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CULTIVATION OF BACTERIUM TULARENSE ON THREE ADDITIONAL MEDIUMS NEW TO THIS ORGANISM.[1]

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The writer now reports the cultivation of *Bacterium tularense* on (1) beef infusion agar containing 0.02 per cent of an amino-acid (cystine), (2) beef infusion agar plus a piece of fresh sterile rabbit spleen, and (3) Loeffler's blood serum coagulated at 70° C.

The mediums here reported were used for the subcultivation of strains of *Bacterium tularense* which had had their original isolations from animals 12 months previously and had been carried continuously during the year on artificial mediums other than egg yolk, except that about 8 months previously they were carried for one or two passages through guinea pigs.

The strains used for this cultural work were human strains of "J", "G", and "S" and ground squirrel strain "S. F.", which were the subject of previous cultural studies.[2]

COMPOSITION OF MEDIUMS.

(1) *Cystine agar.*—Beef infusion agar containing 1 per cent peptone and 1 per cent agar adjusted to a reaction having a p_H of 7.6 is kept on hand in stock. When needed, there is added to the stock agar 0.02 per cent of cystine, and this is placed for 15 minutes at the temperature of streaming steam in an Arnold sterilizer to melt the agar and to sterilize the cystine, after which the medium is tubed, slanted, and incubated 24 hours to insure sterility.

(2) *Plain agar plus a piece of fresh sterile rabbit spleen.*—The spleen is removed from a healthy rabbit and under sterile precautions is cut into pieces of about 3 mm. diameter. One piece is rubbed on the slanted surface of each beef infusion agar slant and the piece of spleen is left remaining on the surface of each slant just above the water of condensation; one piece of spleen is planted as a control into a

[1] Eight articles, including the present article on tularæmia, which appeared in Public Health Reports, vol. 36, 1921, and vol. 37, 1922, will be combined and printed in pamphlet form as Hygienic Laboratory Bulletin No. 130. For a summary of these articles see "Tularæmia: A New Disease of Man." By Edward Francis, Jour. Am. Med. Assoc., vol. 78, 1922, pp. 1015–1018.

[2] Cultivation of *Bacterium tularense* on mediums new to this organism. By Edward Francis, Surgeon, United States Public Health Service. Public Health Reports, vol. 37, No. 3, Jan. 20, 1922, pp. 102–115.

fermentation tube containing glucose beef infusion broth. The tubes are incubated 24 to 48 hours, and, if sterile, are ready for inoculation.

CULTIVATION ON CYSTINE AGAR.

Cultures grown upon cystine agar are now in their fourteenth consecutive generation, having been carried over every 48 hours. Growth in the fifth generation was rubbed on the shaved abraded skin of the abdomen of a guinea pig, causing its death on the sixth day with typical lesions of tularæmia. At the moment of death the spleen was removed and, under sterile precautions, was seared and cut into pieces about 3 mm. in diameter. One piece was planted on the slanted surface of each of three cystine agar tubes, two plain agar tubes, and two serum glucose agar tubes by rubbing the tissue over the surface of the medium and then allowing it to remain just above the water of condensation. One piece was planted into each of two fermentation tubes containing glucose beef infusion broth as a control. The heart's blood was planted on cystine agar slants, plain agar slants, and into fermentation tubes containing glucose bouillon broth. All tubes were incubated at 37° C. The cultures on the infected guinea pig's spleen and heart's blood will now be discussed.

(1) *Growth from guinea pig's spleen.*—Growth appeared on the third day on all seven of the tubes of slanted medium planted with infected spleen, but the fermentation tubes are still clear on the thirteenth day. The growth on the seven tubes had the morphology of *Bacterium tularense*, was Gram negative, and was subcultured as follows: Cystine agar growth to cystine agar slants, plain agar growth to plain agar slants plus a piece of fresh sterile rabbit spleen, serum glucose agar growth to serum glucose agar slants, and all seven to control tubes of plain agar slants and glucose fermentation tubes.

The controls are all negative at the end of ten days, but all other tubes showed good growth at the end of 24 hours, which has been subcultured daily, each to its own kind of medium. These subcultures in the fifth generation were rubbed on the shaved abraded skin of the abdomen of guinea pigs on April 25, causing acute death with typical lesions of tularæmia.

(2) *Growth from guinea pig's heart's blood.*—Growth appeared on the sixth day on the cystine agar slants planted with the guinea pig's heart's blood, and by the eighth day growth was abundant. Daily subcultivation on cystine agar and plain agar give good growth on the former but no growth on the latter. The fermentation tubes planted with the guinea pig's heart's blood are sterile on the thirteenth day.

CONCLUSION.

Cultures of *Bacterium tularense* of human and ground-squirrel origin which have been carried one year on artificial mediums other

than coagulated egg yolk grow well on (1) cystine agar, (2) plain agar plus a piece of fresh sterile rabbit spleen, and (3) Loeffler's blood serum coagulated at 70° C. The same cultures fail to show growth on plain agar and in fermentation tubes containing beef infusion broth.

Cultures in the fifth generation on these special mediums caused acute death with typical lesions of tularæmia in guinea pigs from which *Bactreium tularense* was cultured on the same mediums; these latter cultures in the fifth generation caused acute death in guinea pigs with typical lesions of tularæmia.

NOTE.—Old cultures of gonococcus and *B. diphtheriæ* grow abundantly on cystine agar.

THE COMPARATIVE ANTISCORBUTIC VALUES OF MILK.

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Review of the Literature.

Bolle[1] found that guinea pigs fed on boiled milk developed scurvy, while those given raw milk did not. Bartenstein[2] disagreed with Bolle.

Froehlich[3] found that by feeding guinea pigs on raw cow's milk alone, the pigs showed an extraordinary brittleness of bones, a symptom which in the disease picture of infantile scurvy plays a great rôle, while the other symptoms of this disease—the typical hemorrhages, the tooth affections, and the specific bone changes—do not enter. When fed oats alone guinea pigs always developed scurvy with brittle bones and definite symptoms. But when fed a combination of oats and raw milk the animals were maintained in normal health. The addition of raw milk not only prevented scurvy, but the combination also prevented brittleness of bones. Heated milk did not prevent scurvy.

Hart[4] fed monkeys on canned condensed milk, and they became typically scorbutic. Funk[5] states that heated milk induces scurvy in infants. Hess and Fish[6] found that in several cases infantile scurvy occurred as a result of feeding milk which had been pasteurized at 63° C. for only 30 minutes. Janet Lane-Claypon[7] concluded that animals and infants develop better on milk of their own

[1] Zeitschr. f. diät. u. physik. Therapie, *6*, 354 (1903).
[2] Jahrb. f. Kinderh., *61*, 6 (1905).
[3] Zeitschr. f. Hyg. u. Infektionskr., *72*, 155 (1912).
[4] Arch. f. Path. Anat. u. Physiol. u. f. klin. Med. (Virchow) *208*, 367 (1912).
[5] Ergeb. d. Physiol., *13*, 125 (1913).
[6] Am. Jour. Dis. Chil., *8*, 385 (1914).
[7] Ergebn. d. Inn. Med. u. Kinderh., *1913*, 635; Report to the Local Government Board, London (1912), N. S. No. 63, 1219.

kind, whether this milk is boiled or raw, than on milk of foreign species; that development is best on boiled milk; and that it is by no means proved that infants develop scurvy from boiled milk alone. Jackson and Moore[8] produced scurvy in guinea pigs whether fed certified, boiled, pasteurized, or condensed milk *ad libitum*. Goat's milk did not produce scurvy.

McCollum[9] and McCollum and Pitz[10] came to the conclusion that scurvy in guinea pigs induced by feeding milk was caused by the constipating character of the diet, which produced an impaction and retention of feces in the cecum. Fresh whole milk in addition to oats caused scurvy.

Chick, Hume, and Skelton[11] conclude from their experimental evidence that " milk must be classed among the less valuable materials. If reliance is to be placed upon its presence in a diet as the only means of preventing scurvy, the amounts consumed must be large, and any methods of preparation, such as heating or drying, which involve diminution of the small amount of antiscorbutic substance originally contained, must be regarded with suspicion." They found that guinea pigs needed 86–130 c. c. raw cow's milk daily to furnish the necessary antiscorbutic for good health. They found an almost complete loss of antiscorbutic properties in both dried and strongly heated (120° C. for one hour) milk. In another article[12] they confirm these statements with their experimental work. They fed milk plus a basal diet of oats and bran. They disagree with the statement of McCollum and Pitz that scurvy is due to constipation. Cohen and Mendel[13] found that small amounts of raw milk do not prevent scurvy, but large amounts do; 35–50 c. c. daily failed to protect; 70 c. c. daily prevented scurvy. Two animals died apparently because milk was increased from 70 to 100 c. c. daily, on account of the constipating character.

Hess and Unger[14] found that milk dried by the Just-Hatmaker process had not lost its antiscorbutic properties.

Hart, Steenbock, and Smith[15] fed milk to guinea pigs in addition to a basal diet of hay and rolled oats. They found that 30 c. c. of fresh milk daily will prevent or at least delay the onset of scurvy; 84 c. c. daily of fresh whole milk absolutely protected from scurvy. Guinea pigs fed on milk sterilized at 120° for 10 minutes, in addition to the basal diet of hay and oats, developed scurvy, although the average daily consumption of milk was 79 c. c. Skim milk powder

[8] Jour. Infect. Dis., *19*, 478 (1916).
[9] Jour. Am. Med. Assoc., *68*, 1385 (1917).
[10] Jour. Biol. Chem., *31*, 229 (1917).
[11] Lancet, 1918, 1.
[12] Biochem. Jour. *12*, 131 (1918).
[13] Jour. Biol. Chem., *35*, 425 (1918).
[14] Am. Jour. Dis. Chil., *17*, 221 (1919).
[15] Jour. Biol. Chem. *38*, 305 (1919).

or unsweetened condensed milks did not protect from scurvy. They did not find that scurvy was due to constipation, as stated by McCollum and Pitz.

Hess and Unger [16] stated that 80 c. c. daily of fresh raw milk sufficed to protect guinea pigs from scurvy. Further, guinea pigs were cured of scurvy when given a diet of 80 c. c. dried milk powder (made by the Just-Hatmaker roller process, dried at a temperature of 116° C. for a few seconds) diluted with 8 volumes of water, in addition to a basal diet of hay and oats. In another article [17] they gave the results of their work upon infants. They cured two infants of scurvy by feeding dried milk made by the Just-Hatmaker process, and further protected them from scurvy, in one case three months, in the other seven months. The dietary contained no other antiscorbutic. They claim that milk quickly dried by this process partially withstands subjection to 120° C. for one hour, whereas fluid milk loses practically all antiscorbutic virtues when heated to the same degree.

Barnes and Hume [18] found that 98 c. c. daily of raw milk was not enough to protect guinea pigs from scurvy when the milk was fed in addition to a basal diet of oats and wheaten bran; 119–147 c. c. daily effected a cure of scurvy which had been caused during the period when 98 c. c. daily was consumed. With milk made from dried milk, 90, 110, and 128 c. c. daily failed to protect from scurvy. The food consumption of the animals did not increase with their age as was the case with raw milk. For monkeys they found that 125–175 c. c. daily of raw milk protected from scurvy, and that 250–300 c. c. milk made from dried milk powder did also. It therefore required almost as much to protect a guinea pig as a monkey.

They also observed that cow's milk may possess more antiscorbutic power during the season of the year when cows eat more green stuff. Hart and Steenbock [19] have taken up this question of the feed of the cow affecting the antiscorbutic substance of the milk. They kept cows on (A) summer pasture, (B) on dry feed, (C) on silage (winter feed), and (D) on dry feed plus root crops. They found that of milk from (A), 15 c. c. daily gave partial protection to guinea pigs, 30 c. c. better, and 50 c. c. full protection. Of milk from (B), 75 c. c. daily was necessary; from (C), 50 to 75 c. c. daily; and from (D), results better than (B), but not as good as (A).

Jephcott and Bachanach [20] fed milk reconstructed from powders. They found that milk powder made by the roller process retains its antiscorbutic properties, whereas milk powder made by the spray

[16] Jour. Biol. Chem., *38*, 295 (1919).
[17] Jour. Am. Med. Assoc., *74*, 217 (1920).
[18] Biochem. Jour., *13*, 306, (1919).
[19] Jour. Biol. Chem. *42*, 383, (1920).
[20] Biochem. Jour. XV, 129, (1921).

process does not. Basing their calculations upon the body weight of the guinea pigs, they observed that 26 c. c. per 100 gm. body weight protected from scurvy. Just as we did in some of our experiments, they also fed the milk in some cases more concentrated than ordinary fluid milk.

Experimental.

We have undertaken a comparative study of a variety of milks and milk powders in relation to their antiscorbutic value. Guinea pigs were kept in individual cages and fed hay and oats *ad libitum* and in addition were given milk to drink instead of water. It was found that after a few days the animals in most cases readily took the milk. The amount of milk consumed daily was in most cases measured accurately. The animals were gone over two or three times weekly for clinical symptoms of scurvy, such as drag of legs, lying down in face-ache position, swollen joints, tenderness, etc. At death or upon chloroforming, the animals were carefully necropsied. Hemorrhages, looseness of molar teeth, brittleness of bones, yellowish-brown bars at the costochondral junctions, and enlargement of joints were noted. The costochondral junctions were fixed in formalin, decalcified, cut in celloidin, stained with hematoxylin and eosin, and examined microscopically. Findings on all these points are given in the tables.

It is to be noted here that our findings serve to indicate that no positive diagnosis of scurvy can be made without a histological examination. In many cases observed by us the clinical examination and necropsy gave no indication of scurvy, whereas the sections of the costochondral junctions showed positive under the miscroscope. Much of the researches on scurvy in guinea pigs has been published without histological data. This work is valuable but can not be used for positive deductions. To get a true insight into the antiscorbutic value of any food, histological examinations of the costochondral junctions must always be made, as very many cases are doubtful and many others do not show the presence of scurvy until this examination is made. Due credit should be given the careful work of Chick, Hume, Delf, Tozier, and others in England, on the histological examination of the costochondral junctions in guinea-pig scurvy. All reliance can be placed upon their findings in contrast with those of others who have made no such examinations.

MILK STUDIED.

1. A fresh raw milk supplied daily from the farms of the U. S. Department of Agriculture, Dairy Division. These cows were always kept on a silage feed and never given green stuff.

2. A certified milk from a local dairy. According to the statement of this company, the cows were fed grain and silage in winter and green feed in season. The milk received by us was not over 24 hours old.

3. A pasteurized milk bought from another local dairy. This milk had been heated to 145° F. The cows were fed upon silage and grain in winter and were pastured during the warm seasons. The milk was not over 36 hours old when received by us.

4. A so-called "reconstructed milk" made from spray process skim milk powder, and the necessary butter and water to restore to original fluid condition.

5. Whole milk powder made by the spray process and made up by us with water to original condition or in some cases to a more concentrated condition.

6. A brand of roller process milk powder, made especially for babies and made up by us with water to original or more concentrated condition. This milk powder contains 12 per cent fat.

7. Roller process whole milk powder made up by us with water to original or more concentrated condition.

8. Roller process skim milk powder made up by us with water and butter to original or more concentrated condition than fluid milk.

In making milk powder by the spray process, the milk is first preheated, then sent through a spray machine into a vacuum chamber held at an elevated temperature. The drying takes place instantly, and the powder falls to the floor of the chamber. In the case of the powders manufactured by the roller or Just-Hatmaker process, the milk is preheated and dried on a heated drum. It is then flaked from this drum. The temperature is 116° C. The special brand for babies is claimed to be made with great care, and the milk is dried within 6 hours of the time of milking. In this way the manufacturers claim that there is very little loss of the antiscorbutic substance. The heating at 116° C. is for a very short time. However, the company making the spray process powder states that their milk is dried within 5 hours of the time of milking.

Forced feeding was not resorted to by us for the reason that we wished to allow the animals full choice. If the milk did not attract the animals by reason of its taste, odor, etc., we thought that this would be a good test. We were not trying to get at the absolute consumption so much as to make a direct comparison between various milks given under exactly the same conditions to animals of approximately the same age, weight, and health.

TABLE I.—*Guinea pigs on spray process skim milk powder mixed with oatmeal.*

Pig No.	Length of life (days).	Symptoms of scurvy.	Necropsy.	Average weight (grams).	Average daily intake (grams)—		Histology of rib junctions.
					To time of symptoms.	Entire period.	
2	32	Emaciation	Fragility of bones; hemorrhages	164	3.1	3.0	Acute scurvy.
3	12	.....do	Negative	140	0.7	0.6	Nearly normal; "incipient scurvy."
5	34	Cries when handled on twenty-sixth day; bloody diarrhea on twenty-eighth day.	Hemorrhages	150	2.5	1.9	Definite scurvy.
6	32	Bloody diarrhea on twenty-ninth day	Fragility of bones; hemorrhages; increase in pericardial fluid.	160	2.5	2.1	Acute scurvy.
7	19	Ruffled on eighteenth day	Negative	131	3.5	2.9	Definite scurvy.
9	12	Emaciation	.....do	137	1.6	1.4	Nearly normal; "incipient scurvy."
10	34	Bloody diarrhea on twenty-third day	Extensive hemorrhages	161	4.2	3.9	Definite scurvy.
11	9	Emaciation	Negative	152	2.4	1.9	Nearly normal; "incipient scurvy."
12	21	.....do	.....do	113	4.0	4.0	Do.
13	9	.....do	.....do	136	2.9	2.2	Do.
15	14	.....do	.....do	110	3.7	3.7	Do.

TABLE II.—*Guinea pigs on reconstructed milk.*

Pig No.	Length of life (days).	Symptoms of scurvy.	Necropsy.	Average weight (grams).	Average daily intake (c. c.)—		Histology of rib junction.
					To time of symptoms.	Entire period.	
19♂	15	Ruffled on thirteenth day	Negative	226	41	36	Acute scurvy.
22♂	30	Drags hind legs on twenty-second day; paralysis of hind legs on twenty-seventh day.	Fragility of bones; hemorrhages	273	36	30	Do.
23♂	28	"Face-ache position" on fourteenth day; drags hind legs; hind legs paralyzed on twenty-second day.	do	234	32	30	Do.
24♂	22	"Face-ache position" on fourteenth day; drags hind legs.	do	228	36	30	Do.
25♀	27	"Face-ache position" on fifteenth day	Hemorrhages	249	29	27	Do.
					Before symptoms scurvy.	Entire period.	
32♀	29	Drag of hind legs after 19 days; persistent diarrhea after 26 days.	Extensive hemorrhages; molars loose	231	32	28	Do.
33♀	24	Drags legs after 21 days; diarrhea	Extensive hemorrhages	177	27	24	Do.
34♀	25	Drags legs after twenty-second day	Extensive hemorrhages; fragility of bones; molars loose.	181	28	27	Do.
35♀	26	Diarrhea after twenty-fifth day	do	220	31	28	Do.
36♀	25	Bloody diarrhea after 22 days	do	222	44	38	Do.
48♀	33	Drags hind legs after 26 days	Extensive hemorrhages	231–253			Do.
49♀	24	Drags hind legs after 21 days	Extensive hemorrhages; rib junction ridged	220–256			Do.
50♀	25	Drags hind legs after 23 days	Extensive hemorrhages; rib junction ridged; molars loose; fragile bones.	210–227			Do.
51♂	25	Drags hind legs after 26 days	Extensive hemorrhages; fragility of bones	198–240			Do.
52♀	24	Slight drag after 21 days	Extensive hemorrhages; rib junction ridged; fragility of bones.	222–230			Do.
53♀	31	Drags hind legs after 25 days	Extensive hemorrhages; fragility of bones	220–224			Do.
54♀	21	None	Slight hemorrhages	202–225			Do.
62♀	30	Drags hind legs after 22 days, persistent	Slight hemorrhages; fragility of bones; molars loose.	235–250			Do.
63♂	28	do	do	248–252			Do.
64♀	30	do	Slight hemorrhages; rib junction ridged	284–288			Do.

TABLE II.—*Guinea pigs on reconstructed milk*—Continued.

Pig No.	Length of life (days).	Symptoms of scurvy.	Necropsy.	Average weight (grams).	Average daily intake (c. c.)— To time of symptoms.	Average daily intake (c. c.)— Entire period.	Histology of rib junction.
65 ♂	31	Drags hind legs after 22 days	Severe hemorrhages; rib junction ridged; fragility of bones.	240	.....	.....	Acute scurvey.
73 ♀	25	Drags legs after 16 days, persistent; cries, ruffled, diarrhea after 22 days.	Severe hemorrhages; fragility of bones	170–228	.....	.....	Do.
75 ♀	36	Drags hind legs after 32 days	Severe hemorrhages	205–211	.....	.....	Do.
84 ♀	27	Drags legs after 24 days	Severe hemorrhages; fragility of bones; rib junction ridged; molars loose.	124–210	.....	.....	Do.
85 ♀	24	None	Slight hemorrhages; pneumonia	157–235	.....	.....	Do.
86 ♀	26	Drags legs after 17 days; soreness	Hemorrhages; fragility of bones; molars loose	152–194	.....	.....	Definite scurvy.
87 ♀	18	None	Negative	129–195	.....	.....	Do.
88 ♂	28	Drags legs after 21 days	Severe hemorrhages; rib junctions ridged; fragility of bones.	164–290	.....	.....	Do.
90	24	None	Hemorrhages; fragility of bones	160–275	.....	.....	Acute scurvy.
94	42	Drags legs after 25 days	Severe hemorrhages; rib junctions ridged; fragility of bones.	227–260	.....	.....	Definite scurvy.
95 ♀	30	Drags legs after 22 days	do	152–175	.....	.....	Acute scurvy.
96	3	None	Pneumonia	140–140	.....	.....	Normal.
98 ♂	28	Ruffled after 26 days	Fragility of bones; congestion of lungs	131–165	.....	.....	Acute scurvy.

Pig No.	Length of life (days).	Symptoms of scurvy.	Necropsy.	Weight. Initial.	Weight. Maximum.	Weight. Final.	Histology of rib junction.
99 ♂	34	Drags legs after 25 days	Severe hemorrhages, fragility of bones	203	260	144	Do.
103	27	Drags legs after 13 days	Severe hemorrhages, cecum distended with mustard-colored feces.	153	218	155	Do.
104 ♂	22	Emaciation	Severe hemorrhages; fragility of bones; molars loose.	142	219	145	Do.
117 ♂	25	Drags legs after 15 days	Severe hemorrhages; fragility of bones	220	250	150	Do.
118 ♂	27	Emaciation	do	205	216	150	Do.
119 ♀	24	Ruffled after 19 days	Severe hemorrhages; rib junctions ridged; fragility of bones; molars loose.	174	187	125	Do.
120 ♀	20	Drags hind legs after 16 days	do	157	194	143	Do.
122 ♂	20	Ruffled after 16 days	do	310	320	164	Do.

				Weight.			Average daily intake entire period (c. c.).	
				Initial.	Maximum.	Final.		
126♀	22	Drags hind legs after 17 days	Severe hemorrhages, fragility of bones	310	317	190	38	Acute scurvy.
127♂	47	Ruffled after 9 days	do	230	240	175	68	Definite scurvy.
128♂	22	Emaciation	do	330	330	240	62	Do.
129♀	13	do	Pneumonia	280	307	300		Normal.
134♂	27	Drags legs after 26 days	Slight hemorrhages; rib junctions ridged	355	385	250	44	Acute scurvy.
136♀	11	Ruffled after 5 days	Pneumonia	240	240	170		Incipient scurvy.
137♂	16	Slight emaciation	Negative	304	353	247		Definite scurvy.
138♀	41	Emaciation	Slight hemorrhages; rib junctions ridged; fragility of bones; molars loose.	290	375	195	51	Acute scurvy.
140♂	49	Drags hind legs after 30 days	Hemorrhages; rib junction ridged and show transverse yellow bars; fragility of bones.	245	260	200	62	Do.
151♂	28	Drags hind legs after 25 days	Severe hemorrhages; rib junctions ridged and show transverse yellow bars; fragility of bones.	240	270	160	36	Do.
154♂	29	Drags hind legs after 28 days	Severe hemorrhages; rib junctions ridged and show transverse yellow bars; fragility of bones; molars loose.	235	235	200	32	Do.
157♀	53	Drags hind legs after 22 days	Fragility of bones	255	300	210	45	Definite scurvy.
159♀	26	Drags hind legs after 25 days	Severe hemorrhages; rib junctions ridged with transverse yellow bars.	195	220	155	32	Acute scurvy.
169♂	27	Emaciation	Slight hemorrhages; fragility of bones	190	228	135		Do.
170♂	22	do	Slight hemorrhages, fragility of bones; molars loose.	270	270	140		Do.

				Average weight before symptoms of scurvy (grams).	Average daily intake (c. c.).—		
					Before symptoms of scurvy.	Entire period.	
178♂	37	Drags legs after 24 days	Hemorrhages; rib junctions ridged with transverse yellow bars.	254	58	47	Acute scurvy.
179♀	11	Ruffled after 8 days	Pneumonia	244	28	24	Definite scurvy.
180♂	84	Slight drag of hind legs after 24 days; killed.	Rib junctions enlarged and show transverse opaque yellowish bars.	310	56		Chronic scurvy.

TABLE II.—*Guinea pigs on reconstructed milk*—Continued.

Pig No.	Length of life (days).	Symptoms of scurvy.	Necropsy.	Average weight (grams).	Average daily intake (c. c.)— To time of symptoms.	Average daily intake (c. c.)— Entire period.	Histology of rib junction.
				Entire period.			
194 ♀	6	None	Pnemonia	227	.....	23	Normal.
				Before symptoms of scurvy.			
195 ♂	36	Drags legs after 24 days	Hemorrhages, rib junctions enlarged; transverse yellow bars; fragility of bones; molars loose.	272	36	26	Acute scurvy.
205 ♀	49	Drags legs after 29 days	Slight hemorrhages; rib junctions enlarged; transverse yellow bars; fragility of bones; molars loose.	258	52	51	Definite scurvy.
206 ♂	40	Drags legs after 17 days	Hemorrhages; rib junctions enlarged; transverse yellow bars; fragility of bones; molars loose.	276	37	30	Acute scurvy.

TABLE III.—*Guinea pigs on spray process whole milk powder.*

Pig No.	Length of life (days).	Symptoms of scurvy.	Necropsy.	Average weight before symptoms of scurvy. (grams).	Average daily intake (c.c.)—		Histology of rib junction.
					Before symptoms of scurvy.	Entire period.	
142♂	30	Bloody diarrhea on twenty-ninth day.....	Severe hemorrhages; rib junctions enlarged; transverse yellow bars; fragility of bones.	397–410	.....	58	Acute scurvy.
143♂	42	Drags hind legs after 33 days.....	Severe hemorrhages; rib junctions enlarged; transverse yellow bars; fragility of bones; cecum distended with greenish yellow semifluid feces; molars loose.	340–400	.....	96	Do.
144♀	30	Bloody diarrhea on twenty-ninth day.....	Severe hemorrhages; rib junctions enlarged; transverse yellow bars; fragility of bones; cecum distended with greenish yellow feces; molars loose.	270–300	.....	62	Do.
145♂	25	Drags legs after 21 days.....	Severe hemorrhages; cecum distended with greenish yellow feces; fragility of bones.	242–280	.....	66	Do.
164♂	39	Emaciation.....	Severe hemorrhages; rib junctions enlarged; transverse yellow bars.	255–269	.....	63	Do.
166♂	25	.....do.....	.....do.....	204–207	.....	.....	Do.
167♂	45	"Face-ache position" in 21 days; drags legs after 41 days.	Severe hemorrhages; rib junctions enlarged; transverse yellow bars; fragility of bones; molars loose.	213	52	47	Do.
188♂	33	"Face-ache position" in 21 days; drags legs after 19 days.	.....do.....	271	52	47	Do.
189♂	33	Drags legs after 23 days; soreness.....	.....do.....	339	65	45	Do.
190♂	71	Drags legs after 18 days; soreness.....	Rib junctions enlarged; transverse yellow bars; molars loose.	296	44	60	Do.
191♂	84	Drags hind legs from 26–31 days, after 46 days persistent; killed.	Rib junctions enlarged; transvers yellow bars; fragility of bones; molars loose.	336	46	68	Chronic scurvy.
207♂	20	Scurvy position on twentieth day.....	Pneumonia.....	262	30	28	Rib junctions sectioned are normal.
217♀	34	Drags legs after 21 days; soreness.....	Hemorrhages; rib junctions enlarged; transverse yellow bars; fragility of bones; molars loose.	324	58	46	Acute scurvy.

TABLE IV.—*Guinea pigs on roller process skim milk powder, butter, and water.*

Pig No.	Length of life (days).	Symptoms of scurvy.	Necropsy.	Average weight before symptoms of scurvy. (grams).	Average daily intake (c. c.)—		Histology of rib junction.
					Before symptoms of scurvy.	Entire period.	
113♂	104	Drags hind legs after 18 days, persistent; died.	Rib junctions enlarged (few), fragility of bones; molars loose; cecum distended.	190–225	.....	74	Definite scurvy.
114♀	23	Ruffled after 18 days	Congestion of lungs, cecum distended	215–235	.....	.....	Do.
115♀	32	Drags legs after 15 days, persistent	Negative	197–240	.....	74	Normal.
116♀	104	Ruffled after 54 days; emaciation; died	Hemorrhages; cecum distended; fragility of bones	194–270	.....	79	Do.
121♂	32	Drags legs after 20 days	Hemorrhages; fragility of bones	290	.....	.....	Definite scurvy.
131♂	84	Ruffled on twenty-second day	.....do	310	.....	.....	Acute scurvy.
133♂	36	Drags hind legs after 25 days	Hemorrhages	280–320	.....	.....	Do.
141♀	33	Drags hind legs after 30 days	Hemorrhages; rib junctions enlarged; transverse yellow bars; cecum distended; fragility of bones.	260–295	.....	38	Do.
156♀	31	Emaciation	Severe hemorrhages; rib junctions enlarged; transverse yellow bars; cecum distended; fragility of bones.	210–245	.....	53	Do.
168♂	26	.....do	Hemorrhages; fragile bones; cecum distended; molars loose.	223	33	34	Do.
181♀	26	Ruffled after 20 days; emaciation	Emaciation	273	53	44	Do.
182♀	31	Ruffled after 23 days	Hemorrhages; fragile bones; teeth loose	287	50	45	Definite scurvy.
196♀	27	.....do	Negative	282	46	42	Acute scurvy.
197♀	27	Drags hind legs on twenty-sixth day	Hemorrhages; rib junctions ridged	235	37	33	Do.
198♂	17	Ruffled after 16 days	Negative	244	38	36	Definite scurvy.
214♂	25	Drags hind legs after 19 days	Fragility of bones	288	44	36	Do.
215♂	30	Drags hind legs after 16 days	Hemorrhages; rib junctions ridged; fragility of bones; molars loose.	330	66	56	Acute scurvy.
216♂	15	Drags hind legs after 11 days	Pneumonia	247	36	32	Definite scurvy.

TABLE V.—*Guinea pigs on whole milk powder, roller process.*

Pig No.	Length of life (days).	Symptoms of scurvy.	Necropsy.	Weight (grams).	Average daily intake (c. c.)— Before symptoms of scurvy.	Average daily intake (c. c.)— Entire period.	Histology of rib junction.
146 ♀	29	None	Hemorrhages, rib junctions ridged	290–300	.....	53	Acute scurvy.
148 ♀	10	Ruffled after 3 days	Pneumonia	240–260	.....	.....	Normal.
149 ♂	18	None	Subperitoneal hemorrhages	300–330	.....	49	Definite scurvy.
152 ♂	25	Drags legs after 23 days	Hemorrhages; 4 rib junctions ridged; fragile bones	225–245	.....	.....	Rib junctions sectioned are normal.
153 ♂	32	Drags legs after 31 days	Two rib junctions ridged; fragile bones; cecum distended; molars loose.	225–285	.....	44	Acute scurvy.
158 ♀	28	Drags legs after 25 days	Negative	255–285	.....	.....	Definite scurvy; starvation marrow.
165 ♂	24	Emaciation	Subperitoneal hemorrhages	195–207	.....	.....	Acute scurvy.
171 ♂	28	Drags hind legs on twenty-seventh day	Hemorrhages; rib junctions ridged; fragile bones	330–332	.....	.....	Do.
				Average weight before symptoms of scurvy.			
192 ♀	33	Drags hind legs after 28 days	Severe hemorrhages, rib junctions ridged; fragile bones; molars loose.	319	44	36	Do.
199 ♂	30	Drags hind legs after 27 days	Hemorrhages; one rib junction ridged	249	32	34	Definite scurvy.
200 ♂	13	Emaciation	Pneumonia	252	22	20	Incipient scurvy; nearly normal.
201 ♀	30	Drags hind legs after 27 days	....do	240	48	42	Definite scurvy.
202 ♂	33	....do	Hemorrhages; rib junctions enlarged; molars loose	332	46	45	Acute scurvy.
213 ♂	30	Drags hind legs after 23 days	Hemorrhages; rib junctions enlarged; molars loose; fragility of bones.	287	64	54	Do.

TABLE VI.—*Guinea pigs fed on special brand milk powder, roller process.*

Pig No.	Length of life (days).	Symptoms of scurvy.	Necropsy.	Weight (grams).				Average daily intake (c. c.)—		Histology of rib junction.
				Average before symptoms of scurvy.	Initial.	Maximum.	Final.	Before symptoms of scurvy.	Entire period.	
208 ♀	30	Drags legs after 27 days	Hemorrhages; rib junctions ridged	268	250	288	261	66	63	Definite scurvy.
209 ♀	93	None; killed	Negative	308	242	627	627	.....	98	Normal.
210 ♂	68	None; suddenly died	Pneumonia; cecum distended	366	287	415	412	.....	114	Do.
211 ♀	93	None killed	Rib junctions ridged; transverse yellowish-brown bars.	369	272	567	567	.....	103	Nearly normal, "incipient scurvy."
212 ♂	67	.....do	Negative	330	260	500	500	.....	80	Normal.
248 ♀	53	.....do	Hemorrhages; costochondral junctions swollen; transverse opaque yellowish-brown bars.	457	.....	.....	.....	.....	97	Definite scurvy.
249 ♂	53	.....do	Negative	480	.....	.....	.....	.....	122	Normal.
250 ♀	53	Slight drag 35–38 days	Hemorrhages; costochondral junctions swollen; transverse opaque yellowish-brown bars.	358	.....	.....	.....	57	.....	Definite scurvy.
251 ♀	53	None	Rib junctions swollen; transverse opaque yellowish-brown bars.	408	.....	.....	.....	.....	62	Do.
252 ♂	39	Drags legs after 29 days	Hemorrhages; wrists swollen; costochondral junctions swollen; hemorrhagic and show transverse yellowish-brown bars.	423	.....	.....	.....	58	.....	Acute scurvy.
253 ♂	51	Drags legs after 37 days	Costochondral junctions swollen and show transverse yellowish-brown bars.	383	.....	.....	.....	48	.....	Do.

TABLE VII.—*Guinea pigs fed on local market pasteurized milk.*

Pig No.	Length of life (days).	Symptoms of scurvy.	Necropsy.	Weight (grams).				Average daily intake (c. c.)—		Histology of rib junction.
				Average before symptoms of scurvy.	Initial.	Maximum.	Final.	Before symptoms of scurvy.	Entire period.	
37♀	32	Diarrhea after 22 days, persistent	Hemorrhages; fragile bones	183	178	225	141	31	29	Acute scurvy.
38♀	34	Drags hind legs after 23 days	Severe hemorrhages; rib junctions ridged; fragile bones.	248	245	259	190	32	32	Do.
39♀	25	Ruffled after 16 days; diarrhea after twenty-third day.	Hemorrhages; fragile bones	246	232	261	201	56	53	Do.
40♀	32	Drags hind legs after twenty-third day	....do	206	193	223	142	33	32	Do.
41♀	26	....do	Severe hemorrhages; fragile bones; molars loose	243	234	267	170	40	38	Do.
55♂	41	Drags hind legs after thirty-fourth day	....do		244	306	207			Do.
56♂	39	Drags hind legs after twenty-second day.	....do		237	291	189			Definite scurvy.
58♀	40	Drags hind legs after twenty-fifth day, persistent.	Severe hemorrhages over knee joints		204	230	142			Acute scurvy.
59♂	31	Drags hind legs after twenty-fifth day	Hemorrhages; rib junctions ridged		203	250	178			Do.
60♀	24	Drags hind legs after fourteenth day, persistent.	....do		192	212	143			Do.
61♂	32	Drags hind legs after twenty-second day, persistent.	Hemorrhages; fragile bones		272	284	152			Do.
74♀	29	Drags hind legs after twenty-second day.	Hemorrhages; fragile bones; molars loose		204	229	172			Do.
77♀	34	Drags hind legs after 25 days	Severe hemorrhages; fragile bones		245	277	196			Do.
79♀	42	Emaciation	Pneumonia; fragile bones		215	270	185			Definite scurvy.
80♂	34	Drags hind legs after 28 days	Severe hemorrhages; rib junctions ridged; fragile bones.		205	252	198			Acute scurvy.
81♀	29	Emaciation	Hemorrhages; fragile bones		119	196	155			Do.
82♂	29	....do	Hemorrhages; rib junctions ridged; fragile bones; cecum distended.		167	240	150			Definite scurvy.
83♀	26	Drags hind legs after 24 days	Hemorrhages; fragile bones; molars loose		160	270	125			Acute scurvy.
89	22	Drags hind legs after 20 days; soreness.	Severe hemorrhages; rib junctions ridged; fragile bones; molars loose.		150	205	125			Do.
91	27	Emaciation	Hemorrhages; fragile bones; pneumonia		130	230	150			Nearly normal; "incipient scurvy."
97	10	Ruffled after six days	Pneumonia		150	151	115			Acute scurvy.
100	21	Emaciation	Hemorrhages; rib junctions ridged; fragile bones		180	180	130			Do.
101♂	16	....do	Pneumonia		204	225	142			Definite scurvy.
102♀	11	Ruffled after 10 days	....do		160	171	162			Do.

TABLE VII.—*Guinea pigs fed on local market pasteurized milk*—Continued.

Pig No.	Length of life (days).	Symptoms of scurvy.	Necropsy.	Weight (grams).				Average daily intake (c. c.)—		Histology of rib junction.
				Average before symptoms of scurvy.	Initial.	Maximum.	Final.	Before symptoms of scurvy.	Entire period.	
106♂	159	Drags hind legs 17 to 77 days; killed...	Hemorrhages over knee joints; fragile bones; molars loose.	.....	144	390	380	.....	108	Definite scurvey.
107♂	74	Drags hind legs after 16 days; persistent.	Fragile bones; molars loose.....	.....	163	212	159	.....	91	Do.
108♂	53	Drags hind legs after 33 days; soreness.	Rib junctions ridged; fragile bones.....	.....	250	272	200	.....	51	Acute scurvy.
109♂	98	"Face-ache position" on nineteenth day; drags hind legs after nineteenth day, persistent.	Rib junctions ridged; fragile bones; molars brittle..	.....	260	274	180	.....	90	Chronic scurvy.
111♂	31	Emaciation.....	Pneumonia.....	.....	230	265	195	.....	.....	Acute scurvy.
112♂	74	Drags hind legs after 25 days, persistent.	Fragile bones; molars brittle; cecum distended.....	.....	220	242	195	.....	89	Definite scurvy.
132♂	19	Ruffled after 17 days.....	Fragile bones.....	.....	265	280	220	.....	36	Acute scurvy.
139♂	76	Drags hind legs between 26 to 46 days; killed.	Hemorrhages; friable teeth; rib junctions ridged; molars loose.	.....	257	344	342	48	85	Definite scurvy.
150♂	35	Drags hind legs after 25 days.....	Rib junctions ridged; transverse yellow bars; fragile bones; molars loose; cecum distended.	.....	220	260	165	.....	46	Acute scurvy.
					Average weight.					
155♀	44	Drags hind legs after 29 days; soreness.	Severe hemorrhages; rib junctions ridged; transverse yellow bars; fragile bones.	.....	279			44	40	Definite scurvy.
203♂	31	Drags hind legs after 19 days.....	Rib junctions ridged; transverse yellow bars; hemorrhages; molars loose.	.....	266			32	29	Acute scurvy.
204♀	32	.....do.....	Hemorrhages; rib junctions ridged; transverse yellow bars; molars loose.	.....	242			27	24	Do.

TABLE VIII.—*Guinea pigs fed on local market certified milk.*

Pig No.	Length of life (days).	Symptoms of scurvy.	Necropsy.	Weight (grams).				Average daily intake (c. c.)—		Histology of rib junction.
				Average.	Initial.	Maximum.	Final.	Before symptoms of scurvy.	Entire period.	
66♂	124	Drags hind legs 20 to 30 days, and after 60 days persistent.	Fragile bones; rib junctions ridged; cecum distended; molars brittle and loose.	.....	227	319	222	.....	.....	Definite scurvy.
67♂	137	Drags hind legs after 20 days; persistent; soreness.	Rib junctions ridged; fragile bones	.....	231	360	267	.....	.....	Do.
68♂	37	Ruffled after 30 days; soreness	Severe hemorrhages; fragile bones; cecum distended.	.....	220	225	192	.....	.....	Do.
69♂	235	Drags hind legs 30–90 days; killed	Exostoses over tibia	.....	207	642	555	.....	110	Deformed only.
70♂	78	"Face-ache position," drags legs after 24 days.	Hemorrhages; rib junctions ridged; pneumonia; cecum distended.	.....	233	300	235	.....	.....	Definite scurvy.
71♀	68	Drags hind legs after 30 days; persistent.	Hemorrhages; rib junctions ridged; fragile bones	.....	197	270	205	.....	.....	Do.
72♂	123	Drags hind legs 30–40 days and after 90 days.	.....do	.....	205	365	253	.....	.....	Do.
92♀	28	Drags hind legs after 21 days	Hemorrhages; fragile bones; cecum distended	.....	225	270	135	.....	.....	Acute scurvy.
105♀	46	Drags hind legs after 17 days; persistent.	Hemorrhages; fragile bones	.....	152	230	162	.....	.....	Definite scurvy.
110♂	140	Drags hind legs after 60 days; persistent; killed.	Fragile bones; exostoses about knee joint	.....	210	370	370	.....	83	Chronic scurvy.
123♂	30	Drags hind legs after 28 days	Severe hemorrhages; rib junctions ridged	.....	295	305	195	.....	24	Acute scurvy.
124♀	110	Drags hind legs 28–60 days; killed	Negative	.....	260	435	435	.....	89	Chronic scurvy.
125♂	110	None; killed	.....do	.....	285	332	332	.....	79	Do.
183♂	35	Drags hind legs after 17 days; soreness	Rib junctions ridged; transverse yellow bars; hemorrhages; fragile bones.	279	.....	.....	.....	30	37	Acute scurvy.
184♀	43	Drags hind legs after 17 days	Rib junctions ridged; transverse yellow bars; hemorrhages; molars loose.	312	.....	.....	.....	29	42	Definite scurvy.
185♂	110	Drags hind legs 27–57 days; killed	Rib junctions show transverse yellowish-brown bars.	300	.....	.....	.....	57	73	Nearly normal.
186♂	67	Drags hind legs after 17 days; persistent.	Rib junctions ridged; transverse yellowish bars; fragile bones.	386	.....	.....	.....	50	54	Acute scurvy.
187♂	57	Bloody diarrhea nineteenth day; drags legs after twenty-third day; "face-ache position" on thirtieth day.	Rib junctions ridged; transverse yellowish bars; hemorrhages; molars loose; pneumonia; fragile bones.	298	.....	.....	.....	40	44	Definite scurvy.

TABLE IX.—*Guinea pigs fed on raw milk from United States Department of Agriculture.*

Pig No.	Length of life (days).	Symptoms of scurvy.	Necropsy.	Weight (grams).				Average daily intake (c. c.)—		Histology of rib junction.
				Average.	Initial.	Maximum.	Final.	Before symptoms of scurvy.	Entire period.	
27 ♂	287	Drags hind legs 150–200 days; killed	Negative	341				50		Chronic scurvy.
28 ♂	50	"Face-ache position"; drags hind legs after 30 days.	do	284				33	31	Acute scurvy.
29 ♀	161	Drags legs after 129 days; persistent	do	329				42		Chronic scurvy.
30 ♂	287	Drags legs 175–190 days; killed	do	312				47		Do.
31 ♀	287	Drags legs 30–90 days, and from 120–150 days; killed.	Negative; ankylosis of knee joint	265				33		Do.
42 ♂	276	Drags legs 13–90 days; killed	Negative		189	500	490			Deformity only.
43 ♂	235	Drags legs 120–135 days; killed	Negative; ankylosis of knee joint		182	650	650			Do.
44 ♀	38	Emaciation	Slight hemorrhages		218	218	135			Acute scurvy.
45 ♀	40	do	Hemorrhages; fragile bones		228	248	181			Do.
46 ♀	262	Drags legs 90–150 days; killed	Negative		220	597	597			Deformity only.
47 ♂	262	Drags legs 35–90 days; killed	do		239	535	535			Do.
76 ♀	219	Drags legs 50–115 days; killed	Ankylosis of knee joint		225	459	442			Do.
78 ♂	222	None	Negative		288	552	550			Normal.
93 ♂	145	"Face-ache position" forty-first day; drags legs 47–107 days.	Fragile bones; molars brittle; peritonitis		180	335	315			Nearly normal; "incipient scurvy."
135 ♂	81	None; killed	Negative		335	560	557			Normal.
160 ♂	114	do	do	343					76	Do.
161 ♂	114	do	do	364					104	Do.
162 ♂	114	do	do	361					109	Do.
163 ♂	114	do	do	346					96	Do.
172 ♀	50	Drags hind legs after 17 days; persistent.	Rib junctions ridged; transverse yellowish bars; fragile bones; molars loose.	271				32	34	Acute scurvy.
173 ♂	84	None; killed	Negative	408					61	Normal.
174 ♀	110	Drags hind legs 35–65 days; soreness; killed.	Rib junctions ridged; transverse yellow bars; knee joints deformed.	321				29	41	Chronic scurvy.
175 ♂	84	"Face-ache position" twenty-first day; drags hind legs 21–47 days; killed.	Negative	317				33	73	Deformity only.
193 ♂	73	None	do	363					54	Normal.

NOTE.—Pigs 27, 46, and 76 developed scurvy and were apparently cured by the addition of orange juice, 5 c. c. to their daily diet.

TABLE X.—*Spray process whole milk powder and orange juice, one-eighth of an orange (=5 c. c. orange juice) daily.*

Pig No.	Length of life (days).	Termination.	Symptoms of scurvy.	Necropsy.	Weight (grams).			Average daily intake (c. c.).	Histology of rib junction.
					Initial.	Maximum.	Final.		
218♂	63	Killed...	None	Rib junctions show very faint transverse yellowish-brown bars, otherwise negative.	287	.....	478	20	Normal.
219♀	63	...do.....	.....do	.....do	304	.....	340	20	Nearly normal; "incipient scurvy."
220♀	53	Died....	Slight drag after 52 days	Negative	307	395	330	20	Do.
221♂	63	Killed...	None	Rib junctions show faint transverse yellowish-brown bars.	317	.....	625	20	Normal.
222♀	63	...do.....	.....do	.....do	286	470	455	20	Do.
224♂	63	...do.....	.....do	Rib junctions somewhat swollen and show transverse opaque yellowish-brown bars.	337	.....	575	40	Do.
225♂	63	...do.....	.....do	.....do	335	.....	562	40	Do.
226♂	63	...do.....	.....do	.....do	305	.....	562	40	Nearly normal; "incipient scurvy."
227♂	63	...do.....	.....do	.....do	290	.....	508	40	Normal.
255♀	72	...do.....	Gave birth to one young on fifty-sixth day.	Negative	300	572	365	40	Nearly normal; "incipient scurvy."

TABLE XI.—*Spray process skim milk powder+orange juice (one-eighth of an orange).*

Pig No.	Length of life (days).	Termination.	Symptoms of scurvy.	Necropsy.	Weight (grams).			Average daily intake (c. c.).	Histology of rib junction.
					Initial.	Maximum.	Final.		
228♀	62	Died....	Ruffled after 60 days	Liver abscesses	325	420	295	20	Definite scurvy.
229♀	28	...do.....	Ruffled after 24 days	Negative	307	347	249	20	Nearly normal; "incipient scurvy."
230♀	63	Killed...	None	Rib junctions somewhat swollen and show faint transverse yellowish-brown bars.	320	430	.....	20	Normal.
231♂	63	...do.....	.....do	.....do	327	567	.....	20	Do.
256♀	58	...do.....	.....do	Negative	450	480	.....	20	Definite scurvy.

TABLE XII.—*Roller process special brand milk powder+orange juice (one-eighth of an orange).*

Pig No.	Length of life (days).	Termination.	Symptoms of scurvy.	Necropsy.	Weight (grams). Initial.	Weight (grams). Maximum.	Weight (grams). Final.	Average daily intake (c. c.).	Histology of rib junction.
234♂	63	Killed...	None	Rib junctions somewhat swollen and show faint transverse yellowish-brown bars.	320	520	.....	20	Normal.
235♂	63	...do.....	.....do	.....do	322	557	.....	20	Do.
236♂	63	...do.....	.....do	.....do	290	470	.....	20	Do.
237♂	63	...do.....	.....do	.....do	275	475	.....	20	Do.
254♀	61	...do.....	Gave birth to two young on fortieth day.	Negative	409	612	485	20	Do.
238♀	63	...do.....	None	Rib junctions somewhat swollen and show faint transverse yellowish-brown bars.	310	.....	.....	40	Do.
239♀	63	...do.....	.....do	.....do	290	518	.....	40	Do.
240♀	63	...do.....	.....do	.....do	265	562	.....	40	Do.
241♂	63	...do.....	.....do	.....do	325	552	.....	40	Do.
242♂	63	...do.....	.....do	.....do	315	565	.....	40	Do.

TABLE XIII.—*Agricultural milk (4–5 per cent fat)+orange juice.*

Pig No.	Length of life (days).	Termination.	Symptoms of scurvy.	Necropsy.	Weight (grams). Initial.	Weight (grams). Maximum.	Weight (grams). Final.	Average daily intake (c. c.).	Histology of rib junction.
243♀	63	Killed...	None	Negative	325	434	.....	20	Normal.
244♀	63	...do.....	.....do	Rib junctions somewhat swollen and show faint transverse yellowish-brown bars.	280	380	.....	20	Do.
245♀	63	...do.....	.....do	.....do	314	488	.....	20	Do.
246♀	63	...do.....	.....do	.....do	321	380	370	20	Do.
247♀	63	...do.....	.....do	Negative	350	526	.....	20	Do.

TABLE XIV.—*Hay bedding, oats ad libitum; water; no milk or orange juice.*

Pig No.	Length of life (days).	Termination.	Symptoms of scurvy.	Necropsy.	Weight (grams). Initial.	Weight (grams). Maximum.	Histology of rib junction.
257 ♀	30	Died....	"Face-ache position" thirtieth day; diarrhea; refused to walk.	Hemorrhages; loose teeth; rib junctions swollen and show transverse yellowish-brown bars.	470	260	Acute scurvy.
258 ♂	28	...do....	Drags legs after 24 days	Hemorrhages; bones very fragile; rib junctions swollen and show transverse yellowish-brown bars and hemorrhagic.	330	215	Do.
259 ♂	30	...do....	Ruffled after 28 days	Hemorrhages; bones very fragile; rib junctions swollen and show transverse yellowish-brown bars.	310	199	Do.
260 ♂	23	...do....	Ruffled after 16 days	One rib junction enlarged with transverse yellowish-brown bars; bones brittle; teeth not loose.	300	202	Do.
261 ♂	30	...do....	Ruffled after 28 days	Hemorrhages; bones brittle; rib junctions swollen and show transverse yellowish-brown bars and hemorrhagic.	335	230	Do.
262 ♂	27	...do....	Ruffled after 20 days	.....do.....	305	190	Do.

TABLE XV.—*Agricultural milk only (no hay or oats)+one-half gram yeast.*

Pig No.	Length of life (days).	Termination.	Symptoms of scurvy.	Necropsy.	Weight (grams). Initial.	Weight (grams). Maximum.	Weight (grams). Final.	Average daily intake (c. c.).	Histology of rib junction.
265 ♀	9	Died....	None	Negative	370	235	.....	13	Normal.
266 ♀	10	...do....	Ruffled on ninth day	.....do.....	390	225	.....	6	Do.
267 ♂	10	...do....	.....do.....	.....do.....	385	250	.....	18	Nearly normal; "incipient scurvy."
283 ♂	11	...do....	.....do.....	.....do.....	360	235	.....	36	Do.
286 ♀	5	...do....	None	.....do.....	318	235	.....	17	Do.
290 ♀	11	...do....	Diarrhea on seventh day	.....do.....	330	210	.....	25	Do.
298 ♀	14	...do....	None	.....do.....	315	220	.....	55	Do.
297 ♀	30	Killed...	.....do.....	.....do.....	305	240	280	46	Normal.
305 ♀	26	...do....	.....do.....	Three rib junctions swollen and show transverse yellowish-brown bars.	300	220	.....	34	Acute scurvy.
308 ♀	16	Died....	.....do.....	Rib junctions swollen and show transverse opaque yellowish-brown bars.	300	220	.....	35	Do.
313 ♂	22	Killed...	.....do.....	Hemorrhages; rib junctions swollen and show transverse yellowish-brown bars.	195	240	.....	28	Definite scurvy.

TABLE XVI.—*Local market pasteurized milk+one-half gram yeast daily.*

Pig No.	Length of life (days).	Termination.	Symptoms of scurvy.	Necropsy.	Weight (grams). Initial.	Weight (grams). Maximum.	Average daily intake (c. c.).	Histology of rib junction.
268 ♀	19	Died	None	Negative	385	245	49	Acute scurvy.
269 ♀	10	...do	...do	...do	330	190	22	Nearly normal; "incipient scurvy."
270 ♂	8	...do	...do	...do	340	245	25	Normal.
271 ♀	12	...do	Ruffled after nine days	...do	380	250	57	Acute scurvy.
287 ♀	7	...do	Ruffled on sixth day	...do	315	220	14	Definite scurvy.

TABLE XVII.—*Local market pasteurized milk + 7 grams oats daily.*

Pig No.	Length of life (days).	Termination.	Symptoms of scurvy.	Necropsy.	Weight (grams). Initial.	Weight (grams). Maximum.	Weight (grams). Final.	Average daily intake (c. c.).	Histology of rib junction.
273 ♀	12	Died	Ruffled on ninth day	Negative	330	220	.....	15	Definite scurvey.
274 ♀	9	...do	Aborted 2 young on third day	...do	390	250	.....	14	Nearly normal; "incipient scurvy."
276 ♀	42	Killed	Ruffled from 13–23 days	Four rib junctions swollen but do not show bars; teeth not loose; bones fragile.	345	260	.....	66	Definite scurvy.
277 ♀	42	...do	Slight drag after 38 days	Negative	370	275	.....	62	Acute scurvy.
310 ♀	23	...do	None	Rib junctions swollen and show opaque yellowish-brown bars.	295	290	.....	47	Do.
308½ ♀	26	...do	Slight drag after 22 days	Hemorrhages; rib junctions swollen and show opaque transverse yellowish-brown bars.	290	310	240	53	Do.
291 ♀	23	Died	Ruffled and diarrhea after twenty-first day.	Negative	420	225	.....	55	Do.
300 ♀	24	...do	Ruffled and diarrhea after eighteenth day.	...do	290	225	.....	56	Definite scurvy.
301 ♀	29	...do	Drags hind legs after 24 days	Hemorrhages; rib junctions swollen and show yellowish-brown opaque transverse bars.	300	245	.....	39	Acute scurvy.
292 ♀	18	...do	None	Negative	345	247	.....	48	Normal.
288 ♀	18	...do	Ruffled after 6 days	...do	320	200	.....	38	Acute scurvy.
311 ♂	23	Killed	None	...do	285	270	.....	46	Normal.
307 ♀	27	...do	...do	...do	355	240	.....	39	Acute scurvy.
304 ♀	25	Died	Drags legs after 24 days	...do	365	230	.....	67	Definite scurvy.
312 ♀	23	Killed	None	...do	270	290	240	26	Do.

TABLE XVIII.—*Local market pasteurized milk + 7 grams oats daily.*

Pig No.	Length of life (days).	Termination.	Symptoms of scurvy.	Necropsy.	Weight (grams).			Average daily intake (c. c.).	Histology of rib junction.
					Initial.	Maximum.	Final.		
278♀	10	Died	Ruffled and weak on ninth day	Cecum distended with mustard-colored feces	350	250	.....	44	Acute scurvy.
302♂	7	...do	None	Negative	315	250	.....	37	Normal.
284♂	5	...do	Ruffled and weak on fourth day	.....do	384	300	.....	25	Do.
289♂	10	...do	Slightly ruffled from second day	One rib junction swollen with transverse yellow bars	330	260	.....	86	Acute scurvy.
281♀	8	...do	None	Negative	370	242	.....	17	Normal.
285♀	14	...do	.....do	.....do	385	400	265	62	Definite scurvy.

It was observed by us that when the milk is fed to the guinea pigs in the way that we followed—namely, to give a basal diet of hay and oats and to allow no liquid to enter the milk—that the animal's taste for milk will vary according to the milk served. The animals in general placed upon the raw milk from the Department of Agriculture fared best, both in growth and in absence of scurvy. However, our figures show that these animals in general consumed more milk. It would seem, therefore, that the animal's instinct leads it to take more of this milk. The certified raw milk from a local dairy did not attract the animals and did not in general prevent scurvy, although the company claims that the cows receive green stuff in summer, whereas the cows of the Agricultural Department receive only silage the year round.

EXPLANATION OF CHARTS 1–12.

These charts are representative, picked from a large number which, because of the expense involved, could not all be published. Detailed explanation is given with each chart.

EXPLANATION OF CHARTS 13, 14, AND 15.

These are composite charts and were obtained from the average weights of all the guinea pigs run by us on each kind of milk. The summarized figures can be found in the tables.

(A) Guinea pigs fed upon a dry mixture of 40 per cent oatmeal, 20 per cent butter fat, and 40 per cent spray process skim milk powder. Water given in addition.

(B) Guinea pigs fed upon a dry mixture of 20 per cent oatmeal, 20 per cent butter, and 60 per cent spray process skim milk powder. Water given in addition.

(C) Guinea pigs fed upon a dry mixture of 20 per cent butter and 80 per cent spray process skim milk powder. Water given in addition.

(D) Guinea pigs fed upon "reconstructed milk" made from spray process skim milk powder, butter, and water, and approximating the composition of ordinary fluid milk. Hay and oats given in addition *ad lib.*

(E) Guinea pigs fed upon a "reconstructed milk" made from spray process skim milk powder, butter, and water, but twice the concentration of ordinary fluid milk. Hay and oats given in addition *ad lib.*

(F) Guinea pigs fed upon a milk made from spray process whole milk powder and water and approximating the composition of ordinary fluid milk. Hay and oats given in addition *ad lib.*

(G) Guinea pigs fed upon a milk made from spray process whole milk powder and water, but of twice the concentration of ordinary fluid milk. Hay and oats given in addition *ad lib.*

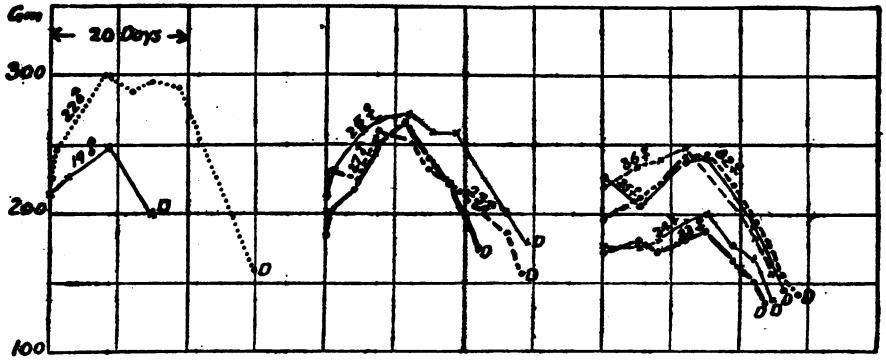

CHART 1.—Pigs fed "reconstructed" milk *ad lib.* Basal diet of hay and oats. Pigs soon began to lose weight and developed scurvy. Consumption of milk low, although no other liquids given. (See Table II for food intake, symptoms, and necropsy findings.)

(H) Guinea pigs fed upon a milk made from roller process skim milk powder, butter, and water, and approximating the composition of ordinary fluid milk. Hay and oats given in addition *ad lib.*

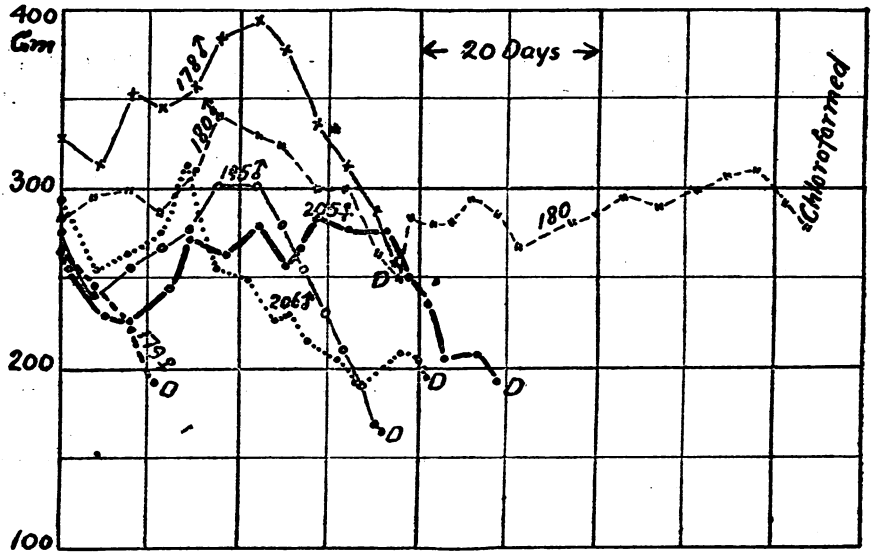

CHART 2.—Pigs fed "reconstructed" milk *ad lib.* (from spray process skim milk powder, butter, and water) made up to twice concentration of ordinary fluid milk. Only one pig lived for any considerable time. All developed scurvy. Basal diet of hay and oats. No other food. (See Table II for food intake, symptoms, and necropsy findings.)

(I) Guinea pigs fed upon a milk made from roller process skim milk powder, butter, and water, but twice the concentration of ordinary fluid milk. Hay and oats given in addition *ad lib.*

(J) Guinea pigs fed upon a milk made from roller process whole milk powder and water and approximating the composition of ordinary fluid milk. Hay and oats given in addition *ad lib.*

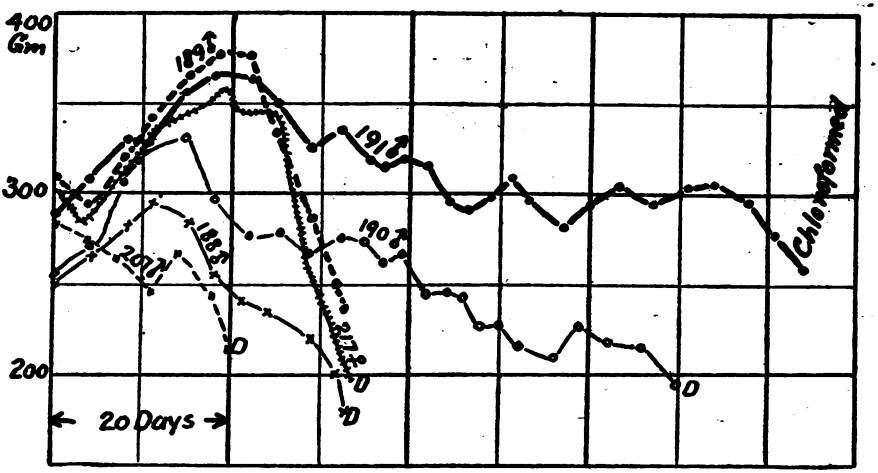

CHART 3.—Pigs fed spray process whole milk powder *ad lib.*, made up to twice concentration of ordinary fluid milk. Basal diet of hay and oats. Consumption low. Pigs developed scurvy, except No. 207, which died of pneumonia. (See Table III for food intake, symptoms, and necropsy findings.)

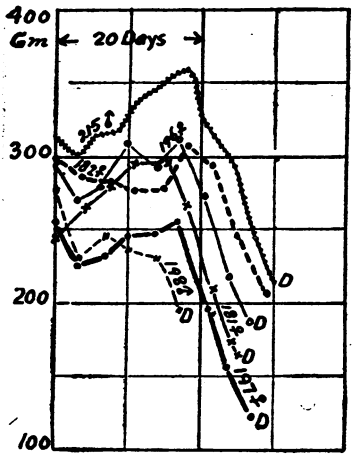

CHART 4.

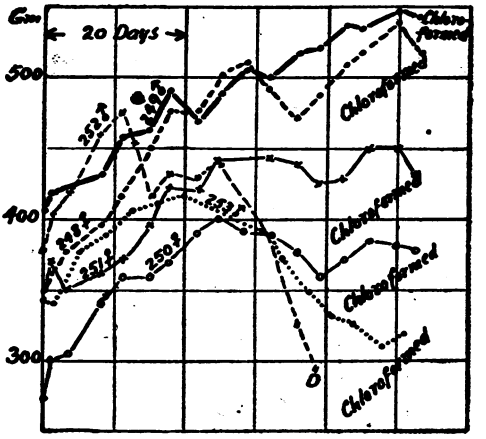

CHART 5.

CHART 4.—Pigs fed roller process skim milk powder, butter, and water made up to twice the concentration of ordinary fluid milk; given *ad lib.* Basal diet of hay and oats. No other food. Consumption low; pigs soon developed scurvy and died. (See Table IV for food intake, symptoms, and necropsy findings.)

CHART 5.—Pigs fed roller process special milk powder (30 grams powder to 240 c. c. water) *ad lib.* Basal diet of dried hay and oats. Consumption good. All showed scurvy except No. 249; however, it did not cause death during period of observation, which was longer than that with reconstructed milk. (See Table VI for food intake, symptoms, and necropsy findings.)

(K) Guinea pigs fed upon a milk made from roller process whole milk powder and water, but twice the concentration of ordinary fluid milk. Hay and oats given in addition *ad lib.*

(L) Guinea pigs fed upon a milk made from a special brand of milk powder for babies, roller process, which contained about one-half the butter fat of whole milk powder. This was mixed with water

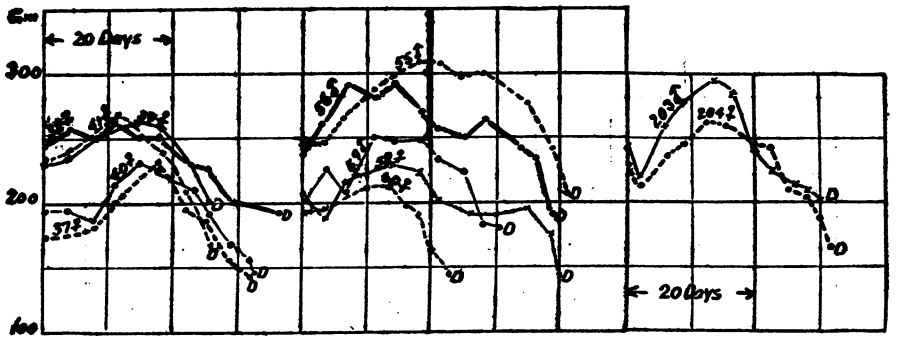

CHART 6.—Pigs fed local market pasteurized milk *ad lib.* Basal diet of hay and oats. No other food. Consumption fairly low in general. Pigs soon developed scurvy and died. (See Table VII for food intake, symptoms, and necropsy findings.)

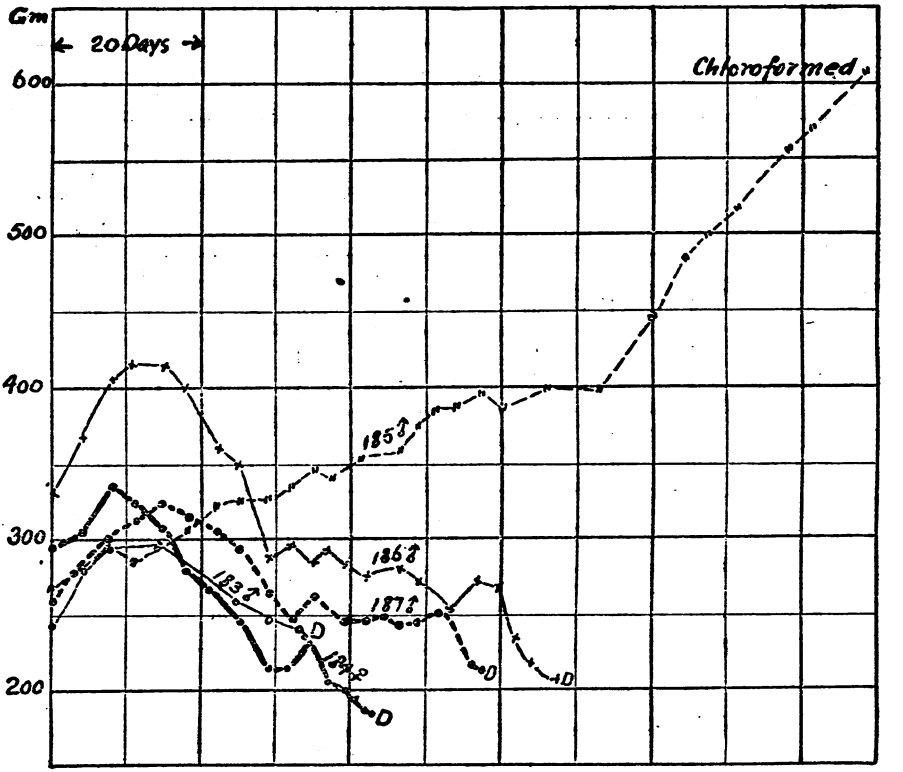

CHART 7.—Pigs fed local market certified milk *ad lib.* Only one pig made good growth and showed no scurvy on section (No. 185). Consumption was not high in general. Basal diet consisted of dried hay and oats. (See Table VIII for food intake, symptoms, and necropsy findings.)

in proportion of 1 part of powder to 4 parts water. Hay and oats were given in addition *ad lib.*

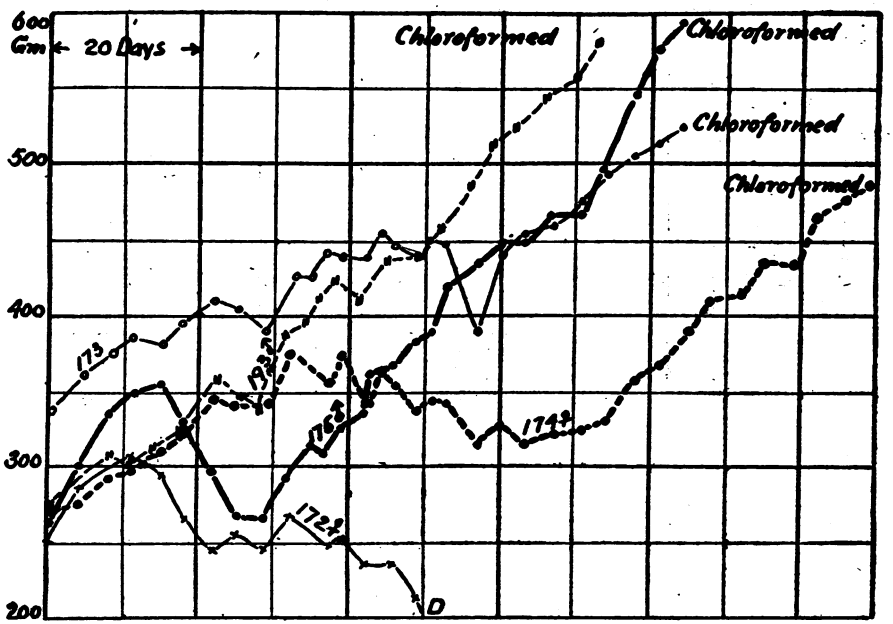

CHART 8.—Pigs fed raw milk from the U. S. Department of Agriculture *ad lib.* Basal diet of dried hay and oats. No. 172 showed acute scurvy; No. 174 showed chronic scurvy; the other three made fairly good growth, with no scurvy. (See Table IX for food intake, symptoms, and necropsy findings.)

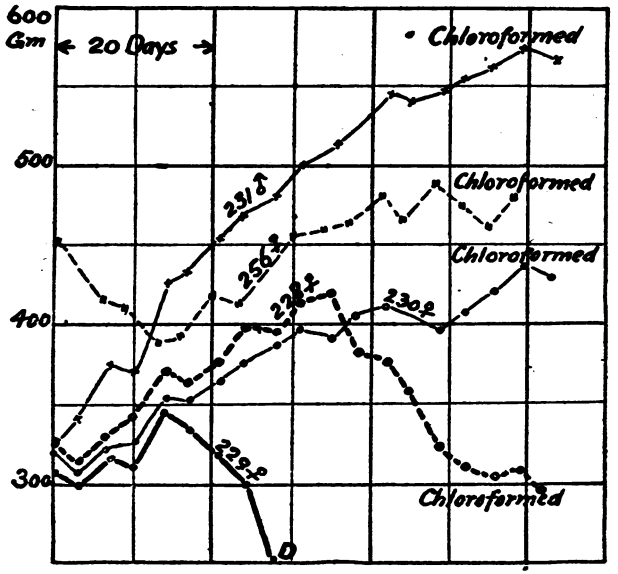

CHART 9.—Pigs fed 20 c. c. daily of a mixture of spray process skim milk powder and water (30 grams powder to 120 c. c. water), with the addition of one-eighth orange, daily. Absence of butter fat did not affect animals' growth in general. Basal diet of hay and oats. No other food. No. 229 showed "incipient scurvy." (See Table XI for symptoms and necropsy findings.)

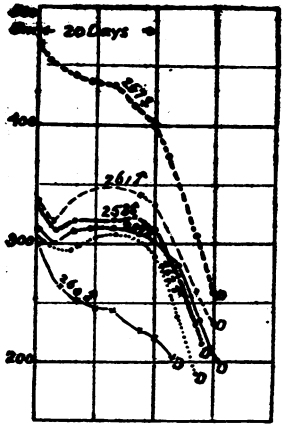

CHART 10.

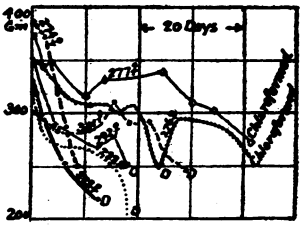

CHART 11.

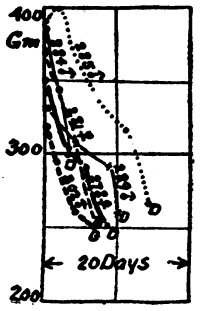

CHART 12.

CHART 10.—Control pigs fed hay, oats, and water. No other food. Pigs soon developed scurvy and died. Experiment was made to test the hay and oats for antiscorbutic. (See Table XIV for symptoms and necropsy findings.)

CHART 11.—Pigs fed local market pasteurized milk plus 7 grams oats daily. Each animal given 75 c. c. milk daily. Food consumption low. All pigs developed scurvy. (See Table XVII for food intake, symptoms, and necropsy findings.)

CHART 12.—Pigs fed local market pasteurized milk only. No other food. 75 c. c. was given daily, but consumption was very low. Death soon occurred. Nos. 302, 284, and 281 did not show scurvy, but probably died of pneumonia. (See Table XVII for food intake, symptoms, and necropsy findings.)

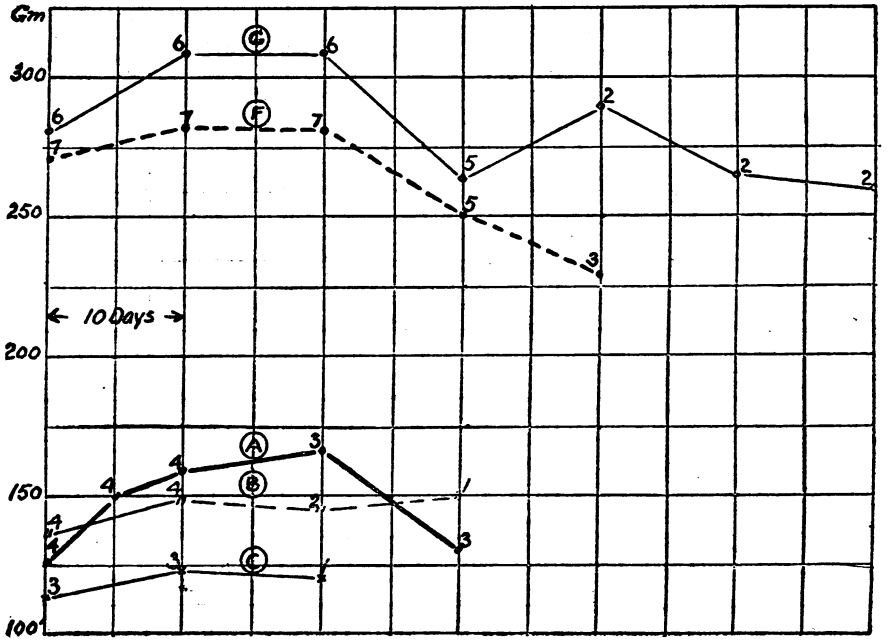

CHART 13.

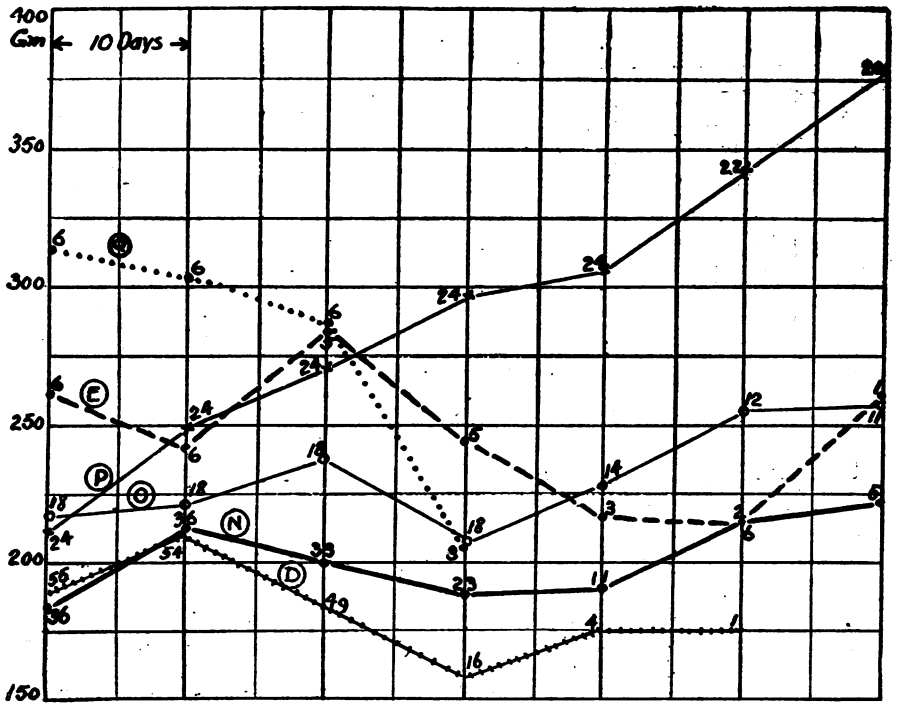

CHART 14.

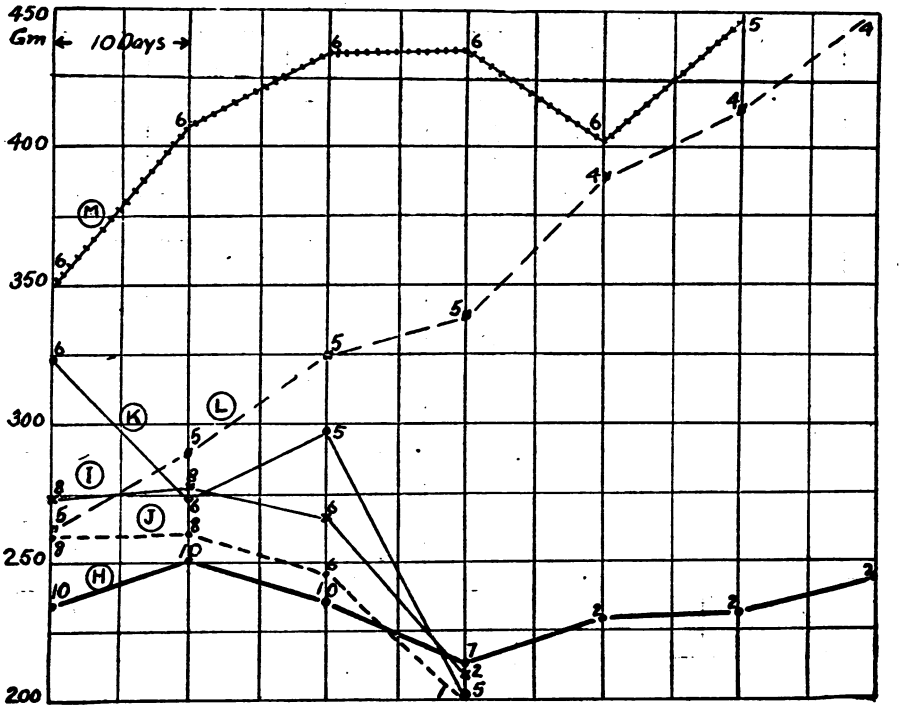

CHART 15.

(M) Guinea pigs fed upon a milk made from same powder as (L), but proportions used were 1 part of powder to 8 parts water. Hay and oats were given in addition *ad lib.*

(N) Guinea pigs fed upon a pasteurized milk obtained daily on the local market. Hay and oats given in addition *ad lib.*

(O) Guinea pigs fed upon a certified milk obtained daily on the local market. Hay and oats given in addition *ad lib.*

(P) Guinea pigs fed upon a raw milk obtained fresh daily from the farm of the U. S. Department of Agriculture. Hay and oats given in addition *ad lib.*

(Q) Guinea pigs run as controls without any milk, but given the basal diet of hay and oats *ad lib.* and water.

These charts are the composite growth charts of all animals fed by us, with the exception of special animals put upon orange juice and those not given hay and oats *ad lib.* The composite charts are carried only as far as the sixtieth day, as a great many of the animals were discontinued about that time. One set was chloroformed about the fiftieth day. Where the curve does not run as far as the sixtieth day, it indicates that all the animals had died. The weights were averaged at each 10-day period. The figures along the curves at these periods indicate the number of animals on that milk living at that period. In a few cases a small proportion of the animals lived longer than the rest, and the average growth curve thus increased again. These composite charts show that a fair increase in growth was obtained with only two milks—the raw milk from the U. S. Department of Agriculture and the milks made up from the roller process milk powder especially made for babies. Whole milk powder and skim milk powder made by the roller process gave no better growth than the spray process milk powders or the pasteurized milk. The poor showing made by the certified milk may be due to the age of the milk, as it probably was at least 12 hours older than the raw milk from the U. S. Department of Agriculture when fed. As regards the food of the cows, the company furnishing this milk claimed to feed more green stuff than the herd of the Agricultural Department was receiving.

The one particular brand of the roller-process milk, made especially for babies, attracted the animals and prevented scurvy in general. The other brands of dry milk of the same company (whole and skim) were no better than the spray process powders in this respect. What the particular virtue is in this brand we can not say, as it would seem from the claim of the other company that just as great care is exercised in the manufacture of their milk powder as in that of this brand. Our results in general show that the process of drying has a destructive effect upon the antiscorbutic vitamine, but that

pasteurization has a similar effect. However, certified milk as put upon the market by a first-class dairy is not far superior to reconstructed and pasteurized milks, and in fact did not seem to give as good results as the roller-process dried milk. But the results all depend upon the amount consumed, and the animals, when left to select their food voluntarily, will not take as much of one milk as of another. If it is the presence of the antiscorbutic vitamine which leads them to consume more, or merely the taste, odor, etc., of the milk, then the raw milk of the Department of Agriculture which we fed the day it was milked gave the best results.

But judging from the number of scurvy cases obtained in the large number of animals kept under observation by us it would appear that no milk is trustworthy to prevent scurvy when the animal is not forced to consume large amounts daily. Orange juice must be added or some other substance high in antiscorbutic power. A few experiments carried out by us feeding milk alone, or milk plus yeast or a small amount of oats, showed that the animals soon came down with scurvy.

The possible small amount of fat-soluble A present in the diet when guinea pigs consumed less than 40 c. c. of milk daily might lead to the conclusion that the animals were rachitic rather than scorbutic. In order to decide this question, guinea pigs were given 20–40 c. c. daily of milk plus the basal ration of hay and oats plus one-eighth orange daily, with the result that good growth was obtained and scurvy was prevented. No signs of rickets were present.

Summary.

The antiscorbutic vitamine in fresh milk is not very great and is injured by the process of drying.

Scurvy can not be determined positively except by a histological examination of the costochondral junctions.

It is not wise to depend upon certified milk alone to prevent scurvy. Strong antiscorbutic material, like orange juice, should be added. One particular brand of dried milk powder appears to have retained a large amount of its original antiscorbutic substance. This is not due to the process used, as other brands made by the same process by the same company are deficient in antiscorbutic substance. It may be due to the extreme care in preparing this particular brand.

Acknowledgments.—Thanks of the authors are due Dr. Carl Voegtlin, Chief of the Division of Pharmacology, Hygienic Laboratory, under whose direction this work was undertaken and who aided in many

ways during its progress. Our thanks are also due Mr. C. G. Remsburg, Mr. H. L. Shoub, and Mr. O. H. Schunk, of the Division of Chemistry of the Laboratory, for chemical control of the milks; also to Mr. J. W. Thompson and Mr. E. G. Hendrick for aid rendered during the work.

ACT PROVIDING FOR ERECTION OF WASHROOMS FOR EMPLOYEES HELD INVALID.[1]

Section 1 of chapter 20 of the 1920 acts of Kentucky required certain employers to provide and maintain washrooms when 30 per cent of the employees had voted to notify the employer to erect such washroom. This act has been declared unconstitutional by the Court of Appeals of Kentucky on the ground of its being a delegation of legislative power in violation of section 60 of the State constitution.

DEATHS DURING WEEK ENDED APRIL 15, 1922.

Summary of information received by telegraph from industrial insurance companies for week ended April 15, 1922, and corresponding week, 1921. (From the Weekly Health Index, April 18, 1922, issued by the Bureau of the Census, Department of Commerce.)

	Week ended Apr. 15, 1922.	Corresponding week, 1921.
Policies in force	47,723,535	45,995,647
Number of death claims	9,123	8,249
Death claims per 1,000 policies in force, annual rate	10.0	9.4

[1] Commonwealth *v.* Beaver Dam Coal Co., 237 S. W. 1086.

Deaths from all causes in certain large cities of the United States during the week ended April 15, 1922, infant mortality, annual death rate, and comparison with corresponding week of 1921. (From the Weekly Health Index, April 18, 1922, issued by the Bureau of the Census, Department of Commerce.)

City.	Estimated population July 1, 1922.	Week ended Apr. 15, 1922. Total deaths.	Week ended Apr. 15, 1922. Death rate.[1]	Annual death rate per 1,000, corresponding week, 1921.	Deaths under 1 year. Week ended Apr. 15, 1922.	Deaths under 1 year. Corresponding week, 1921.	Infant mortality rate, week ended Apr. 15, 1922.[2]
Total	27,855,509	7,356	13.8	12.7	1,116	936	.....
Akron, Ohio	[3] 208,435	39	9.8	9.6	10	11	106
Albany, N. Y.	116,223	47	21.1	18.6	4	4	90
Atlanta, Ga.	220,047	73	17.3	13.6	2	8	.....
Baltimore, Md.	762,222	209	13.7	13.8	20	17	56
Birmingham, Ala.	191,017	63	17.2	14.6	7	8	.....
Boston, Mass.	764,017	259	17.7	14.7	40	33	107
Bridgeport, Conn.	[3] 143,555	31	11.3	12.5	4	8	50
Buffalo, N. Y.	528,163	167	16.5	14.5	23	33	91
Cambridge, Mass.	110,944	25	11.8	10.9	2	3	37
Camden, N. J.	121,915	23	9.8	13.1	4	5	61
Chicago, Ill.	2,833,288	631	11.6	11.4	136	90	.....
Cincinnati, Ohio	404,865	98	12.6	14.0	17	10	113
Cleveland, Ohio	854,003	204	12.5	10.5	35	28	90
Columbus, Ohio	253,455	70	14.4	12.5	6	6	63
Dallas, Tex.	171,974	42	12.7	9.5	6	3	.....
Dayton, Ohio	161,824	28	9.0	12.2	4	8	68
Denver, Colo.	267,591	96	18.7	13.3	11	8	.....
Detroit, Mich.	[3] 993,678	223	11.7	10.4	45	44	87
Fall River, Mass.	120,790	36	15.5	16.9	14	7	196
Fort Worth, Tex.	114,717	17	7.7	.....	3	.....	.....
Grand Rapids, Mich.	143,572	25	9.1	9.6	7	6	117
Houston, Tex.	150,057	39	13.5	10.1	8	6	.....
Indianapolis, Ind.	333,257	86	13.5	14.3	8	15	61
Jersey City, N. J.	305,911	94	16.0	13.6	21	14	134
Kansas City, Kans.	105,688	26	12.8	10.0	4	4	92
Kansas City, Mo.	343,988	96	14.6	15.2	11	11	.....
Los Angeles, Calif.	634,866	188	15.4	11.4	19	12	79
Louisville, Ky.	236,877	73	16.1	18.3	10	6	108
Lowell, Mass.	114,423	40	18.2	11.5	11	2	185
Memphis, Tenn.	167,862	64	19.9	23.6	3	10	.....
Milwaukee, Wis.	476,603	89	9.7	9.7	20	16	98
Minneapolis, Minn.	400,970	74	9.6	11.4	15	11	82
Nashville, Tenn.	122,832	60	25.5	12.0	6	3	.....
New Bedford, Mass.	127,542	38	15.5	14.6	7	5	104
New Haven, Conn.	169,987	48	14.7	9.4	8	3	98
New Orleans, La.	399,616	110	14.4	15.2	16	14	.....
New York, N. Y.	5,839,746	1,577	14.1	12.6	253	182	98
Newark, N. J.	431,792	108	13.0	11.2	24	18	106
Norfolk, Va.	124,915	33	13.8	14.6	4	4	71
Oakland, Calif.	233,279	51	11.4	11.7	5	8	63
Omaha, Nebr.	200,739	62	16.1	14.3	5	6	54
Paterson, N. J.	138,521	30	11.3	9.9	3	0	46
Philadelphia, Pa.	1,894,500	562	15.5	13.5	73	71	87
Pittsburgh, Pa.	607,902	164	14.1	14.6	29	18	93
Portland, Oreg.	269,240	65	12.6	12.4	2	2	20
Providence, R. I.	241,011	63	13.6	17.8	7	12	55
Richmond, Va.	178,365	56	16.4	13.9	9	5	110
Rochester, N. Y.	311,548	90	15.1	12.0	18	7	138
St. Louis, Mo.	795,008	200	13.1	11.2	17	24	.....
St. Paul, Minn.	239,836	54	11.7	13.4	3	6	28
Salt Lake City, Utah	123,918	42	17.7	9.4	7	5	104
San Francisco, Calif.	529,792	158	15.6	13.5	9	8	52
Seattle, Wash.	[3] 315,312	59	9.8	11.2	8	7	68
Spokane, Wash.	104,445	28	14.0	14.0	6	6	128
Springfield, Mass.	140,052	37	13.8	11.1	8	5	119
Syracuse, N. Y.	181,012	48	13.8	13.8	13	11	156
Toledo, Ohio	260,717	51	10.2	16.4	4	15	39
Trenton, N. J.	125,075	42	17.5	9.8	6	5	92
Washington, D. C.	[3] 437,571	141	16.8	15.7	17	18	97
Wilmington, Del.	115,568	30	13.5	10.6	3	3	58
Worcester, Mass.	188,449	33	9.1	11.6	6	4	65
Yonkers, N. Y.	105,422	29	14.3	13.1	5	4	104
Youngstown, Ohio	144,970	21	7.6	10.8	5	9	66

[1] Annual rate per 1,000 population.
[2] Deaths under 1 year per 1,000 births—an annual rate based on deaths under 1 year for the week and astimated births for 1921. Cities left blank are not in the registration area for births.
[3] Enumerated population Jan. 1, 1920.

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 STATE SUMMARIES.

Telegraphic Reports for Week Ended April 22, 1922.

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

ALABAMA.

	Cases.
Cerebrospinal meningitis	1
Chicken pox	37
Diphtheria	5
Hookworm disease	242
Influenza	36
Malaria	15
Pellagra	3
Pneumonia	6
Poliomyelitis	1
Scabies	22
Scarlet fever	8
Smallpox	13
Tuberculosis	8
Typhoid fever	15

ARKANSAS.

Chicken pox	11
Diphtheria	6
Influenza	78
Malaria	37
Measles	25
Pellagra	8
Scarlet fever	3
Smallpox	3
Tuberculosis	11
Typhoid fever	4
Whooping cough	3

CALIFORNIA.

Cerebrospinal meningitis:	
San Francisco	1
Santa Ana	1
Diphtheria	98
Influenza	90
Leprosy—Sacramento	1
Measles	19
Rabies—Los Angeles	1

CALIFORNIA—continued.

	Cases.
Scarlet fever	76
Smallpox	23
Typhoid fever	5

COLORADO.

(Exclusive of Denver.)

Chicken pox	10
Diphtheria	12
Impetigo contagiosa	1
Influenza	30
Measles	4
Mumps	2
Pneumonia	7
Scarlet fever	15
Smallpox	10
Tuberculosis	41
Typhoid fever	2
Whooping cough	26

CONNECTICUT.

Cerebrospinal meningitis	1
Chicken pox	41
Conjunctivitis (infectious)	3
Diphtheria:	
Bridgeport	8
Hartford	11
New Haven	10
Scattering	29
German measles	15
Influenza	34
Lethargic encephalitis	3
Malaria	1
Measles:	
Cheshire	9
East Haven	12
Hartford	61

CONNECTICUT—continued.

Measles—Continued.	Cases.
New Haven	59
New London	14
Norwich	9
Stamford	17
Scattering	45
Mumps	9
Ophthalmia neonatorum	1
Pneumonia (lobar)	38
Scarlet fever	69
Smallpox	21
Tuberculosis (all forms)	51
Typhoid fever	4
Whooping cough	32

DELAWARE.

Chicken pox	1
Diphtheria	1
Malaria	1
Measles	3
Pneumonia	2
Scarlet fever:	
Wilmington	23
Scattering	5
Tuberculosis	10

FLORIDA.

Diphtheria	15
Influenza	21
Malaria	13
Pneumonia	3
Scarlet fever	2
Smallpox	5
Typhoid fever	9

GEORGIA.

Cerebrospinal meningitis	1
Chicken pox	20
Conjunctivitis (infectious)	1
Diphtheria	1
Dysentery (amebic)	1
Dysentery (bacillary)	8
Hookworm disease	6
Influenza	100
Malaria	13
Measles	4
Pneumonia	18
Scarlet fever	6
Septic sore throat	4
Smallpox	13
Tuberculosis (pulmonary)	8
Typhoid fever	11
Whooping cough	16

ILLINOIS.

Cerebrospinal meningitis:	
Chicago	3
Scattering	3
Diphtheria:	
Chicago	100
Scattering	51
Influenza	37
Lethargic encephalitis—Chicago	3
Pneumonia	329
Poliomyelitis—Chicago	1

[1] Week ended Friday.

ILLINOIS—continued.

Scarlet fever:	Cases.
Chicago	81
Scattering	104
Smallpox	41
Typhoid fever	9
Whooping cough	88

INDIANA.

Diphtheria	29
Rabies in animals:	
Marion County	2
Vigo County	1
Scarlet fever	42
Smallpox	50

IOWA.

Diphtheria	16
Scarlet fever	35
Smallpox	15

KANSAS.

Cerebrospinal meningitis	1
Chicken pox	80
Diphtheria	46
German measles	1
Influenza	24
Malaria	1
Measles	7
Mumps	23
Pellagra	1
Pneumonia	37
Scarlet fever	65
Smallpox	16
Trachoma	5
Trichinosis	1
Tuberculosis	27
Typhoid fever	8
Whooping cough	41

LOUISIANA.

Diphtheria	12
Influenza	139
Scarlet fever	8
Smallpox	7
Typhoid fever	10
Whooping cough	16

MARYLAND.[1]

Chicken pox	86
Diphtheria	23
Dysentery	1
German measles	4
Influenza	119
Malaria	3
Measles	315
Mumps	108
Ophthalmia neonatorum	1
Pellagra	1
Pneumonia (all forms)	113
Scarlet fever	52
Septic sore throat	1
Smallpox	1
Tuberculosis	78
Typhoid fever	7
Whooping cough	29

MASSACHUSETTS.

	Cases.
Cerebrospinal meningitis	5
Chicken pox	103
Conjunctivitis (suppurative)	7
Diphtheria	129
German measles	16
Influenza	17
Lethargic encephalitis	13
Measles	945
Mumps	117
Ophthalmia neonatorum	16
Pneumonia (lobar)	101
Poliomyelitis	1
Scarlet fever	174
Septic sore throat	1
Trachoma	1
Tuberculosis	167
Typhoid fever	4
Whooping cough	72

MINNESOTA.

Cerebrospinal meningitis	1
Chicken pox	9
Diphtheria	51
Influenza	207
Measles	89
Pneumonia	2
Scarlet fever	114
Smallpox	57
Trachoma	1
Tuberculosis	70
Typhoid fever	5
Whooping cough	11

MISSISSIPPI.

Diphtheria	10
Scarlet fever	3
Smallpox	10
Typhoid fever	7

MISSOURI.

Cerebrospinal meningitis	1
Chicken pox	20
Diphtheria	42
Epidemic sore throat	2
Influenza	13
Measles	13
Mumps	13
Pneumonia	17
Rabies	1
Scarlet fever	35
Smallpox	6
Tuberculosis	31
Typhoid fever	4
Whooping cough	18

MONTANA.

Diphtheria	16
Rocky Mountain spotted or tick fever—Delphia	1
Scarlet fever	2
Smallpox	14

NEBRASKA.

Chicken pox	17
Diphtheria	3
German measles	2
Influenza	8

NEBRASKA—continued.

Measles:	Cases.
Knox County	9
Lincoln	37
Omaha	33
Scattering	8
Mumps	13
Pneumonia	1
Scarlet fever	12
Smallpox	10
Tuberculosis	1
Whooping cough	2

NEW JERSEY.

Cerebrospinal meningitis	3
Chicken pox	150
Diphtheria	122
Influenza	26
Measles	986
Pneumonia	142
Scarlet fever	202
Typhoid fever	11
Whooping cough	72

NEW MEXICO.

Chicken pox	1
Conjunctivitis	7
Diphtheria	28
Influenza	39
Measles	1
Mumps	1
Pneumonia	6
Scarlet fever	9
Smallpox	5
Tetanus	1
Trachoma	1
Tuberculosis	22
Typhoid fever	2
Whooping cough	5

NEW YORK.

(Exclusive of New York City.)

Cerebrospinal meningitis	2
Diphtheria	138
Influenza	145
Lethargic encephalitis	1
Measles	601
Pneumonia	340
Poliomyelitis	1
Scarlet fever	225
Smallpox	1
Tetanus	3
Trachoma	1
Typhoid fever	16
Whooping cough	133

NORTH CAROLINA.

Chicken pox	134
Diphtheria	22
German measles	1
Measles	36
Scarlet fever	17
Septic sore throat	1
Smallpox	20
Typhoid fever	10
Whooping cough	128

OREGON.

	Cases.
Chicken pox	12
Diphtheria:	
Portland	10
Scattering	10
Influenza	14
Measles	3
Mumps	5
Pneumonia	[1] 3
Scarlet fever	6
Septic sore throat	4
Smallpox:	
Jackson County	15
Portland	13
Scattering	8
Tuberculosis	9
Typhoid fever	3

SOUTH DAKOTA.

Chicken pox	3
Diphtheria	3
Measles	2
Scarlet fever	9
Smallpox	6
Tuberculosis	3
Typhoid fever	2
Whooping cough	3

TEXAS.

Chicken pox	39
Diphtheria	18
Influenza	162
Measles	107
Pellagra	5
Pneumonia	15
Scarlet fever	17
Smallpox	118

VERMONT.

Chicken pox	8
Diphtheria	4
Measles	17
Mumps	8
Pneumonia	1
Scarlet fever	26
Whooping cough	9

WASHINGTON.

Cerebrospinal meningitis—Chelan County	1
Chicken pox	44
Diphtheria:	
Wenatchee	57
Scattering	27
Measles	7
Mumps	55
Pneumonia	2
Poliomyelitis—Wenatchee	1
Scarlet fever	23
Smallpox	41
Tuberculosis	38
Typhoid fever	2
Whooping cough	21

[1] Deaths.

WASHINGTON—continued.

WEST VIRGINIA.

Chicken pox	7
Diphtheria	4
Influenza	13
Measles:	
Martinsburg	18
Moundsville	10
Scattering	5
Scarlet fever	12
Smallpox	1
Typhoid fever	2

WISCONSIN.

Milwaukee:	
Cerebrospinal meningitis	2
Chicken pox	45
Diphtheria	11
German measles	9
Influenza	3
Lethargic encephalitis	2
Measles	2
Pneumonia	15
Scarlet fever	9
Smallpox	2
Tuberculosis	16
Whooping cough	47
Scattering:	
Cerebrospinal meningitis	1
Chicken pox	59
Diphtheria	41
German measles	12
Influenza	569
Lethargic encephalitis	1
Measles	23
Pneumonia	10
Scarlet fever	71
Smallpox	20
Tuberculosis	32
Typhoid fever	3
Whooping cough	37

WYOMING.

Chicken pox	3
Influenza	5
Measles	2
Pneumonia	3
Rocky Mountain spotted or tick fever:	
Natrona County	1
Scarlet fever	1
Smallpox	9
Trachoma	1
Tuberculosis	5
Typhoid fever	6
Whooping cough	4

Delayed Reports For Week Ended April 15, 1922.

DISTRICT OF COLUMBIA.

	Cases.
Chicken pox	28
Diphtheria	5
Influenza	5
Lethargic encephalitis	1
Measles	15
Scarlet fever	9
Smallpox	2
Tuberculosis	31
Typhoid fever	1
Whooping cough	8

KENTUCKY.

Chicken pox	5
Diphtheria	5
German measles	2
Influenza:	
Allen County	26
Jefferson County	28
Laurel County	25
Scattering	28

KENTUCKY—continued.

	Cases.
Measles:	
Fayette County	18
Franklin County	14
Jefferson County	12
Scott County	11
Scattering	4
Mumps	9
Pneumonia	36
Scabies	1
Scarlet fever	3
Septic sore throat	1
Smallpox	2
Trachoma	7
Tuberculosis:	
Jefferson County	51
Scattering	10
Typhoid fever	2
Whooping cough	2

SUMMARY OF CASES REPORTED MONTHLY BY STATES.

The following summary of monthly State reports is published weekly and covers only those States from which reports are received during the current week:

State.	Cerebrospinal meningitis.	Diphtheria.	Influenza.	Malaria.	Measles.	Pellagra.	Poliomyelitis.	Scarlet fever.	Smallpox.	Typhoid fever.
1921.										
California (March)	9	806	24,332	9	105	3	6	609	253	48
Colorado (January)	.....	259	8	.....	35	.....	.....	214	200	15
Idaho (March)	.....	8	663	.....	4	.....	.....	31	22	2
Illinois (March)	22	1,198	5,487	19	2,162	.....	9	1,380	211	61
Indiana (March)	5	305	662	.....	178	.....	2	438	155	23
Louisiana (March)	1	58	12,472	23	57	9	1	28	72	46
Maryland (March)	1	179	2,690	4	1,027	1	.....	411	.....	20
Michigan (March)	.....	646	796	.....	1,886	.....	5	1,009	143	76
Minnesota (March)	4	251	771	.....	177	.....	3	840	268	23
North Carolina (March)	4	142	.....	.....	148	.....	3	110	306	23
Oklahoma (March)	.....	11	418	.....	1	1	.....	20	100	11
Rhode Island (March)	.....	85	158	.....	8	.....	.....	37	3	3
South Carolina (March)	3	97	97	5	6	5	.....	4	48	15
South Dakota (March)	.....	44	89	.....	20	.....	1	83	97	4

RECIPROCAL NOTIFICATION.

Minnesota—March, 1922.

Cases of communicable diseases referred during March, 1922 to other State health departments by the Department of Health of the State of Minnesota.

Disease and locality of notification.	Referred to health authority of—	Why referred.
Tuberculosis:		
Thomas Hospital, Minneapolis, Hennepin County.	Aberdeen, Brown County, S. Dak.	Improved; inactive case; left hospital for home.
Sivertsen Clinic, Minneapolis, Hennepin County.	Estherville, Emmet County, Iowa.	Patient examined at clinic and found to be moderately advanced case.
Mayo Clinic, Rochester, Olmsted County.	Springfield, Sangamon County, Ill.	Three advanced cases, one doubtfully advanced, two moderately advanced, one incipient, and one doubtfully incipient, left clinic for their homes.
	Mason City, Cerro Gordo County, Iowa.	
	Menlo, Route No. 2, Guthrie County, Iowa.	
	Detroit, Wayne County, Mich.	
	Janesville, Rock County, Wis.	
	Gray Bull, Big Horn County, Wyo.	
	Winnipeg, Manitoba, Canada.	
	Shawville, Quebec, Canada.	
U. S. Veterans' Hospital No. 65, St. Paul, Ramsey County.	Kalispell, Flathead County, Mont.	Two inactive improved cases left hospital for their homes.
	Enderlin, Ransom County, N. Dak.	
	Fort Lyons, Colo.	Twenty-five active cases and one inactive case transferred from U. S. Veterans' Hospital to other sanatoriums.
	Denver, Denver County, Colo.	
	Hot Springs, Fall River County, S. Dak.	
Sand Beach Sanatorium, Becker County.	Fargo, Cass County, N. Dak.	Incipient case left sanatorium for home.
Oronoco Sanatorium, Olmsted County.	Anaconda, Deerlodge County, Mont.	Patient left sanatorium for home.

CITY REPORTS FOR WEEK ENDED APRIL 8, 1922.

ANTHRAX.

City.	Cases.	Deaths.
Pennsylvania:		
Philadelphia	1	.....

CEREBROSPINAL MENINGITIS.

The column headed "Median for previous years" gives the median number of cases reported during the corresponding weeks of the years 1915 to 1921, inclusive. In instances in which data for the full seven years are incomplete, the median is that for the number of years for which information is available.

City.	Median for previous years.	Week ended Apr. 8, 1922.		City.	Median for previous years.	Week ended Apr. 8, 1922.	
		Cases.	Deaths.			Cases.	Deaths.
Arkansas:				Michigan:			
Fort Smith	.....	.....	1	Grand Rapids	0	.....	1
California:				Minnesota:			
Los Angeles	1	2	.....	Duluth	0	1	.....
San Francisco	0	1	.....	Missouri:			
Connecticut:				St. Louis	1	1	1
New Britain	0	2	.....	New Jersey:			
Stonington	0	1	1	Garfield	0	2	1
Florida:				Newark	1	.....	1
Tampa	.....	.....	1	New York:			
Georgia:				Albany	0	1	.....
Atlanta	0	.....	1	New York	10	6	3
Idaho:				Ohio:			
Pocatello	.....	.....	1	Martins Ferry	.....	1	1
Illinois:				Oklahoma:			
Chicago	3	3	1	Tulsa	0	1	1
Peoria	0	.....	2	Pennsylvania:			
Indiana:				Philadelphia	3	1	2
East Chicago	.....	.....	1	Washington:			
Maryland:				Spokane	0	1	.....
Baltimore	1	1	1				
Massachusetts:							
Lynn	0	2	2				
Springfield	0	.....	1				

CITY REPORTS FOR WEEK ENDED APRIL 8, 1922—Continued.

DIPHTHERIA.

See p. 1035; also Telegraphic weekly reports from States, p. 1023, and Monthly summaries by States, p. 1027.

INFLUENZA.

City.	Cases. Week ended Apr. 9, 1921.	Cases. Week ended Apr. 8, 1922.	Deaths, week ended Apr. 8, 1922.
Alabama:			
Birmingham	.....	.....	4
Montgomery	.....	.....	1
Arkansas:			
Little Rock	.....	3	.....
California:			
Alameda	1	1	.....
Berkeley	11	.....	.....
Los Angeles	5	37	1
Oakland	1	3	.....
Pasadena	.....	6	.....
Sacramento	1	.....	1
San Diego	.....	9	2
San Francisco	8	8	5
Stockton	2	1	.....
Colorado:			
Denver	.....	.....	6
Connecticut:			
Bridgeport	1	2	2
Fairfield	.....	.....	1
Hartford	.....	.....	1
Meriden	.....	1	.....
New Britain	2	9	1
New London	.....	3	.....
District of Columbia:			
Washington	2	1	.....
Florida:			
Tampa	.....	14	.....
Georgia:			
Atlanta	.....	10	5
Augusta	.....	5	.....
Brunswick	8	.....	.....
Rome	.....	26	.....
Illinois:			
Bloomington	.....	.....	1
Chicago	16	42	10
Evanston	3	.....	.....
Springfield	.....	5	.....
Indiana:			
Indianapolis	.....	.....	2
Richmond	1	.....	.....
Iowa:			
Burlington	.....	1	1
Kentucky:			
Louisville	.....	3	.....
Louisiana:			
New Orleans	.....	6	2
Maine:			
Bangor	3	.....	.....
Biddeford	2	.....	1
Lewiston	1	.....	.....
Portland	.....	1	.....
Maryland:			
Baltimore	19	26	3
Cumberland	.....	2	.....
Massachusetts:			
Attleboro	.....	2	.....
Boston	5	4	1
Brookline	.....	1	.....
Cambridge	.....	1	.....
Chelsea	1	.....	.....
Everett	5	.....	.....
Fall River	.....	.....	1
Haverhill	1	4	.....
Holyoke	.....	1	1
Malden	.....	1	.....
Pittsfield	.....	.....	1
Saugus	4	3	.....
Massachusetts—Contd.			
Somerville	4	2	.....
Weymouth	.....	.....	1
Worcester	1	.....	.....
Michigan:			
Detroit	1	6	5
Grand Rapids	.....	2	.....
Highland Park	.....	2	.....
Jackson	.....	1	1
Marquette	.....	1	.....
Minnesota:			
Minneapolis	6	.....	.....
St. Paul	.....	7	1
Missouri:			
Kansas City	.....	2	3
St. Joseph	.....	.....	1
St. Louis	1	5	2
Montana:			
Missoula	.....	1	.....
Nebraska:			
Omaha	1	.....	.....
Nevada:			
Reno	.....	4	1
New Jersey:			
Belleville	5	.....	.....
Clifton	1	.....	.....
Garfield	2	1	.....
Harrison	2	.....	.....
Jersey City	2	.....	.....
Kearny	12	3	.....
Newark	19	21	.....
Passaic	3	.....	.....
Paterson	3	.....	.....
Plainfield	.....	.....	1
Trenton	1	2	.....
West Orange	.....	1	.....
New York:			
Albany	5	16	.....
Binghamton	2	.....	.....
Buffalo	1	11	2
Cohoes	2	.....	.....
Glens Falls	.....	.....	1
Jamestown	.....	2	.....
New York	179	59	14
North Tonawanda	8	.....	.....
Poughkeepsie	.....	2	.....
Rochester	1	.....	2
Saratoga Springs	.....	10	1
Syracuse	.....	1	1
Watertown	.....	.....	1
North Carolina:			
Charlotte	.....	.....	1
Greensboro	.....	.....	1
Salisbury	.....	.....	1
Ohio:			
Ashtabula	.....	6	.....
Cincinnati	.....	1	2
Cleveland Heights	.....	.....	1
Columbus	.....	10	2
Hamilton	.....	.....	1
Newark	.....	.....	1
Toledo	.....	.....	1
Oregon:			
Portland	.....	.....	1
Pennsylvania:			
Philadelphia	2	9	9
Rhode Island:			
Providence	.....	.....	3

CITY REPORTS FOR WEEK ENDED APRIL 8, 1922—Continued.

INFLUENZA—Continued.

City.	Cases. Week ended Apr. 9, 1921.	Cases. Week ended Apr. 8, 1922.	Deaths, week ended Apr. 8, 1922.
South Carolina:			
Greenville		12	
South Dakota:			
Sioux Falls	3		
Tennessee:			
Nashville			1
Texas:			
Dallas	2	2	4
El Paso			3
Fort Worth		1	1
Houston		20	1
Virginia:			
Danville			2
Petersburg			1
Richmond			1
Roanoke	6		
West Virginia:			
Charleston		5	
Clarksburg			1
Huntington			1
Wisconsin:			
Eau Claire		3	
Green Bay		2	
Manitowoc		4	
Milwaukee		4	
Sheboygan		1	
Superior			1
Wyoming:			
Casper		11	

LEPROSY.

City.	Cases.	Deaths.
Illinois:		
Decatur	1	
Louisiana:		
New Orleans	2	

LETHARGIC ENCEPHALITIS.

Alabama:		
Mobile		1
Illinois:		
Oak Park	1	
New Jersey:		
Jersey City	1	
Oregon:		
Portland	2	

MALARIA.

Arkansas:		
Little Rock	1	
Florida:		
Tampa	1	
Georgia:		
Albany	1	
Maryland:		
Baltimore	1	
Michigan:		
Detroit	1	
New Jersey:		
Newark	1	
Tennessee:		
Memphis	1	

MEASLES.

See p. 1035; also Telegraphic weekly reports from States. p. 1023, and Monthly summaries by States, p.1027.

PELLAGRA.

City.	Cases.	Deaths.
Alabama:		
Birmingham	1	
Texas:		
Dallas		1
Fort Worth	1	1
Virginia:		
Portsmouth		1
Richmond		1

CITY REPORTS FOR WEEK ENDED APRIL 8, 1922—Continued.

PNEUMONIA (ALL FORMS).

City.	Cases.	Deaths.
Alabama:		
Anniston		1
Birmingham		9
Montgomery		1
Arkansas:		
Little Rock	1	
California:		
Alameda		2
Eureka		1
Los Angeles	43	12
Oakland	6	4
Riverside		1
Sacramento		1
San Bernardino		1
San Diego		1
San Francisco	13	7
Santa Ana	1	
Stockton		2
Colorado:		
Denver		1
Connecticut:		
Bridgeport		4
Bristol	3	
Greenwich	1	
Hartford	5	2
Meriden	6	1
New Britain	8	4
New London		3
Stonington		2
Delaware:		
Wilmington		7
District of Columbia:		
Washington		20
Florida:		
Tampa		1
Georgia.		
Atlanta		16
Augusta	2	
Rome	1	
Savannah		2
Illinois:		
Bloomington		2
Centralia	1	
Chicago	280	88
Cicero		2
Decatur	3	2
East St. Louis		4
Elgin	1	
Evanston	3	
Freeport		1
Galesburg	3	
Jacksonville		2
La Salle		1
Mattoon	1	
Oak Park	6	2
Pekin	1	
Peoria		4
Springfield	8	6
Indiana:		
Anderson		2
East Chicago		2
Fort Wayne		6
Gary		2
Hammond		3
Indianapolis		11
Kokomo		2
Muncie		1
South Bend		3
Terre Haute		2
Iowa:		
Burlington	8	2
Council Bluffs		1
Kansas:		
Fort Scott		1
Hutchinson	2	
Kansas City	8	
Lawrence	2	
Wichita		8
Kentucky:		
Covington		5
Lexington		1
Louisville	27	12
Owensboro	1	
Louisiana:		
New Orleans		5
Maine:		
Auburn		1
Bath	2	1
Biddeford		1
Lewiston		2
Portland		4
Maryland:		
Baltimore	71	39
Cumberland	1	
Massachusetts:		
Arlington	4	2
Attleboro		1
Beverly	1	
Boston		30
Brookline		1
Cambridge		6
Chelsea	6	2
Chicopee		1
Clinton	2	1
Easthampton	5	
Fall River		5
Haverhill	2	
Holyoke		9
Lawrence	1	
Lowell		3
Lynn	4	3
Malden		1
Melrose		3
Methuen	1	
New Bedford		7
Newton		5
North Adams	3	1
Pittsfield		2
Quincy	2	
Salem		2
Saugus		1
Somerville	4	1
Springfield	5	3
Taunton		1
Wakefield	1	
Waltham	1	
Watertown	1	
Webster		2
West Springfield		1
Worcester		7
Michigan:		
Benton Harbor	2	
Detroit	105	42
Flint		5
Grand Rapids	9	5
Hamtramck	5	1
Highland Park	5	1
Ironwood	2	
Jackson	3	1
Kalamazoo	3	2
Pontiac		2
Port Huron	7	
Sault Ste. Marie	3	1
Minnesota:		
Austin		1
Duluth		1
Minneapolis		4
St. Paul		10
Missouri:		
Kansas City		17
St. Joseph		4
Springfield		1
Montana:		
Anaconda		1
Great Falls		4
Nebraska:		
Omaha		11

CITY REPORTS FOR WEEK ENDED APRIL 8, 1922—Continued.

PNEUMONIA (ALL FORMS)—Continued.

City.	Cases.	Deaths.
Nevada:		
Reno	4	2
New Hampshire:		
Dover		2
New Jersey:		
Belleville	4	
Bloomfield	1	
Elizabeth		4
Englewood	3	
Garfield	2	
Hackensack	1	
Harrison	3	
Hoboken		7
Jersey City	4	
Kearny	1	
Morristown		2
Newark	63	11
Orange	2	
Passaic		2
Paterson	5	
Perth Amboy		2
Plainfield	1	
Rahway		1
Trenton	24	7
Union	1	
West Hoboken		3
West New York		2
West Orange		2
New York:		
Albany	19	
Buffalo	51	26
Cohoes	3	
Geneva		1
Glens Falls	4	1
Hornell	1	
Ithaca	4	1
Jamestown	2	
Lackawanna	5	3
Lockport		3
Middletown	1	
New York	470	223
Niagara Falls	21	
North Tonawanda		1
Ogdensburg		1
Olean		1
Port Chester	1	
Poughkeepsie	4	
Rochester	14	13
Rome	4	
Saratoga	1	
Schenectady	7	3
Syracuse	24	12
Troy	8	3
Watertown		1
White Plains		1
Yonkers	3	2
North Carolina:		
Charlotte		4
Greensboro		2
Ohio:		
Akron	8	
Barberton	2	
Cambridge		1
Cincinnati		12
Cleveland Heights		3
Columbus		9
Dayton	1	
Ohio—Continued.		
East Cleveland	2	
East Youngstown		1
Hamilton		1
Ironton	1	
Lancaster		4
Lorain	1	
Marion	1	
Middletown		1
Newark		1
Niles	2	
Piqua	1	
Springfield		5
Steubenville	1	
Toledo		7
Youngstown	3	2
Zanesville		2
Oklahoma:		
Oklahoma		3
Oregon:		
Portland		8
Pennsylvania:		
Philadelphia	94	69
Rhode Island:		
Newport		1
Pawtucket		1
Providence		6
South Dakota:		
Sioux Falls		1
Tennessee:		
Memphis		3
Nashville		1
Texas:		
Beaumont		2
Dallas		5
El Paso		2
Fort Worth		2
Houston		4
Waco		4
Utah:		
Salt Lake City		4
Vermont:		
Burlington		3
Rutland	1	
Virginia:		
Norfolk		2
Petersburg	2	
Portsmouth		2
Richmond		8
Roanoke	2	
Washington:		
Aberdeen	1	
West Virginia:		
Charleston		4
Clarksburg		1
Huntington		3
Wheeling		1
Wisconsin:		
Fond du Lac	4	2
Kenosha		3
Madison	2	
Milwaukee	16	
Oshkosh		2
Racine		1
Superior		1
Wyoming:		
Casper	13	

CITY REPORTS FOR WEEK ENDED APRIL 8, 1922—Continued.

POLIOMYELITIS (INFANTILE PARALYSIS).

The column headed "Median for previous years" gives the median number of cases reported during the corresponding weeks of the years 1915 to 1921, inclusive. In instances in which data for the full seven years are incomplete, the median is that for the number of years for which information is available.

City.	Median for previous years.	Week ended Apr. 8, 1922.	
		Cases.	Deaths.
Illinois:			
Chicago	0	1	1
Michigan:			
Kalamazoo	0	1	.....
New Jersey:			
Orange	0	1	.....
New York:			
New York	0	1	1
Poughkeepsie	0	1	.....

RABIES IN ANIMALS.

City.	Cases.
Kentucky:	
Louisville	3

SCARLET FEVER.

See p. 1035; also Telegraphic weekly reports from States, p. 1023, and Monthly summaries by States, p. 1027.

SMALLPOX.

The column headed "Median for previous years" gives the median number of cases reported during the corresponding weeks of the years 1915 to 1921, inclusive. In instances in which data for the full seven years are incomplete, the median is that for the number of years for which information is available.

City.	Median for previous years.	Week ended Apr. 8, 1922.	
		Cases.	Deaths.
California:			
Alameda	0	2	.....
Los Angeles	3	1	.....
Oakland	0	2	.....
Riverside	0	1	.....
San Diego	0	1	.....
San Francisco	3	2	.....
Colorado:			
Denver	34	5	5
Connecticut:			
Bridgeport	0	5	1
Fairfield	.....	2	.....
Milford	.....	3	.....
District of Columbia:			
Washington	2	1	.....
Georgia:			
Atlanta	8	2	.....
Augusta	0	6	.....
Macon	1	1	.....
Illinois:			
Chicago	3	2	1
Pekin	1	7	.....
Peoria	4	12	.....
Indiana:			
Bloomington	0	5	.....
Iowa:			
Burlington	0	1	.....
Clinton	1	1	.....
Council Bluffs	2	4	.....
Des Moines	5	5	.....
Sioux City	6	1	.....
Kansas:			
Coffeyville	0	1	.....
Kansas City	6	2	.....
Leavenworth	2	3	.....
Topeka	1	1	.....
Wichita	4	8	1
Kentucky:			
Louisville	3	1	.....
Michigan:			
Ann Arbor	0	3	.....
Detroit	16	1	.....
Flint	1	1	.....
Minnesota:			
Duluth	2	1	.....
Minneapolis	13	11	.....
St. Paul	9	16	.....
Missouri:			
Independence	0	2	.....
Kansas City	18	7	6
Montana:			
Billings	1	1	.....
Great Falls	5	1	.....
Nebraska:			
Omaha	14	1	.....
North Carolina:			
Durham	1	1	.....
Winston-Salem	1	4	.....
Ohio:			
Akron	0	1	.....
Cincinnati	1	7	.....
Dayton	1	6	.....

CITY REPORTS FOR WEEK ENDED APRIL 8, 1922—Continued.

SMALLPOX—Continued.

City.	Median for previous years.	Week ended Apr. 8, 1922. Cases.	Deaths.	City.	Median for previous years.	Week ended Apr. 8, 1922. Cases.	Deaths.
Ohio—Continued.				Virginia:			
Springfield	0	4	.....	Lynchburg	0	1	.....
Toledo	3	7	.....	Roanoke	0	2	.....
Oklahoma:				Washington:			
Oklahoma	6	3	.....	Aberdeen	4	1	.....
Oregon:				Bellingham	0	4	.....
Portland	2	19	.....	Everett	0	1	.....
South Carolina:				Seattle	13	1	.....
Columbia	0	2	.....	Spokane	15	2	.....
South Dakota:				Tacoma	1	9	.....
Sioux Falls	7	1	.....	West Virginia:			
Tennessee:				Parkersburg	0	2	.....
Memphis	11	2	.....	Wisconsin:			
Nashville	0	3	.....	Ashland	0	1	.....
Texas:				Fond du Lac	0	1	.....
Dallas	4	2	.....	Manitowoc	0	2	.....
El Paso	1	.....	1	Marinette	0	2	.....
Fort Worth	5	2	.....	Milwaukee	4	1	.....
Waco	2	1	.....	Superior	3	5	.....
Utah:				Waukesha	.....	1	.....
Salt Lake City	12	1	.....	Wausau	0	3	.....

TETANUS.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
California:			Ohio:		
Riverside	.....	1	Columbus	.....	1
Kentucky:			Rhode Island:		
Lexington	1	1	Providence	.....	1
Missouri:			West Virginia:		
St. Louis	1	.....	Charleston	.....	1

TUBERCULOSIS.

See p. 1035; also Telegraphic weekly reports from States, p. 1023.

TYPHOID FEVER.

The column headed "Median for previous years" gives the median number of cases reported during the corresponding weeks of the years 1915 to 1921, inclusive. In instances in which data for the full seven years are incomplete, the median is that for the number of years for which information is available.

City.	Median for previous years.	Week ended Apr. 8, 1922. Cases.	Deaths.	City.	Median for previous years.	Week ended Apr. 8, 1922. Cases.	Deaths.
California:				Kentucky:			
Los Angeles	0	1	.....	Louisville	0	2	1
Sacramento	0	1	.....	Louisiana:			
San Francisco	2	2	.....	New Orleans	2	3	.....
Stockton	0	4	.....	Maine:			
Florida:				Bangor	0	1	.....
Tampa	.....	1	1	Maryland:			
Georgia:				Baltimore	5	4	.....
Savannah	0	4	.....	Massachusetts:			
Valdosta	.....	1	.....	Boston	2	2	.....
Illinois:				Fall River	1	2	.....
Chicago	4	1	.....	Leominster	0	1	.....
Springfield	0	1	.....	Pittsfield	0	1	.....
Indiana:				Quincy	0	1	.....
Hammond	0	3	.....	Michigan:			
Huntington	0	1	.....	Detroit	2	3	.....
Kokomo	0	1	.....				

CITY REPORTS FOR WEEK ENDED APRIL 8, 1922—Continued.

TYPHOID FEVER—Continued.

City.	Median for previous years.	Week ended Apr. 8, 1922.		City.	Median for previous years.	Week ended Apr. 8, 1922.	
		Cases.	Deaths			Cases.	Deaths.
Minnesota:				Texas:			
St. Paul	0	1		Beaumont	0		1
New Jersey:				Dallas	0		1
Rahway	0	1		Houston	0	1	
Trenton	0	2		Utah:			
New York:				Salt Lake City	0	2	
Buffalo	1	1		Virginia:			
Lockport	0	1		Alexandria	1	2	1
New York	20	4	1	Norfolk	0	1	
North Tonawanda	0	1		Roanoke	0		1
Rome	0	1		West Virginia:			
Ohio:				Charleston	0		1
Columbus	0		1	Huntington	0	1	
Oklahoma:				Wisconsin:			
Tulsa	0	1		Fond du Lac	0	2	
Pennsylvania:				Marinette	0	3	
Philadelphia	5	1		Milwaukee	3	3	
Tennessee:							
Knoxville	1	1					

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS.

City.	Population January 1, 1920, subject to correction.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Alabama:										
Anniston	17,734				1				3	
Birmingham	178,270	46	1		4		1		4	9
Mobile	60,151	13								
Montgomery	43,464	17			1				1	2
Arkansas:										
Fort Smith	28,811	12	4							1
Hot Springs	11,695	4								
Little Rock	64,997								4	
California:										
Alameda	28,806	7					9		1	
Eureka	12,923	5							1	
Los Angeles	576,673	179	46		6		34	1	19	30
Oakland	216,361	51	16		3		9		1	4
Pasadena	45,354	11			1		4		1	1
Richmond	16,843	0								
Riverside	19,341	11								
Sacramento	65,857	17			2		1		2	
San Bernardino	18,721	10								1
San Diego	74,683	38	9		1		6		3	3
San Francisco	508,410	138	35	4	4		30		22	8
Santa Ana	15,485	3	1							1
Santa Cruz	10,917	4								1
Stockton	40,296	9	1				2		1	
Vallejo	21,107	4							1	
Colorado:										
Denver	256,369		10		3		3			13
Pueblo	42,908		3						1	
Trinidad	10,906		5							
Connecticut:										
Bridgeport	143,538	30	9		13		7	2		2
Bristol	20,620	5							4	
Derby	11,238	5								
Fairfield (town)	11,475	1	1							
Greenwich (town)	22,123		1				3			
Hartford	138,036	38	8		50		1		2	1
Manchester (town)	18,370	0					2		2	
Meriden (city)	29,842		2						1	
Milford (town)	10,193	0	2		1					
New Britain	59,316	12								
New London	25,688	1	1		7				1	1

CITY REPORTS FOR WEEK ENDED APRIL 8, 1922—Continued.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Continued.

City.	Population January 1, 1920, subject to correction.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Connecticut—Continued.										
Norwalk	27,700	12								1
Stonington (town)	10,236	7	1							
Delaware:										
Wilmington	110,168	30					38	2		1
District of Columbia:										
Washington	437,571	123	7		5		3		21	10
Florida:										
Tampa	51,252	27			1				3	2
Georgia:										
Albany	11,555								1	
Atlanta	200,616	75		1			1		2	3
Macon	52,995				2		1			
Rome	13,252	1								
Savannah	83,252	30					1		1	3
Valdosta	10,783	3							1	1
Idaho:										
Pocatello	15,001	5								
Illinois:										
Alton	24,682		3							
Aurora	36,397	6	1		25				1	
Bloomington	28,725	12	2	1						1
Centralia	12,491	3	2							
Champaign	15,873		1				1			
Chicago	2,701,705	729	119	9	457	1	103	4	262	53
Chicago Heights	19,653	3								
Cicero	44,995	7	4		5					
Decatur	43,818	9	2		1					1
East St. Louis	66,740	12	1		2				2	1
Elgin	27,454	5								
Evanston	37,215	9			9		4			
Freeport	19,669	2	1				1			
Galesburg	23,834	6	1	1	3					1
Jacksonville	15,713	13	2				1			3
La Salle	13,050	5								
Mattoon	13,552	5	2							
Oak Park	39,830	13	4	1	17		1		2	
Pekin	12,086		2				1			
Peoria	76,121	27								1
Rock Island	35,177	5					1		2	1
Springfield	59,183	22	2				2			3
Indiana:										
Anderson	29,767	9	1							1
Bloomington	11,595	5								
Clinton	10,962	2								
Crawfordsville	10,139	4							1	
East Chicago	35,967	17			1		2		1	2
Fort Wayne	36,549	18	2		7		2		2	1
Frankfort	11,585	2								
Gary	55,378	9	2		5		1	1		2
Hammond	36,004	7	1							
Huntington	14,000	4					2			
Indianapolis	314,194	96	13	1	40		4		7	7
Kokomo	30,067	9							1	
La Fayette	22,486	9					1			
Logansport	21,626	3								1
Mishawaka	15,195	7					2		3	1
Muncie	36,624	12								
South Bend	70,983	12	2		1				2	
Terre Haute	66,083	18					3			
Iowa:										
Burlington	24,057	15					1		2	1
Clinton	24,151		2				1			
Council Bluffs	36,162	4			3	1				
Davenport	56,727		2							
Des Moines	126,468						5			
Iowa City	11,267						2			
Mason City	20,065	8	2				1			
Muscatine	16,068	10								
Sioux City	71,227		4				3			
Kansas:										
Atchison	12,630		1							
Coffeyville	13,452	1							1	
Fort Scott	10,693	5								
Hutchinson	23,293		2						3	
Kansas City	101,177				1		3		18	

CITY REPORTS FOR WEEK ENDED APRIL 8, 1922—Continued.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Continued.

City.	Population January 1, 1920, subject to correction.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Kansas—Continued.										
Lawrence	12,456	2	.....	.....	.....	.....	.....	.....	5	1
Salina	15,085	4	.....	.....	.....	.....	2	.....	3	.....
Topeka	50,022	6	5	.....	.....	.....	2	.....	2	.....
Wichita	72,128	29	2	.....	2	.....	10	.....	.....	.....
Kentucky:										
Covington	57,121	18	1	.....	7	.....	1	.....	.....	1
Lexington	41,534	16	.....	.....	50	.....	.....	.....	.....	1
Louisville	234,891	59	2	1	12	.....	3	.....	19	7
Owensboro	17,424	.....	3	.....	2	.....	.....	.....	1	.....
Louisiana:										
New Orleans	387,219	140	10	1	.....	.....	4	.....	37	22
Maine:										
Auburn	16,985	3	.....	.....	.....	.....	1	.....	.....	1
Bath	14,731	5	.....	.....	.....	.....	.....	.....	.....	.....
Biddeford	18,008	12	.....	.....	.....	.....	.....	.....	.....	2
Lewiston	31,791	12	2	1	.....	.....	3	.....	2	1
Portland	69,272	25	.....	.....	.....	.....	13	.....	.....	2
Sanford	10,691	3	.....	.....	.....	.....	2	.....	.....	.....
Maryland:										
Baltimore	733,826	226	24	2	225	1	29	.....	37	21
Cumberland	29,837	8	.....	.....	.....	.....	.....	.....	1	.....
Massachusetts:										
Adams	12,967	2	2	.....	.....	.....	.....	.....	.....	.....
Amesbury	10,036	2	2	1	.....	.....	.....	.....	.....	.....
Arlington	18,665	3	.....	.....	5	.....	.....	.....	.....	.....
Attleboro	19,731	4	.....	.....	1	.....	.....	.....	.....	.....
Belmont	10,749	4	.....	.....	.....	.....	.....	.....	2	.....
Beverly	22,561	4	3	.....	2	.....	.....	.....	.....	.....
Boston	748,060	253	58	2	215	1	28	.....	44	22
Braintree	10,589	3	.....	.....	1	.....	1	.....	.....	.....
Brookline	37,748	12	.....	.....	13	.....	.....	.....	2	1
Cambridge	109,694	23	.....	.....	62	.....	10	.....	5	.....
Chelsea	43,184	12	1	.....	7	.....	4	.....	4	1
Chicopee	36,214	6	5	.....	4	.....	1	.....	1	1
Clinton	12,979	4	.....	.....	.....	.....	.....	.....	2	.....
Danvers	11,108	.....	.....	.....	.....	.....	1	.....	.....	.....
Dedham	10,792	5	1	.....	.....	.....	1	.....	.....	.....
Easthampton	11,261	1	1	.....	.....	.....	.....	.....	.....	1
Everett	40,120	5	1	.....	13	.....	3	.....	3	.....
Fall River	120,485	30	5	.....	.....	.....	6	.....	6	1
Framingham	17,033	6	.....	.....	.....	.....	.....	.....	2	.....
Gardner	16,971	7	.....	.....	1	.....	1	.....	1	.....
Greenfield	15,462	2	2	.....	1	.....	2	.....	1	.....
Haverhill	53,884	15	5	.....	1	.....	1	.....	1	.....
Holyoke	60,203	30	1	.....	28	.....	.....	.....	2	2
Lawrence	94,270	27	1	.....	38	.....	2	.....	5	6
Leominster	19,744	3	.....	.....	.....	.....	1	.....	.....	1
Lowell	112,479	19	2	.....	3	.....	2	.....	1	.....
Lynn	99,148	29	5	2	6	.....	2	.....	5	2
Malden	49,103	9	.....	.....	4	.....	6	.....	.....	.....
Medford	39,038	7	5	.....	12	.....	2	.....	.....	1
Melrose	18,204	5	.....	.....	.....	.....	2	.....	.....	.....
Methuen	15,189	5	.....	.....	20	.....	3	.....	.....	.....
New Bedford	121,217	32	9	1	2	.....	11	.....	2	2
Newburyport	15,618	3	.....	.....	5	.....	.....	.....	.....	.....
Newton	46,054	14	3	.....	.....	.....	4	.....	.....	1
North Adams	22,282	5	.....	.....	.....	.....	.....	.....	.....	.....
Northampton	21,951	5	.....	.....	1	.....	.....	.....	2	.....
Pittsfield	41,751	8	5	1	.....	.....	2	.....	2	.....
Plymouth	13,045	5	.....	.....	.....	.....	.....	.....	.....	.....
Quincy	47,876	11	1	.....	21	.....	3	.....	7	.....
Salem	42,529	15	1	.....	17	.....	2	2	.....	2
Saugus	10,874	2	.....	.....	.....	.....	.....	.....	.....	.....
Somerville	93,091	20	2	1	43	.....	3	.....	1	.....
Southbridge	14,245	5	.....	.....	.....	.....	.....	.....	.....	.....
Springfield	129,563	29	2	.....	21	.....	2	.....	5	4
Taunton	37,137	6	.....	.....	1	.....	.....	.....	1	.....
Wakefield	13,025	6	.....	.....	2	.....	2	.....	.....	.....
Waltham	30,915	7	.....	.....	6	.....	.....	.....	.....	.....
Watertown	21,457	5	1	.....	1	.....	.....	.....	2	.....
Webster	13,258	4	.....	.....	6	.....	.....	.....	.....	.....
West Springfield	13,443	3	.....	.....	.....	.....	.....	.....	.....	1
Westfield	18,604	5	.....	.....	21	1	.....	.....	.....	.....
Weymouth	15,057	2	.....	.....	.....	.....	.....	.....	.....	.....

CITY REPORTS FOR WEEK ENDED APRIL 8, 1922—Continued.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Continued.

City.	Population January 1, 1920, subject to correction.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Massachusetts—Continued.										
Winthrop	15,455	1					1		1	
Woburn	16,574	4								
Worcester	179,754	57	1				6		7	8
Michigan:										
Alpena	11,101		1				2			
Ann Arbor	19,516	17	9							
Battle Creek	36,164		2		22		1			
Benton Harbor	12,233	3	2							
Detroit	993,739	244	41	4	344	9	57	5	44	8
Flint	91,599	25	1		2		6			2
Grand Rapids	137,634	46	2		3		10		3	
Hamtramck	48,615	2	2	1	4				2	
Highland Park	46,499	8	1		37		1		3	
Holland	12,166	4								
Ironwood	15,739	1					1		1	
Jackson	48,374	13						1		
Kalamazoo	48,858	20	5		1		11		1	1
Marquette	12,718	3								
Pontiac	34,273	13	1		70		5			1
Port Huron	25,944	8	1		1					
Sault Ste. Marie	12,096	7								1
Minnesota:										
Austin	10,118	2								
Duluth	98,917	23					5			
Hibbing	15,089								1	
Minneapolis	380,582	101	7	1	23	1	26	2	14	9
Rochester	13,722	12			1					
St. Cloud	15,873						1			
St. Paul	234,595	55	10	1	32		17		25	4
Missouri:										
Cape Girardeau	10,252	0								
Independence	11,686						4			
Joplin	29,855		1							
Kansas City	324,410	116	7	1	4		3	1	3	7
St. Joseph	77,939	29	1	1			6	1		2
St. Louis	772,897	217	36	3	3		14		43	13
Springfield	39,631	9								
Montana:										
Anaconda	11,663	2								
Billings	15,100	3	1							
Great Falls	24,121	5	3				1			
Missoula	12,668	6					1		1	
Nebraska:										
Lincoln	54,934	15			27		2			1
Omaha	191,601	60	5	2	22		3			4
Nevada:										
Reno	12,016	8								1
New Hampshire:										
Berlin	16,104	6								
Concord	22,167	12			1		3			
Dover	13,029	6			8	1				
Keene	11,210	4							1	
Nashua	28,379	11				1				
New Jersey:										
Asbury Park	12,400	1	1							
Atlantic City	50,682	11			1		4		2	
Bayonne	76,754		2		21		3		2	
Belleville	15,660				1					
Bloomfield	22,019	3			40		2		2	
Clifton	26,470	4	2	1	4		3			
Elizabeth	95,682		13		2		8		2	1
Englewood	11,627		1		1		1			
Garfield	19,381	5					1			
Hackensack	17,667	4			3		2		1	2
Harrison	15,721				10		1			
Hoboken	68,166	27	1		33	1	4		6	3
Jersey City	297,864		10		119		19		12	
Kearny	26,724	9	1		14		6		2	1
Morristown	12,548	4	3				1			
Newark	414,216	103	12	2	143	1	38	1	27	14
Orange	33,268	5			2		3			1
Passaic	63,824	15	1		4		6		1	2
Paterson	135,866		5		100		6		6	
Perth Amboy	41,707	11			14		4		4	1
Phillipsburg	16,923	6								

CITY REPORTS FOR WEEK ENDED APRIL 8, 1922—Continued.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Continued.

City.	Population January 1, 1920, subject to correction.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
New Jersey—Continued.										
Plainfield	27,700	5			4		2		1	1
Rahway	11,042	3	1		1		4			
Summit	10,174	2	1				2			
Trenton	119,289	43	3	2	72		4		7	3
Union	20,651				15		4			
West Hoboken	40,068	5			11		5		1	
West New York	29,926	2	2		32		4			
West Orange	15,573	4			6					
New Mexico:										
Albuquerque	15,157	9	7				11		1	3
New York:										
Albany	113,344		6		3		1		8	
Buffalo	506,775	179	14	1			44	1	12	11
Cohoes	22,987	5	1							1
Geneva	14,648	1								
Glens Falls	16,638	6								
Hornell	15,025				6					
Hudson	11,745	1					2		1	
Ithaca	17,004	13	3						1	2
Jamestown	38,917	16			31					2
Lackawanna	17,918	6	5				11			
Lockport	21,308	6					2			1
Middletown	18,420				1				1	1
Newburgh	30,366	7			5		1			1
New York	5,621,151	1,619	273	27	2,590	51	383	8	[1]280	[1]119
Niagara Falls	50,760	10	2		8		8		1	1
North Tonawanda	15,452	3	2				1			
Ogdensburg	14,609	13								1
Olean	20,506	6								
Peekskill	15,868	3	2		6		1		1	
Port Chester	16,573	1	1				1		1	
Poughkeepsie	35,009	11			55					
Rochester	295,750	97	9	1	21	1	6		7	1
Rome	26,341	7	3	1	2		6			
Saratoga Springs	13,181	11								2
Schenectady	88,723	26					6		3	
Syracuse	171,717	52	18	1	5		22	2	11	1
Troy	72,013	28	7				2		3	2
Watertown	31,285	10								2
White Plains	21,031	3			6					
Yonkers	100,226	27	2		41	2	3	1		
North Carolina:										
Charlotte	46,338	12								1
Durham	21,719	1							4	
Greensboro	19,861	14								
Raleigh	24,418	8								
Rocky Mount	12,742	10								
Salisbury	13,884	12								2
Winston-Salem	48,395	10	2	1					4	2
North Dakota:										
Fargo	21,961	1	1	1			1			
Ohio:										
Akron	208,435	34	2		99		17			
Ashtabula	22,082	8	1							
Barberton	18,811	2							3	
Bucyrus	10,425	1							1	
Cambridge	13,104	7	1		7					
Cincinnati	401,247	124	2	1	177	3	5		10	9
Cleveland	796,836				1		1		1	
Columbus	237,031	79	4		8		2		4	7
Coshocton	10,847				1					
Dayton	152,559	48	2				3		2	
East Cleveland	27,292	4			3		1		4	
East Youngstown	11,237	3								
Findlay	17,021	3								
Fremont	12,468	4								
Hamilton	39,675	8			5		2			
Ironton	14,007	3								3
Kenmore	12,683				2				1	
Lancaster	14,706	10	5						1	1
Lorain	37,295						1			
Mansfield	27,824	5	2				1			
Marion	27,891		2							
Martins Ferry	11,634	3							1	1

[1] Pulmonary tuberculosis only.

CITY REPORTS FOR WEEK ENDED APRIL 8, 1922—Continued.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Continued.

City.	Population January 1, 1920, subject to correction.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Ohio—Continued.										
Middletown	23,594	2							2	1
Newark	26,718	8	1							1
Niles	13,080	3	6		1		1			
Norwood	24,966	2			8					
Piqua	15,044	3								1
Salem	10,305	7	2		1		2			
Springfield	60,840	20	1				1		4	
Steubenville	28,508	4	1							
Toledo	243,109	61	2		66		3		2	9
Youngstown	132,358	6	6		22		2		3	
Zanesville	29,569	11					10		3	
Oklahoma:										
Oklahoma	91,258	19	2		1				4	
Tulsa	72,075				25		3		1	
Oregon:										
Portland	258,288	62	13		5		4		16	3
Pennsylvania:										
Allentown	73,502		5		2					
Altoona	60,331				2		3			
Beaver Falls	12,802								1	
Berwick	12,181				29					
Bethlehem	50,358		1		1		1			
Braddock	20,879						1		1	
Bradford	15,525						2			
Butler	23,778		1				1		2	
Canonsburg	10,632		1				2			
Carlisle	10,916				12					
Carrick	10,504				2					
Chambersburg	13,171				9		1			
Chester	58,030		1				4		4	
Donora	14,131		2							
Dubois	18,681		2				2			
Dunmore	20,250		1				2			
Duquesne	19,011				1					
Easton	33,813		2		1		1			
Erie	93,372		1		1		1			
Farrell	15,586						2			
Greensburg	15,033		1				1			
Harrisburg	75,917		1		2		2			
Hazleton	32,277		1		13					
Jeannette	10,627		1							
Johnstown	67,327		6		7		1			
Lancaster	53,150		2				7		5	
McKees Rocks	16,713		3							
Mahanoy City	15,599				2					
Monessen	18,179		2							
Mount Carmel	17,469		1							
Nanticoke	22,614		2		1					
New Castle	44,938		2		13					
New Kensington	11,987				6					
Norristown	32,319				1					
North Braddock	14,928		1		1					
Oil City	21,274								3	
Philadelphia	1,823,158	536	61	5	33		139	3	67	59
Pittsburgh	588,193		13		60		21		13	
Plymouth	16,500				18					
Pottstown	17,431		1				2			
Pottsville	21,876				9		1			
Reading	107,784		12				3		2	
Scranton	137,783		3		26		1		4	
Shamokin	21,294				6					
Sharon	21,747				7					
Shenandoah	24,726		1		11					
Steelton	13,428		2				5		1	
Sunbury	15,721				10		1			
Tamaqua	12,363		1		4					
Uniontown	15,692				2		1			
Warren	14,256		6				1			
Washington	21,480		2		5					
Wilkes-Barre	73,833		3		11		1			
Wilkinsburg	24,403				3					
Williamsport	36,198				7					
Woodlawn	12,495						1		2	
York	47,512		3				2		1	

CITY REPORTS FOR WEEK ENDED APRIL 8, 1922—Continued.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Continued.

City.	Population January 1, 1920, subject to correction.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Rhode Island:										
Cranston	29,407	6								
Newport	30,255	6	2	1			3			
Pawtucket	64,248	14	2							
Providence	237,595	75	11	1			5			6
South Carolina:										
Charleston	67,957	10								1
Columbia	37,524		1				2		2	
Greenville	23,127	1								
South Dakota:										
Sioux Falls	25,176	6			1		1			
Tennessee:										
Chattanooga	57,895						3			
Knoxville	77,818				16				3	3
Memphis	162,351	34	5				7		11	3
Nashville	118,342	34	1				5		6	3
Texas:										
Beaumont	40,422	9								1
Corpus Christi	10,522	4								
Dallas	158,976	41	3		118		3		3	3
El Paso	77,543	25		1	1		2			6
Fort Worth	106,482	21	7		2				1	1
Galveston	44,255	12								1
Houston	138,076	30	2							5
Waco	38,500	17	1							
Utah:										
Salt Lake City	118,110	30	3			1	4			
Vermont:										
Barre	10,008						1			
Burlington	22,779	16	2				2			3
Rutland	14,954	8			1		2			
Virginia:										
Alexandria	18,060	8								1
Danville	21,539	12								
Lynchburg	29,956	10	1							
Norfolk	115,777				1				7	4
Petersburg	31,002	11							4	1
Portsmouth	54,387	18	1		1					4
Richmond	171,667	65			59		2		8	6
Roanoke	50,842	12	1				2			2
Washington:										
Everett	27,644		1							
Seattle	315,652		4				6		1	
Spokane	104,437		3				2			
Tacoma	96,965		1				1		8	
Walla Walla	15,503								1	
Yakima	18,539				1		1			
West Virginia:										
Bluefield	15,282	6								1
Charleston	39,608	16					1			
Clarksburg	27,869	8	1				5			
Fairmont	17,851						2			
Huntington	50,177	18	1							1
Martinsburg	12,515				22					
Moundsville	10,669	1			10		4			
Parkersburg	20,050	9	1							
Wheeling	54,322	19					2		56	1
Wisconsin:										
Beloit	21,284	5					3		1	
Fond du Lac	23,427	8					1			2
Green Bay	31,017		2				1			
Janesville	18,293	6	22							
Kenosha	40,472	12	4	1	1		1		1	
Madison	38,378		1		2		1			
Manitowoc	17,563						1		1	
Marinette	13,610						7			
Milwaukee	457,147		6				13		4	
Oshkosh	33,162	12					2			
Racine	58,593	15					7		2	1
Sheboygan	30,955		3							
Superior	39,624	3					2		1	
Waukesha	12,558						3			
Wausau	18,661						1			
West Allis	13,765				1				3	
Wyoming:										
Casper	11,447	2							2	
Cheyenne	13,829	3								

FOREIGN AND INSULAR.

BRITISH WEST INDIES.

Disease Resembling Smallpox—Trinidad.

The appearance of a few cases of a disease resembling smallpox, at Trinidad, British West Indies, was reported under date of April 4, 1922. The four reported cases were vaccinated before admission to hospital. It was stated that in all but one case, in which recent vaccination had been performed, the vaccination took strongly. In view of this fact and the mild character of the disease the cases were diagnosed as chicken pox. Similar cases were stated to have been treated by physicians in their private practice but without suggesting suspicion of smallpox.

The last reported epidemic of smallpox in Trinidad occurred in 1904. The only cases of smallpox noted subsequently to that period were quarantine cases from vessels. Of these, four were reported, approximately two years ago, on vessels arriving from Bahia, Brazil.

ECUADOR.

Plague—Plague-Infected Rats—March 1-15, 1922.

During the period March 1 to 15, 1922, plague was reported in Ecuador as follows: *Guayaquil*, five cases with one death; *Naranjito*, one case. The finding of 80 plague-infected rats out of 3,000 rats examined was reported at Guayaquil.

GREAT BRITAIN.

Plague-Infected Rats—Liverpool.

The finding of three plague-infected rats at Liverpool, England, was reported March 31, 1922. The rats were taken from a warehouse in which sacks and other material removed from the steamship *Warwickshire* were stored. Plague rats were reported found on the *Warwickshire* at Liverpool in February, 1922. The vessel arrived February 12, at Liverpool from Rangoon and ports.[1]

Typhus Fever—Birkenhead.

Under date of April 6, 1922, the occurrence of 13 cases of typhus fever with three deaths was reported at Birkenhead, vicinity of Liverpool, England.

[1] Public Health Reports, Mar. 31, 1922, p. 784.

JAMAICA.

Alastrim.

During the five weeks ended April 1, 1922, 97 cases of alastrim were reported in the island of Jamaica.

Typhoid Fever—Kingston and Vicinity.

During the period under report, 13 cases of typhoid fever were reported in Kingston and 71 cases in the surrounding country.

MADAGASCAR.

Plague—Tananarive and Vicinity.

During the week ended January 29, 1922, nine cases of plague, with five deaths, were reported at Tananarive, island of Madagascar. Of these, six cases with two deaths were of the bubonic type of the disease; one fatal case was pneumonic, and two cases with two deaths were of septicemic plague. Bubonic and septicemic plague were stated to be present in the surrounding country.

MAURITIUS.

Plague.

During the period January 12 to 22, 1922, nine cases of plague with four deaths were reported at Port Louis, island of Mauritius. From January 23 to February 6, 1922, 12 cases of plague with three deaths were reported for the island of Mauritius, and it was stated that previous reports of plague prevalence had indicated existence of the disease only at Port Louis, but that later information showed that other localities were infected. No data showing actual locality of occurrence were received.[1]

MEXICO.

Plague-Infected Rodent—Vera Cruz.

A plague-infected rodent was reported found at Vera Cruz, Mexico, April 4, 1922.

RUSSIA.

Smallpox—Typhus Fever—Recurrent Typhus—Latvia.

During the month of January, 1922, there were reported in the Province of Latvia, Russia, 22 cases of smallpox, 288 cases of typhus fever, 28 cases of recurrent typhus, and 4 cases of paratyphoid fever.

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[1] Public Health Reports, Mar. 10, 1922, p. 601, and Mar. 31, 1922, p. 786.

VENEZUELA.

Smallpox—Ciudad Bolivar.

Under date of March 22, 1922, smallpox was reported present with three cases at Ciudad Bolivar, Venezuela. The cases occurred in a suburb of the city.

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

Reports Received During Week Ended April 28, 1922.[1]

CHOLERA.

Place.	Date.	Cases.	Deaths.	Remarks.
India				Jan. 15-28, 1922: Deaths, 1,225.
Calcutta	Feb. 26-Mar. 11	98	82	
Philippine Islands:				
Manila	do	6	3	
Provinces—				
Bulacan	Feb. 12-18	1	1	
Carite	Jan. 1-7	1	1	
Cebu	Jan. 8-14	1		
Rizal	Jan. 15-28	18	12	
Zambales	Jan. 1-7	5	4	
Siam:				
Bangkok	Feb. 19-Mar. 4	3	1	

PLAGUE.

Brazil:				
Porto Alegre	Mar. 12-18	3	2	
British East Africa:				
Uganda	Dec. 1-31	87	89	
Ceylon:				
Colombo	Feb. 26-Mar. 4		1	1 plague-infected rat.
China:				
Hongkong	Mar. 5-11	16	12	
Ecuador:				
Guayaquil	Mar. 1-15	5	1	Rats examined, 3,000; found infected, 80.
Naranjito	do	1		
Great Britain:				
Liverpool				Mar. 31, 1922: Finding of 3 plague-infected rats reported; place, warehouse in which material from steamship Warwickshire was stored.[2]
India				Feb. 12-25, 1922: Cases, 5,660; deaths, 4,443.
Bombay	Feb. 12-25	35	30	
Calcutta	Feb. 26-Mar. 4	3	3	
Karachi	Mar. 6-18	55	38	
Madras Presidency	do	521	363	
Java:				
East Java—				
Soerabaya	Feb. 12-18	2	2	
Madagascar:				
Tananarive	Jan. 23-29	9	5	Bubonic, cases 6, deaths 2; pneumonic, 1 fatal case; septicemic cases 2, deaths 2. Bubonic and septicemic plague present in surrounding country.
Mauritius Island				In island: Jan. 23-Feb. 6, 1922: Cases, 12; deaths, 3.
Port Louis	Jan. 12-22	9	4	
Mexico:				
Vera Cruz				Apr. 4, 1922: 1 plague-infected rodent found.
Siam:				
Bangkok	Feb. 19-Mar. 4	13	12	
Straits Settlements:				
Singapore	Feb. 22-Mar. 4	4	4	

[1] From medical officers of the Public Health Service, American consuls, and other sources.
[2] Public Health Reports, Mar. 31, 1922, p. 784.

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

Reports Received During Week Ended April 28, 1922—Continued.

SMALLPOX.

Place.	Date.	Cases.	Deaths.	Remarks.
Brazil:				
Santos	Feb. 20-26		1	
British East Africa:				
Uganda	Dec. 1-31	11	3	
Canada:				
New Brunswick—				
Westmoreland County	Mar. 26-Apr. 1	3		
Ontario—				
Ottawa	Apr. 9-15	2		
Toronto	Apr. 2-8	3		
Ceylon:				
Colombo	Feb. 26-Mar. 4	3		
Chile:				
Ollague	Mar. 12-25	1		Reported Mar. 16.
Valparaiso	Jan. 22-Mar. 25		83	
China:				
Amoy	Mar. 5-18		3	
Chungking	Feb. 19-Mar. 4			Present.
Foochow	Mar. 5-18			Do.
Harbin	Mar. 5-12	1		
Hongkong	Mar. 5-11	9	6	
Mukden	Mar. 12-18			Do.
Shanghai	Mar. 13-19		2	Chinese.
Cuba:				
Cienfuegos	Mar. 26-Apr. 1	5		
Dominican Republic:				
San Pedro de Macoris	Mar. 12-Apr. 1			About 60 cases in vicinity.
Santo Domingo	Mar. 19-Apr. 1			About 20 cases, with 1 death, in surrounding country.
Egypt:				
Port Said	Jan. 22-28	1		
Finland	Feb. 15-28	17		
Fiume	Mar. 21-27	2		
India				Jan. 15-28, 1922: Deaths, 371.
Bombay	Feb. 12-25	2	1	
Calcutta	Feb 26-Mar. 11	89	44	
Karachi	Mar. 5-18	42	29	
Madras	....do	210	66	
Japan:				
Nagasaki	Mar. 13-19	1		
Java:				
West Java—Batavia	Feb. 24-Mar. 2	2		Province: Feb. 17-Mar. 2, 1922: Cases, 5; deaths, 1.
Russia:				
Latvia	Jan. 1-31	22		
Siberia:				
Vladivostock	Feb. 22-28	1	1	
Spain:				
Huelva	Jan. 1-31	1	1	
Seville	Mar. 12-25		22	
Valencia	Mar. 19-25	1		
Straits Settlements:				
Singapore	Feb. 22-Mar. 4	58	10	
Turkey:				
Constantinople	Mar. 19-25	16	3	
Venezuela:				
Ciudad Bolivar	Mar. 22	3		In suburb.

TYPHUS FEVER.

Brazil:				
Sao Paulo	Feb. 6-12	12	2	
China:				
Harbin	Mar. 6-12	7		
Egypt:				
Cairo	Jan. 22-23	2	1	
Great Britain:				
Birkenhead	Apr. 6	13	3	Vicinity of Liverpool, England.
Palestine:				
Jerusalem	Mar. 21-27	1		
Portugal:				
Oporto	Mar. 26-Apr. 1	2		
Russia:				
Latvia	Jan. 1-31	288		Recurrent typhus, 28 cases.

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

Reports Received During Week Ended April 28, 1922—Continued.

TYPHUS FEVER—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Syria:				
Aleppo	Mar. 19-25			Present.
Diarbekir	Mar. 19-Apr. 1			Do.
Mardin	do			Do.
Tunis:				
Tunis	Mar. 19-25	1		
Turkey:				
Constantinople	do	17		

Reports Received from December 31, 1921, to April 21, 1922.

CHOLERA.

Place.	Date.	Cases.	Deaths.	Remarks.
India				Oct. 2-Dec. 31, 1921: Deaths, 37,749 (Corrected report.) Jan. 1-14, 1922: Deaths, 1,603.
Bombay	Oct. 30-Nov. 5	1		
Do	Jan. 29-Feb. 4	1	1	
Calcutta	Oct. 23-Dec. 31	71	60	
Do	Jan. 1-Feb. 25	135	119	
Karachi	Nov. 6-12		1	
Madras	Dec. 11-31	4	1	
Do	Jan. 1-Feb. 4	10	7	
Rangoon	Oct. 1-Dec. 31	30	24	
Do	Jan. 1-Feb. 25	30	25	
Indo-China:				
Saigon	Nov. 6-12	1	1	
Do	Jan. 29-Feb. 18	24	23	Including 100 km. surrounding country.
Java:				
West Java—				
Batavia	Nov. 1-7	2	22	At Lebak.
Philippine Islands:				
Manila	Nov. 13-Dec. 31	49	18	
Do	Jan. 1-Feb. 18	76	24	
Province—				
Bulacan	Dec. 25-31	1		
Pampanga	do	1		
Zambales	Dec. 11-31	31	18	
Poland				Aug. 14-Sept. 10, 1921: Cases, 4; deaths, 1.
Russia:				
Kharkoff	Jan. 28			Present.
Kieff	Dec. 15-Jan. 11	259		
Latvia—				
Riga				At quarantine station in October, 1921: One case.
Odessa	Jan. 28			Present.
Siam:				
Bangkok	Oct. 23-Dec. 24	8	4	
Do	Jan. 29-Feb. 18	4	2	

PLAGUE.

Asia Minor:				
Smyrna	Nov. 27-Dec. 3	1	1	
Australia:				
New South Wales—				
Sydney	do	2	1	Dec. 7-13: 4 plague rats. Jan. 15-21, 1922: 1 plague rat.
Do	Jan. 29-Apr. 15	11	2	Mar. 26-Apr. 1, 1922: Cases reported, 6 to 10; 1 death.
Queensland—				
Aramac	Mar. 19-25	1	1	Inland town on railroad about 150 miles from coast.
Brisbane	Oct. 30-Dec. 31	27	20	Total, Aug. 22-Dec. 31, 1921: Cases, 41; deaths, 27. Total infected rats, 54. Total cases, Jan. 1-Mar. 18, 1922: 10. Total infected rats, 10

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

Reports Received from December 31, 1921, to April 21, 1922—Continued.

PLAGUE—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Australia—Continued.				
Queensland—Continued.				
Brisbane	Jan. 1–Mar. 18	10		
Bundaberg	Mar. 5–11	1		
Cairns	Oct. 30–Dec. 31	6	3	Plague rats, 9.
Do	Jan. 1–7		1	
Cooktown	Oct. 30–Nov. 5	1		Pest is minor.
Ingham				Nov. 6–Dec. 24, 1921: Plague rats, 14. Jan. 1–14, 1922: 2 plague rats.
Inisfail				Nov. 27–Dec. 3, 1921: 1 plague rat.
Ipswich	Dec. 11–17	1	1	
Port Douglas	Nov. 13–19	1	1	
Townsville	Nov. 20–Dec. 3	2	2	Total cases, 27; deaths, 18.
Do	Jan. 1–14		2	To Jan. 14, 1922: Cases, 32; deaths, 21.
Azores:				
Islands—				
Fayal	Jan. 16–22	2	2	
St. Michael				Nov. 27–Dec. 31, 1921: Cases, 23; deaths, 9. Jan. 1–21, 1922: Cases, 13; deaths, 8. Jan. 22–Mar. 4, 1922: Cases, 51; deaths, 25; occurring at Arrifes, Capelas, Fenaes, Ribeira Grande and Santo Antonio: distance from port of Ponta Delgada, 3 to 9 miles.
Arrifes	Dec. 25–31	1	1	3 miles from port.
Do	Jan. 1–7	1		
Fenaes d'Ajuda	Nov. 27–Dec. 3			Present. 6 miles from port.
Do	Jan. 15–21	3	2	
Ribeira Grande	Nov. 13–Dec. 10	19	8	9 miles from port.
Do	Jan. 8–14	9	6	
Livramonto	Dec. 4–10	2		Vicinity of Ponta Delgada.
Ponta Delgada	do	1		
Brazil:				
Bahia	Oct. 30–Dec. 31	13	12	
Do	Jan. 1–Feb. 18	13	10	
Para	Feb. 6–12		1	
Rio de Janeiro	Jan. 22–28	1	1	
British East Africa:				
Uganda	Aug. 1–Nov. 29	169	140	Aug. 1–Oct. 31, 1921: Reports of inspectors, deaths, 343; reports of chiefs, deaths, 651.
Cape Verde Islands:				
St. Vincent	Mar. 16			Present: no plague mortality reported during previous 5-month period. August, 1921: Cases, 6; deaths, 3.
Ceylon:				
Colombo	Oct. 30–Dec. 31	13	10	Oct. 30–Dec. 24, 1921: Rodent plague, 6.
Do	Jan. 1–Feb. 25	23	20	Infected rats, 10.
Chile:				
Antofagasta				Mar. 5–11, 1922: 1 plague rat.
China:				
Amoy	Feb. 18–Mar. 4			Present in surrounding country.
Hongkong	Nov. 20–Dec. 17	6		
Do	Jan. 1–Mar. 4	42	21	
Ecuador:				
Guayaquil	Nov. 16–Dec. 31	18	6	Rats examined, 2,958; found infected, 90. Total, July–Dec. 15, 1921: Cases, 28. Jan. 1–Feb. 28, 1922: Rats examined, 11,800; found infected, 295.
Do	Jan. 1–Feb. 28	31	12	
Egypt				Jan. 1–Dec. 31, 1921: Cases, 356; deaths, 153. Jan. 1–Mar. 16, 1922: Cases, 43; deaths, 22.
City—				
Alexandria	Dec. 5–30	7	2	Feb. 12–18, 1922: 1 plague rodent.
Do	Jan. 17–Mar. 16	8	5	Mar. 12–16, 1922: One case, one death, septicemic.
Port Said	Dec. 20	1		
Do	Mar. 15	1	1	
Suez	Nov. 22–Dec. 31	16	9	
Do	Jan. 2–Mar. 14	5	3	

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

Reports Received from December 31, 1921, to April 21, 1922—Continued.

PLAGUE—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Egypt—Continued.				
Province—				
Assouan	Feb. 28	1	1	Septicemic.
Fayoum	Feb. 17-Mar. 9	5	1	
Gharbieh	Feb. 17-28	4	.....	
Girgeh	Jan. 12	1	.....	Do.
Keneh	Dec. 1	1	.....	Do.
Do	Jan. 21-Feb. 28	4	3	Pneumonic, 1 case, 1 death; septicemic, 1 case.
Minieh	Feb. 21-Mar. 9	3	3	Septicemic.
Greece:				
Preveza	Feb. 8	.....	.....	Outbreak. Port on the Ionian Sea.
India		[illegible]	.....	Oct. 23-Dec. 31, 1921: Cases, 8,690; deaths, 6,458 (reports, weeks ended Dec. 3 and 17, 1921, missing). Jan. 1-Feb. 11, 1922: Cases, 13,051; deaths, 10,100.
Bombay	Oct. 23-Dec. 24	7	6	
Do	Jan. 1-Feb. 11	33	18	
Calcutta	Jan. 29-Feb. 11	2	2	
Karachi	Nov. 6-Dec. 31	5	5	
Do	Jan. 1-Mar. 5	82	64	
Madras	Dec. 11-17	1	.....	
Madras Presidency	Nov. 13-Dec. 31	2,047	1,438	
Do	Jan. 1-Mar. 6	3,182	2,293	
Rangoon	Oct. 1-Dec. 31	139	129	
Do	Jan. 1-Feb. 25	257	231	
Indo-China:				
Saigon	.....	.....	.....	Nov. 6-Dec. 24, 1921: Rodent plague, 10. Jan. 8-Feb. 4, 1922. Rodent plague.
Italy:				
Catania	Nov. 27	1	1	Total, Oct. 16-Nov. 27, 1921: Cases, 8 (of which 1 doubtful); deaths, 5. Jan.-Feb., 1922: 28 plague-infected rats found.
Naples (Province)—				
Torre Annunziata	Oct. 22-Dec. 27	2	.....	17 miles from city of Naples.
Venice	Oct. 27	1	.....	
Java	.....	.....	.....	Islands of Java and Madoera: Nov. 1-Dec. 31, 1921: Deaths, 1,781. Jan. 1-31, 1922: Deaths, 976.
East Java—				
Soerabaya	Oct. 30-Dec. 10	11	12	
Do	Jan. 1-Feb. 11	4	4	
Madagascar:				
Tananarive	Mar. 2	38	.....	Among natives. Entire city reported infected. Feb. 4: Present.
Mauritius (Island):				
Port Louis	Oct. 29-Dec. 30	241	142	Plague-infected rats, 176; plague-infected cats, 36. (Corrected report.) Dec. 1-30, 1921: Dead rats found, 155; dead cats, 4.
Do	Dec. 31-Jan. 11	7	2	Dead rats found, 17.
Mesopotamia:				
Bagdad	Oct. 1-31	1	1	
Mexico:				
Tampico	Mar. 26-Apr. 1	1	.....	Dec. 18-31, 1921: Infected rodents found, 5; total, Jan. 1-Dec. 31, 1921, infected rodents, 322; Jan. 1-Apr. 8, 1922, 14 plague-infected rodents.
Vera Cruz	.....	.....	.....	One infected rodent caught Dec. 5, 1921.
Peru	.....	.....	.....	Nov. 17-Dec. 31, 1921: Cases, 94; deaths, 35. Occurring in Callao, Huacho, Huaras, Lima, Magdalena Vieja, Paita, Salaverry, and Sechura, Jan. 1-Feb. 28, 1922: Cases, 141; deaths, 62. (Corrected report to Feb. 15, 1922.)
Localities—				
Bambamarca	Jan. 1-15	.....	.....	Present. Rural.
Barranco	Jan. 16-31	1	.....	
Callao	Jan. 1-Feb. 28	7	4	Rural. Year, 1921: Deaths, 30.
Casma	Feb. 1-28	11	3	
Chiclayo	Jan. 16-Feb. 28	19	16	
Chilca	Jan. 16-Feb. 15	11	2	

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

Reports Received from December 31, 1921, to April 21, 1922—Continued.

PLAGUE—Concinued.

Place.	Date.	Cases.	Deaths.	Remarks.
Peru—Continued.				
Localities—Continued.				
Cutervo	Jan. 1-15	1		Rural.
Guadalupe	Jan. 1-31	7	2	
Huacho	Jan. 1-Feb. 15	3		
Hualgayoc	Jan. 16-31			Province. Present.
Huaral	Jan. 1-15	2		
Jayanca	do			Present.
Lambayeque	Jan. 16-Feb. 15	3	1	
Lima	Jan. 1-Feb. 28	14	4	In district, 20 cases; 6 deaths.
Mollendo	Feb. 1-28	3		
Pacasmayo	do	1		
Payta	Jan. 1-Feb. 28	28	21	
Piura	Feb. 1-15	1		
Salaverry	Jan. 16-31	1		
San Pedro	Jan. 1-15	1		
Sullana	Jan. 1-Feb. 28	3	3	
Trujillo	Feb. 1-15			Present.
Tumbez	do	4		
Portugal:				
Lisbon	Dec. 15	1	1	
Portuguese West Africa:				
Angola—				
Loanda	Oct. 9-Nov. 5		2	
Mossamedes	Feb. 14			Present.
Rhodes (Island) (Aegean Sea)	Oct. 13	3	1	
Senegal:				
Dakar	Feb. 1-28	2		Jan. 1-31, 1922: 1 rodent plague.
Siam:				
Bangkok	Oct. 23-Dec. 31	7	6	
Do	Jan. 8-Feb. 18	22	14	
Straits Settlements:				
Singapore	Nov. 6-Dec. 31	3	3	
Do	Jan. 15-Feb. 28	30	11	
Syria:				
Beirut	Oct. 9-Nov. 20	10	4	
Turkey:				
Constantinople	Jan. 1-7	1		
Union of South Africa:				
Orange Free State—				
Boschrand Farm	Jan. 25	3	3	10 miles from Kroonstad.
Bothaville	Nov. 19			Plague-infected mouse found.
Hoopstad	Dec. 4-10	1		In native herd boy.
Klipfontein (farm)	Feb. 10	1	1	12 miles from Bothaville. Plague infection found in rats on adjoining farm, week ended Feb. 4, 1922.
On vessel:				
S. S. City of Genoa	Mar. 9-15	4	2	At Suez and Port Said, Egypt from Karachi and Bombay, India, for Plymouth, England: One fatal case at sea en route to Suez; 1 case on arrival. At Port Said, 2 cases, of which 1 fatal.
S. S. Polycarp	Feb. 3	1		At Para, Brazil, from Ceara, via, Manaos, Maranham, and Para; for New York.
S. S. Tango Maru	Dec. 31	1		At Thursday Island Quarantine, Australia, from Kobe, via Nagasaki, Hongkong, Manila, and Zamboanga.
S. S. Warwickshire	Feb. 12			At Liverpool, England, from Rangoon. Plague rats, 27; 1 plague mouse.

SMALLPOX.

Arabia:				
Aden	Dec. 25-31		1	
Do	Jan. 8-14		1	
Asia Minor:				
Smyrna	Jan. 15-21	1		In district.
Algeria:				
Algiers	Jan. 1-Feb. 28	2		

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

Reports Received from December 31, 1921, to April 21, 1922—Continued.

SMALLPOX—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Bolivia:				
La Paz	Aug. 1-Dec. 31	60	41	
Do	Jan. 1-31	15	9	
Brazil:				
Bahia	Nov. 6-Dec. 17	4		
Do	Jan. 8-Feb. 4	2		
Rio de Janeiro	Nov. 13-Dec. 31	13	2	
Do	Jan. 1-Mar. 11	34	8	
Sao Paulo	Oct. 31-Dec. 25	11		
Do	Dec. 26-Jan. 8	2		
British East Africa:				
Uganda	Aug. 1-Nov. 30	22	3	
Canada:				
British Columbia—				
Vancouver	Dec. 25-31	3		
Do	Jan. 29-Feb. 4	1		
Victoria	Mar. 12-18	1		
Manitoba				Year 1921: Cases, 71.
Winnipeg	Nov. 20-Dec. 3	2		
New Brunswick—				
Charlotte County				Dec. 17, 1921: 31 cases previously reported, occurring at Andersonville and Blacks Harbor. Dec. 18-24, 1921: Cases, 3. Dec. 25-31, 1921: Cases, 2. Feb. 19-20, 1922: Cases, 2.
St. Stephen	Dec. 11-17	2		
Restigouche County				Dec. 11-31, 1921: Cases, 3. Feb. 12-25, 1922: Cases, 4.
Charlo	Feb. 19-25	2		20 miles from Campbellton.
Westmoreland County	Mar. 5-18	13		
York County	Dec. 11-17	1		
Do	Jan. 29-Feb. 4	1		
Ontario				Dec. 1-31, 1921: Cases, 128. Jan. 1-31, 1922: Cases, 170; Feb. 1-28, 1922: Cases, 185.
Fort William and Port Arthur	Jan. 1-21	3		
Hamilton	Jan. 22-Mar. 25	4		
Kingston	Jan. 17-Feb. 11	5		Jan. 16-20, 1922: Two cases reported.
Niagara Falls	Dec. 11-24	2		
Do	Jan. 15-Apr. 10	40		
North Bay	Feb. 12-15	1		
Ottawa	Dec. 11-24	17		
Do	Jan. 1-Mar. 25	34		
Sault Ste. Marie	Jan. 15-21	1		
Toronto	Dec. 11-24	4		
Do	Jan. 1-Apr. 1	51		
Windsor	Jan. 8-Mar. 4	3		
Quebec—				
Montreal	Dec. 11-24	1		
Saskatchewan—				
Regina	Jan. 1-Feb. 11	4		
Saskatoon	Dec. 1-18	6		
Do	Feb. 5-18	3		
Canal Zone:				
Ancon				Admitted to hospital by transfer from Panama, Nov. 30, 1921, 1 case. Arrived on sailing vessel from a village on south coast.
Ceylon:				
Colombo	Nov. 27-Dec. 3	1		Port case.
Do	Jan. 29-Feb. 25	2		One port case.
Chile				Jan.-Sept., 1921: Cases, 5,500 (approximately); deaths, 2,200 (approximately). Nov. 15-21, 1921: Diffused in southern provinces; not epidemic.
Concepcion	Nov. 23-Dec. 26		25	Nov. 15-21, 1921: Present. In vicinity, at Hualqui, cases, 32; deaths, 5. Dec. 4-17, 1921: Present.
Do	Dec. 27-Jan. 30		21	
Coronel	Nov. 15-Dec. 17			Present.
Curanilahue	Nov. 15-21	4		
Lota				Oct. 28, 1921-Jan. 31, 1922: Cases, 879; deaths, 338.
Osorno				From beginning of outbreak to Feb. 15, 1922: Cases, 87.
Talcahuano	Nov. 15-Dec. 24	6		Jan. 8-28, 1922: Present.
Do	Jan. 29-Feb. 18	5		

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

Reports Received from December 31, 1921, to April 21, 1922—Continued.

SMALLPOX—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Chile—Continued.				
Temuco	Nov. 15–21	9		From beginning of outbreak to Feb. 15, 1922: Cases, 80.
Valparaiso	Oct. 23–Dec. 31		94	
Do	Jan. 1–21		39	
China:				
Amoy	Nov. 16–Dec. 31		7	Nov. 23–29, 1921: Present. Jan. 22–28, 1922: Present.
Do	Jan. 1–Mar. 4		10	
Antung	Nov. 28–Dec. 18	4	1	
Canton	Dec. 1–31			Present.
Changsha	Jan. 16–22	1		
Chungking	Nov. 6–Dec. 31			Do.
Do	Jan. 1–Feb. 18			Do.
Foochow	Nov. 6–Dec. 31			Do.
Do	Jan. 1–Feb. 11			Do.
Hankow	Nov. 13–Dec. 31			Do.
Do	Jan. 1–21	2		
Harbin	Nov. 14–Dec. 11	5		
Do	Dec. 26–Feb. 12	3		
Hongkong	Dec. 3–31	5		
Do	Jan. 1–Mar. 4	41	30	
Mukden	Nov. 20–Dec. 31			Do.
Do	Jan. 15–Mar. 10			Do.
Nanking	Nov. 20–Dec. 17			Do.
Do	Jan. 15–Mar. 15			Do.
Shanghai	Oct. 31–Dec. 31	23	194	Cases, foreign; deaths, Chinese and foreign. Populations: Native, 790,000; foreign, 24,000. Corrected report.
Do	Jan. 2–Mar. 12	34	499	Cases, foreign; deaths, native. Jan. 14, 1922: Seriously prevalent.
Tientsin	Dec. 11–17	2		In Mission Hospital.
Tsingtau	Jan. 1–Feb. 19	31	11	
Chosen (Korea):				
Fusan	Dec. 1–31	3	1	
Do	Jan. 1–Feb. 28	80	19	
Gensan	Feb. 1–28	1		
Seoul	Jan. 1–Feb. 28	8	3	
Colombia:				
Cartagena	Nov. 22–28		1	
Santa Marta	Feb. 19–25			Present.
Cuba				Dec. 4–31, 1921: Cases, 361. Jan. 1–31, 1922: Cases, 257.
Antilla	Dec. 12–31	3		At Preston.
Do	Jan. 8–Feb. 4	13	1	
Cienfuegos	Jan. 22–Mar. 4	5	1	Two cases from outside city limits.
Santiago	Jan. 1–Feb. 28	8	1	
Czechoslovakia:				
Prague	Dec. 18–24		42	
Dominican Republic				Oct. 1–31, 1921: Cases, 653; deaths, 54. Jan. 2–Feb. 4, 1922: Cases, 6,922; deaths, 185.
Puerta Plata	Jan. 13	100	5	In district, widely diffused, with 1,000 estimated cases with 100 deaths.
San Pedro de Macoris	Nov. 20–Dec. 31	31	1	Estimate of about 500 cases of smallpox in the district of Macoris; of this number 50 within the city limits.
Do	Jan. 14–Feb. 4	122		In surrounding country. Feb. 12–25: 66 cases. Feb. 26–Mar. 11: 61 cases.
Santo Domingo	Nov. 15–Dec. 5			In district, 401 cases estimated. Dec. 17–24, 1921: Present in vicinity. Jan. 9–16, 1922: In surrounding country, 1,745 cases (estimated).
Ecuador:				
Guayaquil	Nov. 16–Dec. 31	7		And vicinity.
Do	Jan. 1–Feb. 28	3		
Egypt:				
Alexandria	Nov. 26–Dec. 2	1	1	
Cairo	do	2		
Port Said	Dec. 20–26	1		Dec. 16–23, 1921: 1 case.
Do	Jan. 22–28	1		

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

Reports Received from December 31, 1921, to April 21, 1922—Continued.

SMALLPOX—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Finland				Nov. 16–30, 1921: 1 case.
Do				Feb. 1–15, 1922: Cases, 19.
Fiume				Dec. 27, 1921–Jan. 2, 1922: Cases, 2.
Great Britain:				
Manchester	Jan. 1–7	4		
Nottingham	Dec. 4–31	18		
Do	Jan. 8–28	3		
Swansea	Jan. 17–23	2		Imported on vessel from Persian Gulf.
Haiti				Jan. 22–Mar. 25, 1922: A few cases.
Cape Haitien	Dec. 11–24	8		
Do	Jan. 1–Feb. 18	21	1	
Port au Prince	Dec. 11–31			Present.
Do	Jan. 15–21	2		
India				Oct. 2–8, 1921: Deaths, 28. Oct. 23–Nov. 19, 1921: Deaths, 266. Nov. 27–Dec. 31, 1921: Deaths, 533. Jan. 1–14, 1922: Deaths, 329.
Bombay	Oct. 23–Dec. 31	3	2	
Do	Jan. 1–Feb. 11	10	1	
Calcutta	Nov. 13–Dec. 31	37	28	
Do	Jan. 1–Feb. 25	110	102	
Karachi	Nov. 11–Dec. 31	28	9	
Do	Jan. 1–Mar. 4	60	37	
Madras	Nov. 13–Dec. 31	133	59	
Do	Jan. 1–Mar. 4	602	212	
Rangoon	Oct. 1–Dec. 31	6		
Do	Jan. 15–Feb. 25	85	1	
Indo-China:				
Saigon	Dec. 18–24	1	1	City and district.
Do	Jan. 8–Feb. 18	8	8	Do.
Italy:				
Catania	Feb. 20–26	1		In Province.
Genoa	Nov. 10–20	1		
Messina—				
Messina	Nov. 28–Dec. 4	1		
Pettineo	Nov. 14–Dec. 4	2		
Venice	Jan. 30–Feb. 5	2		
Japan:				
Kobe	Jan. 23–29	3	1	
Taiwan Island	Dec. 1–31	2	1	
Do	Feb. 14–Mar. 10	2	1	
Yokohama	Jan. 9–29	3		Corrected report.
Java:				
East Java—				
Soerabaya	Jan. 1–7	4		
West Java—				
Bandoeng	Nov. 18–Dec. 8	2		
Batavia	Nov. 18–Dec. 22	11	9	City and Province.
Do	Dec. 30–Jan. 26	3	3	In Province: Cases, 23; deaths, 4; 13 cases, with 3 deaths, not locally stated. Feb. 3–9, 1922: Cases, 10; deaths, 1.
Buitenzorg	Nov. 25–Dec. 8	7	1	
Krawang	Nov. 18–24	1		
Lebak	Nov. 18–Dec. 8	7	4	
Pandeglang	Nov. 25–Dec. 1		1	
Tangerang	Nov. 18–Dec. 8	5	1	
Liberia:				
Grand Bassa County	Nov. 30			Present at Lower Buchannan.
Mesopotamia:				
Bagdad	Oct. 1–Nov. 30	117	50	Epidemic with high mortality November, 1921.
Mexico:				
Chihuahua	Dec. 5–11		1	
Do	Jan. 22–Feb. 19		2	
Guadalajara	Nov. 1–Dec. 31	6		
Do	Jan. 1–Feb. 28	31	5	
Mexico City	Nov. 20–Dec. 31	64		Including municipalities in Federal District.
Do	Jan. 1–Mar. 4	139		Do.
Monterey	Apr. 12		2	Epidemic.
Saltillo	Jan. 29–Feb. 4		1	From San Salvador, Zacatecas.
San Luis Potosi	Dec. 18–24		2	
Do	Jan. 8–Apr. 1		18	
Torreon	Dec. 1–31		134	
Do	Jan. 1–Feb. 28		82	
Newfoundland:				
St. Johns	Feb. 4–10	1		
Nicaragua:				
Managua	Mar. 5			Present.

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

Reports Received from December 31, 1921, to April 21, 1922—Continued.

SMALLPOX—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Palestine:				
Jerusalem	Jan. 10–Feb. 20	27		
Panama:				
Bocas del Toro Province—				
Sursuba	Jan. 18–Feb. 8	11		Village 24 miles from Almirante.
Chiriqui Province	Dec. 22			Present.
Do	Jan. 26			Present with center of prevalence at Boquete Bajo. At Boquete Bajo, Jan. 22–Mar. 23, 1922, 59 admissions to lazaretto; on Mar. 20, 1922, 16 cases of smallpox, confluent type.
Panama	Dec. 14	1		On Dec. 21, 1921: 1 additional case from country district of Sabanas admitted to hospital. Total admissions, Jan. 1–Dec. 21, 1921, 207.
Peru:				
Lima	Nov. 1–Dec. 31		3	
Poland				Aug. 14–Dec. 31, 1921: Cases, 578; deaths, 146. Exclusive of Brest-Litovsk, Minsk, and Wilno districts.
Portugal:				
Lisbon	Nov. 13–Dec. 31	48	12	
Do	Jan. 1–28	46	1	
Portuguese East Africa:				
Lourenco Marques	Oct. 1–Nov. 5	2	4	
Portuguese West Africa:				
Angola—				
Loanda	Oct. 9–Dec. 31		7	
Do	Jan. 1–14		3	
Rumania:				
Bucharest	Nov. 1–30		33	
Chisinau	Dec. 1–31	33		
Russia:				
Esthonia	Oct. 1–Dec. 31	38		
Latvia	do	75		
Do	Jan. 1–31	15		
Senegal:				
Dakar	Jan. 1–Feb. 28	5	3	
Serbia:				
Belgrade	Oct. 2–Nov. 26	16	4	
Siam:				
Bangkok	Oct. 23–Nov. 5	1		
Spain:				
Barcelona	Jan. 8–14		1	
Huelva	Oct. 1–Dec. 31		3	
Malaga	Nov. 1–Dec. 31		60	
Do	Jan. 1–31		8	
Seville	Nov. 16–Dec. 31		7	
Do	Jan. 8–Mar. 11		33	
Valencia	Jan. 22–Mar. 18	4	1	
Straits Settlements:				
Singapore	Nov. 6–Dec. 24	49	13	
Do	Jan. 1–Feb. 18	77	20	
Switzerland:				
Glarus, Canton	Dec. 10			Epidemic.
Lucerne	Feb. 1–28	12		
St. Gall	Feb. 12–18	1		
Zurich	Dec. 10	2		In vicinity.
Do	Mar. 12–18	5		
Syria:				
Adana	Dec. 18–24			Present.
Do	Jan. 1–14			Do.
Aleppo	Dec. 18–24			Do.
Do	Jan. 1–Mar. 4			Do.
Alexandretta	do			Do.
Beirut	Oct. 9–Nov. 13	5	2	
Do	Jan. 8–Feb. 25	20	9	Dec. 29, 1921–Jan. 4, 1922: Cases, 14; deaths, 2.
Cilicia	Jan. 8–Feb. 4			Present.
Diarbekir	Dec. 18–24			Do.
Do	Jan. 1–Feb. 4			Do.
Mersina	Dec. 18–24			Do.
Do	Jan. 1–7			Do.

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

Reports Received from December 31, 1921, to April 21, 1922—Continued.

SMALLPOX—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Syria—Continued.				
Urfa	Dec. 18–24			Present.
Do	Jan. 1–Feb. 4			Do.
Tunis:				
Tunis	Nov. 26–Dec. 23	17	15	
Do	Jan. 1–Feb. 4	4	5	
Turkey:				
Constantinople	Nov. 27–Dec. 24	20	4	
Do	Jan. 15–Mar. 18	88	18	
Union of South Africa				Nov. 1–Dec. 31, 1921: Cases, 326; deaths, 6 (colored). White, 10 cases.
Cape Province	Nov. 5–Dec. 31			Outbreaks. Nov. 1–Dec. 31, 1921: Cases, 42; deaths, 1 (colored).
Do	Jan. 8–Feb. 11			Outbreaks.
Natal	do			Outbreaks. Nov. 1–Dec. 31, 1921: Cases, 209; deaths, 5 (colored).
Orange Free State	Oct. 23–Dec. 24			Outbreaks. Nov. 1–Dec. 31, 1921: cases, 8 (colored).
Do	Feb. 5–11			Outbreaks.
Southern Rhodesia	Dec. 29–Feb. 22	149		Natives.
Transvaal	Oct. 23–Dec. 31			Outbreaks.
Do	Jan. 1–Feb. 11			Outbreaks. December, 1921: Cases, 15. Nov. 1–Dec. 31, 1921: Cases, 22 (colored). Among white population, 8 cases, State not designated.
Johannesburg District	Dec. 1–31	1		
Do	Jan. 1–7			Outbreaks.
Yugoslavia				July 3–30, 1921: Cases, 37.
Bosnia Herzegovina	July 3–9	2		
Croatia Slavonia	do	1		
Dalmatia	do	1		
Serbia	do	3		
Belgrade	Dec. 11–17	4		
Do	Jan. 1–Feb. 18	6		
Slavonia	July 3–9	1		
Voivodina	do	3		
On vessel:				
S. S. Victoria	Jan. 16	1	1	At Thursday Island Quarantine, Australia. Vessel left Hongkong Jan. 3; case isolated, Jan. 10. Vessel left for Townsville, Sydney, and Melbourne. Released at Melbourne Feb. 4, 1922.
S. S. West O'Rowa	Jan. 5–8	3	1	At Kobe, Japan, from Shanghai, China.
S. S. ———	Jan. 17–23	2		At Swansea, Wales, from Persian Gulf.

TYPHUS FEVER.

Algeria:				
Algiers	Nov. 1–Dec. 31	3		
Do	Jan. 11–Mar. 10	4		
Oran	Dec. 21–31	1		
Do	Jan. 1–Mar. 20	20	8	
Asia Minor:				
Brousa	Jan. 15–21	1		
Austria:				
Vienna	Dec. 4–31	10		
Do	Jan. 1–28	9	1	
Bolivia:				
La Paz	Aug. 1–Dec. 31	121	98	
Do	Jan. 1–31	15	12	
Bulgaria:				
Sofia	Dec. 18–24	1		
Do	Feb. 12–Mar. 18	2		
Chile:				
Concepcion	Nov. 22–Dec. 26		3	
Do	Jan. 3–30		3	
Talcahuano	Jan. 29–Feb. 18	3		

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

Reports Received from December 31, 1921, to April 21, 1922—Continued.

TYPHUS FEVER—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Chile—Continued.				
Valparaiso	Oct. 23-Nov. 26	.....	6	
Do	Jan. 1-7	.....	1	
China:				
Antung	Dec. 26-Jan. 1	1	.....	
Do	Feb. 6-12	1	.....	
Harbin	Nov. 7-Dec. 25	12	.....	
Do	Dec. 26-Feb. 19	20	.....	Jan. 23, 1922: Reported extending from Soviet Russia, along railway line to maritime provinces.
Czechoslovakia:				
Prague	Jan. 22-Feb. 18	3	.....	
Danzig (free city)	Feb. 23	1	.....	In district, at Zoppot. In merchant from Warsaw.
Egypt:				
Alexandria	Nov. 19-Dec. 31	3	1	
Do	Jan. 15-Feb. 25	17	5	
Cairo	Oct. 1-Dec. 31	18	14	
Do	Jan. 1-21	4	3	
Port Said	Jan. 22-Feb. 11	2	.....	
Finland:				
Helsingfors	Jan. 1-31	1	.....	In courier from Moscow.
Germany:				
Breslau	Dec. 25-31	2	1	
Do	Jan. 1-Feb. 5	55	8	Including district.
Frankfort-on-Oder	Feb. 16	26	.....	In persons returning from Russia.
Hamburg	Dec. 11-17	4	.....	
Great Britain:				
Glasgow	Dec. 25-31	1	.....	
Greece:				
Saloniki	Jan. 23-29	1	.....	
Italy:				
Palermo	Jan. 15-28	3	1	
Mesopotamia:				
Bagdad	Oct. 1-Dec. 31	3	9	
Mexico:				
Mexico City	Nov. 20-Dec. 31	242	.....	Including municipalities in Federal District.
Do	Jan. 1-Feb. 25	208	.....	Do.
San Luis Potosi	Dec. 18-24	.....	1	Dec. 25-31, 1921: Present.
Do	Jan. 8-Feb. 25	.....	.....	Present. One death.
Palestine:				
Jerusalem	Dec. 27-Mar. 13	11	.....	
Poland	.....	.....	.....	Aug. 14-Nov. 5, 1921: Cases, 2,399; deaths, 173. Nov. 6-Dec. 3, 1921: Cases, 1,512; deaths, 105. Nov. 20-Dec. 10, 1921: Cases, 1,162; deaths, 89. Dec. 4-31, 1921; Cases, 3,600; deaths, 313. Jan. 1-7, 1922: Cases, 1,322. All statistics are exclusive of Brest-Litovsk, Minsk, and Wilno districts.
District—				
Bialystok	Nov. 20-Dec. 10	116	3	
Do	Jan. 1-7	253	.....	
Galicia—				
Lemberg	Jan. 3	229	.....	Jan. 1-7, 1922: Cases, 61.
Kielce	Nov. 20-Dec. 10	31	8	
Do	Jan. 1-7	28	.....	
Krakow	Nov. 20-Dec. 10	45	6	
Do	Jan. 1-7	53	.....	
Lodz	Nov. 20-Dec. 10	67	.....	
Do	Jan. 1-7	41	.....	
Lublin	Nov. 20-Dec. 10	59	.....	
Do	Jan. 1-7	147	.....	
Lwow	Nov. 20-Dec. 10	121	16	
Nowogrod	do	249	15	
Polesia	do	83	5	
Do	Jan. 1-7	450	.....	
Posen	do	1	.....	
Stanislawow	Nov. 20-Dec. 10	88	8	
Do	Jan. 1-7	54	.....	
Tarnopol	Nov. 20-Dec. 10	86	17	
Do	Jan. 1-7	28	.....	
Volhynia	Nov. 20-Dec. 10	89	4	
Do	Jan. 1-7	107	.....	

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

Reports Received from December 31, 1921, to April 21, 1922—Continued.

TYPHUS FEVER—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Poland—Continued.				
District—Continued.				
Warsaw	Nov. 20-Dec. 10	81	2	
Do	Jan. 1-7	32		
Warsaw City	Nov. 20-Dec. 10	47	5	
Do	Jan. 1-7	67		
Portugal:				
Oporto	Jan. 8-Mar. 11	22	2	
Rumania:				
Bucharest	Nov. 1-30	3		
Chisinau	Nov. 1-Dec. 31	28		Dec. 1-31, 1921: Recurrent typhus, cases, 19.
Russia				Nov. 28-Dec. 10, 1921: In Soviet Russia, cases, 7,681.
Esthonia	Oct. 1-Dec. 31	53		
Do	Jan. 1-31	36		Recurrent typhus, 29 cases.
Latvia	do	341		(Corrected report) Oct. 1-Nov. 30, 1921: Cases, 127.
Libau	Jan. 15-Feb. 1	4		
Lithuania	Jan. 1-31	814	73	Recurrent typhus: Cases, 357; deaths, 12.
Perm	Nov. 23-Dec. 10	1,408		Oct. 1-31, 1921: Cases, 539. Nov. 1-30, 1921: Cases, 2,399.
Saratov District—				
Markstadt				Sept. 1-Dec. 31, 1921: Cases, 1,987; mortality, about 10 per cent; hospital cases.
Serbia:				
Belgrade	Oct. 2-Nov. 26	3	2	
Siberia				Jan. 23, 1922: Present in western districts.
Chita	Dec. 26			Epidemic.
Vladivostok	Dec. 25-31	5	1	
Spain:				
Madrid	Dec. 1-31	1		
Do	Jan. 1-31	2		
Syria:				
Diarbekir	Mar. 5-11			Present.
Mardin	do			Do.
Tunis:				
Tunis	Feb. 5-Mar. 4	3	3	
Turkey:				
Constantinople	Nov. 20-Dec. 31	19		
Do	Jan. 1-Mar. 18	31		
Union of South Africa				Nov. 1-Dec. 31, 1921: Cases, 1,368; deaths, 205 (colored). White, 20 cases; deaths, 4.
Cape Province				Oct. 23-Dec. 24, 1921: Outbreaks. Nov. 1-Dec. 31, 1921: Cases, 1,053; deaths, 158 (colored). Among white population, 19 cases, 3 deaths.
Do				Jan. 1-Feb. 11, 1922: Outbreaks.
East London	Oct. 30-Dec. 21	3		One death in European at Jensenville, Dec. 6, 1921.
Do	Jan. 29-Feb. 11	2		Natives.
Natal	Nov. 5-Dec. 17			Outbreaks. Stated to be prevalent only in Newcastle District. Nov. 1-Dec. 31, 1921: Cases, 135; deaths, 25 (colored).
Orange Free State	Nov. 13-Dec. 31			Outbreaks. Nov. 1-Dec. 31, 1921: Cases, 158; deaths, 21, (colored).
Do	Jan. 1-Feb. 11			Outbreaks.
Durban	Jan. 15-21	1		Imported.
Transvaal	Jan. 8-Feb. 11			Outbreaks. Nov. 1-Dec. 31, 1921: Cases, 35; deaths, 4 (colored). White, one case, one death.
Johannesburg District	Jan. 12-18	26	4	
Venezuela:				
Maracaibo	Dec. 20-26		1	
Yugoslavia				July 3-30, 1921: Cases, 13.
Bosnia Herzegovina	July 3-9	1		
Croatia—				
Zagreb	Jan. 1-Feb. 25	3		
Montenegro	July 3-9	3		

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

Reports Received from December 31, 1921, to April 21, 1922—Continued.

YELLOW FEVER.

Place.	Date.	Cases.	Deaths.	Remarks.
Brazil:				
Pernambuco	Feb. 19–25	1	1	
Mexico				Year 1921: Cases, 115; deaths, 53.
Colima (State)				Year 1921: Cases, 7; deaths, 4.
Colima	Oct. 27	4	3	
Manzanillo	Aug. 21	3	1	
Jalisco (State)				Year 1921: Cases, 13; deaths, 7.
Guadalajara	Nov. 1–30	1	1	Imported.
Puerta Vallarta (Las Penas).	Oct. 5–Dec. 17	13	5	
Do	Jan. 31		1	
Tonila	Aug. 31	1	1	
Quintana Roo (Territory)—				
Payo Obispo	Aug. 8	1	1	
Sinaloa (State)				Year 1921: Cases, 18; deaths, 9.
Culiacan	Sept. 17	4	1	
Guamuchil	Oct. 10	1		
Mazatlan	Aug. 21	1	1	Imported.
Palmar de los Leales	Sept. 30	12	7	
Tamaulipas (State)				Year 1921: Cases, 1; deaths, 1.
Tampico	Jan. 11	1	1	
Vera Cruz (State)				Year 1921: Cases, 75; deaths, 31.
Alamo	June 21	4	1	Oil camp.
Alvarado	July 3	1	1	
Barra de Penn	July 18	1	1	
Cordoba	Sept. 22	5	3	
Cosamaloapam	July 18	14	6	
Nogales	Oct. 28	1	1	
Crizaba	do	1		
Papantla	Jan. 14	6	3	
Providencia	Oct. 28	3		
Purga	Feb. 7	1	1	
Rancho de Santa Rosa	Oct. 8	2		
Rancho "El Jaguey"	Sept. 14	2	2	
San Pablo (Papantla)	Sept. 12	1		
San Ildefonso	Oct. 17	2		
Tierra Blanca	Sept. 24–Nov. 12	4	3	
Tlacotalpan	Sept. 14	1	1	
Tuxpam	Jan. 3	8	2	
Vera Cruz	Jan. 15	18	7	Two of these cases imported Dec. 20–26, 1921: Cases, 1; deaths, 1. Imported.