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PLASMOCHIN IN MALARIA PREVENTION

Experiments in Alabama

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As the result of work with the United Fruit Co., Barber and Komp (1) and Barber, Komp, and Newman (2) have reported that a small dosage of plasmochin renders a carrier noninfective to mosquitoes. Whitmore (3), also with the United Fruit Co., confirmed these findings. In their conclusions, Barber, Komp, and Newman (2) stated: "It is probable that the general use, in a population of such small dosage [1] of plasmochin would be safe and effective in reducing the transmission of malaria."

It was decided to test this conclusion in Alabama by the administration of plasmochin at regular intervals to all the people in a certain area and to observe the effect on the incidence of malaria during the season.

Two rural areas were selected for the purpose of the experiment; one was in Macon County and the other was in Montgomery County. They were chosen because it was known that malaria was prevalent among the population and because they were typical in regard to housing conditions, screening, economic status, medical care, permanency of residence, etc., of the tenant farmer. Similar areas near by were used for control. In the case of Macon County the control area was in all ways similar to that of the experimental group, as much of it was part of the same plantation. There was chosen as a control for the Montgomery County area, the adjoining portion of Autauga County, separated by the Alabama River from the experimental area. The living conditions of these people were similar, except the density of population was not so great.

An initial survey included the history of malaria for the preceding year, together with an examination of thick blood films. The history of malaria was obtained from the head of the household, and only those cases were included which gave histories of definite clinical

[1] This dosage varied from 0.005 gm to 0.06 gm plasmochin.

attacks. It is appreciated that clinical histories may not always be scientifically accurate; but the same person obtained the history from both groups, and quite likely the total error in one area was balanced by that of the other.

SEASON OF 1930

Commencing the last week in June and continuing until the middle of October, every person in the demonstration areas received one tablet of plasmochin compound per week (containing 0.01 gm plasmochin and 0.125 gm quinine sulphate). The drug was always given in the presence of field workers, and so the total dosage was known. The control groups were likewise visited each week to ascertain the presence of clinical malaria, while a similar record was kept of all cases occurring in the demonstration area. At the conclusion of the season, a second blood survey of all groups was made. Owing to rains and road conditions, it was impossible to obtain this second test on all the controls of the Montgomery County experiment, but slightly over 50 per cent of the group were retested.

The results of this experiment of 1930 were as follows:

History of malaria attacks during year

MACON COUNTY

Area	Number in area	1929		1930			
		Number attacked	Attack rate per 100	Number attacked	Attack rate per 100	Ratio, 1930 to 1929	Plasmochin, average dosage
							Tablets
Experimental area	475	349	73.5	87	18.3	0.25	16.1
Control area	534	391	73.2	167	31.3	.43	

MONTGOMERY-AUTAUGA COUNTIES

Experimental area	370	229	61.9	23	6.2	0.10	16.8
Control area	300	105	35.0	21	7.0	.20	

OBSERVATIONS

There was a marked reduction in malaria in all areas as compared with 1929, but this reduction was much more marked in the demonstration areas. Statistically, the odds against this reduction being due to chance alone are very great; and so it is believed that it may be considered significant. The blood surveys taken at the beginning and end of the experiment did not reveal any difference in favor of the plasmochin group. In both groups the percentage of positive bloods was about four times as high in November as in June. However, since plasmochin is claimed to exercise a selective action on the

sexual forms of the parasite, it would not be expected to clear the peripheral blood of all parasites.

SEASON OF 1931

The results of the experimental work carried out during the preceding summer seemed encouraging and led to a continuation of the work during 1931. Based on our experiences of 1930, certain changes were made in the method of conducting operations.

(1) One large area in Macon County was selected and the personnel concentrated on this one experiment. An area of about 31 square miles, with a population of about 1,100 people, was used for demonstration, and an area of about 36 square miles immediately adjoining and with a similar population group was used as control. This part of Macon County is a typical rural area, in which farming is the sole industry. Most of the population is composed of negro tenant farmers and their families. Screening is practically nonexistent, while breeding areas are extensive in normal years.

(2) The dosage of plasmochin was increased to one tablet twice a week (each tablet containing 0.01 gm plasmochin and 0.125 gm quinine sulphate).

(3) The field workers reported each day all suspicious cases of malaria. These were visited within 24 hours by the county health officer, and a definite diagnosis was made. This diagnosis was confirmed in some cases by a positive laboratory report; but if the clinical picture was typical of the disease, it was so diagnosed.

(4) In order to prove the presence of *Anopheles quadrimaculatus* mosquitoes in the areas, 10 stations were set up in each group and catches were made at weekly intervals.

The original survey was completed about the middle of June, 1931, and plasmochin was started June 20. The final blood survey was conducted October 26 to November 15, 1931, the last plasmochin dose being given October 24.

The results were as follows:

History of malaria attacks during year

Area	1930			1931			
	Number in area	Number attacked	Attack rate per 100	Number attacked	Attack rate per 100	Ratio, 1931 to 1930	Plasmochin, average dosage
							Tablets
Experimental area	1,093	222	20.2	38	3.5	0.17	31.13
Control area	861	108	12.4	76	8.8	.71	----------

Anopheles quadrimaculatus mosquitoes captured

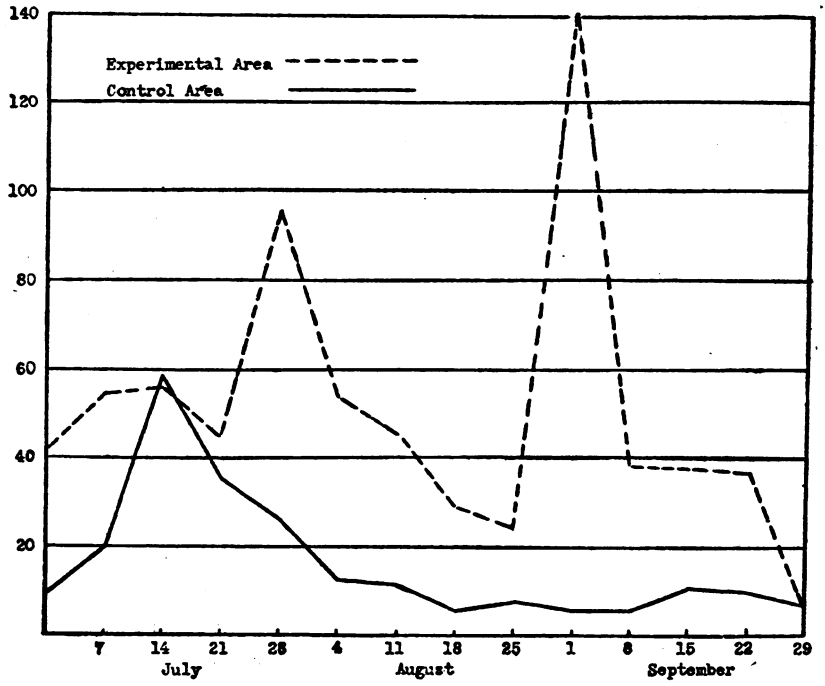
Area	June	July				August				September					Total	Average
	30	7	14	21	28	4	11	18	25	1	8	15	22	29		
Experimental area	42	51	53	44	97	51	46	29	24	141	38	38	36	7	697	49.79
Control area	9	19	59	36	27	13	12	6	8	6	6	11	10	7	229	16.36

Incidence of cases

Area	July	August	September
Experimental area:			
Number	13	12	13
Rate per 1,000	11.9	11.0	11.9
Control area:			
Number	11	30	34
Rate per 1,000	12.8	34.8	39.5

OBSERVATIONS

For the second consecutive year climatic conditions were unfavorable for the propagation of malaria. There was very little rainfall



Anopheles quadrimaculatus mosquitoes captured in experimental area and in control area

from July to November, resulting in a marked decrease in incidence in both areas as compared with previous years. It is, of course, difficult to state how much of this decrease was due to natural conditions, but the mosquito catches showed that the control area was more

affected by the drought than was the demonstration area. It is apparent, therefore, that lack of *Anopheles* mosquitoes was not responsible for all the decrease in the plasmochin area. Statistically, this decrease can be shown to be outside the limits of normal variation and to be significant.

Since the foregoing experiments were conducted, other workers have reported favorably on the action of plasmochin. James, Nichol, and Shute (4) found that plasmochin administered in doses of 0.02 gm three times a day prevented the development of malaria in 10 volunteers bitten by mosquitoes heavily infected with the sporozoites of benign tertian malaria. Four controls without plasmochin developed the disease within 14 days.

Barber, Rice, and Brown (5), working in Liberia, found that plasmochin in doses of 0.01 gm administered twice weekly to all the inhabitants of two camps caused a marked fall in the mosquito infection rate of these camps. In their discussion they state:

> The fall in the mosquito infection rate of the two plasmochin-treated camps was so large as to indicate a local disappearance, or at least a great reduction, in gametocyte carriers in the treated population. The minimum rate occurred during a period when plasmochin would presumably be most effective and was correlated with a fall in the crescent rate as shown by blood surveys. The anopheline infection rate was high in the two camps before treatment and rose after the treatment had been discontinued. The infection rate of the control camps remained high during the whole period. The most probable explanation of the fall in the mosquito infection rate is that the plasmochin treatment sterilized human carriers of viable gametocytes. The alternate explanation, that effective carriers happen to be absent during this period, is the least probable one.
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> The results were so definite that we advised a second trial of plasmochin in the same plantation. This should be carried out over a wider area and be continued for a longer time. Weekly instead of semiweekly doses may be tried, and small amounts of quinine may be added to the plasmochin. In the experiment just described we used plasmochin alone in order to test a single factor.

CONCLUSIONS

The results of these two experiments, covering two consecutive years, suggest that plasmochin compound in a dosage of one to two tablets per week (each tablet containing 0.01 gm plasmochin and 0.125 gm quinine sulphate), when administered to all the inhabitants of a district, will materially lessen the incidence of malaria. Such a dosage is both safe and convenient. If further experience confirms these results, it would seem that a valuable addition has been made to the present methods of malaria control, which therapeutic control may be further enhanced through scientific chemical study of the potentialities embraced in plasmochin.

REFERENCES

(1) Barber, M. A., and Komp, W. H. W.: Some observations in the Limon and Panama division of the United Fruit Co., with special reference to certain measures for the control of malaria. Sixteenth Annual Report, Medical Department, United Fruit Co., 1927, pages 60–62.
(2) Barber, M. A.; Komp, W. H. W.; and Newman, B. N.: Observations and experiments in the Panama division of the United Fruit Co., with special reference to certain measures for the control of malaria. Seventeenth Annual Report, Medical Department, United Fruit Co., 1928, pages 34–45.
(3) Whitmore, E. R.: The place of plasmochin in malaria control. Eighteenth Annual Report, Medical Department, United Fruit Co., 1929, pages 30–37.
(4) James, S. P.; Nichol, W. D.; and Shute P. G.: On the prevention of malaria with plasmochin. Lancet 2, 341 (1931).
(5) Barber, M. A.; Rice, J. B.; and Brown, J. Y.: The effect on the infection rate of Anopheles of the plasmochin treatment of a group of employees. Am. Jour. Hygiene, May, 1932, pages 601–622.

RECENT COURT DECISIONS ON MILK CONTROL*

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One of the few stabilizing features of modern American civilization is the fact that basic principles of law are less liable to sudden fluctuations and the whims of progress than are most of our social, economic, and scientific customs and procedures. On the significant subject of public hygiene, the law remains satisfactorily static and thus contributes to the proper advancement of public-health administration.

This steadying influence has been well exemplified in the recent court decisions on milk control. During the four years that have elapsed since my last report to you on this subject, courts of final resort in more than a dozen States have handed down a score of opinions regarding various aspects of milk regulation. Some of the most sapient essays on this phase of public health have, in fact, been written not by sanitarians but by judges.

MILK CONTROL

"Milk is in universal use as a food," wrote the chief justice of Connecticut in a recent case.[1] "It is peculiarly liable to contamination and adulteration. Therefore, in the interest of public health and safety, the regulation of its production, marketing, and sale are held to be within the proper exercise of the police power of the State. This the State may effectuate directly by its statute, or it may delegate its regulatory power to an official board or officer, or to a municipality."

*Presented at the 47th Conference of State and Provincial Health Authorities of North America, Washington, D. C., June 2, 1932.

[1] Shelton *v.* City of Shelton (Conn. 1930), 150 A. 811.

After setting forth that this power may be either exercised or delegated directly or completely, this opinion continues: "The State may determine the standard of quality, prohibit the production, sale, or distribution of milk not within the standard, divide it into classes, and regulate the manner of their use, so long as these standards, classes, and regulatory provisions be neither unreasonable nor oppressive. The many recorded instances in which the courts have sustained this power of regulation bear witness to the liberality of their viewpoint where the public health and safety are concerned." [2]

Making due allowance for the redundancy which is characteristic of legal phraseology, this is an admirable statement of an established principle in public health law. Having set forth this fundamental so clearly, the court then proceeded to hold invalid a city ordinance prohibiting the sale of milk at retail unless it was produced from tuberculin-tested cattle, or had been pasteurized.

From the scientific point of view this decision might seem contrary to the best interests of public health, but it was legally correct because the ordinance in question was in direct conflict with the State law. Since the Connecticut Legislature, in its wisdom, or lack of it, had decided that raw milk which was clean and apparently not detrimental to public health could be sold in the State under certain conditions, the city as a mere agent of the State could not decide otherwise. "We are not now passing upon the merit or the reasonableness of the tuberculin test or of pasteurization," said the court. "Primarily these are for legislative, not judicial, consideration."

PASTEURIZATION

A number of other courts have, however, been less reluctant to adjudicate these matters. In the neighboring State of Rhode Island a store-keeper attempted to restrain by injunction the enforcement of a State law requiring all pasteurized milk sold in Rhode Island to be actually pasteurized in the State, except that pasteurization plants situated in a "local milk shed" could be licensed to provide milk within the State.

Because of various legal technicalities and the incompleteness of the record, the supreme court refused to pass on the constitutionality of this law and sent the case back to a lower tribunal, the superior court, for further testimony. In the course of the decision,[3] however, the following significant remarks were delivered on the subject of pasteurization:

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[2] These recorded instances will be found in the following useful pamphlets:

Tobey, J. A.: Legal aspects of milk control. Reprint No. 939, U. S. Public Health Service. 1924.

Tobey, J. A.: Court decisions on pasteurization. Reprint No. 1168. U. S. Public Health Service. 1927.

Walker, H.: Regulating the production, handling, and distribution of milk. Reprint No. 1240. U. S. Public Health Service. 1928.

Tobey, J. A.: The legal phases of milk control. Reprint No. 1343. U. S. Public Health Service. 1929.

[3] First Nat. Stores *v.* Lewis (R. I. 1931), 155 A. 534.

"We may take judicial notice that milk is a highly perishable product, subject to rapid deterioration, and easily contaminated. Its production and sale are, therefore, subject to reasonable regulation in the interest of public health. We may also take judicial notice of the fact that pasteurization is one of the accepted methods of protecting the public in the use of this essential article of diet, but we may not extend the principle of judicial notice to the methods and technique of the process."

In a recent Oklahoma case [4] upholding a low fee for the inspection of pasteurizing plants and a different fee for dairies producing raw milk, a justice of the supreme court wrote that, "The public health regulations and the authorities on public health agree that the process of pasteurization is such as to kill bacteria existing in milk." If the court had been a little more meticulous, the opinion should have stated that proper pasteurization destroys about 90 per cent of the bacteria in milk, including all of a pathogenic nature that might be present.

TUBERCULIN TESTING

State laws dealing with tuberculin testing have come before the courts of last resort in six instances during the past three years and in every case these laws have been sustained. In one instance a judge of a Federal circuit court of appeals held that an inspector of the United States Bureau of Animal Industry was acting beyond his powers when he demanded the right to test the cattle of a conscientious objector in Ohio who had forcibly resisted the State veterinarian and had also obtained a temporary injunction in a State court restraining the application of this alleged nefarious procedure.[5] This case lays down the rule that the making of the tuberculin test on cattle not intended for immediate shipment in interstate commerce is purely a State function and no business of the Federal authorities.

This decision does not, of course, opine that the test itself is in any way improper or invalid. In 2 cases in Nebraska, 1 in Iowa, 1 in California, and 1 in Washington various aspects of State laws on tuberculin testing have been definitely upheld. Of these five decisions, that delivered by the supreme court of Iowa is particularly notable, as it reviews at length the existing legal principles on this important subject.

In this case [6] an offended dairyman attempted to show that the State law for the control of bovine tuberculosis was unconstitutional, with respect to both the Federal and State constitutions. The court held, however, that the legislation in question was justified

[4] Stephens *v.* Oklahoma City, 1 P. (2d) 367.
[5] Whipp *v.* U. S. (Ohio, 1931), 47 Fed. (2d) 496.
[6] Loftus *v.* Dept. of Agr. of Iowa (Iowa, 1930), 232 N. W. 412.

under the police power, and cited 13 other decisions in various States in which similar laws had been sustained. This court also declared that a tuberculous animal is a nuisance and may be quarantined or summarily destroyed, such destruction not denying to the owner his right and privilege of due process of law.

In the determination of this cause, the Iowa court quoted with approval the findings in the Nebraska and California cases reported a short time prior to this one. In the Nebraska case of 1930[7] a provision in the law that breeding cattle must be tested under certain conditions, but that feeding cattle need not be, was found not to be unreasonable. "That the existence of tuberculosis in breeding and dairy cattle is a menace to the public health both of infants and adults is a matter of common knowledge," said the court, although all scientists might not agree with regard to the danger to adults. The validity of this bovine tuberculosis law was reiterated in another case in 1931.[8]

In the California case [9] the question was whether payment for the destruction of diseased animals was proper under the State constitution. The court held that the legislature might have decided that no compensation should have been paid, but since it did not the funds permitted by statute must be given by the State to the unfortunate owner of the diseased animals. Here again the court waxed dogmatic on the subject of public health, saying:

"That tuberculosis is a dangerous and infectious disease which attacks both human beings and domestic animals, that it is prevalent throughout the State among both human beings and domestic animals, and that it is communicated to human beings, especially children, by milk and other food products from infected animals stand undisputed."

The Washington case[10] was one in which there was another definite sustention of the State bovine tuberculosis law as a valid exercise of the police power.

LICENSES AND PERMITS

So much for tuberculin testing and pasteurization. Half a dozen other cases on milk regulation have been concerned with licensing requirements. In the District of Columbia, for example, it was held by the court of appeals last January (1932) that the local law requiring all sellers of cream to have a permit from the District health officer applies to a canned product known as "Pantry Cream," which the manufacturers claimed was exempt because it was sterilized and consequently must be pure. That argument evidently did not impress the court any more than it had impressed the health officer.[11]

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[7] State *v.* Splittberger (Nebr., 1930), 119 Nebr. 436, 229 N. W. 332.
[8] State *v.* Knudtsen (Nebr., 1931), 256 N. W. 696.
[9] Patrick *v.* Riley (Calif., 1930), 287 P. 455.
[10] Hacker *v.* Barnes (Wash., 1932), 7 P. (2d) 607.
[11] Leaman *v.* D. C. (D. C., 1932), 60 Wash. L. R. 116.

Two of the license cases arose in Oklahoma. In one of them [12] it was held by the criminal court of appeals that a license fee of $1 per head for each cow was not exorbitant, especially since the defendant who appealed from a conviction for failure to pay it had offered no evidence to show that the fee was unreasonable. In the other case [13] the supreme court held that it was reasonable for the legislature to classify the local dairy industry as "inspected dairies, farm dairies, and pasteurizing plants," and impose heavy licensing fees on the first, moderate ones on the second, and mild ones on the pasteurizing plants, even granting that the object was regulation rather than the raising of revenue. The court stated that it was obvious that it cost more to inspect raw than pasteurized milk.

The revocation by a city health department of a permit to sell milk, for good and sufficient reasons, was upheld recently by the appellate division of the New York Supreme Court.[14]

In Arkansas the supreme court upheld the conviction of a dairyman who had failed to secure and pay for a permit as required by the rules of a district board of health.[15]

The most interesting of the cases on licenses is a New Hampshire decision,[16] in which a rule of a city board of health denying licenses to nonresidents was held to be improper and illegal. The State law said that boards of health *may* grant licenses to sell milk to properly qualified persons. The board of health of Manchester, N. H., had voted on March 26, 1928, that no more distributor's licenses be granted to nonresidents, except to those persons who already possessed them on this date. A well-qualified dairyman who had never had such a license applied in 1931 and was refused because his dairy was 6 miles beyond the city limits. He thereupon sued to compel the issuance of the license.

The court held in the first instance that the word "may" in the State law should be construed as meaning "shall," so that a board of health must issue a license to a person who satisfied the requirements. Next it held that the limitation on nonresidents was unreasonable and if set forth in a law instead of a resolution would have been unconstitutional, a view which is undeniably correct.

In an Oregon case which I reported to you in 1928, it was held that the milk regulations of a city apply to dairies beyond the city limits if the milk from those dairies is sold within the city.[17]

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[12] Grider *v.* City of Ardmore (Okla., 1930), 287 P. 776.
[13] Stephens *v.* Oklahoma City (Okla., 1931), 1 P. (2d) 367.
[14] Morris *v.* Dept. of Health of City of New York (N. Y., 1931), 254 N. Y. S. 90.
[15] Belzung *v.* State (Ark., 1931), 36 S. W. (2d) 397.
[16] Whitney *v.* Watson (N. H., 1931), 157 A. 78.
[17] Korth *v.* Portland (Oreg., 1927), 261 P. 895.

Another interesting case [18] concerning a general State milk regulation came up in the Federal district court in Florida. This cause was brought by a citizen of Georgia who felt aggrieved by the Florida law prescribing milk standards, requiring permits, except from Florida owners of five cows or less, and imposing a penalty of not more than $5,000 or imprisonment for 12 months. The Georgia gentlemen felt that this was class legislation, not wholly consistent with southern hospitality. He also had to label his milk as coming from Georgia.

The court held that the State of Florida had the undeniable right to protect public health by such legislation, that the classification did not infringe any constitutional rights or cause irreparable injury, and that labeling the source of the milk created no inequity.

ADULTERATION AND LIABILITY

Three other recent cases on miscellaneous aspects of milk deserve brief mention. In Massachusetts the violator of a law prohibiting the sale of milk from which cream had been removed attempted to squirm out of his conviction by asserting that he had not received written notice to comply with the legal standards. The court upheld the conviction, pointing out that the gentleman in question had the statutes mixed up.[19]

In a New Jersey case [20] a man who became ill after consuming milk was awarded $2,500 damages, and his wife who tasted the milk to ascertain what was wrong with it and also became sick, got $500. The court held that there was no contributory negligence in her action. In Illinois a section of a "filled milk law" was pronounced unconstitutional because it prohibited the sale of a nut oil and evaporated skim milk product which the court considered to be wholesome and, in its own words, "Not poisonous or explosive." [21]

CONCLUSION

From this brief review of the 20 recent court decisions on various aspects of milk control, it is gratifying to note that the courts in this country continue to be liberal and progressive in upholding all reasonable regulation of such an essential food as milk. The courts seem to recognize what scientists concede, that milk is our most nearly perfect food,[22] and that the best interests of public health are maintained and promoted when the cleanliness and safety of milk are properly safeguarded.

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[18] Noble *v.* Carlton (Fla., 1930), 36 Fed. (2d) 967.
[19] Commonwealth *v.* Rapoza (Mass., 1931), 178 N. E. 530.
[20] McAteer *v.* Sheffield Farms (N. J., 1930), 152 A. 469.
[21] People *v.* Carolene Products Co. (Ill., 1931), 177 N. E. 698.
[22] Crumbine, S. J., and Tobey, J. A.: The Most Nearly Perfect Food. Williams and Wilkins. 1929.

These able decisions confirm established public health law that tuberculin testing of dairy cattle and pasteurization requirements are proper under the police power of the State and that licenses may be granted or revoked under conditions imposed by health authorities so long as there is no oppressive or arbitrary action.

These cases also demonstrate that the actions of public health authorities must be conducted in a strictly legal manner, with due guarantee of the constitutional rights of individual citizens and the people as a whole. If regulations or procedures are defective, the courts have no choice but to uphold the law as it should be, and this they will do despite their willingness to support all reasonable public-health measures. Public-health officials must bear in mind that prevention applies to law as well as to sanitary science, and they should see to it that legislation and law enforcement comply with adjudicated standards and modern jurisprudence.[23]

DEATHS DURING WEEK ENDED NOVEMBER 12, 1932

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

	Week ended Nov. 12, 1932	Corresponding week, 1931
Data from 85 large cities of the United States:		
Total deaths	7,215	7,613
Deaths per 1,000 population, annual basis	10.3	11.0
Deaths under 1 year of age	539	604
Deaths under 1 year of age per 1,000 estimated live births [1]	45	47
Deaths per 1,000 population, annual basis, first 45 weeks of year	11.0	11.8
Data from industrial-insurance companies:		
Policies in force	70,000,097	74,289,657
Number of death claims	9,464	12,908
Death claims per 1,000 policies in force, annual rate	7.1	9.1
Death claims per 1,000 policies, first 45 weeks of year, annual rate	9.5	9.7

[1] 1932, 81 cities; 1931, 77 cities.

[23] See Tobey, J. A.: Public Health Law. Williams & Wilkins. 1926.

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 November 19, 1932, and November 21, 1931

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended November 19, 1932, and November 21, 1931

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Nov. 19, 1932	Week ended Nov. 21, 1931	Week ended Nov. 19, 1932	Week ended Nov. 21, 1931	Week ended Nov. 19, 1932	Week ended Nov. 21, 1931	Week ended Nov. 19, 1932	Week ended Nov. 21, 1931
New England States:								
Maine	2	2	4	1	1	147	1	0
New Hampshire	1					5	0	0
Vermont		5			4	41	0	0
Massachusetts	45	59	4	9	78	127	2	3
Rhode Island	2	3				126	1	0
Connecticut	3	4	29	8	11	17	2	0
Middle Atlantic States:								
New York	58	106	[1]18	[1]9	345	199	7	9
New Jersey	17	41	19	9	211	45	2	1
Pennsylvania	113	159			196	319	4	4
East North Central States:								
Ohio	72	90	4	4	86	78	1	1
Indiana	110	97	52	5	2	18	3	1
Illinois	130	123	28	5	47	34	14	6
Michigan	28	56	25	1	157	24	3	2
Wisconsin	9	16	22	15	115	22	0	2
West North Central States:								
Minnesota	23	28		2	110	36	0	0
Iowa	13	19			1	1	1	0
Missouri	80	92	3	3	11	20	0	0
North Dakota	7	6			36		0	0
South Dakota	1	16	5		3	52	0	0
Nebraska	27	20	1	2	2	6	0	0
Kansas	30	87	1		7	19	0	1
South Atlantic States:								
Delaware	1	36	1	4		2	0	0
Maryland [2]	24	78	13	14	12	7	1	2
District of Columbia	3	17	3	2	1	3	1	0
Virginia	48				43		0	1
West Virginia	49	55	10	16	35	110	1	0
North Carolina	66	167	10	35	68	86	0	1
South Carolina	30	34	500	452	17	14	0	0
Georgia [3]	45	36		45		3	0	7
Florida	37	26	3	1	1	4	0	0

See footnotes at end of table.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended November 19, 1932, and November 21, 1931—Continued

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Nov. 19, 1932	Week ended Nov. 21, 1931	Week ended Nov. 19, 1932	Week ended Nov. 21, 1931	Week ended Nov. 19, 1932	Week ended Nov. 21, 1931	Week ended Nov. 19, 1932	Week ended Nov. 21, 1931
East South Central States:								
Kentucky	50	143	55	----	38	----	0	4
Tennessee	67	152	271	26	1	2	0	5
Alabama [3]	55	102	204	47	3	6	0	5
Mississippi	38	79	----	----	----	----	0	1
West South Central States:								
Arkansas	17	56	24	9	----	21	0	0
Louisiana	35	59	23	6	7	6	0	2
Oklahoma [4]	56	151	31	20	2	31	0	0
Texas [3]	145	115	71	11	----	2	0	1
Mountain States:								
Montana	2	4	1	----	153	60	0	1
Idaho	5	9	12	----	----	----	0	0
Wyoming	----	----	----	----	5	1	0	0
Colorado	14	4	----	----	3	4	0	1
New Mexico	18	31	146	----	3	----	1	1
Arizona	----	10	175	2	----	1	0	0
Utah [2]	----	2	333	10	----	3	0	1
Pacific States:								
Washington	9	13	1	----	4	28	0	0
Oregon	7	4	81	28	39	12	0	0
California	75	110	903	72	49	181	4	4
	1,667	2,522	3,086	873	1,907	1,923	49	67

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Nov. 19, 1932	Week ended Nov. 21, 1931	Week ended Nov. 19, 1932	Week ended Nov. 21, 1931	Week ended Nov. 19, 1932	Week ended Nov. 21, 1931	Week ended Nov. 19, 1932	Week ended Nov. 21, 1931
New England States:								
Maine	0	1	10	25	0	0	4	2
New Hampshire	0	2	19	2	0	0	1	0
Vermont	0	4	8	5	0	8	0	0
Massachusetts	0	14	265	237	0	0	3	7
Rhode Island	0	0	24	19	0	0	0	0
Connecticut	0	3	55	58	0	0	1	1
Middle Atlantic States:								
New York	5	42	409	385	22	3	18	21
New Jersey	5	13	154	143	0	0	6	7
Pennsylvania	10	14	416	403	0	0	23	64
East North Central States:								
Ohio	0	5	322	397	49	14	18	27
Indiana	3	0	131	106	8	6	7	11
Illinois	5	17	361	306	0	23	21	25
Michigan	2	6	210	228	11	4	7	16
Wisconsin	1	14	89	72	0	14	2	1
West North Central States:								
Minnesota	1	20	85	31	2	1	2	1
Iowa	1	5	26	55	6	33	0	6
Missouri	0	1	93	77	1	8	5	14
North Dakota	0	0	4	24	7	30	1	3
South Dakota	0	0	12	8	0	20	0	3
Nebraska	1	2	45	19	7	1	2	2
Kansas	2	0	102	51	2	8	3	7
South Atlantic States:								
Delaware	0	0	3	10	0	0	1	0
Maryland [2 3]	0	2	92	126	0	0	12	27
District of Columbia	0	0	7	27	0	0	6	5
Virginia	2	----	86	----	0	----	13	----
West Virginia	0	0	71	50	0	1	17	37
North Carolina	0	3	99	203	0	0	3	5
South Carolina	0	2	12	16	1	0	7	11
Georgia [3]	0	0	36	40	0	0	15	16
Florida	0	0	8	9	0	2	2	0

See footnotes at end of table.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended November 19, 1932, and November 21, 1931—Continued

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Nov. 19, 1932	Week ended Nov. 21, 1931	Week ended Nov. 19, 1932	Week ended Nov. 21, 1931	Week ended Nov. 19, 1932	Week ended Nov. 21, 1931	Week ended Nov. 19, 1932	Week ended Nov. 21, 1931
East South Central States:								
Kentucky	1	0	56	102	4	12	14	31
Tennessee	2	0	68	87	0	8	23	24
Alabama [3]	0	1	41	55	1	1	2	19
Mississippi	2	0	28	36	0	9	0	10
West South Central States:								
Arkansas	0	1	29	35	0	0	6	14
Louisiana	2	0	24	41	1	1	8	28
Oklahoma [4]	1	1	28	45	0	10	19	32
Texas [3]	0	0	93	59	12	9	6	17
Mountain States:								
Montana	0	0	16	34	0	0	3	2
Idaho	0	0	2	8	4	1	0	2
Wyoming	0	0	6	5	0	0	0	0
Colorado	1	0	26	23	0	2	1	4
New Mexico	0	0	12	9	1	1	8	12
Arizona	0	0	9	4	0	0	0	1
Utah [3]	0	0	2	15	0	0	1	0
Pacific States:								
Washington	4	2	44	43	4	9	2	7
Oregon	1	0	27	20	1	22	0	3
California	2	5	179	134	0	3	11	14
	54	180	3,944	3,887	144	264	304	539

[1] New York City only.
[2] Week ended Friday.
[3] Typhus fever, week ended Nov. 19, 1932, 11 cases: 1 case in Maryland, 3 cases in Georgia, 3 cases in Alabama, and 4 cases in Texas.
[4] Figures for 1932 are 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
October, 1932										
Alabama	3	505	93	389	10	75	6	309	1	91
District of Columbia	-------	18	5	-------	5	1	10	54	0	3
Georgia	1	262	163	414	29	16	4	121	0	105
Illinois	22	474	61	17	132	-------	26	1,107	8	145
Louisiana	3	141	48	116	11	23	6	60	4	51
Maryland	5	96	19	-------	9	-------	6	253	0	96
Montana	2	1	26	-------	506	-------	0	43	12	22
New York	16	198	-------	4	473	-------	46	948	8	139
North Carolina	3	410	41	-------	170	71	6	435	1	42
Ohio	4	434	198	4	247	-------	6	1,621	48	178
Pennsylvania	11	411	-------	3	499	2	238	1,148	0	226
Rhode Island	-------	26	1	-------	5	-------	0	94	0	5
South Carolina	-------	264	1,563	1,581	56	262	1	47	1	76
West Virginia	2	310	40	-------	75	-------	8	340	1	198

October, 1932

Anthrax:	Cases
New York	1
Pennsylvania	1
Chicken pox:	
Alabama	12
District of Columbia	9
Georgia	26
Illinois	1,043
Louisiana	8
Maryland	121
Montana	161
New York	854
North Carolina	154
Ohio	984
Pennsylvania	1,164
Rhode Island	18
South Carolina	47
West Virginia	108
Dengue:	
Georgia	1
Louisiana	4
South Carolina	6
Diarrhea:	
Maryland	91
South Carolina	417
Diarrhea and enteritis:	
Ohio	18
Dysentery:	
Georgia	12
Illinois (amebic)	2
Illinois (bacillary)	13
Louisiana	3
Maryland	28
New York	41
Pennsylvania	4
Food poisoning:	
Ohio	25
German measles:	
Illinois	10
Maryland	9
Montana	1
New York	45
North Carolina	26
Ohio	14
Pennsylvania	21
South Carolina	2
Hookworm disease:	
Louisiana	106
South Carolina	105
Impetigo contagiosa:	
Maryland	112
Montana	54
Lead poisoning:	
Illinois	4
Maryland	2
Ohio	19
Leprosy:	
Louisiana	1
Lethargic encephalitis:	
Alabama	3
Georgia	1
Illinois	6
Louisiana	5
Maryland	1

Lethargic encephalitis—Continued.	Cases
New York	6
Ohio	2
Pennsylvania	5
Mumps:	
Alabama	79
Georgia	16
Illinois	98
Louisiana	4
Maryland	62
Montana	16
Ohio	83
Pennsylvania	548
Rhode Island	14
South Carolina	35
West Virginia	2
Ophthalmia neonatorum:	
Illinois	6
Louisiana	1
Maryland	3
New York	3
Ohio	83
Pennsylvania	8
South Carolina	25
Paratyphoid fever:	
Georgia	1
Illinois	1
Louisiana	1
New York	11
North Carolina	2
Ohio	1
South Carolina	5
Psittacosis:	
Illinois	1
Montana	1
Puerperal septicemia:	
Illinois	5
Ohio	7
Pennsylvania	24
Rabies in animals:	
Illinois	2
Louisiana	5
Maryland	1
New York[1]	2
South Carolina	13
Rabies in man:	
Illinois	1
Rocky Mountain spotted fever:	
Montana	1
Scabies:	
Maryland	8
Montana	80
Septic sore throat:	
Georgia	32
Illinois	13
Louisiana	6
Maryland	5
Montana	3
New York	4
North Carolina	14
Ohio	143
Rhode Island	2
South Carolina	4

Silicosis:	Cases
Montana	4
Tetanus:	
Illinois	7
Louisiana	6
Maryland	1
New York	4
Ohio	1
Pennsylvania	7
Tick paralysis:	
Montana	1
Trachoma:	
Illinois	7
Montana	6
Ohio	14
Pennsylvania	2
Trichinosis:	
Illinois	1
Montana	1
New York	8
Tularaemia:	
Georgia	4
Illinois	1
Maryland	1
West Virginia	2
Typhus fever:	
Alabama	48
District of Columbia	1
Georgia	38
Louisiana	5
Maryland	2
New York	1
North Carolina	4
South Carolina	4
Undulant fever:	
Georgia	2
Illinois	8
Louisiana	2
Maryland	3
Montana	1
New York	22
North Carolina	1
Ohio	7
Pennsylvania	3
Vincent's angina:	
Illinois	22
Maryland	8
New York[1]	115
South Carolina	2
Whooping cough:	
Alabama	48
District of Columbia	25
Georgia	72
Illinois	268
Louisiana	6
Maryland	106
Montana	21
New York	1,187
North Carolina	185
Ohio	344
Pennsylvania	890
Rhode Island	40
South Carolina	69
West Virginia	93

[1] Exclusive of New York City.

WEEKLY REPORTS FROM CITIES

City reports for week ended November 12, 1932

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	0	0	7	0	0	0	5	25
New Hampshire:											
Concord	0	-------	0	0	1	0	0	0	0	0	10
Nashua	0	-------	0	0	0	1	0	0	0	0	0
Vermont:											
Barre	2	-------	0	0	0	0	0	0	0	0	3
Burlington	0	-------	0	0	0	1	0	0	0	0	11
Massachusetts:											
Boston	12	2	0	26	12	39	0	10	1	30	185
Fall River	2	-------	0	0	0	2	0	0	0	4	17
Springfield	0	-------	0	0	0	6	0	1	0	0	27
Worcester	9	-------	0	0	4	15	0	2	0	3	46
Rhode Island:											
Pawtucket	0	-------	0	0	2	0	0	0	0	0	18
Providence	2	-------	0	0	7	6	0	2	1	7	54
Connecticut:											
Bridgeport	0	-------	1	9	4	5	0	1	0	2	22
Hartford	0	-------	0	1	0	1	0	0	0	1	27
New Haven	0	-------	0	0	1	1	0	1	0	4	44
New York:											
Buffalo	4	-------	0	2	14	29	0	6	0	21	133
New York	43	15	11	112	93	77	0	82	7	91	1,219
Rochester	2	-------	0	0	3	18	0	1	0	0	73
Syracuse	0	-------	0	1	8	12	0	1	0	10	51
New Jersey:											
Camden	4	-------	0	0	0	4	0	0	0	1	34
Newark	1	5	0	19	3	15	0	4	0	5	67
Trenton	0	1	1	0	0	4	0	3	0	1	37
Pennsylvania:											
Philadelphia	6	4	6	4	25	63	0	29	3	3	414
Pittsburgh	11	3	2	2	12	36	0	5	1	4	139
Reading	0	-------	0	5	0	1	0	3	0	6	28
Scranton	0	-------	-------	2	-------	4	0	-------	0	0	-------
Ohio:											
Cincinnati	2	3	0	0	9	11	0	8	1	1	119
Cleveland	12	33	1	2	15	77	0	10	0	19	167
Columbus	3	-------	0	64	6	14	0	4	0	3	71
Toledo	6	2	1	1	5	42	0	7	1	5	64
Indiana:											
Fort Wayne	3	-------	0	0	2	1	0	1	1	0	26
Indianapolis	8	-------	0	1	7	14	0	7	1	2	-------
South Bend	0	-------	1	0	1	7	0	2	0	3	11
Terre Haute	0	-------	0	0	2	1	0	0	0	0	21
Illinois:											
Chicago	16	7	2	44	45	167	0	27	2	28	578
Springfield	0	-------	0	0	0	5	0	0	0	0	12
Michigan:											
Detroit	19	4	0	20	16	66	0	22	2	53	215
Flint	1	9	0	0	0	2	0	0	0	0	16
Grand Rapids	0	-------	1	2	3	2	0	0	1	7	28
Wisconsin:											
Kenosha	0	-------	0	2	1	7	0	0	0	3	6
Madison	0	-------	-------	2	-------	0	0	-------	0	1	-------
Milwaukee	1	1	1	3	4	6	0	3	0	12	82
Racine	0	-------	0	0	1	1	0	0	0	1	12
Superior	0	-------	0	1	0	0	0	0	0	0	9
Minnesota:											
Duluth	0	-------	0	1	1	4	0	3	0	0	22
Minneapolis	1	-------	1	6	6	14	0	1	0	12	-------
St. Paul	0	1	1	0	7	16	0	4	0	8	61
owa:											
Des Moines	10	-------	0	0	0	3	0	0	0	0	28
Sioux City	2	-------	-------	0	-------	0	0	-------	0	1	-------
Waterloo	0	-------	-------	0	-------	1	0	-------	0	4	-------
Missouri:											
Kansas City	5	-------	1	12	8	15	0	2	0	1	100
St. Joseph	16	-------	0	1	2	1	0	0	0	0	13
St. Louis	32	-------	0	0	6	22	0	8	0	1	178
North Dakota:											
Fargo	0	-------	0	1	0	0	0	0	0	0	7
Grand Forks	0	-------	0	7	0	0	0	0	0	0	-------

City reports for week ended November 12, 1932—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								
South Dakota:											
Aberdeen	0		0	0	0	0	0	0	0	0	
Nebraska:											
Lincoln	1		0	0	0	0	0	0	0	0	
Omaha	18		0	0	6	7	1	3	1	0	63
Kansas:											
Topeka	1		0	0	2	2	0	0	0	4	18
Wichita	2		0	0	3	9	0	0	0	1	23
Delaware:											
Wilmington	1		0	0	3	0	0	1	0	3	32
Maryland:											
Baltimore	10	1	0	2	19	20	0	14	1	11	189
Cumberland	0		0	0	0	2	0	1	0	0	11
Frederick	0		0	0	0	3	0	0	0	0	2
District of Col.:											
Washington	6	2	0	0	13	18	0	3	0	1	160
Virginia:											
Lynchburg	1		0	2	0	4	0	0	0	1	9
Norfolk	0		0	0	1	5	0	4	0	0	
Richmond	1		1	1	4	6	0	2	0	0	45
Roanoke	4		0	0	0	2	0	1	3	0	11
West Virginia:											
Charleston	1		0	0	0	3	0	0	2	4	15
Huntington	1		0	4	0	5	0	0	0	0	
Wheeling	0		0	25	4	5	0	0	[1] 1	2	22
North Carolina:											
Raleigh	0		0	0	1	6	0	0	0	0	12
Wilmington	0		0	0	0	0	0	0	0	0	13
Winston-Salem	6		0	0	1	6	0	2	0	2	14
South Carolina:											
Charleston	3	18	0	0	1	1	0	1	0	0	24
Columbia	1		0	0	5	2	0	1	1	1	60
Georgia:											
Atlanta	27	8	0	0	11	0	0	0	0	4	57
Brunswick	0		0	0	0	0	0	0	0	0	3
Savannah	1		0	0	2	2	0	1	0	0	23
Florida:											
Miami	2		0	1	0	0	0	2	0	0	20
Tampa	2		0	0	4	0	0	0	0	0	25
Kentucky:											
Lexington	0	2	0	0	0	0	0	0	0	0	9
Louisville	5	3	2	0	7	6	0	4	0	1	57
Tennessee:											
Memphis	26		0	0	4	7	0	3	0	1	62
Nashville	1		3	0	1	1	0	1	0	0	48
Alabama:											
Birmingham	6	6	2	0	5	12	0	4	0	0	61
Mobile	1		1	0	1	0	0	0	0	0	22
Montgomery	2			0		3	0		0	0	
Arkansas:											
Fort Smith	0			0		0	0		0	0	
Little Rock	4		0	0	0	0	0	2	0	0	8
Louisiana:											
New Orleans	12	2	3	0	11	8	0	7	0	0	135
Shreveport	1		0	1	0	1	0	1	0	0	17
Oklahoma:											
Tulsa	3		0	0	0	4	0	0	0	0	1
Texas:											
Dallas	28		0	0	3	19	0	2	0	3	50
Fort Worth	11		0	0	1	20	0	0	0	0	27
Galveston	0		1	0	2	1	0	0	0	0	12
Houston	12		0	0	5	9	0	1	0	0	49
San Antonio	5		11	0	3	0	0	6	0	0	58

[1] Nonresident.

City reports for week ended November 12, 1932—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								
Montana:											
Billings											
Great Falls	0		0	0	1	1	0	1	0	0	7
Helena	0		0	0	0	1	0	0	0	0	2
Missoula	0		0	0	0	0	0	0	0	0	4
Idaho:											
Boise	0		0	1	0	0	11	0	0	0	6
Colorado:											
Denver	1		0	9	18	14	0	3	0	4	86
Pueblo	0		0	0	0	2	0	0	0	0	8
New Mexico:											
Albuquerque	2	1	0	0	2	1	0	6	3	0	16
Arizona:											
Phoenix	1		0	1	0	0	0	3	0	0	
Utah:											
Salt Lake City	9		1	1	2	4	0	1	0	0	34
Nevada:											
Reno											
Washington:											
Seattle	0			0		5	0		0	1	
Spokane	0			1		3	0		0	0	
Tacoma	0		0	0	3	1	1	0	0	0	21
Oregon:											
Portland	1	1	0	1	3	9	2	3	0	0	66
Salem	0	7		3		0	0		0	0	
California:											
Los Angeles	52	210	4	17	17	35	0	24	0	26	323
Sacramento	0	5	3	0	8	8	0	0	0	3	34
San Francisco	4	8	0	3	8	4	0	8	0	18	170

State and city	Meningococcus meningitis		Poliomyelitis cases	State and city	Meningococcus meningitis		Poliomyelitis cases
	Cases	Deaths			Cases	Deaths	
Maine:				Minnesota:			
Portland	0	0	1	Minneapolis	1	0	0
New York:				St. Paul	0	0	1
New York	3	2	2	Missouri:			
New Jersey:				St. Louis	0	1	0
Camden	1	0	0	District of Columbia:			
Pennsylvania:				Washington	0	0	1
Philadelphia	1	0	2	Alabama:			
Pittsburgh	0	0	2	Birmingham	0	0	1
Ohio:				Colorado:			
Cincinnati	1	0	0	Denver	0	1	0
Cleveland	1	0	0	California:			
Toledo	1	2	0	Los Angeles	1	0	2
Indiana:				San Francisco	1	0	0
Indianapolis	3	0	0				
Illinois:							
Chicago	4	2	2				
Wisconsin:							
Milwaukee	0	0	1				

Lethargic encephalitis.—Cases: Bridgeport, 1; New York, 1; Pittsburgh, 1; St. Louis, 1.
Pellagra.—Cases: Savannah, 3; New Orleans, 1; Dallas, 2.
Typhus fever.—Cases: New York, 1; Dallas, 1. Deaths: Dallas, 1.

FOREIGN AND INSULAR

CANADA

Provinces—Communicable diseases—Week ended November 5, 1932.—The Department of Pensions and National Health of Canada reports cases of certain communicable diseases for the week ended November 5, 1932, as follows:

Disease	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Total
Chicken pox			60	251	61	7	12	19	410
Diphtheria	6	2	30	42	5	10		1	96
Dysentery				1					1
Erysipelas			5	1	1			1	8
Influenza								88	88
Measles		14	15	198	14	2	35	34	312
Mumps				45	2	8	1	12	68
Paratyphoid fever				1					1
Pneumonia (all forms)				5				7	12
Poliomyelitis			6	12					18
Scarlet fever	4	13	50	40	25	4	4	12	152
Tuberculosis	2	1	68	31	30	14		12	158
Typhoid fever		12	15	19	3		1		50
Whooping cough			124	46	20	5	1	9	205

Ontario Province—Communicable diseases—Five weeks ended October 29, 1932.—The Department of Health of the Province of Ontario, Canada, reports certain communicable diseases for the five weeks ended October 29, 1932, as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Actinomycosis	1		Poliomyelitis	59	5
Cerebrospinal meningitis	6	3	Puerperal septicemia	1	
Chicken pox	702		Scarlet fever	229	5
Diphtheria	104	5	Septic sore throat		1
Dysentery		1	Smallpox	1	
Erysipelas	8		Syphilis	141	2
German measles	4		Tetanus	1	
Gonorrhea	272		Trachoma	1	
Influenza	3	6	Trench mouth		
Jaundice (infectious)			Tuberculosis	201	37
Measles	839		Tularaemia	1	
Mumps	226		Typhoid fever	91	6
Paratyphoid fever	18		Undulant fever	12	
Pneumonia		121	Whooping cough	320	8

CUBA

Habana—Communicable diseases—Four weeks ended November 5, 1932.—During the four weeks ended November 5, 1932, certain communicable diseases were reported in Habana, Cuba, as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Diphtheria	7	5	Tuberculosis	10	4
Malaria	30	3	Typhoid fever	9	4
Scarlet fever	2				

JAMAICA

Communicable diseases—Four weeks ended November 5, 1932.—During the four weeks ended November 5, 1932, cases of certain communicable diseases were reported in Kingston, Jamaica, and in the island of Jamaica outside of Kingston, as follows:

Disease	Kingston	Other localities	Disease	Kingston	Other localities
Chicken pox	3	8	Puerperal fever		2
Diphtheria	3	1	Tuberculosis	24	75
Dysentery		4	Typhoid fever	5	97
Leprosy		1			

PORTUGAL

Vital statistics—1931.—The following table shows the numbers of births, deaths, stillbirths, and marriages reported in Portugal during the year 1931, as compared with 1930:

	1931	1930
Births	189,003	186,836
Deaths	107,276	107,691
Stillbirths	8,323	8,116
Marriages	41,489	44,337

The population of Portugal, according to the census of Dec. 1, 1930, was 6,190,999.

Deaths from certain diseases reported during the year 1931 are shown in the following table:

Disease	Number of deaths	Disease	Number of deaths
Alcoholism, acute or chronic	213	Pneumonia	8,557
Bronchitis	2,312	Puerperal septicemia and infections	393
Cancer and other malignant tumors	2,795	Scarlet fever	43
Diabetes	311	Smallpox	580
Diarrhea and enteritis:		Syphilis	994
Under 2 years of age	10,994	Tuberculosis:	
Over 2 years of age	3,328	Pulmonary	9,717
Diphtheria	946	Other forms	1,947
Heart diseases	9,104	Other diseases of the lungs	1,287
Hemorrhage of the brain and embolism	7,672	Typhoid and paratyphoid fever	930
Influenza	2,629	Typhus fever	13
Malaria	149	Whooping cough	1,007
Measles	1,194		

VIRGIN ISLANDS

Notifiable diseases—August-October, 1932.—During the months of August, September, and October, 1932, cases of certain notifiable diseases were reported in the Virgin Islands as follows:

Disease	Cases			Disease	Cases		
	August	September	October		August	September	October
Filariasis	1		13	Tetanus			1
Gonorrhea	6	3	3	Tuberculosis	1		1
Leprosy	1			Uncinariasis	1		2
Malaria	38	12	5	Whooping cough	1	3	
Syphilis	7	7	23				

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

(NOTE.—A table giving current information of the world prevalence of the quarantinable diseases appeared in the Public Health Reports for November 25, 1932, pp. 2231-2244. A similar cumulative table will appear in the Public Health Reports to be issued December 30, 1932, and thereafter, at least for the time being, in the issue published on the last Friday of each month.)

Cholera

For the week ended November 5, 1932, 24 cases of cholera with 10 deaths were reported at Calcutta, India.

Plague

Angola.—On November 20, 1932, plague was reported at Naulila, District of Huila, Angola.

Argentina.—During the week ended November 5, 1932, seven cases of plague with one death, were reported in Salta Province, Argentina.

Peru.—Plague was reported in Peru, November 1 to 11, 1932, as follows: Ancachs Department, 2 suspected cases; Libertad Department, 1 case; Lima Department, 5 cases, 2 of which are suspected cases; Piura Department, several suspected cases.

Syria—Beirut.—Under date of November 23, 1932, 37 cases of bubonic plague were reported at Beirut, Syria.

Yellow Fever

French West Africa—Guinea.—Two cases of yellow fever were reported in Guinea, French West Africa, during the week ended November 12, 1932.

French Sudan—Kayes.—Three fatal cases of yellow fever were reported at Kayes, French Sudan, during the week ended November 5, 1932.

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