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## PERCENTAGE OF ILLNESSES TREATED SURGICALLY AMONG 9,000 FAMILIES, BASED ON NATION-WIDE PERI- ODIC CANVASSES, 1928-31\*

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A preceding paper in this series (11) dealt with the annual incidence of surgical operations of various kinds per 1,000 population under observation, as one measure of the use of surgical procedures in the surveyed families. An equally good measure and one which takes account of the need for surgery is the percentage of nondisabling, disabling, and bed cases that were treated surgically and the percentage of various conditions that were so treated.

Physicians, clinics, and hospitals could tabulate cases cared for by them to show the proportions that were treated surgically. However, such percentages would apply only to cases under their care and would not take account of the many nonsurgical cases that do not come to the attention of these treatment agencies. Also, many operations are performed by specialists; therefore, cases handled by general practitioners or those treated by surgeon-specialists would

\*From Statistical Investigations, Division of Public Health Methods, National Institute of Health.

This is the twelfth of a series of papers on sickness and medical care in this group of families (1-11). The survey of these families was organized and conducted by the Committee on the Costs of Medical Care; the tabulation was done under a cooperative arrangement with the committee and the Public Health Service. Committee publications based on the results deal primarily with costs and Public Health Service publications primarily with the incidence of illness and the extent and kind of medical care, without regard to cost. As costs are meaningless without some knowledge of the extent and nature of the service received, there is inevitably some overlapping. The Committee staff, particularly Dr. I. S. Falk and Miss Margaret Klem, cooperated in the tabulation of the data.

Special thanks are due to Dr. Mary Gover, who assisted in the analysis, to Mrs. Lily Vanzee Welch, who was in immediate charge of tabulating the data, and to other members of the statistical staff of the Public Health Service for advice and assistance in the preparation of the study.

not alone be representative of surgical cases in general. Data for the present study come from family reports and include operations performed by various types of physicians both in and outside of hospitals.

#### I. SOURCE AND CHARACTER OF DATA

In the study of illness in canvassed white families in 130 localities in 18 States<sup>1</sup> that was made by the Committee on the Costs of Medical Care (12) and the United States Public Health Service, all service received from physicians and other practitioners was recorded, including the nature of surgical treatment used. This record of illnesses, which may be classified by severity and by diagnosis, together with the record of all surgical procedures used on these cases, affords data on the proportion of the various kinds of cases that were treated surgically.

The composition and characteristics of the group of 8,758 families which were kept under observation for 12 consecutive months in the years 1928-31 have been considered in some detail in the first report in the series (1). These families, including a total of 39,185 individuals, resided in 18 States representing all geographic sections. Every size of community was included, from metropolitan districts to small industrial and agricultural towns and rural unincorporated areas.<sup>2</sup> With respect to income, the distribution of the canvassed population was reasonably similar to the estimated income distribution of the general population of the United States at the time of the survey.

*Definition of illness and of surgical treatment.*—An illness, for the purpose of this study, was defined as any symptom, disorder, or affection which persisted for one or more days or for which medical service<sup>3</sup> was received or medicine purchased. In general the illness record covers the ailments which the family informant remembered and designated as illness.

Provision was made for recording all surgical procedures that were done in connection with any illness. Since nurses made the periodic canvasses, it may be assumed that a more complete record of surgical treatment was obtained than would have been secured by visitors with no knowledge of surgery. The entry as made by the nurse was accepted without correction, except to consider as surgical any case in which the diagnosis itself indicated that surgical treatment had

<sup>1</sup> The 18 States sampled and the number of canvassed families were: California (890), Colorado (336), Connecticut (100), District of Columbia (99), Georgia (544), Illinois (463), Indiana (404), Kansas (301), Massachusetts (287), Michigan (329), Minnesota (224), New York (1,710), Ohio (1,148), Tennessee (212), Virginia (412), Washington (551), West Virginia (318), Wisconsin (290). Further details about the distribution of the canvassed population are included in a preceding paper (1).

<sup>2</sup> Every community that was included in the study had either a local health department or some other organization, or both, employing a visiting nurse; possibly the rural communities of this kind may have had more surgical operations than those with no such organizations.

<sup>3</sup> Exclusive of dental service, eye refractions, immunizations and health examinations rendered when no symptoms were present.

been given but not recorded as such on the schedule. Examples of these diagnoses are boil lanced, abscess drained, and fracture of the leg or other part of the body which would involve the setting of a bone or placing of a cast. The definition of surgical treatment was necessarily inexact, but in general it included any procedure which involved the cutting of tissue or suturing of wounds. It also included the setting of a bone or placing of a cast. While these latter procedures are not commonly thought of as operations, they are surgical in nature and are so classified by the medical profession. Accidental injuries and childbirth were not considered surgical unless some specific operation, such as repair of lacerations, was reported on the case; the use of forceps was incompletely reported, and so was not tabulated as an operation. Surgical cases as used in this study refer always to cases which actually had surgical treatment and do not include those cases sometimes designated as surgical merely because surgical rather than medical treatment is ordinarily indicated.

In the preceding paper on the frequency of surgical procedures during the study year, each operation was counted separately and classified usually according to the kind of operation rather than the disease being treated. Tabulations for the present paper were made as follows: (a) The diagnosis refers to the nature of the illness rather than the kind of operation performed; (b) the case is counted as surgically treated whether the operation was done within or just before the study year; and (c) two or more operations on the same case (same diagnosis) are counted as one surgical case only.<sup>4</sup>

## II. PROPORTION OF CASES THAT WERE TREATED SURGICALLY IN THE WHOLE OBSERVED GROUP

In the whole population observed, there were, in the course of the year, 32,755 illnesses; an illness refers to a continuous period of sickness regardless of the number of diagnoses involved. These illnesses had a total of 34,287 diagnoses, the additional 1,532 being contributory to the primary diagnosis of the illness. Of these 34,287 diagnoses, 2,607, or 7.6 percent, had surgical treatment. The 2,607 cases treated surgically amounted to 9.7 percent of the cases that had the care of a doctor; no surgery would occur on cases not attended by a doctor.

<sup>4</sup> The differences enumerated here account for minor differences in such totals as the following: (a) 202 appendectomies within the study year, but 206 cases of appendicitis sick within and treated surgically either within or prior to the study year; (b) 123 surgical operations for otitis media or mastoid and 125 cases treated surgically either within or prior to the study year; (c) 219 operations in connection with female genital and puerperal diagnoses but only 211 separate surgical cases—some cases had two operations. Larger differences, such as the following, are due to classification: (a) 83 surgical operations on boils and abscesses included operations on sties and gumboils, but in the present paper the 66 boils and abscesses treated surgically do not include sties and gumboils; (b) 146 removals of cancers and tumors in the preceding article included the removal of warts, birthmarks, and tumors of the eye and brain which are classified in the present paper according to the organs affected; (c) 532 operations in connection with injuries included some operations on infections (unqualified), which were not classified as infected wounds (accidental origin) in the present paper; also a few injuries had two operations on the same case.

Of the total diagnoses, 13,259 were on illnesses that caused no loss of time from school, work, or other usual activities. In this group of nondisabling illnesses only 372, or 2.8 percent, of the cases were treated surgically. In the group of 21,028 disabling illnesses, 2,235 cases, or 10.6 percent, were treated surgically; of the 17,003 disabling cases that were attended by a doctor, 13.1 percent were treated surgically. In the great majority of the disabling illnesses, the patients were also in bed for 1 or more days; of the group of 17,753 bed cases, 2,060, or 11.6 percent, were treated surgically; of the 14,713 bed cases that were attended by a doctor, 14.0 percent were treated surgically. Among the bed cases, 2,661 were hospitalized; and of this group, 1,596, or 60 percent, were treated surgically. Looking at the matter from another viewpoint, 61 percent of all surgical cases had hospital service and presumably the operation was done in a hospital.

*Age and sex differences, all diagnoses.*—Table 1 and figure 1 show for males and females the age incidence of all cases and of cases that were treated surgically. The curves on the right of the chart show the percentage of cases that were treated surgically. Although the actual values of these various measures differ radically, the scales are so arranged that the relative age curves are comparable from one measure to another and at the same time the actual scale appears on the left of each chart.<sup>5</sup>

Considering first the age curves for both sexes, there are two peaks of surgical cases, one at 5 to 9 and one at 25 to 34 years. Reference to the curves for the two sexes separately indicates that the latter peak is accounted for almost entirely by surgical operations among women; when puerperal and female genital diagnoses are eliminated from the comparison, the frequency of surgical procedures is, for corresponding ages, almost identical for adults of the two sexes.

Referring to the curves representing the percentage of cases that were treated surgically, a higher proportion of cases is so treated between the ages of 5 and 35 years than in younger or older ages. Although there are more operations among women than men, more illnesses are also reported among females, and the percentage of cases that were treated surgically is consistently higher for men than for women.<sup>6</sup> When diagnoses that are not common to both sexes are eliminated from consideration, the difference between the sexes with

<sup>5</sup> Throughout this paper the numbers of cases refer to the total number of diagnoses regardless of whether they were sole, primary, or contributory. Surgical treatment was tabulated with respect to a specific diagnosis regardless of accompanying surgical or nonsurgical diagnoses on the same illness; therefore, the computation of the proportion of cases (diagnoses) treated surgically is based on the total of all diagnoses.

<sup>6</sup> A part of this showing may be due to the fact that adult women were usually the informants and would remember their own minor illnesses better than those of the husband and other members of the household. Since surgical cases would probably be fairly complete for both informants and non-informants, the proportion of cases that were surgical would tend to be less among females.



respect to the percentage of cases that were treated surgically is greater for adult ages than when all cases are considered together.

*Specific diagnoses, all ages.*—In a preceding report in this series (1) the frequency of illness was shown for detailed diagnoses, a total of about 135 different diseases and types of accidents being included.

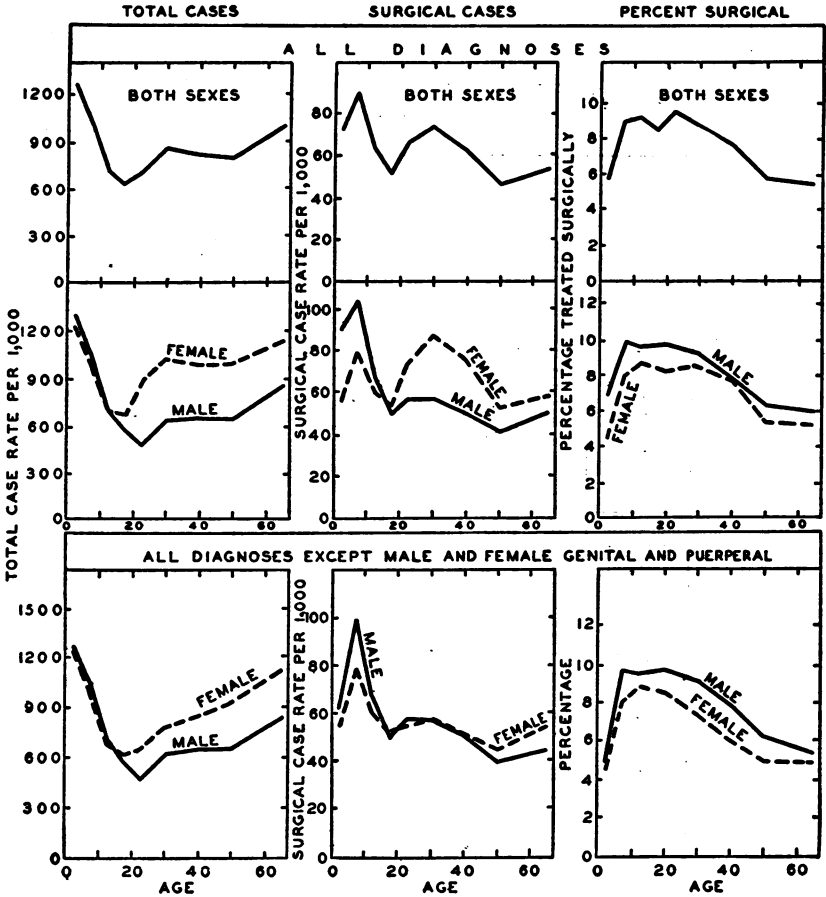


FIGURE 1.—Annual incidence of illness (all diagnoses) among persons of specific ages for (a) all cases, and (b) surgical cases; and the percentage of cases that were treated surgically—8,758 canvassed white families in 18 States during 12 consecutive months, 1928-31. (Sole, primary, and contributory diagnoses. Scales are so made that the adjusted rate for all ages of both sexes represents an interval on the vertical rate scale that corresponds to 40 years on the horizontal age scale.)

To show as specifically as possible the kinds of diagnoses that are commonly treated surgically, this detailed list, with only minor changes, has been used as the basis for computing the percentage of cases that had surgical treatment.

Figure 2 shows the proportion of cases treated surgically for every diagnosis in the list<sup>7</sup> for which 2 percent or more of the cases were so treated. Because the numbers of cases are frequently small, the total cases (surgical and nonsurgical) are shown for each cause. Non-venereal diseases of the male genital organs (except prostate) head

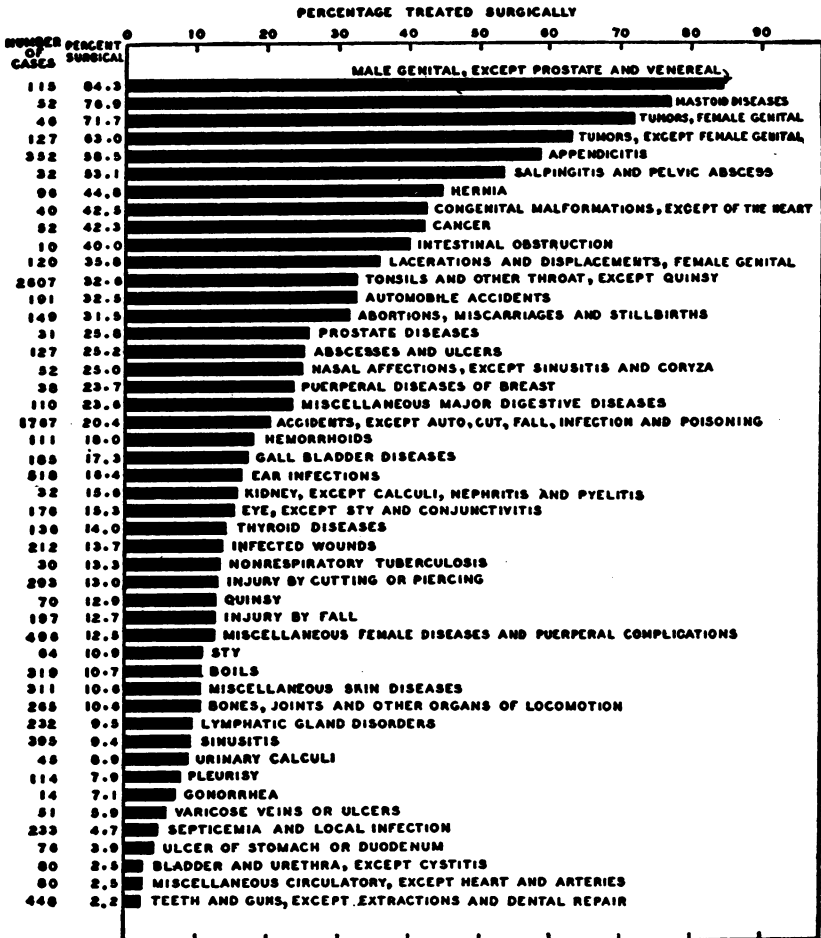


FIGURE 2.—Percentage of cases of certain diagnoses that were treated surgically—8,758 canvassed white families in 18 States during 12 consecutive months, 1928-31. (Sole, primary, and contributory diagnoses for all causes with 2 percent or more of the cases treated surgically.)

the list with 84 percent of the cases treated surgically; circumcision constitutes practically all of the surgical treatment in this class. Other diagnoses with more than half of the cases treated surgically are mastoid diseases, 77 percent; cysts and tumors of the female

<sup>7</sup> The original diagnosis list included two categories that were made up solely of operations, namely circumcision and tonsillectomy. In the computation of the percentages that were treated surgically, circumcision was combined with other nonvenereal male genital diseases, except prostate; and tonsillectomy was combined with tonsillitis and other throat disorders.

genital organs, 72 percent; other benign tumors, 63 percent; appendicitis, 58 percent; and salpingitis, 53 percent.

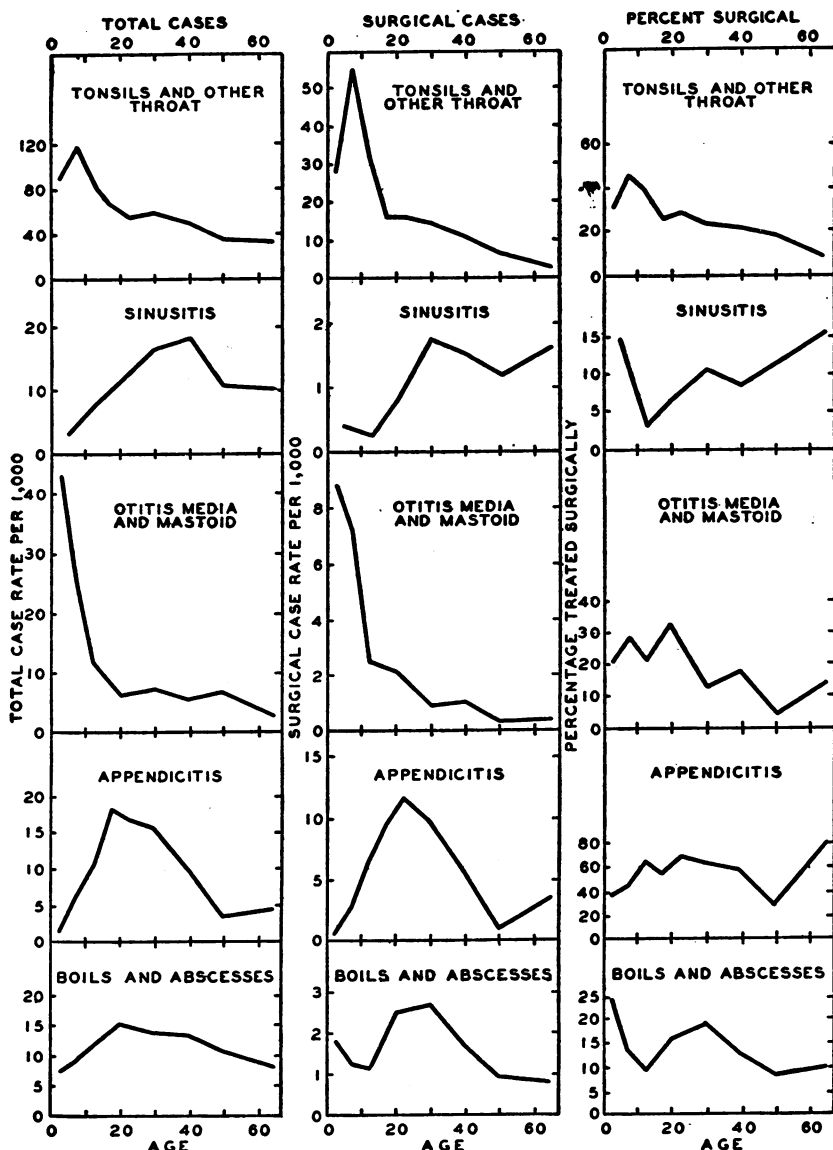


FIGURE 3.—Annual incidence of certain diseases among persons of specific ages for (a) all cases, and (b) surgical cases; and the percentage of cases that were treated surgically—8,758 canvassed white families in 18 States during 12 consecutive months, 1928-31. (Sole, primary, and contributory diagnoses. Scales are so made that the adjusted rate for all ages represents an interval on the vertical rate scale that corresponds to 20 years on the horizontal age scale. In a few instances rates are plotted in broader age groups than shown in the table.)

*Specific diagnoses, by age.*—There are sufficient numbers of cases of all kinds to make more or less reliable age curves for detailed causes,



but only the major diagnoses have enough surgical cases for this purpose. Ten diagnosis groups were selected as having enough surgical cases to use as the basis for age curves; all except one of these groups have totals of more than 300 cases, but the number of surgical cases

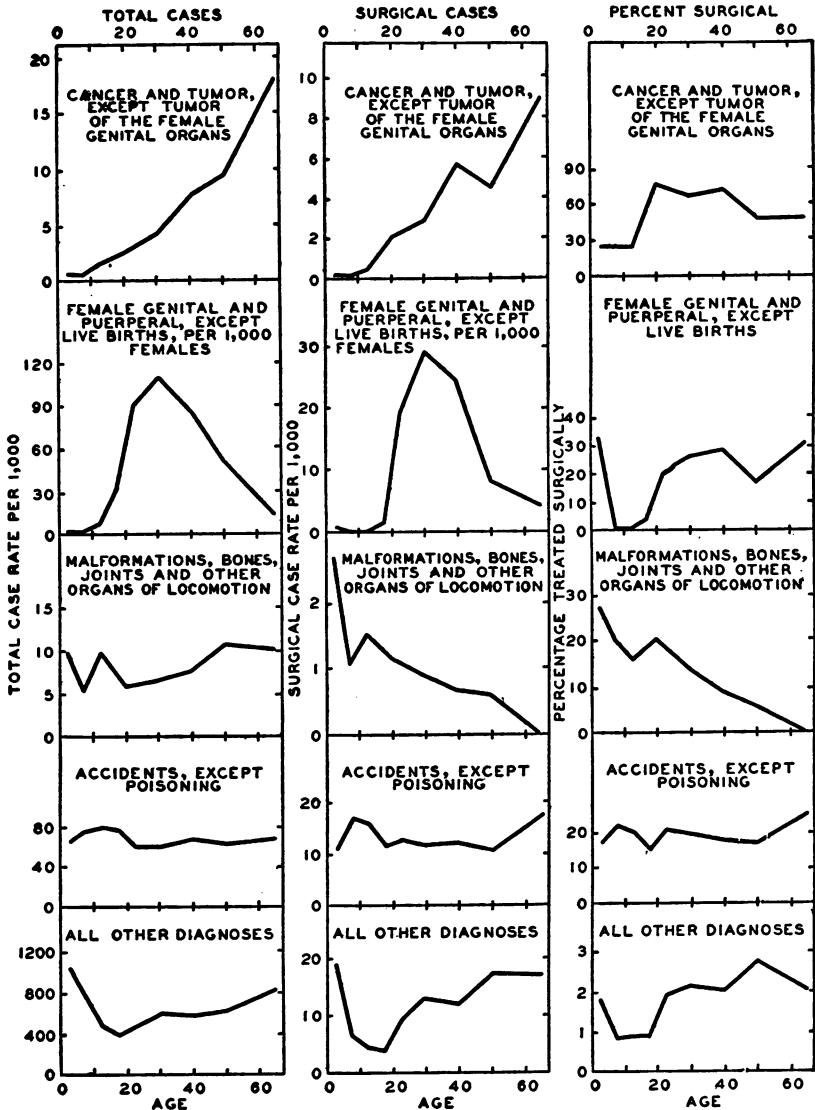


FIGURE 4.—Annual incidence of certain diseases among persons of specific ages for (a) all cases, and (b) surgical cases; and the percentage of cases that were treated surgically—Continued.

runs as low as 37 (table 2). In figures 3 and 4, age curves for each diagnosis are plotted for the incidence per 1,000 population for all cases and for cases treated surgically; on the right of the chart, age curves are plotted for the percentage of cases of the given diagnosis

TABLE 2.—Age incidence of certain diseases for (a) all cases and (b) surgical cases; and the percentage of cases that were treated surgically—8,758 canvassed white families in 18 States during 19 consecutive months, 1928-31

[Sole, primary, and contributory diagnoses]

Diagnosis	All ages 1							Age						
	Num-ber of cases	Ad-justed	Crude	Under 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 34	35 to 44	45 to 64	65 and over		
					5 to 9	10 to 14	15 to 19	20 to 24	25 to 34	35 to 44	45 to 64	65 and over		
All types of cases—annual rate per 1,000														
Tonsil and other throat diseases.....	2,677	62.34	69.45	88.9	119.2	81.6	63.0	54.7	59.4	49.1	33.7	32.4		
Sinusitis.....	2,395	10.85	10.25	1.6	4.4	7.7	12.1	10.4	16.5	18.2	10.4	10.1		
Otitis media and mastoid diseases.....	570	11.66	14.79	43.2	26.0	11.6	6.6	6.1	7.1	5.6	6.9	2.8		
Appendicitis.....	352	9.32	7.91	1.4	6.3	10.5	18.4	17.0	15.6	9.6	3.3	4.4		
Malformations, bones, joints, and other organs of locomotion.....	305	7.96	7.91	9.8	6.3	9.8	5.6	5.7	6.6	7.9	11.0	10.1		
Bells and abscesses.....	448	11.85	11.57	7.4	9.4	11.8	20.0	9.4	13.8	13.3	10.7	8.1		
Cancer and tumor, except tumor of the female genital organs.....	179	6.02	4.64	1.7	1.7	3.7	3.6	1.4	4.3	7.9	9.6	18.2		
Female genital and puerperal, except live births (per 1,000 females).....	881	47.31	44.89	2.2	1.7	6.7	31.5	89.8	109.3	81.3	49.8	13.0		
Accidents, except poisoning.....	2,860	66.31	69.01	64.9	77.3	79.5	27.0	59.9	60.3	67.3	62.7	68.4		
All other diagnoses.....	25,822	651.28	669.94	1,094.4	766.2	481.2	392.8	431.8	607.6	590.0	623.8	896.1		
Surgical cases—annual rate per 1,000														
Tonsil and other throat diseases.....	859	18.41	22.20	27.2	55.3	31.3	15.4	15.6	14.0	10.5	6.0	2.4		
Sinusitis.....	37	1.08	3.24	8.9	7.2	2.4	2.0	1.9	1.8	1.5	1.2	1.4		
Otitis media and mastoid diseases.....	125	2.60	3.24	8.9	7.2	2.4	2.0	1.9	1.8	1.0	0.9	1.4		
Appendicitis.....	203	6.75	6.24	6.5	2.6	6.8	9.8	11.8	9.8	6.9	3.6	3.6		
Malformations, bones, joints, and other organs of locomotion.....	65	1.03	1.17	2.7	1.9	1.1	1.0	1.4	2.7	1.7	1.7	1.8		
Bells and abscesses.....	44	1.70	2.65	1.9	1.2	1.1	2.6	1.9	2.9	1.7	1.7	1.8		
Cancer and tumor, except tumor of the female genital organs.....	102	3.24	10.73	6.6	1.2	.4	2.6	1.9	2.8	4.3	4.8	6.9		
Female genital and puerperal, except live births (per 1,000 females).....	511	13.44	13.36	11.1	17.2	16.0	11.3	18.5	29.0	24.1	8.9	4.1		
Accidents, except poisoning.....	441	11.08	11.44	19.2	6.5	4.4	3.6	12.7	11.9	12.1	10.7	17.8		
All other diagnoses.....								9.4	13.1	12.0	17.3	17.0		

Percentage of cases that were treated surgically										
	32.1	30.6	46.4	38.3	24.5	28.4	23.6	21.8	17.7	7.5
Tonsil and other throat diseases.....	9.4	33.3	8.0	2.9	8.1	4.6	10.8	8.3	11.4	16.0
Sinusitis.....	21.9	20.6	28.7	20.8	35.0	30.8	12.5	18.2	4.4	14.3
Otitis media and mastoid diseases.....	58.5	37.5	44.4	64.6	53.6	69.4	62.5	57.9	27.3	81.8
Appendicitis.....	14.8	27.8	20.0	15.6	17.6	25.0	13.5	8.7	5.4	10.0
Malformations, bones, joints, and other organs of locomotion.....	14.8	24.4	13.0	9.3	18.0	10.0	19.2	12.7	8.3	10.0
Bolls and abscesses.....	57.0	25.0	25.0	25.0	72.7	100.0	66.7	72.3	46.9	48.9
Cancer and tumor, except tumor of the female genital organs.....	24.0	33.3	22.2	20.1	4.2	20.9	26.6	26.6	16.0	31.2
Female genital and puerperal, except live births.....	19.4	17.0	.8	.9	14.9	21.3	19.6	17.9	17.1	26.0
Accidents, except poisoning.....	1.7	1.8			.9	2.0	2.2	2.0	2.8	2.0
All other diagnoses.....										
Population (years of life)										
Both sexes.....	38,544	5,513	5,715	4,568	3,050	2,119	5,640	6,930	3,351	2,471

1 "All ages" includes a few of unknown age; "Both sexes" includes a few of unknown sex.  
 † Adjusted by the *direct* method as described in note to table 1.

that were treated surgically. Although the actual rates and even the types of rates differ, the vertical scales are set up in a way to make the relative age curves directly comparable on all charts.

In the 9 specific diagnoses included in figures 3 and 4, the proportions of cases (all ages) that were treated surgically range from 9 percent for sinusitis to 58 percent for appendicitis. In spite of the fact that the proportion of cases represented by the surgical curve is usually less than 50 percent, the age incidence of the surgical cases is generally similar to that of all cases of the same diagnosis. Otitis media and mastoid diseases, appendicitis, cancer and tumor, female genital and puerperal diagnoses, and accidents are instances in which the two curves are quite similar.

The age curve of the percentage of cases treated surgically represents a more rigid test of the similarity of the other two curves. If the two incidence curves were identical in shape, the curve of the percentage of cases that were treated surgically would be a horizontal straight line. The fact that the percentage of cases treated surgically generally varies with age less than either of the incidence curves for the same diagnosis indicates some uniformity in the use of surgical treatment at the various ages. In the instance of tonsil and other throat disorders, ear and mastoid diseases, and affections of the bones, joints, and other organs of locomotion, there is a distinct tendency toward a decrease as age increases in the percentage of cases that were treated surgically. In appendicitis and accidents there is not much variation with age, but in both instances a somewhat higher percentage of the oldest age group was treated surgically. The use of surgical procedures in cancer and tumor, and in female genital and puerperal diagnoses is more common in the young and middle adult ages. The curve for all cases of sinusitis shows a low incidence under 10 years of age, but among the few cases that do occur surgical treatment is used more frequently than at the young adult ages.

*Specific diagnoses, by sex.*—Figure 5 shows for males and females separately the proportion of 23 more or less specific diagnoses that were treated surgically. The incidence of all cases of hernia and accidents of the various kinds is considerably greater among males than females, and in this chart it is seen that the proportion of these cases that are treated surgically is also greater for males, except for injury by cuts and lacerations. The excess for males is particularly large for hernia, a considerable proportion of which illnesses must have been compensation cases. There are several diagnoses which show a higher proportion with surgical treatment for males but not a higher incidence of total cases; among these are benign tumors, gall bladder diseases, sinus infections, and other nasal affections. There are several diagnoses with an especially high proportion of cases treated surgically

for females, namely, cancer, abscesses, boils, and injuries by cutting or piercing instruments.

The numbers of cases treated surgically for many of the diagnoses included in figure 5 are not sufficient to use as a basis for age curves for each sex. However, in table 3, 5 diagnosis groups are shown by sex, and in figure 6 age curves like those in figures 3 and 4 are shown by sex for three diagnoses that are important in surgery and that are common to both sexes.

In the instance of tonsil and other throat disorders, none of the three kinds of age curves differs greatly for the two sexes. However, there is a slight but consistent excess for females in the incidence of

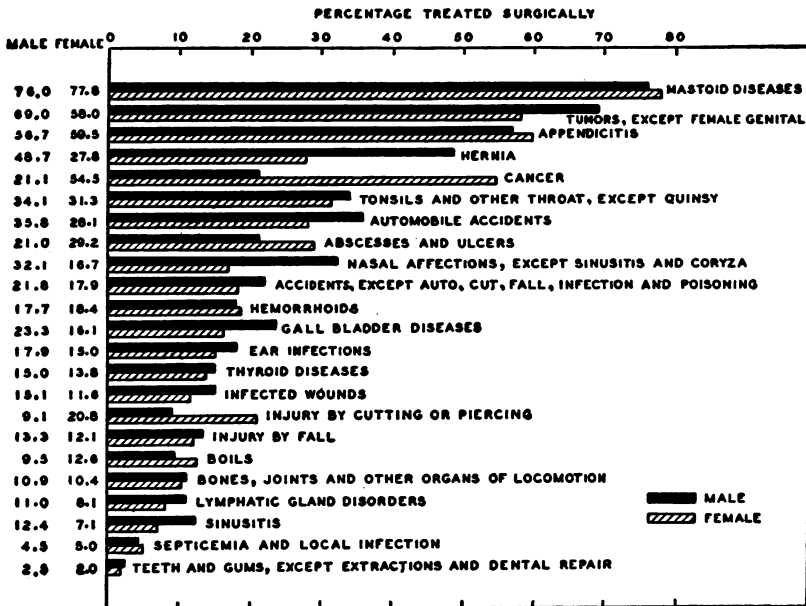


FIGURE 5.—Percentage of cases of certain diagnoses among males and females that were treated surgically—8,758 canvassed white families in 18 States during 12 consecutive months, 1928-31. (Sole, primary, and contributory diagnoses for all causes that are common to both sexes, with a total of 50 or more cases and 10 or more surgical cases.)

all tonsil and throat cases, particularly above 25 years of age. As there is no corresponding excess for females in the incidence of surgical tonsil cases, there is a slightly lower percentage of such cases treated surgically among adult females.

The incidence of all cases of appendicitis is definitely higher for females at every age above 5 years, with a particularly large excess at 15 to 19 years. Approximately the same thing can be said about the incidence of surgical cases of appendicitis except that the excess at 15 to 19 is about the same as at 20 to 24 years. In spite of these wide differences between the sexes in the incidence of the total and of surgical cases, the percentage of cases that were treated surgically is, for corresponding ages, about the same for the two sexes.

TABLE 3.—Age incidence of certain diseases among males and females for (a) all cases and (b) surgical cases; and the percentage of cases that were treated surgically—8,758 canvassed during 12 consecutive months, 1928-31  
[Sole, primary, and contributory diagnoses]

Diagnosis and sex	All ages <sup>1</sup>		Age									
	Num-ber of cases	Ad-justed	Crude	Under 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 34	35 to 44	45 to 54	55 and over
Tonsil and other throat diseases:												
Male.....	1,226	57.5	64.9	86.5	116.3	77.4	55.7	53.7	56.6	44.6	21.1	27.4
Female.....	1,451	67.4	73.9	92.0	121.9	86.0	70.3	55.5	61.5	53.5	49.1	37.4
Appendicitis:												
Male.....	120	6.6	6.4	1.8	5.0	8.3	9.8	10.1	12.1	7.0	2.7	2.4
Female.....	232	12.3	11.8	1.1	7.6	12.8	26.9	22.0	18.2	12.2	4.0	6.5
Female genital and puerperal, except live births:												
Female.....	881	47.4	44.9	2.2	1.7	5.7	31.5	89.8	109.3	84.4	49.8	13.0
Accidents, except poisoning:												
Male.....	1,658	85.0	87.7	77.6	108.2	108.2	106.1	88.4	74.5	83.9	71.5	62.0
Female.....	1,002	52.4	51.0	52.2	47.3	50.3	47.9	37.2	50.0	51.5	51.8	74.8
All other diagnoses:												
Male.....	12,230	606.1	647.2	1,138.9	812.1	510.2	402.1	314.3	486.3	503.2	549.0	765.5
Female.....	15,475	785.6	788.4	1,098.7	810.0	537.7	479.3	661.2	781.7	783.8	828.0	1,006.5
Surgical cases—annual rate per 1,000												
Tonsil and other throat diseases:												
Male.....	410	17.8	21.7	24.2	38.5	27.8	13.8	14.5	13.7	11.8	4.9	1.6
Female.....	449	19.1	22.9	30.6	52.2	34.8	17.1	16.3	14.2	9.2	7.3	3.2
Appendicitis:												
Male.....	68	3.9	3.6	.7	2.5	5.2	5.2	6.7	7.1	4.0	.5	2.4
Female.....	138	7.4	7.0	.4	3.1	8.4	14.4	15.5	11.7	7.1	1.3	4.9
Female genital and puerperal, except live births:												
Female.....	211	10.9	10.8	.8	-----	-----	1.3	18.8	29.0	24.1	8.0	4.1
Accidents, except poisoning:												
Male.....	336	17.4	17.8	14.2	23.8	21.3	17.0	22.4	16.6	16.8	14.1	13.7
Female.....	179	9.8	9.1	7.8	10.7	10.6	6.9	5.7	8.3	7.5	6.6	23.0
All other diagnoses:												
Male.....	442	23.4	23.4	50.2	19.5	13.5	13.8	13.4	20.0	17.5	21.1	33.0
Female.....	374	20.2	19.1	16.0	13.5	6.6	14.4	17.1	23.8	27.8	29.2	24.4

Percentage of cases that were treated surgically											
Tonsil and other throat diseases:											
Male.....	33.4	28.0	50.3	36.0	24.7	27.1	24.3	26.3	23.1	5.9	
Female.....	30.9	33.2	42.8	40.5	24.3	28.4	23.1	17.1	14.9	8.7	
Appendicitis:											
Male.....	56.7	40.0	50.0	63.2	53.3	66.7	58.6	57.1	20.0	100.0	
Female.....	59.5	33.3	40.9	65.5	53.7	70.4	64.4	66.3	33.3	75.0	
Female genital and puerperal, except live births:											
Male.....	24.0	33.3	-----	-----	4.2	20.9	26.6	28.5	16.0	31.2	
Female.....	20.3	18.4	22.0	19.7	16.0	25.3	22.4	20.0	19.7	22.1	
Accidents, except poisoning:											
Male.....	17.9	16.0	22.6	21.0	12.3	14.6	16.7	14.5	12.8	29.4	
Female.....	3.6	4.4	2.4	2.6	3.4	4.3	4.1	3.5	3.8	4.3	
All other diagnoses:											
Male.....	2.4	1.5	1.7	1.2	3.0	2.6	3.0	3.6	3.5	2.4	
Female.....	2.4	1.5	1.7	1.2	3.0	2.6	3.0	3.6	3.5	2.4	
Population (years of life)											
Male.....	18,896	2,808	2,820	2,301	1,527	894	2,402	2,979	1,845	1,241	
Female.....	19,627	2,684	2,895	2,267	1,523	1,225	3,238	2,951	1,506	1,230	

1 "All ages" includes a few of unknown age.  
 \* Adjusted by the direct method as described in note to table 1.

The incidence of all accidents, and of surgically treated accidents, and the percentage of injuries that were surgically treated all show definite excesses for males of the working ages. This showing presumably reflects the greater frequency of more serious industrial accidents among males. At the oldest age, 65 years and over, females are above males in all three curves. Among children under 15 years there were more accidents per 1,000 and more surgically treated acci-

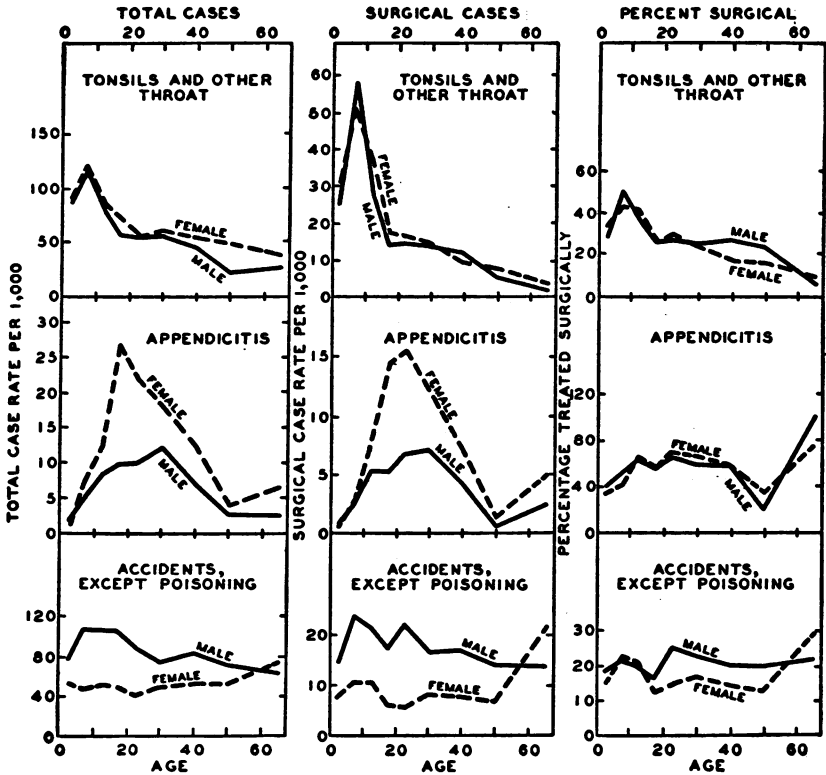


FIGURE 6.—Annual incidence of certain diseases among males and females of specific ages for (a) all cases, and (b) surgical cases; and the percentage of cases that were treated surgically—8,758 canvassed white families in 18 States during 12 consecutive months, 1928-31. (Sole, primary, and contributory diagnoses. Scales are so made that the adjusted rate for all ages of both sexes represents an interval on the vertical rate scale that corresponds to 20 years on the horizontal age scale.)

dents per 1,000 boys than girls, but the percentage of accidents that were surgically treated is about the same for the two sexes.

### III. PROPORTION OF CASES THAT WERE TREATED SURGICALLY IN FAMILIES OF DIFFERENT INCOME LEVELS

In the study of the incidence of surgical procedures (11), it was found that operations occurred with considerably greater frequency in the upper than in the lower income brackets. Figure 7 indicates that the proportion of cases of illness that were treated surgically also in-



creases definitely with income; the only exception to a regular rise as income increases is a smaller percentage for the \$3,000 to \$5,000 group than for the income class immediately below it.

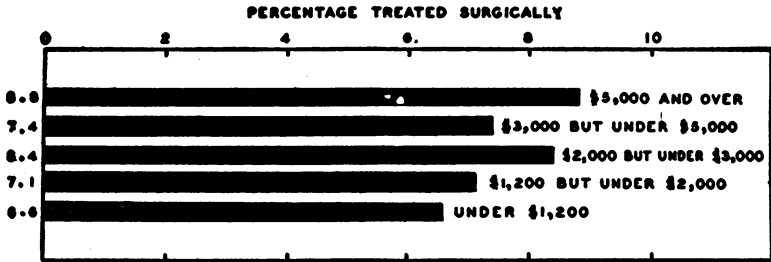


FIGURE 7.—Percentage of cases (all diagnoses) that were treated surgically among persons classified according to annual family income—8,758 canvassed white families in 18 States during 12 consecutive months, 1928-31. (Sole, primary, and contributory diagnoses.)

The percentage of cases that were treated surgically was computed for persons of specific ages in families of different income levels. For the ages above 15 years, the highest income class shows consistently larger percentages than the lowest (fig. 8), but the intervening income groups (table 4) do not fall consistently between the two extremes. However, the numbers of surgical cases for specific ages in given income groups are not large, and considerable chance variation would be expected.

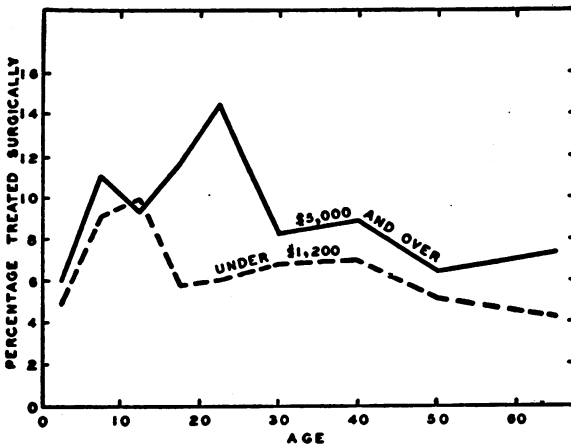


FIGURE 8.—Percentage of cases (all diagnoses) of specific ages that were treated surgically among persons of high and of low annual family income—8,758 canvassed white families in 18 States during 12 consecutive months, 1928-31. (Sole, primary, and contributory diagnoses.)

Figure 9 shows for 6 rather specific diagnoses in which surgery is important the proportion of cases that were treated surgically in each of five income groups. The proportion of appendicitis cases treated surgically varies from 52 percent in families with annual incomes under \$1,200 and 46 percent among those with \$1,200 to

TABLE 4.—Percentage of cases (all diagnoses) that were treated surgically among persons of specific ages in different income groups—8,758 canvassed white families in 18 States during 12 consecutive months, 1928-31

[Sole, primary, and contributory diagnoses]

Annual family income	All ages	Age									Total number of cases (surgical and non-surgical) for all ages
		Under 5	5-9	10-14	15-19	20-24	25-34	35-44	45-54	55 and over	
Under \$1,200.....	6.6	4.8	9.2	9.9	5.8	6.0	6.8	7.0	5.2	4.3	4,902
\$1,200 but under \$2,000.....	7.1	5.2	9.0	8.5	6.4	6.3	8.3	7.5	4.9	4.9	11,247
\$2,000 but under \$3,000.....	8.4	6.8	9.1	8.2	10.5	13.0	9.6	8.0	7.1	6.7	8,170
\$3,000 but under \$5,000.....	7.4	5.5	7.5	11.1	6.3	11.0	10.5	7.3	4.8	4.4	4,495
\$5,000 and over.....	8.8	6.0	11.1	9.3	11.6	14.6	8.2	8.9	6.5	7.3	5,057

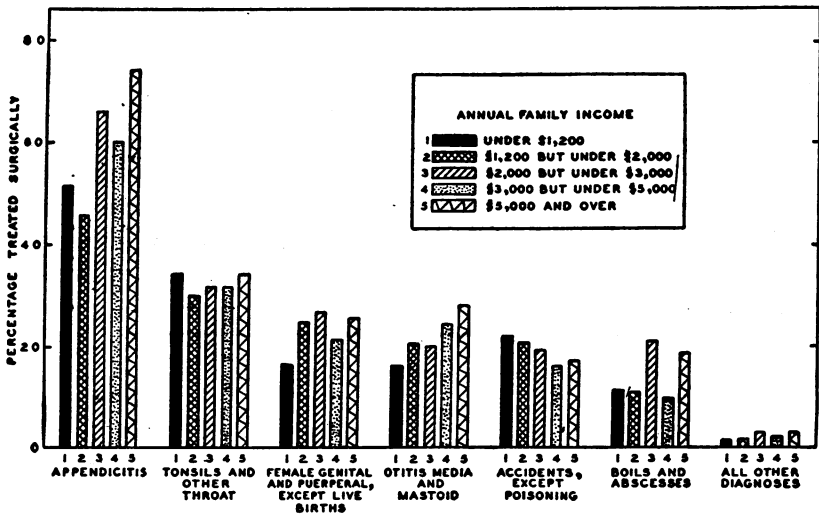


FIGURE 9.—Percentage of cases of certain diagnoses that were treated surgically among families of different income levels—8,758 canvassed white families in 18 States during 12 consecutive months, 1928-31. (Sole, primary, and contributory diagnoses.)

\$2,000 incomes, to 75 percent for cases in families with \$5,000 or more income. The proportion of otitis media and mastoid cases treated surgically also increases with income, ranging from 16 percent in the group with less than \$1,200 to 28 percent in the highest income class. Little variation with income appears in the percentages of boils and abscesses, of female genital and puerperal diagnoses, or of tonsil and throat cases that come up for operation. Practically all surgery in the tonsil and throat class consists of tonsillectomy, and the frequency of this operation in the lower income brackets may be somewhat influenced by school and other health work. The proportion of accidents (exclusive of poisoning) accorded surgical treatment is definitely higher in the lower income groups; since practically all fractures call for surgical treatment (setting of bone or placing of

cast), the data suggest that industrial accidents, which occur more frequently in the lower-income groups, are more severe than non-industrial accidents. Another factor in the situation may be better care of industrial injuries under compensation systems.

TABLE 5.—Percentage of cases of certain diagnoses that were treated surgically among families of different income levels—8,758 canvassed white families in 18 States during 12 consecutive months, 1928-31

[Sole, primary, and contributory diagnoses]

Diagnosis and age	Percentage of cases treated surgically in families of specified annual incomes					Total number of cases (surgical and nonsurgical) in families of specified annual incomes				
	Under \$1,200	\$1,200 but under \$2,000	\$2,000 but under \$3,000	\$3,000 but under \$5,000	\$5,000 and over	Under \$1,200	\$1,200 but under \$2,000	\$2,000 but under \$3,000	\$3,000 but under \$5,000	\$5,000 and over
<b>Tonsil and other throat diseases:</b>										
All ages <sup>1</sup> .....	34.3	30.1	31.6	31.7	34.5	332	889	652	366	411
Under 20.....	43.8	37.2	35.2	34.4	40.2	219	603	434	227	234
20 to 44.....	19.8	17.6	25.0	29.0	29.8	81	238	184	114	121
45 and over.....	6.2	4.4	20.6	20.0	17.3	32	46	34	25	52
<b>Otitis media and mastoid diseases:</b>										
All ages <sup>1</sup> .....	16.4	20.6	20.0	24.3	27.9	67	180	140	70	111
Under 20.....	18.5	22.1	23.0	23.6	31.6	54	154	113	55	76
20 to 44.....	11.1	10.0	4.6	40.0	28.0	9	20	22	10	25
45 and over.....		16.7	20.0			4	6	5	5	10
<b>Appendicitis:</b>										
All ages <sup>1</sup> .....	51.7	45.9	66.3	60.4	74.5	58	98	95	48	51
Under 20.....	50.0	33.3	60.0	53.3	79.2	30	39	30	24	24
20 to 44.....	52.0	53.7	69.5	66.7	76.2	25	54	59	21	21
45 and over.....	66.7	50.0	66.7	33.3	50.0	3	4	6	3	6
<b>Boils and abscesses:</b>										
All ages <sup>1</sup> .....	11.5	11.3	21.2	10.1	18.7	52	141	104	69	75
Under 20.....	16.0	9.4	26.2	7.4	15.6	25	64	61	27	32
20 to 44.....	10.0	13.8	17.6	12.9	20.0	20	58	34	31	30
45 and over.....		10.5		9.1	18.2	7	19	8	11	11
<b>Female genital and puerperal, except live births:</b>										
All ages <sup>1</sup> .....	16.7	24.9	26.6	21.5	25.5	120	333	214	107	98
Under 20.....	8.3	10.7				12	28	17	5	9
20 to 44.....	18.0	26.4	29.5	23.6	31.9	100	276	173	89	69
45 and over.....	14.3	18.5	25.0	16.7	15.8	7	27	24	12	19
<b>Accidents, except poisoning:</b>										
All ages <sup>1</sup> .....	22.3	20.8	19.3	16.3	17.1	355	850	642	381	404
Under 20.....	22.8	20.3	19.2	15.0	17.2	180	439	365	193	209
20 to 44.....	16.4	21.9	18.9	20.7	12.2	104	306	201	135	115
45 and over.....	29.6	20.2	21.0	9.8	23.7	71	99	76	51	76
<b>All other diagnoses:</b>										
All ages <sup>1</sup> .....	1.6	1.9	2.9	2.3	3.2	3,918	8,756	6,323	3,454	3,907
Under 20.....	1.0	1.4	2.2	1.4	2.2	2,089	4,899	3,346	1,618	1,764
20 to 44.....	2.5	2.4	3.5	3.2	3.8	1,016	2,803	2,059	1,161	1,172
45 and over.....	2.0	2.8	4.3	3.3	4.4	766	1,016	902	642	953

<sup>1</sup> "All ages" includes a few of unknown age.

#### IV. PROPORTION OF CASES THAT WERE TREATED SURGICALLY IN METROPOLITAN, URBAN, AND RURAL AREAS

Surgeon-specialists and hospital facilities both tend to be concentrated in cities and therefore surgical treatment may be more conveniently secured in urban than in rural areas. It is of interest to find whether this situation is actually accompanied by more frequent resort to surgical treatment in the city than in the country.<sup>8</sup>

<sup>8</sup> In a survey of this kind no error arises because the place of treatment is different from the place of the patient's residence, as all the data about a given family are classified according to the place of the family's residence.

Figure 10 shows the percentage of cases of all diagnoses that were treated surgically in cities of different sizes and in rural areas. The proportion of cases treated surgically increases regularly from 6.0 percent for rural areas to 9.0 for large cities; in other words, surgery is resorted to in cities in 50 percent more of the cases than in rural areas.

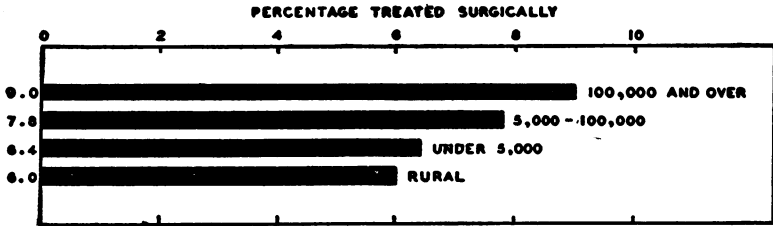


FIGURE 10.—Percentage of cases (all diagnoses) that were treated surgically among persons living in cities of different sizes and in rural areas—8,758 canvassed white families in 18 States during 12 consecutive months, 1928-31. (Sole, primary, and contributory diagnoses.)

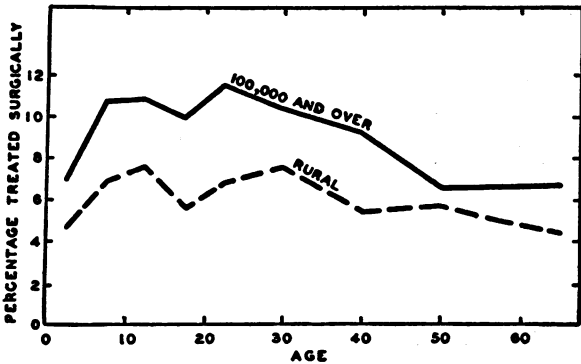


FIGURE 11.—Percentage of cases (all diagnoses) of specific ages that were treated surgically among persons living in large cities and in rural areas—8,758 canvassed white families in 18 States during 12 consecutive months, 1928-31. (Sole, primary, and contributory diagnoses.)

TABLE 6.—Percentage of cases (all diagnoses) that were treated surgically among persons of specific ages living in cities of different sizes and in rural areas—8,758 canvassed white families in 18 States during 12 consecutive months, 1928-31

[Sole, primary, and contributory diagnoses]

Size of city	All ages	Age									Total number of cases (surgical and non-surgical) for all ages
		Under 5	5-9	10-14	15-19	20-24	25-34	35-44	45-54	55 and over	
Cities of 100,000 or over.....	9.0	7.0	10.7	10.8	9.8	11.5	10.3	9.2	6.6	6.7	12,066
Cities 5,000 to 100,000.....	7.8	5.4	10.3	9.8	10.5	9.2	7.8	7.6	5.3	5.6	9,085
Towns under 5,000.....	6.4	4.6	7.2	8.2	7.4	7.7	8.0	6.8	4.9	4.0	7,492
Rural.....	6.0	4.6	6.9	7.6	5.6	6.8	7.6	5.4	5.7	4.4	5,644

In figure 11 the percentages that were treated surgically are shown for cases of specific ages in large cities as compared with rural areas. The percentages treated surgically are definitely and consistently higher in the various age groups in large cities than in rural areas. While the percentages for the two intermediate city classes do not fall consistently between the extremes, there is a distinct tendency in the various ages toward a regular increase in surgical treatment as size of city increases (table 6).

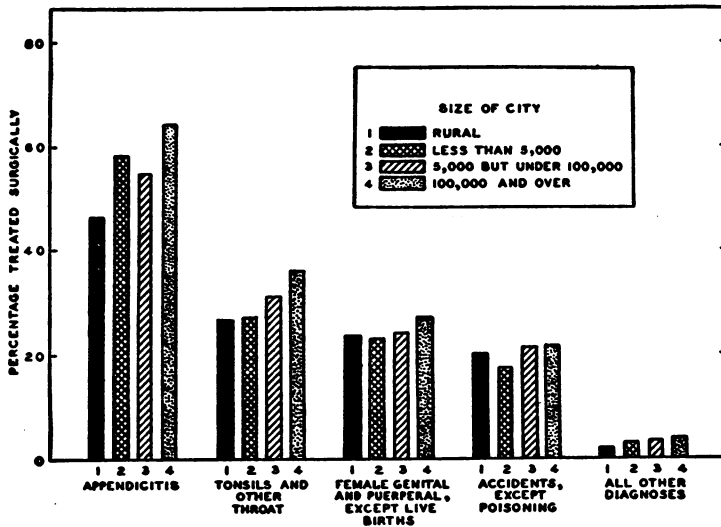


FIGURE 12.—Percentage of cases of certain diagnoses that were treated surgically among persons living in cities of different sizes and in rural areas—8,758 canvassed white families in 18 States during 12 consecutive months, 1928-31. (Sole, primary, and contributory diagnoses.)

TABLE 7.—Percentage of cases of certain diagnoses that were treated surgically among families living in cities of different sizes and in rural areas—8,758 canvassed white families in 18 States during 12 consecutive months, 1928-31

[Sole, primary, and contributory diagnoses]

Diagnosis	Percentage of cases that were treated surgically				Total number of cases (surgical and nonsurgical)			
	Cities of 100,000 or over	Cities 5,000-100,000	Towns under 5,000	Rural	Cities of 100,000 or over	Cities 5,000-100,000	Towns under 5,000	Rural
All diagnoses.....	9.0	7.8	6.4	6.0	12,066	9,085	7,492	5,644
Tonsil and other throat diseases.....	36.2	31.5	27.3	26.9	946	761	550	420
Appendicitis.....	64.4	55.1	58.3	46.5	132	89	60	71
Female genital and puerperal, except live births.....	27.1	23.9	22.6	23.2	336	213	190	142
Accidents, except poisoning.....	21.2	21.0	16.9	19.4	959	681	579	428
All other diagnoses.....	3.7	3.0	2.5	1.7	9,683	7,333	6,113	4,583

Table 7 and figure 12 show the percentage of cases of 5 diagnosis groups that were treated surgically in cities of different sizes and in rural areas. Appendicitis and tonsil and throat diseases both show fairly regular increases in surgical treatment with size of city. In female genital and puerperal diagnoses and in accidental injuries there is little variation with size of city in the percentages treated surgically.

The percentage of cases treated surgically varies slightly in the different geographic sections (table 8). However, in all sections except the West there is a fairly consistent tendency toward an increasing percentage of cases treated surgically as the size of city increases (table 9).

TABLE 8.—Percentage of cases of certain diagnoses that were treated surgically among families living in four geographic sections<sup>1</sup>—8,758 canvassed white families in 18 States during 12 consecutive months, 1928-31

[Sole, primary, and contributory diagnoses]

Diagnosis	Percentage of cases that were treated surgically				Total number of cases (surgical and nonsurgical)			
	North-east	North Central	South	West	North-east	North Central	South	West
All diagnoses.....	6.3	8.1	7.8	8.1	8,628	11,708	6,551	7,340
Tonsil and other throat diseases.....	22.5	34.9	33.7	34.4	649	1,001	498	529
Appendicitis.....	70.7	52.4	59.7	50.0	75	126	77	74
Female genital and puerperal, except live births.....	25.1	22.3	26.7	26.2	187	301	202	191
Accidents, except poisoning.....	20.1	21.3	20.6	17.1	583	968	506	603
All other diagnoses.....	2.5	2.9	2.7	3.8	7,134	9,372	5,268	5,943

<sup>1</sup> States included in the survey were as follows: *Northeast*—New York, Massachusetts, Connecticut; *North Central*—Illinois, Ohio, Michigan, Indiana, Wisconsin, Minnesota, Kansas; *South*—District of Columbia, Virginia, West Virginia, Tennessee, Georgia; *West*—Washington, California, Colorado.

TABLE 9.—Percentage of cases (all diagnoses) that were treated surgically in metropolitan, urban and rural parts of four geographic sections<sup>1</sup>—8,758 canvassed white families in 18 States during 12 consecutive months, 1928-31

[Sole, primary, and contributory diagnoses]

Size of city	Percentage of cases that were treated surgically				Total number of cases (surgical and nonsurgical)			
	North-east	North Central	South	West	North-east	North Central	South	West
Cities of 100,000 or over.....	7.8	8.8	10.0	9.7	2,347	5,034	1,945	2,740
Cities 5,000 to 100,000.....	7.3	8.7	7.8	6.0	1,816	3,370	2,636	1,263
Towns under 5,000.....	5.0	7.3	7.0	7.1	2,635	1,733	953	2,171
Rural.....	5.2	5.9	4.5	8.6	1,830	1,631	1,017	1,166

<sup>1</sup> See footnote to table 8 for definition of sections.

## V. SUMMARY

Records of all surgical treatment were obtained for 8,758 white families in 130 localities in 18 States for a period of 12 consecutive months between 1928 and 1931. Each family was visited at intervals of 2 to 4 months to obtain the data.

The surveyed families include representation from nearly all geographic sections, from rural, urban, and metropolitan areas, from all income classes, and of both native- and foreign-born persons. With respect to income, the distribution was reasonably similar to the estimated distribution of the general population of the United States at the time of the survey.

Considering the whole surveyed group, 7.6 percent of the cases reported were treated surgically; of those that came under the care of a doctor, 10 percent were so treated; and of those that were hospitalized, 60 percent had surgical treatment.

The age incidence of surgical cases shows peaks at 5 to 9 and 25 to 34 years, but the percentage of cases that were treated surgically is about the same from 5 to 35 years, with smaller percentages above and below those ages (fig. 1).

The diagnoses that were most frequently treated surgically are nonvenereal diseases of the male genital organs, with circumcision as the usual operation, 84 percent; mastoid diseases, 77 percent; cysts and tumors of the female genital organs, 72 percent; other benign tumors, 63 percent; appendicitis, 58 percent; and salpingitis, 53 percent (fig. 2).

In general, the percentage of cases of a given diagnosis that were treated surgically varies less with age than the total case incidence or the incidence of surgical cases of the same diagnosis (figs. 3 and 4).

The percentage of cases that were treated surgically increases as family income increases (figs. 7, 8, and 9).

The percentage of cases that were treated surgically is greater in cities than in rural areas (figs. 10, 11, and 12).

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## TWO NEW SPECIES OF TICKS (*Ixodes*) FROM CALIFORNIA<sup>1</sup>

(ACARINA: Ixodidae)

By R. A. COOLEY, *Entomologist*, and GLEN M. KOHLS, *Assistant Entomologist, Rocky Mountain Laboratory, United States Public Health Service.*

Two new species of ticks of the genus *Ixodes*, found in California, are described in this paper. One was collected by Assistant Parasitologist William L. Jellison, of the Rocky Mountain Laboratory, incident to field studies on tick-transmitted diseases, and the other was received from Mr. D. E. Howell, department of entomology, University of California, through the courtesy of Dr. W. B. Herms.

*Ixodes howelli* n. sp.

Male unknown.

#### FEMALE

Described from one partly engorged specimen. Color, yellow-brown.

#### DORSAL VIEW

*Capitulum*.—Length, 0.48 mm; width at the cornua, 0.39 mm. Basis capituli about twice as broad as long; the posterior margin between the cornua a salient edge; surface faintly shagreened; cornua short, broadly rounded. Porose areas large, occupying much of the dorsal surface, mildly depressed, indefinite in extent except at their lateral and posterior sides. Basis capituli excavated at the sides posterior to the insertion of the palpi thus permitting the palpi to be turned backward more than is usual in ticks of this genus.

<sup>1</sup> Contribution from the Division of Infectious Diseases, National Institute of Health, Rocky Mountain Laboratory, Hamilton, Montana.



*Palpi*.—Length of articles 2 and 3, 0.33 mm; width, 0.15 mm. Shorter than in most United States species; hairy; apically broadened and rounded; surface impunctate, slightly irregular (not smooth). Article 1 visible only as a faint band between the two interarticular membranes; articles 2 and 3 fused leaving no visible sutural line.

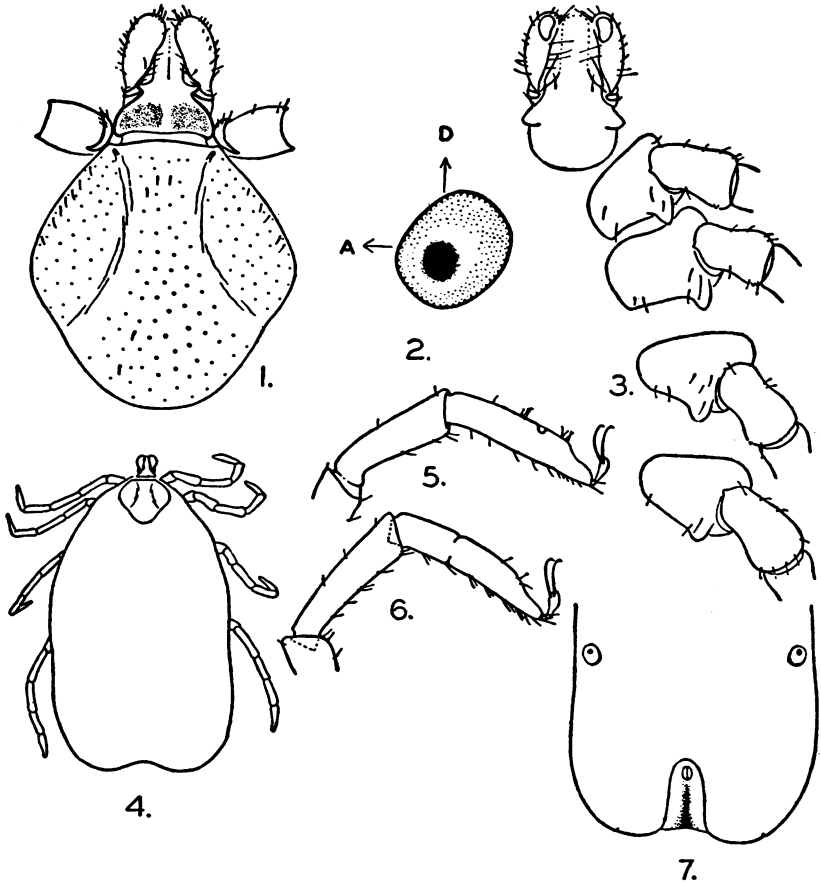


FIGURE 1.—*Ixodes howelli*. 1. Dorsal view of capitulum, palpi, and scutum. 2. Spiracular plate. 3. Ventral view of capitulum, palpi, and coxae. 4. Dorsal view of the partly engorged specimen. 5. Tarsus and metatarsus of leg I. 6. Tarsus and metatarsus of leg IV. 7. Anal grooves.

*Scutum*.—Length, 0.99 mm; width, 0.96 mm; widest at the middle, rounded posteriorly. Surface faintly shagreened, mildly irregular, with a few shallow rugae present in the lateral areas; punctate throughout except in and near the cervical grooves. Scapulae absent (or very faint). Cervical grooves well-defined but shallow and broad; persistent from the scapular areas to the postero-lateral margins. A few hairs are in evidence in the lateral and median areas.

*Post-scutal area*.—Bi-lobed posteriorly<sup>2</sup> and with a few hairs.

*Legs*.—Long, slender, and with fine hairs. All tarsi tapering gradually. Length of tarsus I, 0.66 mm; length of metatarsus I, 0.54 mm. Length of tarsus IV, 0.72 mm; length of metatarsus IV, 0.63 mm.

VENTRAL VIEW

*Capitulum*.—Length of the basis capituli greater than the length of the hypostome; surface faintly shagreened, smooth, impunctate. Auricula present as a lateral tooth, the apex of which is continuous with a narrow ridge which connects the ventral and dorsal walls of the basis capituli. Posterior margin a curved salient edge. Palpus: Article 1 indefinite; article 2 narrowed basally.

*Hypostome*.—Spatulate, apically rounded; length about 0.24 mm; width about 0.12 mm. (Some of the teeth have been broken off, but the apical portion is present.) Teeth in two principal files on each side of the median line.

*Coxae*.—Surface shagreened. No internal spurs present. External spurs on I to IV short, rounded, about as long as broad. A few hairs present on all coxae. Trochantal spurs on I, II, and III small, subacute.

Vaginal opening between coxae II. Anal grooves nearly parallel, connected and rounded on the median line anterior to the anus. The area between the grooves is longitudinally depressed on the median line. Anus in an oval.

*Spiracular plates*.—Length, 0.24 mm; width, 0.185 mm. Subellipsoidal with the sides and ends somewhat flattened. The macula eccentric on an axis directed antero-ventrally. Goblets moderate in number, small.

*Type*.—Holotype (female), Rocky Mountain Laboratory, Hamilton, Mont., A. P. 14037.

*Type host*.—Sierra Nevada rosy finch (*Leucosticte tephrocotis dawsoni* Grinnell). Taken in July 1937, at an altitude of 12,000 feet.

*Type locality*.—Northern Yosemite National Park, Tuolumne County, Calif.

Of the Sierra Nevada rosy finch, Joseph Grinnell and Tracy Irwin Storer, state:<sup>3</sup>

*Occurrence*.—Resident in Alpine-Arctic Zone, descending at times into Hudsonian. Most often seen in summer on open ground around edges of snow banks above the 10,500-foot contour. \* \* \* The Sierra Nevada rosy finch, or *Leucosticte*, is the most typically alpine of all Californian birds. The mountaineer does not meet with it until he reaches the main Sierran crest or at least the loftiest of the outstanding spurs.

<sup>2</sup> The possibility of this tick being a teratological specimen should not be overlooked. Teratological specimens of *D. andersoni* are occasionally seen in the abundant material reared at the Rocky Mountain Laboratory. Posteriorly bi-lobed individuals have been found, but all such specimens have had two anuses; this specimen has only one.

<sup>3</sup> Animal Life in the Yosemite, etc. Contribution from the Museum of Vertebrate Zoology, University of California, 1924.

The tick was taken from a nestling nearly old enough to fly. Numerous adult birds were examined for ectoparasites, but no ticks were found. It belongs to the group of bird ticks which have the scapulae lacking or insignificant, including *I. auritulus* Neumann, *I. signatus* Birula, *I. unicavatus* Neumann, and *I. eichhorni* Nuttall.

*Ixodes jellisoni* n. sp.

Male unknown.

FEMALE

Described from an unfed female specimen. Length of tick (measured from line connecting tips of scapulae to posterior margin of

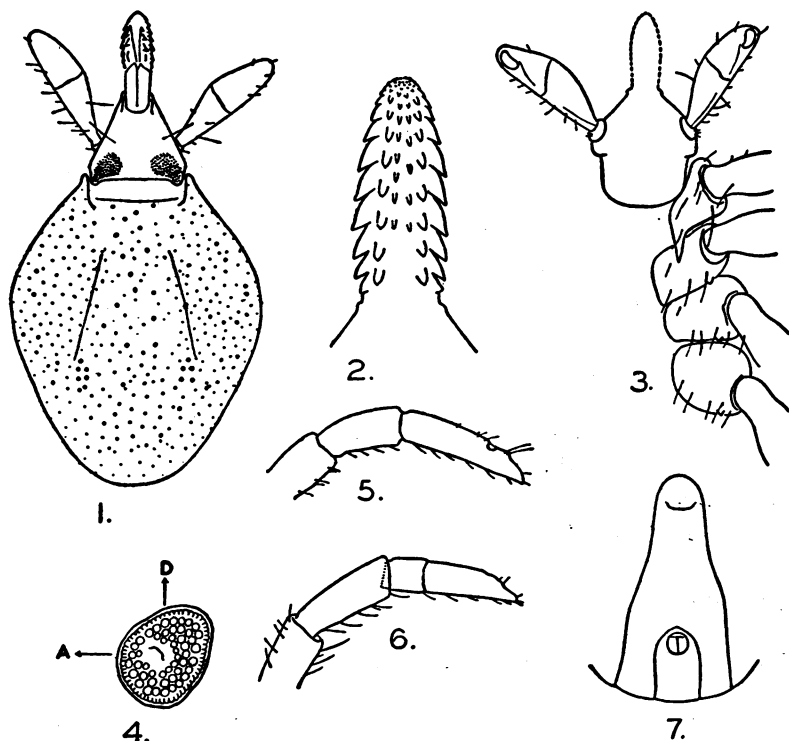


FIGURE 2.—*Ixodes jellisoni*. 1. Dorsal view of capitulum, palpi, and scutum. 2. Hypostome. 3. Ventral view of capitulum, palpi, and coxae. 4. Spiracular plate. 5. Tarsus and metatarsus, leg I. 6. Tarsus and metatarsus, leg IV. 7. Genital and anal grooves.

body), 1.95 mm; width, 1.26 mm. Capitulum, scutum, legs, and coxae dark brown (nearly black). Post-scutal area yellow-white.

DORSAL VIEW

*Capitulum*.—Length, 0.66 mm; greatest width, 0.39 mm. Portion anterior to the insertion of the palpi conical; portion posterior to the palpi subrectangular. Surface convex, faintly shagreened, smooth,

impunctate, without hairs. Cornua short, rounded; the interval which forms the posterior margin of the basis nearly straight, salient. Porose areas far apart, mildly depressed, and with their axes converging anteriorly. Length of palpus, 0.48 mm; palpi smooth, rounded apically with the outer margins straight and the inner margins convex; article 1 scarcely visible dorsally, article 2 a little longer than article 3; palpus widest near juncture of 2 and 3. A few hairs of varying lengths present on the palpi.

*Scutum*.—Length, 1.14 mm; width, 0.96 mm; lateral and posterior margins rounded; cervical grooves scarcely visible as two shallow depressed lines, divergent posteriorly, not reaching either the anterior or postero-lateral margins, and terminating posteriorly near a restricted area which has a few large punctations. Punctations present, fine and coarse; finer punctations more numerous, generally distributed; coarser punctations scatteringly distributed and notable near the posterior termini of the cervical grooves. A very few scattering hairs are present.

*Post-scutal area*.—Marginal grooves very moderate; surface smooth, and with numerous moderately long hairs similar to those on the legs.

*Legs*.—Tarsi I and IV long, tapering gradually. Length of tarsus I, 0.54 mm; metatarsus, 0.345 mm. Length of tarsus IV, 0.51 mm; metatarsus, 0.42 mm.

#### VENTRAL VIEW

*Capitulum*.—Convex, faintly shagreened, smooth, impunctate; notably long and with the portion anterior to the insertion of the palpi conical; posterior margin curved, salient. Auriculae suggested as mild excrescences just posterior to the insertion of the palpi. Palpi: Article 1 simple (without lateral extensions) and with a few very small hairs; inner faces of articles 2 and 3 not excavated, smooth.

*Hypostome*.—Length about 0.3 mm; width about 0.121 mm. Spatulate; teeth in two principal files on each side of the median line, those in the median file smaller.

*Coxae*.—Coxa I with a moderately long internal spur; coxae II, III, and IV with internal spurs lacking but each with a very small conical external spur. All coxae with a few hairs similar to those on the legs.

Vaginal opening between coxae IV. Anal grooves short, sub-parallel, connected and rounded anterior to the anus.

*Spiracular plates*.—Oval; length, 0.21 mm; width, 0.18 mm.

*Type*.—Holotype (female), Rocky Mountain Laboratory, Hamilton, Mont., A. P. 8037.

*Type host*.—Ground squirrel, taken April 2, 1932.

*Type locality*.—Northwest of Antelope, Kings County, Calif.

In size and color this tick resembles *I. muris* which Bishopp and Smith recently described from Massachusetts. The females differ in the following more important characters:

In *jellisoni*: tarsus I is about one and one-half times the length of the metatarsus (0.540 mm to 0.345 mm); auriculae only suggested; spiracular plates moderate in size; hairs on legs and body long, numerous, and conspicuous; hypostome spatulate, of the type found in *I. sculptus*.

In *I. muris*: tarsus I about twice as long as the metatarsus (0.51 mm to 0.25 mm); auriculae definite (retrograde); spiracular plates notably large; hairs on legs and body short and moderate in number; hypostome acuminate, of the type found in *I. angustus*.

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## MIAMI HEALTH OFFICER ACTS TO PREVENT THE INTRODUCTION OF YELLOW FEVER

Owing to the shortening, to 10 hours, of the flight time of airplanes coming to Miami, Fla., from actual or potential foci of yellow fever in South America, thereby increasing the danger of bringing passengers whose arrival, as timed from the date of possible exposure, falls within the incubation period of the disease, Dr. George N. MacDonell, Director of Health of Miami, has issued the following special order regarding such passengers:

### CITY OF MIAMI

#### Department of Public Health

##### SPECIAL ORDER

Any person coming to and remaining in Miami, who, within 6 days previous to his or her arrival in Miami, has been in any city, town, or area which the United States Public Health Service has declared to be an actual or potential focus from which yellow fever might be spread, must, within 24 hours after arriving in the city, report in person to the Department of Public Health, eighth floor of the Courthouse, or telephone 3-4431, between the hours of 8:30 a. m. and 5 p. m. Said person shall be kept under surveillance until 6 days have elapsed from the time of departure from the focus above referred to. Should any febrile condition arise, the Director of Public Health must be notified immediately.

Should said person leave Miami before the expiration of that time, he must report to the Director of Public Health such intention and furnish him information as to his movements during the period of surveillance.

This order shall not apply to transients leaving the city immediately upon arrival nor shall it apply to any person who can show a certificate of immunity to yellow fever.

After office hours and on Saturday afternoon or on Sunday, the Director of Public Health may be reached by calling him over telephone 4-4573.

GEORGE N. MACDONELL, M. D.,

*Director of Public Health.*

JULY 1, 1938.

Should visitors stopping temporarily in Miami depart for some destination in the *Aedes aegypti* area of the United States, the Miami health authorities will notify the proper health authorities to keep such persons under surveillance until the period of observation has elapsed.

In the case of transients who leave the city immediately upon arrival, and who are excepted from the order, officers of the Public Health Service, who have information regarding the destination of the passengers and their movements prior to embarkation, will notify the health officers concerned.

Doctor MacDonell believes that, with the intensive work done by the *Aedes aegypti* Control Unit, sponsored jointly by the United States Public Health Service, the Florida State Board of Health, the Dade County Commission, and the City of Miami, "the surveillance of passengers will go a long way toward preventing the introduction and spread of yellow fever from Southern foci."

Although yellow fever has been eliminated from North America, and has not been reported in any of the ports of the Western Hemisphere for many years, the presence of the disease in the jungle areas of South America, the existence of an animal reservoir, and the fact that there may be vectors of the disease which have not yet been discovered, make it important to observe necessary precautions to prevent its reintroduction into North America. With knowledge of the mode of transmission and methods of control, it is unlikely that this country will ever again be subjected to the frightful ravages of yellow fever which it experienced less than half a century ago; but we should not be soothed to inaction by this relatively brief period of freedom from the infection.

All State and local health officers will no doubt be eager to cooperate in completing the surveillance of airplane passengers from South America arriving in their jurisdictions before the expiration of the observation period.

### DEATHS DURING WEEK ENDED AUGUST 20, 1938

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

	Week ended Aug. 20, 1938	Correspond- ing week, 1937
<b>Data from 88 large cities of the United States:</b>		
Total deaths.....	7,573	17,421
Average for 3 prior years.....	17,205	-----
Total deaths, first 33 weeks of year.....	273,443	296,866
Deaths under 1 year of age.....	534	1,538
Average for 3 prior years.....	1,522	-----
Deaths under 1 year of age, first 33 weeks of year.....	17,530	19,014
<b>Data from industrial insurance companies:</b>		
Policies in force.....	68,423,734	69,683,606
Number of death claims.....	10,854	10,988
Death claims per 1,000 policies in force, annual rate.....	8.3	8.2
Death claims per 1,000 policies, first 33 weeks of year, annual rate.....	9.4	10.2

<sup>1</sup> Data for 86 cities.

# 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.

In these and the following tables, a zero (0) indicates a positive report and has the same significance as any other figure, while leaders (.....) represent no report, with the implication that cases or deaths may have occurred but were not reported to the State health officer.

*Cases of certain diseases reported by telegraph by State health officers for the week ended August 27, 1938, rates per 100,000 population (annual basis), and comparison with corresponding week of 1937 and 5-year median*

Division and State	Diphtheria				Influenza				Measles			
	Aug. 27, 1938, rate	Aug. 27, 1938, cases	Aug. 28, 1937, cases	1933-37 median	Aug. 27, 1938, rate	Aug. 27, 1938, cases	Aug. 28, 1937, cases	1933-37 median	Aug. 27, 1938, rate	Aug. 27, 1938, cases	Aug. 28, 1937, cases	1933-37 median
<b>NEW ENGLAND</b>												
Maine.....	18	3	0	0	-----	-----	-----	-----	-----	-----	7	7
New Hampshire.....	0	0	0	0	-----	-----	-----	-----	-----	-----	4	7
Vermont.....	0	0	0	0	-----	-----	-----	-----	27	2	-----	21
Massachusetts.....	2	2	0	6	-----	-----	-----	-----	42	36	10	7
Rhode Island.....	0	0	0	0	-----	-----	-----	-----	31	4	5	3
Connecticut.....	0	0	1	1	9	3	-----	-----	12	4	8	8
<b>MIDDLE ATLANTIC</b>												
New York.....	4	9	11	18	12	13	12	12	37	93	84	84
New Jersey.....	10	8	6	10	10	8	6	6	14	12	37	32
Pennsylvania.....	8	15	22	22	-----	-----	-----	-----	18	35	129	57
<b>EAST NORTH CENTRAL</b>												
Ohio.....	10	13	14	11	-----	-----	4	2	15	20	93	10
Indiana.....	14	9	7	11	8	5	4	11	8	5	5	5
Illinois.....	9	14	15	19	2	3	5	5	24	36	51	32
Michigan.....	6	6	5	6	1	1	-----	-----	42	39	24	9
Wisconsin.....	2	1	0	2	27	15	28	19	70	39	21	21
<b>WEST NORTH CENTRAL</b>												
Minnesota.....	12	6	1	1	4	2	-----	-----	35	18	2	2
Iowa.....	4	2	0	2	-----	-----	2	-----	20	10	3	3
Missouri.....	4	3	6	9	30	23	7	7	3	2	18	6
North Dakota.....	15	2	2	2	7	1	-----	-----	44	6	-----	3
South Dakota.....	0	0	0	0	-----	-----	-----	-----	-----	-----	1	1
Nebraska.....	4	1	0	3	-----	-----	-----	-----	15	4	3	3
Kansas.....	6	2	2	5	-----	-----	1	-----	25	9	6	5

See footnotes at end of table.

Cases of certain diseases reported by telegraph by State health officers for the week ended August 27, 1938, rates per 100,000 population (annual basis), and comparison with corresponding week of 1937 and 5-year median—Continued

Division and State	Diphtheria				Influenza				Measles			
	Aug. 27, 1938, rate	Aug. 27, 1938, cases	Aug. 28, 1937, cases	1933-37 median	Aug. 27, 1938, rate	Aug. 27, 1938, cases	Aug. 28, 1937, cases	1933-37 median	Aug. 27, 1938, rate	Aug. 27, 1938, cases	Aug. 28, 1937, cases	1933-37 median
<b>SOUTH ATLANTIC</b>												
Delaware	20	1	0	0								
Maryland <sup>2</sup>	3	1	3	5	6	2	2	2	31	10	11	3
Dist. of Col. <sup>2</sup>	0	0	4	4					17	2	3	3
Virginia <sup>2</sup>	44	23	21	22					29	15	16	16
West Virginia	17	6	10	14	36	13	15	15	6	2	4	10
North Carolina <sup>2,4</sup>	67	45	34	34	1	1			84	56	24	13
South Carolina <sup>2,4</sup>	97	35	11	9	311	112	80	80	75	27	5	4
Georgia <sup>4</sup>	59	35	20	20								
Florida <sup>4</sup>	34	11	6	6			2	1			6	6
<b>EAST SOUTH CENTRAL</b>												
Kentucky	16	9	15	22	11	6	5		5	3	37	31
Tennessee <sup>4</sup>	31	17	14	14	16	9	15	13	54	30	14	14
Alabama <sup>4</sup>	52	29	14	33	32	18	4	5	61	34	5	5
Mississippi <sup>1</sup>	39	15	11	16								
<b>WEST SOUTH CENTRAL</b>												
Arkansas	36	14	15	11	46	18	5	4	15	6	4	
Louisiana <sup>4</sup>	27	11	10	12	17	7	5	5	7	3	1	6
Oklahoma	16	8	4	9	20	10	27	6	8	4	5	4
Texas <sup>4</sup>	35	41	15	39	83	98	37	28	13	15	8	8
<b>MOUNTAIN</b>												
Montana	10	1	2	0	116	12			290	30	3	3
Idaho	11	1	3	0	42	4			85	8		
Wyoming	44	2	0	0							1	1
Colorado	34	7	1	4					10	2	16	4
New Mexico	25	2	5	2	12	1			62	5	21	5
Arizona	0	0	2	2	228	18	11	4	38	3		2
Utah <sup>2</sup>	10	1	0	1					60	6	15	4
<b>PACIFIC</b>												
Washington	6	2	2	1					19	6	35	13
Oregon	0	0	4	1	51	10	8	5	25	5	7	7
California	10	12	21	21	10	12	11	11	84	99	24	49
Total	17	425	339	449	21	415	286	286	31	745	776	733
34 weeks	18	14,940	14,062	18,569	69	46,473	274,785	141,878	918	761,325	241,920	342,358

Division and State	Meningitis, meningococcus				Poliomyelitis				Scarlet fever			
	Aug. 27, 1938, rate	Aug. 27, 1938, cases	Aug. 28, 1937, cases	1933-37 median	Aug. 27, 1938, rate	Aug. 27, 1938, cases	Aug. 28, 1937, cases	1933-37 median	Aug. 27, 1938, rate	Aug. 27, 1938, cases	Aug. 28, 1937, cases	1933-37 median
<b>NEW ENGLAND</b>												
Maine	0	0	0	0	0	0	8	2	18	3	2	3
New Hampshire	0	0	0	0	0	0	5	1	0	0	1	1
Vermont	0	0	0	0	14	1	5	1	27	2	1	1
Massachusetts	0	0	3	1	5	4	51	35	29	25	20	46
Rhode Island	0	0	0	0	8	1	1	1	0	0	6	6
Connecticut	0	0	1	1	0	0	7	1	18	6	7	6
<b>MIDDLE ATLANTIC</b>												
New York	0.4	1	8	5	5	12	64	64	17	43	67	73
New Jersey <sup>1</sup>	0	0	2	1	5	4	8	8	16	13	17	19
Pennsylvania	1	2	2	3	3	6	22	11	22	43	78	88

See footnotes at end of table.



Cases of certain diseases reported by telegraph by State health officers for the week ended August 27, 1938, rates per 100,000 population (annual basis), and comparison with corresponding week of 1937 and 5-year median—Continued

Division and State	Meningitis, meningococcus				Poliomyelitis				Scarlet fever			
	Aug. 27, 1938, rate	Aug. 27, 1938, cases	Aug. 28, 1937, cases	1933-37 median	Aug. 27, 1938, rate	Aug. 27, 1938, cases	Aug. 28, 1937, cases	1933-37 median	Aug. 27, 1938, rate	Aug. 27, 1938, cases	Aug. 28, 1937, cases	1933-37 median
<b>EAST NORTH CENTRAL</b>												
Ohio.....	0.8	1	3	1	3	4	50	10	27	35	69	67
Indiana.....	0	0	0	0	0	0	7	2	30	20	24	22
Illinois <sup>1</sup> .....	1.3	2	4	4	7	11	46	15	34	52	42	74
Michigan <sup>1</sup> .....	0	0	2	0	2.2	2	31	9	43	40	93	49
Wisconsin.....	9	5	1	1	14	8	13	3	43	24	19	27
<b>WEST NORTH CENTRAL</b>												
Minnesota.....	0	0	1	1	4	2	14	3	31	16	20	19
Iowa.....	2	1	1	2	8	4	14	1	41	20	15	15
Missouri.....	1.3	1	1	1	2.6	2	29	1	29	22	30	17
North Dakota.....	7	1	0	0	0	0	0	1	37	5	11	9
South Dakota.....	0	0	1	0	15	2	0	1	53	7	13	3
Nebraska.....	0	0	0	0	8	2	19	2	4	1	3	6
Kansas.....	0	0	0	1	0	0	15	2	50	18	18	18
<b>SOUTH ATLANTIC</b>												
Delaware.....	0	0	0	0	0	0	1	1	0	0	0	1
Maryland <sup>1</sup> .....	0	0	0	0	0	0	7	0	9	3	7	14
District of Columbia <sup>1</sup> .....	0	0	5	1	17	2	3	1	42	5	1	4
Virginia <sup>1</sup> .....	0	0	4	1	8	4	2	2	13	7	3	16
West Virginia.....	2.8	1	2	1	0	0	7	5	17	6	29	24
North Carolina <sup>1,4</sup> .....	3	2	1	1	3	2	4	1	31	21	15	16
South Carolina <sup>1,4</sup> .....	0	0	1	0	2.8	1	1	1	25	9	1	2
Georgia <sup>4</sup> .....	0	0	0	0	3	2	4	1	25	15	12	10
Florida <sup>4</sup> .....	0	0	0	0	0	0	1	0	9	3	0	2
<b>EAST SOUTH CENTRAL</b>												
Kentucky.....	0	0	1	1	0	0	4	5	29	16	42	20
Tennessee <sup>4</sup> .....	1.8	1	1	1	4	2	5	6	22	12	17	17
Alabama <sup>4</sup> .....	1.8	1	9	1	1.8	1	4	4	16	9	4	14
Mississippi <sup>1</sup> .....	0	0	1	0	2.6	1	8	1	21	8	2	5
<b>WEST SOUTH CENTRAL</b>												
Arkansas.....	2.5	1	0	0	2.5	1	7	1	13	5	11	6
Louisiana <sup>4</sup> .....	2.4	1	1	1	0	0	4	2	7	3	2	2
Oklahoma.....	0	0	0	0	2	1	25	1	35	17	12	5
Texas <sup>4</sup> .....	2.5	3	1	1	2.5	3	34	4	19	23	16	20
<b>MOUNTAIN</b>												
Montana.....	0	0	0	0	48	5	1	1	68	7	6	3
Idaho.....	0	0	0	0	0	0	0	0	63	6	3	4
Wyoming.....	0	0	0	0	0	0	10	0	67	3	1	2
Colorado.....	5	1	2	0	0	0	28	0	49	10	8	7
New Mexico.....	0	0	1	1	0	0	1	0	12	1	2	2
Arizona.....	0	0	0	0	0	0	2	0	13	1	1	3
Utah <sup>1</sup> .....	0	0	0	0	0	0	1	1	40	4	12	5
<b>PACIFIC</b>												
Washington.....	0	0	0	0	0	0	5	2	31	10	14	12
Oregon.....	0	0	0	0	0	0	0	0	20	4	7	8
California.....	0	0	3	3	3	4	44	24	53	63	59	58
Total.....	1	25	63	51	4	94	622	332	27	666	843	877
34 weeks.....	2.6	2,188	4,250	4,221	1.2	1,028	4,054	4,054	164	137,851	165,702	165,702

See footnotes at end of table.

*Cases of certain diseases reported by telegraph by State health officers for the week ended August 27, 1938, rates per 100,000 population (annual basis), and comparison with corresponding week of 1937 and 5-year median—Continued*

Division and State	Smallpox				Typhoid and paratyphoid fever				Whooping cough	
	Aug. 27, 1938, rate	Aug. 27, 1938, cases	Aug. 28, 1937, cases	1933-37 median	Aug. 27, 1938, rate	Aug. 27, 1938, cases	Aug. 28, 1937, cases	1933-37 median	Aug. 27, 1938, rate	Aug. 27, 1938, cases
<b>NEW ENGLAND</b>										
Maine.....	0	0	0	0	12	2	9	6	225	37
New Hampshire.....	0	0	0	0	0	0	3	1	0	0
Vermont.....	0	0	0	0	27	2	0	0	395	29
Massachusetts.....	0	0	0	0	5	4	3	3	111	94
Rhode Island.....	0	0	0	0	15	2	0	1	0	0
Connecticut.....	0	0	0	0	12	4	0	1	201	67
<b>MIDDLE ATLANTIC</b>										
New York.....	0	0	0	0	17	43	17	30	294	731
New Jersey <sup>1</sup> .....	0	0	0	0	4	3	9	9	335	279
Pennsylvania.....	0	0	0	0	13	25	43	37	109	212
<b>EAST NORTH CENTRAL</b>										
Ohio.....	0	0	1	0	13	17	72	45	166	214
Indiana.....	3	2	1	1	24	16	7	11	24	16
Illinois <sup>2</sup> .....	3	4	1	0	19	29	20	32	346	522
Michigan <sup>3</sup> .....	1	1	0	0	14	13	15	15	320	296
Wisconsin.....	0	0	1	1	2	1	2	2	608	341
<b>WEST NORTH CENTRAL</b>										
Minnesota.....	0	0	0	0	2	1	0	3	92	47
Iowa.....	0	0	4	1	6	3	3	4	98	48
Missouri.....	0	0	1	0	33	25	17	22	26	26
North Dakota.....	7	1	0	0	0	0	3	1	162	22
South Dakota.....	0	0	0	0	8	1	0	1	53	7
Nebraska.....	0	0	0	0	0	0	1	1	38	10
Kansas.....	3	1	0	0	31	11	8	8	201	72
<b>SOUTH ATLANTIC</b>										
Delaware.....	0	0	0	0	0	0	1	2	60	3
Maryland <sup>3</sup> .....	0	0	0	0	65	21	18	18	93	30
District of Columbia <sup>2</sup> .....	0	0	0	0	25	3	2	3	58	7
Virginia <sup>2</sup> .....	0	0	0	0	37	19	20	26	54	28
West Virginia.....	3	1	0	0	62	22	16	25	36	13
North Carolina <sup>2,4</sup> .....	0	0	0	0	31	21	23	21	252	169
South Carolina <sup>2,4</sup> .....	0	0	0	0	39	14	8	19	195	70
Georgia <sup>4</sup> .....	0	0	0	0	63	37	20	30	41	24
Florida <sup>4</sup> .....	0	0	0	0	31	10	0	1	50	16
<b>EAST SOUTH CENTRAL</b>										
Kentucky.....	0	0	1	0	55	31	49	72	102	57
Tennessee <sup>4</sup> .....	0	0	0	0	21	17	32	53	32	18
Alabama <sup>4</sup> .....	0	0	18	0	34	19	8	25	115	64
Mississippi <sup>3</sup> .....	0	0	0	0	21	8	9	9	0	0
<b>WEST SOUTH CENTRAL</b>										
Arkansas.....	0	0	0	0	89	35	37	14	59	23
Louisiana <sup>4</sup> .....	0	0	0	0	34	14	23	26	37	15
Oklahoma.....	0	0	0	0	53	26	24	24	16	8
Texas <sup>4</sup> .....	2	2	0	0	39	46	60	54	85	101
<b>MOUNTAIN</b>										
Montana.....	19	2	16	1	19	2	1	3	677	70
Idaho.....	21	2	4	0	11	1	1	1	74	7
Wyoming.....	0	0	0	0	0	0	0	0	67	3
Colorado.....	19	4	0	0	29	6	9	7	195	40
New Mexico.....	12	1	0	0	49	4	15	7	148	12
Arizona.....	13	1	0	0	89	7	3	3	215	17
Utah <sup>2</sup> .....	0	0	1	0	30	2	2	1	241	24

See footnotes at end of table.



Summary of monthly reports from States—Continued

July 1938—Continued

	Cases		Cases		Cases
Food poisoning:		Paratyphoid fever—Con.		Trichinosis:	
California	123	Louisiana	3	California	3
German measles:		New York	20	New York	10
Alabama	20	Puerperal septicemia:		California	4
California	60	Mississippi	36	Georgia	2
Kansas	1	South Dakota	1	Kansas	2
Montana	7	Washington	1	Louisiana	3
New York	72	Rabies (in animals):		Montana	2
Rhode Island	7	Alabama	41	Oklahoma	1
Washington	8	California	121	Oklahoma	2
Granuloma, coccidioides:		Louisiana	4	Typhus fever:	
California	3	Mississippi	14	Alabama	51
Hookworm disease:		New York	5	California	1
Georgia	616	Rhode Island	6	Georgia	119
Louisiana	5	Washington	18	Louisiana	4
Mississippi	654	Rabies (in man):		Mississippi	2
Impetigo contagiosa:		Georgia	1	New York	1
Montana	6	Mississippi	1	Undulant fever:	
Jaundice, epidemic:		Relapsing fever:		Alabama	8
California	3	California	3	California	19
Leprosy:		Rocky Mountain spotted fever:		Georgia	10
California	2	Alabama	2	Kansas	9
Georgia	1	Montana	3	Louisiana	3
Louisiana	1	Nevada	2	Mississippi	2
Mississippi	2	Septic sore throat:		Montana	1
Mumps:		California	5	New York	13
Alabama	24	Georgia	34	Oklahoma	170
California	639	Kansas	4	Washington	8
Georgia	23	Louisiana	50	Vincent's infection:	
Kansas	116	Montana	1	Kansas	10
Louisiana	1	New York	55	New York	73
Mississippi	114	Oklahoma	38	Oklahoma	1
Montana	12	Rhode Island	8	Washington	2
Nevada	4	Washington	4	Whooping cough:	
Oklahoma	4	Tetanus:		Alabama	204
Rhode Island	14	Alabama	4	California	962
South Dakota	11	California	6	Georgia	288
Washington	139	Georgia	5	Kansas	369
Ophthalmia neonatorum:		Kansas	1	Louisiana	222
California	1	Louisiana	3	Mississippi	926
Louisiana	4	New York	4	Montana	241
Mississippi	5	Trachoma:		Nevada	10
New York	5	California	7	New York	2,303
Oklahoma	1	Georgia	2	Oklahoma	167
Rhode Island	1	Louisiana	11	Rhode Island	61
Paratyphoid fever:		Mississippi	6	South Dakota	63
California	6	Oklahoma	8	Washington	241
Georgia	5				
Kansas	4				

PLAGUE INFECTION IN CALIFORNIA AND NEW MEXICO

IN GROUND SQUIBBELS IN SAN BERNARDINO COUNTY, CALIF.

Under date of August 24, 1938, Dr. W. M. Dickie, State Director of Health of California, reported plague infection proved in one *fisheri* squirrel collected August 4, 9 miles east of Mentone, San Bernardino County.

IN PRAIRIE DOGS AND IN POOLS OF FLEAS FROM PRAIRIE DOGS AND FIELD MICE IN CATRON COUNTY, N. MEX.

Under date of August 20, 1938, Senior Surg. C. R. Eskey reported plague infection proved in prairie dogs (*Cynomys gunnisoni zuniensis*) and in pools of fleas from prairie dogs and field mice (*Peromyscus* sp.) in Catron County, as indicated below.

It is believed that these reports present the first evidence of the existence of plague in the State of New Mexico.

In pools of fleas, in animals and tissue from animals all within 4 to 7 miles north, west, and northwest of Adams Diggings, Catron County, as follows: 19

fleas from one prairie dog found dead August 9; 8 fleas from one prairie dog found dead August 9; 98 fleas from 8 prairie dogs shot August 10; 6 fleas from two field mice trapped August 10; 56 fleas from 6 prairie dogs shot August 11; 98 fleas from 10 prairie dogs shot August 12; 131 fleas from 12 prairie dogs shot August 12; one prairie dog found dead August 9; tissue from one prairie dog found dead August 9; and tissue from one prairie dog found dead August 12.

### WEEKLY REPORTS FROM CITIES

City reports for week ended August 20, 1938

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.

State and city	Diph- theria cases	Influenza		Meas- les cases	Pneu- monia deaths	Scar- let fever cases	Small- pox cases	Tuber- culosis deaths	Ty- phoid fever cases	Whoop- ing cough cases	Deaths, all causes
		Cases	Deaths								
Data for 90 cities: 5-year average..	99	39	13	256	233	258	3	352	98	1,167	-----
Current week..	81	26	15	164	251	185	7	311	92	1,898	-----
Maine:											
Portland.....	0	-----	0	0	2	0	0	1	1	1	20
New Hampshire:											
Concord.....	0	-----	0	0	3	0	0	0	0	0	10
Manchester.....	0	-----	0	0	1	0	0	0	0	0	12
Nashua.....	0	-----	0	0	0	0	0	0	0	0	4
Vermont:											
Barre.....	0	-----	0	0	0	0	0	1	0	0	3
Burlington.....	0	-----	0	0	0	0	0	0	0	1	9
Rutland.....	0	-----	0	0	0	0	0	0	0	0	2
Massachusetts:											
Boston.....	1	-----	0	9	1	9	0	6	1	26	197
Fall River.....	0	-----	0	0	0	1	0	0	0	1	26
Springfield.....	0	-----	0	3	0	0	0	2	0	4	25
Worcester.....	0	-----	0	0	3	0	0	4	0	3	45
Rhode Island:											
Pawtucket.....	0	-----	0	0	0	0	0	0	0	0	17
Providence.....	0	-----	0	0	5	0	0	2	2	10	60
Connecticut:											
Bridgeport.....	0	-----	0	0	1	0	0	2	0	1	27
Hartford.....	0	-----	0	0	1	0	0	0	4	1	-----
New Haven.....	0	-----	1	0	0	1	0	0	0	7	50
New York:											
Buffalo.....	0	-----	0	2	6	3	0	9	0	33	127
New York.....	13	-----	0	39	55	18	0	63	26	413	1,284
Rochester.....	0	-----	0	4	3	0	0	1	1	10	54
Syracuse.....	0	-----	0	8	0	2	0	0	0	11	54
New Jersey:											
Camden.....	1	-----	0	1	0	0	0	0	0	4	25
Newark.....	1	-----	0	2	1	4	0	3	0	66	79
Trenton.....	1	-----	0	0	0	0	0	3	1	0	30
Pennsylvania:											
Philadelphia.....	3	-----	1	4	11	3	0	21	2	77	416
Pittsburgh.....	0	-----	0	0	4	2	0	3	1	23	135
Reading.....	0	-----	0	0	2	0	0	1	0	1	27
Scranton.....	0	-----	0	0	-----	0	0	-----	1	0	-----
Ohio:											
Cincinnati.....	2	-----	0	1	3	5	0	5	3	11	123
Cleveland.....	0	-----	3	0	10	6	4	17	0	67	163
Columbus.....	3	-----	0	1	2	1	0	6	0	1	84
Toledo.....	1	-----	0	5	2	0	0	0	2	16	62
Indiana:											
Anderson.....	0	-----	0	0	3	2	0	0	0	0	13
Fort Wayne.....	1	-----	0	0	2	0	0	0	1	0	23
Indianapolis.....	1	-----	0	1	5	2	0	4	0	5	96
Muncie.....	0	-----	0	0	0	3	1	0	0	0	12
South Bend.....	0	-----	0	1	2	1	0	0	0	0	16
Terre Haute.....	0	-----	1	0	2	0	0	0	0	0	11
Illinois:											
Alton.....	0	-----	0	0	1	0	0	0	0	0	6
Chicago.....	8	-----	2	0	8	14	39	0	23	1	400
Elgin.....	0	-----	0	0	0	0	0	0	0	2	12
Moline.....	0	-----	0	0	0	0	0	0	0	0	7
Springfield.....	0	-----	0	0	0	1	0	0	1	9	18
Michigan:											
Detroit.....	1	-----	1	0	4	4	11	0	9	5	187
Flint.....	0	-----	0	0	1	3	0	1	0	1	22
Grand Rapids.....	3	-----	0	2	2	5	2	2	1	8	33

City reports for week ended August 20, 1938—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								
<b>Wisconsin:</b>											
Kenosha	0		0	0	0	0	0	0	0	8	7
Madison	0		0	1	0	0	0	0	0	1	9
Milwaukee	0		0	3	6	6	0	2	0	245	103
Racine	0		0	1	0	0	0	2	0	18	14
Superior	0		0	2	0	2	0	0	0	1	10
<b>Minnesota:</b>											
Duluth	0		0	1	1	0	0	1	0	16	22
Minneapolis	1		0	5	2	1	0	3	0	13	86
St. Paul	0		0	1	4	0	0	3	0	15	54
<b>Iowa:</b>											
Cedar Rapids	0			1		0	0		0	2	
Davenport	0			0		0	0		0	0	
Des Moines	0		0	0	0	2	0	0	1	0	25
Sioux City	0			2		1	0		0	4	
Waterloo	2			0		1	0		0	2	
<b>Missouri:</b>											
Kansas City	0		1	1	3	3	0	8	1	1	81
St. Joseph	0		0	0	3	0	0	0	0	0	12
St. Louis	4		0	1	3	2	0	6	1	5	198
<b>North Dakota:</b>											
Fargo	0		0	1	1	2	0	0	0	0	6
Grand Forks	0			1		0	0		0	0	
Minot	0		0	0	0	0	0	0	0	0	6
<b>South Dakota:</b>											
Aberdeen	0			0		0	0		0	0	
Sioux Falls	0		0	0	0	0	0	0	0	0	9
<b>Nebraska:</b>											
Lincoln	0		0	1	0	1	0	0	0	16	16
Omaha	0		0	3	4	0	0	0	1	0	45
<b>Kansas:</b>											
Lawrence	0		0	0	0	0	0	0	0	0	6
Topeka	0		0	0	3	2	0	0	1		5
Wichita	0		0	1	0	0	0	2	0	2	21
<b>Delaware:</b>											
Wilmington	0		0	0	1	0	0	1	1	1	37
<b>Maryland:</b>											
Baltimore	1		4	2	7	2	0	12	2	30	221
Cumberland	0		0	0	0	0	0	0	0	0	15
Frederick	0		0	0	0	0	0	0	0	0	4
<b>Dist. of Columbia:</b>											
Washington	1		0	2	8	4	0	9	3	7	177
<b>Virginia:</b>											
Lynchburg	1		0	0	1	0	0	1	0	0	13
Norfolk	0		0	0	1	0	0	1	0	0	26
Richmond	0		1	0	2	0	0	1	1	0	45
Roanoke	1		0	0	0	0	0	0	0	10	13
<b>West Virginia:</b>											
Charleston	0		0	0	0	0	0	0	0	0	9
Wheeling	0		0	0	0	1	0	1	1	0	16
<b>North Carolina:</b>											
Gastonia	1			0		0	0		0	0	
Raleigh	1		0	0	0	0	0	0	0	5	7
Wilmington	0		0	0	0	1	0	0	0	0	7
Winston-Salem	0		0	2	0	1	0	0	0	0	9
<b>South Carolina:</b>											
Charleston	0	1	0	0	1	0	0	0	1	0	17
Florence	0		0	0	2	0	0	0	0	0	13
Greenville	1		0	3	2	0	0	1	0	4	15
<b>Georgia:</b>											
Atlanta	5	4	0	0	5	3	0	5	2	10	80
Brunswick	0		0	0	1	0	0	0	0	0	5
Savannah	1		0	0	3	0	0	1	3	2	34
<b>Florida:</b>											
Miami	0		0	0	3	0	0	2	0	2	28
Tampa	0		0	1	0	0	0	2	0	0	19
<b>Kentucky:</b>											
Ashland	0			0		0	0		1	0	
Covington	0		0	0	2	0	0	0	0	3	16
Lexington	0		0	0	1	0	0	0	0	0	18
Louisville	1		0	4	4	3	0	3	1	8	70
<b>Tennessee:</b>											
Knoxville	0		0	0	2	0	0	2	0	3	30
Memphis	0		2	0	0	5	0	4	1	1	69
Nashville	0		0	1	3	0	0	2	0	12	54
<b>Alabama:</b>											
Birmingham	0		3	1	1	1	0	0	4	0	71
Mobile	1		1	1	1	1	0	0	0	0	26
Montgomery	0			0		1	0		0	0	

## City reports for week ended August 20, 1938—Continued

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Small-pox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Arkansas:											
Fort Smith	0			0		5	0		0	0	
Little Rock	0		0	0	0	0	0	1	0	0	2
Louisiana:											
New Orleans	2	1	3	0	15	3	0	8	4	28	174
Shreveport	0		0	0	4	1	0	1	1	0	35
Oklahoma:											
Oklahoma City	0	3	1	0	2	2	0	1	0	0	37
Texas:											
Dallas	4	1	1	2	0	1	0	1	0	4	56
Fort Worth	0		0	1	3	0	0	1	0	2	28
Galveston	0		0	0	0	1	0	1	0	0	13
Houston	2		0	1	0	1	0	0	2	4	87
San Antonio	1		0	0	3	0	0	7	1	0	65
Montana:											
Billings	0		0	0	0	0	0	0	0	4	5
Great Falls	0		0	0	0	0	0	0	0	6	8
Helena	0			1	0	0	0	0	0	0	
Missoula	0		0	0	1	0	0	0	0	0	6
Idaho:											
Boise	0		0	0	0	0	0	0	0	0	4
Colorado:											
Colorado											
Spring	0		0	0	1	0	0	1	0	7	10
Denver	3		0	2	6	3	0	4	0	10	73
Pueblo	1		0	0	1	0	0	0	0	0	8
New Mexico:											
Albuquerque	0		0	0	0	0	0	3	0	0	7
Utah:											
Salt Lake City	1		0	1	1	0	0	4	1	11	33
Washington:											
Seattle	1		1	0	1	0	2	5	1	4	94
Spokane	0		0	2	0	0	0	0	3	2	28
Tacoma	0		0	0	2	2	1	0	1	1	29
Oregon:											
Portland	0		0	4	1	4	0	0	0	10	80
California:											
Los Angeles	10	2	0	13	6	20	2	15	1	26	256
Sacramento	0		0	5	1	2	0	0	3	0	24
San Francisco	0		0	8	3	0	0	7	0	14	147

State and city	Meningitis, meningococcus		Poliomyelitis cases	State and city	Meningitis, meningococcus		Poliomyelitis cases
	Cases	Deaths			Cases	Deaths	
Massachusetts:							
Worcester	1	0	0	Missouri:			
New York:							
Buffalo	2	2	0	St. Louis	0	0	1
New York	3	1	3	Nebraska:			
New Jersey:							
Newark	0	0	2	Omaha	0	0	1
Pennsylvania:							
Philadelphia	0	0	3	District of Columbia:			
Pittsburgh	0	0	1	Washington	0	0	3
Ohio:							
Cleveland	0	0	2	Georgia:			
Toledo	1	0	1	Savannah	0	0	1
Illinois:							
Chicago	1	0	0	Kentucky:			
Michigan:							
Detroit	0	0	2	Lexington	0	0	1
Minnesota:							
Duluth	0	0	1	Alabama:			
Minneapolis	0	0	1	Birmingham	0	0	1
St. Paul	0	0	1	Louisiana:			
California:							
				New Orleans	0	1	1
				Texas:			
				Fort Worth	0	0	1
				Galveston	1	0	0
				California:			
				San Francisco	0	0	1

*Encephalitis, epidemic or lethargic.*—Cases: Boston, 1; New York, 1; Grand Forks, 1; Minot, 1; New Orleans, 1.

*Pellagra.*—Cases: Atlanta, 7; Savannah, 9; Birmingham, 1.

*Rabies in man.*—Deaths: Dallas, 1.

*Typhus fever.*—Cases: Charleston, S. C., 2; Savannah, 2; Mobile, 1; Fort Worth, 1.

## FOREIGN AND INSULAR

### CANADA

*Provinces—Communicable diseases—2 weeks ended August 13, 1938.*—During the 2 weeks ended August 13, 1938, cases of certain communicable diseases were reported by the Department of Pensions and National Health of Canada as follows:

Disease	Prince Edward Island	Nova Scotia <sup>1</sup>	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alber-ta	British Columbia	Total
Cerebrospinal meningitis.....			1	2		1				4
Chickenpox.....		4		29	112	21	58	7	48	279
Diphtheria.....		13	1	45	7	4	3	4		77
Dysentery.....				2					27	29
Erysipelas.....				3	1	5				9
Influenza.....		5			46	7				66
Lethargic encephalitis.....				1						1
Measles.....		49		85	141	6	4	10	17	312
Mumps.....					24	11	4	9	3	51
Paratyphoid fever.....					9	1				10
Pneumonia.....		3			19				7	29
Poliomyelitis.....		1	2	2	30	7	5	14	7	68
Scarlet fever.....		9	3	47	57	18	16	20	24	194
Tuberculosis.....	1	8	12	90	128	41	20	3	23	326
Typhoid fever.....		2	15	38	13	2	4		5	79
Undulant fever.....				5	3				1	9
Whooping cough.....		6		143	343	35	2	4	42	575

<sup>1</sup> For 2 weeks ended Aug. 17, 1938.

### FINLAND

*Communicable diseases—July 1938.*—During the month of July 1938, cases of certain communicable diseases were reported in Finland as follows:

Disease	Cases	Disease	Cases
Diphtheria.....	143	Poliomyelitis.....	14
Dysentery.....	3	Scarlet fever.....	388
Influenza.....	583	Typhoid fever.....	11
Paratyphoid fever.....	17	Undulant fever.....	3



## ITALY

*Communicable diseases—4 weeks ended June 19, 1938.*—During the 4 weeks ended June 19, 1938, cases of certain communicable diseases were reported in Italy as follows:

Disease	May 23-29	May 30-June 5	June 6-12	June 13-19
Anthrax.....	6	14	13	20
Cerebrospinal meningitis.....	23	32	28	18
Chickenpox.....	468	480	437	260
Diphtheria.....	368	413	387	372
Dysentery.....	18	22	15	37
Hookworm disease.....	34	30	39	65
Lethargic encephalitis.....		4	1	1
Measles.....	3,006	3,175	2,701	2,543
Mumps.....		239	226	193
Paratyphoid fever.....	27	40	62	68
Pellagra.....	26	51	36	31
Poliomyelitis.....	12	14	20	31
Puerperal fever.....	20	25	28	35
Rabies.....			1	
Scarlet fever.....	275	350	272	264
Typhoid fever.....	210	258	304	281
Undulant fever.....	141	179	156	146
Whooping cough.....	556	556	530	509

## SCOTLAND

*Vital statistics—Quarter ended June 30, 1938.*—Following are vital statistics for Scotland for the quarter ended June 30, 1938:

	Number	Rate per 1,000 population		Number	Rate per 1,000 population
Population.....	4,985,300		Deaths from—Continued.		
Number of marriages.....	9,425	7.6	Influenza.....	78	.06
Births.....	23,999	19.3	Measles.....	237	.19
Deaths.....	15,604	12.6	Pneumonia.....	948	.76
Deaths under 1 year of age.....	1,563	1.65	Scarlet fever.....	24	.02
Deaths from:			Tuberculosis.....	950	.76
Cerebrospinal fever.....	24	.02	Whooping cough.....	47	.04
Diphtheria.....	101	.08			

<sup>1</sup> Per 1,000 live births.

## 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 August 26, 1938, pages 1544-1558. A similar cumulative table will appear in future issues of the PUBLIC HEALTH REPORTS for the last Friday of each month.

## Cholera

*China.*—During the week ended August 20, 1938, cases of cholera were reported in China as follows: Canton, 3; Hong Kong, 38; Macao, 50; Shanghai, 959; Swatow, 7. (Under date of August 25, 1938, the Consul General at Shanghai reported that for the week ended August 20, 1938, there had been reported 1,365 new cases of cholera, with 263 deaths in Shanghai and outlying areas, 65 percent of which new cases were said to be true cholera.)

*Indochina (French).*—During the week ended August 20, 1938, 53 cases of cholera were reported in Annam Province and 3 cases of cholera in Hanoi, French Indochina.

#### Plague

*India.*—During the week ended August 27, 1938, 1 fatal case of plague was reported in Cochin, India. During the week ended August 20, 1938, 1 fatal case of plague was reported in Rangoon, India.

*United States.*—A report of plague infection in San Bernardino County, California, and in Catron County, New Mexico, appears on page 1628 of this issue of PUBLIC HEALTH REPORTS.