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THE PRODUCTION OF CARIOUS LESIONS IN THE MOLAR TEETH OF HAMSTERS (*C. AURATUS*)¹

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Investigations concerning the etiology of dental caries have been handicapped by the lack of a suitable laboratory animal which will develop dental caries similar in all respects to human dental caries. Numerous species have been tried, but at present the albino rat is the only common laboratory animal which is used to any great extent in experimental caries studies. A factor difficult to evaluate in studies on rat caries is the etiological importance of the particle size of the cereals used in the caries-producing diets. Diets which contain coarse ground cereals will produce carious lesions in the molar teeth of rats, but the same diet with finely ground cereals will not (1, 2, 3). This fact has restricted the use of synthetic diets in experimental caries studies in rats.

Examinations of the molar teeth of Syrian hamsters (*C. auratus*) at the National Institute of Health revealed an occlusal configuration somewhat similar to that of rat molar teeth. It was also found that hamsters occasionally had lesions resembling caries in their molar teeth. These observations suggested an investigation of the susceptibility of these teeth to induced caries. Results of preliminary experiments indicated that cereal-containing diets similar to those used in studies on induced caries in rats were also effective in hamsters. Experiments were then planned to determine whether the particular size of the cereal in the diet had the same etiological influence on dental caries in hamsters as it does in rats. A second experiment was made to test the feasibility of using cornstarch rather than corn meal in the caries-producing diet.

EXPERIMENTAL PLAN

The animals in these experiments were young male and female hamsters from the stock colony at the National Institute of Health. After weaning, all animals were kept on a stock ration consisting of food pellets plus lettuce and carrots until they were 35 days of age.

¹ From the Division of Infectious Diseases, National Institute of Health.

In the first experiment 90 litter mates were distributed into 3 groups, and each group was fed one of the following diets:

No. 510.—Corn meal, 66 percent; whole-milk powder, 30 percent; alfalfa, 3 percent; NaCl, 1 percent. The corn meal used in this diet was a coarse ground meal of which only 3 percent passed a 60-mesh sieve.

No. 512.—The same ingredients as diet No. 510, but the corn meal was ground in a ball mill for 48 hours before mixing with the other constituents. Tests indicated that practically all of this corn meal passed a 60-mesh sieve after such treatment.

Stock ration.—Commercially prepared food pellets with a guaranteed analysis as follows: Not less than 17.5 percent protein, not less than 2.5 percent fat, not more than 8.5 percent fiber, and not less than 58.0 carbohydrate.

All animals were given carrots or lettuce once each week and received distilled water and diet *ad libitum*. The animals were kept on these diets for 90 to 95 days at which time they were sacrificed. The jaws and teeth were separated from the surrounding tissues and dried. The molar teeth were examined by the use of a wide field low power microscope (X22.5) and all dental lesions recorded.

In the second experiment a group of 26 male and 26 female hamsters was given a diet (No. 610) similar in all respects to diet No. 510 described above except that cornstarch was used instead of corn meal. The animals were fed this diet and distilled water *ad libitum* plus lettuce or carrots once each week for a period of 95 to 100 days, at which time they were killed. The jaws and teeth were removed and dried, and the molar teeth were examined by low power microscope as in the first experiment. All observable dental lesions were recorded.

RESULTS

Data in respect to the incidence and amount of dental caries observed in hamsters fed these different diets are shown in tables 1 and 2.² The results are recorded on the basis of two types of carious lesions, occlusal and cervical. Occlusal carious lesions are those which apparently originated in pits or fissures on the occlusal area of the tooth, being similar in macroscopic appearance to carious lesions on the occlusal surfaces of the molar teeth of rats and humans. Cervical carious lesions are those lesions which occurred on the mesial surface of the first molars, both upper and lower, near the cemento-enamel junction and extending around the cervical portion of the tooth usually more to the lingual than to the buccal.³

² Attention is called to the fact that the results are recorded for male and female animals together as there was a relatively equal distribution of sex in each group. However, we were impressed by the fact that in these two experiments the males in each group had the greater number of teeth affected. Further study will be necessary to evaluate this variable respecting possible sex differences.

³ Although this lesion was recorded only on the first molars in these animals, other questionable areas were observed on the second and third molars. It was deemed advisable at the present time to consider these areas on the proximal of the second and third molars as questionable caries until they can be studied more carefully by the use of ground sections.

In order to give the reader an idea as to the occlusal anatomy of hamster teeth, a photograph of an artist's sketch of the occlusal surfaces of the upper and lower molars of the rat and the hamster is shown in figure 1. As may be seen in this photograph, there are distinct differences in the occlusal areas of the molar teeth of these two animals, although the general configuration is of similar type. In the rat molars narrow deep fissures are found, but in the hamster teeth the fissures are shallow and wide. There is considerably more exposed dentine on the tips of the cusps of the rat molars than on the cusps of the hamster teeth. Features such as these should be considered when comparing caries in hamsters with rat and human caries. Photographs of the different types and sizes of lesions observed in the teeth of the animals used in these experiments are presented in figure 2.

TABLE 1.—*The incidence and amount of caries in the molar teeth of hamsters fed three different diets*

Treatment	Number of animals	Number of litters	Occlusal caries ¹			Cervical caries ¹			Animals showing either or both types of caries		
			Animals with	Teeth with—			Animals with	Teeth with—			
				Upper	Lower	Both		Upper		Lower	Both
Diet No. 512 (fine corn meal):											
Number.....	28	11	18	38	40	78	17	8	29	37	22
Percent ²			64	23	24	23	61	14	52	33	79
Average number per animal ³				2.1	2.2	4.3		0.5	1.7	2.2	
Diet No. 510 (coarse corn meal):											
Number.....	28	12	14	11	20	31	5	2	8	10	14
Percent.....			50	7	12	9	18	4	14	18	50
Average number per animal				0.8	1.4	2.2		0.4	1.6	2.0	
Diet—Stock ration:											
Number.....	30	12	4	0	4	4	0	0	0	0	4
Percent.....			13	0	2	1	0	0	0	0	13
Average number per animal				0	1.0	1.0		0	0	0	

¹ Defined in the text.

² The percentages for teeth with occlusal caries are based on six upper and six lower molar teeth per hamster but the percentages for teeth with cervical caries are based on the two upper and two lower first molars per animal.

³ Averages are based only on the number of hamsters in each group which showed caries

The results shown in table 1 indicate that carious lesions occurred in some of the hamsters on all three diets, but there is a considerable difference in the incidence and amount that occurred. Those animals which were fed diet No. 512 (fine corn meal) had a greater percentage of their molar teeth showing carious lesions of both the occlusal and cervical types than did their litter mates in either of the other two groups. In those hamsters that had carious teeth the average number of teeth with occlusal lesions was twice as high in the animals that received diet No. 512 as in those fed diet No. 510 and four times as great as in those given a stock ration.

The results of the second experiment, shown in table 2, indicate that carious lesions can be produced in the molar teeth of hamsters when the diet contains cornstarch rather than corn meal. Of the 52

animals fed this cornstarch diet, 30, or 58 percent, had occlusal caries, and 66, or 21 percent, of their molar teeth were affected. Almost 50 percent of this group showed cervical caries with 48, or 23 percent, of their first molars affected. There is also some evidence in these results that there may be a difference in the caries susceptibility of different litters, for example, litter No. 210 had 100 percent of the animals showing occlusal caries, whereas litter No. 209 had only 30 percent with this type of lesion. More animals and more litters, however, would be needed to determine whether or not this litter membership factor is as important in hamster studies as has been reported for rats (4).

TABLE 2.—The incidence and amount of caries in the molar teeth of hamsters fed a diet, the cereal content of which was cornstarch

Litter No.	Number of animals	Occlusal caries ¹				Cervical caries ¹				Number of animals showing either or both types of caries
		Animals with	Teeth with—			Animals with	Teeth with—			
			Upper	Lower	Both		Upper	Lower	Both	
188.....	4	3	1	4	5	1	1	2	3	3
190.....	9	3	1	3	4	8	1	11	12	8
195.....	3	2	3	4	7	1	0	2	2	2
200.....	7	3	2	2	4	2	0	3	3	3
201.....	8	5	4	3	7	1	0	2	2	6
209.....	10	3	2	6	8	5	2	9	11	6
210.....	11	11	7	24	31	6	4	11	15	11
Total.....	52	30	20	46	66	24	8	40	48	39
Percent ²		58	6	15	21	46	8	38	23	75
Average number per carious hamster.....			0.6	1.5	2.2		0.3	1.6	2.0	

¹ As defined in the text.

² The percentages for teeth with occlusal caries are based on 12 molar teeth per animal; the percentages for teeth with cervical caries are based on the two upper and two lower first molars per animal.

DISCUSSION

Insofar as is known this is the first report of carious lesions being produced in the molar teeth of the Syrian hamster. This finding opens a new field in the study of experimental dental caries in an animal which, like the rat, is a good laboratory animal. Also of importance is the fact that carious lesions occurred in those animals which received a diet containing fine ground corn meal. This result indicates that the hamster may be a better experimental animal for studying dental caries than the rat, since it is apparently necessary in the case of the latter animal to have coarse cereal particles present in the diet in order to induce dental caries.

Obviously too little is known at present concerning these carious lesions in hamster teeth to theorize as to their etiology. From the

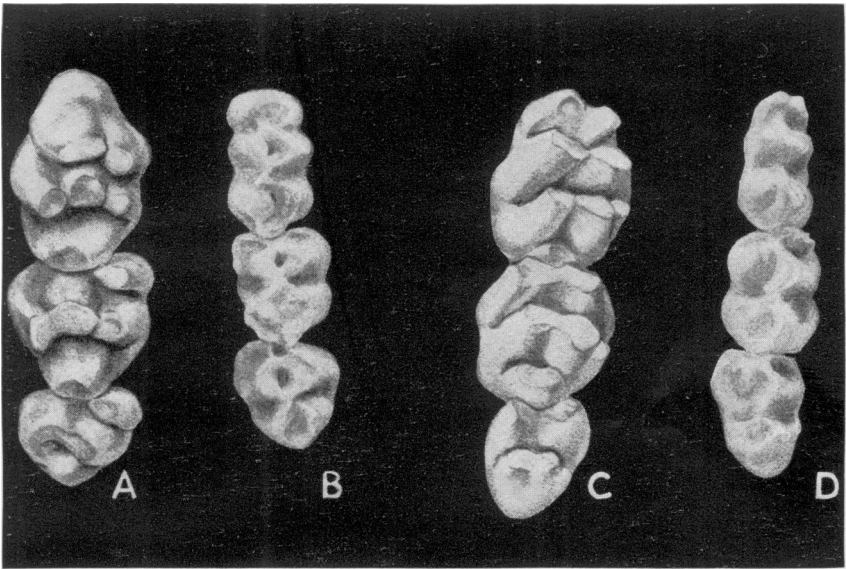


FIGURE 1.—A photograph of an artist's sketch of the upper and lower right molars of the rat (A and C) and the hamster (B and D).

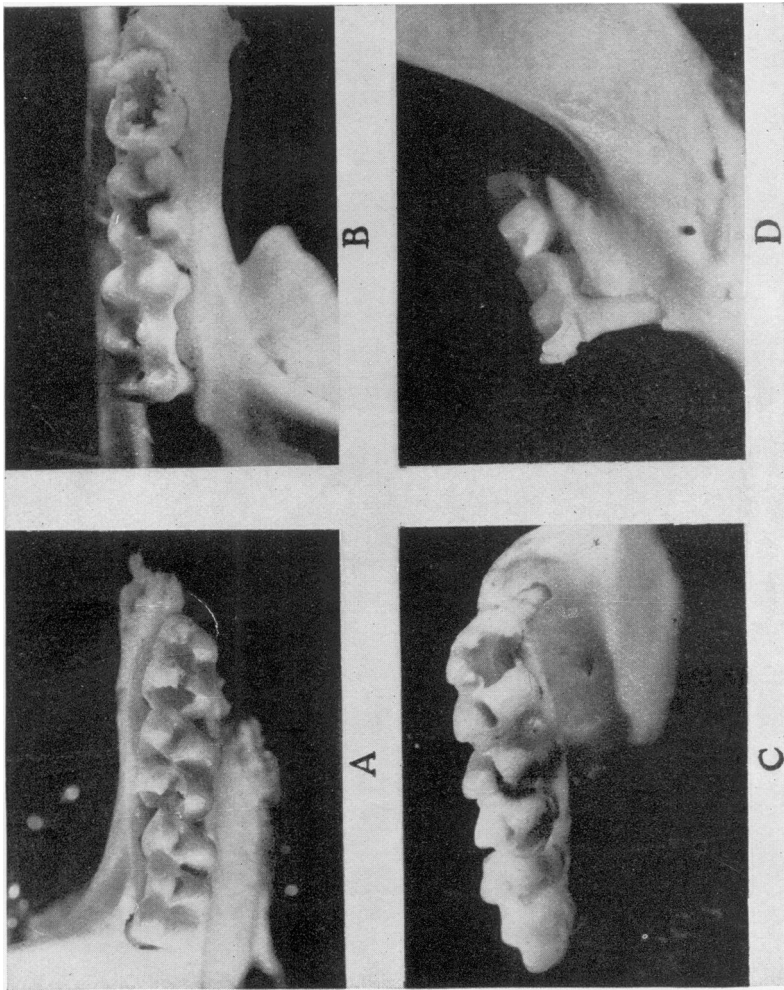


FIGURE 2.—Photographs of carious lesions in the molar teeth of hamsters: (A) Lesions in the upper left molars involving the mesio-occlusal angle of the second molar and the mesio-occlusal and centro-occlusal portions of the third molar. (B) A lesion involving almost the entire occlusal area of the upper right third molar. (C) Lesions involving the buccal and occlusal surfaces of the lower left second and third molars. (D) Cervical type of lesion involving the mesio-buccal angle and extending onto the lingual and buccal surfaces in the cervical region of the lower left first molar.

observations made so far without the aid of microscopic sections, it appears that the carious process originates in the enamel and progresses into the dentine. Lesions were found which had a small enamel opening leading to a much larger decalcified area in the dentine, thus leaving overhanging enamel edges. Other lesions had progressed to the point where almost all of the crown of the tooth was destroyed. Similar to dental caries in humans and rats, the susceptible areas on the occlusal surface of the molars in hamsters appear to be those places favorable for the retention of food particles. However, it may be well to emphasize that those factors involved in the retention of food particles on the occlusal surfaces of the teeth may be different in the hamster from those in the rat. When one considers the difference in the anatomy of the molar teeth of these animals (fig. 1), it appears likely that conditions favoring a severe *impaction* of food particles are present to a much greater degree in the molars of the rat than in those of the hamster. Although the facilities favoring food impaction are apparently reduced in hamster teeth, carious lesions occurred in those animals fed a finely ground diet as well as in those receiving the coarse ground cereal diet. Such results suggest that enamel fracture caused by impaction of food particles was of little or no importance in the production of the carious lesions found on the occlusal surfaces of the molar teeth of these animals.

Another interesting observation made on these hamsters was the presence of a cervical type of dental lesion in those animals given the caries-producing diets (fig. 2D). These lesions were similar macroscopically to that type of caries which occurs on the cervical portions of the buccal and lingual surfaces of the molar teeth of humans. The observations made so far indicate that the lesion in hamsters started near the cemento-enamel junction, usually on the mesial surface of the first molars, and progressed around the cervical portion of the tooth. Sometimes the lesion involved a good portion of the mesial, lingual, and buccal surfaces. Future studies may show that these lesions are comparable to smooth surface caries in human teeth.

The results obtained in the second experiment (table 2), in which cornstarch replaced corn meal in the diet, seem encouraging from the standpoint of using synthetic diets in experimental caries studies on this animal. As they are not litter mate animals, the results on the hamsters in this experiment are not directly comparable to the results obtained in the first experiment (table 1). It would appear, however, that the cornstarch diet has definite caries-producing qualities because the incidence, amount, and type of caries observed in the hamsters fed this diet were similar to those found in the group of animals which received the coarse corn meal ration (No. 510).

SUMMARY

1. Carious lesions have been produced in the molar teeth of a new and practical laboratory animal, the Syrian hamster (*C. auratus*).

2. The production of these carious lesions is not dependent upon the presence of a coarse particle cereal in the diet, as the greatest amount of caries occurred in those animals fed a finely ground corn meal ration.

3. Carious lesions were observed in the molar teeth of hamsters fed a diet in which cornstarch replaced the corn meal. This result suggests the possibility of adapting a strictly synthetic diet to the study of experimental caries in these animals.

4. At least two distinct types of lesions were observed; one originated in the pits and fissures of the occlusal area of the molar teeth, and the other originated in the cervical portions of the proximal surfaces, mostly in the upper and lower first molars.

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AN ANALYSIS OF SANITARY FACILITIES IN THE UNITED STATES*

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In an earlier report,¹ availability of sanitary facilities by family income and by color were presented for households in each of 83 cities and in 23 rural counties enumerated in the National Health Survey.² This paper supplements the material already reported upon

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¹ Adequacy of urban housing in the United States as measured by degree of crowding and type of sanitary facilities. National Health Survey, Preliminary Reports, Sickness and Medical Care Series, Bulletin No. 5, Division of Public Health Methods, National Institute of Health, U. S. Public Health Service, Washington, 1938 (Reprinted, 1939).

See also Britten, R. H., Brown, J. E., and Altman, I.: Certain characteristics of urban housing and their relation to illness and accidents: Summary of findings of the National Health Survey. *Milbank Memorial Fund Quarterly*, 18: 91 (1940).

² A description of the technique employed in the National Health Survey for securing information pertaining to sanitary facilities is contained in a paper by Perrott, G. St. J., Tibbitts, C., and Britten, R. H.: The National Health Survey: Scope and method of the Nation-wide canvass of sickness in relation to its social and economic setting. *Pub. Health Rep.*, 54: 1663 (1939) (Reprint 2096).

by presenting tabulations of sanitary facilities³ by geographic area and color, by city size, by type of dwelling, and by monthly rental or owner's estimate of dwelling value in dollars.

This report is based largely on information gathered from 611,698 households (known as to type of toilet facilities) within the city limits of 83 urban communities in 18 States. The data were collected by trained enumerators from the housewife or other responsible member of the household. The cities were chosen to be representative of urban United States generally and have been classified into four geographic regions. Rural areas of 23 counties were included, 16 of which were in Georgia, 3 in Missouri, and 4 in Michigan. It is believed that the data obtained reflect accurately conditions in the urban communities in each broad region. However, the rural data represent only the counties for which information is available.

Approximately 10 percent of all urban households canvassed in the survey were excluded from this report by confining consideration to those households containing "real" families; that is, households with at least one person related to the head. Those omitted were mainly single-person households, dormitories, and rooming houses in charge of individuals with no person related to them living in the household.

Fifty-one of the eighty-three cities were enumerated completely. In order to avoid too great overrepresentation of large city populations, 32 large² cities (31 of which were over 100,000 in population) were sampled. The samples enumerated in the larger cities varied from 5,000 to 45,000 households, not according to a fixed ratio but on the basis of the number believed adequate to represent the individual community, and the number required on the basis of regional and size distribution. The ratio of households canvassed to total households in the sampled cities ranged from 1 to 2 in the smaller cities to about 1 to 38 in the largest cities.⁴

Dwelling units were classified as "owner-occupied" or "tenant-occupied." The tenant-occupied dwellings were further subdivided into "multiple" and "single." The "multiple" ones were those in struc-

³ The sanitary (toilet) facilities of the households enumerated in the survey were reported as "private" or "communal" and as "flush, inside," "flush, outside," or "privy." The definitions of these classifications are as follows:

Private inside flush toilet.—Toilet or water closet with flush bowl, connected to any water supply and customarily used by the members of one household only, i. e., not shared with any other household.

Private outside flush toilet.—Toilet or water closet with flush bowl located outside of the dwelling proper, as on the porch or in the yard, connected to a water supply and customarily used by members of one household only.

Communal flush toilet.—Toilet or water closet with flush bowl either inside or outside the dwelling and used by two or more households, that is, shared with another household. A flush toilet in the hall of a tenement serving several families is an example.

Privy.—Toilet without flush bowl and not connected to a water supply. The term includes outhouses and chemical closets.

⁴ The population to be sampled was determined by a random selection of many small districts based on those used in the United States Census of 1930. For more detailed explanation see reference given in footnote 2.

tures in which the entrance from the street was used in common by more than one household. Since less than 5 percent of all owner-occupied dwelling units were of the multiple type, no corresponding separation has been made for this group in this report.

DISTRIBUTION OF HOUSEHOLDS AND TYPES OF SANITARY FACILITIES

Distribution of households.—In order to interpret the information to be presented on sanitary facilities, it is necessary to know something of the distribution of households according to size of city, color,⁵ type of dwelling, and rental (or value). Seventy-four percent of the dwelling units were in cities with populations of 100,000 and over; 14 percent in cities with populations between 25,000 and 100,000; and 12 percent in cities under 25,000. These figures indicate an overrepresentation of the large cities compared to urban areas generally. Because of the fact that the provision of different types of sanitary facilities varied widely with size of city, this discrepancy is of significance. Percentages for all city sizes combined, therefore, have been weighted in accordance with the distribution of households by size of city in the country generally (Census, 1930).

Sixty-five percent of the dwelling units were classified as rented; the others as owned. Of the rented, a little more than half were in "multiple dwellings." The percentage distribution of all dwelling units according to size of city and type was as follows:•

Size of city	Rented			
	Total	Multiple	Single	Owned
All sizes.....	100.0	35.6	29.9	34.5
100,000 and over.....	73.8	30.3	20.0	23.5
25,000 to 100,000.....	14.2	3.0	5.6	5.6
Under 25,000.....	12.0	2.3	4.3	5.4

About 9 percent of the households were colored, though in the South this percentage rose to 32. Analysis of the households from the point of view of rental or value will be found in a separate report.⁶

Sanitary facilities (general data).—The percentage of households (urban, total) by type of sanitary facilities is as follows (weighted in

⁵ The term "colored" as used in this paper includes Mexican and comprises all but the white race. With the exception of the western area, where about 60 percent of the colored households were other than Negro, the colored group was composed almost exclusively of Negroes.

⁶ Britten, Rollo H., and Brown, J. E.: Urban housing and crowding: Relation to certain population characteristics as indicated by National Health Survey data. Public Health Bulletin No. 261. Of the rented dwellings 11 percent were under \$10 a month; 16 percent, \$10 to \$15; 18 percent, \$15 to \$20; 28 percent, \$20 to \$30; and 27 percent, \$30 and over. Of the owned dwellings the estimated value was below \$3,000 in 31 percent.

accordance with the distribution of households by size of city in the country generally):

With private inside flush toilets.....	85.7
With private outside flush toilets.....	3.2
With communal inside flush toilets.....	2.6
With communal outside flush toilets.....	.7
With privy:	
Private.....	7.0
Communal.....	.6

The availability of various types of sanitary facilities varies with size of city, as shown in figure 1. Thus, 1.3 percent of all households in cities of 100,000 and over lack either inside or outside flush toilets (in other words, have privies), while the corresponding percentage is 17.3 in cities under 25,000. Communal flush toilets⁷ are almost three times higher in the largest cities than in the cities having less than

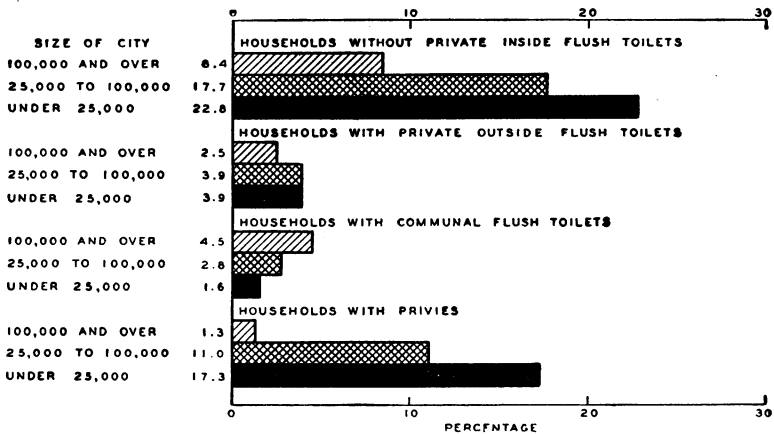


FIGURE 1.—Percentage of households with (or without) various types of sanitary facilities, by size of city.

25,000 population. This difference can be attributed in part to the greater proportion of multiple dwellings in the former. (See "Rural communities," p. 1611, for data on sanitary facilities in rural areas.)

The average percentages given in figure 1 fail to depict the wide variation from city to city in the percentage of households showing varying types of sanitary facilities. Such variations are so great as to make a consideration of the data for individual cities almost a necessity. Hence, the reader is referred to the bulletin presenting such percentages.⁸

The relationship of sanitary facilities to color, rental, and dwelling value will be discussed in the following paragraphs.

⁷ No separation has been made in the figures or tables between communal toilets located inside and those located outside the dwelling because of the small number of the latter. Such a separation is made in Bulletin 5 (referred to in footnote 1).

⁸ See Bulletin 5 referred to in footnote 1.

AVAILABILITY OF PRIVATE INSIDE FLUSH TOILETS

Urban communities.—Table 1 shows the distribution of urban households without private inside flush toilets by size of city and type of dwelling. In tables 2 and 3 the comparison is extended to region and color. The wide discrepancies between white and colored in the availability of this facility is apparent. When the same facility is analyzed by region, no great differences are to be found among the white populations for corresponding city sizes and types of dwellings.⁹ The tables show that owned dwellings are better provided with private inside flush toilets, regardless of city size and color, than are rented single or multiple dwellings.

TABLE 1.—Percentage of households without private inside flush toilets, by city size and type of dwelling

Type of dwelling	City size			
	All city sizes ¹	100,000 and over	25,000 to 100,000	Under 25,000
All dwellings.....	14.3	8.4	17.7	22.8
Rented dwellings, total.....	17.3	10.9	21.6	26.2
Multiple.....	15.9	11.8	22.6	19.0
Single.....	17.5	9.5	21.1	30.0
Owned dwellings.....	9.1	3.0	11.6	18.6

¹ Weighted in accordance with proportion of population in specific city-size groups (Census, 1930).

TABLE 2.—Percentage of households without private inside flush toilets, by region, city size, and type of dwelling and by color for the South

City size and type of dwelling	North-east	North Central	South			West
			Total	White	Colored	
100,000 and over, all dwellings.....	5.5	8.6	20.4	7.3	51.3	3.9
Rented dwellings, total.....	6.8	11.4	25.4	9.2	55.2	5.6
Multiple.....	7.1	14.1	25.2	12.4	59.3	14.0
Single.....	5.9	6.2	25.5	6.6	53.4	2.0
Owned dwellings.....	2.2	2.9	8.1	3.7	30.6	1.5
25,000 to 100,000, all dwellings.....	10.4	15.8	25.7	8.9	80.3	4.6
Rented dwellings, total.....	12.4	18.8	30.0	10.2	84.8	7.1
Multiple.....	8.4	27.5	29.0	11.7	86.5	14.5
Single.....	16.5	16.3	30.6	9.2	83.9	4.1
Owned dwellings.....	7.7	12.0	16.5	6.5	65.2	2.0
Under 25,000, all dwellings.....	15.8	27.1	39.6	23.7	78.1	11.2
Rented dwellings, total.....	17.7	31.1	43.1	25.8	81.8	12.2
Multiple.....	6.3	22.2	36.3	22.1	79.8	14.4
Single.....	26.4	35.5	46.4	27.9	82.5	11.3
Owned dwellings.....	13.9	23.2	32.7	19.8	69.3	10.1

⁹ Care should be exercised in drawing conclusions with respect to a particular area and size group because of the possibility that surveyed cities in that group may inadequately represent the group as a whole. This is especially true in the group of cities from 25,000 to 100,000 population (2 in Northeast, 3 in North Central, 4 in South, and 1 in West).

TABLE 3.—Percentage of households without private inside flush toilets in cities of 100,000 and over population, by region, color, and type of dwelling

Type of dwelling	Region and color									
	All regions		Northeast		North Central		South		West	
	White	Colored	White	Colored	White	Colored	White	Colored	White	Colored
All dwellings.....	5.7	33.6	4.9	14.7	7.0	28.7	7.3	51.3	3.4	11.2
Rented dwellings, total..	7.4	35.6	6.1	15.4	9.2	30.8	9.2	55.2	4.9	12.7
Multiple.....	9.1	34.9	6.6	14.9	11.4	36.3	12.4	59.3	12.6	38.1
Single.....	4.6	36.3	5.0	16.6	5.2	16.9	6.6	53.4	1.5	6.8
Owned dwellings.....	2.4	19.6	2.0	8.2	2.8	6.7	3.7	30.6	1.5	3.6

TABLE 4.—Percentage of households without private inside flush toilets classified by size of city, color, and rental or value

Type of dwelling and rental or value	Cities of 100,000 and over population				Cities of 25,000 to 100,000 population				Cities under 25,000 population			
	Northeast, North Central, and West		South		Northeast, North Central, and West		South		Northeast, North Central, and West		South	
	White	Colored	White	Colored	White	Colored	White	Colored	White	Colored	White	Colored
All dwellings, total.....	4.5	20.5	7.3	51.3	12.9	8.9	80.2	17.9	23.7	78.1		
Rented dwellings, total.....	7.2	22.0	9.2	55.2	15.6	10.2	84.8	19.8	25.8	81.8		
Under \$10 a month.....	41.0	58.3	35.8	75.0	52.2	33.6	90.1	66.0	53.7	84.7		
\$10 to \$15 a month.....	22.7	32.6	17.4	44.4	19.7	11.2	56.5	36.4	16.2	53.2		
\$15 to \$20 a month.....	10.4	16.4	7.9	18.4	5.4	4.6	142.2	15.0	6.9	36.0		
\$20 to \$30 a month.....	4.2	8.4	4.0	9.3	2.7	2.0	28.0	3.7	2.3	28.6		
\$30 and over a month.....	.73	3.7	.87	19.6	.96	.64	28.6	.67	1.3			
Owned dwellings, total.....	2.2	6.7	3.7	30.6	9.5	6.5	65.2	15.8	19.8	59.3		
Under \$1,000 value.....	33.5	40.0	46.1	58.6	57.0	41.5	81.9	68.3	76.2	88.2		
\$1,000 to \$1,500 value.....	14.5	15.8	22.1	43.5	30.7	10.1	68.6	40.6	32.8	55.3		
\$1,500 to \$2,000 value.....	7.9	12.6	10.6	29.2	16.4	4.1	55.6	24.6	18.2	47.7		
\$2,000 to \$3,000 value.....	3.5	8.1	4.8	19.2	6.1	1.3	26.6	13.7	7.5	24.8		
\$3,000 and over value.....	1.0	2.6	.93	9.4	1.7	.87	24.6	3.6	1.8	14.8		

¹ Fewer than 100 households.

The availability of private inside flush toilets by rental and dwelling value groups is given in table 4. The proportion of households lacking this facility diminishes rapidly with increased rental and dwelling value for all regions and city sizes, for both white and colored households. Here again, white households in the South and in other regions compare favorably by city size, rental, and dwelling value. However, differences persist between white and colored households even for rentals of more than \$30 per month and owned dwellings valued at more than \$3,000.

AVAILABILITY OF PRIVATE OUTSIDE FLUSH TOILETS

The percentage of households with private outside flush toilets is given in table 5 by city size and region (and by color in the South).

This facility is not very common, except among colored in the South. Significantly, however, rented single dwellings show slightly higher percentages in the availability of this facility than do multiple or owned dwellings.

TABLE 5.—Percentage of households with private outside flush toilets, by region, city size, and type of dwelling and by color for the South

City size and type of dwelling	North-east	North-Central	South			West
			Total	White	Colored	
100,000 and over, all dwellings.....	1.9	0.99	10.1	2.3	28.5	0.56
Rented dwellings, total.....	2.2	1.1	12.6	2.7	30.7	.62
Multiple.....	1.1	.94	7.0	1.2	22.4	.14
Single.....	4.8	1.4	16.3	4.0	34.3	.82
Owned dwellings.....	1.2	.72	3.9	1.4	16.9	.48
25,000 to 100,000, all dwellings.....	2.2	4.2	5.0	2.5	13.3	1.5
Rented dwellings, total.....	2.8	5.0	6.0	2.7	15.3	1.9
Multiple.....	.53	3.0	4.2	1.8	12.2	1.1
Single.....	5.2	5.5	7.2	3.3	16.9	2.3
Owned dwellings.....	1.3	3.1	3.0	2.2	6.7	1.0
Under 25,000, all dwellings.....	2.5	1.1	11.5	5.4	26.0	1.4
Rented dwellings, total.....	3.6	1.1	14.5	7.1	31.2	1.7
Multiple.....	.73	.33	8.9	4.9	20.9	1.4
Single.....	5.7	1.5	17.3	8.3	34.9	1.8
Owned dwellings.....	1.4	1.1	5.3	2.4	13.5	.94

DISTRIBUTION OF COMMUNAL FLUSH TOILETS

Communal flush toilets are characteristic of multiple type dwellings, and this is amply illustrated in table 6. Since it was shown in figure 1 that communal flush toilets are much more frequent in cities of 100,000 and over than in smaller cities, the comparison has been limited to the former.

TABLE 6.—Percentage of households with communal flush toilets (inside or outside) in cities of 100,000 and over population, by region, color, and type of dwelling

Type of dwelling	Region and color									
	All regions		Northeast		North Central		South		West	
	White	Colored	White	Colored	White	Colored	White	Colored	White	Colored
All dwellings.....	3.5	14.5	3.1	6.5	4.4	21.0	3.5	16.3	2.3	7.7
Rented dwellings, total.....	5.0	16.3	4.2	7.1	6.3	22.7	5.2	19.0	4.1	9.2
Multiple.....	7.7	24.7	5.6	10.0	9.2	29.8	10.6	35.3	12.5	37.2
Single.....	.73	7.9	.52	.68	1.2	5.0	.76	11.8	.30	2.7
Owned dwellings.....	.50	1.7	.59	1.3	.60	2.4	.48	1.8	.10	.18

DISTRIBUTION OF PRIVIES

Urban communities.—Privies were more commonly found in the South than in other regions of the country. There was also a marked increase in the dependence on this facility as the size of the city

decreased, especially among colored in the South. (See tables 7 and 8.) In every region, privies are found in less than 2 percent of all white households and less than 7 percent of all colored households in cities of over 100,000 (table 9).

TABLE 7.—Percentage of households with privies, by city size and type of dwelling

Type of dwelling	City size			
	All city sizes ¹	100,000 and over	25,000 to 100,000	Under 25,000
All dwellings.....	7.7	1.3	11.0	17.3
Rented dwellings, total.....	8.2	1.3	12.5	18.0
Multiple.....	5.0	.79	9.5	9.8
Single.....	10.1	2.1	14.1	22.4
Owned dwellings.....	7.0	1.2	8.7	16.5

¹ Weighted in accordance with proportion of population in specific city-size groups (Census, 1930).

TABLE 8.—Percentage of households with privies, by region, city size, and type of dwelling and by color for the South

City size and type of dwelling	North-east	North Central	South			West
			Total	White	Colored	
100,000 and over, all dwellings.....	0.30	2.0	3.0	1.5	6.5	0.66
Rented dwellings, total.....	.29	2.3	2.8	1.3	5.5	.47
Multiple.....	.15	1.8	.82	.54	1.5	.06
Single.....	.65	3.2	4.1	1.9	7.3	.64
Owned dwellings.....	.30	1.5	3.5	1.8	11.9	.93
25,000 to 100,000, all dwellings.....	6.0	8.7	17.7	4.2	61.7	.95
Rented dwellings, total.....	6.1	8.9	19.7	4.2	62.8	1.2
Multiple.....	1.3	4.8	17.0	2.6	64.5	-----
Single.....	10.9	10.0	21.6	5.3	62.0	1.6
Owned dwellings.....	5.9	8.5	13.2	4.1	57.7	.72
Under 25,000, all dwellings.....	12.7	24.3	26.5	16.7	50.1	7.5
Rented dwellings, total.....	13.0	26.9	26.1	16.5	47.9	6.3
Multiple.....	3.2	13.2	22.3	11.5	55.5	.85
Single.....	20.5	33.7	28.0	19.2	45.2	8.6
Owned dwellings.....	12.3	21.7	27.1	17.2	55.4	8.9

As would be expected, privies are more frequent in rented single dwellings than in multiple rented dwellings. Owned dwellings fare somewhat better, although among colored in the South and in cities of 100,000 and over, owned dwellings occupied by colored households in every region except the North Central show a greater use of this facility.

Rural communities.—Data on the availability of privies in rural areas are given in table 10. A noticeable difference is found among relief and nonrelief households in Michigan and Missouri towns or villages. The table shows that nonrelief households in towns or villages are much better off in this respect than are relief households. Approximately half of the former households in Michigan use privies, but in other towns and villages in Missouri and Georgia the figure is

more than 85 percent. More than 90 percent of the households in purely rural areas are equipped with privies.

TABLE 9.—Percentage of households with privies in cities of 100,000 and over population, by region, color, and type of dwelling

Type of dwelling	Region and color									
	All regions		Northwest		North Central		South		West	
	White	Colored	White	Colored	White	Colored	White	Colored	White	Colored
All dwellings.....	0.95	4.5	0.24	1.2	1.7	5.5	1.5	6.5	0.64	1.0
Rented dwellings, total..	.94	4.1	.24	.95	1.9	5.7	1.3	5.5	.43	.90
Multiple.....	.61	2.4	.12	.61	1.4	4.8	.54	1.5	.06
Single.....	1.5	5.7	.55	1.7	2.8	7.9	1.9	7.3	.59	1.1
Owned dwellings.....	1.0	7.7	.24	3.1	1.5	3.1	1.8	11.9	.92	1.3

TABLE 10.—Percentage of households with privies in rural Michigan, Missouri, and Georgia classified by whether town or village or purely rural, by economic status, and type of dwelling and by color for Georgia

ALL ECONOMIC STATUSES

Economic status and type of dwelling	Town or village				Purely rural			
	Michigan	Missouri	Georgia ¹		Michigan	Missouri	Georgia ¹	
			White	Colored			White	Colored
All dwellings.....	58.0	86.9	88.6	96.6	93.0	98.9	92.4	97.4
Rented.....	61.1	89.1	93.6	99.1	94.1	99.2	94.0	96.6
Owned.....	56.1	85.9	81.2	97.5	92.4	98.7	88.9	97.1

RELIEF

All dwellings.....	89.5	97.9	97.4	97.8	97.8	98.8	97.4	98.5
Rented.....	87.0	97.1	99.3	96.4	97.1	99.0	97.4	99.1
Owned.....	92.1	100.0	91.1	100.0	98.5	98.4	97.5	94.9

NONRELIEF

All dwellings.....	51.8	86.1	87.4	98.7	92.2	96.9	91.8	98.4
Rented.....	53.7	87.5	92.6	99.2	93.3	99.3	93.4	98.5
Owned.....	50.8	85.1	80.5	97.2	91.7	98.7	88.4	97.3

¹ Includes households with no toilet facilities.

SUMMARY

The present report ¹⁰ summarizes the data on sanitary (toilet) facilities collected in the course of the National Health Survey (1935-36). The dwelling units covered are confined to those containing "real" families, i. e., households with at least one person related to the head. The data for urban areas are regarded as reflecting accurately condi-

¹⁰ This report is to be regarded as supplementary to one giving corresponding data for each of the cities surveyed. See Bulletin 5 referred to in footnote 1.

tions in urban communities generally. However, the rural data definitely represent only the counties for which information was available.

1. Fourteen percent of the urban households included¹¹ were without private inside flush toilets; more than half of this group (8 percent) used privies.

2. The smaller cities showed much larger percentages of households without private inside flush toilets.

3. The South fared worse than the rest of the country.

4. Colored households in the South showed the highest percentages without private inside flush toilets.

5. There was a close relation between type of sanitary facility and rental (or value).

Certain data of a limited character are shown for rural areas.

PRESENT STATUS OF STATE CANCER CONTROL PROGRAMS¹

By LEONARD A. SCHEELE, *Passed Assistant Surgeon, United States Public Health Service*

The pattern of present-day cancer control programs has been planned to make the best use of existing information on cancer care. While we have some knowledge of specific factors related to the etiology of the disease in some cases and therefore know how to prevent a few, our information is still so fragmentary as far as the causes of cancer as a whole are concerned that the control program is primarily a curative one.

Information on the extent of the problem with reference to incidence and mortality has been available for many decades; and even though the early data were crude, they were adequate to convince laymen and physicians alike that cancer occurred frequently and usually had a fatal outcome. As a result, fear was instilled into the minds of men, and cancer has been considered a loathsome and dangerous disease for centuries. Laymen often have a fatalistic attitude and ignore warning signs and symptoms because they think that little can be done to cure their disease, should it be cancer. Physicians, especially many of those educated earlier, are not always fully aware of the benefits which are available from therapy as we know it today.

The earliest effective treatment, judged by present standards, was surgery. Late in the nineteenth century the discovery of X-rays and later the isolation of radium served to add new weapons for the fight on cancer. Remarkable progress in effective use of surgery,

¹¹ Survey data for each size of city group weighted in accordance with the percentage of households in such groups in urban United States generally (Census, 1930).

¹ Presented at the American Public Health Association meeting in Atlantic City, N. J., October 15, 1941 (Health Officers Section).

X-ray, and radium, alone and in combination, has occurred in the last three decades.

The effort to control cancer must remain one of trying to see patients early in the course of the disease and of using our present knowledge of diagnosis and treatment promptly to combat it until the day arrives when scientists discover clues which will enable us to make the control program a preventive one. The broad organized attack on cancer today can be divided roughly into the following activities:

1. Efforts to educate laymen in the advantages of periodic physical examinations, in recognizing danger signals, and in the need for seeking early care.
2. Efforts to keep physicians aware of the importance of constantly looking for cancer in their patients, up-to-date in the newer knowledge of diagnosis and treatment, and cognizant of their ability or their limitations in caring for cancer patients.
3. Stimulation and aid in the organization of diagnostic and treatment centers and provision of direct or indirect public assistance to the needy in obtaining adequate care.
4. Research in statistical and fundamental scientific fields relating to cancer and in improving diagnosis and therapy.

The author asked health officers and cancer commissioners for information on programs in their States and received generous cooperation, for which he wishes to express his appreciation. By using the data thus supplied, and other information from files on State programs in the National Cancer Institute and the States Relations Division of the United States Public Health Service, individual cancer-control activities administered by State health departments and cancer commissions were tabulated by States and are presented in table 1. The activities are those in progress during the fiscal year which began July 1, 1941. Expenditures are for the preceding fiscal year, the last for which useful data are available.

ENABLING LEGISLATION

Eleven States have specific laws which designate cancer as a disease against which control measures are to be taken. The earliest cancer acts were passed in New York and Massachusetts in 1898 and 1926, respectively, and the most recent ones were signed in Maine and Texas during the present year. Some laws are broad enabling acts and direct that action should be taken to control cancer in a manner to be decided by the program-administering agency, while others give explicit directions on the details of each step that is to be taken, and place little or no discretion on methods to be followed in the hands of the program administrators.

Basic public health laws of most States provide authority for taking steps to control any disease which the boards of health deem necessary, and thereby authorize cancer control programs without benefit of special enabling legislation. That many health departments have acted against cancer under the authority of basic public health laws is

evident from the fact that there are many more States with programs than there are States with laws. It should be noted, however, that with few exceptions control programs are most extensive and appropriations have been largest and most consistent in States with specific cancer legislation.

AGENCY AND METHOD OF ADMINISTRATION

Twenty-seven States and the Territory of Hawaii, in addition to the 11 States with laws, carry on one or more activities designed to aid in the control of cancer, making the total number of States and insular possessions with programs 39. The active official agency administering a State-wide program in 36 of these is the health department. In 3 additional States there are cancer commissions appointed by the Governors and these function as separate State agencies. The health departments all cooperate with the cancer commissions in some measure.

Seven health departments have bureaus or divisions of cancer control, and the 3 States with cancer commissions have activities which can be ranked as bureaus or divisions of their State governments. Nine of these 10 agencies have full-time administrative personnel. The table shows that the 10 States referred to, with one exception, are those with laws and with extensive programs. The States which attack cancer on all fronts invariably have found it necessary to employ full-time personnel in order to make their programs most effective.

CANCER REPORTING

Cancer is a reportable disease in 16 States. In 5 there are specific reporting laws, while in the remaining 11, regulations of the State boards of health make it reportable. Complete morbidity data are very valuable, but New York is the only State of the 16 in which a serious attempt has been made to encourage complete reporting.

LAY EDUCATION

Twenty-nine States have lay educational programs designed to increase the awareness of their citizens of the signs and symptoms of cancer and to urge them to seek early care. The extent of these programs varies widely. Activity in Massachusetts is on a large scale. Efforts are made throughout the year in that State to have volunteer physician-speakers present talks to organized groups which devote at least one meeting each year to cancer. Many States publish pamphlets and others purchase them from other agencies for local distribution. Motion pictures on cancer, especially one entitled "Choose to Live," have been used in the educational programs of most States, both before private groups and in commercial motion-picture theatres. Posters and other exhibit media have been used at county and State fairs and other public gatherings. There is an increasing effort to bring lay education to the students of high schools and colleges.

The American Society for the Control of Cancer, a voluntary health group, is the parent organization of the Women's Field Army which is organized in the States to carry on an annual subscription drive and to do lay education and other work in cancer control with the funds collected. In most States there is excellent cooperation between the official health agency and the Women's Field Army, and sometimes all lay cancer education in a State is done by this group. Direct financial and other assistance, such as purchase of pamphlets, posters, and movies, is given to them by many departments, and in one instance there is a direct State appropriation for this lay health organization.

PROFESSIONAL EDUCATION

No State health agency attempts to do professional education except in close cooperation with, and at the direction of, its State medical society. Twenty-two States are engaged in such activities. In some, monthly or periodic health department bulletins on cancer are sent to all practicing physicians and often to dentists and nurses. In others, cancer handbooks have been written and distributed. Teaching institutes and seminars have been utilized in a number of States. In some, meetings are held at various points in the State for specialists, and in others the topics discussed are broad enough to be of great value to general practitioners. One State employes a physician who spends his full time visiting the practicing physicians in the State and discussing the diagnosis and treatment of cancer and other related problems.

TISSUE DIAGNOSTIC SERVICE

Accurate diagnosis of cancer and proper evaluation of therapy can be made only if suspected tissue is given to a trained histopathologist for examination and opinion. Teaching the necessity for removing tissue for biopsy is often part of the professional educational program mentioned earlier. When such a program exists the demands for tissue diagnostic service expand and often place a heavy burden on the histopathologists in the States, especially in the matter of examination of tissue from medically indigent patients. Fifteen States provide tissue examination at State expense. In 4 the work is done in central State laboratories; in 9 it is subsidized in private laboratories; and in 2 additional States it is provided in both ways.

MEDICAL CARE

Long ago the complexities of the problem of caring for cancer patients were recognized by the American College of Surgeons. It became obvious that collaboration between surgeons, radiologists, pathologists, and other specialists was necessary if the best care was to be provided. Accordingly, the College set up standards for tumor

clinics and began a program to stimulate the development of diagnostic and treatment centers which would meet these standards. Over 300 such approved clinics now exist in the United States, and many more are in various stages of development. It is noteworthy that with few exceptions the standards set by States for clinics in their official programs closely conform to those of the American College of Surgeons and that the majority of the State clinics are approved by that organization.

Cancer care is costly, because it often requires extensive surgical and radiation therapy and hospitalization. For this reason many persons with cancer are unable to obtain adequate attention. Many voluntary hospitals provide care for limited groups of needy patients, but careful studies of such facilities in most States show that there is need for more extensive programs organized at the State level with financial aid for the care of needy patients if their lives are to be prolonged.

Many States have recognized their responsibilities for the care of needy patients' with cancer. Three States have erected cancer hospitals with from 85 to 195 beds and additional outpatient services. Two of these States and 9 additional ones have aided the organization of numerous diagnostic and treatment clinics in private hospitals. The number of such clinics varies from 2 in Vermont to 23 in Massachusetts. Service is available to needy residents of the States in all cases and is also available for all residents in two of the instances.

Follow-up of cancer patients is important from the standpoints of encouraging them to come in for repeated examinations and of enabling proper appraisals of therapy to be made. Thirteen State programs include follow-up service. Some use only letters, but the majority use nurses from local health departments or social workers for home visits.

The Territorial department of health of Hawaii owns radium which it loans to physicians.

RESEARCH

One State health department has a biological research laboratory, and another subsidizes fundamental cancer research in a medical school. Six States have other research programs, including studies of epidemiology, morbidity, mortality, end results of therapy, effectiveness of lay and professional education, and related statistical subjects. The compilation of usual mortality data for all deaths including cancer for annual reports has not been used as an indication that a State has a statistical research program relating to cancer, because the author is interested only in programs which have been organized because of special interest in the cancer problem.

COST

It is impossible with the data available to ascertain exact costs of individual activities in control programs and to relate these to the extent of the job done. Certain programs in which only medical care is provided for the needy indicate that average costs vary from \$40 to \$60 per patient. These amounts represent payment of minimum hospital charges and include no compensation for physicians' services which are generously donated.

It is sometimes impossible to ascertain the cost of operation of a tissue service or of a cancer educational program because their individual costs are bulked with general laboratory or public health education budgets. Another part of the money spent in the State program in a few instances on which information was not available is that which is provided by the local community, usually the town or county, as its legally designated share of the cost of care for its residents. However, information was available showing the following expenditures during the year July 1, 1940, to June 30, 1941: State funds, \$1,102,359; local and other funds, \$500; Social Security Act, title VI, funds, \$181,031; total \$1,283,890.

SUMMARY

Current cancer control activities conducted by 39 health departments and 3 cancer commissions in 38 States and the Territory of Hawaii have been summarized.

Known expenditures for programs amounted to over \$1,280,000 during the past fiscal year ending June 30, 1941.

Activities consist of lay and professional education, provision of diagnostic and treatment facilities, and research, primarily statistical.

The author has not attempted to evaluate the effectiveness of any activities or programs in this paper.

Interest in cancer control has increased rapidly in the past few years and most of the new programs have been developed since 1930. It seems likely that worthwhile gains in the fight against cancer will come through improvement and extension of current programs. Later, when our knowledge of the cancer process increases, it is hoped that the program can be improved to make it even more effective and that some day it may be primarily a preventive rather than a curative one.

DISABLING MORBIDITY AMONG INDUSTRIAL WORKERS. SECOND QUARTER OF 1942¹

By W. M. GAFAFER, *Senior Statistician, United States Public Health Service*

The material presented in this paper is based on periodic reports on disabling sickness and nonindustrial injuries from industrial plants

¹ From the Division of Industrial Hygiene, National Institute of Health. For the first quarter of 1942 see *Public Health Reports*, 57: 1344 (Sept. 4, 1942).

located in Pennsylvania, Illinois, Massachusetts, Connecticut, New York, Ohio, Maine, South Dakota, New Jersey, and Canada. Over 200,000 workers are covered, representing the male memberships of mutual sick benefit associations, group insurance plans, and company relief departments. The data presented deal with the frequency of sickness and nonindustrial injuries causing disability lasting more than one week.

TABLE 1.—*Frequency of disabling cases of sickness and nonindustrial injuries lasting 8 consecutive calendar days or longer among MALE employees in various industries, by cause, the second quarter of 1942 compared with the second quarter of 1941, and the first half of 1942 compared with the first halves of the years 1937-41, inclusive*

Cause (numbers in parentheses are disease title numbers from the International List of Causes of Death, 1939)	Annual number of cases per 1,000 males				
	Second quarter		First half		
	1942	1941	1942	1941	1937-41
Sickness and nonindustrial injuries ¹	96.7	93.5	109.9	116.0	108.2
Nonindustrial injuries (169-195).....	10.5	10.7	11.3	11.1	10.8
Sickness ¹	86.2	82.8	98.6	104.9	97.4
Respiratory diseases.....	33.1	34.7	45.1	56.6	49.1
Influenza and grippe (33).....	11.5	10.8	17.9	30.4	26.1
Bronchitis, acute and chronic (106).....	5.1	5.1	7.1	6.4	5.7
Diseases of pharynx and tonsils (115b, 115c).....	5.5	7.7	5.7	6.7	6.0
Pneumonia, all forms (107-109).....	4.8	4.7	6.0	5.3	4.1
Tuberculosis of respiratory system (13).....	.7	.8	.7	.7	.8
Other respiratory diseases (104, 105, 110-114).....	5.5	5.6	7.7	7.1	6.4
Digestive diseases.....	15.7	14.4	15.9	14.5	14.2
Diseases of stomach except cancer (117, 118).....	4.4	3.7	4.4	3.8	3.8
Diarrhea and enteritis (120).....	1.5	1.1	1.5	1.1	1.1
Appendicitis (121).....	5.1	5.1	5.2	5.1	4.8
Hernia (122a).....	1.9	1.7	1.8	1.7	1.7
Other digestive diseases (115a, 115d, 116, 122b-129).....	2.8	2.8	3.0	2.8	2.8
Nondigestive diseases.....	35.3	31.0	35.5	30.9	31.6
Diseases of heart and arteries, and nephritis (90-99, 102, 130-132).....	4.3	4.2	4.6	4.4	4.5
Other genitourinary diseases (133-138).....	2.6	2.3	2.5	2.2	2.4
Neuralgia, neuritis, sciatica (87b).....	2.3	2.1	2.3	2.1	2.3
Neurasthenia and the like (part of 84d).....	1.0	1.1	1.0	.9	1.0
Other diseases of the nervous system (80-85, 87, except part of 84d, and 87b).....	1.1	1.3	1.2	1.2	1.1
Rheumatism, acute and chronic (58, 59).....	4.1	3.9	4.1	4.3	4.4
Diseases of the organs of locomotion, except diseases of the joints (156b).....	2.9	3.0	3.2	3.0	2.9
Diseases of the skin (151-153).....	2.8	2.4	2.6	2.4	2.7
Infectious and parasitic diseases ² (1-12, 14-24, 26-29, 31, 32, 34-44).....	3.2	3.3	3.3	2.9	2.8
All other diseases (45-57, 60-79, 88, 89, 100, 101, 103, 154, 155, 156a, 157, 162).....	11.0	7.4	10.7	7.5	7.5
Ill-defined and unknown causes (200).....	2.1	2.7	2.1	2.9	2.5
Average number of males covered in the record.....	260,664	226,685	257,779	222,353	941,091
Number of organizations.....	21	22	22	22	

¹ Industrial injuries, venereal diseases, and a few numerically unimportant causes of disability are not reported.

² Except influenza, respiratory tuberculosis, and the venereal diseases.

Second quarter and first half of 1942.—Table 1 shows the number of disabilities per 1,000 industrial workers for the second quarter and first half of the year 1942. An examination of the table reveals that the pneumonia rate for both time periods continues relatively high.

There are in addition two cause groups that show notable increases in frequency. These are, for both the second quarter and first half, diseases of the stomach except cancer, and diarrhea and enteritis. In fact the rates for these two cause groups for the second quarter as well as the first half are the highest recorded for the 10 years 1933-42. The second quarter rate of 4.4 cases per 1,000 workers on account of diseases of the stomach except cancer shows an excess of 16 percent when compared with the mean (3.8) for the past 10 second quarters; for the second half of 1942 the rate is also 4.4 and the corresponding percentage excess is 16 percent. The second quarter rate of 1941 for diarrhea and enteritis is 1.5, which is also the rate for the second half. When these rates are compared with the corresponding means based on the years 1933-42 the percentage excesses are found to be 25 percent and 36 percent for the second quarter and the first half, respectively.

DEATHS DURING WEEK ENDED OCTOBER 10, 1942

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

	Week ended Oct. 10, 1942	Correspond- ing week 1941
Data from 87 large cities of the United States:		
Total deaths.....	8,671	7,757
Average for 3 prior years.....	7,678	-----
Total deaths, first 40 weeks of year.....	332,069	333,577
Deaths per 1,000 population, first 40 weeks of year, annual rate.....	11.6	11.7
Deaths under 1 year of age.....	632	553
Average for 3 prior years.....	516	-----
Deaths under 1 year of age, first 40 weeks of year.....	22,696	20,871
Data from industrial insurance companies:		
Policies in force.....	65,108,967	64,520,321
Number of death claims.....	10,802	9,924
Death claims per 1,000 policies in force, annual rate.....	8.7	8.0
Death claims per 1,000 policies, first 40 weeks of year, annual rate.....	9.2	9.5

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

REPORTS FROM STATES FOR WEEK ENDED OCTOBER 17, 1942

Summary

Normal seasonal increases were reported for most of the common communicable diseases for which weekly telegraphic reports are received from the State health officers. Of the 9 diseases included in the following tables, however, the incidence of only 3 (influenza, meningococcus meningitis, and scarlet fever) is currently above the 5-year (1937-41) median expectancy. For the year to date, the incidence of only 2 (measles and meningococcus meningitis) is above the 5-year median.

The current incidence of influenza is above that for the corresponding week of each of the 5 preceding years. The excess is restricted to 3 States (Texas 507, South Carolina 263, and Virginia 169), which reported approximately 70 percent of the total of 1,346 cases. For the current week, the incidence of scarlet fever is above the 5-year median. The total this year to date, however, is below the corresponding figure for each of the preceding 5 years.

The incidence of poliomyelitis remained about the same as for the preceding week. The seasonal peak of this disease was apparently reached during the week ended September 12, when 267 cases were reported.

A total of 104 cases of typhus fever was reported, as compared with 88 for the preceding week and 76 for the next earlier week. A total of 2,779 cases has been reported this year to date, as compared with 2,117 cases last year for the same period.

A decline was recorded for the death rate in large cities, as compared with the preceding week, but the rate is still significantly above the 3-year average. The current rate is 11.6 per 1,000 population, as compared with 12.2 for the preceding week and with a 3-year (1939-41) average of 10.7. Owing to the low urban death rate during the first half of the current year, the cumulative rate to date (11.6) is still slightly below that for the same period last year (11.7).

Telegraphic morbidity reports from State health officers for the week ended October 17, 1942, and comparison with corresponding week of 1941 and 5-year median

In these tables a zero indicates a definite report, while leaders imply that, although none were reported, cases may have occurred.

Division and State	Diphtheria			Influenza			Measles			Meningitis, meningococcus		
	Week ended—		Med-ian, 1937-41	Week ended—		Med-ian, 1937-41	Week ended—		Med-ian, 1937-41	Week ended—		Med-ian, 1937-41
	Oct. 17, 1942	Oct. 17, 1941		Oct. 17, 1942	Oct. 18, 1941		Oct. 17, 1942	Oct. 18, 1941		Oct. 17, 1942	Oct. 18, 1941	
NEW ENG.												
Maine.....	0	0	0				2	31	12	1	0	0
New Hampshire.....	0	0	0				36	10	10	0	0	0
Vermont.....	1	0	0				16	1	5	1	0	0
Massachusetts.....	3	0	1				107	82	43	2	3	2
Rhode Island.....	2	2	1				4	3	2	2	0	0
Connecticut.....	2	1	1	6			3	11	9	1	0	0
MID. ATL.												
New York.....	18	15	16	16	14	14	66	80	80	5	2	2
New Jersey.....	1	3	9	11	6	8	19	22	22	3	0	0
Pennsylvania.....	8	9	20				67	110	110	8	7	3
E. NO. CEN.												
Ohio.....	18	5	30	15	3	19	19	26	21	0	1	1
Indiana.....	8	17	18	13	14	13	12	5	11	0	0	0
Illinois.....	20	20	23	7	9	2	11	29	29	7	1	1
Michigan ¹	12	18	15	1		1	23	35	35	2	0	2
Wisconsin.....	3	1	1	33	16	25	53	51	51	1	0	0
W. NO. CEN.												
Minnesota.....	5	10	5		3	2	7	10	8	0	0	0
Iowa.....	1	0	5		7		11	12	12	0	0	0
Missouri.....	4	11	14	1			14	9	9	0	2	1
North Dakota.....	1	1	1	5		1	0	37	2	0	0	0
South Dakota.....	17	8	2				5	0	4	0	0	0
Nebraska.....	1	7	3	7			15	4	4	0	0	0
Kansas.....	6	4	4	5	7	2	6	2	4	1	0	0
SO. ATL.												
Delaware.....	1	3	1				0	0	1	1	0	0
Maryland ¹	7	7	7	8	1	7	4	11	6	0	3	1
Dist. of Col.....	0	2	6				1	4	1	2	0	0
Virginia.....	30	33	61	169	104	70	5	20	20	1	1	1
West Virginia.....	11	12	19	1	10	10	2	45	2	1	1	1
North Carolina.....	78	101	124	1	1	1	2	73	44	0	0	0
South Carolina.....	37	63	24	263	151	151	6	16	3	0	0	0
Georgia.....	39	30	48	38	25	16	4	7	3	0	1	1
Florida.....	10	11	10	1	25	1	1	9	2	0	0	0
E. SO. CEN.												
Kentucky.....	24	15	20	5		3	1	32	19	2	1	1
Tennessee.....	23	40	34	12	3	16	11	20	6	0	1	1
Alabama.....	40	29	30	55	18	23	3	9	4	1	1	1
Mississippi ¹	16	11	16				0		0	0	0	0
W. SO. CEN.												
Arkansas.....	17	20	20	16	13	16	5	16	3	1	1	0
Louisiana.....	14	22	19	3	3	3	0	1	0	0	0	0
Oklahoma.....	10	13	22	25	35	30	1	11	2	0	0	0
Texas.....	78	78	58	507	526	210	33	14	17	2	0	1
MOUNTAIN												
Montana.....	4	5	3	3	2	4	5	3	22	0	0	0
Idaho.....	0	0	0	3		1	14	1	7	0	0	0
Wyoming.....	0	1	0	8	9		7	1	3	0	0	0
Colorado.....	8	13	10	25	16	7	3	30	13	0	0	0
New Mexico.....	6	1	1	1	1		0	19	7	0	0	0
Arizona.....	1	2	4	47	51	40	13	10	4	0	0	0
Utah ¹	0	0	1	1	2	1	108	3	6	0	1	0
Nevada.....	0	0		1			1	0		0	0	
PACIFIC												
Washington.....	1	0	0	3			157	6	6	1	0	0
Oregon.....	3	0	0	8	18	13	59	13	10	1	0	0
California.....	24	18	23	32	45	14	38	98	48	2	1	1
Total	613	662	753	1,346	1,131	748	980	1,042	1,042	49	28	34
41 weeks	10,537	11,058	16,191	87,214	496,626	164,435	471,849	830,575	352,687	2,782	1,642	1,642

See footnotes at end of table.

Telegraphic morbidity reports from State health officers for the week ended October 17, 1942, and comparison with corresponding week of 1941 and 5-year median—Continued

Division and State	Poliomyelitis			Scarlet fever			Smallpox			Typhoid and paratyphoid fever		
	Week ended—		Median 1937-41	Week ended—		Median 1937-41	Week ended—		Median 1937-41	Week ended—		Median 1937-41
	Oct. 17, 1942	Oct. 18, 1941		Oct. 17, 1942	Oct. 18, 1941		Oct. 17, 1941	Oct. 18, 1942		Oct. 17, 1942	Oct. 18, 1941	
NEW ENG.												
Maine.....	4	0	0	6	11	7	0	0	0	0	0	0
New Hampshire.....	0	2	0	5	28	2	0	0	0	2	3	0
Vermont.....	0	1	0	8	4	7	0	0	0	0	0	0
Massachusetts.....	2	7	4	128	94	65	0	0	0	12	0	0
Rhode Island.....	0	3	1	2	4	4	0	0	0	1	0	0
Connecticut.....	4	5	4	18	6	20	0	0	0	0	0	1
MID. ATL.												
New York.....	20	55	20	152	90	123	0	0	0	12	9	14
New Jersey.....	14	12	10	43	54	48	0	0	0	1	3	3
Pennsylvania.....	7	30	7	112	89	161	0	0	0	6	17	20
E. NO. CEN.												
Ohio.....	6	14	14	137	130	171	0	0	0	7	10	9
Indiana.....	5	1	3	50	81	81	1	1	2	2	2	3
Illinois.....	22	16	16	145	125	168	0	1	1	22	6	15
Michigan ¹	6	11	13	72	100	147	0	0	0	4	13	7
Wisconsin.....	2	4	9	109	66	84	0	1	1	2	4	1
W. NO. CEN.												
Minnesota.....	2	11	18	49	35	46	0	0	0	0	0	0
Iowa.....	8	4	11	45	43	52	2	0	0	0	5	5
Missouri.....	1	1	1	44	65	65	0	0	0	3	8	8
North Dakota.....	1	2	0	1	8	11	0	0	0	0	2	2
South Dakota.....	1	0	0	19	11	14	0	0	0	0	1	0
Nebraska.....	15	0	2	25	10	9	0	0	0	0	0	1
Kansas.....	11	4	4	70	49	62	0	0	0	1	4	4
SO. ATL.												
Delaware.....	2	0	0	10	6	7	0	0	0	1	0	1
Maryland ¹	0	7	2	26	23	27	0	0	0	1	10	8
Dist. of Col.....	0	4	1	15	14	10	0	0	0	2	1	1
Virginia.....	3	6	2	57	37	37	0	0	0	12	8	10
West Virginia.....	1	3	2	42	64	64	5	0	0	3	9	9
North Carolina.....	2	10	5	113	93	80	1	0	0	3	6	6
South Carolina.....	2	6	0	12	11	10	0	0	0	2	1	8
Georgia.....	1	18	1	58	33	33	0	0	0	3	1	8
Florida.....	0	3	1	3	6	6	0	0	0	1	1	2
E. SO. CEN.												
Kentucky.....	1	5	5	65	46	56	1	0	0	3	10	14
Tennessee.....	5	17	2	98	103	52	0	1	1	6	21	15
Alabama.....	5	22	2	40	52	31	0	0	0	6	2	4
Mississippi ¹	1	6	0	12	14	19	0	1	0	2	4	5
W. SO. CEN.												
Arkansas.....	3	2	2	23	7	15	3	3	0	7	8	11
Louisiana.....	3	1	1	12	6	14	0	0	0	7	5	8
Oklahoma.....	0	0	2	23	14	23	0	1	1	5	6	8
Texas.....	12	6	7	33	26	40	0	0	0	16	25	27
MOUNTAIN												
Montana.....	1	1	1	8	12	14	0	0	0	0	1	3
Idaho.....	0	0	0	0	4	14	1	0	0	0	0	3
Wyoming.....	0	1	1	1	2	4	0	0	0	1	1	1
Colorado.....	1	0	6	18	20	20	0	0	1	1	8	8
New Mexico.....	0	0	2	2	8	8	0	0	0	8	3	7
Arizona.....	1	0	0	3	2	2	0	0	0	1	0	2
Utah ¹	0	1	2	20	9	9	0	0	0	0	0	0
Nevada.....	0	0	0	0	0	0	0	0	0	0	0	0
PACIFIC												
Washington.....	1	1	1	16	25	28	0	0	0	3	2	2
Oregon.....	0	3	3	4	5	16	0	0	1	0	3	1
California.....	14	6	10	87	87	89	0	0	1	7	4	12
Total.....	190	312	312	2,041	1,846	1,985	14	9	15	176	227	291
41 weeks.....	3,214	7,586	7,586	98,378	98,644	126,278	658	1,193	8,466	5,689	7,165	10,725

See footnotes at end of table.

Telegraphic morbidity reports from State health officers for the week ended October 17, 1942—Continued

Division and State	Whooping cough		Week ended Oct. 17, 1942								
	Week ended—		An-thrax	Dysentery			En-ceph-alitis, infectious	Lep-rosy	Rocky Mt. spotted fever	Tula-remia	Ty-phus fever
	Oct. 17, 1942	Oct. 18, 1941		A-me-bic	Bacil-lary	Un-specified					
NEW ENG.											
Maine.....	8	9	0	0	0	0	0	0	0	0	0
New Hampshire.....	8	7	0	0	0	0	0	0	0	0	0
Vermont.....	28	3	0	0	0	0	0	0	0	0	0
Massachusetts.....	161	94	0	0	310	0	0	0	0	0	0
Rhode Island.....	0	22	0	0	0	0	0	0	0	0	0
Connecticut.....	65	33	0	0	3	0	0	0	0	0	0
MID. ATL.											
New York.....	352	287	0	4	14	0	2	0	0	0	0
New Jersey.....	202	143	1	0	0	0	0	0	0	0	0
Pennsylvania.....	260	233	0	0	1	0	0	0	0	0	0
E. NO. CEN.											
Ohio.....	139	226	0	0	7	0	0	0	0	0	0
Indiana.....	49	14	0	0	0	0	0	0	0	0	0
Illinois.....	173	190	0	1	20	0	0	0	1	0	0
Michigan ¹	210	233	0	0	6	0	0	0	0	0	0
Wisconsin.....	137	231	0	0	0	0	0	0	0	0	0
W. NO. CEN.											
Minnesota.....	41	56	0	9	0	0	0	0	0	0	0
Iowa.....	11	15	0	0	0	0	1	0	0	0	0
Missouri.....	16	36	0	0	0	1	0	0	0	0	0
North Dakota.....	11	12	0	0	0	0	3	0	0	0	0
South Dakota.....	4	10	0	0	0	0	0	0	0	0	0
Nebraska.....	22	6	0	0	0	0	0	0	0	0	0
Kansas.....	22	52	0	0	0	0	4	0	0	1	0
SO. ATL.											
Delaware.....	2	0	0	0	0	0	0	0	0	0	0
Maryland ²	62	32	0	0	0	10	0	0	0	1	0
Dist. of Col.....	0	25	0	0	0	0	0	0	0	0	0
Virginia.....	29	17	0	2	0	84	0	0	0	0	0
West Virginia.....	1	16	0	0	0	0	0	0	0	0	0
North Carolina.....	42	112	0	0	0	0	0	0	1	0	1
South Carolina.....	14	62	0	0	14	0	0	0	0	0	6
Georgia.....	14	19	0	2	6	0	0	0	0	1	25
Florida.....	5	25	0	0	0	0	0	0	0	0	10
E. SO. CEN.											
Kentucky.....	9	40	0	0	0	7	0	0	0	0	0
Tennessee.....	34	33	0	0	0	6	0	0	0	0	4
Alabama.....	15	16	0	0	0	0	1	0	0	0	10
Mississippi ²	0	0	0	0	0	0	0	0	0	0	2
W. SO. CEN.											
Arkansas.....	26	15	0	3	4	0	0	0	0	1	2
Louisiana.....	0	3	0	1	0	0	0	0	0	0	5
Oklahoma.....	3	11	0	0	0	0	0	0	0	0	0
Texas.....	124	93	0	25	122	0	1	0	0	0	38
MOUNTAIN											
Montana.....	53	14	0	0	0	0	0	0	0	0	0
Idaho.....	0	5	0	0	0	0	0	0	0	0	0
Wyoming.....	10	3	0	0	0	0	0	0	0	1	0
Colorado.....	6	69	0	0	4	0	0	0	0	0	0
New Mexico.....	5	21	0	0	5	0	0	0	0	0	0
Arizona.....	1	5	0	0	0	16	0	0	0	0	0
Utah ²	16	18	0	0	0	0	0	0	0	0	0
Nevada.....	0	5	0	0	0	0	0	0	0	0	0
PACIFIC											
Washington.....	15	43	0	0	1	9	0	0	0	0	0
Oregon.....	12	34	0	0	0	0	0	0	0	0	0
California.....	175	181	0	0	9	0	0	0	0	2	1
Total.....	2,614	2,807	1	47	526	124	12	0	2	7	104
41 weeks.....	144,350	171,071									

¹ New York City only.
² Period ended earlier than Saturday.

WEEKLY REPORTS FROM CITIES

City reports for week ended October 3, 1942

This table lists the reports from 87 cities of more than 10,000 population distributed throughout the United States, and represents a cross section of the current urban incidence of the diseases included in the table.

	Diphtheria cases	Encephalitis, infectious, cases	Influenza		Measles cases	Meningitis, meningococcus, cases.	Pneumonia deaths	Poliomyelitis cases	Scarlet fever cases	Smallpox cases	Typhoid and paratyphoid fever cases	Whooping cough cases
			Cases	Deaths								
Atlanta, Ga.	0	0	0	0	0	0	1	1	6	0	0	0
Baltimore, Md.	3	0	1	0	4	3	10	0	2	0	0	45
Billings, Mont.	0	0	0	0	0	0	1	0	0	0	0	0
Birmingham, Ala.	0	0	1	0	0	0	0	0	1	0	1	2
Boise, Idaho.	0	0	0	0	0	0	0	0	0	0	0	0
Boston, Mass.	1	0	0	0	7	1	5	0	25	0	0	35
Bridgeport, Conn.	0	0	0	0	0	0	1	0	4	0	1	0
Brunswick, Ga.	0	0	0	0	0	0	0	0	0	0	0	0
Buffalo, N. Y.	0	0	2	2	2	0	7	0	3	0	0	8
Camden, N. J.	1	0	0	0	0	0	1	0	1	0	0	7
Charleston, S. C.	0	0	1	0	0	0	1	1	0	0	0	0
Charleston, W. Va.	0	0	0	0	0	0	0	0	2	0	0	0
Chicago, Ill.	7	1	1	0	5	0	28	14	24	0	1	92
Cincinnati, Ohio.	2	0	0	0	3	0	2	1	15	0	0	12
Cleveland, Ohio.	3	0	5	0	1	0	3	2	18	0	0	31
Columbus, Ohio.	0	0	1	1	0	0	1	0	15	0	2	6
Concord, N. H.	0	0	0	0	0	0	0	0	1	0	0	0
Cumberland, Md.	0	0	0	0	0	0	0	0	0	0	0	0
Dallas, Tex.	2	0	0	0	0	0	2	0	8	0	1	5
Denver, Colo.	11	0	12	0	2	0	1	1	4	0	1	6
Detroit, Mich.	1	0	1	1	9	0	8	6	21	0	1	103
Duluth, Minn.	0	0	0	0	0	0	3	0	1	0	0	8
Fall River, Mass.	0	0	1	2	0	0	0	0	2	0	0	1
Fargo, N. Dak.	0	0	0	0	0	0	0	1	0	0	0	0
Flint, Mich.	0	0	0	0	0	0	4	0	0	0	0	4
Fort Wayne, Ind.	0	0	0	0	0	0	1	0	0	0	1	0
Frederick, Md.	0	0	0	0	0	0	0	0	0	0	0	0
Galveston, Tex.	0	0	0	0	0	0	2	0	0	0	0	0
Grand Rapids, Mich.	0	0	1	0	0	0	1	0	0	0	0	0
Great Falls, Mont.	0	0	0	0	0	0	0	0	2	0	0	0
Hartford, Conn.	0	0	0	1	0	0	1	2	4	0	0	3
Helena, Mont.	0	0	0	0	0	0	0	0	0	0	0	0
Houston, Tex.	3	0	0	0	0	0	8	0	1	0	1	2
Indianapolis, Ind.	1	0	0	1	0	0	6	0	10	0	0	13
Kansas City, Mo.	0	0	0	1	1	1	1	1	10	0	1	0
Kenosha, Wis.	0	0	0	1	0	0	0	0	8	0	0	3
Los Angeles, Calif.	6	0	10	0	7	1	11	7	10	0	0	13
Lynchburg, Va.	0	0	0	0	1	0	1	0	2	0	0	2
Memphis, Tenn.	0	0	2	0	0	0	2	0	6	0	0	14
Milwaukee, Wis.	0	0	0	0	10	0	0	1	6	0	1	42
Minneapolis, Minn.	0	0	1	1	0	1	1	1	13	0	0	7
Missoula, Mont.	0	0	0	0	0	0	0	0	0	0	1	0
Mobile, Ala.	2	0	0	0	0	0	1	0	1	0	0	0
Nashville, Tenn.	1	0	0	0	0	0	3	0	1	0	0	0
Newark, N. J.	0	0	0	1	2	4	1	3	0	1	0	19
New Haven, Conn.	0	0	0	0	0	0	1	0	5	0	0	2
New Orleans, La.	0	0	2	1	0	0	11	0	4	0	0	1
New York, N. Y.	9	2	6	1	4	4	40	4	42	0	5	123
Omaha, Nebr.	1	0	0	0	0	0	0	0	3	0	0	6
Philadelphia, Pa.	1	0	0	0	29	3	14	0	21	0	4	114
Pittsburgh, Pa.	0	0	4	0	0	0	11	0	4	0	0	5
Portland, Maine.	0	0	0	0	0	0	1	0	1	0	0	12
Providence, R. I.	4	0	0	4	0	0	0	0	2	0	0	24
Pueblo, Colo.	0	0	0	0	0	0	2	0	1	0	0	0
Racine, Wis.	0	0	0	0	0	0	0	0	3	0	0	0
Raleigh, N. C.	0	0	0	1	0	0	2	0	0	0	0	4
Reading, Pa.	0	0	1	0	0	0	1	0	0	0	0	1
Richmond, Va.	0	0	0	0	0	0	0	0	6	0	0	12

City reports for week ended October 3, 1942—Continued

	Diphtheria cases	Erysipellitis, infectious, cases	Influenza		Measles cases	Meningitis, meningococcus, cases	Pneumonia deaths	Polymyellitis cases	Scarlet fever cases	Smallpox cases	Typhoid and paratyphoid fever cases	Whooping cough cases
			Cases	Deaths								
Roanoke, Va.....	0	0		0	0	0	0	0	0	0	0	0
Rochester, N. Y.....	0	0		0	2	0	2	0	3	0	1	10
Sacramento, Calif.....	2	0		0	1	0	0	0	0	0	0	4
St. Joseph, Mo.....	0	0		0	0	0	0	0	0	0	0	0
St. Louis, Mo.....	0	1	2	1	2	0	6	1	8	0	0	2
St. Paul, Minn.....	0	0		0	0	0	4	1	3	0	0	13
Salt Lake City, Utah.....	0	0		0	15	0	2	0	1	0	2	2
San Antonio, Tex.....	1	0	1	0	0	0	1	1	1	0	0	1
San Francisco, Calif.....	1	0		0	12	0	3	0	6	0	1	4
Savannah, Ga.....	0	0	3	2	0	0	1	0	0	0	0	1
Seattle, Wash.....	3	0		1	2	0	2	0	0	0	0	4
Shreveport, La.....	4	0		1	0	0	6	0	2	0	1	0
South Bend, Ind.....	0	0		0	0	0	0	0	0	0	0	1
Spokane, Wash.....	0	0		0	10	1	2	0	7	0	0	5
Springfield, Mass.....	0	0		0	0	0	1	0	20	0	0	0
Superior, Wis.....	0	0		0	0	0	0	0	1	0	0	0
Syracuse, N. Y.....	0	0		0	0	2	2	1	2	0	0	15
Tacoma, Wash.....	0	0	1	9	0	0	0	0	1	0	0	1
Tampa, Fla.....	0	0		0	0	0	1	0	0	0	0	0
Terre Haute, Ind.....	1	0		0	0	0	1	0	0	0	0	1
Topeka, Kans.....	0	0		0	0	0	1	0	1	0	0	0
Tranton, N. J.....	0	0		0	0	0	3	0	3	0	0	9
Washington, D. C.....	1	0		0	0	0	5	0	14	0	0	6
Wheeling, W. Va.....	0	0		0	1	1	0	0	0	0	0	3
Wichita, Kans.....	0	0		0	1	0	1	0	3	0	0	0
Wilmington, Del.....	0	0		0	0	0	1	2	1	0	0	0
Wilmington, N. C.....	0	0		0	1	0	1	0	1	0	0	0
Winston-Salem, N. C.....	0	0		0	0	0	1	0	5	0	0	0
Worcester, Mass.....	0	0		0	1	0	6	0	9	0	0	28

Dysentery, amebic—Cases: Los Angeles, 1; New York, 1.

Dysentery, bacillary—Cases: Baltimore, 11; Chicago, 13; Los Angeles, 1; Missoula, 1; Nashville, 2; Newark, 1; New York, 46; Richmond, 4; Rochester, 1.

Typhus fever—Cases: Birmingham, 1; Charleston, S. C., 4; New Orleans, 1; Savannah, 4; Shreveport, 1.

Rates (annual basis) per 100,000 population, for the group of 87 cities in the preceding table (estimated population, 1942, 33,957,450)

Period	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Typhoid and paratyphoid fever cases	Whooping cough cases
		Cases	Deaths						
Week ended Oct. 3, 1942....	11.06	7.98	3.07	23.49	39.92	63.42	0.00	4.30	137.28
Average for week 1937-41....	14.28	8.07	1.86	130.11	45.62	59.12	0.31	8.07	162.63

† Median.

PLAGUE INFECTION IN CALIFORNIA

Under date of October 9, 1942, plague infection was reported proved in specimens collected in California as follows:

Kern County: In a pool of 200 fleas from 27 ground squirrels, *C. beecheyi*, taken within 1 mile south of Tejon school.

Mono County: September 4, in a pool of 47 fleas from 7 ground squirrels, *C. fisheri*, taken one-half mile east of Mammoth Post Office;

September 8, in pools of 33 fleas from 9 ground squirrels, *C. beldingi*, taken from Convict Lake, 7 miles north of Mammoth Post Office, and 68 fleas from 17 golden mantled ground squirrels, *C. lateralis* sp., taken 1 mile south and 2 miles west of Mammoth Post Office; September 9, in tissue from 1 chipmunk, *Eutamias* sp., found dead 1 mile east and 4 miles south of June Lake.

Siskiyou County: In pools of fleas from ground squirrels, *C. douglasii*, as follows: September 14, 119 fleas from 4 squirrels taken two and one-half miles east of Gazelle; September 16, 113 fleas from 15 squirrels taken 6 miles north of Gazelle; September 17, 132 fleas from 16 squirrels taken 12 miles north of Weed; September 18, 152 fleas from 6 squirrels taken 1 mile south of Edgewood.

TERRITORIES AND POSSESSIONS

Hawaii Territory

Plague (rodent).—During the week ended September 26, 1942, 1 rat found in Paauhau area, Hamakua District, Island of Hawaii, T. H., has been proved positive for plague.

FOREIGN REPORTS

CANADA

Provinces—Communicable diseases—Week ended September 19, 1942.—During the week ended September 19, 1942, cases of certain communicable diseases were reported by the Dominion Bureau of Statistics of Canada as follows:

Disease	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Total
Cerebrospinal meningitis		2	1	4	6		1		1	15
Chickenpox		2		21	63	10	17	9	25	147
Diphtheria	1	16	1	21	2	11		1		53
Dysentery				32						32
Encephalomyelitis								1		1
German measles		1		2	2			3	3	11
Influenza		2			3	2				7
Measles				15	14	9	6	1	4	49
Mumps		8		34	111	11	20	8	71	263
Pneumonia		1			3				18	22
Poliomyelitis	1	17	7	12		1	1		4	52
Scarlet fever		8	6	68	48	10	20	20	25	205
Trachoma									1	1
Tuberculosis	1	10	17	110	41	35	24	26	39	303
Typhoid and paratyphoid fever			2	24	2	5	1			34
Undulant fever				1	1				2	4
Whooping cough		1		254	90	4	13	11	13	386
Other communicable diseases		9		6	267	61	2		1	346

CUBA

Provinces—Notifiable diseases—4 weeks ended September 12, 1942.—During the 4 weeks ended September 12, 1942, cases of certain notifiable diseases were reported in the Provinces of Cuba as follows:

Disease	Pinar del Rio	Habana ¹	Matanzas	Santa Clara	Camaguey	Oriente	Total
Cancer	1	1	1	8	2	11	24
Diphtheria	2	19	4	1	1	3	30
Hookworm disease		15				1	16
Leprosy			1			3	4
Malaria	44	12		10		150	216
Measles		16	4			21	41
Poliomyelitis	2	17	1	3	5	11	39
Scarlet fever		3					3
Tuberculosis	18	31	33	54	5	73	214
Typhoid fever	11	51	11	39	3	23	138
Whooping cough		1					1
Yaws						5	5

¹ Includes the city of Habana.

FINLAND

Communicable diseases—June 1942.—During the month of June 1942, cases of certain communicable diseases were reported in Finland as follows:

Disease	Cases	Disease	Cases
Diphtheria	138	Poliomyelitis	3
Dysentery	1	Scarlet fever	396
Influenza	617	Typhoid fever	226
Paratyphoid fever	107		

REPORTS OF CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER RECEIVED DURING THE CURRENT WEEK

NOTE.—Except in cases of unusual prevalence, only those places are included which had not previously reported any of the above-mentioned diseases, except yellow fever, during the current year. All reports of yellow fever are published currently.

A cumulative table showing the reported prevalence of these diseases for the year to date is published in the PUBLIC HEALTH REPORTS for the last Friday in each month.

(Few reports are available from the invaded countries of Europe and other nations in war zones.)

Typhus Fever

Algeria.—During the period August 21–31, 1942, 205 cases of typhus fever were reported in Algeria.

Hungary.—During the week ended September 19, 1942, 8 cases of typhus fever were reported in Hungary.

Morocco.—During the week ended September 19, 1942, 26 cases of typhus fever were reported in Morocco.

Tunisia.—During the period September 1–10, 1942, 1,333 cases of typhus fever were reported in Tunisia, as compared with 101 cases reported during the preceding 10-day period.

Turkey.—During the week ended September 26, 1942, 8 cases of typhus fever were reported in Turkey.

COURT DECISION ON PUBLIC HEALTH

Natural milkshed—statutory definition construed.—(Connecticut Supreme Court of Errors; *Bryant & Chapman Co. v. Lowell, Dairy and Food Com'r*, 27 A.2d 637; decided July 16, 1942.) A statute defined the natural milkshed of Connecticut as embracing the State itself and “that area or areas adjacent to the State in which fresh milk for daily use in Connecticut is produced, or may be produced, and which gradually expands or contracts over a contiguous milk producing area in accordance with the operation of the law of supply and demand.” By the statute dairy farms located in the natural milkshed and outside

the boundaries of the State, and producing fresh milk for daily use in the State, were subject to the same registration, inspection, and approval as dairy farms in the State and producing milk for sale in the State. The State dairy and food commissioner was forbidden to inspect dairy farms for the production of milk which were located beyond the natural milkshed of the State except in the event of (a) a milk shortage in the State milkshed or (b) an emergency. Certain dairies in New York in an area adjacent to the New York-Connecticut State line had registered with the defendant dairy and food commissioner and had been inspected by the defendant at State expense pursuant to the provisions of the above-mentioned statute. These dairies, whose location was such that they could supply fresh milk for daily use in Connecticut, were found upon inspection to comply with the Connecticut standards of sanitation and public health, but the defendant refused to approve them as a source of milk supply for daily use as fresh milk in Connecticut because he found that there was no shortage of milk in the State milkshed, that no emergency existed, and that the "dairies were beyond the natural milkshed."

In a mandamus action against the commissioner the Connecticut Supreme Court of Errors was of the view that the part of the statutory definition of the natural milkshed of the State which referred to an area adjacent to the State "in which fresh milk for daily use in Connecticut is produced, or may be produced" presented a comparatively simple question of fact. "Can the milk be preserved and transported to Connecticut in time to be usable as fresh milk?" With respect to the additional qualification that such area "gradually expands or contracts over a contiguous milk producing area in accordance with the operation of the law of supply and demand," the court said that the qualification was merely descriptive, that it added nothing to and subtracted nothing from the definition, and that it could be disregarded. "The apparent purpose of the clause under consideration was to make it clear that the area of the natural milkshed was not one which was fixed as of any particular time but was one which would fluctuate from time to time in accordance with the law of supply and demand." According to the court the facts stipulated brought the dairies involved in the instant case squarely within the statutory definition of the natural milk shed as interpreted above.

The court also rejected the defendant's claim that it was the legislature's intention to delegate to him the authority to define the boundary of the natural milkshed in accordance with the operation of the law of supply and demand and that before he could find out-of-State dairies within the natural milkshed he first had to find that a shortage or emergency existed in Connecticut. That intention, said the court,

was not expressed and could not be implied from the vague qualification of the definition of the natural milkshed. It was pointed out that the defendant commissioner, under his own construction of the statutory definition, had found that the dairies in the instant case were in the natural milkshed because he, although finding that there was no shortage and no emergency, had inspected the dairies at State expense. The court said that it could not be assumed that he would act in direct contravention of the expressed direction of the statute that he "shall not inspect dairy farms for the production of milk which are located beyond the natural milkshed of this State except in the event of a milk shortage in such State milkshed, or in the event of an emergency."