ... ..	2
2	Cocanut shell oil ... ..	7
3	Water for Residual chlorine ... ..	329
4	Sewage effluent ... ..	2
5	Water ... ..	28
6	Rice ... ..	1
7	Essences ... ..	4
8	Blood sugar estimation ... ..	3
9	Ragi ... ..	2
10	B. D. Broth ... ..	2
11	Light Coautchoucine ... ..	1
12	Distilled Water ... ..	2
13	Motion for detection of Arsenic ... ..	1
14	Vomit Do ... ..	1
15	Wood-Naptha ... ..	2
16	Milk ... ..	1
17	Opium ... ..	1
Total ...		389

3. *Medico-legal Section.*—In this section 67 cases with 265 articles were examined.

No.	Particulars	No. of cases	No. of articles
1	Mammalian Blood ... ..	34	148
2	Suspected human poisoning ... ..	21	92
3	Explosives ... ..	6	10
4	Rape ... ..	3	5
5	Abortion ... ..	2	7
6	Ragi ... ..	1	3
Total ...		67	265



In 33 Cases Mammalian blood was detected.

„ 1 „ Arsenic and Pot. cholorate were detected.

„ 1 „ Sulphuric acid were detected.

„ 1 „ Mercury was detected.

„ 1 „ Nitric acid was detected.

„ 4 „ Potassium chlorate was detected.

„ 1 „ Arsenic and potarsium sulphide were detected.

„ 1 „ Potassium nitrate was detected.

„ 2 „ Oleander was detected.

„ 1 „ Ragi was declared as unfit for human consumption.

„ 1 „ G. C. was present.

4. *Vaccines Issued.*—In the quarter under report 1,750 cc. of Cholera Vaccine and 1,054 cc. T.A.B. vaccine were issued.

5. *Fees.*—

	<i>Items.</i>	<i>Amount.</i>		
		Rs.	a.	p.
1.	Bacteriological Examinations ...	21	7	0
2.	Chemical ...	25	0	0
3.	T. A. B. Vaccine ...	92	6	0
4.	Cholera vaccine ...	6,985	5	6
5.	Other Receipts (Training fees) ...	50	0	0
Total ...		7,174	2	6

(b) **Vaccine Institute.**

J. A. ISWARAMURTHY, B.A., L.M.S., B.S.SC.,

*Superintendent.*

<i>Particulars.</i>	<i>Number.</i>
Calves waiting on 1st July 1937 ...	12
„ replaced against those returned during the previous quarter, ...	...
„ purchased ...	14
„ waiting died ...	...
„ available for vaccination ...	26
„ waiting on 1st October 1937 ...	14
„ vaccinated ...	12
„ vaccinated and uncollected ...	...
„ vaccinated and rejected ...	2
„ vaccinated and died (uncollected) ...	...
„ vaccinated and whose pulp was collected. ...	9
„ vaccinated and remained over for collection of lymph on 1st October 1937. ...	1

<i>Particulars.</i>	<i>Number.</i>	
Lymph produced during the quarter was 4,610 grains of pulp equivalent to ...	57,625	Cases
„ remained on 1st July 1937 enough for ...	424,345	„
„ produced during the quarter enough for ...	57,625	„
„ available enough for ...	481,970	„
„ issued during the quarter enough for ...	78,870	„
„ wasted in loading and storing ...	1,090	„
„ utilised for Seed and Test enough for ...	42,380	„
„ issued, wasted and utilised for seed, etc. ...	122,340	„
„ remained over 1st October 1937 ...	359,630	„
	Rs.	a. p.
Income realised including arrears as per accounts of this office.	3,361	0 0
Expenditure during the quarter ...	4,198	12 10
Candidates trained in vaccination ...	Nil	
„ granted qualifying certificates ...	Nil	

*General Remarks.—*

- (1) Chloroformed Glycerine lymph was issued for general issue in the State.
- (2) Fifty-two Glycerine samples were examined bacteriologically 159 times and their potency tested in serial dilution on the rabbit and clinically in the Model Range.
- (3) Only potent lymph found free from pathogenic organism were issued.

*Model Range.*—A total of 322 primary vaccinations were done with Glycerine lymph of varying age periods for clinical test before releasing for general issue and were observed to give a success rate of 87·4 per cent. The oldest Glycerine lymph used in this range has been preserved for nine months and 25 days from the date of production before use and freshest for about four months and five days, the average period being six months and 15 days.

Percentage of successful primary cases reported during the quarter by random sampling work out as under:—

	<i>Per cent.</i>
Rural Health Unit ...	73·6
Bangalore City ...	83
Mysore „ ...	90·9
and from the rest of the State ...	90·2

Demand for vaccine lymph were met in full during the quarter under report.



**BUREAU OF HEALTH EDUCATION.**

E. ANANTHA RAO, B.Sc., M.B.B.S., D.P.H.,

*Superintendent.*

During the quarter ended 30th September 1937 the Cinema publicity was mainly concentrated in Kadur, Tumkur and Kolar Districts and in selected parts of Bangalore City, the total number of demonstrations given being 55. An approximate audience of 48,740 persons attended these shows. The cinema staff toured in the departmental motor van, covering a total distance of 2011.7 miles.

Of the 55 cinema shows held, three were in connection with Health and Baby shows organised at the Bangalore Woollen, Cotton and Silk Mills, Military Area, Hebbal, Bangalore and Channapatna. Seven shows were organised in selected parts of Bangalore City and the rest of the shows were held in parts of Kolar, Tumkur and Kadur Districts, mostly in villages selected for intensive propaganda work under the rural improvement scheme.

The Publicity Officer visited several Government and aided Primary, Middle and High Schools, 34 in all, and delivered simple health talks to the teachers and pupils. He visited eight shandies in villages, and distributed printed health propaganda leaflets. The Superintendent, Bureau of Health Education, delivered a lecture in Kannada on "Maternity and Childwelfare" at Hebbal in connection with the Health and Baby week celebration organised by the Military authorities.

Twenty-six poster exhibitions were arranged during the quarter. Nine articles on health subjects and 13 weekly bulletins in Kannada in regard to the state of public health in the State were contributed to the local English and Kannada papers. Convictions secured under Food Adulteration Prevention Regulation in Mysore City were given publicity to in the local newspapers. A brief summary of the activities of the Health Training Centre at Closepet for the month of July 1937 was also published. The issue of the Mysore Arogya on "Wholesome Milk" was printed and published. The full text of this issue was reproduced by the editor, "Viswakarnataka" in one of the weekly issues, duly acknowledging the source.



Nine hundred and fifteen posters, 2,389 leaflets and 92 picture-pamphlets on health subjects, printed by the Bureau of Health Education were freely issued during the quarter.

Regarding Red Cross propaganda, 44 lectures were delivered on the aims and objects of the Red Cross movement.

### **BUREAU OF RURAL HEALTH.**

#### **(a) Health Training Centre, Closepet.**

T. CHANDRASEKHARAIYA, B.A., M.B.B.S., M.P.H.,

*Health Officer.*

The routine activities of the Centre were carried on undisturbed by epidemic disease prevalence and greater attention was paid towards the improvement of the Sanitation of the villages in collaboration with the revenue authorities. Four co-operative villages, *viz.*, Chickankanahalli, Doddankanahalli, Honganur and Vodakehosalli were selected for this purpose and works such as road construction, removal of rank vegetation, removal of unsightly dilapidated walls, filling up of insanitary pits, construction of drains and soak-pits, white-washing of houses, etc., were commenced towards the end of the quarter.

During the quarter work was started on 29 latrines, 160 soak-pits were introduced and 44 manure pits and 20 insanitary pits were got filled up. 31 windows were introduced, nine cattle-sheds were improved and 70 houses were got white-washed, 114 encroachments and dilapidated walls were got removed and improvement of roads and drains was undertaken in 12 villages. Two conservancy lanes were also opened. The progress that has been made in this direction during this short period has been very encouraging.

In Archikarahalli the improvement works have been undertaken by the people on the Health League basis.

For carrying out these improvement works satisfactorily it is necessary to have the requirements tabulated. In order to do so, the Sanitary Inspectors have been asked, first of all, to prepare statements showing the actual requirements under various heads for individual houses as well as for the villages. These statements,



when they are complete, will form useful and ready guides to the workers while actually starting the activities in any of the villages in the area.

*Vital Statistics.*—All the villages were visited by the Sanitary Inspectors for the collection of vital statistics and the checking of the birth and death registers. It was found that 83 births out of 60 (or 13·6 per cent) and 17 deaths out of 212 (or 8 per cent) had escaped registration. This gives a birth-rate of 48·7 and a death-rate of 16·9 for the quarter under report as against 37·9 and 16·5 respectively in the previous quarter.

The public health nurses investigated and reported 72 infant deaths and two maternal deaths.

*Propaganda.*—The Sanitary Inspectors during their 602 visits to the various villages gave 1,970 talks on various health subjects, about 27,000 persons attending these.

The Sanitary Inspectors are giving special attention to the primary schools in their divisions, where, on a systematic routine, they have been directed to talk to the children and the teachers on health and health habits.

*Chlorination.*—All the drinking water wells and stepwells were chlorinated according to routine.

*Vaccination.*—Intensive vaccination was carried on as, as usual, in all the areas of the Centre. A total of 7,212 vaccinations (561 primary and 6,651 re-vaccinations) were performed. The percentage protected has now risen over 90 in the divisions C, D and E.

*Maternity and Child Welfare.*—The public health nurses have started systematic work in all their areas. During the quarter two more clinics were started—one weekly clinic at Neelkantanhalli in the C division and another fortnightly clinic at Kailancha in the B division. The Closepet and Bannikuppe Clinics were held regularly. In all 48 clinics were held during the quarter and 117 pre-natals, 285 infants and 322 pre-school children attended these clinics as compared with 25 clinics, 63 pre-natals, 108 infants and 138 pre-school children in the previous quarter.

These five nurses during their 6,641 home-visits examined and registered 2,048 pre-natals, 2,945 infants and 3,573 pre-school children. They also examined 1,027 samples of urine.

*Midwives.*—The midwives attached to the Centre conducted 287 deliveries during the quarter. A total



of 2,088 post-natal visits were paid, giving an average visit of 4·8 per case as against 4·3 in the previous quarter.

*School Medical Inspection.*—School medical inspection was conducted in 12 schools of which seven are Government primary boys schools and five private schools. Out of 298 children that were examined, 254 were found defective, the number of defects noted being 578.

*Spleen Survey.*—The routine spleen survey (once every four months) was done in 34 villages out of 35 selected for the purpose, in the month of July. The villages situated along the river Arkavathi continued to give spleen rates of 10 and over.

*Laboratory.*—During the quarter 23 blood smears were examined at the Centre laboratory for detection of malarial parasites, three sputums for 'T. B., nine samples of stools for ova, and 10 urine samples. Five blood samples were sent to the Public Health Institute for Wassermann reaction and four stool samples for bacteriological examination.

At the Office 85 patients turned up for consultation. These were examined and given advice.

Abstract of work done in the Health Training Centre, Closepet, in the quarter July-September, 1937.

<i>Particulars.</i>			<i>Number.</i>
Area	...	...	113 Sq. miles.
Villages	...	...	139
Population	...	...	50,149
Wells chlorinated	...	...	673
Houses surveyed	...	...	228
Health talks given	...	...	1,971
Attendance	...	...	27,588
Average attendance...	...	...	14
Deaths detected	...	...	17
Births detected	...	...	83
Vaccinations done	...	...	7,212

*Public Health Nurses.*—

Infant deaths investigated	...	...	68 out of 72
Maternal deaths investigated	...	...	2 out of 2
Urine samples examined	...	...	1,027
Houses visited by Public Health Nurses	...	...	6,441
Clinics held	...	...	48



<i>Particulars.</i>			<i>Number.</i>
Midwives.—			
Visits to villages	...	...	1,684
Clinics attended	...	...	72
Pre-natals visited	...	...	6,358
Labour cases conducted	...	...	287
Post-mortem visits paid	...	...	2,088
Home-visits for other purposes	...	...	156
New Pre-natals registered	...	...	618
School Medical Inspection.—			
School children examined	...	...	298
Number defective	...	...	251
Number of defects found	...	...	578
Laboratory Examinations.—			
Samples sent to Public Health Institute	...	...	9
Samples examined	...	...	45
Patients examined at the Office...	...	...	85

### (b) Rural Health Unit, Mandya.

M. NARAYANA IYENGAR, L.M.P.,

*Officer in Charge.*

*Plague.*—During the quarter the Unit area was free from plague. Five attacks with five deaths were, however, reported from one village (Machenhalli), outside the Unit area. The village was visited and as many as 271 anti-plague inoculations were performed, protecting 90 per cent of the population and no further reports were received from the infected village.

*Smallpox.*—The Unit area was free from smallpox in the period under report. A total of 774 primary and 34 re-vaccinations were performed as a preventive measure.

*Cholera.*—Only one suspected case was reported from Channasandra village, Maddur area. The house was disinfected and all the drinking water supplies were chlorinated as a preventive measure, and 453 anti-cholera inoculations were performed by the sub-assistant surgeon of Maddur.

*Typhoid.*—During the quarter three cases at Mandya town, and three at Sivapur (Maddur area) and two cases at Gowdagere (Hanakere area) were recorded. Of these one case at Gowdagere proved fatal. Thirteen anti-typhoid



inoculations were performed during the quarter. One sample of blood for widal test was sent to the Public Health Institute, Bangalore, and the result was reported as positive both for enteric and para-typhoid A.

*Clinics.*—General clinics were held in the villages visited during the quarter and 29 persons were examined both at clinics and at office for various ailments and remedial measures were suggested.

*Midwives.*—The two midwives attached to the Unit paid 98 visits to 24 villages in their jurisdiction. They paid 493 pre-labour, 84 post labour and 20 miscellaneous visits. A total of 586 old and new cases came under their care. They conducted eight labour cases in the villages against 11 during the previous quarter. They examined nine samples of urine of pregnant women for albumin.

*Laboratory.*—The following samples were examined at the Unit Laboratory :—

Particulars	No. of specimens examined	Positive	Negative
1. Blood smears for M. P. ...	7	2	5
2. Sputum for T. B. ...	2	...	2
3. Urine for Albumin and sugar.	14	...	14
4. Spleen smears for B. P. ...	2	...	2
5. Blood for W. R. ...	13	...	13
6. Faeces for cholera vibrios ...	1	...	1
7. Blood for Widal Test ...	1	1	...
Total ...	40	3	37

*Dog Destruction.*—Thirteen stray dogs at Mandya town and eight at Maddur town were destroyed.

*Chlorination.*—A total of 519 drinking water supplies were chlorinated during the the quarter as detailed below :—

Range.	No. of water supplies chlorinated.
1. Kottatti ...	93
2. Satnur ...	77
3. Hanakere ...	57
4. Maddur ...	292
Total ...	519



*Propaganda.*—The staff gave during their rounds 1,136 talks to about 6,000 persons with a set of posters published by the Department for illustration; 54 leaflets on epidemic diseases were also distributed.

*Vital Statistics.*—During the quarter 50 births and 37 deaths were verified and 19 births and six deaths were detected by the staff as against 85 and 64, 21 and 28 during the previous quarter.

*General Sanitation.*—The sweepers were engaged for intensive cleaning work in all the villages in the 2nd and 3rd divisions and 83 villages were got cleaned up during the quarter. In addition to cleaning they were engaged in putting up one or two model soak-pits in each village for demonstrating the same to the villagers to adopt for preventing sullage water flowing into the streets. They were also engaged in removing rank-vegetation in and around the villages, to remove silt from the existing surface earth drains and pulling out dilapidated walls and levelling up.

## BUREAU OF SANITARY ENGINEERING.

N. KRISHNIENGAR, B.E.,

*Sanitary Engineer.*

As in the previous quarter, the Bureau consisted of five sections in addition to the two sub-divisions, one at Mysore for the City water distribution and one at Bethamangala for the Kolar Gold Fields water-supply.

### 1. WATER SUPPLY.

Fifty-three towns have in all been provided with water-supply. Of these, the annual maintenance works of 22 towns have been taken up by this Bureau. The list of works under progress and under maintenance is appended herewith.

### 2. DRAINAGE WORKS.

(a) *Bangalore City Drainage.*—The work of main outfall sewer line, except a length of about 700 feet at the end, is completed.

The street sewers in Arlepet and Akkipet were under progress.



Tenders for construction of sewers in Cubbonpet, Thiglarpet and along the Avenue Road have been received and are under disposal.

(b) *Moffusil Drainage*.—Drainage works of Chamarajanagar (3rd stage), Banavar, Tarikere (2nd stage) and Channarayapatna were completed. The works in other places shown in the statement are under progress.

(c) *Drainage*.—Projects of Bhadravathi, Vidhuraswatha and Hole-narsipur were modified and sent to the respective presidents. Projects for Belur and Mudigere were also prepared.

### 3. SANITARY FITTINGS INCLUDING HOUSE CONNECTIONS AND BORE-HOLE LATRINES.

In addition to the ordinary maintenance of sanitary installations of all the Government buildings in Mysore and Bangalore, the works shown in the list were under progress. Out of these works, sanitary installation of Telephone Exchange building, the lavatory of V and VI Wards in the Victoria Hospital, water closet at the lavatory of the Chief Electrical Engineer's Office, sanitary fittings to 'Lake View' cottage at Mysore, of Sri Narasimharaja Hospital at Kolar and of the Inspection Lodge at Sivasamudram were completed. The appended list shows the estimated amount and outlay to the end of September 1937.

Bore-hole latrines with flushing arrangements were constructed at Marconahalli. Two latrines with septic tank and flushing arrangement were constructed at Chikballapur.

### 4. TOWN PLANNING SCHEMES.

The plan for a proposed park at Kolar Town and a modified plan for an extension at Malur, Kolar District, were prepared and forwarded to the Municipalities. Type designs with estimates of granary with rat-proof arrangements, waiting sheds and village halls were prepared.

Extensive surveys of places of jattras at Mudukatore and Chunchankatte were conducted.

Ankanahalli Village, Closepet Taluk, was surveyed for rural improvements.

### 5. BOREWELLS.

During the quarter, 12 drills were working in 12 places, *viz.*, Hommergalli, Melkote, Nuggehalli, Kulagurki.



Mysore Lamp Works area, Lakkavalli, T. P. Nos. B and C. Belagola, Anekal No. 3, Hudi Village, Hosnagar and Devanhalli No. 2. Out of these twelve borewells, one at Lakkavalli T. P. Nos. was completed.

#### 6. ANALYSES OF WATER SAMPLES.

During the quarter, 96 samples of water, bacteriological 76 and chemical 20, were analysed.

#### *List of places where works are under progress in various stages.*

No.	Places	Amount of Estimate in rupees	Outlay to the end of Sept. 1937 in rupees	Remarks
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#### (1) WATER SUPPLY.

##### (a) Capital Works.—

1	Chintamani ...	24,806	20,971	Completed.
2	Closepet ...	25,850	22,169	Do
3	Kunigal ...	10,688	11,603	Do
4	Whitefield ...	19,824	14,523	Do
5	Chikballapur ...	3,930	3,833	Do
6	Vidhuraswatha Jatra	2,930	1,651	
7	Davangere ...	1,99,000	8,223	
8	Jagalur ...	2,700	2,326	Do
9	Chitaldrug ...	12,930	16,797	Do
10	Constructing filter for Chitaldrug Town water-supply.	20,000	6,042	
11	Improving Dodballapur water works.	1,645	1,532	Do
12	Mandya ...	61,875	61,533	Do
13	Ganjam ...	19,988	15,902	
14	Arsikere ...	33,110	26,052	Do
15	Hoskote ...	17,440	6,477	
16	Chikmagalur ...	71,381	7,463	
17	Constructing settling tank, Nanjangud.	8,000	7,587	
18	Melkote ...	10,000	4,174	
19	Laying mains from Chamaraja Road to Krishnaraja Road, Chamaraja Agrahar, Kannegowdan koppal, Mysore.	8,830	7,435	



No.	Places	Amount of Estimate in rupees	Outlay to the end of Sept. 1937 in rupees	Remarks
20	Jatra at Chunchan-katte, Krishnaraja Nagar.	7,222	2,116	
21	Mudukatore Jatra ...	8,013	6,598	
22	Hemagiri Jatra . .	7,007	2,016	
23	Fig Cultivation at Ganjam village.	12,500	10,640	
24	Fire Hydrants to the Carriage Workspot, at Railway Central workshop, Mysore.	2,024	1,442	
25	Erecting three tanks on the top terrace of the Medical College, Mysore.	1,208	736	
26	Erecting a galvanised tank on the terrace of Park House, Mysore.	349	287	
27	Water connection to Parsi Burial Ground, Mysore.	700	392	
28	Water supply to Attibele village.	8,000	2,915	
29	Improving water supply to distribution system in Mysore City.	48,985	789	
30	Improving water supply to Hassan.	52,625	9,485	
31	Saklespur town ...	29,125	9,548	
32	Extending water supply main to block No. IV, Vani Vilas Mohalla.	2,325	1,913	

## (b) Annual Maintenance.—

1	A. M. of Vani Vilas water works, Mysore.	...	36,051	
2	„ of K. G. F. water works, Bethamangala.	82,500	22,050	
3	„ of Shimoga water works, Shimoga.	23,997	1,224	
4	„ of Doddballapur water works.	3,343	608	



No.	Places	Amount of estimate in rupees	Outlay to the end of Sept. 1937 in rupees	Remarks
5	A. M. of Robertsonpet and Andersonpet.	28,700	7,763	
6	„ of Hole-Narsipur	...	1,803	
7	„ of Channapatna	...	698	
8	„ of French Rocks	...	7	
9	„ of Konanur ...	...	664	
10	„ of Chitaldrug water works.	...	356	
11	„ of Satnur ...	...	75	
12	„ of Krishnaraja Nagar.	2,493	388	
13	„ of Santhemarahally.	1,233	122	
14	„ of Seringapatam	3,150	2	
15	„ of Arsikere ...	...	463	
16	„ of Ghati Subramanya Jatra.	...	8	
17	„ of Kunigal ...	...	148	
18	„ of Chickchannanajappa water works, Kolar.	4,156	953	
19	„ of Mandya ...	3,000	213	
20	„ of Melkote ...	...	139	
21	„ of Closepet ...	2,644	130	
22	„ of Water supply to fig cultivation at Ganjam.	1,800	84	

## (2) DRAINAGE.

1	Bangalore ...	2,61,385	2,63,041	
2	Chamarajnagar, 3rd stage.	10,500	7,690	
3	Banavar ...	4,028	3,181	Completed.
4	Tarikere, 2nd stage ...	20,000	16,253	Do
5	Dodballapur ...	6,250	4,403	
6	Chintamani ...	3,000	974	
7	Goribidnur ...	6,854	5,094	
8	Channarayapatna ...	3,000	2,597	
9	Hoskote Village (Pavgada Taluk).	1,340	1,340	Do



No.	Places	Amount of estimate in rupees	Outlay to the end of Sept. 1937 in rupees	Remarks
(3) SANITARY FITTINGS.				
1	Sanitary Installation of <i>Dharmapravarta</i> Sajjan Rao's Obstetric Isolation Hospital, Bangalore.	6,258	4,461	Completed.
2	New Mental Hospital	14,600	5,950	
3	Central College Home	1,945	1,581	Do
4	Telephone Exchange...	1,120	896	Do
5	Victoria Hospital ...	6,345	3,623	
6	New Railway Offices, Mysore.	4,200	2,603	
7	Railway Central Workshop, Mysore.	6,850	4,957	Do
8	Sri Narasimharaja Hospital, Kolar.	7,000	4,360	Do
9	Wards Nos. V and VI, Victoria Hospital.	834	462	Do
(4) MISCELLANEOUS.				
1	An office building at Bethamangala.	4,120	1,007	

### BUREAU OF VITAL STATISTICS.

E. R. SUNDARARAJAN, M.A. (Hons.),  
*Superintendent.*

Government have passed orders on the Report of the Mysore Committee on Vital Statistics submitted on March 4, 1937. The Government Order runs as follows:—

ORDER No. G. 2990-3016—P. H. 154-36-4, DATED  
BANGALORE, THE 7TH OCTOBER 1937.

The importance of correct statistics of births and deaths as a guide for health measures was recognised in the State as early as 1879; and by an order dated 13th February of that year, registration was introduced as an optional measure. As the statistics obtained under this system were found to be defective, compulsory registration



was introduced in the Municipalities by the Municipal Regulation of 1906.

2. Action in respect of rural areas was, however, deferred for some time. In 1915, a Committee was appointed to study the question of registration of vital statistics "with reference to the systems obtaining in British India and in three or four countries of Europe and America and to make definite recommendations for practical action." In accordance with the recommendation of this Committee, the Mysore Registration of Births and Deaths Regulation was enacted in 1918 and the registration of births and deaths in the State was made compulsory.

3. In 1928, a Bureau of Vital Statistics was established under the State Department of Health in charge of a statistician. This officer undertook an investigation into the methods pursued in reporting births, deaths and epidemic diseases in some representative areas in the State. His enquiry revealed that on an average no reports at all were being received from one-third of the villages or regarding one-half of the events. With a view to remedying this defect, new forms, cards and registers for the registration of births and deaths were designed and approved by Government.

4. The system of reporting and compilation at present in force in the State is that, in villages the Patel is expected to write out particulars of births and deaths occurring in his village, in original and duplicate sheets of his births and deaths registers, and to send the duplicate sheets for each month to the Amildar on or before the 5th of the following month. The Amildar is expected to consolidate the report for his taluk, and submit the abstract to the Deputy Commissioner, who is similarly expected to consolidate the returns for the district and forward the abstract to the Director of Health on or before the 15th of the second month. In the town and minor municipalities, the initial reports are made by the Bill Collector or the Octroi Collector and forwarded to the Deputy Commissioner. In the City Municipalities, there are Special Sub-Registrars, who report daily to the Health Officer, who in turn, makes an abstract of all the returns and forwards it to the Deputy Commissioner. The Deputy Commissioner posts all these returns and abstracts in an abstract for the district, which he forwards to the Director of Health.



5. In February 1936, Sir Charles Todhunter brought

1. Sir Charles Todhunter, K.C.S.I. (Chairman).
2. The Revenue Commissioner in Mysore.
3. The Senior Surgeon in Mysore.
4. The Director of Health in Mysore.
5. Mr. K. B. Madhava, Professor, Maharaja's College, Mysore.
6. The Superintendent, Bureau of Vital Statistics of the Health Department (Secretary).

to the notice of Government the desirability of co-ordinating efforts in the collection of Vital Statistics both in the interest of general health and for the development of maternity and child welfare work.

The Government accordingly

sanctioned in the Government Orders dated 9th March 1936 and 9th April 1936 read above, the formation of a Committee consisting of the marginally noted officers to suggest the arrangements necessary for co-ordinating the collection of statistics relating to the births and maternity and child welfare work, so that the extent of skilled assistance available at the time of child-birth, and the additional assistance to be provided in places served by child welfare centres may be readily available to the officers concerned and to the child welfare organizations. The Committee was also requested to examine the proposals made from time to time for improving the accuracy of the statistics of births and deaths compiled in the State and to suggest measures which could be adopted without excessive cost in order to secure this object.

6. The Committee in their report (received on 4th March 1937) trace the history of the registration of births and deaths in the State, point out how the returns obtained under the present arrangements are incomplete and of doubtful accuracy and detail the measures necessary for ensuring completeness, and recommend the adoption of the central system of compilation now in vogue in the Madras Presidency or a more up-to-date system of sorting such as the Hollerith or Copechat system in order to secure greater accuracy. Under the Madras System, the village headman sends monthly *abstracts* of returns instead of the duplicates of the births and deaths registers as in Mysore to the taluk office on or before the 5th of each month; and the taluk office arranges these returns in the order of villages, as given in the Census Report, and forwards them in a bundle to the Director of Health, so as to reach him on or before the 8th of the month. In his office the abstracts are checked and posted into the registers concerned. Under the mechanical system, the initial returns are sent direct in the first instance to a Central Statistical Office where they are copied on to cards, each



dealing with one individual occurrence, and then posted according to the various items of information, which it is desired to compile. A great variety of statistical abstracts can then be made by mechanical or other means.

7. After careful consideration of the several systems and the conditions obtaining in Mysore, the Committee have come to the conclusion that it is desirable to proceed by stages in this matter. "At present there is an enormous amount of leeway to be made up, and it will represent a vast improvement over present conditions if completeness can be secured by the Amildars, and a fairly high degree of accuracy by placing the compilation in the hands of a trained staff at headquarters. If, at the same time, the existing procedure of having the returns sent up in original is maintained and arrangements are made for collecting them all at the central office, the central office will have all the materials available for proceeding to the preparation of statements illustrating new factors regarding which information may be required from time to time. It will also be quite easy, as soon as a reasonable degree of completeness and accuracy has been secured, to take the further step of introducing a system of mechanical compilation."

8. The Government agree with the Committee that the adoption of the Madras system of preparing and compiling vital statistics would be a great advance on the existing practice in the State. In order, however, to reduce the initial cost and ensure careful supervision by the Headquarters Staff during the period of transition, they direct that the new system be introduced in two Districts, *viz.*, Bangalore and Shimoga, in the first instance.

The cost involved in this proposal will be:—

#### RECURRING EXPENDITURE.

				<i>Cost per month.</i>	
				Rs.	
2 Clerks on Rs. 25 each	...	...	...	50	
2 Do " 30 "	...	...	...	60	
1 Typist on " 40	...	...	...	40	
2 Peons on " 12 each	...	...	...	24	
				174 per mensem	
				or	
				2,088 per annum.	



## NON-RECURRING EXPENDITURE.

	<i>Cost per month.</i>
	Rs.
One Dalton adding machine with electric attachment ...	700
One typewriter of a size suitable for statistical work ...	300
	<hr/>
Total	...1,000
	<hr/>

9. In order to give effect to their proposals, the Committee have submitted (a) draft rules for the registration of births and deaths in rural areas under the Mysore Births and Deaths Registration Regulation (Appendix I), and (b) draft bye-laws for the registration of births and deaths in Municipalities. The former will be issued separately and made applicable to the rural areas in the two selected districts, and the latter are commended for adoption by the Municipalities in these two Districts and by the City Municipalities of Bangalore and Mysore and the Sanitary Board, Kolar Gold Fields.

10. The Committee observe that as one of the causes of the high rate of mortality among mothers and infants is generally admitted to be early marriage and early child-bearing, it is highly desirable to have statistics relating to marriage and consequently a system of registration of marriages. There is provision already in the Municipal Regulation for the registration of marriages and it can be made compulsory in City and Town Municipalities by framing bye-laws for the purpose. The Committee consider that in the case of Minor Municipalities and rural areas, it would satisfy the present requirements if, without undertaking legislation, arrangements are made for optional registration.

Government accept this recommendation and direct that the draft rules proposed by the Committee for the optional registration of marriages in rural areas and Minor Municipalities (Appendix IV) be adopted in the Bangalore and Shimoga Districts and that the draft bye-laws for the compulsory registration of marriages in City and Town Municipalities (Appendix III) be referred to the Municipal Councils concerned for their consideration.

11. With regard to the statistics to be maintained in connection with maternity and child welfare work,



the Committee have made the following recommendations:—

(1) A complete list should be maintained containing the names of all places at which there are situated women's hospitals, women's wards, maternity homes, lady medical practitioners and midwives.

(2) Similarly a list should be maintained of all places at which there are maternity and child welfare centres and nursery schools.

(3) A list of places where baby weeks are held should also be maintained up-to-date.

(4) In the complete registration of births, it will be necessary to include the births conducted in maternity hospitals, female dispensaries, maternity homes, those conducted by the midwives outside these institutions and those conducted in institutions managed by the Red Cross Society or the Mission authorities or other bodies.

(5) In addition to the statistics of mortality of children under one year, separate statistics should be prepared grouping (a) natural abortions, (b) still-births and (c) prematurity cases, these being cases in which what is indicated is attention to the mother rather than attention to the child.

(6) It is necessary to standardize the baby-week judging cards.

(7) Weighing of babies should be made on a uniform basis with clothes removed, and the weights should be recorded week after week in the weight chart against the graph of the average weights of Indian infants marked thereon.

(8) For children in nursery schools between one and five years of age, the weighments should be made once in four weeks, the weights and heights being recorded against the graphs of average weights and heights of Indian children marked thereon.

(9) Uniform registers should be maintained in all maternity and child welfare centres, and similarly in all nursery schools.

(10) Index cards for the identification of mothers and children from the time the mothers come to the centres to the time the children leave the nursery schools should be maintained.

(11) A monthly return should be made by these institutions of the number of individuals attending ante-natal clinics, children's clinics and of those receiving milk or other food, and baths and so forth.

(12) Scientific studies of the height and weight charts and the baby judging cards should be made periodically with a view to evolving normal tables of heights and weights for Mysore children of different ages.

The Director of Health is requested to take steps, in co-operation with the Senior Surgeon and other authorities concerned, to give effect to these recommendations, as far as practicable.

12. The Director of Health will also intimate to the Superintendent of Government Printing, the changes to be made in the list of standard forms in pursuance of the instructions contained in this order.



13. The Director of Health will take necessary action to bring into force the new system of registration and compilation in the two selected districts from 1st January 1938.

14. Government wish to thank the Chairman and members of the Committee for the valuable suggestions made in their report.

P. H. KRISHNA RAO,

*Secretary to Government,  
Local Self-Government Department.*

**(a) Population.**

The estimated populations of the districts and cities as on July 1, 1937 are:—

<i>District or City.</i>			<i>Estimated Population.</i>
Bangalore	...	...	1,191,051
Chitaldrug	...	...	709,110
Hassan	...	...	605,214
Kadur	...	...	356,753
Kolar	...	...	885,195
Mysore	...	...	1,579,879
Shimoga	...	...	537,480
Tumkur	...	...	917,706
Total (Mysore State)			6,782,388
Bangalore City...	...	...	206,670
Mysore City	...	...	121,933
Kolar Gold Fields	...	...	83,460

**(b) Parturition Statistics.**

As in the previous quarters, statistics of parturition cases conducted in the following institutions were collected and analysed:—



*Parturition Cases conducted in 31 Maternity Hospitals  
and Female Dispensaries.*

No.	Place	Institutions	Number of Labour cases conducted	Number of Maternal Deaths
1	Bangalore City	Vani Vilas Hospital	1,068	1
2	Mysore City	Do	482	6
3	Do	Holdsworth Memorial Hospital.	123	...
4	Kolar Gold Fields	Maternity Hospital	357	1
5	Anekal	Female Dispensary	97	...
6	Channapatna	Do	26	...
7	Chikballapur	Do	3	...
8	Chikmagalur	Maternity Hospital	68	2
9	Chintamani	Female Dispensary	...	...
10	Chitaldrug	Do	145	3
11	Davangere	Maternity Hospital and Female Dispensary.	152	...
12	Hassan	Female Dispensary and Maternity.	36	...
13	Do	Red Fern Memorial Hospital.	24	...
14	Hebbal	Female Dispensary	5	...
15	Hole-Narsipur	S. N. Maternity Hospital	48	...
16	Hunsur	Female Dispensary	5	...
17	Kolar	Female Dispensary	16	1
18	Do	E. T. C. Memorial Hospital.	30	1
19	Koppa	Female Dispensary	5	1
20	Krishnarajnagar	Female Dispensary and Maternity.	44	..
21	Mudgere	Combined Dispensary	2	...
22	Mandagadde	Maternity Hospital	8	1
23	Nanjangud	Female Dispensary	53	...
24	Sagar	Do	8	...
25	Saklespur	Women and Children Hospital.	16	...
26	Shimoga	Maternity Hospital	70	2
27	Sira	Female Dispensary	2	...
28	Tarikere	Do	94	...
29	Tiptur	Maternity Hospital	23	...
30	Tirthahalli	Do	43	...
31	Tumkur	Do	67	2
Total (Mysore State)			3,120	21

Of 3,120 labour cases conducted, the number of maternal deaths (mortality of mothers at or within 14 days of labour) was 21, giving a maternal mortality rate of 6.73 per 1,000 births as compared with 10.46 in the previous quarter.

**(c) Epidemic Diseases.**

As in the previous quarters, the number of attacks and deaths from plague, small-pox and cholera are given in the following table for each district and city. The number of infected places is also given together with the total population affected.



## (C) Epidemic Diseases.

District or City	Plague		Number of villages affected	Population affected	Small-pox		Number of villages affected	Population affected	Cholera		Number of villages affected	Population affected
	A.	D.			A.	D.			A.	D.		
Bangalore	...	81	16	2,18,867	1	1	1	2,06,670	...	...	1	...
Chitaldrug	...	...	...	...	62	17	9	4,312	182	66	12	8,519
Hassan	...	89	10	21,124	...	...	...	...	2	2	1	195
Kadur	...	...	...	...	...	...	...	...	12	6	1	1,654
Kolar	...	252	52	1,37,991	23	1	4	86,898	...	...	...	...
Mysore	...	174	21	1,86,020	53	15	6	1,814	92	44	19	15,465
Shimoga	...	65	4	6,827	3	0	1	456	49	30	8	5,397
Tumkur	...	...	...	...	11	3	4	1,543	...	...	...	...
Total (Mysore State)	...	661	103	5,20,829	154	37	25	3,01,693	337	148	42	31,230
Total (cities)	...	38	...	4,12,063	6	1	...	2,90,130	...	...	...	...
Bangalore City	...	4	...	2,06,670	1	1	...	2,06,670	...	...	...	...
Mysore City	...	33	...	1,21,333	...	...	...	...	...	...	...	...
Kolar Gold Fields	...	1	...	83,460	5	0	...	83,460	...	...	...	...



*Plague.*—Increase of incidence was observed during the quarter in respect of plague, particularly in Kolar and Mysore Districts. Of 661 attacks and 366 deaths reported, 252 attacks and 144 deaths occurred in Kolar District alone. The districts of Chitaldrug, Kadur and Tumkur were free.

In the case of cities, Bangalore reported four attacks with four deaths, Mysore had 33 attacks with 22 deaths, whilst Kolar Gold Fields reported only one attack with one death.

*Small-pox.*—The incidence of small-pox was at a very low level in the quarter under report. As compared with 240 attacks with 32 deaths in the previous quarter, only 154 attacks with 37 deaths were reported during the quarter. Bangalore City reported one fatal case, Mysore City was free and Kolar Gold Fields had five attacks reported.

*Cholera.*—The State was free from cholera in the quarter under report.

**(d) Vital Statistics reported for the Previous Quarter  
(April—June 1937).**

*Births.*—During the quarter 35,244 live births were reported giving a birth-rate of 20·96 per mille of population as compared with 19·01 in the preceding quarter. Birth-rates in the districts varied from 24·32 in Kolar District to 15·56 in Kadur District. Bangalore and Mysore Cities had rates between 30 and 35, whilst Kolar Gold Fields reported a rate of 52·89.

*Still-births.*—As compared with 516 still-births in the previous quarter, a total of 538 still-births were reported in the quarter under report. The computed still-birth rate was 15·04 per 1,000 births against 15·89 in the preceding quarter.

*Deaths.*—The total number of deaths reported, excluding still-births was 22,756 with a death-rate of 13·53 per 1,000 of population as compared with 15·06 in the previous quarter. The death-rates varied from district to district. It was as low as 10·56 in Tumkur District and 17·44 in Shimoga District.

In the case of cities, the rates were more reliable, they being 23·01 in Bangalore City, 24·21 in Mysore City and 30·05 in Kolar Gold Fields.



The reported deaths classified under the 18 chief causes were:—

<i>Cause of Death.</i>			<i>Current Quarter April—June 1937.</i>	<i>Previous Quarter Jan.—Mar. 1937.</i>
1.	Plague ...	...	533	409
2.	Small-pox ...	...	298	398
3.	Cholera ...	..	1,614	2,031
4.	Malaria ...	...	7,095	7,884
5.	Typhoid ...	...	1,088	1,264
6.	Other Fevers ...	...	2,485	2,767
7.	Dysentery and Diarrhoea		1,479	1,512
8.	Respiratory Diseases ...	...	1,047	1,359
9.	Consumption ...	...	1,209	1,122
10.	Leprosy ...	...	216	176
11.	Child-birth ...	...	550	588
12.	Suicide ...	...	66	55
13.	Drowning ...	...	237	191
14.	Wounds and Accidents...		179	180
15.	Killed by Wild Beasts ...	...	14	15
16.	Snake-bite ...	...	56	26
17.	Rabies ...	...	14	27
18.	All Other Causes ...	...	4,637	5,313
Total ...			22,756	25,317

*Child-birth (Maternal Mortality).*—The number of reported deaths from child-birth from all over the State was 550, giving a maternal mortality rate of 15·37 per 1,000 total births inclusive of still-births as against 18·10 in the preceding quarter.

*Infant Mortality.*—During the quarter 3,103 deaths of infants under one year of age were reported giving an infant mortality rate of 88·04 per 1,000 live births, as compared with 118·00 in the preceding quarter. The rates varied from 114·06 in Kolar District to 71·91 in Mysore District.

The infant mortality rates in cities were comparatively more reliable. Bangalore City reported a rate of 118·10, Mysore City 132·19 and Kolar Gold Fields 172·54.







TABLE 2.

*Reported Deaths in the Districts and Cities of the Mysore State in the Quarter, April—June 1937, Classified according to the Chief Causes of Death.*

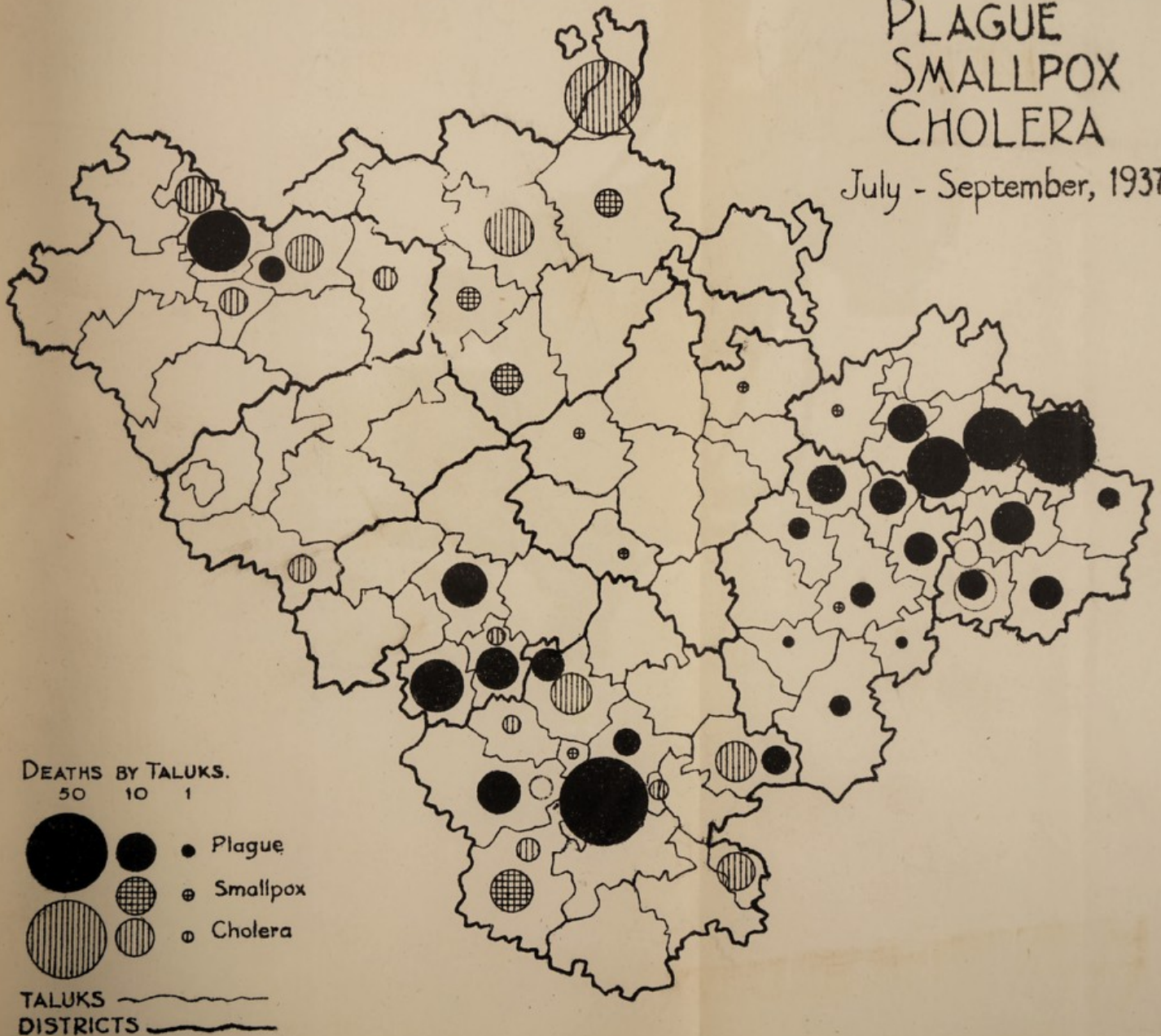
District	Plague	Small-pox	Cholera	Malaria	Typhoid	Other Fevers	Dysentery and Diarrhoea	Respiratory Diseases	Consumption	Leprosy	Child-birth	Suicide	Drowning	Wounds and Accidents	Killed by wild beasts	Snake-bite	Rabies	All other causes	Total Deaths	
																			April to June 1936	January to March 1937
Bangalore	43	25	58	690	116	457	257	233	246	27	51	15	34	29	2	11	4	1,174	3,522	4,033
Chitaldurg	4	71	373	634	109	315	77	88	69	20	80	5	22	27	...	8	1	358	2,261	2,307
Hassan	49	11	25	1,067	63	178	88	43	77	20	66	4	13	13	...	6	1	245	1,969	2,320
Kadur	...	5	82	629	57	53	73	43	31	5	54	4	6	7	1	3	...	156	1,209	1,195
Kolar	179	47	24	927	129	496	300	191	167	37	71	11	71	30	3	10	1	940	3,573	2,755
Mysore	252	113	831	1,424	249	433	407	229	335	41	101	18	46	37	6	8	2	960	5,492	5,829
Shimoga	5	6	198	840	134	270	150	106	54	26	65	4	13	9	1	5	1	384	2,331	4,015
Tumkur	1	20	23	884	171	283	127	64	230	40	62	5	32	27	1	5	4	420	2,399	2,863
(Mysore State) Total	533	295	1,614	7,095	1,088	2,485	1,479	1,047	1,209	216	550	66	237	179	14	56	14	4,637	22,756	25,317
(Cities) Total	6	...	11	59	30	79	316	351	236	4	32	9	8	30	...	1	4	1,435	2,511	3,061
Bangalore City	1	...	2	9	16	37	115	182	116	4	17	8	3	5	...	1	2	640	1,158	1,417
Mysore City	2	...	9	30	14	9	80	71	111	...	15	...	2	12	...	...	1	368	724	921
Kolar Gold Fields...	3	...	...	20	...	33	121	98	9	...	...	1	8	13	...	...	1	427	629	723



# MYSORE STATE

PLAGUE  
SMALLPOX  
CHOLERA

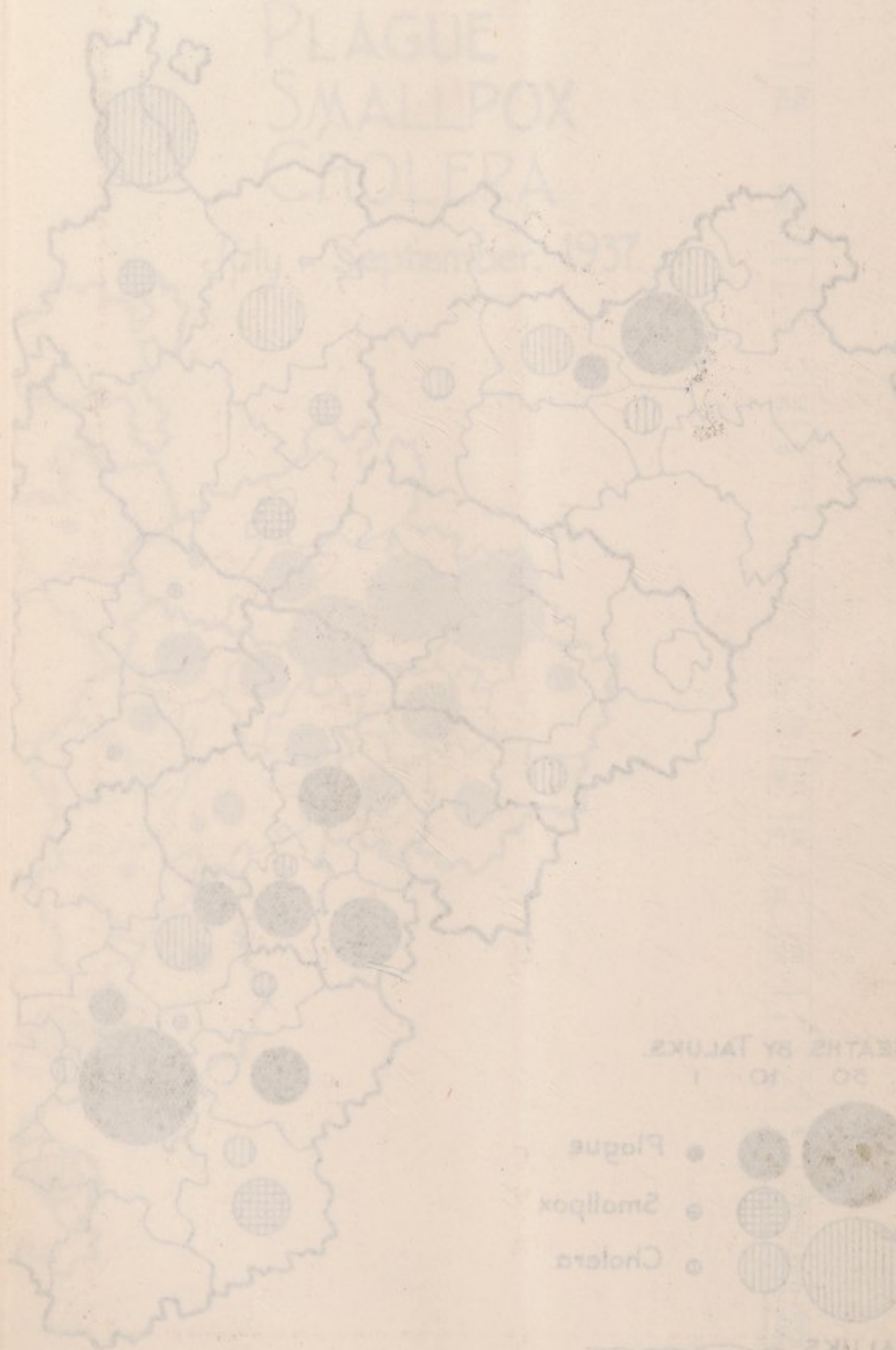
July - September, 1937.





# PLAGUE SMALLPOX CHOLERA

July - September, 1937

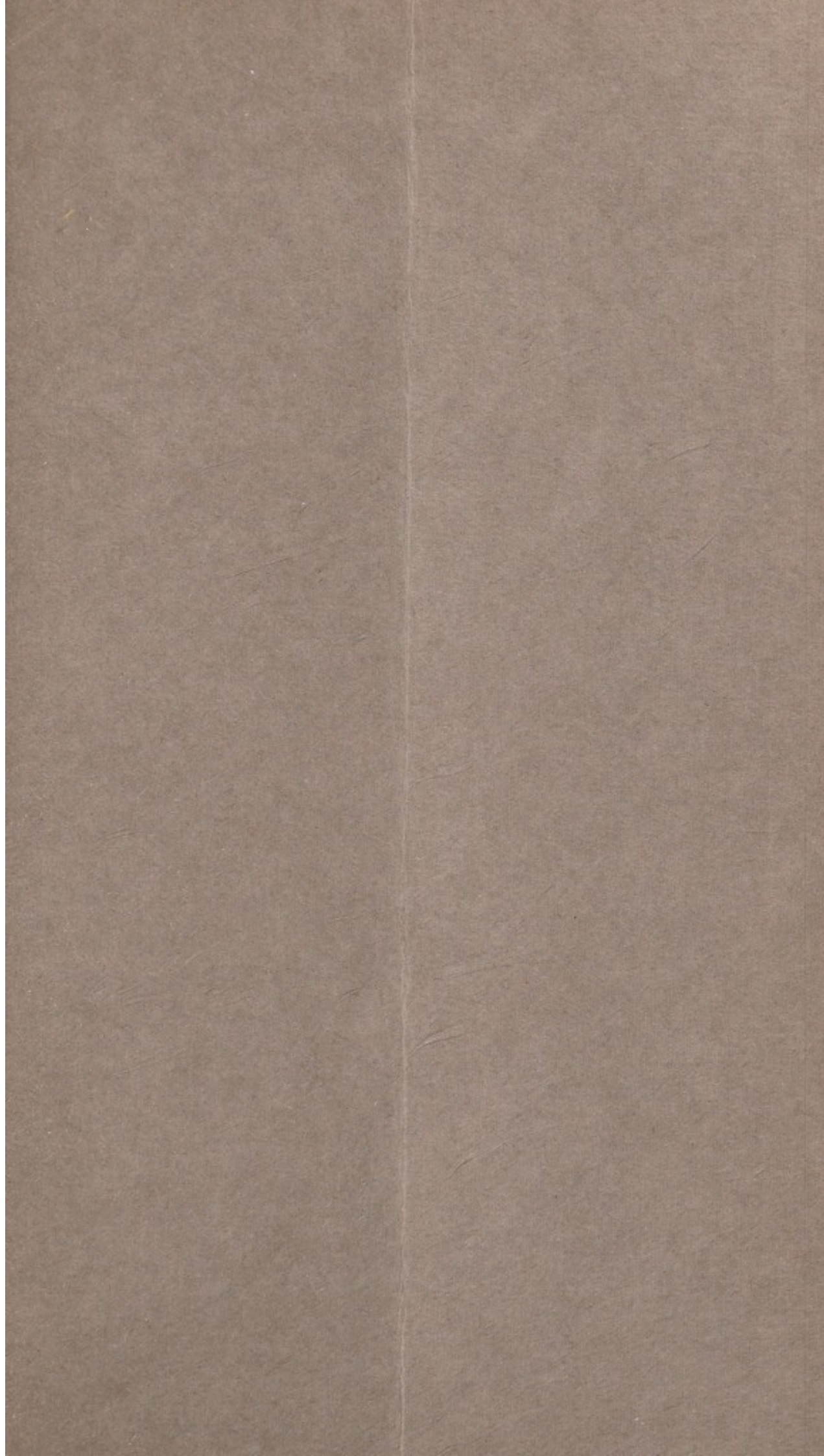


LEGEND BY TALKS  
30  
10  
1

- Plague
- ⊗ Smallpox
- ⊙ Cholera

TALKS  
DISTRICTS







## MYSORE STATE DEPARTMENT OF HEALTH.

The following Bulletins are published by Government:—

- No. 1. **Report on a Health Survey of Mysore—**  
By W. C. SWEET, B.Sc., M.D., Dr.P.H., Consultant in Health in Mysore, Bangalore, 1928.
- No. 2.\* **Report on Tuberculosis in Mysore State—**  
By P. S. CHANDRASEKHAR, M.D., sometime Officer-in-charge of Tuberculosis Survey in Mysore, 1928.
- No. 3.\* **Report on a Sanitary Survey of the City of Bangalore for the Year 1927—**  
By MOHAMED USMAN, L.M.S., (Retired) Senior Surgeon and Sanitary Commissioner, Bangalore, 1928.
- No. 4.\* **Guineaworm Disease in Mysore State—**  
By J. V. KARVE, M.B., CH.B., D.P.H., (Retired) Director of Health in Mysore, Bangalore, 1929.
- No. 5 **Report of the Delegation of the British Social Hygiene Council (Inc.), to the Government of Mysore, 1929.**
- No. 6. **Report on the Present Status of Birth, Death and Epidemic Diseases Reports in Mysore District, Bangalore City and Kolar Gold Fields, with Suggestions for Improvement—**  
By E. R. SUNDARARAJAN, M.A. (Hons.), Superintendent, Bureau of Vital Statistics, Bangalore, 1929.
- No. 7. **A Survey of Mysore State for Enlarged Spleens and for Hook-worm and other Helminthic Infections—**  
By W. C. SWEET, B.Sc., M.D., Dr.P.H., Consultant in Health in Mysore, Bangalore, 1929.
- No. 8. **Physician's Pocket Reference to the International List of Causes of Death, 1932.**
- No. 9. **Handbook of the Mysore State Department of Health—**  
By J. V. KARVE, M.B., CH.B., D.P.H., (Retired) Director of Health in Mysore, Bangalore, 1933.
- No. 10. **Notes on Malaria in Mysore State—**  
By W. C. SWEET, B. A. RAO and D. NURSING, 1934.
- No. 11. **Organic Manure from Street Refuse and Night Soil at Mysore City, India—**  
By J. J. MIELDAZIS, B.Sc., C.E., M.A.S.C.E., Former Honorary Sanitary Engineer, 1936.
- No. 12. **Periodicity of Cholera in Mysore State—**  
By P. Parthasarathy, L.M.S., B.S.Sc., L.R.C.P., L.R.C.S., D.T.M., D.P.H., Director of Public Health and E. R. Sundararajan, M.A. (Hons.), 1937.

\* Not available.