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THE PREPARATION OF A CONCENTRATE OF VITAMINS B_1 AND B_2 FROM BREWERS' YEAST

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In the course of concentration and isolation of the antineuritic vitamin B_1 as described in previous publications (1, 2), the thermostable growth factor B_2 is gradually eliminated. It became a matter of interest to ascertain at what stage of the process the bulk of the latter vitamin is eliminated. Physiological tests of the B_2 potency of the various fractions usually discarded in the process of isolation of B_1 from brewers' yeast showed that the greater part of B_2 was eliminated in the precipitate obtained during the concentration by distillation of the extract derived by eluting the water-soluble vitamins from fuller's earth adsorbate. A considerable amount of B_1 also was found to separate out at this stage. More recently a method has been found for the further concentration of the vitamins in this precipitate, with the result that concentrates have now been obtained of a high order of potency as compared with dried brewers' yeast. Such concentrates have been found especially useful in nutritional investigations requiring rigorous control of the nitrogenous constituents of experimental "synthetic" diets. In the belief that such concentrates may be of some service to other workers in nutrition, their preparation and properties are described in this report.

Fresh pressed brewers' bottom yeast is partially liquefied by the addition of about 20 percent of its weight of sodium chloride, and to this mixture an approximately equal volume of 95 percent ethyl alcohol is added. The suspended solids in this mixture are removed, preferably by means of a filter press; and to the clear alcoholic extract, English fuller's earth is added in proportion of 5 kilograms for each 100 kilograms of fresh yeast employed. The mixture is stirred continuously for at least half an hour, and the adsorbate is separated and washed. The vitamins are extracted from the adsorbate by suspending it in water in proportion of 10 liters per kilogram of adsorbate, adding sufficient concentrated sodium hydroxide to render the solution about 0.4 normal, agitating the mixture violently for 3 minutes and removing the adsorbate by centrifugation as quickly as possible, and then acidifying the clear solution with sulphuric acid to pH 4.5. A precipitate forms at this point, which is separated and

discarded. The aqueous solution is concentrated by vacuum distillation to about one-tenth its volume or less.[1] During this distillation a large amount of brown precipitate is formed, representing the greater part of the B_2 of the original extract and a considerable amount of its B_1. This precipitate is immediately separated by centrifugation, and may be washed by stirring with 2 or 3 times its volume of water and again centrifuging. The washed precipitate is dried in vacuum.

The yield of such precipitates, which may be referred to as the crude concentrate, appears to vary with the degree of concentration of the liquid; and since it is difficult to regulate this quantitatively, amounts varying from 100 to 400 grams per 100 kilograms of fresh yeast have been obtained. The physiological activity of such crude concentrates will be discussed below.

Extended experiments, with the object of effecting a further concentration of the vitamins, have shown that alkaline methyl alcohol removes the vitamins almost quantitatively, leaving the greater part of the inert material behind. The best solvent appears to be methyl alcohol containing 10 percent of its volume of aqueous 2 normal sodium hydroxide solution. Thus, 100 grams of the crude concentrate may be most conveniently extracted by grinding in a mortar with 200 cc of the alkaline methyl alcohol, centrifuging, and decanting the clear supernatant solution. This extraction should be repeated with 150, 125, and 100 cc of solvent, and finally twice with 100 cc methyl alcohol each. Each of the extracts is acidified to methyl red with normal sulphuric acid, and the final mixture is brought to pH 4.0. A precipitate separating out at this point is removed by centrifugation and may be discarded. The clear alcoholic solution is evaporated to dryness in a current of warm air. The deposit is transferred to a centrifuge tube of convenient size with the aid of ethyl ether, is thoroughly extracted with this solvent, and is finally dried in vacuum. The weight of such concentrates is usually about 10 percent of the crude concentrate referred to above.

THE PHYSIOLOGICAL POTENCY OF THE CONCENTRATES

The activity of the concentrates for B_1 and B_2 was determined by methods previously described. The tests for B_1 are based on the determination of the minimum amount of concentrate required to bring about a remission in polyneuritic rats (3). The International Standard for B_1 was used as a standard of reference, and the B_1 potency of our concentrates is expressed in terms of International B_1 units, bearing in mind that the International Unit is the equivalent of 10 mg of the International Standard. The B_2 activity of the concentrates was measured in terms of weight increment per day when

[1] Unless it is desired to continue the concentration and purification of the antineuritic vitamin apart from B_2, the distillation may be continued to as small a volume as is convenient.

fed for a period of 10 days to rats on a basal diet adequately supplemented with intravenous injections of the crystalline antineuritic vitamin (4). The B_2 activity of the concentrates is expressed in terms of an arbitrary standard consisting of a carefully dried preparation of fresh bottom brewer's yeast secured in a local brewery, ground fine, and ether-extracted in a Soxhlet apparatus. Such a preparation, when kept thoroughly dry, has given no evidence of deterioration over a period in excess of 1 year. Since 200 mg of such a preparation produces a supraminimal increment of weight of about 1.5 gm per day when fed over a period of 10 days, we may define this as the B_2 unit as used herein, and thus our arbitrary standard has a potency of 5 units per gram.

The accompanying table summarizes the results obtained in a series of assays of the International Standard, crystalline B_1, several samples of dried brewer's yeast, and several concentrates. Examination of this table reveals the following:

1. The International Standard for B_1 is not wholly free from B_2, though it is only about one-third as active as dried brewer's yeast, weight for weight.

2. Dried brewer's yeast appears to present but little variation in B_2 activity, but may vary by as much as 800 percent in B_1 potency.

TABLE 1.—*The physiological* B_1 *and* B_2 *activity of several yeast preparations and concentrates*

No.	Description	B_1		B_2 units per gram
		Minimum curative dose	International Units per gram	
		Mg		
1	International Standard for B_1	20	100	<2
2	Dried brewers' yeast, laboratory sample	50	40	5
3	Dried brewers' yeast, commercial sample ("Medicinal Yeast A-B")	400	5	5
4	Dried brewers' yeast, commercial sample ("Vita Food" for medicinal use)	100	20	6
5	Dried brewers' yeast, 135-Y (provisional subsidiary B_1 standard, U. S. P. Vitamin Committee)	300	6.6	6
6	Crude B_1B_2 concentrate 355D	5	400	30
7	Crude B_1B_2 concentrate 390	5	400	60
8	B_1B_2 concentrate 36.78	1	2,000	350
9	B_1B_2 concentrate 36.93	1	2,000	325
10	B_1B_2 concentrate 36.112	0.8	2,500	750
11	B_1B_2 concentrate 36.119	0.8	2,500	875
12	Crystalline B_1 vitamin hydrochloride (Merck)	0.006	333,000	0

3. Concentrates prepared by the method described herein may have a B_2 potency of from 70 to 175 times, and a B_1 potency of from 60 to 500 times that of dried brewers' yeast.

The precise relationship between the thermostable growth factor B_2 and the pellagra-preventive factor has never been definitely established, although they are usually referred to in the literature as one and the same thing. In view of their close association it is possible

that our concentrates may have an antipellagric potency parallel with their B_2 activity as measured by their growth effects on rats. We have found, in a series of experiments with experimental dermatitis produced in rats on a basal diet devoid of the B complex and supplemented with the crystalline antineuritic vitamin, that a minimum daily supplement of 200 to 300 milligrams of dried brewers' yeast (sample 2, table 1) is required to cure this condition in 10 to 20 days. In like manner, we have observed prompt disappearance of the lesions following the administration of several concentrates in doses of such magnitude as to indicate a close parallelism of their antidermatitic activity with their growth-promoting effects. As a striking illustration may be cited the instance of complete disappearance of skin lesions in a rat in 6 days following a single intravenous injection of 10 milligrams of a concentrate which had assayed 500 B_2 units per gram. A therapeutic test of such concentrates in clinical pellagra would seem to be well worth trying.

Through the courtesy of Dr. E. Elvove, of the National Institute of Health, nitrogen determinations were made on 2 of our concentrates, numbers 10 and 11, table 1, showing 11.76 and 10.92 percent, respectively. The nitrogen content of dried brewers' yeast, number 2, table 1, was 10.08 percent.

References

(1) Seidell and Smith: Pub. Health Rep., **45**: 3194 (1930).
(2) ————: Jour. Am. Chem. Soc., **55**: 3380 (1933).
(3) Smith: Pub. Health Rep., **45**: 116 (1930).
(4) ————: Jour. Biol. Chem., **100**: 225 (1933).

APPLICATION OF THE PRELIMINARY SANITARY SURVEY TO FLOODED AREAS

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During the past few years this country has been visited by several disasters, such as floods, tornadoes, and dust storms. As a result of these occurrences, the actual work of disaster relief has been placed on a firm foundation, so that such considerations as rescue work, food and clothing distribution, and temporary housing have been handled in a well-organized manner. In view of this fact, the sanitarian's duties have been confined mainly to the important considerations of a safe supply of water and milk, and of sewage disposal. Once these problems have been solved, the sanitarian is confronted with the task of determining the extent of the damage to various sanitary facilities.

In the recent floods experienced in the East, the authors, detailed to one of the flooded areas, were requested to aid the State health

department officials in determining the extent of the damage done to a relatively small area in the flooded zone. This information was needed in order to have accurate data for both rehabilitation purposes and for the determination of any illnesses which might have been caused by the flood.

The purpose of the present paper is to present the technique used in the organization and conduct of a preliminary sanitary survey, and to discuss the value of such a study.

METHODS USED IN THE PRESENT STUDY

In order to obtain uniform data, it was essential to devise a simple survey form which could be used in a house-to-house canvass. The form used in the present investigation is here reproduced. It will be observed from a study of this form that the data have been considered under four main headings.

The first heading, "General Data", relates to information as to number of occupants in the flooded home, whether or not they are on relief, and the location and type of construction of the dwelling.

The second heading, "Sanitary Data", was designed for the purpose of determining the condition of the water supply, the sewage disposal systems, the height that the water reached in the dwelling, the present level of the water, and certain information on the occupants' plans for cleaning their homes. This house-to-house survey provided an opportunity for instructing the householder in the correct way to clean the home and its environs, the mode of using disinfectant, and where this substance could be obtained in the locality free of charge.

The third subject covered by this survey concerned information of a medical and epidemiological nature. The surveyors were instructed to inquire about any illness existent in the home, and to record illnesses which had occurred since the flood. It will be seen that those illnesses which are at times associated with disasters have been especially noted on this form. However, the investigators were also instructed to record, in the margin, any other sickness not specifically mentioned. It was thought advisable, in the event of an epidemic, to obtain information as to the number of persons who had moved during the flood, where they moved to, and the date of return to their own homes. It is apparent that such information is of value to the medical authorities, since it is then possible to determine the number of persons who have been exposed to disease, and also the actual location of the exposed persons. The last subject covered by this survey dealt with physical damage to the structure itself, its contents, and such items as light, gas, and telephone service.

PRELIMINARY SANITARY SURVEY OF FLOODED AREAS

1. GENERAL DATA: SHEET NO._____ DATE_____
Tenant's name_____ Street_____
Borough
Number occupants_____ Working_____ Relief_____ Township_____
Owner's name_____ Address_____
Type of dwelling: Detached_____ Apartment_____ Number stories_____ Brick_____
Frame_____ Garage_____ Stable_____

2. SANITARY DATA:
A. Water: Public_____ Private_____ Condition of_____
B. Sewers: Public_____ Privy_____ Cesspool_____ Septic tank_____
Condition of_____
C. Flood limit: Cellar_____ First story_____ Second story_____
D. Present level: Cellar_____ First story_____
E. Occupant's plans for clean-up_____
F. Instructions furnished on clean-up_____
G. Date when cellar pumped out_____ Was disinfectant used_____

3. MEDICAL DATA:
Sickness in family_____ Age_____ Date of onset_____
Diarrhea_____ Typhoid_____ Diphtheria_____ Scarlet fever_____ Measles_____
Physician on case_____ Name of family physician_____
Did occupant move_____ Address moved to_____
Date returned_____

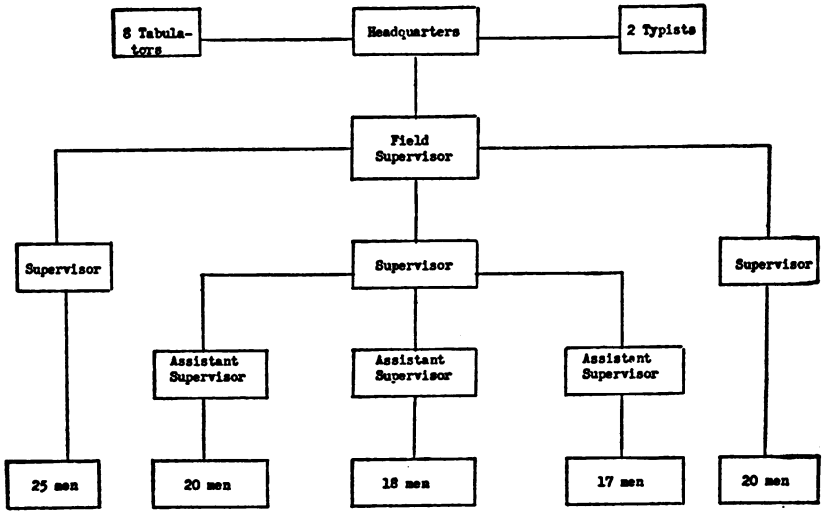
4. REHABILITATION DATA:
Estimate of damage: Cellar walls_____
Floors_____ Walls_____ Furniture_____
State general condition of structure_____
Utilities: Light_____ Gas_____ Telephone_____
Surveyed by_____ Checked by_____

Owing to the fact that it was highly essential to obtain this information in a brief period of time, it was decided to use the facilities of the local W. P. A. Fortunately, this organization had trained "white-collar" workers who were at the time engaged on a house-to-house survey of another nature, and 100 of them were assigned to the present study. The accompanying chart gives a picture of the organization devised for the conduct of this study. The supervisors listed were called in as soon as the form was developed, and the purpose of the study as well as the various items in the form were discussed with them. It will be noted that almost all of the items in the form required merely a "yes" or "no" answer. These supervisors were furnished with maps of the area to be surveyed, headquarters were established in the various areas, and transportation was furnished for both supervisors and surveyors. The men who were to make the house-to-house survey were then assembled and the details of the study were explained to them. The data were recorded in triplicate so that one copy could be furnished to the city or town officials, one to the Red Cross, and one kept in the district health department headquarters for the use of the physicians and engineers. Considerable publicity was given to this project through the newspapers and radio, so that excellent cooperation was assured on the part of the householders.

With the aid of a skilled draftsman, also furnished by the W. P. A., it was possible to evolve master tabulation sheets for recording the

data obtained for each day. In addition to the men engaged on field work, the W. P. A. furnished 10 girls to do tabulating and typing. Eight of these girls were trained to work in teams of two in tabulating the data; one read the essential information while the other tallied. They were instructed to set aside the form for special disposition if any illness had been recorded or damage to sanitary facilities or to the dwelling itself. A medical case was starred with a black crayon, a sanitary case was labelled with a blue crayon, while a dwelling in need of immediate repair to the structure itself was marked with a red crayon. These marked forms were collected by two typists who immediately made a separate list of the medical, sanitary, and rehabilitation cases. In this way immediate attention could be given to those families in need of assistance of one kind or another. The

ORGANIZATION CHART



medical officer was kept informed by this technique as to the kind of sickness prevalent in his area, and the number of persons involved. The sanitary engineer knew which water or sewer facilities were damaged and also obtained some idea of the number of places needing disinfectant. The Red Cross and the town or city officials were apprised of the families requiring immediate aid.

RESULTS OF THE STUDY

The accompanying table presents a summary compilation of the entire survey. It was possible to complete the survey, as shown in the table, within the period of a week. Although the purpose of the present contribution is merely to point out the methods used in conducting such a preliminary survey, and to indicate its value from a standpoint of obtaining accurate information relating to public health

in a flooded area, it may be well to discuss very briefly the results which the present study yielded.

Preliminary survey of flooded areas

COMPILATION SHEET

Items of survey	Affected communities										
	A	B	C	D	E	F	G	H	I	J	Total
General data:											
Number of houses surveyed	3,158	752	209	16	811	154	118	53	302	66	5,639
Number of persons affected	13,696	3,446	913	79	4,167	634	678	291	1,433	351	25,688
Number on relief	903	658	199	5	659	45	112	33	113	55	2,782
Number of owner occupants	1,377	256	120	13	387	43	35	17	111	43	2,440
Sanitary data:											
Number of water supplies affected	50	5	33	13	18	0	11	0	0	0	130
Public	48	5	4	0	18	0	7	0	0	0	82
Private	2	0	29	13	0	0	4	0	0	0	48
Number of affected disposal systems	79	57	64	11	36	2	15	9	14	3	290
Public	72	17	0	0	16	2	5	0	10	0	122
Privy	5	37	34	4	5	0	9	9	0	2	105
Cesspool	2	3	29	4	15	0	1	0	4	1	59
Septic tanks	0	0	1	3	0	0	0	0	0	0	4
Flood limit:											
Cellar	1,782	326	35	1	394	145	117	20	121	62	2,703
First story	1,658	421	161	15	415	9	1	33	181	4	2,898
Second story	18	5	13	0	2	0	0	0	0	0	38
Present level:											
Cellar	1,340	197	44	2	105	0	97	2	66	12	1,865
First story	4	1	0	0	0	0	1	0	0	0	6
Number doing own cleaning	2,674	663	167	16	758	154	87	52	292	63	4,921
Number requiring aid	370	73	48	0	50	0	31	1	28	3	586
Number who have pumped cellars	2,003	607	159	14	714	154	20	51	236	55	3,904
Number needing disinfectant	2,530	650	134	9	330	70	100	17	210	42	4,082
Medical data:											
Number persons ill with—											
Diarrhea	8	1	0	0	0	0	0	0	0	0	9
Typhoid	0	0	0	0	0	0	0	0	0	0	0
Diphtheria	1	0	0	0	0	0	0	0	0	0	1
Scarlet fever	0	1	0	0	1	0	0	0	0	0	2
Measles	0	0	0	0	0	0	0	0	0	0	0
Other	207	25	29	0	61	3	7	3	8	1	344
Number of occupants who moved	7,350	1,894	734	75	2,520	121	0	161	883	119	13,856
Rehabilitation data:											
Number houses with damaged—											
Cellar walls	655	86	57	7	163	12	6	15	49	12	1,062
House walls	788	217	48	6	170	5	0	26	113	2	1,375
Floors	807	193	41	4	183	11	1	21	91	4	1,356
Furniture	968	221	45	9	193	6	0	21	133	3	1,599
Number houses in following condition:											
Good	2,453	639	133	9	726	151	109	32	268	63	4,583
Fair	551	90	49	4	58	3	8	13	27	2	805
Bad	154	23	27	3	27	0	1	8	7	1	251

It will be seen that this study covered nearly 6,000 homes, with a population of approximately 26,000. About 11 percent of the persons affected were on relief, and 43 percent of the homes were owned by their occupants. In all, 130 water supplies were affected. The public supplies affected, 82 in number, were found to be safe from a health standpoint, although the owners stated that the water was turbid, thereby giving the impression that it was unsafe. The 48 private supplies affected were given attention by the district engineers. The information on the number of affected sewage disposal systems was of considerable value to the engineers, and the data on privies were

immediately submitted to the State W. P. A. Administrator on the privy-construction project. It will also be observed from the information gathered under the heading of "Sanitary data" that the flood waters reached the first story in 51 percent of the cases, and at the time the survey was in progress many homes were still flooded. The number of dwellings needing disinfectant was recorded, and this information was of considerable value to the officials handling the material.

It is to be noted that the number of persons ill with the diseases listed in the summary table is normal for the total number involved, and that the number of illnesses of these types was to be expected in a population of the size under consideration. It is very interesting to see that 54 percent of the persons in the affected area moved, and the exact location of their temporary domicile was known by the sanitary authorities. The data on the damage to the homes and furnishings need no additional comment.

SUMMARY

The present paper gives, in brief, the methods used in conducting a preliminary sanitary survey of a flooded area. It also discusses the practical application of the data obtained from such a survey, and its potential value in case a serious outbreak of a communicable disease should occur. It is the feeling of the authors that the same technique could be projected on a larger scale so as to cover an entire State or several States.

RAT-PROOF CONSTRUCTION AND ITS EFFECT ON THE CONTROL OF RAT LIFE ON SHIPS

Instances of Permanent and Apparent Automatic Control Effected by this Type of Construction Observed on 50 Ships at the Port of New York

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From time immemorial it has been noted by persons associated with the shipping industry that the majority of rats living on board of vessels are found usually in the holds or cargo compartments. This condition of affairs was of such common occurrence and obtained on so many ships that the presence of rats in the cargo holds of ships was accepted as a matter of course.

Statistics compiled from reports submitted by Public Health Service officers in charge of several of the largest quarantine stations show

that the greater percentage of rats killed by fumigation or trapped were in the holds.[1]

In former years little thought was given to this matter and no attempt was made to ascertain the specific places that served rats so well as homes and breeding places.

When surveys were being conducted to obtain data for use in drafting the standard specifications and the collateral information given in the publication, The Rat Proofing of Vessels (third edition), issued by the United States Public Health Service, a rather complete list of such places was compiled. (This list will be found on pp. 29–32 of that publication.) As stated in that pamphlet, many of these spaces were so ideally suited for rat homes as to give the impression that they were especially designed for that purpose.

In the development of ratproofing methods it was found that, when ratproofing work of a fundamental character, that is, the elimination of enclosed spaces, had been carried out, the results of rat control were more permanent and the cost of this type of construction and its upkeep was, in most instances, considerably less than that of the conventional type.

In the light of this knowledge and experience, it was thought that it would be interesting and informative to study the histories (records of fumigation, trappings, reports of inspections and surveys) of a number of ships on which the elimination of enclosed spaces in cargo holds had been carried out when they were built and learn whether such ships had kept free from rat colony life.

It was realized that the histories of a great many ships of this type of construction would have to be studied and that they should cover periods of not less than 3 or 4 years and include vessels that were engaged in the transportation of diversified cargoes and had touched at the various ports of the world, especially those that were regarded as rat infested.

A list of 50 vessels was selected. Many of these ships were built prior to 1930. Several were more than 10 years old. Sixteen of them had been constructed prior to the publication of the specification for the ratproofing of ships. Therefore, the elimination of the

[1] Annual Reports of the Surgeon General, U. S. Public Health Service, 1923, 1925, 1926.

"Approximately two-thirds of rodents recovered were found in the holds of vessels" (p. 138, Annual Report, 1923, and p. 140, Annual Report, 1925).

"Of a total number of 10,178 rats killed by fumigation, 7,683 were recovered in holds (p. 136, Annual Report, 1925).

"The 10,144 rats found after fumigation were distributed as follows:

Mess and ship's stores	1,081, or 10.65 percent.
Holds and all cargo spaces	7,231, or 71.29 percent.
Crews' quarters and staterooms	230, or 2.27 percent.
Other superstructure	1,602, or 15.79 percent."

(P. 143, Annual Report, 1926).

"Of the total number (1,837) of rats recovered (as a result of fumigation), 1,080 were from the holds of vessels" (p. 151, Annual Report, 1926).

raised wooden ceiling of flooring over tank tops in the lower holds had been done for reasons other than ratproofing, viz, the reduction of dead weight and because of construction costs.

It was thought that vessels falling in this category would be excellent subjects for survey and study. So far as could be ascertained, no thought had been given to the matter of fundamental rat control on ships that were built prior to 1925, and therefore no special effort had been made to promote it.

All of the vessels under consideration were regularly inspected at each visit to New York and many of them were fumigated a number of times during the period covered by the report, as indicated in the accompanying table. The information as to rat infestation and its extent, as well as regarding the number of rats retrieved after fumigation, was taken from the official reports.

It will be seen that few rats were killed or trapped on these ships, and in the majority of instances the results were negative, both as to fumigation and as to trapping.

These vessels carried diversified cargoes, usually classified as rat harboring or rat attractive, such as jute, rubber, cotton, fruits, grain, hemp, flour, and similar materials. Many of them touched at ports of India, the Far East, the Straits Settlements, and the Dutch East Indies. Notwithstanding the hazards usually associated with such factors, trading at infected and rat-infested ports and transporting cargoes of the character mentioned above, they have continued to remain practically free of rat colony life for the length of time that they have been in service, periods ranging from 4 to 10 or more years.

This freedom from rat infestation would hardly appear to be just a coincidence. It would seem to be due to some basic cause, very probably to the absence of enclosed spaces that could be used for breeding purposes and which would afford protection to the young during immaturity. The operation of this barrier against successful propagation appears to be automatic; for, in many of the cases cited, no attention had been paid to the matter of control of rat life through this medium on the vessels concerned prior to 1925 or 1926.

An analysis of trade routes involved reveals the following information:

Sixteen vessels were engaged in round-the-world service and touched at ports of Japan, China, Straits Settlements, Dutch East Indies, and the Philippine Islands.

Fifteen vessels touched at ports of the Far East and India.

Twelve vessels were engaged in trade on the North Atlantic and plied between ports of Europe and North America. One of these touched continually at ports of the Mediterranean Sea, and for more than 2 years was in the South American service, plying between South American ports and those of Italy.

Two are in the West Indies service and touch at Havana, New Orleans, and New York. Two touch at ports of Brazil, and three sail from New York to the West Coast via the Panama Canal.

A study of the histories of these vessels would appear to confirm the following findings, which should be given consideration in dealing with problems connected with the prevention of the spread of bubonic plague through the agency of maritime shipping.

First: That the absence of structural harborage, or harborage of a more or less permanent character, apparently exercises permanent control of rat colony life on ships by depriving rats of fixed facilities for breeding and protecting their young during the helpless stage of their early existence.

Second. That this control, as demonstrated in the cases of the vessels cited in the list given in this report, was exercised notwithstanding the fact (*a*) that a certain percentage of the cargo carried was of a rat-harboring and rat-attractive character, such as burlap, jute, raw cotton, rubber, oils, sugar, tapioca flour, and grain, and fruits at times; or (*b*) that these vessels traded at such ports as Calcutta, Bombay, Colombo, Port Sedan, Soerabaya, Singapore, Shanghai, Hong Kong, Penang, Manila, Port Said, Habana, east- and west-coast ports of the United States, and Italian ports. Many of these ports are generally regarded as being more or less rat-infested, and some are suspected of being infected with plague.

The history of rat life on the ships listed during the period of observation revealed the following:

(*a*) Twenty-five ships had kept entirely free from rodent infestation.

(*b*) On four ships a stray rat or two was reported on but one trip.

(*c*) On three ships a stray rat or two was reported on only two trips.

(*d*) On the nine vessels that showed indications of a slight or temporary infestation, rats were living in sections other than the cargo holds.

The quarantine history of the British freighter *City of Lincoln* (no. 50) presents some interesting facts and demonstrates the effect which the absence of structural harborage in cargo holds exerts on rat control in such compartments even when rat-colony life is present in other parts of the ship.

This vessel, which had been engaged in the far-eastern, Australian, and Indian trade, had for several years been badly rat-infested in and around the provision storeroom and domestic refrigerator, which were located in the extreme after part of the ship.

Rats were so numerous and had become so strongly entrenched in this refrigerator that practically the entire insulated space, which was filled with cork and asbestos, was honeycombed with nests containing young rats.

Repeated fumigations and trappings yielded very large numbers of rats. In one fumigation in 1922, 58 rats were retrieved; in another fumigation in 1928, 253 rats; and in July 1929 more than 450 rats were killed by fumigation and in a clean-up drive, at which time the refrigerator was reconstructed and ratproofed.

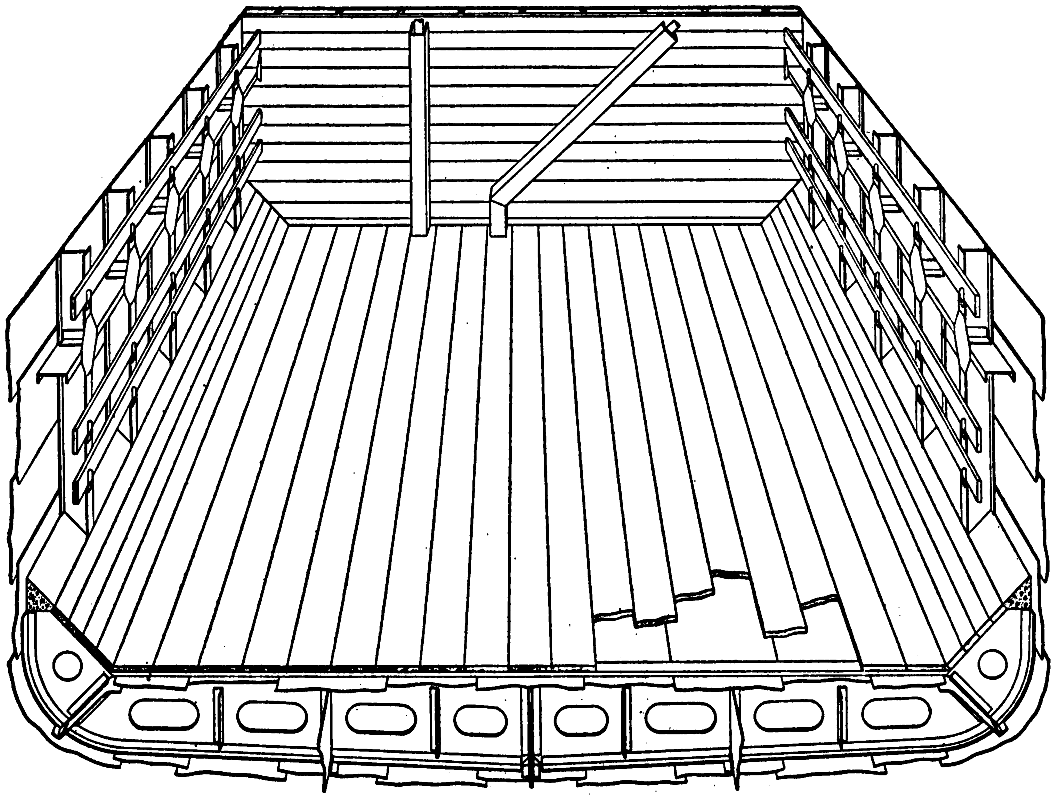
Strange as it may seem, notwithstanding the presence for several years of this large number of rats on board this vessel in the sections mentioned above, and of the opportunities which were offered them to pass from such nearby sections to the cargo holds (the infested refrigerator being installed in the passageway on the main deck), no colony rat life in the holds was discovered at any time that the vessel was inspected in New York. Reports obtained from the ship's officers and crew were to this effect also. The cargo usually carried was of a rat-attractive and rat-harboring character, as noted above.

The holds of this vessel were constructed free from raised wooden ceilings over tank tops, and many of the pipe casings were of an open type, free from enclosed spaces which could be used for nesting and breeding purposes.

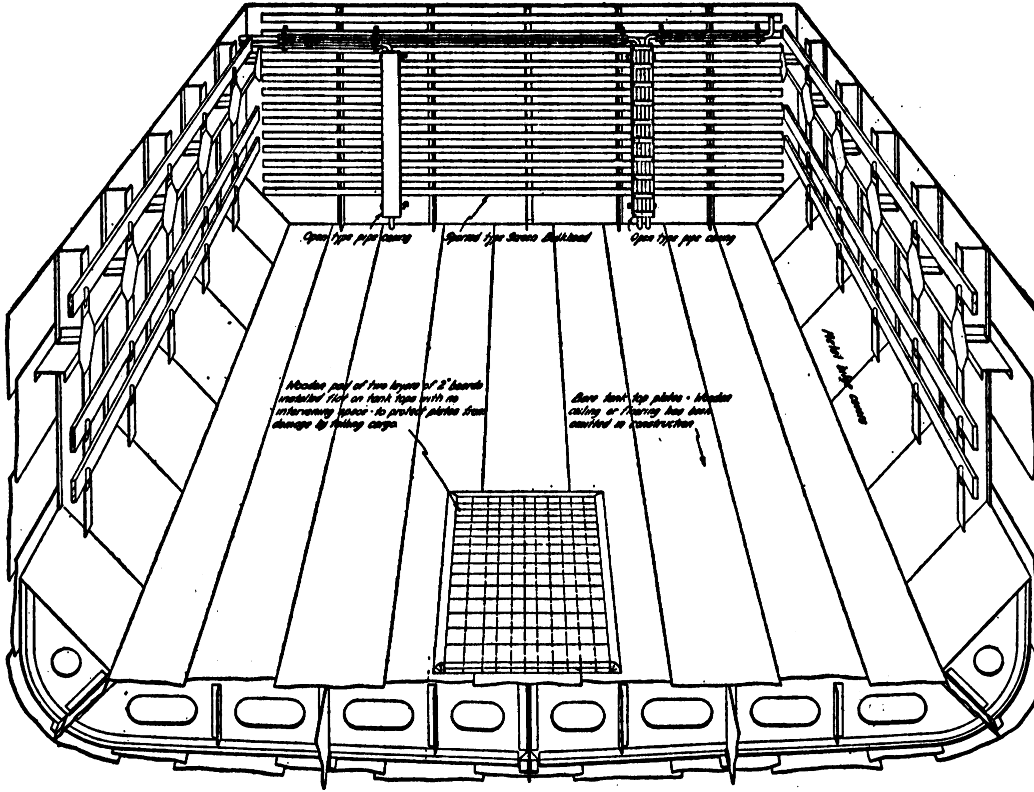
The *City of Lincoln* was inspected at the port of New York on two occasions after the refrigerator had been reconstructed and ratproofed, and some protective ratproofing work had been done in the storeroom section. Only a stray rat or two were discovered on these occasions. The ship was fumigated in January 1930, and only four rats were retrieved following fumigation.

It would appear that the lesson which might be learned from these surveys, and from a study of the quarantine histories of the ships mentioned, is that the type of vessel offering the least facilities for the propagation and perpetuation of rat life on board is one that has been designed and constructed in such a manner that enclosed spaces which have been or may be used as rat harborages are eliminated to the fullest possible extent. When harborage has been eliminated on vessels, as the histories of the ships presented in this report show, satisfactory permanent rat control has resulted and rodent life on such vessels has been reduced to a minimum, as is contemplated by the provisions of article 28 of the International Sanitary Convention of Paris, 1926.

While the data as to rat-infestation status of the vessels surveyed covers only the period given on the list, for reasons outlined in eligibility requirement no. 2, given below, there is every reason to believe that in the majority of instances these vessels have been practically free from rat life during their entire period of service, ranging from 3 to 20 years. (The table shows the year in which the vessels were built.) The condition of the ship, the absence of even old signs of the presence of rats, and the word-of-mouth history given by the



Sketch showing cargo hold of the type which abounds in rat harborage. Note enclosed spaces formed by wooden ceiling over tank top, closed type wooden screen bulkhead and boxed pipe casings. Ceiling usually raised 2" over tank top



SKETCH SHOWING TYPE OF CONSTRUCTION IN LOWER CARGO HOLDS IN WHICH ENCLOSED SPACES WHICH FORM RAT HARBORAGES HAVE BEEN ELIMINATED. THE MAJORITY OF SHIPS CITED IN THIS REPORT HAD BARE TANK TOP CEILINGS AND ONE OF THE OPEN TYPE OF PIPE CASINGS SHOWN ON SKETCH

long-service members of the crew of such ships tend to confirm this belief.

In order to be considered in this survey, each vessel had to comply with the requirements regarding—

(1) Type of construction of cargo holds.
(2) Minimum length of service, and inspection and fumigation records.
(3) Class of cargo transported and ports visited.

Under (1) it was required that the cargo holds should be free from wooden tank-top ceilings or flooring, and that the pipe casings be of an open or ratproof type.

Under (2), that the vessel had been in commission for at least 3 years and that bona-fide inspection reports and fumigation records covering such periods were available for reference and study.

And under (3), that the vessel had been engaged in the transportation of cargoes usually regarded as rat attractive or rat harboring, or that it had traded at ports generally regarded as suspicious of being plague infected and more or less rat infested.

There were a few exceptions made to the requirement mentioned in the latter part of no. 3. Several ships that were engaged exclusively in the North Atlantic trade were included in the list of 50 for the reason that they carried both rat-attractive and rat-harboring cargoes of foodstuffs, case and crated goods, as well as grain at certain seasons.

A few other ships, built without wooden ceilings in holds, were not included in this list, for the reason that official records giving the data contemplated by no. 2 were lacking. The reports available did not cover the minimum period specified.

Eight of these vessels, the British ships *Ajax*, built in 1931, *Adenvohr*, built in 1930, *Crispin*, built in 1935, *Maihar*, built in 1917, *River Delaware*, built in 1918, *Tantalus*, built in 1923, *Maron*, built in 1930, and the *Arctees*, built in 1934, gave negative histories so far as rat-colony life is concerned.

The majority of these vessels are engaged in the far-eastern and Indian Ocean trade, and transport cargoes very similar to those carried by the ships mentioned in the list.

There are practically no other ships constructed without wooden ceilings and similar features in lower holds which touch at New York. Those listed and mentioned in this report constitute practically all of this type of vessel available for survey and study at this port.

One of the accompanying sketches shows examples of methods of eliminating the usual enclosed spaces that form marked rat harborage in the cargo holds of ships. The other sketch shows the contrasting conditions—rat harborages formed by the enclosed spaces usually found in such compartments.

Histories and records of 50 vessels on which enclosed spaces in cargo holds have been eliminated

Vessel	Year built	Structural status of cargo holds as to harborage	History of rat infestation	Period under observation	Number of inspections or surveys	Times fumigated and number of rats retrieved [1]	Type of cargo	Ports of call
1. British S. S. *Adrastus* (cargo).	1923	No wooden ceilings over tank tops in lower holds. Open-type pipe casings.	Negative	1928–35	10	(1) No rats	Rubber, burlap, jute, hemp, tea, tin, coconuts, oil, tapioca.	Far East, Kobe, Shanghai, Suez, Port Said.
2. British S. S. *Ashburton* (cargo).	1926	do	do	1932–35	3	None recorded	General cargo, hides, ore.	Ports of Australia, Port Pirie, Freemantle.
3. British S. S. *Basil* (cargo).	1928	do	Slight infestation in 1933	1930–34	8	(3) 5 rats	Rubber, hides, machinery, wax, cocoa, cotton, nuts, flour, case oil.	Brazilian ports: Para, Bahia, Pernambuco, Natal, Victoria, Macelo, Parahyba.
4. British S. S. *Benedict* (cargo).	1929	do	Slight infestation—1 or 2 rats on 2 trips, 1934, 1935.	1930–35	5	(2) No rats	do	Do.
5. German S. S. *Bremen* (passenger and express cargo).	1929	do	Negative	1929–35	99	None	General express cargo	Cherbourg, Southampton, Bremen.
6. British S. S. *Britannic* (passenger and cargo.)	1930	No wooden ceilings over tank tops in lower holds and open-type pipe casings in all holds except section where refrigerators were installed.	Moderate infestation in crew's galley section and in refrigerator section for some months after being commissioned, due to existence of enclosed insulated spaces and brine pipes which had not been rat proofed.	1930–35	55	(3) 7 rats. Some rats were trapped in these sections in 1930–31.	Grain, fruits, case goods, etc., general cargo.	Liverpool.
7. American S. S. *California* (passenger and cargo).	1928	do	Negative after first few months, when stray rats from shipyard had been destroyed.	1928–35	60	(1) 11 rats	General cargo, fruits, flour, canned goods, nuts, etc.	Havana, Canal Zone, San Pedro, San Francisco.
8. British S. S. *California* (passenger and cargo).	1923	do	Slight localized infestation several times during early period of observation.	1926–35	50	(5) 3 rats	Grain, fruit, case goods, general cargo.	Glasgow, Halifax, Londonderry, Belfast.
9. British S. S. *Caledonia* (passenger and cargo).	1925	do	Slight infestation in galley section in 1927.	1926–35	94	No record of any fumigation.	do	Do.

[1] Number of fumigations in parentheses.

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Histories and records of 50 vessels on which enclosed spaces in cargo holds have been eliminated—Continued

Vessel	Year built	Structural status of cargo holds as to harborage	History of rat infestation	Period under observation	Number of inspections or surveys	Times fumigated and number of rats retrieved [1]	Type of cargo	Ports of call
10. British S. S. *Cameronia* (passenger and cargo).	1921	No wooden ceilings over tank tops in lower hold. Open-type pipe casings.	Negative except for strays on 3 separate trips.	1927–35	82	No fumigation; 3 rats trapped.	General cargo, fruit, grain, case goods.	Glasgow, Halifax, Londonderry, Belfast.
11. British S. S. *Clytoneus* (cargo).	1930	----do----	Several stray rats reported on 2 inspections.	1931–34	6	(3) 1 rat----	Hemp, tin, tea, jute, rubber, hides, tapioca, flour, burlap.	Hong Kong, Manila, Batavia, Soerabaya, Suez, Singapore, Port Said, Penang, Gibraltar.
12. British S. S. *Dardanus* (cargo).	1923	----do----	Negative----	1929–35	5	(2) No rats----	----do----	Do.
13. British S. S. *Empress of Australia* (passenger and cargo).	1913	No wooden ceilings over tank tops in lower holds; solid steel pipe casings completely closed.	Several strays on 2 voyages.	1930–35	7	(3) 2 rats----	General express cargo, grain, fruit.	Quebec, Halifax, Cherbourg, Southampton.
14. British S. S. *Empress of Britain* (passenger and cargo).	1931	No wooden ceilings over tank tops in lower holds: open type pipe casings.	Slight in 1931 and 1933 in galley section.	1931–35	8	(1) 4 rats----	General cargo, fruit, grain, case goods, etc.	Do.
15. German S. S. *Europa* (passenger and cargo).	1929	----do----	Negative in holds. Some infestation in deckhead and fixtures of galleys during first year and a half of service, until these conditions were ratproofed.	1929–35	90	(2) No rats. A number of rats were trapped in galley section prior to correction of deckhead defects.	General express cargo, case goods.	Cherbourg, Southampton, Bremen.
16. British S. S. *Georgic* (passenger and cargo).	1932	No wooden ceilings over tank tops in lower holds: open type pipe casings. No sheathing or double walls in crews' quarters, third class, nor tourists' section.	Negative----	1932–35	29	(1) No rats----	General cargo, fruits, grain, case goods, etc.	Liverpool, Cobh, Galway.
17. British S. S. *Glaucus* (cargo).	1921	No wooden ceilings over tank tops in lower holds and open type pipe casings.	----do----	1927–35	9	(1) No rats----	Rubber, fruit, tea, tin, hemp, jute, tapioca flour, general cargo.	Canal Zone, Manila, Yokohama, Hong Kong, Kobe, Shanghai, Dutch East Indies.

18. British S. S. *Greystoke Castle* (cargo).	1927	do	Negative except for one stray rat in 1932.	1927–35	18	(10) 1 rat	General cargo, ore, tea, rubber, jute, burlap, tapioca flour.	Penang, Colombo, Manila, Batavia, Deli, Macassar, Singapore.
19. British S. S. *Helenus* (cargo).	1913	do	Negative	1921–35	2	(2) 13 rats	Rubber, hemp, tea, tin, jute, flour.	Far East, Kobe, Yokohama, Hong Kong, Shanghai, Manila.
20. British S. S. *Laurentic* (passenger and cargo).	1927	do	do	1928–34	9	No record of any fumigation.	General cargo, grain, fruit, case goods, cloth, etc.	Liverpool, Cobh, Galway, Montreal.
21. British S. S. *Mahanada* (cargo.)	1914	do	Slight infestation in storeroom and forepeak in 1932.	1930–35	6	(6) 14 rats	Burlap, case goods, hides, tea, ore, jute, grain, cotton, shellac gum, etc.	Calcutta, Colombo, Port Sudan, Oran, Port Said.
22. British S. S. *Maidan* (cargo).	1925	do	do	1931–35	7	(4) No rats	do	Do.
23. British S. S. *Mahout* (cargo).	1925	do	Negative	1930–34	10	(1) No rats	do	Do.
24. British S. S. *Mahronda* (cargo).	1925	do	do	1931–35	5	None	do	Do.
25. British S. S. *Mahseer* (cargo).	1925	do	do	1930–35	10	(2) No rats	do	Do.
26. British S. S. *Mahsud* (cargo).	1917	do	do	1931–35	11	(1) No rats	do	Do.
27. British S. S. *Markhor* (cargo).	1929	do	do	1931–34	9	None	do	Do.
28. British S. S. *Matra* (cargo).	1926	do	do	1928–35	7	None	do	Do.
29 British S. S. *Menestheus* (cargo).	1929	do	do	1930–35	4	(1) No rats	do	Far East, Manila, Hong Kong, Kobe, Yokohama, Shanghai.
30. British S. S. *Myrmidon* (cargo).	1930	do	do	1930–35	4	None	Rags, jute, rubber, hemp, tin, tea, tapioca flour.	Far East, Dutch East Indies, Penang, Batavia, Port Said.
31. British S. S. *Penrith Castle* (cargo).	1929	do	Negative, except for a slight infestation in 1933.	1929–35	14	(6) 9 rats	Rubber, flour, tea, ore, hemp, tapioca, sago, sisal.	Penang, Manila, Macassar, Colombo, Batavia, Singapore.
32. American S. S. *Pennsylvania* (passenger and cargo).	1929	do	Negative, after the few stray rats from shipyard were trapped in working alleyway near storeroom.	1929–35	10	None	Cased and canned goods, fruits, general cargo.	Havana, Canal Zone, San Pedro, San Francisco.
33. British S. S. *Phemius* (cargo).	1913	do	Negative	1922–35	9	(2) No rats	Burlap, jute, rubber, tea, tin, tapioca flour.	Far East, Manila, Hong Kong, Batavia, Soerabaya, Singapore, Penang.
34. Dutch S. S. *Polyphemius* (cargo).	1906	do	Negative, except for a stray rat on several trips.	1930–32	3	(2) 1 rat	do	Do.
35. British S. S. *Rhexenor* (cargo).	1923	do	1 rat, 1931	1929–35	11	(2) 1 rat	do	Do.

[1] Number of fumigations in parentheses.

Histories and records of 50 vessels on which enclosed spaces in cargo holds have been eliminated—Continued

Vessel	Year built	Structural status of cargo holds as to harborage	History of rat infestation	Period under observation	Number of inspections or surveys	Times fumigated and number of rats retrieved [1]	Type of cargo	Ports of call
36. American S. S. *Seatrain Havana* (loaded freight cars).	1932	No wooden ceilings over tank tops in lower holds; open holds for storage of loaded freight cars.	Negative	1932–35	35	None	Freight cars loaded with fruits, vegetables, etc., and general food supplies on return voyage.	Havana, New Orleans, New York.
37. American S. S. *Seatrain New York* (loaded freight cars).	1932	do	Negative, during whole period except for evidence of stray rat in March 1933.	1932–35	31	None	do	Do.
38. Dutch S. S. *Statendam* (passenger and cargo).	1929	No wooden ceilings over tank tops in lower holds; open-type pipe casings.	Negative since 1931. Moderate infestation in superstructure for first year; negative thereafter. Ratproofing work was carried out in superstructure for more than a year after vessel was commissioned.	1929–35	53	(8) 34 rats. A number of rats were trapped by the crew in the superstructure, storeroom, and galleys during the first year.	Grain, fish, case goods, cheese.	Rotterdam.
39. British S. S. *Eurybates* (cargo).	1920	do	Slight infestation reported on 1 occasion.	1922–34	4	(3) 2 rats	Rubber, jute, tapioca, flour, burlap in bales, general cargo.	Suez, Port Said, Dutch East Indies, Singapore.
40. British S. S. *Silverpalm* (cargo).	1930	do	Negative, except for 1 or 2 stray rats reported on 2 trips.	1930–32	13	(5) No rats	Rubber, flour, tin, tea, hemp, cocoanut oil, some fruits, jute.	Yokohama, Shanghai, Hong Kong, Soerabaya, Manila, Batavia, Colombo, Penang, Rangoon.
41. British S. S. *Silversandal* (cargo).	1930	do	Negative, except for 1 stray rat reported on 1 trip.	1930–35	18	(1) No rats	do	Do.
42. British S. S. *Silverteak* (cargo).	1930	do	Negative	1930–35	16	None	do	Do.
43. British S. S. *Silverwalnut* (cargo).	1929	do	Negative; 1 reported killed while loading bananas in 1933.	1930–35	18	(2) No rats	do	Do.
44. British S. S. *Silveryew* (cargo).	1929	do	Negative	1930–35	14	(2) No rats	do	Do.
45. British S. S. *Thurland Castle* (cargo).	1929	do	do	1929–35	10	(7) No rats	General cargo, ore, tea, jute, rubber, burlap, tapioca.	Macassar, Deli, Singapore, Manila, Penang, Colombo, Batavia.

46. British S. S. *Transylvania* (passenger and cargo).	1925	----do----	Had moderate infestation in galley section and baggage room until 1929; negative since.	1926-34	81	(4) 2 rats----	Case goods, grain, fruit, meats, general cargo.	Glasgow, Halifax, Londonderry, Belfast.
47. American S. S. *Virginia* (passenger and cargo).	1929	----do----	Negative----	1929-35	46	None----	----do----	Habana, Canal Zone, San Pedro, San Francisco.
48. British S. S. *Raby Castle* (cargo).	1925	----do----	Moderate infestation in 1930.	1930-35	13	(4) 13 rats----	General cargo, jute, tea, ore, rubber, tapioca, flour.	Macassar, Manila, Penang, Colombo, Singapore, Batavia.
49. Italian S. S. *Conte Grande* (passenger and cargo).	1928	----do----	Slight infestation in galley and linen room located in no.2 hold for a short time after going into commission; negative since 1930.	1928-35	52	(25) A few rats----	Oils, fruit, nuts, case goods, flour, general cargo.	Genoa, Naples, Malta, Gibraltar, Buenos Aires.
50. British S. S. *City of Lincoln* (cargo).	1911	----do----	Practically negative in cargo holds; refrigerators and store room in poop space badly infested from 1922 to 1929.	1922-33	6	(6) 781 rats----	Rubber, jute, burlap, tin, hides.	Ports of New Zealand, Singapore, Macassar, Telok, Port Said, and ports of India.

DEATHS DURING WEEK ENDED MAY 9, 1936

[From the Weekly Health Index, issued by the Bureau of the Census, Department of Commerce]

	Week ended May 9, 1936	Corresponding week, 1935
Data from 86 large cities of the United States:		
Total deaths	9,044	8,590
Deaths per 1,000 population, annual basis	12.6	12.0
Deaths under 1 year of age	613	591
Deaths under 1 year of age per 1,000 estimated live births	55	54
Deaths per 1,000 population, annual basis, first 19 weeks of year	13.5	12.6
Data from industrial insurance companies:		
Policies in force	68,210,894	67,734,320
Number of death claims	13,873	12,858
Death claims per 1,000 policies in force, annual rate	10.6	9.9
Death claims per 1,000 policies, first 19 weeks of year, annual rate	10.9	10.7

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

CURRENT WEEKLY STATE REPORTS

These reports are preliminary, and the figures are subject to change when later returns are received by the State health officers

Reports for Weeks ended May 16, 1936, and May 18, 1935

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended May 16, 1936, and May 18, 1935

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended May 16, 1936	Week ended May 18, 1935	Week ended May 16, 1936	Week ended May 18, 1935	Week ended May 16, 1936	Week ended May 18, 1935	Week ended May 16, 1936	Week ended May 18, 1935
New England States:								
Maine	1	5	1	2	375	178	0	0
New Hampshire					35	5	0	0
Vermont	2				437	49	0	0
Massachusetts	9	4			1,614	423	8	0
Rhode Island		2			68	498	0	0
Connecticut	1	2	2		233	1,202	2	1
Middle Atlantic States:								
New York	37	39	[1] 3	[1] 8	3,170	2,876	27	35
New Jersey	12	30	3	11	499	2,166	2	3
Pennsylvania	34	23			616	3,438	12	2
East North Central States:								
Ohio	24	35	75	73	542	2,056	13	10
Indiana	7	20	40	14	36	229	6	6
Illinois	39	42	29	47	35	1,861	15	24
Michigan	12	11		1	164	4,217	3	0
Wisconsin	6	2	53	89	167	1,505	0	1
West North Central States:								
Minnesota	1	12	1	2	530	520	3	0
Iowa	5	9		8	5	331	4	2
Missouri	12	25	72	37	30	448	4	20
North Dakota	1	4	12		1	15	0	0
South Dakota	1				1	37	0	0
Nebraska	1	5			41	295	2	2
Kansas	8	6	20	4	8	821	0	1
South Atlantic States:								
Delaware		2			27	6	0	0
Maryland [2 3]	5	6	3	8	454	73	11	9
District of Columbia [3]	17	10			186	49	7	8
Virginia	7	18	68		136	506	8	23
West Virginia	7	13	36	12	74	384	8	4
North Carolina	14	23	5	9	47	150	8	3
South Carolina	4	2	126	72	32	13	3	0
Georgia [4]	9	3					1	1
Florida [4]	4	2	7	3	25	23	3	0
East South Central States:								
Kentucky	6	7	58	24	38	283	20	2
Tennessee	4	6	71	18	28	18	9	7
Alabama [4]	5	8	54	26	30	122	1	0
Mississippi [3]	6	6					0	0

See footnotes at end of table.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended May 16, 1936, and May 18, 1935—Continued

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended May 16, 1936	Week ended May 18, 1935	Week ended May 16, 1936	Week ended May 18, 1935	Week ended May 16, 1936	Week ended May 18, 1935	Week ended May 16, 1936	Week ended May 18, 1935
West South Central States:								
Arkansas	5	8	96	37	3	73	1	0
Louisiana	12	17	506	6	27	56	4	1
Oklahoma [4]	7	2	66	65	46	67	2	1
Texas [4]	37	35	211	86	325	117	7	3
Mountain States:								
Montana [3]	----	5	58	45	5	592	0	0
Idaho	----	----	1	3	21	2	0	1
Wyoming [3]	----	----	----	----	2	23	0	0
Colorado	1	8	----	----	19	405	1	0
New Mexico	4	1	10	9	44	9	0	0
Arizona	----	9	48	8	110	13	1	0
Utah [3]	----	1	----	----	22	1	1	0
Pacific States:								
Washington	1	7	----	----	414	524	2	2
Oregon [3]	2	3	19	15	151	210	0	2
California [3]	26	24	259	47	1,908	1,714	7	5
Total	396	502	2,013	789	12,781	28,603	206	179
First 20 weeks of year	10,966	13,029	134,758	99,537	194,175	550,132	4,721	2,843

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended May 16, 1936	Week ended May 18, 1935	Week ended May 16, 1936	Week ended May 18, 1935	Week ended May 16, 1936	Week ended May 18, 1935	Week ended May 16, 1936	Week ended May 18, 1935
New England States:								
Maine	0	0	22	9	0	0	3	1
New Hampshire	0	0	1	17	0	0	1	0
Vermont	0	0	7	2	0	0	0	1
Massachusetts	1	0	218	210	0	0	2	4
Rhode Island	0	0	27	19	0	0	0	0
Connecticut	0	0	36	104	0	0	1	1
Middle Atlantic States:								
New York	3	1	781	1,020	0	0	17	8
New Jersey	0	0	285	179	0	0	4	1
Pennsylvania	1	0	338	598	0	0	4	10
East North Central States:								
Ohio	0	0	320	638	0	0	5	7
Indiana	2	0	134	96	3	2	4	3
Illinois	1	0	680	1,131	13	2	6	7
Michigan	0	0	284	304	2	0	8	3
Wisconsin	1	1	431	467	7	17	1	1
West North Central States:								
Minnesota	0	0	366	364	4	3	0	1
Iowa	0	1	137	79	31	10	1	1
Missouri	0	0	140	34	29	4	3	5
North Dakota	0	0	39	43	3	1	0	0
South Dakota	0	0	53	25	32	2	0	0
Nebraska	0	0	87	56	16	17	0	0
Kansas	0	0	212	44	25	18	3	8
South Atlantic States;								
Delaware	0	0	2	10	0	0	0	0
Maryland [2] [3]	0	0	43	103	0	0	2	5
District of Columbia [3]	0	0	24	43	0	0	0	0
Virginia	0	1	51	17	1	0	6	2
West Virginia	0	0	26	62	0	0	6	11
North Carolina	1	2	11	17	1	0	4	1
South Carolina	2	0	3	3	0	0	5	12
Georgia [4]	0	0	25	6	0	0	11	14
Florida [4]	0	1	9	1	0	0	5	6
East South Central States:								
Kentucky	0	0	20	21	0	0	4	8
Tennessee	0	1	17	16	0	0	5	3
Alabama [4]	0	0	4	7	0	3	3	6
Mississippi [3]	0	0	5	7	2	0	2	3

See footnotes at end of table.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended May 16, 1936, and May 18, 1935—Continued

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended May 16, 1936	Week ended May 18, 1935	Week ended May 16, 1936	Week ended May 18, 1935	Week ended May 16, 1936	Week ended May 18, 1935	Week ended May 16, 1936	Week ended May 18, 1935
West South Central States:								
Arkansas	1	0	3	4	0	5	1	4
Louisiana	0	4	5	2	0	0	3	13
Oklahoma [5]	0	1	56	6	1	0	7	0
Texas [4]	1	1	46	28	7	8	14	22
Mountain States:								
Montana [2]	2	0	114	6	16	8	1	1
Idaho	0	0	17	8	3	0	1	0
Wyoming [2]	0	0	20	15	0	2	0	2
Colorado	0	0	66	167	3	0	0	1
New Mexico	0	0	61	5	0	0	0	3
Arizona	0	0	44	24	0	0	2	3
Utah [2]	0	0	68	131	4	0	0	0
Pacific States:								
Washington	0	2	61	48	5	34	0	1
Oregon [2]	0	0	25	15	13	8	4	5
California [2]	5	3	337	241	2	11	5	9
Total	21	19	5,761	6,452	223	155	154	192
First 20 weeks of year	359	478	150,399	142,869	4,619	3,778	2,299	2,732

[1] New York City only.
[2] Week ended earlier than Saturday.
[3] Rocky Mountain spotted fever, week ended May 16, 1936, 16 cases, as follows: Maryland, 1; District of Columbia, 1; Montana, 6; Wyoming, 5; Oregon, 2; California, 1.
[4] Typhus fever, week ended May 16, 1936, 22 cases, as follows: Georgia, 7; Florida, 1; Alabama, 2; Texas, 12.
[5] Exclusive of Oklahoma City and Tulsa.

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of cases reported monthly by States is published weekly and covers only those States from which reports are received during the current week.

State	Meningococcus meningitis	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever
February 1936										
New Hampshire			16				0	48	0	0
March 1936										
Colorado	5	37	7		82		0	498	18	1
New Hampshire			6					28	0	0
April 1936										
Alabama	18	51	4,017	131	133	26	1	25	1	5
Florida	22	14	139	4	66	6	1	22	0	11
Indiana	23	47	378	2	105		1	1,235	16	4
Maine	3	2	156		555		0	55	0	3
Maryland	76	14	67	1	1,274			299	0	4
Michigan	14	40	40	10	400		2	1,339	2	17
Minnesota	11	15	4	1	1,803		1	1,611	31	2
New Hampshire							0	25	0	5
New Jersey	32	48	106	3	1,448		0	1,675	0	9
New Mexico	8	12	111	1	134	2	0	298	0	1
Ohio	63	77	358	6	1,452	1	4	1,672	3	68
South Carolina		91	1,197	437	136	77	0	10	1	6
Tennessee	32	30	2,119	97	292	20	1	108	0	17

March 1936

	Cases
Colorado:	
Chickenpox	398
Epidemic encephalitis	1
Impetigo contagiosa	12
Jaundice	1
Mumps	813
Undulant fever	1
Vincent's infection	2
Whooping cough	104

April 1936

	Cases
Anthrax:	
New Jersey	2
Chickenpox:	
Alabama	69
Florida	128
Indiana	218
Maine	89
Maryland	339
Michigan	1,357
Minnesota	331
New Jersey	1,307
New Mexico	99
Ohio	1,302
South Carolina	51
Tennessee	76
Diarrhea:	
Maryland	5
Ohio (under 2 years)	7
South Carolina	134
Dysentery:	
Florida	1
Maryland (bacillary)	3
Michigan (amoebic)	5
Michigan (bacillary)	1
New Mexico (amoebic)	2
Tennessee	2
Epidemic encephalitis:	
Maryland	1
Michigan	1
New Jersey	1
New Mexico	1
South Carolina	3
Tennessee	2
Food poisoning:	
New Mexico	1
German measles:	
Alabama	1
Maryland	514
Michigan	1,090
New Jersey	617
New Mexico	4
Ohio	244

April 1936--Continued

	Cases
German measles—Con.	
South Carolina	19
Tennessee	24
Hookworm disease:	
South Carolina	30
Tennessee	1
Impetigo contagiosa:	
Maryland	7
Michigan	1
Tennessee	4
Lead poisoning:	
Michigan	3
New Jersey	1
Ohio	5
Mumps:	
Alabama	563
Florida	156
Indiana	407
Maine	701
Maryland	892
Michigan	1,479
New Jersey	1,447
New Mexico	333
Ohio	1,344
South Carolina	180
Tennessee	317
Ophthalmia neonatorum:	
Alabama	1
Maryland	1
New Jersey	19
Ohio	52
South Carolina	5
Tennessee	8
Paratyphoid fever:	
Michigan	1
Tennessee	1
Puerperal septicemia:	
New Mexico	4
Tennessee	3
Rabies in animals:	
Alabama	90
Indiana	61
Maryland	3
Michigan	1
New Jersey	21
South Carolina	39
Scabies:	
Maryland	1
Tennessee	8
Septic sore throat:	
Maine	4
Maryland	13
Michigan	93

April 1936—Continued

	Cases
Septic sore throat—Con.	
Minnesota	3
New Mexico	8
Ohio	142
Tennessee	8
Tetanus:	
Alabama	5
Maryland	1
New Jersey	1
New Mexico	1
Ohio	1
Tennessee	2
Trachoma:	
Michigan	1
New Mexico	1
Ohio	1
Tennessee	2
Tularaemia:	
Alabama	2
South Carolina	1
Tennessee	2
Typhus fever:	
Alabama	8
South Carolina	1
Undulant fever:	
Alabama	2
Florida	5
Indiana	2
Maine	1
Maryland	2
Michigan	6
Minnesota	9
New Jersey	1
Ohio	5
Vincent's infection:	
Maine	3
Maryland	7
Michigan	34
Tennessee	25
Whooping cough:	
Alabama	62
Florida	57
Indiana	165
Maine	86
Maryland	234
Michigan	1,241
Minnesota	169
New Jersey	610
New Mexico	83
Ohio	817
South Carolina	29
Tennessee	81

CEREBROSPINAL MENINGITIS ON STEAMSHIP AT FALL RIVER, MASS.

A report under date of May 12, 1936, states that a case of cerebrospinal meningitis, found on May 11 on the steamship *Wm. C. Atwater* in port at Fall River, Mass., was removed to the Union Hospital in Fall River, and later, upon diagnosis, transferred to the Fall River Contagious Hospital.

CASES OF VENEREAL DISEASES REPORTED FOR MARCH 1936

These reports are published monthly for the information of health officers in order to furnish current data as to the prevalence of the venereal diseases. The figures are taken from reports received from State and city health officers. They are preliminary and are therefore subject to correction. It is hoped that the publication of these reports will stimulate more complete reporting of these diseases.

Reports from States

	Syphilis		Gonorrhea	
	Cases reported during month	Monthly case rates per 10,000 population	Cases reported during month	Monthly case rates per 10,000 population
Alabama [1]				
Arizona	67	1.47	92	2.01
Arkansas [2]	238	1.27	146	.78
California	1,256	2.04	1,020	1.66
Colorado [2]				
Connecticut	233	1.41	87	.53
Delaware	119	4.92	43	1.78
District of Columbia [1]				
Florida	296	1.88	130	.83
Georgia	1,285	4.41	495	1.70
Idaho	0	0	0	0
Illinois	1,511	1.92	931	1.18
Indiana	103	.31	137	.41
Iowa [2]	76	.31	106	.43
Kansas	78	.41	46	.24
Kentucky	259	.97	240	.90
Louisiana	233	1.08	131	.60
Maine	40	.50	41	.51
Maryland	818	4.90	203	1.21
Massachusetts	492	1.13	485	1.12
Michigan	480	.94	528	1.04
Minnesota	256	.98	260	1.00
Mississippi	1,241	6.03	1,925	9.36
Missouri	236	.64	65	.18
Montana [2]	23	.43	29	.54
Nebraska	27	.19	60	.43
Nevada [2]				
New Hampshire	14	.30	17	.36
New Jersey	521	1.23	204	.48
New Mexico	55	1.26	45	1.03
New York	6,673	5.11	1,544	1.18
North Carolina	1,435	4.35	377	1.14
North Dakota	40	.58	45	.65
Ohio [2]	598	.87	157	.23
Oklahoma [2]	163	.66	134	.54
Oregon	46	.46	78	.79
Pennsylvania [4]	232	.24	125	.13
Rhode Island	148	2.10	64	.91
South Carolina [2]	191	1.09	283	1.62
South Dakota	10	.14	21	.30
Tennessee	1,017	3.80	443	1.66
Texas	274	.45	175	.29
Utah [2]				
Vermont	18	.50	15	.42
Virginia	683	2.79	259	1.06
Washington	123	.76	147	.91
West Virginia	179	1.00	68	.38
Wisconsin [2]	26	.09	119	.40
Wyoming [2]				
Total	21,813	1.80	11,520	.95

See footnotes at end of table.

Reports from cities of 200,000 population or over

	Syphilis		Gonorrhea	
	Cases reported during month	Monthly case rates per 10,000 population	Cases reported during month	Monthly case rates per 10,000 population
Akron, Ohio	18	0.66	8	0.29
Atlanta Ga	158	5.50	145	5.05
Baltimore, Md	530	6.42	115	1.39
Birmingham, Ala.[1]				
Boston, Mass	221	2.79	179	2.26
Buffalo, N. Y	174	2.94	68	1.15
Chicago Ill	848	2.38	616	1.73
Cincinnati, Ohio	70	1.50	40	.86
Cleveland, Ohio	172	1.85	70	.75
Columbus, Ohio	76	2.49	13	.43
Dallas, Tex	77	2.66	15	.52
Dayton, Ohio [1]				
Denver, Colo	12	.40	26	.88
Detroit, Mich.[1]				
Houston, Tex.[6]	184	5.49	54	1.61
Indianapolis, Ind	30	.80	41	1.09
Jersey City, N. J	1	.03	1	.03
Kansas City, Mo	91	2.16	7	.17
Los Angeles, Calif	394	2.75	248	1.73
Louisville, Ky.[1]				
Memphis, Tenn	189	7.08	62	2.32
Milwaukee, Wis	5	.08	15	.24
Minneapolis, Minn	91	1.87	92	1.89
Newark, N. J	223	4.81	103	2.22
New Orleans, La	84	1.75	53	1.11
New York, N. Y	4,703	6.44	1,016	1.39
Oakland, Calif	60	1.98	72	2.37
Omaha, Nebr	11	.50	13	.59
Philadelphia, Pa	211	1.06	40	.25
Pittsburgh, Pa	40	.58	19	.28
Portland, Oreg	16	.51	57	1.82
Providence, R. I	76	2.93	31	1.20
Rochester, N. Y	51	1.51	44	1.31
St. Louis, Mo	260	3.11	58	.69
St. Paul, Minn	33	1.17	39	1.38
San Antonio, Tex.[1]				
San Francisco, Calif	119	1.77	128	1.91
Seattle, Wash	90	2.37	109	2.87
Syracuse, N. Y	96	4.40	46	2.11
Toledo, Ohio	53	1.74	24	.79
Washington, D. C.[1]				

[1] No report for current month.
[2] Incomplete.
[3] Not reporting.
[4] Includes only those cases that enter the clinics conducted by State department of health.
[5] Only cases of syphilis in the infectious stage are reported.
[6] Reported by the Jefferson Davis Hospital; physicians are not required to report venereal diseases.

WEEKLY REPORTS FROM CITIES

City reports for week ended May 9, 1936

This table summarizes the reports received weekly from a selected list of 140 cities for the purpose of showing a cross section of the current urban incidence of the communicable diseases listed in the table. Weekly reports are received from about 700 cities, from which the data are tabulated and filed for reference.

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Maine:											
Portland	0	------	0	47	7	2	0	0	1	14	30
New Hampshire:											
Concord	0	------	0	0	1	1	0	1	0	0	6
Manchester	0	------	0	0	1	2	0	0	0	0	8
Nashua	0	------	--------	59	-------	0	0	-------	0	0	--------
Vermont:											
Barre	-------	------	-------	-------	-------	-------	-------	-------	-------	-------	--------
Burlington	0	------	0	92	0	0	0	0	0	1	5
Rutland	0	------	0	47	1	0	0	0	0	1	6
Massachusetts:											
Boston	2	------	1	367	25	77	0	9	1	25	212
Fall River	0	------	0	9	2	11	0	1	0	0	23
Springfield	0	------	0	3	2	8	0	0	0	3	41
Worcester	1	------	0	120	7	14	0	2	1	3	41
Rhode Island:											
Pawtucket	0	------	0	0	0	9	0	0	0	0	17
Providence	0	------	0	28	3	5	0	4	0	0	52
Connecticut:											
Bridgeport	1	3	1	7	3	4	0	0	0	0	32
Hartford	0	------	0	8	0	6	0	1	1	0	30
New Haven	0	------	0	1	3	3	0	1	0	41	42
New York:											
Buffalo	0	------	0	80	14	42	0	10	0	3	151
New York	63	8	4	2,462	124	401	0	90	6	74	1,566
Rochester	0	------	1	1	5	2	0	3	0	1	90
Syracuse	0	------	0	190	5	17	0	1	0	5	60
New Jersey:											
Camden	1	------	0	8	2	4	0	0	0	1	34
Newark	0	5	0	19	6	73	0	4	0	15	101
Trenton	0	------	1	0	5	5	0	1	0	9	38
Pennsylvania:											
Philadelphia	7	4	0	718	43	79	0	31	3	78	545
Pittsburgh	8	4	2	10	52	86	0	14	1	29	224
Reading	0	------	0	16	2	1	0	2	0	4	28
Scranton	2	------	-------	0	-------	3	0	-------	0	0	--------
Ohio:											
Cincinnati	2	------	1	41	14	22	0	6	0	0	151
Cleveland	2	12	4	127	24	55	0	18	1	113	223
Columbus	1	3	3	1	6	9	0	2	1	5	95
Toledo	0	2	1	29	9	2	0	6	0	25	81
Indiana:											
Anderson	0	------	1	0	3	4	0	0	0	8	15
Fort Wayne	0	------	0	0	1	6	0	0	0	0	25
Indianapolis	1	------	2	2	22	39	0	6	0	15	121
Muncie	0	------	1	0	3	0	0	0	0	0	15
South Bend	1	------	1	0	3	3	0	1	0	7	31
Terre Haute	0	------	0	0	0	6	0	0	0	0	24
Illinois:											
Alton	0	------	0	0	0	4	0	0	0	5	3
Chicago	14	12	5	21	84	187	0	36	4	109	829
Elgin	0	------	0	0	2	2	0	0	0	0	9
Moline	0	------	1	0	0	4	0	0	0	0	14
Springfield	0	------	0	2	4	7	0	0	0	8	20
Michigan:											
Detroit	6	------	1	36	32	155	0	11	1	265	300
Flint	0	------	0	3	12	14	0	2	0	9	37
Grand Rapids	0	------	0	3	0	6	0	1	0	5	41
Wisconsin:											
Kenosha	0	------	0	0	0	6	0	0	0	0	8
Madison	0	------	0	6	1	11	0	0	0	8	30
Milwaukee	0	3	3	10	9	76	0	4	0	115	124
Racine	0	------	0	5	0	12	0	0	0	2	10
Superior	0	------	0	0	1	25	0	0	0	0	11
Minnesota:											
Duluth	0	------	0	2	8	15	0	1	0	11	35
Minneapolis	1	------	1	186	7	78	0	1	1	14	122
St. Paul	0	------	0	149	10	27	0	3	0	1	76
Iowa:											
Cedar Rapids	1	------	--------	1	-------	3	0	-------	0	3	--------
Davenport	0	------	--------	0	-------	7	0	-------	0	0	--------
Des Moines	0	------	--------	0	-------	13	17	-------	0	0	29
Sioux City	0	------	--------	1	-------	7	18	-------	0	0	--------
Waterloo	2	------	--------	0	-------	5	0	-------	0	0	--------

City reports for week ended May 9, 1936—Continued

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Missouri:											
Kansas City	1	------	1	0	13	101	0	4	0	6	95
St. Joseph	0	------	0	0	4	1	4	4	0	0	39
St. Louis	9	------	3	9	14	44	0	12	0	6	246
North Dakota:											
Fargo	0	------	0	0	0	2	0	0	0	2	10
Grand Forks	0	------	------	0	------	0	0	------	0	0	------
Minot	0	------	0	0	0	2	0	0	0	0	8
South Dakota:											
Aberdeen	0	------	------	0	------	3	0	------	0	0	------
Sioux Falls	0	------	0	0	0	7	0	0	0	0	10
Nebraska:											
Omaha	1	------	0	10	5	43	4	3	0	0	81
Kansas:											
Lawrence	0	------	0	0	1	1	3	0	0	0	2
Topeka	0	------	2	0	5	88	0	1	0	6	29
Wichita	0	1	1	4	4	21	0	1	0	3	30
Delaware:											
Wilmington	1	------	0	2	0	0	0	0	0	1	28
Maryland:											
Baltimore	1	3	2	321	32	20	0	17	0	68	238
Cumberland	0	------	0	0	3	0	0	1	0	0	15
Frederick	0	------	0	1	0	0	0	0	0	0	3
District of Columbia:											
Washington	16	1	1	187	25	17	0	12	1	34	186
Virginia:											
Lynchburg	0	------	1	4	0	3	0	0	0	14	9
Norfolk	0	------	0	2	5	2	0	1	0	2	25
Richmond	0	------	3	1	6	22	0	2	0	0	64
Roanoke	0	------	0	0	1	1	0	0	0	0	16
West Virginia:											
Charleston	1	1	0	0	3	1	0	1	1	0	9
Huntington	2	------	------	0	------	0	0	------	0	0	------
Wheeling	0	------	------	48	------	0	0	------	1	0	------
North Carolina:											
Gastonia	0	------	0	0	0	0	0	1	0	0	5
Raleigh	0	------	0	0	2	0	0	0	0	10	19
Wilmington	0	------	0	0	3	0	0	1	0	0	12
Winston-Salem	0	------	1	23	0	0	0	2	1	0	17
South Carolina:											
Charleston	0	4	0	0	0	1	0	1	0	0	13
Columbia	------	------	------	------	------	------	------	------	------	------	------
Florence	0	------	0	0	3	0	0	0	0	1	11
Greenville	0	------	0	2	9	0	0	1	0	0	29
Georgia:											
Atlanta	1	4	1	0	11	9	0	0	0	1	77
Brunswick	0	------	0	0	0	0	0	0	0	0	3
Savannah	0	4	1	0	2	1	0	0	0	0	26
Florida:											
Miami	1	4	3	3	2	2	0	0	0	11	26
Tampa	0	1	1	25	1	2	0	0	1	0	23
Kentucky:											
Ashland	1	------	------	2	------	1	0	------	0	2	------
Covington	0	------	0	3	1	2	0	1	0	0	16
Lexington	------	------	------	------	------	------	------	------	------	------	------
Louisville	3	1	0	33	8	6	0	3	1	9	62
Tennessee:											
Knoxville	0	3	0	15	7	0	0	1	2	0	35
Memphis	0	------	3	2	12	2	0	1	0	7	95
Nashville	0	------	1	2	10	2	0	3	0	0	52
Alabama:											
Birmingham	1	------	1	0	10	1	0	4	0	1	65
Mobile	0	------	0	0	1	1	0	1	0	0	16
Montgomery	0	1	------	0	------	0	0	------	0	0	------
Arkansas:											
Fort Smith	0	------	------	0	------	0	0	------	0	0	------
Little Rock	1	100	2	0	3	1	0	1	1	0	7
Louisiana:											
Lake Charles	0	------	0	2	0	1	0	0	0	0	4
New Orleans	6	21	9	4	23	1	0	21	1	76	171
Shreveport	0	------	0	0	5	0	0	4	1	0	40
Oklahoma:											
Oklahoma City	1	16	0	0	4	4	0	0	0	4	55
Tulsa	0	------	------	0	------	3	0	------	0	------	------
Texas:											
Dallas	4	3	3	63	6	0	0	1	0	2	66
Fort Worth	0	------	1	1	1	2	0	0	1	0	42
Galveston	0	------	0	1	4	1	0	1	0	0	19

City reports for week ended May 9, 1936—Continued

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Texas—Continued.											
Houston	11	------	2	2	4	1	0	2	1	0	61
San Antonio	2	------	0	31	2	0	0	3	1	0	67
Montana:											
Billings	0	------	0	0	0	1	1	0	0	0	7
Great Falls	0	------	0	0	0	3	0	0	0	0	9
Helena	0	------	0	0	0	5	0	0	0	0	6
Missoula	0	------	0	0	1	3	0	1	0	0	6
Idaho:											
Boise	0	------	0	1	1	3	0	0	0	0	6
Colorado:											
Colorado Springs	0	------	0	0	4	3	0	0	0	1	14
Denver	0	------	1	21	3	17	0	6	0	12	71
Pueblo	0	------	1	0	2	18	0	0	0	9	7
New Mexico:											
Albuquerque	1	------	1	3	0	4	0	1	0	1	11
Utah:											
Salt Lake City	0	------	0	8	3	18	2	1	0	12	38
Nevada:											
Reno	------	------	------	------	------	------	------	------	------	------	------
Washington:											
Seattle	------	------	------	------	------	------	------	------	------	------	------
Spokane	0	1	1	7	3	32	0	1	0	12	32
Tacoma	0	------	1	28	7	7	0	0	0	0	45
Oregon:											
Portland	0	------	0	14	3	4	0	1	1	6	75
Salem	1	1	------	5	------	3	0	------	3	------	------
California:											
Los Angeles	8	12	0	391	14	42	0	27	0	56	292
Sacramento	1	------	0	3	1	6	0	0	4	7	28
San Francisco	1	------	0	163	9	71	0	8	0	24	169

State and city	Meningococcus meningitis		Poliomyelitis cases
	Cases	Deaths	
Maine:			
Portland	0	1	0
Massachusetts:			
Boston	4	2	0
Worcester	0	0	1
Rhode Island:			
Providence	1	0	0
Connecticut:			
New Haven	2	0	0
New York:			
Buffalo	3	0	0
New York	20	6	0
Syracuse	0	1	0
New Jersey:			
Newark	1	0	0
Pennsylvania:			
Philadelphia	1	1	0
Pittsburgh	6	3	1
Ohio:			
Cincinnati	3	1	0
Cleveland	1	0	0
Columbus	0	1	0
Toledo	1	0	0
Indiana:			
Fort Wayne	1	0	0
Indianapolis	2	3	0
Illinois:			
Chicago	4	3	0
Michigan:			
Detroit	1	2	0
Minnesota:			
Duluth	0	0	1
Minneapolis	2	1	0
St. Paul	0	1	0
Missouri:			
Kansas City	1	0	0
St. Joseph	1	1	0
St. Louis	2	0	0
Maryland:			
Baltimore	6	3	0
District of Columbia:			
Washington	1	4	0
West Virginia:			
Wheeling	1	------	0
North Carolina:			
Wilmington	3	0	0
South Carolina:			
Charleston	3	0	0
Georgia:			
Atlanta	3	2	0
Kentucky:			
Ashland	1	0	0
Louisville	2	0	0
Tennessee:			
Knoxville	2	0	0
Memphis	1	1	0
Nashville	1	0	0
Louisiana:			
New Orleans	0	2	0
Shreveport	0	1	0
Oklahoma:			
Oklahoma City	1	1	0
Texas:			
Houston	3	0	0
Colorado:			
Denver	1	0	0
Utah:			
Salt Lake City	2	1	0
California:			
Los Angeles	4	2	1
San Francisco	1	0	0

Dengue.—Cases: Charleston, S. C., 1.
Epidemic encephalitis.—Cases: Trenton, 1.
Pellagra.—Cases: Chicago, 1; Wilmington, N. C., 1; Savannah, 5; Miami, 1; Birmingham, 1; Dallas, 1.
Typhus fever.—Cases: Savannah, 1.

FOREIGN AND INSULAR

CANADA

Provinces—Communicable diseases—2 weeks ended May 2, 1936.—During the 2 weeks ended May 2, 1936, cases of certain communicable diseases were reported by the Department of Pensions and National Health of Canada as follows:

Disease	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Total
Cerebrospinal meningitis				2					2	4
Chicken pox		9	5	140	436	42	32	18	120	802
Diphtheria		5	1	27	9	4	6			52
Dysentery				2						2
Erysipelas				19	6	8	1		10	44
Influenza		24		28	120	5	2		146	325
Measles		66	103	1,263	4,986	518	285	102	2,024	9,347
Mumps		16			968	24	76	22	207	1,313
Paratyphoid fever								1		1
Pneumonia		1			44		4		18	67
Poliomyelitis				1				2		3
Scarlet fever		18	3	227	389	97	37	54	24	849
Smallpox								2		2
Trachoma									1	1
Tuberculosis	7	39	15	162	75	38	43	3	40	422
Typhoid fever				56	7	6	7	1		77
Undulant fever				1	6	1				8
Whooping cough		25	13	139	234	12	35	12	130	600

ITALY

Communicable diseases—4 weeks ended March 1, 1936.—During the 4 weeks ended March 1, 1936, cases of certain communicable diseases were reported in Italy as follows:

Disease	Feb. 3-9		Feb. 10-16		Feb. 17-23		Feb. 24-Mar. 1	
	Cases	Communes affected	Cases	Communes affected	Cases	Communes affected	Cases	Communes affected
Anthrax	8	8	10	10	8	7	16	16
Cerebrospinal meningitis	11	8	12	11	16	15	28	23
Chicken pox	309	120	343	124	316	125	346	135
Diphtheria and croup	609	313	484	258	480	259	462	262
Dysentery	6	6	3	3	4	4	3	3
Hookworm disease	4	3	8	5	3	1	3	3
Lethargic encephalitis	2	2	1	1	2	2		
Measles	1,583	257	1,486	244	1,848	280	1,573	253
Paratyphoid fever	29	24	19	19	31	26	38	32
Poliomyelitis	5	5	11	10	9	8	10	9
Puerperal fever	50	41	47	43	40	35	42	37
Rabies	1	1						
Scarlet fever	259	115	269	119	295	135	281	129
Typhoid fever	250	152	190	121	183	116	187	126
Undulant fever	40	24	40	31	47	29	34	27
Whooping cough	240	101	275	90	324	110	477	115

MEXICO

Mexico—Torreon—Cerebrospinal meningitis.—According to information dated May 6, 1936, 18 cases of cerebrospinal meningitis with 9 deaths were reported during the month of April 1936, and 2 deaths from the same disease occurred during the period May 1–3, 1936, in Torreon, Mexico.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER

From medical officers of the Public Health Service, American consuls, International Office of Public Health, Pan American Sanitary Bureau, health section of the League of Nations, and other sources. The reports contained in the following table must not be considered as complete or final as regards either the list of countries included or the figures for the particular countries for which reports are given.

CHOLERA

[C indicates cases; D, deaths; P, present]

Place		Sept. 29–Oct. 26, 1935	Oct. 27–Nov. 30, 1935	Dec. 1–28, 1935	Dec. 29, 1935–Jan. 25, 1936	Week ended— February 1936					March 1936				April 1936			
						1	8	15	22	29	7	14	21	28	4	11	18	25
Ceylon:																		
Batticaloa.[1]																		
Provinces	C															14	4	
India	C	29,882	25,638	11,615	14,233	2,967	2,891	2,606	2,450	2,815	2,995	3,799	4,206					
	D	15,039	13,350	6,169	7,799	1,653	1,496	1,389	1,233	1,412	1,449	1,792	2,064					
Assam	C	164	658	707	318	35		21	21	15	8	12	8	31	20	19	45	53
	D	79	356	396	167	19		11	7	9	4	7	5	14	12	4	22	27
Bombay Presidency	C	3,318	1,892	941	459	141	63	54	35	39	16	41	35	38	40			
	D	1,510	877	445	237	58	31	25	10	25	9	15	21	10	14			
Bombay	C		[2] 1															
Calcutta	C	90	144	103	140	47	58	61	79	135	227	188	179	208	245	171	230	153
Central Provinces and Berar	C	5,775	1,350	98	14			8	18	30	26	45	52	94	122	102	49	84
Chittagong	C		1															
Cochin	D	9																
Madras Presidency	C	4,648	5,280	2,855	3,870	387	486	131	953	920	902	861	598	390				
	D	2,114	2,527	1,336	2,013	212	236	68	496	395	429	421	281	209				
Madras	C	8	12	13	9	11	28	18	3	10	5	4	12	5	1	2	1	1
	D	1	4	7	3	6	6	8	4	2	3	3	5				1	
Moulmein	C								1	1	5	1	1	3	1		1	
Negapatam	C			7	22	2	14	5	18	17	2		4		1	1		
	D			4	8		6	9	7	5	2							
Northwest Frontier Province	C	12			1		1											
	D	11																
Punjab	C	154	24	7	3 1											1	1	4
Rangoon	C		[2] 1		[2] 1											4		
India (French):																		
Chandernagor	C				8	1	1	1	3									
Karikal	C	4	12															
Pondichery	C	16	5															
Indochina (see also table below): Pnom-Penh	C	1																
Siam:																		
Ang Thoang Province	C	10	3				1	1	1		4	1	1		5	1		
	D	9	3				1	1	1		3	1			2	1		
Ayudhaya Province	C	30	25	40	74	31	46	48	53	36	40	14	23	24	1	5		
	D	25	16	35	49	27	28	35	41	28	25	9	18	17	4	4		

Bankok	C	44	77	49	124	31	82	96	91	75	48	52	30	18	18	11	17	13
Bejrpuri Province	C	14	3	-------	56	19	9	15	13	10	4	3	10	25	14	18	-------	-------
Bichitr Province	C	-------	-------	-------	-------	-------	-------	-------	-------	-------	P	6	11	3	23	11	-------	-------
Bisnulok Province	C	-------	-------	-------	-------	-------	-------	-------	1	12	14	35	25	32	14	4	-------	-------
Chandapuri Province	C	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	15	-------	4	-------	-------
Chhaxoengsao Province	C	-------	-------	55	175	51	23	11	8	2	5	2	2	12	4	1	-------	-------
Jalapuri Province	C	-------	-------	3	20	-------	9	1	-------	2	-------	1	7	1	5	-------	-------	-------
Jayanad Province	C	-------	-------	-------	-------	-------	-------	-------	-------	13	1	4	2	4	-------	-------	-------	-------
Kanchanapuri Province	C	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	2	9	8	1	-------	-------
Lobpuri Province	C	-------	-------	10	-------	-------	2	3	1	1	2	-------	-------	-------	-------	-------	-------	-------
Nagara Nayok Province	C	-------	-------	-------	-------	-------	2	5	-------	3	-------	-------	-------	-------	-------	-------	-------	-------
Nagara Pathom Province	C	11	25	1	4	-------	-------	-------	4	7	1	6	17	19	6	17	-------	-------
Nagara Rajsima Province	C	-------	-------	-------	-------	-------	1	1	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Nagara Svarga Province	C	-------	-------	-------	-------	-------	7	6	1	1	1	1	23	17	24	3	-------	-------
Nondpuri Province	C	8	19	3	7	-------	12	2	2	5	16	2	2	3	3	2	-------	-------
Prachinpuri Province	C	-------	14	54	26	4	-------	-------	-------	-------	-------	3	-------	-------	1	-------	-------	-------
Prachuabgirikhand Province	C	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	14	-------	-------
Pradhumdhani Province	C	6	2	1	4	14	5	7	3	12	18	3	-------	-------	-------	1	-------	-------
Prae Province	C	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	3	-------	-------	-------	-------	-------
Rajpuri Province	C	18	36	54	63	5	3	1	-------	7	6	7	14	16	13	14	-------	-------
Sarapuri Province	C	6	17	-------	2	15	41	27	16	5	7	1	1	-------	-------	-------	-------	-------
Singhapuri Province	C	11	15	2	1	-------	-------	-------	1	-------	-------	-------	-------	-------	-------	-------	-------	-------
Smudprakar Province	C	5	6	49	15	25	48	27	20	36	20	45	46	27	5	30	-------	-------
Smudsagara Province	C	9	7	36	58	14	17	25	9	11	30	19	23	8	10	5	-------	-------
Smudsongram Province	C	23	34	38	49	14	12	21	20	17	20	36	32	24	27	10	-------	-------
Subarnpuri Province	C	-------	18	-------	-------	-------	-------	4	6	3	4	24	4	16	14	12	-------	-------
Upala Rajdhani Province	C	-------	-------	-------	-------	-------	-------	-------	-------	-------	P	33	2	-------	-------	-------	-------	-------
Uttradhani Province	C	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	12	-------	-------	-------	-------
Utradith Province	C	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	3	2	-------	3	10	-------	-------
On vessels:																		
S. S. *Egra* at Rangoon	C	-------	-------	-------	1	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
S. S. *Floristan* at Masulipatam	C	-------	-------	-------	[3] 1	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
S. S. *Chatala* at Rangoon from Chittagong	C	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	1	-------	-------	-------	-------
S.S. *Kutsang* at Penang from Calcutta	C	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	1	-------	-------

Place		November 1935			December 1935			January 1936			February 1936			March 1936		
		1-10	11-20	21-30	1-10	11-20	21-31	1-10	11-20	21-31	1-10	11-20	21-29	1-10	11-20	21-31
Indochina (French) (see also table above):																
Cambodia [4]	C	-------	-------	1	-------	-------	-------	1	-------	1	4	7	-------	4	4	3
	D	-------	-------	-------	-------	-------	-------	1	-------	1	3	1	-------	4	3	3
Cochinchina [4]	C	-------	1	1	-------	2	1	-------	-------	2	2	-------	3	3	4	1
	D	-------	1	-------	-------	2	1	-------	-------	2	2	-------	3	3	4	1

[1] According to information dated Apr. 8, 1936, 31 cases of cholera with 27 deaths have occurred in the vicinity of Batticaloa, Ceylon.
[2] Suspected.
[3] Imported.
[4] Reports incomplete.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

PLAGUE[1]

[C indicates cases; D, deaths; P, present]

Place		Sept. 29–Oct. 26, 1935	Oct. 27–Nov. 30, 1935	Dec. 1–28, 1935	Dec. 29, 1935–Jan. 25, 1936	Week ended—											
						February 1936					March 1936				April 1936		
						1	8	15	22	29	7	14	21	28	4	11	18	25
Algeria: Philippeville	C	3																
Argentina (see also table below):																		
Bahia Blanca (vicinity of)	C									2								
	D									2								
Azores. (See table below.)																		
Basutoland	C									[2]2								
Belgian Congo	C	1																
Plague-infected rats		3																
Brazil (see also table below): Piauhy State	C	4																
British East Africa:																		
Kenya	C	10	7	25	10	4	4	3	5	6		2	2	5	7	3		
Tanganyika	C				7			1	1		5							
Uganda	C	206	281	61	44	6	8	3	8	19	14	14	18	16	9	8		
	D	188	231	54	40	5	8	3	8	18	13	14	15	16	9	8		
Ceylon:																		
Anuradhapura	C												1					
Balapitiya	C		1															
Colombo	C	6	5	11	10	1		2	2	1	1			2	1	1	1	
	D	6	4	10	9	1		2			1			2	1	1	1	
Plague-infected rats		4	27	4						2	2	1			2		1	5
Manar	C																1	
Ratnapura	C	1																
Tellijjawilla	C	1																
Weligama	C															1		
China: Manchuria[3]																		
Dutch East Indies: West Java	C	769	985	878	726	194	183	207										
	D	769	980	873	723	192	183	204										
Ecuador:																		
Daule[4]	C												1					
Duran	C	1																
Guayaquil	C	35	48	20	8		2	1	2	1		1			1			
	D	15	16	4	6	1	2								1			
Plague-infected rats		8	12	5	2						1							
Nobol	C	1																

Egypt:																			
Alexandria: Plague-infected rats		P	P	P	P		P		P		P		P		P				
Asyut Province	C		1	3	6	3	1	2	1	2	1	1	4	7	4	5	7	2	
Girga Province	C				1	1			1					1	1				
Minya Province	C								2	2		1	4					1	
Qena Province	C	1																	
Great Britian—England—Liverpool:																			
Plague-infected rats				2															
Hawaii Territory: Plague-infected rats:																			
Hawaii Island—Hamakua district:																			
Hamakua Mill			1	1					1										
Kukaiau		1	2	1															
Paauhau [1]		2			1														
Pohakea Sector								1							1	1	2		
India	C	2,635	3,131	1,852	2,168	661	545	761	639	776	591	1,168	1,061	723					
	D	1,228	1,019	928	1,144	267	349	328	379	403	367	483	426	393					
Bassein	C	1		1			3	1	3		1	2	1		3		1	1	
Plague-infected rats			1					1		1									
Bombay Presidency	C	363	148	88	99	15	28	39	36	51	17	36	47	25	9				
	D	234	93	48	61	17	20	15	24	34	8	23	24	15	6				
Bombay	C				[6] 1														
Central Provinces and Berar	C	464	1,651	716	194	28	75	165	150	166			345	111	181	135	79	92	
Karachi	C											5							
Madras Presidency	C	121	133	71	42				12	17	16	11	4	13					
	D	73	88	51	26				6	5	14	8	6	10					
Punjab	C		48			1					7	2	3	2	8	22	54	11	
	D		21								3	2		2	4	16	28	5	
Rangoon	C	1		[6] 1				[6] 1											
Plague-infected rats		1		1		1	1		1	2		2							
Indochina (see also table below):																			
Pnom-Penh	C				1					1									
Saigon-Cholon	C				1													1	
Tanghai	C															2			
Iraq: Baghdad	C		1	1	[6] 1														
Madagascar. (See table below.)																			
Malta	C																3		
	D																2		
Peru. (See table below.)																			
Senegal. (See table below.)																			
Tunisia: Tunis	C	2	1																
	D		1																
Plague-infected rats			1					2							1	1			

[1] Including plague in the United States and its possessions.
[2] Includes 1 suspected case.
[3] A report dated Oct. 28, 1935, states that up to Oct. 23, 155 deaths from plague were reported in the provinces of Kirin, Lungkiang, Fengtien, and South Hsingan, Manchuria, China. A report dated Nov. 27, 1935, stated that 23 deaths from plague had occurred in the vicinity of Koshan, and that there were about 15 cases in Harbin.
[4] During the period Jan. 1 to Feb. 20, 1936, 7 cases of plague were reported at Daule and vicinity, Ecuador.
[5] During the week ended May 2, 1936, 2 rats were proved positive for plague at Paauhau Sector, Hamakua district, Hawaii Island, Hawaii Territory.
[6] Imported.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

PLAGUE—Continued

[C indicates cases; D, deaths; P, present]

Place		Sept. 29–Oct. 26, 1935	Oct. 27–Nov. 30, 1935	Dec. 1–28, 1935	Dec. 29, 1935–Jan. 25, 1936	Week ended— February 1936 1	8	15	22	29	March 1936 7	14	21	28	April 1936 4	11	18	25
Union of South Africa	C	18	7	7	44	[7] 91		[7] 18		[7] 35		[7] 22		[7] 19		[7] 6		
Cape Province	C			2														
Orange Free State	C		1	1														
United States: California:																		
Santa Rosa	C																1	
Ventura County: Plague-infected squirrel															1			
On vessel: S. S. *Ipanema* at Marseille	C	[8] 2																

Place		October 1935	November 1935	December 1935	January 1936	February 1936	March 1936
Argentina (see also table above):							
Buenos Aires Province	C					2	
Cordoba Province	C			5	1		
Santa Fe	C				1		
Azores	C	2	2	2	3		
Basutoland	C			16			
Brazil:							
Bahia State	C	3	7	20			
Ceara State	C					7	54
Pernambuco State	C						[9] 15
Indochina (see also table above):							
Cambodia	C				1	2	1
Cochinchina	C		1		1		
Madagascar (central region)	C	293	345	507	503	382	
	D	282	333	485	485	358	

Place		October 1935	November 1935	December 1935	January 1936	February 1936	March 1936
Peru	C	1	14	9	23	19	10
Arequipa Department	C				5		
Catamarca Department	C		13				
Lambayeque Department	C			1	4	3	
Libertad Department	C	1	1		5	1	1
Lima Department	C		10	7	9	8	3
Callao	C				1	2	4
	D				1	2	1
Piura Department	C					5	
Trujillo Department	C						2
Senegal:							
Dakar [10]	C				1	1	
	D				1	1	
Tivouane [10]	C	1	1	1			

[7] For 2 weeks.
[8] One of these cases was a member of the crew and the other was believed to have worked on the vessel. Several plague-infected rats were reported found on board the vessel.
[9] From Jan. 1 to Mar. 16, 1936.
[10] Incomplete reports.

SMALLPOX

[C indicates cases; D, deaths; P, present]

Place		Sept. 29–Oct. 26, 1935	Oct. 27–Nov. 30, 1935	Dec. 1–28, 1935	Dec. 29, 1935–Jan. 25, 1936	Week ended— February 1936: 1	8	15	22	29	March 1936: 7	14	21	28	April 1936: 4	11	18	25
Algeria: Algiers Department	C							1	1									
Argentina (see also table below):																		
Corrientes Province	C													5				
Jujuy Province	C													7				
Belgian Congo. (See table below.)																		
Bolivia. (See table below.)																		
British East Africa:																		
Tanganyika	C	6	18		9	6		2					38	19				
Uganda	C				10	1	1	3		7	4	2	1					
British Somaliland	C	4	3	7	4		31		3									
British South Africa: Southern Rhodesia	C	1						1										
Canada:																		
Alberta	C		[1]1		[1]1				1	2	4	18	5	3	1			
British Columbia	C	[1]1	[1]1	2	2						[1]1							
Saskatchewan	C	[1]3	[1]1															
Ceylon: Colombo	C				1													
China:																		
Amoy	C								2	1								1
Canton	C														1			
Dairen	C						3	1										
Foochow	C	P	P	P	P		P		P		P		P				P	
Hangchow	C			1	3	1	2		11	1	5		1	2	2			
Hankow	C					1	1	1		1			1					
Hong Kong	C		2								2	1	2	1	4	2	1	
Nanking	C		26	43	16	8	11	10	9	3	4	6	14	14	21			
Shanghai	C	2	4	6	5	4	2	9	5	10	7	6	7	3	15	9	17	9
Swatow	C		3	1					1	1	1				2	2		
Tientsin	C			3							2							
Chosen. (See table below.)																		
Colombia (see also table below)	C		44	32	68		[1]13					[2]78		10				
Bogota	C		8	3														
Dahomey. (See table below.)																		
Dutch East Indies: Palembang	C										1							
Ecuador. (See table below.)																		
Egypt: Provinces	C							2			5							
Eritrea	C	7						1					5				2	
Asmara	C	4															1	
France. (See table below.)																		
Great Britain: London and Great Towns.[3]																		
Greece: Salonika	C		4		6	2	3	3	3	3	5	5	5	5	5	5	5	

[1] For 2 weeks. [2] For 3 weeks.

[3] During the week ended May 2, 1936, 3 cases of smallpox were reported in London and Great Towns, Great Britain.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

SMALLPOX—Continued

[C indicates cases; D, deaths; P, present]

Place		Sept. 29–Oct. 26, 1935	Oct. 27–Nov. 30, 1935	Dec. 1–28, 1935	Dec. 29, 1935–Jan. 25, 1936	Week ended— February 1936 1	8	15	22	29	March 1936 7	14	21	28	April 1936 4	11	18	25
Guatemala. (See table below.)																		
Honduras: Tela	C	2																
India	C	4,147	8,642	9,617	19,883	5,660	6,951	6,830	7,562	7,352	6,407	7,841	8,353	8,711				
	D	865	1,762	2,106	4,220	1,387	1,592	1,641	1,853	1,944	1,585	1,818	2,068	2,208				
Assam	C	10	17	168	116	303	59	130	164	142	85	84	64	88	57	60	32	70
Bassein	C				[4]1													
Bombay Presidency	C	487	635	741	1,708	504	662	713	801	764	730	627	754	709	741			
	D	65	90	103	282	104	111	122	165	148	158	139	134	125	104			
Bombay	C	11	21	30	86	38	46	47	72	63	54	64	78	81	87	104	74	57
	D	4	12	21	49	19	27	21	46	36	34	37	43	43	46	65	45	39
Calcutta	C	13	19	88	270	223	270	309	378	426	330	464		511	563	383	288	318
	D	5	12	56	133	131	180	24	258	300	272	312		361	425	310	217	214
Central Provinces and Berar	C	380	475	808	1,266	415	965	502	280	490	479	549	541	540	461	913	561	891
Chittagong	D				1				1									1
Cochin	C	5	1			6			8	7	2		5					
Karachi	C	2	8	11	17	8	10	16	26	17	12	5	6	5	13	7	11	5
Madras Presidency	C	1,664	1,811	1,366	1,312			96	557	561	458	555	439	528				
	D	339	324	269	176			23	82	86	75	85	56	78				
Madras	C	1	7	5	3		1		1	1		4	7	1			1	
Moulmein	C		2	6	27	16		17	13	15	26	22	20	15	12	9	7	7
Negapatam	C	2			3		1	1							1	2		
Northwest Frontier Province	C		9	7	26	6	5	5	29	5		1			3		16	2
Punjab	C	99	336	313	498	116	111	173	183	58	92	140	100	105	53	83	135	101
Rangoon	C	1	[4]1	4	9	[4]1	1	3	4	1	2	7	5	2	8	5	3	4
Sind State	C															21	43	26
Tuticorin	C	11	3	5														
Visagapatam	C	18	6	9	36	12	9	2	4	12	1	2	11	5		1	1	
India (French):																		
Chandernagor	C	4	44															
Karikal	C	25	1															
Pondichery	C	11	3															
	D	8	3		7													
Indochina (see also table below):																		
Haiphong	C									1								
Tourane	C												1					1
Iran	C	19	3	12	9	12						1						
Teheran	C	3																
	D	1																

Iraq	C	11	8	36	58	7	9	4	18	2	5	1	1	2	2	4	2	2
Baghdad	C		2		1										1			
Basra	C	1	1														2	
Italian Somaliland	C		2															
Japan:																		
Kobe	C														1			
Moji	C									1								
Nagasaki	C																1	
Osaka	C												1					
Yamaguchi Prefecture	C				1													
Libya: Tripolitania	C				2													
Mexico (see also table below):																		
Chihuahua	C		1		1					1					2			
Guadalajara	D	1	9	16	13	8	9		14	15	14	13	6	6	9	13	8	3
Mazatlan	C		1			1					1	1						
Mexico, D. F.	C	3	12	5	4	3	5	2		1	3	3	5	1				
Monterrey	C	1	1							2	2							1
San Luis Potosí	D											1						
Torreon	C		5	1	1							1		1				
Morocco. (See table below.)																		
Mozambique. (See table below.)																		
Nigeria	C	289	146	427	84	265		[1] 252	32		[1] 798							
Niger Territory. (See table below.)																		
Nyasaland. (See table below.)																		
Oman: Sharjah and Pirate Coast	C				875				[5] 70					[6] 46				
Peru. (See table below.)																		
Poland	C		1				1											
Portugal (see also table below): Lisbon	C	3	5	8	3	1		1		3	1		1	3		1	1	1
Portuguese East Africa. (See table below.)																		
Salvador. (See table below.)																		
Saudi Arabia	C		4							8								
Sierra Leone	C	110	222	116	87	[1] 41		[1] 67		[1] 27		[1] 211						
Freetown	C	7		2				[1] 1										
Spain	C	7	1	1	20			1	4	7	1	2	5	7	10		2	
Sudan (Anglo-Egyptian)	C		2		3			2	1	2	12				2		1	3
Syria: Tripoli	C	1																
Turkey. (See table below.)																		
Union of Soviet Socialist Republics. (See table below.)																		
Uruguay. (See table below.)																		

[1] For 2 weeks. [4] Imported. [5] For 4 weeks. [6] For 5 weeks.

On vessels:

S. S. *Ethiopia* at Rangoon from Madras	1 case	Oct.	4, 1935
S. S. *Ekma* at Rangoon from Calcutta	1 case	Dec.	10, 1935
S. S. *Cape St. Francis* at Rangoon from Calcutta	1 case	Dec.	17, 1935
S. S. *Bankura* at Karachi	1 case	Jan.	4, 1936
S. S. *Jalgopal* at Rangoon from Aracan	1 case	Jan.	5, 1936
S. S. *Matua* at Suez from Calcutta	1 case	Jan.	21, 1936
S. S. *Khosrou* at Kamaran quarantine station	1 case	Feb.	15, 1936
S. S. *Karapara* at Rangoon from Calcutta	1 case	Mar.	9, 1936

On vessels—Continued.

S. S. *Egra* at Calcutta	1 case	Mar.	10, 1936
S. S. *City of Auckland* at Rangoon from Calcutta	2 cases	Mar.	15, 1936
S. S. *Khandalla* at Rangoon from Calcutta	1 case	Mar.	16, 1936
S. S. *Haishang* at Rangoon	1 case	Mar.	18, 1936
S. S. *Cranfield* at Madras from Calcutta	1 case	Mar.	27, 1936
S. S. *Hokuryo Maru* at Moji from Tientsin	1 case	Apr.	2, 1936
S. S. *City of Adelaide* at Colachel from Rangoon	1 case	Apr.	13, 1936
S. S. *Manipura* at Port Sudan from Calcutta	1 case	Apr.	23, 1936

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

SMALLPOX—Continued

[C indicates cases; D, deaths; P, present]

Place		October 1935	November 1935	December 1935	January 1936	February 1936	March 1936
Argentina:							
Buenos Aires Province	C					4	
Entre Rios Province	C					5	1
Belgian Congo	C	248		54	456	227	
Bolivia	C	23	38	43	48	18	62
China: Manchuria—Harbin	C	1		1	1	3	
Chosen	C	53	53	53	86		
Colombia:							
Barranquilla	D					1	1
Santa Marta	D					1	
Dahomey	C		31	11		18	
Ecuador: Guayaquil	C					1	
France	C	16	7	18	76	24	30
Guatemala	C		1		2	14	2
Indochina (see also table above)	C	98	66	44	57	229	196
	D	12	10	3	3	31	15
Mexico (see also table above):							
Aguascalientes State—Aguascalientes	C					5	
Chipas State	C				1		
Coahuila State—Torreon	C					1	
Colima State	C					1	
Guanajuato State	C				5		
Leon	C				1		
Jalisco State	C				109		
	D				28		

Place		October 1935	November 1935	December 1935	January 1936	February 1936	March 1936
Mexico—Continued.							
Guadalajara	C				85	115	
	D				24	50	
Lower California	C					7	
Mexico State	C					2	
Mexico, D. F.	C				10	22	
Mexico City	C				9		
Puebla State	C				2	9	
Puebla	C					8	
Sonora State	C					1	
Tamaulipas State	C				8		
Morocco	C				9	1	2
Mozambique	C	15	1		3	1	
Niger Territory	C	127		43			
Nyasaland	C	24	19		3		
Peru	C		7		31	7	
Portugal (see also table above)	C	154	103	74	103		
	D	34	26	11	6		
Portuguese East Africa	C				3		
Salvador	C		36	12	32	46	13
Turkey	C	1			5	6	
Union of Soviet Socialist Republics	C	44					
Uruguay	C				3		

TYPHUS FEVER

[C indicates cases; D, deaths; P, present]

Place		Sept. 29–Oct. 26, 1935	Oct. 27–Nov. 30, 1935	Dec. 1–28, 1935	Week ended— January 1936				February 1936					March 1936				April 1936		
					4	11	18	25	1	8	15	22	29	7	14	21	28	4	11	18
Algeria:																				
Algiers Department	C	1	1				1	3	3	6		15	7	7		53	4	31	26	15
Algiers	C				1															
Constantine Department	C	5	1		3	18		4	5	24	10	10	11		10	24	15	22	16	6
Bone	C					1														
Constantine	C	1			2	1									1					
Oran Department	C							7			50	2	1		12			4	12	1
Australia: Sydney	C		2					1												
Belgian Congo	C	1																		
Bolivia. (See table below.)																				
Bulgaria	C						9	5	5	6			[1] 430					16	14	
Chile	C	473	691																	
Concepcion	C	21																		
Santiago [2]	C	333																		
Valparaiso	C	26	56	37	3	2		7	6	8	5	6	4	2	1	2	3	1	4	6
China:																				
Canton	C		2																	
Hankow	C	3	1														1			
Nanking	C		1																	
Shanghai	C			3																
South Manchuria Railway Zone	C		4																	
Tientsin	C		1									1		1						
Tsingtao	C			3						1							1			
Chosen. (See table below.)																				
Czechoslovakia. (See table below.)																				
Egypt:																				
Alexandria	C			1		1								2	3	1	2			1
Asyut Province	C	1	1							5	2				1		1	1		
Beheira Province	C	10	11	12		22		6	14	16	52			33	31		39	49		
Cairo	C							1	3	3		3	2			1		3		2
Dakahliya Province	C							1		10	25			4	3		7	6		
Faiyum Province	C		1																	
Gharbiya Province	C		1			6		40	26	36	16			49	37		45	33		
Girga Province	C		1					1										1		
Minufiya Province	C									26	4			9	2		7			

[1] For 5 weeks.

[2] A report dated Jan. 20, 1936, states that there were 305 cases of typhus fever with 58 deaths in Santiago Province, Chile, from Nov. 2–16, 1936.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

TYPHUS FEVER—Continued

[C indicates cases; D, deaths; P, present]

Place		Sept. 29–Oct. 26, 1935	Oct. 27–Nov. 30, 1935	Dec. 1–28, 1935	Week ended—															
					January 1936				February 1936					March 1936				April 1936		
					4	11	18	25	1	8	15	22	29	7	14	21	28	4	11	18
Egypt—Continued.																				
Port Said. [3]																				
Qena Province	C		1							2	1			1			24	20		
Sharkiya Province	C							1	1					1	11		1			
Suez	C		1																	
Provinces	C	14	26	41	49	35		54	44		103	126	98	86	153	133		119	159	153
Greece (see also table below): Salonika	C		1	4	1		1	1	1	2	2	2	2	6	6	6	6	1	1	1
Guatemala. (See table below.)																				
Hawaii Territory: Honolulu	C	6	1	1											1	4	2			
Hungary	C					3										7		2	2	
Iran	C	5	7	2	2	4	5	6	3			4	2		3	2	4	7	8	7
Teheran	C	2			1									1	1	1	1	2	2	6
Iraq	C			17		19														
Irish Free State:																				
Mayo County	C																		2	
Waterford County—Youghal District No. 2	C	1																		
Japan	C					1														
Lithuania	C		19		12		[4] 57			9				6			[4] 7		[4] 8	
Mexico (see also table below):																				
Mexico, D. F	C	50	60	68	9	26			12	14	21		24	9	9	9	15			
San Luis Potosi	D												1							
Morocco (see also table below)	C	1	8	12	2	2	2	33	7	11	1	9	9			3	2	4	1	29
Palestine: Haifa	C	8	11		[3] 2			1		1	1							1		
Panama Canal Zone. (See table below.)																				
Peru. (See table below.)																				
Poland	C	109	159	230	55	96	100	131	101	153	121	150	146	126	153	144	196	134	129	113
	D	4	8	22	6	6	6	6	16	7	6	11	8	6	6	16	11	2	11	9
Portugal (see also table below): Oporto	C														1					
Rumania. (See table below.)																				
Straits Settlements: Singapore	C	1	1	2	1	1	1								1	1				
Syria: Beirut	C											[4] 2								
Trans-Jordan	C	2					3	3	5	4	1		1	2			4	5	5	

Tunisia:																					
Tunis	C	2	1	1			3	2							3	1	5	1	1	1	
Provinces	C	13	6	31	12	34	10	5	20	4	9	22	9	14	30	45	49	14	37	26	
Turkey. (See table below.)																					
Union of Soviet Socialist Republics. (See table below.)																					
Union of South Africa. (See table below.)																					
Yugoslavia. (See table below.)																					

Place		October 1935	November 1935	December 1935	January 1936	February 1936	March 1936
Bolivia	C	88	134	168	135	115	110
China: Manchuria—Harbin	C	1	3		1	5	9
Chosen	C	20	30	50	51		
Czechoslovakia	C	12			14	25	219
Finland [6]	C						5
Greece	C	6	4	9	5	7	
Guatemala	C	18	26	7	9	17	6
Latvia	C						5
Mexico:							
Aguascalientes State: Aguascalientes	C					5	
Durango State	C					1	
Guanajuato State	C				15		
Leon	C				7	16	
Mexico State	C					2	
	D					3	
Mexico, D. F.	C				86	73	
Mexico City	C				75		
	D				22		
Oaxaca State	C				1	2	
Puebla State	C				1		
Puebla	C						2
Queretaro State	C						
San Luis Potosi State: San Luis Potosi	C					8	6
Morocco	C	8		13	45	30	7
Panama Canal Zone	C	5	1	1	2	1	1
Peru	C	16			143	103	
Portugal	C	2			1	1	
Rumania	C	37	92	210	572	905	
Turkey	C	13	18	35	33	51	
Istanbul	C				5	4	4
Union of Soviet Socialist Republics	C	2,823					
Union of South Africa:							
Cape Province	C	66	79	76	36	57	
Natal	C		6	1	7	2	
Orange Free State	C	23	18	4	17	21	
Transvaal	C	2	25	12	1	13	
Yugoslavia	C	6	10		131	80	113

[3] For the week ended May 16, 1936, 1 case of typhus fever was reported at Port Said, Egypt.
[4] For 2 weeks.
[5] Imported.
[6] For the period Apr. 1–15, 1936, 73 cases of typhus fever were reported in Finland.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

YELLOW FEVER

[C indicates cases; D, deaths; P, present]

Place		Sept. 29–Oct. 26, 1935	Oct. 27–Nov. 30, 1935	Dec. 1–28, 1935	Week ended—														
					January 1936				February 1936					March 1936				April 1936		
					4	11	18	25	1	8	15	22	29	7	14	21	28	4	11	18
Bolivia: Santa Cruz Department.[1]																				
Brazil:[2]																				
Bahia State	C			1	2															
Matto Grosso State	C			1			1		1				1	1					1	
Minas Geraes State	C			10	3	1	4		2	3	4		2	1		4	2		1	1
	D			5	3	1	4		2	3	4		2	1		4	2		1	1
Para State	C	1																		
Parana State [3]	C										1	4	4	1	7	5	6	1	2	
Sao Paulo State [3]	C			11	1		3			2	2	3	16	17	5	7	6	[3] 1		
Colombia:																				
Boyaca Department	C											3								
Intendencia of Meta	C											3								
Acacias	C		2																	
Restrepo	C		2																	
Gold Coast:																				
Bawku	C	3																		
Koforidua	C																			1
Kumasi	C												1				1			
Preprawase	C																		1	
Ivory Coast:																				
Abidjan	C		1																	
Sassandra	C		1																	
Vavua	C																	1		
Niger Territory: Fada N'Gourma	C																			1
Senegal:																				
Dakar	C			[4] 1																
M'Bake	C			1																
Sudan (French): Koutiala	C	1	1																	

[1] Yellow fever has been reported in Bolivia as follows: For the month of February, 2 cases; March, 10 cases.

[2] Yellow fever has also been reported in Brazil as follows: Parana State, Feb 16–25, 1936, 5 cases, 5 deaths; Sao Paulo State, no date given, 3 cases and 4 deaths, Mar. 24–31, 1936, 2 cases, 2 deaths, May 2, 1936, 1 case, 1 death.

[3] This case occured in the city of Sao Paulo, Sao Paulo State, Brazil.

[4] Suspected.

×