PUBLIC HEALTH REPORTS

VOL. 51 AUGUST 14, 1936 No. 33

PREVENTION OF INTRANASALLY INOCULATED ENCEPHALITIS (ST. LOUIS TYPE) IN MICE AND OF POLIOMYELITIS IN MONKEYS BY MEANS OF CHEMICALS INSTILLED INTO THE NOSTRILS

By CHARLES ARMSTRONG and W. T. HARRISON, *Surgeons, United States Public Health Service, National Institute of Health*

Encouraging results in the prevention of intranasally inoculated encephalitis (St. Louis type) in mice by means of chemicals instilled into the nostrils have been reported by Armstrong (*1*), and Armstrong and Harrison (*2, 3*). Successful results were similarly produced against intranasally inoculated poliomyelitis in monkeys by Armstrong and Harrison (*2, 3*); Schultz and Gebhardt (*4*); and Sabin, Olitsky, and Cox (*5*).

Among chemicals found effective in preventing intranasal infection with the above-mentioned neurotropic viruses were several astringents, such as sodium aluminum sulphate (*1, 2, 3, 5*), picric acid (*3, 4*), and tannic acid (*5*).

We desire to report here certain findings which apparently exert a marked influence upon the effectiveness of picric acid solutions in preventing experimental intranasal infection by the above-mentioned viruses. Unpublished work by Armstrong indicates that the protection afforded mice against intranasal infection with encephalitis virus is not due, at least not in major part, to its antiseptic action, since, mixed with saline, buffered to pH 7.6, it exerted no marked viricidal effect. Sabin, Olitsky, and Cox (*5*) believe that the protection afforded by sodium alum is likewise not due to its viricidal action.

The local effects produced by astringents are usually attributed in large part to their ability to form precipitates with proteins; and since the acidity of the mixture is known to be an important factor in this reaction, it was deemed desirable to study this relationship *in vitro* and to attempt to correlate the findings with the protection obtained in animals.

METHODS

Solutions of picric acid in varying buffers (pH 8.6 to pH 1.4) were prepared by adding 1 part of a warm 2 percent picric acid in saline solution to 3 parts of the appropriate buffer, thus giving a 0.5 percent solution of picric acid.

The coagulating effect of the various buffered solutions was tested by placing 0.2 cc of the solution in small test tubes to which human

ascitic fluid or pooled human serum was slowly added with constant agitation. The appearance or nonappearance of a floccular precipitate was noted. The precipitate, if formed, was found to redissolve in excess of the protein-containing fluid. The amount of such fluid necessary to bring about resolution of the precipitate was recorded in each instance.

The results as shown in table 1 relate to human ascitic fluid, each recorded observation being the average of several trials. Results with blood serum were similar to those given for ascitic fluid, with the exception that it was necessary to add somewhat less serum than ascitic fluid to bring about resolution of any coagulum which formed.

The final hydrogen ion concentrations of the buffered picric acid solutions were determined by Senior Biophysicist Herbert Kahler by means of the glass electrode method.

TABLE 1.—*In vitro studies of the protein-coagulating action of various chemical solutions*

Chemical	Amount of chemical in test	Ascitic fluid added to produce flocculation	Ascitic fluid added to produce resolution of flocculi	Amount of N/10 NaOH to render 1 cc chemical alkaline to litmus	Electrically determined pH of solution
	Cc.	*Cc.*	*Cc.*	*Cc.*	
0.5 percent picric acid-buffered pH 8.6	0.2	0.01	0.08	0.17	[1] 1.90
0.5 percent picric acid-buffered pH 8.0	.2	[2]	[2]	.13	6.45
0.5 percent picric acid-buffered pH 7.0	.2	[2]	[2]	.28	5.42
0.5 percent picric acid-buffered pH 5.0	.2	.01	.18	.49	3.20
0.5 percent picric acid-buffered pH 4.4	.2	.01	.25	.63	2.93
0.5 percent picric acid-buffered pH 2.8	.2	.01	.45	.86	2.05
0.5 percent picric acid-buffered pH 1.4	.2	.01	.31	.80	1.30
0.5 percent picric acid in 0.85 percent saline	.2	.01	.14	.26	1.66
0.5 percent picric acid +0.5 percent sodium aluminum in 0.85 percent saline	.2	.01	.63	.77	1.90
0.5 percent sodium aluminum in 0.85 percent saline	.2	.04	.54	.50	3.62

[1] This H_3BO_3 KCl NaOH buffer was thrown out of its buffer range by the addition of picric acid.
[2] No flocculation.

Buffers alone occasioned no flocculation when mixed with ascitic fluid in the same proportions.

In vitro results.—It was found that the picric acid solutions in pH 8.0 and pH 7.0 buffers, which by the electrical method showed readings of pH 6.45 and pH 5.42, respectively, gave no precipitation when ascitic fluid or serum was added in any proportion, whereas in more acid ranges precipitation promptly occurred. The precipitates formed at the more acid ranges tended to be more copious and more difficult to redissolve than were those formed at a lower acidity. The buffer solutions alone occasioned no protein precipitation.

In vivo results.—Should the protective action of picric acid in animals be dependent upon its local protein coagulating effect, a difference should be apparent in mice and monkeys prepared with the buffered pH 7.0 solution, which occasioned no precipitation with proteins, as compared with those which received the more acid strongly flocculating solutions.

TABLE 2.—*Protection of mice against intranasally inoculated encephalitis virus (St. Louis type) by means of various chemical solutions previously instilled into their nostrils*

Solution intranasally instilled	Number of mice treated intranasally on specified date				Number of mice given 0.03 cc 1:430 dilution of virus intranasally, 6/12/36	Deaths by days following intranasal inoculations of virus													Number of mice survived	Percent of mice survived
	6/1/36	6/3/36	6/5/36	6/8/36		1	2	3	4	5	6	7	8	9	10	11	12	13	14	
0.5 percent picric acid in pH 8.6 buffer	35	35	35	35	35	------	------	------	------	------	------	1	[1] 1	1	1	------	------	------	------	31	91
0.5 percent picric acid in pH 7.0 buffer	35	35	35	35	34	------	------	------	------	------	8	11	4	1	1	------	------	------	------	9	26
0.5 percent picric acid in pH 5.0 buffer	35	35	35	35	35	------	------	------	------	------	1	1	1	------	1	------	------	------	------	31	89
0.5 percent picric acid in pH 2.8 buffer	35	35	35	35	35	[2] 1	------	------	------	------	------	1	------	1	------	------	------	1	------	31	91
0.5 percent picric acid in pH 1.4 buffer	35	35	35	35	34	------	------	------	------	------	------	1	------	------	2	------	------	------	------	31	91
0.5 percent picric acid in 0.85 percent saline	35	33	33	33	32	------	------	[2] 1	------	------	------	------	------	------	------	------	------	------	------	31	100
Nonprepared controls	35	35	35	35	35	------	------	------	------	------	6	17	1	------	2	------	1	------	------	8	23

[1] Killed by cage door.
[2] Excluded from compilations as deaths were too early for encephalitis.

TABLE 3.—*Protection of mice against intranasally inoculated encephalitis virus (St. Louis type) by means of various chemical solutions previously instilled into their nostrils*

Solution intranasally instilled	Number of mice treated intranasally on specified date			Number of mice given 0.03 cc 1:430 dilution of virus intranasally, 7/1/36	Deaths by days following intranasal inoculation of virus														Number of mice survived	Percent of mice survived
	6/24/36	6/26/36	6/20/36		1	2	3	4	5	6	7	8	9	10	11	12	13	14		
0.5 percent picric acid in pH 8.6 buffer	35	35	35	35						1	6								28	80
pH 8.6 buffer	35	35	34	33							12	5	1	1					14	42
0.5 percent picric acid in pH 7.0 buffer	35	35	35	35						3	12	7	1	1					11	31
pH 7.0 buffer	35	35	35	35					1		13	6							15	43
0.5 percent picric acid in pH 4.4 buffer	35	35	34	34															34	100
pH 4.4 buffer	35	35	35	33						1	17	4	2						9	27
0.5 percent picric acid in pH 2.8 buffer	35	35	35	35								1					1		33	94
pH 2.8 buffer	35	35	35	35							6	1							28	80
0.5 percent picric acid in pH 1.4 buffer	36	36	36	36							3	1							32	89
pH 1.4 buffer	35	35	35	35							1		2	3	2			2	25	71
0.5 percent picric acid in 0.85 percent saline	35	35	34	34							3								31	91
Nonprepared controls	35	35	35	34						1	11	3	3			1			15	44

By reference to tables 2 and 4 it may be noted that the picric acid solution made with pH 7.0 buffer afforded slight, if any, protection, 26 percent of mice surviving, as compared with 23 percent for the controls, whereas with solutions buffered at a more acid level, from 89 to 100 percent of the mice survived. Similar results were found in monkeys.

TABLE 4.—*Preventive effect of chemicals in monkeys*

Experiment	Monkey no.	Solution and date of intranasal injection (1.5 cc. each nostril)		Dates virus administered (1 cc. supernatant each nostril)	First day of fever	Day of death	Remarks
		0.32 percent picric acid in 2-percent sodium aluminum.	(1935) Aug. 28, 30. Sept. 6, 10, 12, 14.	(1935) Sept. 18, 19, 20.			
	1005				—	S	No symptoms
	1006				—	S	Do.
	1007				—	S	Do.
	1008				—	S	Do.
A		Controls. No chemicals intranasally.		Sept. 18, 19, 20.			
	996				5	9	Poliomyelitis.
	997				5	9	Do.
	998				6	10	Do.
	999				6	10	Do.
		0.16 percent picric acid in 0.5-percent sodium aluminum.	Oct. 29, 31. Nov. 2, 4, 6, 8.	Nov. 12, 13, 14.			
	76				—	S	No symptoms.
	77				—	S	Do.
	78				—	S	Do.
	79				—	S	Do.
B		Controls. No chemicals intranasally.		Nov. 12, 13, 14.			
	88				4	7	Poliomyelitis.
	89				—	S	No symptoms.
	90				3	7	Poliomyelitis.
	91				3	10	Do.

S=survived.

TABLE 4.—*Preventive effect of chemicals in monkeys*—Continued

Experiment	Monkey no.	Solution and date of intranasal injection (1.5 cc. each nostril)		Dates virus administered (1 cc. supernatant each nostril)	First day of fever	Day of death	Remarks
C		0.33 percent picric acid in 0.5-percent sodium aluminum.	(1936) Apr. 29. May 6, 13, 20, 29. June 3.	(1936) May 29 (a. m. and p. m.).			
	180				—	8	No symptoms.
	182				—	8	Do.
	184				—	8	Do.
	186			May 31 (a. m. and p. m.).	—	8	Do.
	188				—	8	Do.
	190				—	8	Do.
	197			June 2 (a. m. and p. m.).	—	8	Do.
	199				—	8	Do.
	201				—	8	Do.
		Controls. No chemicals intranasally.		May 29 (a. m. and p. m.).			
	192				3	7	Poliomyelitis.
	194				—	8	No symptoms.
	196				5	7	Poliomyelitis.
	198			May 31 (a. m. and p. m.).	—	8	No symptoms.
	200				4	8	Poliomyelitis.
	202				—	8	No symptoms.
	203			June 2 (a. m. and p. m.).	4	9	Poliomyelitis.
	204				4	8	Do.
	205				3	8	Do.
D		0.5 percent picric acid in 0.5-percent alum.	June 25, 27, 29. July 3, 10.	July 16 (a. m. and p. m.).			
	217				—	8	No symptoms.
	218				—	8	Do.
	219				—	8	Do.
		Controls. No chemicals intranasally.		July 16 (a. m. and p. m.).			
	220				4	8	Poliomyelitis.
	221				4	8	Do.
	222				3	8	Do.
		0.5-percent picric acid in pH 2.8 buffer.	June 25, 27, 29. July 3, 10.	July 16 (a. m. and p. m.).			
	214				—	8	No symptoms.
	215				—	8	Do.
	216				—	8	Do.
		0.5-percent picric acid in pH 7.0 buffer.	June 25, 27, 29. July 3, 10.	July 16 (a. m. and p. m.).			
	211				5	10	Poliomyelitis.
	212				5	9	Do.
	213				5	10	Do.

8=survived.

The increased protective action shown by more acid solutions of picric acid may, however, be due to their increased ability to coagulate proteins, to their increase in acidity itself, to the chemicals in the buffer, or to some combination of two or more of these factors. In the hope of elucidating this question, groups of mice were prepared by instilling into their nostrils 0.5 percent picric acid dissolved in buffer solutions ranging from pH 8.6 to pH 1.4, while similar control groups received nasal instillations of the various buffer solutions (3 parts diluted with saline 1 part) to which no picric acid had been added. By reference to table 3 it may be noted that the picric acid in acid buffers showed an increased protection over that shown by the corresponding buffer alone. This increased protection is especially marked with the pH 4.4 solutions, but less so for pH 2.8 and pH 1.4 mixtures. By reference to table 1 it may be noted that picric acid in solution tends to increase acidity, so that the identical solution without picric acid is no longer an adequate control for determining the effect of picric acid alone. In the case of buffers of pH 4.4 plus 0.5 percent picric acid, which protected 100 percent of the mice, it may be noted that the actual pH value was 2.93, or but slightly less acid than buffer pH 2.80, which protected 80 percent of the mice. If acidity were the sole important factor, the pH 2.80 buffer alone should have protected somewhat better. Again, the acidifying effect of picric acid is less apparent in more acid buffers. For instance, by adding 0.5 percent of picric acid to pH 1.4 buffer, its pH was reduced to only 1.3. Here again, however, the picric acid solution is more effective as a preventive than the buffer alone.

The buffers from pH 8.6 to 1.4 were made according to Clark (*6*) and, as noted in his text, the chemicals employed vary for different pH ranges both as to kinds and proportions. This leads one to feel that the pH values and not the chemicals *per se* are the important factors.

The series studied, however, is too meager to determine accurately the significance of the possible factors involved, but does indicate that buffer solutions of less acidity than pH 4.4 have of themselves little or no protective effect in mice, while at pH 2.80 and 1.40 the protection is considerable but scarcely sufficient to account for the full effect afforded by buffers plus picric acid. The prophylaxis afforded by picric acid solutions is, therefore, possibly, in part at least, dependent upon its protein-coagulating properties in acid mixtures.

If this assumption be true, acid solutions giving a prompt and copious flocculation of proteins should be the most effective preventives. By reference to table 1 it may be noted that, upon this assumption, 0.5 percent picric acid combined with 0.5 percent sodium aluminum sulphate in saline, or 0.5 percent picric acid in pH 4.4 to more acid buffers should be effective mixtures.

The picric-alum mixture, for instance, showing a pH value of 1.90, caused prompt coagulation with ascitic fluid, and the clot at its maximum was so firm that the tube could be inverted without spilling. Moreover, the coagulum was relatively difficult of resolution, a consideration with a possible bearing on the duration of protection.

Actual trials have shown that the picric-alum combinations are quite effective in protecting monkeys against intranasal infection with poliomyelitis virus, as was also 0.5 percent picric acid in pH 2.8 buffer. By reference to table 4 it may be noted that all of 20 monkeys prepared with the picric-alum mixtures and 3 prepared with 0.5 percent picric acid in pH 2.8 buffer survived without symptoms, while of 20 unprepared controls and 3 treated with the ineffective pH 7.0–0.5 percent picric acid, all died except 4.

Tests are now under way to determine the duration of protection afforded monkeys by these two preparations. The solution of 0.5 percent picric acid in 0.5 percent sodium aluminum sulphate was the one selected for trial as a control measure against poliomyelitis in certain southern States. The methods of preparation and directions for use of the solution are given at the end of this article.

SUMMARY

1. Solutions of picric acid buffered at a pH range which gave no coagulation of protein when mixed with ascitic fluid or serum afforded no protection when introduced repeatedly into the nostrils of mice and monkeys prior to intranasal inoculation with encephalitis or poliomyelitis virus, respectively.

2. Solutions of picric acid buffered in an acid range which permitted coagulation of protein afforded protection to both mice and monkeys.

3. Buffer solutions with an acidity of pH 2.80, or greater, of themselves exert a protective influence but to a less degree than is apparent by 0.5 percent picric acid solutions of approximately the same acidity.

4. Mixtures of picric acid with sodium aluminum sulphate in saline protected all of 20 monkeys against an infection which occassioned poliomyelitis in 16 of 20 nonprepared controls.

5. Solutions of 0.5 percent picric acid in pH 4.4 and more acid buffers were also very effective in mice and in a small group of monkeys.

REFERENCES

(1) Armstrong, Charles: Pub. Health Rep., **50**: 43–50 (1935).
(2) Armstrong, Charles and Harrison, W. T.: Pub. Health Rep., **50**: 725–730 (1935).
(3) Armstrong, Charles and Harrison, W. T.: Pub. Health Rep., **51**: 203–215 (1936).
(4) Schultz, E. W., and Gebhardt, L. P.: Proc. Soc. Exp. Biol. and Med., 1936. **34**: 133–135 (1936).
(5) Sabin, A. B., Olitsky, P. K., and Cox, H. R.: Jour. Exp. Med., **63**: 877–892 (1936).
(6) Clark, W. Mansfield: The determination of hydrogen ions. Williams and Wilkins, 1928.

PICRIC ACID-SODIUM ALUM NASAL SPRAY FOR EXPERIMENTAL POLIOMYELITIS CONTROL

FORMULA

Solution A.—Dissolve 1 gram of sodium alum (sodium aluminum sulphate C. P.) in 100 cc of physiological salt solution (0.85 percent). Turbidity may be removed by filtering one or more times through the same filter paper or Berkefeld filter.

Solution B.—Dissolve 1 gram of picric acid (C. P.) in 100 cc of physiological salt solution (0.85 percent). (Warming will facilitate solution.)

Mix equal amounts of solutions A and B. This gives a 0.5-percent solution of each ingredient, which is stable, and it is this mixture which is to be dispensed.

On the appearance of cases of poliomyelitis in the community, spray the nose thoroughly once daily on alternate days for 3 or 4 applications, then once weekly thereafter for the duration of the poliomyelitis season. The spray should be directed upward toward the top of the head.

NO SUBSTITUTES SHOULD BE USED

REPORT ON MARKET-MILK SUPPLIES OF URBAN COMMUNITIES

Compliance of the Market-Milk Supplies of Urban Communities with the Grade A Pasteurized and Grade A Raw Milk Requirements of the Public Health Service Milk Ordinance and Code (as Shown by Ratings of 90 Percent or More Reported by the State Milk-Sanitation Authorities During the Period July 1, 1934, to June 30, 1936)

The accompanying list gives the sixth semiannual revision of the list of urban communities in which the pasteurized market milk is both produced and pasteurized in accordance with the Grade A pasteurized milk requirements of the Public Health Service Milk Ordinance and Code, and in which the raw market milk sold to the final consumer is produced in accordance with the Grade A raw milk requirements of said ordinance and code, as shown by ratings of 90 percent or more reported by State milk-sanitation authorities.

The primary reason for publishing such lists from time to time is to encourage the communities of the United States to attain and maintain a high level of excellence in the public-health control of milk supplies.

It is emphasized that the Public Health Service does not intend to imply that all communities not on the list are not provided with high-grade milk supplies. Some communities which have high-grade milk supplies are not included because arrangements have not been made for the determination of their ratings by the State milk-sanitation authority. In other cases, the ratings which have been determined are now more than 2 years old and have therefore lapsed.

The rules under which a community is included in this list are as follows:

(1) All ratings must have been determined by the State milk-sanitation authority in accordance with the Public Health Service

rating method, based upon the Grade A pasteurized milk and the Grade A raw milk requirements of the Public Health Service Milk Ordinance and Code.

(2) No community will be included in the list unless both its pasteurized milk and its raw milk ratings are 90 percent or more; provided that communities in which only raw milk is sold will be included if the raw milk ratings are 90 percent or more.

(3) The rating used will be the latest rating submitted to the Public Health Service, but no rating will be used which is more than 2 years old.

(4) Occasional surprise checks will be made of the rating methods used by the State, and discounts will be applied if State ratings are found to be more than 5 percent too high.

Communities are urgently advised to bring their ordinances up to date at least every 5 years, since ratings will be made on the basis of later editions if those adopted locally are more than 5 years old.

Communities which are not now on the list should request the State milk-sanitation authority to determine their ratings and, if necessary, improve their status sufficiently to merit inclusion in the list.

Communities which are now on the list should not permit their ratings to lapse, as ratings more than 2 years old cannot be used.

Communities which have not yet adopted the Public Health Service Milk Ordinance should give thoughtful consideration to the advisability of doing so. It is obviously easier to satisfy the requirements upon which the rating method is based if these are included in the local legislation.

Communities which are enforcing the Public Health Service Milk Ordinance, but which have not yet been admitted to the list, should determine whether this has been the result of failure to enforce the ordinance strictly or failure to bring the ordinance up to date.

State milk-sanitation authorities which are not now equipped to determine municipal ratings are urged, in fairness to their communities, to equip themselves as soon as possible. The personnel required is small, as in most States one milk specialist is sufficient for the work.

The inclusion of a community in this list means that the pasteurized milk sold in the community, if any, is of such a degree of excellence that the weighted average of the percentages of compliance with the various items of sanitation required for Grade A pasteurized milk is 90 percent or more, and that, similarly, the raw milk sold in the community, if any, so nearly meets the requirements that the weighted average of the percentages of compliance with the various items of sanitation required for Grade A raw milk is 90 percent or more. However, high grade pasteurized milk is safer than high grade raw milk, because of the added protection of pasteurization. To secure this added protection, those who are dependent on raw milk can pasteurize

the milk at home in the following simple manner: Place the milk in an aluminum vessel on a hot flame and heat to 155° F., stirring constantly; then immediately set the vessel in cold water and continue stirring until cool.

TABLE 1.—*Communities in which all market milk is pasteurized. In these communities market milk complies with the Grade A pasteurized milk requirements of the Public Health Service Milk Ordinance and Code to the extent shown by pasteurized milk ratings of 90 percent or more*

Community	Percentage of milk pasteurized	Date of rating
MINNESOTA		
Winona	100	Sept. 14, 1934
NORTH CAROLINA		
Princeville	100	Apr. 18, 1935
Tarboro	100	Do.

TABLE 2.—*Communities in which some market milk is pasteurized. In these communities the pasteurized market milk complies with the Grade A pasteurized milk requirements and the raw market milk complies with the Grade A raw-milk requirements of the Public Health Service Milk Ordinance and Code to the extent shown by pasteurized and raw-milk ratings, respectively, of 90 percent or more*

[NOTE.—All milk should be pasteurized or boiled before it is consumed, either commercially or at home. See text for home method.]

Community	Percentage of milk pasteurized	Date of rating
ALABAMA		
Tuscaloosa	77	Dec. 13, 1935.
ARIZONA		
Flagstaff	32	February 1935.
Tucson	85	June 21, 1935.
Yuma	39	June 14, 1935.
ARKANSAS		
Little Rock	19	Dec. 15, 1935.
Pine Bluff	32	June 1936.
Texarkana	18	Feb. 20, 1936.
KANSAS		
Junction City	31	June 1936
Lawrence	48	May 1936.
Topeka	59	Do.
Wichita	58	December 1935.
KENTUCKY		
Ashland	86	June 1936.
Bowling Green	37	May 1936.
Glasgow	62	Do.
Henderson	34	Do.
Louisville	96	March 1936.
MINNESOTA		
Little Falls	55	Oct. 23, 1935.
MISSISSIPPI		
Greenville	26	Aug. 29, 1935.
McComb	8	Jan. 9, 1936.
Vicksburg	41	June 20, 1935.
MISSOURI		
Columbia	41	Mar. 3, 1936.
Hannibal	31	May 29, 1936.
Jefferson City	49	Nov. 22, 1935.
Moberly	49	May 1, 1936.
St. Joseph	31	Aug. 9, 1935.
Sedalia	20	Apr. 10, 1936.
NEW MEXICO		
Las Cruces	53	Nov. 13, 1935.
NORTH CAROLINA		
Charlotte	19	Dec. 15, 1934.
Durham	83	Dec. 14, 1934.
Fayetteville	50	Mar. 28, 1935.
Greensboro	62	Nov. 24, 1934.
Kinston	16	Apr. 10, 1936.
Morehead City	58	Dec. 14, 1935.
Rocky Mount	20	Sept. 12, 1934.
Winston-Salem	46	Nov. 11, 1934.
OKLAHOMA		
Bartlesville	32	Mar. 20, 1936.
Blackwell	48	June 3, 1936.
Muskogee	59	January 1936.
Oklahoma City	70	December 1935.
Tulsa	73	January 1936.

TABLE 2.—*Communities in which some market milk is pasteurized. In these communities the pasteurized market milk complies with the Grade A pasteurized milk requirements and the raw market milk complies with the Grade A raw-milk requirements of the Public Health Service Milk Ordinance and Code to the extent shown by pasteurized and raw-milk ratings, respectively, of 90 percent or more*—Continued

Community	Percentage of milk pasteurized	Date of rating
OREGON		
Portland	76	October 1934.
TENNESSEE		
Bristol	48	May 8, 1935.
Clarksville	42	Apr. 26, 1935.
Memphis	80	May 29, 1935.
Union City	32	Sept. 28, 1934.
TEXAS		
Abilene	70	Aug. 7, 1935.
Amarillo	61	June 29, 1935.
Austin	35	Dec. 19, 1935.
Ballinger	50	Mar. 2, 1936.
Beaumont	57	June 1936.
Big Spring	27	Aug. 5, 1935.
Brownwood	17	June 26, 1936.
Corsicana	4	Mar. 26, 1935.
Dallas	73	Dec. 7, 1935.
Denton	64	Mar. 4, 1936.
El Paso	71	July 31, 1935.
Fort Worth	83	Feb. 23, 1935.
Gainesville	46	Sept. 6, 1935.
Houston	83	October 1935.
TEXAS—continued		
Kerrville	72	May 8, 1936.
Laredo	39	December 1935.
Livingston	20	March 1936.
Lubbock	32	July 10, 1935.
Midland	31	May 6, 1936.
Port Arthur	38	June 1936.
San Angelo	58	Apr. 8, 1936.
San Antonio	64	September 1935.
Seguin	5	March 1936.
Sherman	21	Dec. 21, 1934.
Sweetwater	56	June 23, 1936.
Texarkana	20	May 1935.
Tyler	60	January 1936.
Victoria	13	February 1936.
Waco	31	Sept. 20, 1935.
Wichita Falls	79	May 26, 1936.
VIRGINIA		
Bristol	48	May 8, 1935.
WASHINGTON		
Camas	10	September 1934.
Vancouver	24	Do.

TABLE 3.—*Communities in which no market milk is pasteurized, but in which the raw market milk complies with the Grade A raw-milk requirements of the Public Health Service Milk Ordinance and Code to the extent shown by raw-milk ratings of 90 percent or more*

[NOTE.—All milk should be pasteurized or boiled before it is consumed, either commercially or at home. See text for home method]

Community	Date of rating
ALABAMA	
Demopolis	Nov. 22, 1935.
Scottsboro	Dec. 31, 1935.
Stevenson	Do.
Sylacauga	Dec. 6, 1935.
Talladega	Do.
York	Nov. 20, 1935.
KANSAS	
Horton	Dec. 4, 1934.
Sabetha	Sept. 27, 1935.
KENTUCKY	
Leitchfield	June 1935.
MISSISSIPPI	
Brookhaven	May 17, 1935.
Durant	May 13, 1935.
Lexington	Do.
Magnolia	Jan. 10, 1936.
Ocean Springs	Sept. 5, 1935.
Pascagoula	Do.
Picayune	June 5, 1935.
Yazoo City	May 14, 1935.
MISSOURI	
Ash Grove	Aug. 16, 1935.
NEW MEXICO	
Clayton	June 20, 1935.
Deming	Mar. 26, 1935.
NORTH CAROLINA	
Angier	May 18, 1936.
Cary	Apr. 23, 1936.
Coats	May 18, 1936.
Dunn	Do.
Elkin	Sept. 12, 1934.
Erwin	May 18, 1936.
Fairmont	May 28, 1936.
Hamlet	Aug. 28, 1934.
Hertford	June 25, 1936.
Hope Mills	Sept. 6, 1934.
Lumberton	May 28, 1936.
Monroe	Oct. 24, 1934.
Mount Airy	Sept. 12, 1934.
New Bern	Dec. 12, 1935.
Pinehurst	Dec. 15, 1934.
Raeford	May 29, 1936.
Red Springs	May 28, 1936.

TABLE 3.—*Communities in which no market milk is pasteurized, but in which the raw market milk complies with the Grade A raw-milk requirements of the Public Health Service Milk Ordinance and Code to the extent shown by raw-milk ratings of 90 percent or more*—Continued

Community	Date of rating	Community	Date of rating
NORTH CAROLINA—continued		TEXAS	
Roanoke Rapids	Apr. 6, 1936.	Brenham	June 11, 1936
Rockingham	Aug. 29, 1934.	Bryan	May 1936.
Southern Pines	Aug. 31, 1934.	Canyon	Apr. 13, 1936.
Southport	Oct. 2, 1935.	Childress	Apr. 17, 1936.
Statesville	Mar. 27, 1935.	Colorado	July 19, 1935.
Sylva	Sept. 23, 1935.	Commerce	Apr. 24, 1936.
Washington	Sept. 26, 1935.	Crockett	May 1936.
Williamston	June 25, 1936.	Del Rio	June 12, 1936.
Windsor	Apr. 8, 1936.	Jacksonville	January 1936
TENNESSEE			
Alcoa	July 3, 1935.		
Dyersburg	October 1934.		

EXTENT OF RURAL HEALTH SERVICE IN THE UNITED STATES, DECEMBER 31, 1931, TO DECEMBER 31, 1935

During the year 1935 data concerning the extent of rural health service were again obtained by the United States Public Health Service from State departments of health. This information has been compiled in table 1, wherein are shown, by States, the counties, townships, or districts in which the rural sections thereof were provided with health service under the administration of whole-time local health officers. The data are presented, as of December 31, for the years 1931 to 1935, inclusive.

In the list for the year ended December 31, 1935, there are included all counties, townships, or districts which were operated in units directed by whole-time local health officers and maintained by the pooling of local appropriations from official sources. Counties, townships, or districts with whole-time health organizations maintained entirely by State departments of health are also included in table 1.

TABLE 1.—*Counties, townships, or districts in the United States in which rural sections were provided with health service under whole-time health officers each year from 1931 to 1935, as of Dec. 31*

ALABAMA

1931	1932	1933	1934	1935
Baldwin	Baldwin	Barbour	Autauga	Autauga
Barbour	Barbour	Blount	Barbour	Baldwin
Blount	Blount	Bullock	Blount	Barbour
Bullock	Bullock	Calhoun	Bullock	Blount
Calhoun	Calhoun	Chambers	Calhoun	Bullock
Chambers	Chambers	Cherokee	Chambers	Calhoun
Cherokee	Cherokee	Cleburne	Cherokee	Chambers
Choctaw	Choctaw	Conecuh	Cleburne	Cherokee
Clarke	Clarke	Covington	Colbert	Chilton
Cleburne	Cleburne	Crenshaw	Conecuh	Cleburne
Coffee	Coffee	Cullman	Covington	Coffee
Colbert	Colbert	Dale	Crenshaw	Colbert
Conecuh	Conecuh	Dallas	Cullman	Conecuh
Covington	Covington	De Kalb	Dale	Coosa
Crenshaw	Crenshaw	Elmore	Dallas	Covington

TABLE 1.—*Counties, townships, or districts in the United States in which rural sections were provided with health service under whole-time health officers each year from 1931 to 1935, as of Dec. 31*—Continued

1931	1932	1933	1934	1935
Cullman	Cullman	Escambia	Elmore	Crenshaw
Dale	Dale	Etowah	Escambia	Cullman
Dallas	Dallas	Franklin	Etowah	Dale
De Kalb	De Kalb	Geneva	Franklin	Dallas
Elmore	Elmore	Houston	Houston	De Kalb
Escambia	Escambia	Jackson	Jackson	Elmore
Etowah	Etowah	Jefferson	Jefferson	Escambia
Franklin	Franklin	Lauderdale	Lamar	Etowah
Geneva	Geneva	Lawrence	Lauderdale	Franklin
Houston	Houston	Lee	Lawrence	Houston
Jackson	Jackson	Limestone	Lee	Jackson
Jefferson	Jefferson	Macon	Limestone	Jefferson
Lamar	Lamar	Madison	Lowndes	Lamar
Lauderdale	Lauderdale	Marengo	Macon	Lauderdale
Lawrence	Lawrence	Marion	Madison	Lawrence
Lee	Lee	Marshall	Marengo	Lee
Limestone	Limestone	Mobile	Marion	Limestone
Lowndes	Lowndes	Monroe	Marshall	Lowndes
Macon	Macon	Montgomery	Mobile	Macon
Madison	Madison	Morgan	Monroe	Madison
Marengo	Marengo	Perry	Montgomery	Marengo
Marion	Marion	Pickens	Morgan	Marion
Marshall	Marshall	Pike	Perry	Marshall
Mobile	Mobile	Shelby	Pickens	Mobile
Monroe	Monroe	Sumter	Pike	Monroe
Montgomery	Montgomery	Talladega	Russell	Montgomery
Morgan	Morgan	Tallapoosa	Shelby	Morgan
Perry	Perry	Tuscaloosa	Sumter	Perry
Pickens	Pickens	Walker	Talladega	Pickens
Pike	Pike	Washington	Tallapoosa	Pike
Shelby	Shelby	Wilcox	Tuscaloosa	Randolph
Sumter	Sumter		Walker	Russell
Talladega	Talladega		Washington	Shelby
Tallapoosa	Tallapoosa		Wilcox	Sumter
Tuscaloosa	Tuscaloosa		Winston	Talladega
Walker	Walker			Tallapoosa
Washington	Washington			Tuscaloosa
Wilcox	Wilcox			Walker
Winston	Winston			Washington
				Wilcox
				Winston
ARIZONA				
Cochise	Cochise	Cochise	Cochise	Cochise
Gila	Gila	Gila	Gila	Gila
Maricopa	Maricopa	Maricopa	Maricopa	Maricopa
Pima	Pima	Pima	Pima	Pima
Yuma				
ARKANSAS				
Arkansas [1]	Arkansas [1]	Ashley	Ashley	Ashley
Ashley	Ashley	Clark	Clark	Benton [1]
Bradley	Bradley	Conway	Conway	Clark
Clark	Chicot	Crittenden	Crittenden	Crawford [1]
Cleburne	Clark	Cross	Cross	Crittenden
Conway	Cleveland	Faulkner	Garland	Garland
Crittenden	Conway	Garland	Jackson	Jackson
Cross	Crittenden	Jackson	Jefferson	Jefferson
Desha	Cross	Jefferson	Little River	Little River
Drew	Drew	Little River	Mississippi	Mississippi
Garland	Garland	Lonoke	Monroe	Ouachita
Jackson	Jackson	Mississippi	Ouachita	Phillips
Jefferson	Jefferson	Monroe	Phillips	Pope
Little River	Lincoln	Ouachita	Pope	Pulaski
Lonoke [1]	Little River	Phillips	Pulaski	Saline
Miller	Lonoke [1]	Pope	Saline	Sebastian
Mississippi	Mississippi	Pulaski	Sebastian	Washington [1]
Monroe	Monroe	Saline	Woodruff	Woodruff
Ouachita	Ouachita	Sebastian	Yell	Yell
Perry	Phillips	Woodruff		
Phillips	Pope	Yell		
Pope	Prairie [1]			
Prairie [1]	Pulaski			

[1] 1 district of 3 counties.

TABLE 1.—*Counties, townships, or districts in the United States in which rural sections were provided with health service under whole-time health officers each year from 1931 to 1935, as of Dec. 31*—Continued

ARKANSAS—Continued

1931	1932	1933	1934	1935
Pulaski Saline Sebastian Union White Woodruff Yell	Saline Sebastian Woodruff Yell			

CALIFORNIA

Contra Costa Imperial Los Angeles Madera Monterey Orange Riverside San Bernardino San Diego San Joaquin San Luis Obispo Santa Barbara Stanislaus Yolo	Contra Costa Imperial Los Angeles Madera Monterey Orange Riverside San Bernardino San Diego San Joaquin San Luis Obispo Santa Barbara Stanislaus Yolo	Contra Costa Imperial Los Angeles Madera Monterey Orange Riverside San Bernardino San Diego San Joaquin San Luis Obispo Santa Barbara Stanislaus	Alameda Contra Costa Imperial Los Angeles Madera Monterey Orange Riverside San Bernardino San Diego San Joaquin San Luis Obispo San Mateo Santa Barbara Stanislaus	Alameda Contra Costa Fresno Imperial Los Angeles Madera Monterey Orange Riverside San Bernardino San Diego San Joaquin San Luis Obispo San Mateo Santa Barbara Stanislaus

COLORADO

Otero				

CONNECTICUT

Fairfield [3]	Fairfield [3] West Hartford [3]	Fairfield [3] West Hartford [3]	Fairfield [3] West Hartford [3]	

[3] Included in 1 district of 3 counties.

DELAWARE

Kent New Castle Sussex	Kent New Castle Sussex	Kent New Castle Sussex	Kent New Castle Sussex	Kent New Castle Sussex

FLORIDA

Leon Taylor	Escambia Leon Taylor	Escambia Leon	Escambia Leon	Escambia Jackson Leon

GEORGIA

Baldwin Bartow Bibb Brooks Catoosa [1] Chatham Chattooga [2] Clarke Cobb Coffee Colquitt Dade [2]	Baldwin Bartow Bibb Brooks Catoosa [2] Chatham Clarke Cobb Colquitt Dade [2] Decatur De Kalb	Baldwin Bartow Bibb Brooks Catoosa [4] Chatham Clarke Cobb Colquitt Decatur De Kalb Dougherty	Baldwin Bartow Bibb Camden [2] Catoosa [4] Chatham Clarke Cobb Colquitt Decatur De Kalb Dougherty	Baldwin Bartow Bibb Camden [2] Catoosa [4] Chatham Clarke Cobb Colquitt Decatur De Kalb Dougherty

[1] Included in 1 district of 4 counties.
[2] Included in 1 district of 3 counties.
[4] Included in 1 district of 2 counties.

TABLE 1.—*Counties, townships, or districts in the United States in which rural sections were provided with health service under whole-time health officers each year from 1931 to 1935, as of Dec. 31*—Continued

GEORGIA—Continued

1931	1932	1933	1934	1935
Decatur	Dougherty	Floyd	Floyd	Floyd
De Kalb	Floyd	Fulton	Glynn [2]	Fulton
Dougherty	Fulton	Glynn [2]	Grady	Glynn [2]
Floyd	Glynn	Grady	Hall	Grady
Glynn	Grady	Hall	Jefferson	Hall
Gordon [1]	Hall	Jefferson	Jenkins	Jefferson
Grady	Jefferson	Jenkins	Laurens	Jenkins
Hall	Jenkins	Laurens	Lowndes	Laurens
Jefferson	Laurens	Lowndes	Mitchell	Lowndes
Jenkins	Lowndes	Mitchell	McIntosh [2]	Mitchell
Laurens	Mitchell	Richmond	Richmond	McIntosh [2]
Lowndes	Richmond	Spalding	Spalding	Richmond
Mitchell	Spalding	Sumter	Sumter	Spalding
Murray [1]	Sumter	Thomas	Thomas	Sumter
Richmond	Thomas	Troup	Troup	Thomas
Spalding	Troup	Walker [4]	Walker [4]	Troup
Sumter	Walker [3]	Ware	Ware	Walker [4]
Thomas	Ware	Washington	Washington	Ware
Troup	Washington			Washington
Walker [3]				
Ware				
Washington				
Whitfield [1]				

[1] Included in 1 district of 4 counties.
[2] Included in 1 district of 3 counties.
[3] Walker County also included in a tricounty district.
[4] Included in 1 district of 2 counties.

IDAHO

Twin Falls	Twin Falls			

ILLINOIS

Du Page	Du Page	Du Page	Du Page	

IOWA

Des Moines	Des Moines	Woodbury	Woodbury	Woodbury
Washington	Washington			
Woodbury	Woodbury			

KANSAS

Brown	Brown	Geary	Lyon	Lyon
Butler	Geary	Lyon	Sedgwick	Sedgwick
Cherokee	Lyon	Sedgwick	Shawnee	Shawnee
Dickinson	Marion	Shawnee		
Geary	Sedgwick			
Greenwood	Shawnee			
Lyon				
Marion				
Sedgwick				
Shawnee				

KENTUCKY

Adair	Adair	Adair	Adair	Adair
Allen	Allen	Allen	Allen	Allen
Anderson	Anderson	Anderson	Anderson	Anderson
Barren	Barren	Barren	Barren	Ballard
Bath	Bath	Bath	Bath	Barren
Bell	Bell	Bell	Boyd	Bath
Boyd	Boyd	Boyd	Breathitt	Bell
Breathitt	Breathitt	Breathitt	Butler	Boyd
Bullitt	Bullitt	Bullitt	Caldwell	Breathitt
Butler	Butler	Butler	Calloway	Butler

TABLE 1.—*Counties, townships, or districts in the United States in which rural sections were provided with health service under whole-time health officers each year from 1931 to 1935, as of Dec. 31*—Continued

KENTUCKY—Continued

1931	1932	1933	1934	1935
Caldwell	Caldwell	Caldwell	Carlisle	Caldwell
Calloway	Calloway	Calloway	Carter	Calloway
Carlisle	Carlisle	Carlisle	Casey	Carlisle
Carter	Carter	Carter	Clinton	Carter
Casey	Casey	Casey	Edmonson	Casey
Clinton	Clinton	Clinton	Elliott	Clay
Daviess	Daviess	Daviess	Estill	Clinton
Edmonson	Edmonson	Edmonson	Fayette	Edmonson
Elliott	Elliott	Elliott	Fleming	Elliott
Estill	Estill	Estill	Floyd	Estill
Fayette	Fayette	Fayette	Fulton	Fayette
Fleming	Fleming	Fleming	Gallatin	Fleming
Floyd	Floyd	Floyd	Grant	Floyd
Fulton	Fulton	Fulton	Grayson	Fulton
Gallatin	Gallatin	Gallatin	Green	Gallatin
Grant	Grant	Grant	Greenup	Grant
Grayson	Grayson	Grayson	Hart	Grayson
Green	Green	Green	Henderson	Green
Greenup	Greenup	Greenup	Hickman	Greenup
Hancock	Hancock	Hart	Hopkins	Hart
Harrison	Hart	Henderson	Jackson	Henderson
Hart	Henderson	Hickman	Jefferson	Hickman
Henderson	Hickman	Hopkins	Kenton	Hopkins
Hickman	Hopkins	Jackson	Knott	Jefferson
Hopkins	Jackson	Jefferson	Knox	Kenton
Jackson	Jefferson	Kenton	Laurel	Knott
Jefferson	Kenton	Knott	Lawrence	Knox
Kenton	Knott	Knox	Lee	Laurel
Knott	Knox	Laurel	Leslie	Lawrence
Knox	Laurel	Lawrence	Letcher	Lee
Laurel	Lawrence	Lee	Lincoln	Leslie
Lawrence	Lee	Leslie	Madison	Letcher
Lee	Leslie	Letcher	Marshall	Lincoln
Leslie	Letcher	Lincoln	Martin	Lyon
Letcher	Lewis	Madison	Mason	Madison
Lewis	Lincoln	Magoffin	McCreary	Magoffin
Lincoln	McCreary	Marshall	McLean	Marshall
McCreary	McLean	Martin	Meade	Martin
McLean	Madison	Mason	Menifee	McCracken
Madison	Magoffin	McCreary	Metcalfe	McCreary
Magoffin	Marshall	McLean	Monroe	McLean
Marshall	Martin	Meade	Muhlenberg	Meade
Martin	Mason	Menifee	Nicholas	Menifee
Mason	Meade	Monroe	Ohio	Metcalfe
Meade	Menifee	Muhlenberg	Owsley	Monroe
Menifee	Metcalfe	Nicholas	Perry	Muhlenberg
Metcalfe	Monroe	Ohio	Pike	Nicholas
Monroe	Morgan	Owsley	Powell	Ohio
Morgan	Muhlenberg	Perry	Pulaski	Owsley
Muhlenberg	Nicholas	Pike	Rockcastle	Perry
Nicholas	Ohio	Powell	Rowan	Pike
Ohio	Owsley	Pulaski	Scott	Powell
Owen	Perry	Rockcastle	Todd	Pulaski
Owsley	Pike	Rowan	Trigg	Rockcastle
Perry	Powell	Scott	Trimble	Rowan
Pike	Pulaski	Todd	Union	Scott
Powell	Robertson	Trigg	Warren	Spencer
Pulaski	Rockcastle	Trimble	Wayne	Todd
Robertson	Rowan	Union	Webster	Trigg
Rockcastle	Scott	Warren	Wolfe	Trimble
Rowan	Todd	Wayne		Union
Scott	Trigg	Webster		Warren
Todd	Trimble	Wolfe		Wayne
Trigg	Union			Webster
Trimble	Warren			Wolfe
Union	Wayne			
Warren	Webster			
Wayne	Whitley			
Webster	Wolfe			
Whitley				
Wolfe				

TABLE 1.—*Counties, townships, or districts in the United States in which rural sections were provided with health service under whole-time health officers each year from 1931 to 1935, as of Dec. 31*—Continued

LOUISIANA [1]

1931	1932	1933	1934	1935
Assumption	Assumption	Assumption	Assumption	Acadia
Avoyelles	Avoyelles	Avoyelles	Avoyelles	Assumption
Caddo	Caddo	Caddo	Caddo	Avoyelles
Caldwell	Caldwell	Caldwell	Caldwell	Caddo
Catahoula	Catahoula	Catahoula	Catahoula	Caldwell
Claiborne	Claiborne	Claiborne	Claiborne	Catahoula
Concordia	Concordia	Concordia	Concordia	Claiborne
De Soto	De Soto	De Soto	De Soto	Concordia
East Carroll	East Carroll	East Carroll	East Carroll	De Soto
Evangeline	Franklin	Franklin	Franklin	East Carroll
Franklin	Iberia	Iberia	Iberia	Franklin
Iberia	Iberville	Iberville	Iberville	Iberia
Iberville	Lafayette	Lafayette	Lafayette	Iberville
Lafayette	Lafourche	Lafourche	Lafourche	Jefferson Davis
Lafourche	La Salle	La Salle	La Salle	Lafayette
La Salle	Lincoln	Lincoln	Lincoln	Lafourche
Lincoln	Madison	Madison	Madison	La Salle
Madison	Morehouse	Morehouse	Morehouse	Lincoln
Morehouse	Natchitoches	Natchitoches	Natchitoches	Madison
Natchitoches	Ouachita	Ouachita	Ouachita	Morehouse
Ouachita	Pointe Coupee	Pointe Coupee	Pointe Coupee	Natchitoches
Pointe Coupee	Rapides	Rapides	Rapides	Ouachita
Rapides	Richland	Richland	Red River	Pointe Coupee
Richland	St. Landry	St. Landry	Richland	Rapides
St. Landry	St. Martin	St. Martin	St. Landry	Red River
St. Martin	St. Mary	St. Mary	St. Martin	Richland
St. Mary	Tensas	Tensas	St. Mary	St. Landry
Tensas	Terrebonne	Terrebonne	Tensas	St. Martin
Terrebonne	Washington	Washington	Terrebonne	St. Mary
Washington	Webster	Webster	Washington	Tensas
Webster	West Carroll	West Carroll	Webster	Terrebonne
West Carroll			West Carroll	Washington
				Webster
				West Carroll

[1] Parishes.

MAINE

Bar Harbor	Bar Harbor	Bar Harbor	Bar Harbor	Cooperative
Bucksport	Cooperative Health	Cooperative Health	Cooperative Health	Health Union [6]
Cooperative Health	Union [4]	Union [5]	Union [5]	Motbov Union [3]
Union [4]	Motbov Union [3]	Motbov Union [3]	Motbov Union [3]	
Motbov Union [3]	Rumford [3]	Rumford [3]	Rumford [3]	
Rumford [3]	Sanford [3]	Sanford [3]	Sanford [3]	
Sanford [3]				

[3] Including municipalities of Orono, Milford, Bradley, Veazie and Old Town.
[3] Town (township) wholly or partly rural.
[4] Including towns of Avon, Chesterville, Eustis, Livermore, Phillips, Rangeley, Strong, Temple, Weld, and Wilton.
[5] Including towns of Avon, Chesterville, Dallas Pl., Eustis, Farmington, Industry, Livermore, Lang Pl., New Sharon, Rangeley, Sandy River Pl., Strong, Temple, and Weld. (Farmington, Industry, Dallas Pl., New Sharon added in 1934.)
[6] Including towns of Avon, Carthage, Chesterville, Coplin Pl., Dallas Pl., Dead River, Eustis, Farmington, Flagstaff, Industry, Livermore, Lang Pl., New Sharon, New Vineyard, Phillips (in winter) Rangeley, Sandy River Pl., Strong, Salem, Temple, and Weld.

MARYLAND

Allegany	Allegany	Allegany	Allegany	Allegany
Anne Arundel	Anne Arundel	Anne Arundel	Anne Arundel	Anne Arundel
Baltimore	Baltimore	Baltimore	Baltimore	Baltimore
Calvert	Calvert	Calvert	Calvert	Calvert
Carroll	Carroll	Carroll	Caroline	Caroline
Cecil	Cecil	Cecil	Carroll	Carroll
Dorchester	Charles	Charles	Cecil	Cecil
Frederick	Dorchester	Dorchester	Charles	Charles
Garrett	Frederick	Frederick	Dorchester	Dorchester
Harford	Garrett	Garrett	Frederick	Frederick
Kent	Harford	Harford	Garrett	Garrett
Montgomery	Howard	Howard	Harford	Harford
Prince George	Kent	Kent	Howard	Howard
Queen Annes	Montgomery	Montgomery	Kent	Kent

TABLE 1.—*Counties, townships, or districts in the United States in which rural sections were provided with health service under whole-time health officers each year from 1931 to 1935, as of Dec. 31*—Continued

MARYLAND—Continued

1931	1932	1933	1934	1935
Talbot Washington Wicomico Worcester	Prince Georges Queen Annes Somerset Talbot Washington Wicomico Worcester	Prince Georges Queen Annes St. Marys Somerset Talbot Washington Wicomico Worcester	Montgomery Prince Georges Queen Annes St. Marys Somerset Talbot Washington Wicomico Worcester	Montgomery Prince Georges Queen Annes St. Marys Somerset Talbot Washington Wicomico Worcester

MASSACHUSETTS

Barnstable Nashoba Southern Berkshire	Barnstable Nashoba [1] Southern Berkshire [2]	Barnstable Nashoba [1] Southern Berkshire [2]	Barnstable Nashoba [1] Southern Berkshire [2]	Barnstable Nashoba [1] Southern Berkshire [2]

[1] Represents 11 towns.
[2] Represents 9 towns.

MICHIGAN

Alcona [3] Alpena [3] Antrim [3] Barry Charlevoix [3] Cheboygan [3] Crawford [3] Emmet [3] Genesee Iosco [3] Isabella Kalkaska [3] Kent Midland Missaukee [3] Montmorency [3] Oakland Ogemaw [3] Oscoda [3] Otsego [3] Ottawa Presque Isle [3] Roscommon [3] Saginaw Wexford	Alcona [3] Allegan Alpena [3] Antrim [3] Barry Charlevoix [3] Cheboygan [3] Crawford [3] Emmet [3] Genesee Iosco [3] Isabella Kalkaska [3] Kent Lake [4] Midland Missaukee [3] Montmorency [3] Newaygo [4] Oakland Oceana [4] Ogemaw [3] Oscoda [3] Otsego [3] Ottawa Presque Isle [3] Roscommon [3] Saginaw Wexford	Alcona [3] Allegan Alpena [3] Antrim [3] Barry Charlevoix [3] Cheboygan [3] Crawford [3] Eaton Emmet [3] Genesee Iosco [3] Isabella Kalkaska [3] Kent Lake [4] Midland Missaukee [3] Montmorency [3] Newaygo [4] Oakland Oceana [4] Ogemaw [3] Oscoda [3] Otsego [3] Ottawa Presque Isle [3] Roscommon [3] Saginaw Wexford	Alcona [3] Allegan Alpena [3] Antrim [3] Barry Charlevoix [3] Cheboygan [3] Crawford [4] Eaton Emmet [3] Genesee Grosse Pointe [4] Hillsdale Iosco [3] Isabella Kalkaska [3] Kent Lake [4] Midland Missaukee [3] Montmorency [3] Newaygo [4] Oakland Oceana [4] Ogemaw [3] Oscoda [3] Otsego [3] Ottawa Presque Isle [3] Roscommon [3] Saginaw Van Buren Wexford	Alcona [3] Allegan Alpena [3] Antrim [3] Arenac [3] Barry Branch Clare [3] Charlevoix [3] Cheboygan [3] Crawford [3] Eaton Emmet [3] Genesee Gladwin [3] Hillsdale Iosco [3] Isabella Kalkaska [3] Kent Lake [3] Luce [3] Mackinac [3] Midland Missaukee [3] Montmorency [3] Newaygo [3] Oakland Oceana [3] Ogemaw [3] Oscoda [3] Otsego [3] Ottawa Presque Isle [3] Roscommon [3] Saginaw Schoolcraft [3] Van Buren Wexford

[3] Included in 3 districts of 3 counties each.
[4] Included in 4 districts of 4 counties each.
[4] Included in 1 district of 3 counties.

MINNESOTA

St. Louis	St. Louis	St. Louis	St. Louis	St. Louis

TABLE 1.—*Counties, townships, or districts in the United States in which rural sections were provided with health service under whole-time health officers each year from 1931 to 1935, as of Dec. 31*—Continued

MISSISSIPPI

1931	1932	1933	1934	1935
Adams	Adams	Adams	Adams	Adams
Bolivar	Bolivar	Bolivar	Bolivar	Bolivar
Clarke	Coahoma	Coahoma	Coahoma	Coahoma
Coahoma	Copiah	Forrest	Copiah	Copiah
Copiah	Forrest	Hancock	Forrest	Forrest
Forrest	Hancock	Harrison	Hancock	Hancock
Hancock	Harrison	Hinds	Harrison	Harrison
Harrison	Hinds	Holmes	Hinds	Hinds
Hinds	Holmes	Humphreys	Holmes	Holmes
Holmes	Humphreys	Jackson	Humphreys	Humphreys
Humphreys	Jackson	Lamar	Jackson	Jackson
Issaquena	Lamar	Lauderdale	Lamar	Lamar
Jackson	Lauderdale	Lee	Lauderdale	Lauderdale
Lamar	Lee	Leflore	Lee	Lee
Lauderdale	Leflore	Lincoln	Leflore	Leflore
Lee	Lincoln	Monroe	Lincoln	Lincoln
Leflore	Monroe	Pearl River	Monroe	Monroe
Lincoln	Pearl River	Pike	Pearl River	Pearl River
Monroe	Perry	Sharkey	Pike	Pike
Pearl River	Pike	Sunflower	Sharkey	Sharkey
Perry	Sunflower	Union	Sunflower	Sunflower
Pike	Union	Warren	Union	Union
Sharkey	Warren	Washington	Warren	Warren
Sunflower	Washington	Yazoo	Washington	Washington
Tishomingo	Yazoo		Yazoo	Yazoo
Union				
Warren				
Washington				
Yazoo				

MISSOURI

Boone	Boone	Buchanan	Buchanan	Buchanan
Buchanan	Buchanan	Dunklin	Dunklin	Dunklin
Dunklin	Dunklin	Greene	Greene	Greene
Greene	Greene	Jackson	Jackson	Jackson
Jackson	Jackson	Marion	Marion	Marion
Marion	Marion	Miller	Miller	Miller
Miller	Miller	New Madrid	New Madrid	
New Madrid	New Madrid	Pemiscot	St. Louis	
Pemiscot	Pemiscot	St. Louis		
St. Louis	St. Louis			
Scott				

MONTANA

Cascade	Cascade	Cascade	Cascade	Cascade
Gallatin	Gallatin	Gallatin	Gallatin	Gallatin
Lewis and Clark	Lewis and Clark	Lewis and Clark	Lewis and Clark	Missoula
Missoula	Missoula	Missoula	Missoula	

NEW MEXICO

Bernalillo	Bernalillo	Bernalillo	Bernalillo	Bernalillo [1]
Dona Ana	Dona Ana	Dona Ana	Dona Ana	Catron [2]
Eddy	Eddy	Eddy	Eddy	Chaves [3]
Santa Fe	Santa Fe	Santa Fe	Santa Fe	Colfax [2]
Union	Union	Union	Union	Curry [3]
Valencia	Valencia	Valencia	Valencia	De Baca [3]
				Dona Ana [3]
				Eddy [3]
				Grant [3]
				Guadalupe [3]
				Harding [3]
				Hidalgo [3]
				Lea [3]
				Lincoln [3]
				Luna [3]
				McKinley [1]

[1] Including 3 districts of 2 counties each.
[2] Including 3 districts of 3 counties each.
[3] Including 4 districts of 4 counties each.

TABLE 1.—*Counties, townships, or districts in the United States in which rural sections were provided with health service under whole-time health officers each year from 1931 to 1935, as of Dec. 31*—Continued

NEW MEXICO—Continued

1931	1932	1933	1934	1935
				Mora [1] Otero [2] Quay [2] Rio Arriba [2] Roosevelt [2] Sandoval [1] San Juan [1] San Miguel [1] Santa Fe [2] Sierra [2] Socorro [2] Taos [2] Torrance [2] Union [2] Valencia [2]

[1] Including 3 districts of 2 counties each.
[2] Including 3 districts of 3 counties each.
[3] Including 4 districts of 4 counties each.

NEW YORK

Cattaraugus Cortland Suffolk Westchester	Cattaraugus Cortland Suffolk Westchester	Cattaraugus Columbia Cortland Suffolk Westchester	Cattaraugus Columbia Cortland Suffolk Westchester	Cattaraugus Columbia Cort'and Suffolk Westchester

NORTH CAROLINA

Beaufort Bladen Buncombe Cabarrus Columbus Cumberland Davidson Durham Edgecombe Forsyth Franklin Gaston Granville Guilford Halifax Johnston Lenoir Mecklenburg Moore New Hanover Northampton Pitt Randolph Richmond Robeson Rowan Rutherford Sampson Stokes Surry Vance Wake Wayne Wilkes Wilson Yadkin	Beaufort Bladen Buncombe Cabarrus Columbus Cumberland Davidson Durham Edgecombe Forsyth [1] Franklin Gaston Granville Guilford Halifax Lenoir Mecklenburg Moore New Hanover Northampton Pitt Randolph Richmond Robeson Rowan Rutherford Sampson Stokes [1] Surry Vance Wake Wayne Wilkes Wilson Yadkin	Beaufort Bladen Buncombe Cabarrus Columbus Cumberland Davidson Durham Edgecombe Forsyth [1] Franklin Gaston Granville Guilford Halifax Hyde Lenoir Mecklenburg Moore Nash New Hanover Northampton Pitt Randolph Richmond Robeson Rowan Sampson Stokes [1] Surry Vance Wake Wayne Wilkes Wilson Yadkin	Beaufort Bertie Bladen Buncombe Cabarrus Columbus Cumberland Davidson Duplin Durham Edgecombe Forsyth [1] Franklin Gaston Granville Guilford Halifax Haywood [2] Hyde Jackson [2] Lenoir Mecklenburg Moore New Hanover Northampton Pitt Randolph Richmond Robeson Rowan Rutherford Sampson Stokes [1] Surry Swain [2] Vance Wake Wayne Wilkes Wilson Yadkin [1]	Avery [1] Beaufort Bertie Brunswick Buncombe Cabarrus Caldwell Columbus Craven Cumberland Davidson Duplin Durham Edgecombe Forsyth [1] Franklin Gaston Graham [2] Granville Guilford Halifax Haywood [2] Hyde Jackson [2] Lenoir Macon [2] Mecklenburg Moore Nash New Hanover Northampton Orange Pamlico Person Pitt Polk Randolph Richmond Robeson Rowan Rutherford

[1] Included in 2 districts of 3 counties each.
[2] Included in 1 district of 5 counties.

TABLE 1.—*Counties, townships, or districts in the United States in which rural sections were provided with health service under whole-time health officers each year from 1931 to 1935, as of Dec. 31*—Continued

NORTH CAROLINA—Continued

1931	1932	1933	1934	1935
				Sampson Stokes [1] Surry Swain [2] Vance Wake Watauga [1] Wayne Wilkes Wilson Yadkin [1] Yancey [1]

[1] Included in 2 districts of 3 counties each.
[2] Included in 1 district of 5 counties.

OHIO

Allen Ashtabula Belmont Butler Clinton Columbiana Coshocton Crawford Cuyahoga Darke Delaware Erie Fayette Franklin Guernsey Hamilton Hancock Hocking Huron Jackson Jefferson Lorain Lucas Mahoning Marion Medina Meigs Mercer Miami Montgomery Morrow Perry Pickaway Preble Richland Ross Scioto Seneca Shelby Stark Summit Trumbull Tuscarawas Washington Wayne Wood	Allen Ashtabula Belmont Butler Clinton Columbiana Coshocton Crawford Cuyahoga Darke Delaware Erie Fayette Franklin Hamilton Hancock Hocking Huron Jackson Jefferson Lorain Lucas Mahoning Marion Medina Meigs Mercer Miami Montgomery Morrow Perry Pickaway Preble Richland Ross Scioto Seneca Shelby Stark Summit Trumbull Tuscarawas Washington Wayne Wood	Allen Belmont Butler Clinton Coshocton Crawford Cuyahoga Darke Delaware Erie Fayette Hamilton Hancock Hocking Huron Jefferson Lorain Lucas Mahoning Marion Medina Meigs Mercer Miami Montgomery Perry Pickaway Preble Richland Ross Scioto Seneca Shelby Stark Summit Trumbull Tuscarawas Washington Wayne Wood	Allen Athens Butler Clinton Coshocton Crawford Cuyahoga Darke Delaware Erie Fayette Hamilton Hancock Hocking Huron Jefferson Lorain Lucas Mahoning Marion Medina Meigs Mercer Miami Montgomery Perry Pickaway Preble Richland Ross Seneca Shelby Stark Summit Trumbull Tuscarawas Washington Wayne Wood	Athens Butler Clinton Crawford Cuyahoga Darke Delaware Erie Fayette Guernsey Hamilton Hancock Hocking Huron Jefferson Lorain Lucas Madison Mahoning Marion Medina Meigs Mercer Miami Montgomery Perry Pickaway Preble Richland Ross Seneca Shelby Stark Summit Trumbull Tuscarawas Washington Wayne Wood Wyandot

OKLAHOMA

Carter Le Flore McCurtain Muskogee Okmulgee Ottawa Pittsburg Pottawatomie Seminole			Le Flore	Le Flore Seminole

TABLE 1.—*Counties, townships, or districts in the United States in which rural sections were provided with health service under whole-time health officers each year from 1931 to 1935, as of Dec. 31*—Continued

OREGON

1931	1932	1933	1934	1935
Clackamas	Clackamas	Clackamas	Clackamas	Clackamas
Coos	Coos	Jackson	Douglas	Douglas
Douglas	Douglas	Klamath	Jackson	Jackson
Jackson	Jackson	Lane	Klamath	Klamath
Klamath	Klamath	Marion	Lane	Lane
Lane	Lane	Multnomah	Marion	Marion
Marion	Marion		Multnomah	
Multnomah				

PENNSYLVANIA

Allegheny	Allegheny	Allegheny		
Bucks	Bucks	Bucks		
Luzerne	Luzerne	Luzerne		

SOUTH CAROLINA

Aiken	Aiken	Aiken	Aiken	Aiken
Anderson	Anderson	Anderson	Anderson	Anderson
Beaufort	Beaufort	Beaufort	Beaufort	Beaufort
Berkeley	Berkeley	Berkeley	Berkeley	Berkeley
Charleston	Charleston	Charleston	Charleston	Charleston
Cherokee	Cherokee	Cherokee	Cherokee	Cherokee
Darlington	Darlington	Darlington	Darlington	Darlington
Dillon	Dillon	Dillon [1]	Dillon [1]	Dillon [1]
Dorchester	Dorchester	Dorchester	Dorchester	Dorchester
Fairfield	Fairfield	Fairfield	Fairfield	Fairfield
Florence	Florence	Florence	Florence	Florence
Georgetown	Georgetown	Georgetown	Georgetown	Georgetown
Greenville	Greenville	Greenville	Greenville	Greenville
Greenwood	Greenwood	Greenwood	Greenwood	Greenwood
Horry	Horry	Horry	Horry	Horry
Kershaw	Kershaw	Kershaw	Kershaw	Kershaw
Lexington	Lexington	Marion [1]	Marion [1]	Marion [1]
Marion	Marion	Newberry	Newberry	Newberry
Newberry	Newberry	Oconee	Oconee	Oconee
Oconee	Oconee	Orangeburg	Orangeburg	Orangeburg
Orangeburg	Orangeburg	Pickens	Pickens	Pickens
Pickens	Pickens	Richland	Richland	Richland
Richland	Richland	Spartanburg	Spartanburg	Spartanburg
Spartanburg	Spartanburg			

[1] Included in 1 district of 2 counties.

SOUTH DAKOTA

Pennington	Pennington	Pennington		

TENNESSEE

Bledsoe [2]	Bledsoe [2]	Bledsoe	Anderson [5]	Bledsoe [4]
Blount	Bradley	Bradley	Bledsoe [5]	Blount
Bradley	Carter	Davidson	Blount	Bradley
Carter	Clay [3]	Dyer	Bradley	Carter [4]
Clay [2]	Davidson [3]	Fentress [4]	Campbell [5]	Davidson
Cumberland	Dyer	Gibson	Carter [5]	Fentress [4]
Davidson [3]	Fentress [3]	Giles	Davidson	Gibson
Dyer	Gibson	Greene	Dyer	Giles
Fentress [3]	Giles	Grundy [4]	Fentress [5]	Greene
Gibson	Greene	Hamilton	Gibson	Grundy
Giles	Grundy [3]	Hardeman	Giles	Hamilton
Greene	Hamilton	Humphreys	Greene	Hardeman
Grundy [2]	Hardeman	Jackson [4]	Grundy	Humphreys
Hamilton	Humphreys	Knox	Hamilton	Jackson [4]
Hardeman	Jackson [3]	Lake	Hardeman	Knox
Humphreys	Knox	Lauderdale	Humphreys	Lake
Jackson [3]	Lake	Lincoln	Jackson [5]	Lauderdale

[2] Included in 1 district of 3 counties.
[3] Included in 4 districts of 2 counties each.
[4] Included in 3 districts of 2 counties each.
[5] Included in 5 districts of 2 counties each.

TABLE 1.—*Counties, townships, or districts in the United States in which rural sections were provided with health service under whole-time health officers each year from 1931 to 1935, as of Dec. 31*—Continued

TENNESSEE—Continued

1931	1932	1933	1934	1935
Knox	Lauderdale	Maury	Knox	Lincoln
Lake	Lewis	Meigs [4]	Lake	Maury
Lauderdale	Lincoln	Montgomery	Lauderdale [4]	Meigs
Lewis	Maury	Obion	Lincoln	Montgomery
Lincoln	Meigs [3]	Rhea [4]	Maury	Obion
Maury	Monroe	Roane	Meigs [3]	Rhea
Meigs [3]	Montgomery	Rutherford	Montgomery	Roane
Monroe	Obion	Sequatchie [4]	Obion	Rutherford
Montgomery	Overton [3]	Sevier	Rhea [5]	Sequatchie [4]
Obion	Pickett [3]	Shelby	Roane	Sevier
Overton [3]	Rhea [5]	Sullivan	Rutherford	Shelby
Pickett [3]	Roane	Sumner	Sequatchie [5]	Sullivan
Rhea [5]	Rutherford	Tipton	Sevier	Sumner
Roane	Sequatchie [5]	Washington	Shelby	Tipton
Rutherford	Sevier	Weakley	Sullivan	Unicoi
Sequatchie [5]	Shelby	Williamson	Sumner	Washington
Sevier	Sullivan	Wilson	Tipton	Weakley
Shelby	Sumner		Unicoi [5]	Williamson
Sullivan	Tipton		Washington	Wilson
Sumner	Unicoi		Weakley	
Tipton	Washington		Williamson	
Unicoi	Weakley		Wilson	
Washington	Williamson			
Weakley	Wilson			
Williamson				
Wilson				

[3] Included in 1 district of 3 counties.
[4] Included in 4 districts of 2 counties each.
[4] Included in 3 districts of 2 counties each.
[5] Included in 5 districts of 2 counties each.

TEXAS

Cameron [6]	Cameron	Dallas	Dallas	Cameron
Cass	Gregg	El Paso	El Paso	Culberson [6]
Hidalgo [6]	Hidalgo	Gregg	Gregg	Dallas
Jefferson	McLennan	Hidalgo	Hidalgo	El Paso [1]
McLennan	Nolan	McLennan	Nolan	Hidalgo
Nolan	Potter	Nolan	Potter	Hudspeth [1]
Potter	Starr	Potter	Tarrant	Nolan
Starr [6]	Tarrant	Tarrant		Potter
Willacy [6]				Tarrant

[1] 1 district of 3 counties.
[6] Included in 1 district of 4 counties.

UTAH

Davis Utah	Davis Utah	Davis Utah	Davis Utah	Davis

VIRGINIA

Accomac [2]	Accomac [2]	Albemarle	Albemarle	Albemarle
Albemarle	Albemarle	Arlington	Arlington	Alleghany [1]
Amelia [1]	Amelia [1]	Augusta	Augusta	Arlington
Appomattox [1]	Appomattox [1]	Brunswick [2]	Brunswick [2]	Augusta
Arlington	Arlington	Fairfax	Fairfax	Bath [1]
Augusta	Augusta	Greensville [2]	Greensville [2]	Brunswick [1]
Brunswick [2]	Brunswick [2]	Halifax	Halifax	Buckingham [1]
Buckingham [1]	Buckingham [1]	Henrico	Henrico	Dickinson [7]
Charlotte [1]	Charlotte [1]	Isle of Wight [2]	Isle of Wight [2]	Elizabeth City [2]
Cumberland [1]	Cumberland [1]	Nansemond [2]	Nansemond [2]	Fairfax
Fairfax	Fairfax	Norfolk [2]	Norfolk [2]	Greene [1]

[1] Included in 3 districts of 3 counties each.
[2] Included in 2 districts of 4 counties each.
[2] Included in 1 district of 7 counties.

TABLE 1.—*Counties, townships, or districts in the United States in which rural sections were provided with health service under whole-time health officers each year from 1931 to 1935, as of Dec. 31*—Continued

VIRGINIA—Continued

1931	1932	1933	1934	1935
Greensville [3]	Greensville [3]	Pittsylvania	Nottoway [3]	Greensville [1]
Halifax	Halifax	Prince Edward	Pittsylvania	Halifax [4]
Henrico	Henrico	Princess Anne [2]	Prince Edward [2]	Hanover
Isle of Wight [3]	Isle of Wight [3]	Rockbridge	Princess Anne [2]	Henrico
Lunenburg [1]	Lunenburg [1]	Southampton	Rockbridge	Isle of Wight [4]
Nansemond [3]	Nansemond [3]		Southampton	James City [2]
Norfolk [3]	Norfolk [3]			Lee [2]
Northampton [3]	Nottoway [1]			Madison [3]
Nottoway [1]	Pittsylvania			Mecklenburg [1]
Pittsylvania	Powhatan [1]			Montgomery
Powhatan [1]	Prince Edward [1]			Nansemond [4]
Prince Edward [1]	Princess Anne [2]			Norfolk [4]
Princess Anne [2]	Rockbridge			Northampton
Rockbridge	Southampton			Nottoway [1]
Southampton				Page [3]
Wise				Pittsylvania [4]
				Prince Edward [1]
				Princess Anne [4]
				Rappahannock [3]
				Rockbridge [1]
				Rockingham [3]
				Scott [2]
				Shenandoah [3]
				Southampton
				Warren [3]
				Warwick [3]
				Wise [2]
				Wythe
				York [2]

[1] Included in 3 districts of 3 counties each.
[2] Included in 2 districts of 4 counties each.
[3] Included in 1 district of 7 counties each.
[4] Included in 3 districts of 2 counties each.

WASHINGTON

Chelan	Chelan	Chelan	Chelan	Chelan
Clark	Clark	Clark	Clark	Clallam
King	King	King	King	Clark
Snohomish	Snohomish	Snohomish	Snohomish	King
Spokane	Spokane	Spokane	Spokane	Snohomish
Walla Walla	Walla Walla	Walla Walla	Walla Walla	Spokane
Whitman	Whitman	Whitman	Whitman	Walla Walla
Yakima	Yakima	Yakima	Yakima	Yakima

WEST VIRGINIA

Berkeley	Berkeley	Berkeley	Berkeley	Berkeley
Boone	Boone	Boone	Boone	Boone
Brooke	Brooke	Fayette	Fayette	Brooke
Doddridge [1]	Fayette	Hancock	Hancock	Fayette
Fayette	Hancock	Harrison	Harrison	Hancock
Hancock	Harrison	Kanawha	Kanawha	Harrison
Harrison	Kanawha	Logan	Logan	Kanawha
Kanawha	Logan	Marshall	Marshall	Logan
Logan	Marion	Monongalia	Monongalia	Marshall
Marion	Marshall	Ohio	Ohio	Monongalia
Marshall	Monongalia	Preston	Preston	Ohio
Monongalia	Ohio	Raleigh	Raleigh	Preston
Ohio	Preston	Wood	Wood	Raleigh
Pleasants [1]	Raleigh			Wood
Preston	Wood			
Raleigh				
Ritchie [1]				
Tyler [1]				
Wetzel [1]				
Wood				

[1] Included in 1 district of 5 counties.

Table 2, a résumé of table 1, indicates the number of whole-time county, township, or district health units in each of 38 States during the years 1931 to 1935, inclusive. There is also shown the increase

or decrease from year to year of whole-time units in each of these States. It will be noted that there was a gain of 71 whole-time units in 1935 over 1934.

TABLE 2.—*Résumé of table 1*

	Number of counties					Increase or decrease in—			
	Jan. 1, 1932	Dec. 31, 1932	Dec. 31, 1933	Dec. 31, 1934	Dec. 31, 1935	1932	1933	1934	1935
Alabama	54	54	46	50	56		−8	+4	+6
Arizona	5	4	4	4	4	−1			
Arkansas	30	27	21	19	19	−3	−6	−2	
California	14	14	13	15	16		−1	+2	+1
Colorado	1					−1			
Connecticut	1	2	2	2		+1			−2
Delaware	3	3	3	3	3				
Florida	2	3	2	2	3	+1	−1		+1
Georgia	35	31	30	30	31	−4	−1		+1
Idaho	1	1					−1		
Illinois	1	1	1	1					−1
Iowa	3	3	1	1	1		−2		
Kansas	10	6	4	3	3	−4	−2	−1	
Kentucky	81	79	73	70	76	−2	−6	−3	+6
Louisiana	32	31	31	32	34	−1		+1	+2
Maine	6	5	5	5	2	−1			−3
Maryland	18	21	22	23	23	+3	+1	+1	
Massachusetts	3	3	3	3	3				
Michigan	25	29	30	32	38	+4	+1	+2	+6
Minnesota	1	1	1	1	1				
Mississippi	29	25	24	25	25	−4	−1	+1	
Missouri	11	10	9	8	5	−1	−1	−1	−3
Montana	4	4	4	4	3				−1
New Mexico	6	6	6	6	31				+25
New York	4	4	5	5	5		+1		
North Carolina	36	35	36	41	53	−1	+1	+5	+12
Ohio	46	45	40	39	40	−1	−5	−1	+1
Oklahoma	9			1	2	−9		+1	+1
Oregon	8	7	6	7	6	−1	−1	+1	−1
Pennsylvania	3	3	3					−3	
South Carolina	24	24	23	23	23		−1		
South Dakota	1	1	1					−1	
Tennessee	43	41	34	39	34	−2	−7	+5	−5
Texas	9	8	8	7	9	−1		−1	+2
Utah	2	2	2	2	1				−1
Virginia	27	25	16	17	40	−2	−9	+1	+23
Washington	8	8	8	8	8				
West Virginia	20	15	13	13	14	−5	−2		+1
Total	616	581	530	541	612	−35	−51	+10	+71

The accompanying map shows the location of the counties, townships, or districts in the United States with health service for rural areas, under the direction of whole-time local health officers, on December 31, 1935.

From January 1, 1935, to December 31, 1935, whole-time health service was established in 88 units and was discontinued in 17—a net gain of 71. The greatest gains were in the State of New Mexico, in which whole-time health service was established in 25 counties, and in the State of Virginia, in which whole-time health service was established in 23 counties.

Delaware, Maryland, and New Mexico lead in the percentage of rural population under whole-time health service, all of their counties having been provided with whole-time local health organizations. The health units in Delaware have been provided by the State, whereas those in Maryland and New Mexico are maintained by the

local governments, with or without assistance from the State health departments or other sources.

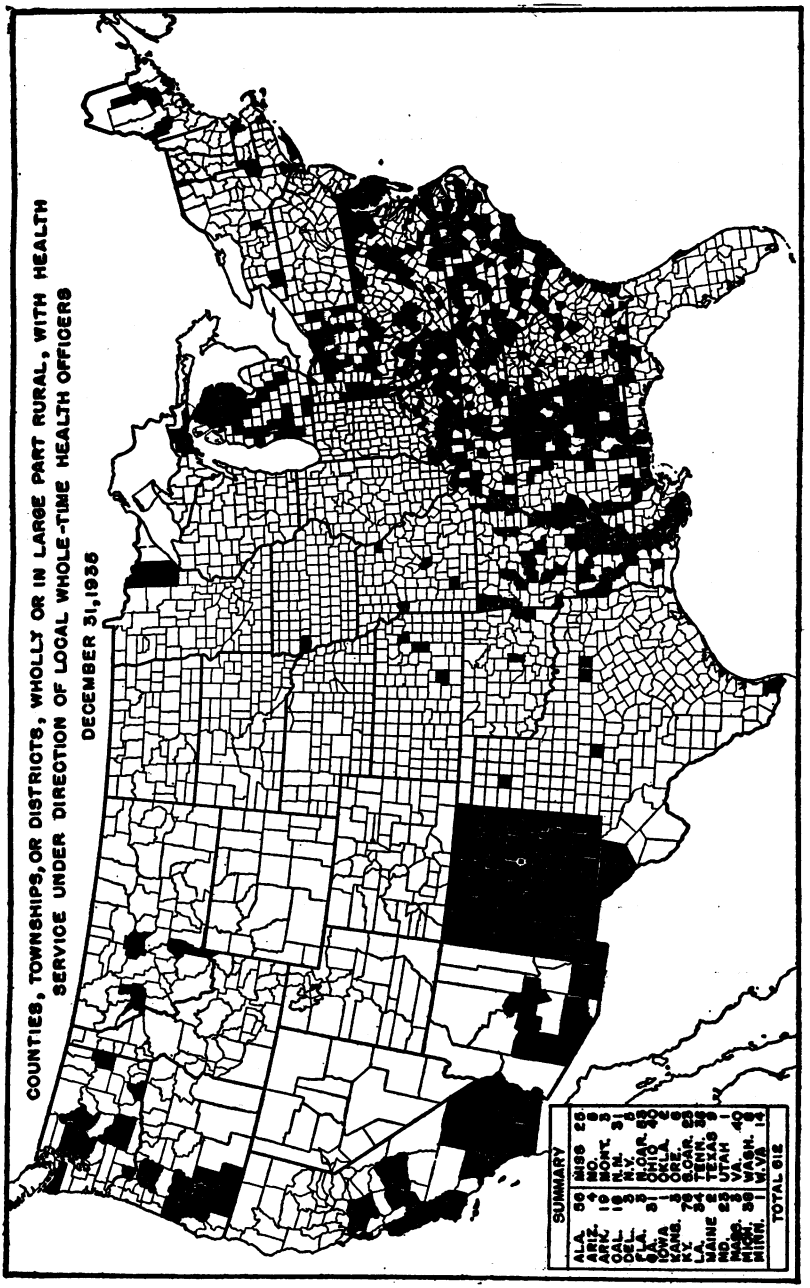

FIGURE 1.—Rural areas (in black) having whole-time health officers, December 31, 1935.

TABLE 3.—*Percentage of rural population having on Dec. 31, 1935, health service under local whole-time health officers*

State	Rural population as of Dec. 31, 1935 (estimate from 1930 census)	Rural population with local health service under direction of whole-time health officers	Percentages of rural population with local health service under direction of whole-time health officers
Alabama	1,937,382	1,684,695	87.0
Arizona	324,469	185,743	57.2
Arkansas	1,477,155	519,447	35.2
California	1,753,113	998,848	57.0
Colorado	532,479	0	0.0
Connecticut	492,433	0	0.0
Delaware	122,526	122,526	100.0
Florida	762,167	64,168	8.4
Georgia	2,013,016	571,243	28.4
Idaho	317,037	0	0.0
Illinois	1,994,927	0	0.0
Indiana	1,442,611	0	0.0
Iowa	1,491,647	23,350	1.6
Kansas	1,151,165	65,644	5.7
Kentucky	1,833,781	1,232,576	67.2
Louisiana	1,322,876	796,472	60.2
Maine	480,109	26,410	5.5
Maryland	699,524	699,524	100.0
Massachusetts	539,399	57,726	10.7
Michigan	1,603,862	636,332	40.0
Minnesota	1,306,337	48,313	3.7
Mississippi	1,738,551	696,566	40.1
Missouri	1,770,248	168,444	9.5
Montana	356,570	28,718	8.1
Nebraska	892,300	0	0.0
Nevada	56,594	0	0.0
New Hampshire	208,421	0	0.0
New Jersey	713,942	0	0.0
New Mexico	328,344	328,344	100.0
New York	2,217,983	330,304	14.9
North Carolina	2,524,047	1,593,201	63.1
North Dakota	572,535	0	0.0
Ohio	2,171,340	1,143,265	52.7
Oklahoma	1,622,351	114,028	7.0
Oregon	504,244	184,355	36.6
Pennsylvania	3,097,139	0	0.0
Rhode Island	72,740	0	0.0
South Carolina	1,367,685	834,611	61.0
South Dakota	577,238	0	0.0
Tennessee	1,720,018	825,242	48.0
Texas	3,595,144	219,271	6.1
Utah	245,942	11,450	4.7
Vermont	240,845	0	0.0
Virginia	1,636,937	815,345	49.8
Washington	718,668	318,265	44.3
West Virginia	1,257,923	555,081	44.1
Wisconsin	1,385,163	0	0.0
Wyoming	165,798	0	0.0
Total	55,356,725	15,899,507	28.7

Table 3 presents, by States, the percentage of rural population having health service under the direction of local whole-time health officers at the end of the calendar year 1935.

Of the 612 counties, townships, or districts with health service under whole-time local health officers at the close of 1935, 587, or 95.3 percent, were receiving financial assistance for the support of their health service from one or more of the following agencies: The State Board of Health, the United States Public Health Service, the Rockefeller Foundation, the American Red Cross, the American Women's Hospital Fund, the Rosenwald Fund, the Commonwealth Fund, and the Milbank Memorial Fund.

The accompanying chart shows, by States, the number of counties, townships, or districts with health service under the direction of whole-time local health officers from 1931–35, and the percentage of the rural population of each State receiving such service at the close of the calendar year 1935. There also is shown the total number of counties, townships, or districts in the United States having whole-

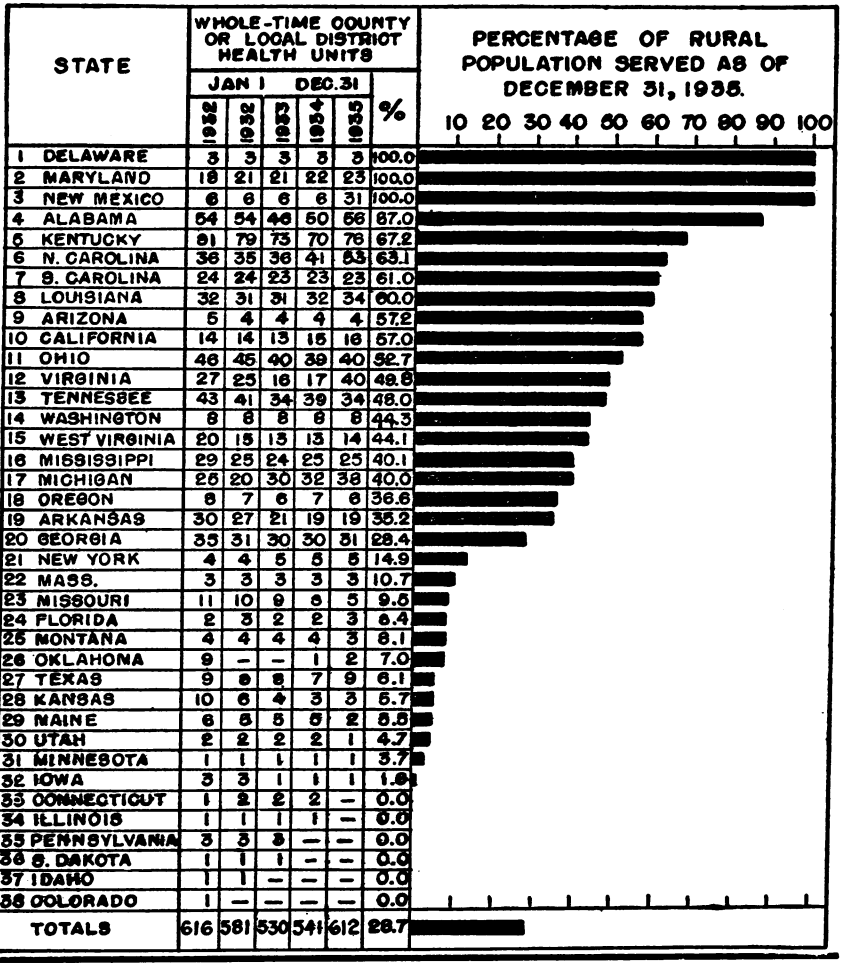

FIGURE 2.—Number of whole-time county or local district health units, by States, 1932–35, and percentage of rural population served on December 31, 1935.

time local health service, together with the percentage of the rural population of the entire United States served by whole-time local health organizations.

It will be noted that 71.3 percent of our rural population is as yet not provided with the form of health organization which is believed to be adapted to rural areas.

DEATHS DURING WEEK ENDED JULY 25, 1936

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

	Week ended July 25, 1936	Corresponding week, 1935
Data from 86 large cities of the United States:		
Total deaths	7,841	7,291
Deaths per 1,000 population, annual basis	11.0	10.2
Deaths under 1 year of age	557	480
Deaths under 1 year of age per 1,000 estimated live births	50	44
Deaths per 1,000 population, annual basis, first 30 weeks of year	12.9	11.9
Data from industrial insurance companies:		
Policies in force	68,651,544	67,942,296
Number of death claims	13,710	12,671
Death claims per 1,000 policies in force, annual rate	10.4	9.7
Death claims per 1,000 policies, first 30 weeks of year, annual rate	10.4	10.2

PREVALENCE OF DISEASE

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

UNITED STATES

CURRENT WEEKLY STATE REPORTS

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

Reports for Weeks Ended Aug. 1, 1936, and Aug. 3, 1935

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended Aug. 1, 1936, and Aug. 3, 1935

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Aug. 1, 1936	Week ended Aug. 3, 1935	Week ended Aug. 1, 1936	Week ended Aug. 3, 1935	Week ended Aug. 1, 1936	Week ended Aug. 3, 1935	Week ended Aug. 1, 1936	Week ended Aug. 3, 1935
New England States:								
Maine	1	1	-------	-------	40	51	0	0
New Hampshire	-------	-------	-------	-------	12	1	0	0
Vermont	-------	-------	-------	-------	7	20	0	0
Massachusetts	9	10	-------	-------	118	65	3	3
Rhode Island	-------	2	-------	-------	7	22	0	1
Connecticut	1	2	-------	1	14	35	0	1
Middle Atlantic States:								
New York	29	22	[1] 1	[1] 1	261	395	10	12
New Jersey	3	12	2	1	74	102	3	4
Pennsylvania [2]	10	18	-------	-------	89	132	3	4
East North Central States:								
Ohio	25	16	11	3	121	79	9	4
Indiana	11	14	5	17	2	10	1	3
Illinois	22	31	7	5	12	89	5	10
Michigan	12	6	-------	2	22	199	1	1
Wisconsin	1	2	1	23	32	440	0	1
West North Central States:								
Minnesota	3	1	2	2	20	18	2	2
Iowa	-------	2	-------	2	4	8	1	1
Missouri	6	11	18	27	5	30	1	4
North Dakota	4	3	2	-------	3	2	0	0
South Dakota	1	1	-------	-------	-------	5	0	0
Nebraska	5	1	-------	-------	2	21	1	0
Kansas	4	5	-------	2	3	16	0	3
South Atlantic States:								
Delaware	-------	1	-------	-------	-------	8	0	0
Maryland [2 3]	4	1	-------	1	33	16	1	3
District of Columbia	5	8	-------	-------	20	3	1	5
Virginia [2]	-------	12	-------	-------	16	21	6	2
West Virginia	3	8	4	42	4	11	0	2
North Carolina [2 4]	9	15	-------	-------	2	4	2	3
South Carolina	3	3	29	45	6	3	1	1
Georgia [4]	11	6	-------	-------	-------	-------	3	0
Florida [4]	7	4	1	-------	2	-------	1	0

See footnotes at end of table.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended Aug. 1, 1936, and Aug. 3, 1935—Continued

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Aug. 1, 1936	Week ended Aug. 3, 1935	Week ended Aug. 1, 1936	Week ended Aug. 3, 1935	Week ended Aug. 1, 1936	Week ended Aug. 3, 1935	Week ended Aug. 1, 1936	Week ended Aug. 3, 1935
East South Central States:								
Kentucky [3]	3	3	1	----	2	23	1	1
Tennessee	6	10	2	4	10	13	2	1
Alabama [4]	9	13	1	2	3	1	1	0
Mississippi [3]	5	10	----	----	----	----	0	1
West South Central States:								
Arkansas	1	7	4	5	----	9	0	2
Louisiana [4]	11	17	13	18	4	4	0	1
Oklahoma [5]	6	8	5	10	3	----	0	1
Texas [4]	16	31	24	14	18	19	1	0
Mountain States:								
Montana	1	4	----	----	1	17	0	0
Idaho	----	----	1	----	7	----	0	0
Wyoming [3]	----	----	----	----	3	7	0	0
Colorado	4	9	----	----	5	104	1	0
New Mexico	3	1	1	----	6	----	0	0
Arizona	2	1	5	1	21	1	0	0
Utah [3]	----	----	----	----	12	----	0	0
Pacific States:								
Washington	1	----	----	----	22	27	0	1
Oregon	----	2	2	11	5	47	0	2
California	12	14	11	9	91	148	5	1
Total	269	348	153	248	1,144	2,226	66	81
First 31 weeks of year	14,542	17,317	141,313	103,499	268,586	693,097	5,832	4,027

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Aug. 1, 1936	Week ended Aug. 3, 1935	Week ended Aug. 1, 1936	Week ended Aug. 3, 1935	Week ended Aug. 1, 1936	Week ended Aug. 3, 1935	Week ended Aug. 1, 1936	Week ended Aug. 3, 1935
New England States:								
Maine	2	2	17	3	0	0	3	4
New Hampshire	1	0	----	2	0	0	0	0
Vermont	1	0	2	5	0	0	1	0
Massachusetts	1	47	55	35	0	0	4	5
Rhode Island	0	7	2	3	0	0	0	0
Connecticut	0	10	9	8	0	0	0	0
Middle Atlantic States:								
New York	6	104	101	78	0	0	19	11
New Jersey	0	7	26	14	0	0	9	2
Pennsylvania [3]	1	2	72	75	0	0	25	13
East North Central States:								
Ohio	1	1	75	54	1	0	13	31
Indiana	0	0	19	14	0	0	6	25
Illinois	12	10	117	95	12	0	19	52
Michigan	3	10	79	56	0	0	11	19
Wisconsin	0	0	78	87	11	6	3	0
West North Central States:								
Minnesota	4	1	28	34	2	1	0	27
Iowa	0	0	29	14	0	3	1	2
Missouri	2	2	23	16	1	0	20	34
North Dakota	3	0	2	4	9	0	0	2
South Dakota	1	0	4	5	4	6	1	0
Nebraska	3	0	16	4	2	3	0	1
Kansas	0	0	36	23	0	0	8	20
South Atlantic States:								
Delaware	0	0	----	1	0	0	0	2
Maryland [2 3]	0	10	15	13	0	0	11	14
District of Columbia	0	7	1	4	0	0	1	3
Virginia [3]	3	100	4	14	0	0	10	38
West Virginia	0	0	12	18	1	0	10	31
North Carolina [2 4]	2	40	7	20	0	0	23	40
South Carolina	0	1	2	1	0	0	13	31
Georgia [4]	6	1	8	4	0	0	46	36
Florida [4]	0	0	3	----	0	0	2	21

See footnotes at end of table.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended Aug. 1, 1936, and Aug. 3, 1935—Continued

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Aug. 1, 1936	Week ended Aug. 3, 1935	Week ended Aug. 1, 1936	Week ended Aug. 3, 1935	Week ended Aug. 1, 1936	Week ended Aug. 3, 1935	Week ended Aug. 1, 1936	Week ended Aug. 3, 1935
East South Central States:								
Kentucky [2]	3	18	5	16	0	0	32	55
Tennessee	26	10	13	16	0	0	32	55
Alabama [4]	29	1	4	9	0	0	15	12
Mississippi [3]	5	1	2	5	0	0	19	18
West South Central States:								
Arkansas	0	1	4	8	0	0	18	42
Louisiana [4]	0	2	2	7	0	0	27	24
Oklahoma [5]	0	0	5	8	0	0	14	44
Texas [4]	1	3	21	17	0	0	34	70
Mountain States:								
Montana	1	0	4	2	20	2	3	2
Idaho	1	0	1	2	1	3	1	0
Wyoming [3]	0	0	9	5	2	2	1	1
Colorado	6	1	7	22	1	0	4	4
New Mexico	0	0	8	3	0	0	7	14
Arizona	0	0	5	2	0	0	5	4
Utah [3]	0	0	8	9	0	0	2	0
Pacific States:								
Washington	1	0	8	10	0	6	1	2
Oregon	1	0	6	10	1	2	4	1
California	16	19	84	50	3	2	16	10
Total	142	418	1,038	905	71	36	494	822
First 31 weeks of year	1,082	2,315	181,957	178,553	6,178	5,257	5,699	7,786

[1] New York City only.
[2] Rocky Mountain spotted fever, week ended Aug. 1, 1936, 29 cases, as follows: Pennsylvania, 1; Maryland, 4; Virginia, 7; North Carolina, 5; Kentucky, 1; Wyoming, 2.
[3] Week ended earlier than Saturday.
[4] Typhus fever, week ended Aug. 1, 1936, 76 cases, as follows: North Carolina, 1; Georgia, 38; Florida, 6; Alabama, 13; Louisiana, 1; Texas, 17.
[5] Exclusive of Oklahoma City and Tulsa.

SUMMARY OF MONTHLY REPORTS FROM STATES

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

State	Meningococcus meningitis	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever
May 1936										
Puerto Rico	-------	50	3,169	584	173	1	0	-------	0	51
June 1936										
Hawaii Territory	2	6	151	-------	5	-------	4	1	0	4
Montana	3	3	40	-------	25	-------	0	139	101	6
Tennessee	11	21	63	221	50	52	0	47	2	51
West Virginia	16	19	43	-------	162	-------	2	61	1	16
Wisconsin	3	5	41	1	609	-------	0	1,012	24	9

Summary of monthly reports from States—Continued

May 1936

	Cases
Puerto Rico:	
Chickenpox	13
Dysentery	45
Filariasis	2
Mumps	21
Ophthalmia neonatorum	6
Puerperal fever	6
Tetanus	12
Tetanus, infantile	5
Trachoma	3
Whooping cough	45

June 1936

Chickenpox:	
Hawaii Territory	55
Montana	98
Tennessee	32
West Virginia	74
Wisconsin	1,207
Dysentery:	
Hawaii Territory (amoebic)	4
Montana (amoebic)	1
Tennessee	49
Epidemic encephalitis:	
Tennessee	1
Wisconsin	1
German measles:	
Tennessee	32
Wisconsin	61
Hookworm disease:	
Tennessee	2
Impetigo contagiosa:	
Tennessee	2
Leprosy:	
Hawaii Territory	5
Mumps:	
Hawaii Territory	36
Montana	137
Tennessee	72
West Virginia	37
Wisconsin	996
Ophthalmia neonatorum:	
Tennessee	4
Wisconsin	1
Puerperal septicemia:	
Tennessee	1
Rocky Mountain spotted fever:	
Montana	10
Scabies:	
Tennessee	2
Septic sore throat:	
Hawaii Territory	2
Montana	8
Tennessee	5
Tetanus:	
Montana	1
Tennessee	5
Trachoma:	
Tennessee	61
Wisconsin	1
Tularaemia:	
Tennessee	1
Wisconsin	3
Typhus fever:	
Hawaii Territory	1
Tennessee	2
Undulant fever:	
Montana	1
Tennessee	2
Wisconsin	6
Vincent's infection:	
Montana	1
Tennessee	4
Whooping cough:	
Hawaii Territory	34
Montana	89
Tennessee	94
West Virginia	88
Wisconsin	561

RODENT PLAGUE IN CALIFORNIA AND UTAH

One ground squirrel found dead July 16, 1936, in Beaver Canyon, 5 miles east of Beaver, Utah, has been proved positive for plague by animal inoculation and cultural reactions.

The Director of Public Health of California has reported plague infection in five squirrels received at the laboratory on July 28, 1936, from a ranch 33 miles north and 13 miles west of Alturas, Modoc County; also in four squirrels received at the laboratory on July 21, 1936, from 6 miles east of Watsonville, and in two squirrels received at the laboratory on July 22, 1936, from a ranch 6 miles east of Watsonville, Santa Cruz County, Calif.

WEEKLY REPORTS FROM CITIES

City reports for week ended July 25, 1936

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

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Maine:											
Portland	0	------	0	5	1	0	0	0	0	0	19
New Hampshire:											
Concord	0	------	0	0	1	0	0	0	0	0	8
Manchester	0	------	1	0	1	0	0	0	0	0	10
Nashua	0	------	--------	0	-------	0	0	-------	0	0	--------
Vermont:											
Barre	0	------	0	0	0	0	0	0	0	0	0
Burlington	0	------	0	1	0	0	0	0	0	0	8
Rutland	0	------	0	0	0	1	0	0	0	0	4
Massachusetts:											
Boston	4	------	1	37	17	9	0	9	0	60	195
Fall River	2	------	0	2	0	1	0	1	0	1	33
Springfield	0	------	0	1	0	1	0	0	0	4	29
Worcester	0	------	0	16	4	2	0	3	0	5	40
Rhode Island:											
Pawtucket	0	------	0	0	0	0	0	0	0	0	16
Providence	1	1	0	3	0	3	0	3	2	6	41
Connecticut:											
Bridgeport	1	------	0	3	0	1	0	0	0	9	26
Hartford	0	------	0	0	1	0	0	1	1	1	28
New Haven	0	------	0	0	0	1	0	0	0	8	34
New York:											
Buffalo	0	------	0	18	0	13	0	3	2	0	117
New York	22	2	1	133	50	29	0	80	9	119	1,182
Rochester	0	------	0	2	2	2	0	0	0	7	54
Syracuse	0	------	0	14	1	4	0	1	0	22	48
New Jersey:											
Camden	0	------	0	4	2	1	0	2	0	0	42
Newark	0	------	0	17	1	3	0	4	1	27	74
Trenton	0	------	0	2	1	0	0	4	0	8	49
Pennsylvania:											
Philadelphia	3	1	0	38	16	11	0	18	2	65	424
Pittsburgh	2	1	1	2	25	22	0	3	1	42	154
Reading	0	------	0	3	0	0	0	2	1	5	24
Scranton	1	0	--------	0	-------	1	0	-------	0	0	--------
Ohio:											
Cincinnati	4	------	0	10	6	7	0	10	1	5	156
Cleveland	6	3	1	19	7	12	1	13	1	110	159
Columbus	0	------	0	2	1	1	0	3	0	24	58
Toledo	0	------	0	4	6	0	0	3	0	40	68
Indiana:											
Anderson	0	------	0	0	0	3	0	1	0	5	7
Fort Wayne	0	------	0	0	1	2	0	0	0	0	24
Indianapolis	1	------	1	0	8	4	0	6	1	7	103
Muncie	0	------	0	0	0	1	0	2	0	0	10
South Bend	0	------	0	0	0	0	0	1	0	2	17
Terre Haute	0	------	0	0	0	0	0	0	0	0	23
Illinois:											
Alton	0	------	0	0	0	1	0	0	3	3	9
Chicago	5	------	0	6	34	39	2	30	1	113	634
Elgin	0	------	0	0	1	0	0	1	0	2	6
Moline	0	------	0	0	1	0	0	0	0	0	8
Springfield	0	------	0	0	1	1	0	0	0	14	18
Michigan:											
Detroit	5	------	0	5	7	34	0	20	5	176	220
Flint	0	------	0	1	1	4	0	2	0	2	22
Grand Rapids	0	------	0	2	1	3	0	0	2	14	3
Wisconsin:											
Kenosha	0	------	0	0	0	1	8	0	0	3	7
Madison	0	------	0	3	0	2	0	0	1	29	14
Milwaukee	0	------	0	6	7	22	1	7	0	45	110
Racine	0	------	0	0	2	3	0	1	0	0	12
Superior	0	------	0	0	0	2	0	0	0	0	8
Minnesota:											
Duluth	0	------	0	0	1	7	0	2	0	12	21
Minneapolis	0	------	0	2	3	3	0	2	0	4	130
St. Paul	------	------	------	------	------	------	------	------	------	------	------

City reports for week ended July 25, 1936—Continued

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Iowa:											
Cedar Rapids	0			0		0	0		0	1	
Des Moines	1			0		0	0		0	0	34
Sioux City											
Waterloo											
Missouri:											
Kansas City	1		0	2	2	6	0	3	0	1	106
St. Joseph											
St. Louis	0		0	4	8	0	0	7	2	17	402
North Dakota:											
Fargo	0		0	0	0	1	0	0	0	3	13
Grand Forks	0			1		0	0		0	0	
Minot	0			1		1	0		0	0	4
South Dakota:											
Aberdeen	0			0		0	0		0	0	
Nebraska:											
Omaha	3		0	1	4	1	0	9	0	0	110
Kansas:											
Lawrence	0			0		0	0		0	0	9
Topeka											
Wichita	0		0	0	3	0	0	0	0	1	52
Delaware:											
Wilmington	0		0	1	3	0	0	1	0	4	27
Maryland:											
Baltimore	3	1	0	53	14	6	0	14	0	95	182
Cumberland	0		0	0	0	0	0	0	0	0	10
Frederick	0		0	0	0	0	0	0	0	0	3
District of Columbia:											
Washington	2	1	0	38	8	5	0	14	2	33	145
Virginia:											
Lynchburg	1	0		0	0	0	0	0	1	1	4
Richmond	0		0	0	1	0	0	1	1	5	41
Roanoke	0		0	1	0	1	0	0	0	0	8
West Virginia:											
Charleston	0		0	0	0	0	0	0	0	0	18
Huntington	0		0	0		1	0	1	1	0	
Wheeling	0		0	1	2	0	0	1	0	4	13
North Carolina:											
Gastonia	0		0	0	0	0	0	0	0	0	
Raleigh	0		0	0	2	0	0	2	0	0	19
Wilmington	0		0	0	0	0	0	1	0	2	8
Winston-Salem	0		0	0	1	0	0	2	0	0	21
South Carolina:											
Charleston	0		0	0	0	0	0	3	1	0	19
Columbia											
Florence	0		0	0	0	0	0	0	0	0	8
Greenville	2		0	1	2	0	0	0	0	0	6
Georgia:											
Atlanta	1	1	0	1	3	0	0	5	1	0	71
Brunswick	0		0	0	0	0	0	0	0	0	4
Savannah	3		0	0	0	0	0	2	0	0	33
Florida:											
Miami	0	1	0	0	0	1	0	2	0	4	24
Tampa	0		0	0	1	0	0	1	0	0	20
Kentucky:											
Ashland	0		0	1	0	0	0	0	3	0	0
Covington	0		0	2	0	1	0	1	0	0	19
Lexington	0		0	0	1	0	0	1	0	0	18
Louisville	1		0	0	3	5	0	4	0	1	77
Tennessee:											
Knoxville	0		1	0	2	1	0	1	0	0	38
Memphis	2		0	0	4	0	0	11	0	13	82
Nashville	1		0	0	6	0	0	1	3	0	49
Alabama:											
Birmingham	1		0	0	5	0	0	3	0	0	62
Mobile	0		0	0	1	1	0	0	0	0	13
Montgomery	0			0		0	0		0	0	
Arkansas:											
Fort Smith	0			0		0	0		0	0	
Little Rock	0		0	0	2	0	0	2	0	0	4
Louisiana:											
Lake Charles	0		0	0	0	0	0	0	0	0	6
New Orleans	4	1	0	4	6	2	0	15	3	17	152
Shreveport	1		0	0	3	0	0	1	0	0	51
Oklahoma:											
Tulsa	0			0		0	0		0	0	

City reports for week ended July 25, 1936—Continued

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Texas:											
Dallas	4	1	1	2	3	3	0	2	1	0	85
Fort Worth	0	------	0	5	1	0	0	0	0	4	41
Galveston	0	------	0	0	1	1	0	2	0	0	16
Houston	1	------	0	0	5	2	0	4	6	0	66
San Antonio	0	------	0	1	1	0	0	5	0	0	49
Montana:											
Billings	0	------	0	0	0	1	0	0	0	1	5
Great Falls	0	------	0	0	0	0	0	0	0	1	5
Helena	0	------	0	1	0	1	0	0	0	0	4
Missoula	0	------	0	0	1	0	0	0	0	0	13
Idaho:											
Boise	0	------	0	0	0	0	0	0	0	0	8
Colorado:											
Colorado Springs	0	------	0	0	0	2	0	1	0	0	5
Denver	1	------	0	1	2	3	0	3	2	43	84
Pueblo	0	------	0	0	1	1	0	0	0	0	11
New Mexico:											
Albuquerque	0	------	0	5	0	1	0	3	0	4	16
Utah:											
Salt Lake City	0	------	0	4	2	4	0	0	0	5	23
Nevada:											
Reno	------	------	------	------	------	------	------	------	------	------	------
Washington:											
Seattle	0	------	1	16	0	0	0	4	0	4	80
Spokane	0	------	0	2	1	2	1	0	0	14	27
Tacoma	0	------	0	1	0	0	0	1	1	0	29
Oregon:											
Portland	0	------	0	0	1	4	0	2	3	4	77
Salem	0	------	------	1	------	2	0	------	0	2	------
California:											
Los Angeles	14	5	0	24	19	7	0	24	2	65	331
Sacramento	0	------	0	0	1	6	0	4	0	29	26
San Francisco	1	------	0	16	5	8	0	7	0	3	141

State and city	Meningococcus meningitis		Poliomyelitis cases	State and city	Meningococcus meningitis		Poliomyelitis cases
	Cases	Deaths			Cases	Deaths	
Massachusetts:				Georgia:			
Boston	1	3	0	Savannah	0	0	1
New York:				Florida:			
New York	6	4	2	Miami	1	0	0
Syracuse	0	0	1	Kentucky:			
Pennsylvania:				Louisville	2	2	0
Philadelphia	2	1	0	Tennessee:			
Ohio:				Knoxville	0	0	2
Cincinnati	0	0	1	Nashville	0	0	2
Indiana:				Alabama:			
Indianapolis	1	0	0	Birmingham	0	0	5
Illinois:				Louisiana:			
Chicago	2	2	2	New Orleans	0	1	0
Springfield	0	1	0	Shreveport	0	2	0
Michigan:				Oklahoma:			
Detroit	0	0	2	Tulsa	1	0	0
Missouri:				Texas:			
St. Louis	1	0	2	Houston	0	0	1
Maryland:				Washington:			
Baltimore	5	0	0	Seattle	1	0	0
Dist. of Columbia:				Oregon:			
Washington	1	0	0	Portland	0	0	1
South Carolina:				California:			
Greenville	1	0	0	Los Angeles	4	2	9
				San Francisco	1	0	0

Epidemic encephalitis.—Cases: New York, 2; Philadelphia, 2; Cleveland, 1; St. Louis, 1.
Pellagra.—Cases: Charleston, S. C., 1; Savannah, 6; Miami, 2; Birmingham, 1; Mobile, 1; New Orleans 1; Los Angeles, 1; San Francisco, 2.
Rabies (human).—Deaths; Chicago, 1.
Typhus fever.—Cases: Savannah, 5.

FOREIGN AND INSULAR

ITALY

Communicable diseases—4 weeks ended May 24, 1936.—During the 4 weeks ended May 24, 1936, cases of certain communicable diseases were reported in Italy as follows:

Disease	Apr. 27–May 3		May 4–10		May 11–17		May 18–24	
	Cases	Communes affected	Cases	Communes affected	Cases	Communes affected	Cases	Communes affected
Anthrax	10	10	9	9	13	12	15	14
Cerebrospinal meningitis	20	17	24	22	18	17	23	19
Chicken pox	346	133	394	160	380	153	402	153
Diphtheria and croup	384	209	378	208	363	210	383	227
Dysentery	3	3	5	5	10	5	4	4
Hookworm disease	17	8	10	7	19	7	20	11
Lethargic encephalitis	5	5	4	4	3	3	3	2
Measles	1,749	343	2,161	349	2,513	374	2,379	364
Mumps	280	117	346	90	334	104	351	126
Paratyphoid fever	37	30	38	26	43	35	26	20
Poliomyelitis	29	24	30	21	46	34	36	27
Puerperal fever	28	26	28	28	29	27	18	18
Rabies					1	1		
Scarlet fever	237	117	253	125	254	120	303	126
Typhoid fever	224	140	251	150	273	161	280	150
Undulant fever	95	67	92	70	100	66	109	79
Whooping cough	723	195	1,030	210	690	174	624	171

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

NOTE.—A table giving current information of the world prevalence of quarantinable diseases appeared in the PUBLIC HEALTH REPORTS for July 31, 1936, pages 1053–1067. A similar cumulative table will appear in the PUBLIC HEALTH REPORTS to be issued August 28, 1936, and thereafter, at least for the time being, in the issue published on the last Friday of each month.

Cholera

India.—Cholera has been reported in India as follows: During the week ended June 27, 1936, eight cases were reported at Karikal Territory, and on July 29, 1936, three cases were reported at Sind State, India.

Plague

Hawaii Territory—Island of Hawaii—Hamakua District—Paauhau Sector.—One rat found July 22, 1936, and one found July 27, 1936, both in Paauhau Sector, Hamakua District, Island of Hawaii, Hawaii Territory, have been proved plague infected.

United States.—A report of rodent plague in California and Utah appears on page 1138 of this issue of PUBLIC HEALTH REPORTS.

Typhus Fever

Irish Free State—Galway County—Oughterard—Poulywerrin.—During the week ended July 18, 1936, one case of typhus fever was reported at Poulywerrin, Oughterard, Galway County, Irish Free State.

Yellow Fever

Bolivia—La Paz Department—Suapi.—During the month of June 1936, two cases of yellow fever were reported at Suapi, La Paz Department, Bolivia.

Brazil—Sao Paulo State—Guayra.—On June 26, 1936, one fatal case of yellow fever was reported at Guayra, Sao Paulo State, Brazil.