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ORGANIZED PUBLIC NURSING AND VARIATION OF FIELD PROGRAMS IN 94 SELECTED COUNTIES *

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In two previous articles of this series dealing with public health organization in 94 selected counties,¹ it was pointed out that, although nursing service is represented in the programs of only about one-third of all reporting health agencies, such service nevertheless constitutes a major element in the combined activities of health organizations, regardless of their sponsorship. This position is maintained whether the proportion of all employees or the proportion of the total health budget assigned to such service is used as a criterion. Since nursing has been accorded such high rank among the component parts of the public health program, it should be of interest to learn how far this service in its various aspects has been extended to persons living in different types of communities.

Health agencies operating in the 94 counties encompassed by the Health Facilities Study of the National Health Inventory afforded many revealing facts bearing on this situation. These sample counties no doubt represent better than average nursing programs, as they are heavily weighted with densely populated areas and include most of the large cities of the country. Because of this selection, it would be misleading to suggest that conditions existing therein furnish a bird's-eye view of public nursing for the Nation as a whole. However, the surveyed areas do include some counties of nearly all representative population groups; consequently, a basis is provided for judging nursing activities in other areas of corresponding character-Since the prevailing scheme of recording service facilitates the istics. isolation and classification of home visits, this item has been selected for showing volume and variation in the nursing programs. For purposes of this presentation, health departments proper and the

^{*} From the Division of Public Health Methods, National Institute of Health. Study conducted in connection with the National Health Inventory.

¹ (a) Mountin, Joseph W.: How expenditures for selected public health services are apportioned. Pub. Health Rep., 52: 1384 (October 1, 1937).

⁽b) Borowski, Anthony J.: Positions and rates of pay in public health agencies. Am. J. Pub. Health, **28**: 1197 (October 1938).

health divisions in departments of welfare and education are classified as official health agencies. Visiting nurse associations, tuberculosis associations, the American Red Cross, child welfare societies, and other similar groups having special health interests compose the nonofficial agencies.

Nursing activity was not reported by 1,302 of 1,861 health agencies operating in the counties included in the study, but the staff of almost 60 percent of these organizations consists of a part-time health officer working alone or assisted occasionally by one or more sanitary inspectors. The great majority of the remaining health units of this group concentrate on the promotion of health programs rather than on the rendering of actual service. While the agencies without nurses are numerically significant, their budgets are of little moment when compared with the total funds available for health work. Health organizations which employ full-time nurses number 559; of these, 171 are health departments, 192 are other official health agencies, and 196 are organizations operating under nonofficial control. According to Borowski,² all of these agencies combined employ a total of 5,795 fulltime persons who carry the designation of public health, or field. nurse. Actually, nurses of this type make up nearly one-half of the roster of all health agency employees * working on a full-time basis.

In his analysis of health agency personnel, Borowski further explains that the extent to which nursing service has been developed is, in most cases, directly related to the urbanization of the area. For all practical purposes this characteristic is expressed in county population: those of small population are predominantly rural, while the more populous ones are largely urban. No public nursing service whatever is available in 9 of the surveyed counties. Each area without nursing service has less than 40,000 inhabitants. In 2 more counties of similar size, only part-time nurses are employed. Nevertheless, all of these counties are included in the calculations in order to show the comparative volume of service furnished to people living in areas having different characteristics. Urban communities are much better supplied with public nursing personnel than are rural sections (table 1). Only 7 full-time nurses per 100,000 inhabitants are employed by health agencies in the group of rural counties with less than 40,000 persons each. There is an obvious increase in the ratio of nurses to residents for counties of the 40,000-99,999 population bracket, but the most striking acceleration of the ratio occurs in counties of the next higher class. In counties with a population exceeding 500,000, more than twice as many nurses per population unit are employed as in those with fewest inhabitants.

The nurse-to-population ratio of both health departments and

³ See footnote 1 (b).

³ Nurses and other employees working in institutions are excluded from all calculations.

nonofficial agencies increases steadily as inhabitants of the counties become more numerous; however, differences in the number of nurses employed by the two groups of agencies are more accentuated for rural areas than for urban. Table 1 strongly suggests that the nursing efforts of nonofficial agencies are primarily concentrated in urban communities.

 TABLE 1.—Number of health agencies of specified type employing full-time nurses, number of nurses employed, and employment ratio per 100,000 population in counties of different population classes

	8	of	Type of agency											
Size of county	f each si	xounties	All agencies		cies	Health depart- ments		Other official agencies		Nonofficial agencies				
	Number of counties of Total population in c	Agencies employing nurses	Nurses employed	Nurses per 100,000 population	Agencies employing nurses	Nurses employed	Nurses per 100,000 population	Agencies employing nurses	Nurses employed	Nurses per 100,000 population	Agencies employing nurses	Nurses employed	Nurses per 100,000 population	
All counties studied	94	33, 978, 479	559	5, 795	17.1	171	2, 921	8.6	192	842	2.5	196	2, 032	6.0
Under 40,000 40,000-99,999 100,000-499,999 500,000 and over	32 22 26 14	656, 404 1, 411, 878 7, 163, 930 24, 746, 267	37 78 209 235	48 131 1, 096 4, 520	7.3 9.3 15.3 18.3	15 25 63 68	24 61 386 2, 450	3.7 4.3 5.4 9.9	12 37 77 66	14 41 317 470	2.1 2.9 4.4 1.9	10 16 69 101	10 29 393 1, 600	1.5 2.1 5.5 6.5

As the higher population ranges are reached, health agencies classified as "other official" (largely health divisions in departments of education and welfare) comprise the only group which fails to show a consistent gain in the number of nurses as related to population. Such deviation from the general trend may, in some degree, be a reflection of the tendency to concentrate tax-supported health services under health department administration in urban counties. Whereas the school nurse occupies a position of relatively high numerical importance on the staff of other official agencies in rural areas and small cities, this position is greatly overshadowed in larger cities by that of nurses attached to health departments. In proportion to the total population involved, agencies designated as "other official" offer nurses a greater opportunity for employment in counties having between 100,000 and 500,000 residents than in areas of any other population range considered.

Borowski's study, previously referred to, also reveals that, from the standpoint of representation on the staff, no other single type of personnel even closely approaches nurses when counties of any selected size category are taken as a group. This statement holds true notwithstanding the fact that 9 counties in the lowest population bracket do not employ nurses. On a basis of full-time employees serving in all counties studied, nurses outnumber physicians 7 to 1; inspectors, 5 to 1; and dentists, 43 to 1. Even the group of employees known as "all others" (embracing clerical workers, technicians, engineers, bacteriologists, and those without particular designation) fails to attain the numerical magnitude of the nursing roster. It is recognized, of course, that physicians and dentists are more likely to serve on a part-time basis than are nurses. Nevertheless, a comparison of combined full- and part-time personnel of each type shows that nurses still constitute the largest group.

The afore-mentioned analysis emphasized that more than half of the nurses devoting all of their time to public health activities are employed by health departments. Visiting nurse associations especially, and, to a lesser extent, tuberculosis and maternal and child welfare societies among the nonofficial agencies are also employers of a relatively high number of nurses. As one might expect, the ratio of nurses to other classes of staff workers is higher for the nonofficial type of agency than for those sponsored by governmental units, since the work of many organizations of the former group is primarily nursing in character. Programs of health departments and health units of school systems, on the other hand, are considerably more differentiated, particularly those of the health departments, and thus necessitates wider representation of techniques in the staff.

With relation to other types of full-time personnel employed by health agencies, nurses occupy a higher position in the smaller counties than in those of the larger population brackets. While in areas with less than 40,000 persons nurses comprise 59 percent of the total personnel attached to health agencies, the percentage drops to 45 in the group of counties which are most populous. This condition exists, very probably, because of the limitation in variety and extent of such health services as may be available in the more rural jurisdictions.

One of the authors (Mountin), in an analysis of health agency expenditures for a period of 1 year,⁴ reported that nearly a third of the total sum expended in the 94 study counties for services commonly classed as public health is alloted to nurses' salaries. He found no other salary budget to be nearly so high; the item designated as operating costs also fails to attain the ranking of nurses' salaries in the distribution scale. Little variation exists among groups of counties in the different population categories with respect to percentage of the total public health fund which is devoted to remuneration of nurses. However, costs per capita for salaries of this class of personnel are considerably higher in counties with populations exceeding the 100,000 mark than in those having less than this number of inhabitants. Advanced per capita costs for nursing in counties of the upper population classes are, for the most part, due to the higher rate of employ-

[·] See footnote 1 (a).

ment of nurses in these areas. Mountin also reported that health departments assign less of their total appropriation to nursing service than do either health divisions of school boards and other types of governmental agencies or voluntary health organizations. This difference, no doubt, is attributable to the relatively greater variety of activities sponsored by health departments in contradistinction to the restricted types of service rendered by other agencies.

In view of the importance attached to nursing, as denoted by extent of staff and size of budget, it will be of interest to see how much of nursing effort is expressed in field visits. Do the higher employment rates and higher per capita expenditures for public health nursing in large counties reflect themselves in a comparatively greater volume, greater variety, and greater intensity of field service to residents of these communities? What relationship exists between the volume and type of field service rendered by agencies of different kinds and the number of nurses employed by each group? Do agencies differ with regard to conditions which are selected for nursing emphasis? Is there a definite relationship between total volume of field nursing service and the type emphasized? Is frequency of contact sacrificed for variety of purpose by particular kinds of agencies? All of these considerations are of major importance to health administrators and to those responsible for appropriating funds for health work. In making comparisons one should have in mind variations in patterns of service which are likely to characterize agencies of different types; otherwise, there will be misinterpretation of what may seem to be deficiencies or lack of balance in the programs of the several nursing units that are operating in a given area.

By limiting inquiry to field nursing service there is excluded, of course, a large part of the nursing work represented by the staffs and budgets previously under consideration. As further explanation, it may be added that no attempt is made to evaluate the quality of work performed by any group of workers; agencies and communities are compared entirely on the bases of volume and distribution of nursing in different categories of service.

During the period of 1 year taken for this study a total of more than 9 million home visits was made by nurses of different health agencies to the population represented by the 94 counties under consideration. Roughly speaking, one-half of the visits were made by health department nurses, 47 percent by nurses of nonofficial health agencies, and 3 percent by nursing personnel employed in official agencies other than health departments. From the standpoint of visits per full-time nurse, nonofficial agencies rank highest, with health departments second, and other official agencies third, their respective performances being 2,077, 1,546, and 334. The strikingly low number of home visits made by other official agencies may be attributed, in large part, to the practice by school nurses of spending the greater portion of their time within the school buildings. Health department nurses, too, are apt to have a variety of duties that curtail field nursing time; voluntary agencies, on the other hand, tend to concentrate on field service.

Insofar as gross totals apply, nearly three-fourths of all nursing visits were made in the 14 counties having 500.000 or more inhabitants. Such focusing of service is not altogether incongruous, since this group of counties also contains approximately three-fourths of the population involved in this study. However, the higher nurseto-population ratio of urban counties suggests that there probably are better opportunities for receiving home nursing service in populous communities than in rural areas. Table 2 supports this supposition, for here it is recorded that when service is related to people, counties with populations in excess of 100,000 received more than three times as many visits per unit of population as were reported for areas with less than 40,000 inhabitants. This tabulation also indicates that residents of the most rural and of the most populous counties receive the greatest amount of their nursing service from health department nurses, but that nonofficial agencies surpass health departments in the amount of service rendered to counties of the two intermediate population brackets.

 TABLE 2.—Total number of home nursing visits and number of visits per 100,000

 population reported by specified types of health agencies in counties of different

 population classes

	Visits reported by specified type of agency									
Size of county	All agencies		Health departments		Other official agencies		Nonofficial agencies			
	Total	Per 100,000 popula- tion	Total	Per 100,000 popula- tion	Total	Per 100,000 popula- tion	Total	Per 100,000 popula- tion		
All counties studied Under 40,000	9, 018, 998 59, 572 294, 685 2, 220, 372 6, 444, 369	26, 543 9, 075 20, 872 30, 994 26, 042	4, 516, 079 30, 739 98, 758 839, 987 3, 546, 595	13, 291 4, 683 6, 995 11, 725 14, 832	281, 568 13, 864 11, 837 164, 538 91, 829	829 2, 112 838 2, 297 369	4, 221, 351 14, 969 184, 090 1, 215, 847 2, 806, 445	12, 423 2, 280 13, 039 16, 972 11, 341		

By inspecting the performance in counties of different size categories, one finds that the volume of nursing service reported by health departments is uniformly in accord with the nurse-to-population ratio for the same groups of counties. Reports of other official agencies, however, did not entirely follow the pattern set by their employment practices. Why counties with more than 40,000 but less than 100,000 inhabitants should have received proportionately less than half the number of home visits from nurses of other official organizations as were made by the same types of agencies in counties of both lower and higher adjacent population intervals is a matter for speculation; it is not explained by the relative number of nurses employed. Another type of inconsistency is found between the most populous counties and the group immediately below: The number of nonofficial nurses per unit of population is higher in areas with 500,000 or more persons than in the group of counties directly smaller (100,000– 499,999); yet proportionately less nursing service was received from voluntary agencies in areas of the former classification than in those of the latter. With this exception, the volume of service rendered by nonofficial health agencies is in agreement with the number of nursing personnel employed.

Intensity of nursing service is higher in densely populated counties than in rural localities, both for nonofficial agencies and for health departments. Health department nurses made an average of 1.3 visits per case in areas having less than 100,000 residents, while in counties with a population of 500,000 or over the frequency of contact by the same class of nurses was twice as high. Corresponding records for nurses of voluntary agencies were 3.7 and 4.7 visits per case.

Home nursing visits may be classified according to two broad types of service-those which are made primarily for instructive purposes and those which feature bedside care of the sick. For the counties covered in this study, instructive visits constitute the larger proportion of public nursing work-64 percent of the total number of visits falling within this definition (see table 3). This percentage is not constant for all classes of agencies, however. Whereas more than 95 percent of all visits by nurses of official agencies were instructive in character, nurses of nonofficial agencies specialize in bedside care to such an extent that less than 30 percent of their visits were of the instructive type. Consequently, it must be borne in mind throughout the discussion which follows that reference to visits of official health agency nurses principally implies instructive service, whereas mention of the work reported by nurses of nonofficial health organizations chiefly suggests bedside care. This difference is a natural development of the functioning policies of official and nonofficial agencies. Health departments and other governmental health organizations have specified regulatory duties which must take precedence over service functions, and they endeavor to accomplish certain ends by educating the public toward a better state of health; conversely. visiting nurse associations, tuberculosis associations, child health agencies, and similar organizations exist primarily for alleviation of the suffering of those already ill.

· .	Type of agency												
	All	agenci	85	Health	Health departments			Other official agencies			Nonofficial agencies		
Purpose of visit	Number of home visits	Percent of visits which were for instruction	Percent of visits which were for bedaide care	Number of home visits	Percent of visits which were for instruction	Percent of visits which were for bedside care	Number of home visits	Percent of visits which were for instruction	Percent of visits which were for bedside care	Number of home visits	Percent of visits which were for instruction	Percent of visits which were for bedside care	
All purposes listed	9, 018, 998	64. 4	35. 6	4, 516, 079	95.4	4.6	261, 568	98.8	1. 2	4, 2 21, 3 51	28.9	71.1	
Transmissible discase 1 Infant care and hygiene Maternal care and hygiene Other a dult care Preschool and school care and hygiene	2, 281, 583 1, 514, 829 1, 130, 878 1, 378, 430 2, 713, 278	92.4 67.1 45.8 79.7	7.6 82.9 54.2 100.0 20.3	1, 840, 993 692, 684 270, 530 90, 288 1, 621, 579	96.7 96.4 92.8 	1.3 3.6 7.2 100.0 3. 2	60, 713 2, 766 2, 454 974 214, 661	99.9 98.2 47.4 	.1 1.8 52.6 100.0	379, 872 819, 379 857, 894 1, 287, 168 877, 038	60. 4 42. 2 30. 9 	39.6 57.8 69.1 100.0 56.6	

TABLE 3.—Home nursing visits made for different purposes as reported by specified types of health agencies, percentage of such visits which were for instruction, and percentage which were for bedside care

¹ The term "transmissible disease" includes acute communicable diseases, tuberculosis, and venereal diseases.

Judging by volume alone one may conclude that control of transmissible disease ⁵ represents the leading motive for home visits by nurses of official agencies, and that attention to preschool and school children in general is next in the rank of importance. This order supports the conviction frequently expressed by health administrators, that the nurse is an important agent in preventing the further spread of transmissible disease, and that child hygiene activities offer exceptionally favorable opportunities for educational work designed to reduce the incidence of illness. It is to be expected, of course, that other official agencies should favor visits of the instructive type in the combined preschool and school hygiene fields, since the latter, particularly, represents the chief interest of the school nurses who predominate among this group.

Nursing services of nonofficial organizations are more evenly distributed as to purpose than are the visits of nurses employed by official agencies. Bedside care of adults (types of illness unspecified) is emphasized above all other purposes of visiting. This selection can be accounted for, in small part perhaps, by the fact that adult members of the family are less able—when illness occurs—to care for themselves

⁴ Included in this total are a small number of instructive home visits made by health officers for transmissible disease control. Consequently, the count of instructive nursing visits accredited to health departments for transmissible disease is a slight overstatement. It is not believed, however, that the health officer visits in question are of sufficient magnitude to alter the relative standing either of health departments among other types of agencies or of transmissible disease among other purposes for visiting.

than for their children. More especially, however, many adults carry insurance which frequently entitles them to nursing benefits. Quite conceivably, therefore, a large portion of the visits reported for bedside care of adults were made in response to requests from such beneficiaries for nursing service. Infant, maternal, and child care are also important items in the nursing programs of nonofficial health agencies. Although nurses of voluntary agencies make fewer visits for transmissible disease than for any other purpose, instruction was the stated objective for a higher percentage of such calls than of any other visits which they reported.

Health organizations which specified the kinds of disease visited stressed tuberculosis above all other transmissible conditions. Although nonofficial agencies were not so active as official agencies in the field of transmissible disease control, they reported an even higher degree of concentration upon tuberculosis than did those bodies which are officially directed. This fact is not surprising, inasmuch as tuberculosis associations, whose main—and often sole interest rests in this disease, comprise an appreciable number of the nonofficial group of agencies.

As one might expect, programs of health departments for the control of transmissible diseases are more extensive than those of other types of agencies. Approximately one-half of all visits reported by health departments for specific transmissible illnesses were for tuberculosis: nearly one-fourth of them were for scarlet fever: measles. venereal diseases, and diphtheria followed in the order named. Approximately 5 percent of all transmissible disease visits were made for diphtheria. As may be surmised from nursing effort, other official agencies are not especially active in the field of transmissible disease control. Tuberculosis and measles consume most of the attention, and between these diseases visits are about equally distributed. This low performance is attributable to the fact that only occasionally are tuberculosis programs administered by some unit of government other than the health department. The prevalence of measles among the school population presumably influences school nurses to allocate a relatively high proportion of their visits to this condition.

It has already been stated that no great variance exists in the aggregate volume of home nursing service reported by official and by nonofficial health agencies. One is impressed, however, by the higher visit rate per nurse in the voluntary agencies. This higher performance may be due to differences in programs, as was previously suggested. Duties that take them from the field for a considerable part of the time are more likely to be imposed upon health department nurses than upon the nurses of nonofficial agencies. Secondly, distributions of all visits reported by the two groups of nursing personnel vary widely as to kind of service selected for emphasis. Still another distinction between the policies of official and nonofficial health organizations is found in the intensity of nursing service rendered. For comparable services, nurses of voluntary agencies make more follow-up visits per case than do nurses of official health bodies, whether service is initiated for the purpose of instruction or of bedside care. At the same time, greater divergence is found between the bedside care visit-case ratios than between the corresponding figures for instructive nursing work. Home nursing service provided by health departments for education pertaining to diphtheria and tuberculosis control constitutes the only exception to the aforementioned general relationship. For these two conditions health departments most strongly stress the importance of follow-up visits. Return calls by nurses of official bodies other than health departments form an exception rather than a rule for all purposes considered; here the peculiar requirements of school nursing service influence the general picture.

The facts cited in this paper supply additional evidence in support of what is well known to health administrators, namely, that official organizations in most instances seek to accomplish their objectives by disseminating information and by instituting regulatory measures, while nonofficial agencies operate very largely in the field of care for a restricted number of persons already ill.

SUMMARY

Reports from all types of health agencies operating in 94 selected counties of the United States reveal information to the effect that field nursing service is frequently an outstanding feature of their whole range of activity. Public health programs in 9 counties apparently do not contain nursing service; but in the other counties studied, nursing staffs vary from one to several hundred employees. When totaled, membership reaches nearly 6,000, more than half of whom are employed by health departments; nonofficial agencies provide the second highest number. One-third of the aggregate sum devoted to health work by all agencies is spent for nurses' salaries, such workers outnumbering any other type of personnel engaged in health service.

More than twice as many nurses per unit of population are employed in urban counties as in areas which are chiefly rural. Consequently, the per capita cost for nursing service is higher in populous counties than in those which are sparsely settled. The comparative volumes of service rendered in the two types of communities are in keeping with the additional expenditures in large counties.

Over 9 million home nursing visits were made to the combined population of the 94 study counties during the period of 1 year. Health departments reported more visits than did agencies of any other type; but if numbers of visits alone are related to numbers of nurses employed and to the total amounts expended for nurses' salaries, nurses of nonofficial agencies present a higher record of performance. This difference must be considered in connection with their respective programs as a whole, however. Nurses of official health organizations have greater responsibilities for activities which are not under discussion at this time than do nurses serving under voluntary sponsorship; this may account for the variations in performance when measured on the basis of home visits.

Whereas nurses of official agencies emphasize instructive home service, those of nonofficial health groups feature bedside care as the outstanding objective of their visiting. Control of transmissible diseases and child hygiene activities represent the most frequent purposes for which instructive service was provided, while general illnesses of adults constitute the most common reason for bedside care. Maternal and infant services occupy a more prominent position in the programs of nonofficial agencies than in those of governmentally controlled organizations. Presumably because return visits are a more necessary factor of bedside care than of instructive services, nurses of nonofficial agencies reported greater intensity of service than did their officially employed coworkers.

MATERNAL SERVICES IN MICHIGAN WITH SPECIAL REFERENCE TO ECONOMIC STATUS¹

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A recent study ² of the character of maternal care being received by parturient women in the general population of Michigan reveals widespread inadequacy of medical supervision and serious deficiencies in maternal services, affecting particularly those women who are poor or on relief and, to a less extent, those living in rural areas and those experiencing their second or a subsequent pregnancy. These findings make it advisable to consider further the data of that study bearing on the adequacy of maternal services received by persons of different economic status. Adequate medical care is fundamental to improvement in maternal and infant welfare. It is generally believed that the majority of the deaths from maternal causes are preventable; that infant mortality in the first month of life can be greatly reduced; and that much of the ill health resulting from childbirth can be prevented.

¹ From Child Hygiene Investigations, Division of Public Health Methods, National Institute of Health. ² See footnote on p. 826.

In view of the fact that the method of study has been discussed in a general report,² only a brief description of the material under consideration will be given. Birth certificates registered in the Michigan Department of Health for all legitimate live births and stillbirths occurring during the first quarter of 1936 were used to define the group of maternity cases to be studied; these certificates were also the source of information regarding identity of the birth attendant, order of the mother's pregnancy, her place of residence, place of confinement (home or hospital), and certain other items. Signers of the birth certificates were requested to furnish for each case an obstetrical history,³ which inquired into prenatal, natal, and postnatal conditions, their management and treatment; the amount and kind of prenatal care; the specific techniques and procedures employed during labor and delivery; economic status of the family; and whether or not the family received financial aid in the form of relief. Information supplied on those histories which were filled in and returned, data from the birth certificates, and certain information about the physician birth attendants obtained from the American Medical Directory (1936) comprise the basic sources in the present study.

For the first quarter of 1936, a total of 21,568 births was reported in Michigan by 3,256 persons; obstetric histories were provided for 10,285 maternity cases by 1,687 of those who signed as birth attendants. Although obstetrical histories were obtained for only 48 percent of the parturient women, these cases seem to be reasonably representative of the total group of women for whom births were registered. The proportion returned was about the same for women experiencing their first pregnancy and for those having a subsequent pregnancy, for women living in the country and in cities of different sizes (except for Detroit, with a return of 43 percent), for women delivered in the home and for those delivered in hospitals, and for women grouped according to the husband's occupational class. It was found, however, that the returned histories overrepresented the practice of specialists as against that of general practitioners, and of members of the American Medical Association as against that of nonmembers.⁴

The birth rate in Michigan for 1936 (18.5 live births per 1,000 population) closely approximated the average for the preceding 5

³ Maternal Care in Michigan. A study of obstetric practices. Preliminary Reports, National Health Survey, Sickness and Medical Care Series Bulletin No. 8. U. S. Public Health Service, 1938. The study of maternal care was made in cooperation with the Committee on Maternal Health of the Michigan State Medical Society. It forms a part of the National Health Survey, a project conducted by the United States Public Health Service with the aid of financial grants from the Works Progress Administration.

² The obstetrical history questionnaire is reproduced in the general report (see footnote 2). The questionnaires were mailed to the birth attendant, together with a sample filled-in history to assist him in interpreting the character of information desired and in understanding the method of entry preferred. No instructions, other than those inserted on the form, accompanied the questionnaires; the terms were not more specifically defined than their statement on the questionnaire.

⁴ These divergencies from a completely representative sample may tend to produce a somewhat more favorable picture of maternal service than was the actual case.

years and was only slightly lower than the average for the preceding 10 years. Births registered during the first quarter comprised about 25 percent of the total occurring during the year. It should be kept in mind that winter conditions prevailed during the latter part of the period of gestation for the cases included in this study, that systematic and regular prenatal care may have been distinctly difficult to obtain in certain sections of the State, and that season may have affected adversely medical services for labor and delivery.

Because of their association with adequacy of medical care received, two factors other than economic status have been considered in the tabulations of maternal services: Size of city in which the parturient woman lived, and whether or not the current pregnancy was her first.⁵ For the city size classification, localities with populations under 2,500 in 1930 were considered rural.

ECONOMIC STATUS

Information as to the economic status of the parturient woman's family was recorded by the attendant in qualitative terms (comfortable, moderate, poor). Such a classification provides sharply differentiated groups with respect to financial ability to purchase goods and services. A rough suggestion as to the economic levels implied by these terms is available from comparison with data on annual family income obtained in the National Health Survey (1935-36).⁶ About 40 percent of the urban families included in the Survey had annual incomes below \$1,000. Since a similar percentage of families in urban areas was classified as poor or on relief in the present study, it is suggested that the upper limit for the annual family income of this group is probably about \$1,000. Analogously, it is probable that the upper limit of the moderate group is not far from \$2,000. The applicability of these approximations is limited to urban sections of the maternal care study.

Of the 10,285 cases with obstetric histories, both economic and relief ⁷ status were reported for 9,544. In the following discussion, percentages by economic status alone and by economic status and order of pregnancy are based on those cases of the 9,544 with known information for each specified type of service. An additional 500 cases were recorded as "poor" but it was not specified as to whether or not the family received relief. Since about 60 percent of these

ⁱ The percentage of cases receiving each specific type of service, according to economic status, is given in the Appendix, table 1, by size of city, and in the Appendix, table 2, by order of pregnancy.

[•] The National Health Survey (1935-36): Illness and medical care in relation to economic status. Preliminary Reports, National Health Survey, Sickness and Medical Care Series Bulletin No. 2. U. S. Public Health Service, 1938.

⁷ Families on relief some time during the pregnancy but not at the time of the confinement may not be included in the relief group (since the question did not specify that the whole period of parturition was to be considered).

cases were concentrated in Detroit, it has seemed preferable in considering rates by economic status and size of city to combine the nonrelief poor and the relief groups (including the group classified as poor but whose relief status was unknown). The number of cases in each economic status group, classified according to size of city, is shown in table 1.

 TABLE 1.—Number of parturient women according to economic status of family and size of city in which they lived

	Size of city 1							
Economic status	All locali- ties	Under 2,500 (rural)	2,500 to 25,000	25,000 to 200,000	Detroit			
Comfortable Moderate Poor or relief	1, 556 4, 444 4, 0 14	431 1, 340 1, 527	230 530 495	342 1, 052 748	553 1, 522 1, 274			
Total	10, 044	3, 298	1, 255	2, 142	3, 349			

¹ Size is based on the city proper (1930 census), but maternal cases in suburbs are included.

Table 1 indicates that 15 percent of the maternal cases were in families classified as being in comfortable circumstances, 43 percent were in moderate circumstances, and about 40 percent were poor or on relief.

About one-third of the parturient women lived in rural communities and about a third in Detroit, 13 percent in cities of 2,500 to 25,000 population, and 21 percent in cities of 25,000 to 200,000.

The number of maternal cases according to order of pregnancy and economic status is shown in table 2.

 TABLE 2.—Number of maternal cases according to order of pregnancy and economic status of family

		Order of pregnancy		
Economic status	Total cases	First preg- nancy	Second or subsequent pregnancy ¹	
Nonrelief: Comfortable Moderate Poor Relief.	1, 556 4, 444 2, 200 1, 344	632 1, 699 604 240	924 2, 745 1, 596 1, 104	

¹ Includes cases unknown as to order of pregnancy (less than 1 percent of the cases with obstetric histories).

Prenatal care.—It is generally agreed that prenatal care is a sound preventive measure; that unfortunate results from complications incidental to pregnancy may be less frequent among women carefully supervised prenatally than among those with little supervision; and that a considerable proportion of the preventable deaths from puerperal causes are attributable to lack of adequate and competent medical supervision during the period of gestation and lying-in. The value of prenatal care as a preventive measure is believed to depend on early and continuous health supervision.

The time during pregnancy when the parturient woman first visited her attendant and the number of months she was under his supervision have been used as the basis ⁸ of a prenatal care classification for the present study. Group A comprises those parturient women who first visited their attendant during the first trimester of pregnancy and were supervised 8 or more months; 9 group B, those who first visited their attendant during the first or second trimester and were supervised for 5 to 7 months; group C, those who first visited their attendant during the first or second trimester and were supervised for 1 to 4 months, and those who first visited their attendant during the third trimester and were supervised for 2 to 4 months; and group D. those who made their first and only visit during the third trimester, those who made no prenatal visits or for whom there was no evidence of any prenatal care, and those for whom the total amount of prenatal care was unknown. According to this classification, 20 percent of the cases with obstetric histories fell in group A, 33 percent in group B, 26 percent in group C, and 21 percent in group D. That this grouping of the cases furnishes sharply differentiated classes with respect to the amount of prenatal services received is manifest from a review of specific services (cf. general report).

It will be seen from table 3 that adequacy of prenatal care is closely associated with economic status.

	Prenatal care classification								
Economic status	Group A	Group B	Group C	Group D	All groups				
Nonrelief: Comfortable Moderate Poor Relief.	36. 4 24. 5 11. 9 7. 8	40. 5 38. 4 27. 2 18. 5	15. 5 24. 1 35. 3 30. 5	7.6 13.0 25.6 43.2	100. 0 100. 0 100. 0 100. 0				

TABLE 3.—Percentage of pregnant women receiving prenatal care of specified classification, according to economic status of family

While three-fourths of the women in comfortable circumstances received care which may be considered reasonably good (groups A and B), three-fourths of the women on relief did not receive such care. Supervision for 8 months or longer (group A) was received by 36 percent of the women in comfortable circumstances, 25 percent of those of moderate means, 12 percent of the nonrelief poor and 8 per-

[•] Since the duration of pregnancy was unrecorded for approximately one-third of the cases, this important factor could not be taken into account in setting up a prenatal care classification.

[•] For purposes of this classification of the duration of supervision, the ninth month was considered as equivalent to 2 months if care was received during both the first and the last half of the month.

to 43 percent for the relief group.

For prenatal care classified as groups A or B, the relative difference with economic status considered according to size of city was similar to that found for the total group. Comparisons for group D showed that deficiencies in prenatal care were much greater with diminished economic levels in Detroit than in all localities, while in rural communities they were less marked.

Prenatal supervision was less adequate for subsequent than for first pregnancies. As shown in figure 1, this inequality occurred in each economic status group.



FIGURE 1.—Percentage distribution by prenatal care classification for first and subsequent pregnancies of Michigan women according to economic status of family.

It is now rather generally agreed that a minimum standard for prenatal care should include frequent and regular urinalyses, blood pressure readings, abdominal examinations, and weighings, and that at least once during pregnancy pelvic measurements and serological test for syphilis should be made. That receipt of these services varied directly with economic status is evident from table 4, which shows the percentage of women receiving each specified type of service at least once during pregnancy. To some extent this finding is merely a reflection of the correlation of economic status and completeness of health supervision during pregnancy. That accessibility of the patient for examination is not the only determining factor, however, is brought out by the fact that an appreciable proportion of women supervised for more than half of their pregnancy (groups A and B) did not receive these services at any time (urinalysis was not received by 1 percent; blood pressure readings by 3 percent; abdominal examination by 5 percent; pelvic measurements by 11 percent; weighing by 16 percent; and serological test for syphilis was not received by more than half of the group). It should be noted that urinalyses were almost universally made at least once if the patient was under supervision for 5 months or longer.

 TABLE 4.—Percentage of pregnant women receiving prenatal service of specified type, according to economic status of family

	Type of prenatal service								
Economic status	Urinalysis	Blood pressure readings	Abdominal examina- tion	Weighing of patient	Pelvic measure- ments	Wasser- mann or Kahn test			
Nonrelief: Comfortable Moderate Poor Relief	95. 5 92. 2 84. 0 69. 8	91. 8 90. 4 81. 5 67. 2	90. 6 87. 5 80. 3 66. 8	80. 4 75. 0 64. 0 49. 1	86. 8 81. 8 74. 6 67. 4	39. 4 33. 6 29. 4 25. 0			

While the proportion of women receiving each service varied considerably, the relative decrease with economic status is quite similar for each type of service. In general, about three-fourths as many women on relief received each service as of those in comfortable circumstances; the percentage of patients weighed and the percentage receiving Wassermann or Kahn test declined somewhat more sharply with economic status.

Size of city had little effect on the relative difference with economic status in the proportion of women receiving specific services except for Wassermann or Kahn test. For this service, the decrease with economic status was most marked in rural areas, while Detroit evidenced the least variation, the percentage for the poor or relief groups being higher than for the moderate group. For each type of service, however, the decrease with economic status was somewhat less for women having their first child than for those who had previously been confined.

Type of attendant.¹⁰—In Michigan during the first quarter of 1936, 96 percent of the confined women were attended by doctors of medicine, 1.8 percent by doctors of osteopathy, and 1.7 percent by other and unspecified types of attendants (including midwives and nurses). Seventy-six percent were attended by physicians who were members of the American Medical Association and 20 percent by nonmembers. Corresponding percentages by economic status are given in table 5.

[&]quot;The signer of the birth certificate was considered the birth attendant.

	Type of attendant								
	Doctor of	medicine							
Economic status	Member of American Medical Association	Non- member	Doctor of osteopathy	Other and unspecified	All types				
Nonrelief: Contortable Moderate Poor Relief	84. 9 82. 6 77. 5 74. 0	12. 9 14. 3 17. 9 20. 9	1. 41 2. 3 3. 5 2 0	0. 77 0. 74 1. 09 3. 1	100. 0 100. 0 100. 0 100. 0				

 TABLE 5.—Percentage distribution of confined women by type of attendant, according to economic status of family

The proportion of women attended by physicians who were Association members decreased consistently with economic status, from 85 percent for the comfortable to 74 percent for the relief group. Attendance by Association members was comparatively less frequent in rural communities and in Detroit than in other cities; however, the relative decline in the rates with economic status was similar for each size of city, except Detroit where it was considerably more marked, reaching the low frequency of about 50 percent for those women who were poor or on relief.

One-sixth of the confined women in Michigan were delivered by specialists and partial specialists¹¹ in obstetrics (and/or gynecology), and one-third by specialists and partial specialists in all fields. Greater frequency of attendance by specialists among the relatively wellto-do is perhaps to be expected. The percentages of cases attended by specialists are shown in table 6.

	Specialty							
Economic status	Obstetri- cians	Partial specialists in obstet- rics	Specialists and partial specialists in other fields	All special- ists and partial specialists				
Nonrclief: Comfortable Moderate Poor Relief	13. 8 7. 0 3. 6 0. 52	15. 7 16. 4 14. 2 11. 2	18.3 17.6 14.2 15.2	47. 9 41. 0 32. 0 26. 9				

 TABLE 6.—Percentage of maternal cases attended by specialists in obstetrics and other fields, according to economic status of family

One of the most striking examples of the relation of medical care to inequality of purchasing power is found in the percentages of confined women delivered by obstetricians. While approximately 1

¹¹ An attendant was classified as a "specialist" if he was so designated in the American Medical Directory. Members of the American Medical Association are eligible for such listing at their request and on their personal statement of specialty.

parturient woman in 7 of those in comfortable circumstances was attended by an obstetrician, relatively half as many with moderate means, about a fourth as many among the poor, and a much smaller proportion among the relief, received such care. In no other type of the maternal services observed was there such marked disparity in the rates for those in comfortable and in moderate circumstances. Although this relative decrease with economic status appeared even more pronounced in smaller cities and rural communities than for the State as a whole, the number of cases was quite small and the differences probably lacking in reliability. Whether a mother is having her first child or experiencing a subsequent pregnancy had no marked influence on the relative difference with economic status in the proportion delivered by obstetricians.

For each economic group, births were more frequently attended by partial specialists in obstetrics or by specialists and partial specialists in other fields than by obstetricians. Although specialists other than obstetricians served a somewhat larger proportion of the relatively well-to-do than of those with more limited financial resources, variation by economic status was not great in the State as a whole or in the city groups of different sizes, with the exception of Detroit.

Almost half of the parturient women in comfortable circumstances were attended by a specialist or partial specialist in some field. The proportion so attended decreased invariably with financial means, the percentages being 48 for comfortable, 41 for moderate, 32 for poor, and 27 for relief. While this trend obtained in each size of city, the disparity was most marked in Detroit, where the proportion fell from 53 percent for those in comfortable circumstances to 39 for those with moderate means and to 23 for those poor or on relief. It was also found that the relative decrease in the rates with lower economic status was somewhat more marked for women who had previously had a pregnancy than for women having their first child.

Hospitalization.—During the first quarter of 1936, 45 percent of all births in Michigan were recorded as having occurred in hospitals or other institutions. However, the proportion of cases hospitalized in different economic status groups fluctuated widely about this average, the percentages being as follows:

Nonrelief:	Perce	ent
Comfortable	65.	4
Moderate	51.	7
Poor	32.	5
Relief	27.	7

The sharp decrease with economic status for confinement cases is at variance with hospitalization experience for disabling illness from all causes. Such data ¹² for 81 urban communities in 19 States are

13 See reference, footnote 6.

available from the National Health Survey, a house-to-house canvass of illness occurring during a 12-month period. It was found ¹³ that among families with annual incomes of \$2,000 and over, 29 percent of all persons with illnesses causing disability for 7 days or longer were hospitalized; in families with incomes of \$1,000 to \$2,000, 28 percent were hospitalized; among nonrelief families with incomes under \$1,000, 24 percent were hospitalized; and among persons on relief, 27 percent of such illnesses were hospitalized.

In Michigan the relative decrease with economic status in the proportion of confined women receiving hospital care was similar for each size of city except Detroit. While in each of the other city-size groups poor women or those on relief were hospitalized for confinement slightly less than half as frequently as women of comfortable status, in Detroit women classified as poor or on relief were hospitalized almost three-fourths as frequently as those in the comfortable group.

Operative procedures.—The employment of operative procedures during labor and delivery followed the general pattern with respect to economic status, whether the procedure was a major operation or a relatively minor technique. The percentages of confined women receiving specified operative procedures are given in table 7.

 TABLE 7.—Percentage of maternal cases in which specified operative procedures were employed, according to economic status of family

	Operative procedure							
Economic status	Cesarean section	Episi- otomy	Version	Forceps	Repair of perineum			
Nonrelief: Comfortable Moderate Poor Relief	3. 3 2. 1 1. 42 1. 05	36. 0 26. 4 15. 8 8. 5	3.7 2.3 2.6 1.42	21. 9 16. 0 11. 6 7. 8	48. 1 43. 5 29. 0 18. 0			

Little discussion of these findings seems necessary, since they conform closely to trends representing other phases of medical service for maternal cases. The most marked relative decrease for poor women or those on relief was reported for episiotomy.

Although there was a tendency for episiotomy to be employed more frequently for women living in larger cities, the relative reduction in the rate with lowered economic level was most pronounced for those living in Detroit. That episiotomy would be employed with less frequency for women who had previously been confined than for those having their first child might be expected; this divergence, however, was considerably greater for the lower economic

¹³ Preliminary analysis of National Health Survey data on hospital care received according to size of city indicates that greater fluctuations by income obtains in the smaller cities, probably reflecting the greater inadequacy of free hospital facilities in these communities.

levels. The decrease with economic status in the proportion of women receiving repair of perineum was also more marked for women who had previously been confined than for those having their first child. Since the number of cases delivered by Cesarean section and for which version was employed was small, percentages for the subclassification by size of city and order of pregnancy have not been shown.

Postpartum examination.—Postnatal care, as reflected by postpartum examination, was received at least once by 71 percent of the parturient women in Michigan. That receipt of this type of preventive maternal care was related to financial ability to purchase service is manifest from the following percentages of women who received one or more postpartum examinations:

Nonrelief:	Percent
Comfortable	83.6
Moderate	78.0
Poor	62 . 0
Relief	47. 2

SIZE OF CITY 14

The level of the rates for maternal services varied considerably in the groups of cities of different sizes. In general, deficiencies in maternal services were most pronounced for women living in rural communities, with a general tendency for improvement with increasing city size; for some services, however, the record for Detroit was not as favorable as for cities of 25,000 to 200,000 population.

Health supervision during essentially the entire period of pregnancy (8 months or longer, Group A) was received by approximately onesixth of the women living in rural communities, by a fifth of those in small cities, and by almost a fourth of those in large cities. Supervision during more than half of the pregnancy (5 months or longer) followed the same trend, the percentage increasing from 43 in rural areas to 59 in Detroit. Similarly, each of the six prenatal services for which record was obtained (urinalysis, blood pressure readings, abdominal examination, weighing, pelvic measurements, and serologic test for syphilis) was received least frequently by women living in rural communities and, with but minor exceptions, with increasing frequency by those living in eities of each larger size group.

The greatest deficiency in prenatal service received by women in rural communities and cities under 25,000, in comparison with those in larger cities, was in relation to the serological test for syphilis, women in the large cities receiving this service twice as frequently as the former group. Wassermann or Kahn test was obviously not reported as a routine procedure of prenatal care in cities of any size

¹⁴ The data on which this discussion is based will be found in the Appendix, table 1. It should be kept in mind that size of city refers to the residence of the parturient woman and, hence, not necessarily to place of confinement.

in Michigan in 1936. In Detroit, about half of the pregnant women were reported as receiving a Wassermann or Kahn test; in cities of 25,000 to 200,000 population about 40 percent, in those of 2,500 to 25,000, about a fourth, and in rural communities, less than a fifth received such tests. The overwhelming probability of unfortunate results for the baby of a mother with untreated syphilis makes the above findings of particular significance.

Detroit had the lowest proportion of women attended by physicians who were members of the American Medical Association, and was followed by rural communities. Cities of 25,000 to 200,000 population outranked somewhat towns of 2,500 to 25,000.

Attendance by obstetricians, on the other hand, was concentrated almost wholly in Detroit and the other large cities. Partial specialists in obstetrics supervised an increasing proportion of the maternal cases as size of city increased (except for Detroit); almost a fourth of all cases in cities of 25,000 to 200,000 were so supervised. The largest proportion attended by specialists in fields other than obstetrics was found for the small cities (2,500 to 25,000). More than half of all the maternal cases in cities of 25,000 to 200,000 were attended by specialists or partial specialists in some field, and from 35 to 40 percent of those in other urban localities, while only a fourth of those in rural communities were so attended. These differences are presumably influenced to a large extent by availability of specialists and by the fact that physicians in the smaller communities probably do not limit their field of specialization to obstetrics.

Only 26 percent of the births in rural communities occurred in hospitals, as contrasted with 45 percent in small cities and 56 percent in large cities.

The employment of specific operative procedures during labor and delivery tends to increase with size of city, except for Detroit, where episiotomy was performed with about the same frequency as in other large cities and the use of forceps and repair of perineum was less frequent. Episiotomy showed the most marked trend with size of city; this technique was used about twice as frequently for women living in large cities as for those in rural communities. For Cesarean section and version, the number of cases was small; hence, rates according to the subclassification by size of city have not been presented.

Postnatal examination was less frequently received by women living in rural than in urban areas. The percentage of women who received at least one postpartum examination was 55 for those living in rural areas, 66 in small cities, 78 in large cities, and 85 in Detroit.

ORDER OF PREGNANCY 15

As stated previously, first pregnancies were supervised longer, on the average, than subsequent pregnancies. Although the individual prenatal services were received by a somewhat higher proportion of women who were experiencing their first pregnancy than by those previously pregnant, the disparity was not marked for the majority of the services. The greatest fluctuation in the rates was for the Wassermann or Kahn test; women previously pregnant received the test three-fourths as often as those pregnant for the first time.

Parturient women were somewhat more frequently attended in their first than in subsequent confinements by physicians who were members of the American Medical Association and by specialists and partial specialists. The variation in the percentages of births delivered by obstetricians, however, was marked; the percentage of women attended by obstetricians was about two-thirds as high for subsequent as for first confinements.

Almost twice as large a proportion of women having their first child was hospitalized for labor and delivery as of those who had previously been confined. The variation associated with order of pregnancy was extreme for specific operative procedures; this finding probably reflects the fact that indications for the employment of a particular technique may be distinctly different for first and subsequent deliveries and their use may also be related to place of delivery (home or hospital).

Postpartum examination was received by women who had previously experienced pregnancy about three-fourths as often as by those whose current confinement was their first.

SUMMARY

Study of the maternal services received by women of Michigan who were confined during the first quarter of 1936 shows serious deficiencies, particularly in the supervision of women classified as poor and those on relief and, to a less extent, those living in rural communities and those experiencing their second or a subsequent pregnancy.

Inequality of maternal care associated with inequality of purchasing power persisted for each type of maternal service, for the specific techniques as well as for the broad classifications of prenatal, natal, and postnatal care. The association between care and economic status, however, varied considerably for the individual types of maternal services. Completeness of prenatal supervision manifested an unusually close relation to economic status; three-fourths of the women of comfortable status were supervised for more than half of their pregnancy, while three-fourths of the women on relief were not

¹⁹ The data on which this discussion is based will be found in the Appendix, table 2.

so supervised. The frequency with which parturient women were attended by obstetricians evidenced the most striking relative diminution with economic status. Hospital care for confinement also decreased sharply with economic status, the percentage hospitalized varying from 65 for those in the comfortable group to 52 for the moderate, 33 for the poor, and 28 for the relief group.

Deficiencies in maternal services were most serious for women living in rural communities, with a general tendency for improvement with increasing city size. Prenatal care followed this pattern; similarly, each of the prenatal services recorded was received least frequently by women living in rural communities and, in general, with increasing frequency by those in cities of each larger size group. More than half of all the maternal cases in cities of 25,000 to 200,000 population were attended by specialists or partial specialists, and from 35 to 40 percent of those in other urban localities, while only a fourth of those in rural communities were so attended. Only 26 percent of the births to women residing in rural communities occurred in hospitals as contrasted with 45 percent in small cities and 56 percent in large cities. Postnatal examination was less frequent for women in rural than in urban areas.

Women who had previously experienced pregnancy received less adequate maternal care than those whose current pregnancy was their first. Without exception, this relation was found for each type of maternal service under consideration. The association was particularly marked in the case of prenatal care and hospitalization for confinement. APPENDIX

TABLE 1.—Percentage of parturient women receiving specified maternal services, according to size of city ¹ in which they lived and economic status of family

		nder 2.5	00 (rural)			2,500-2	25,000			25,000-2	00,00			Detr	oft	
Maternal service	Total	Com- fort- able	Moder- ate	Poor or on rolief	Total	Com- fort- able	Moder- ate	Poor or on relief	Total	Com- fort- sble	Moder- ate	Poor or on relief	Total	Colli- fort- sble	Moder- ate	Poor or on relief
Prenatal care classification: Group A Group B Group D	15.9 27.4 28.2 28.6	30.4 35.7 19.7 14.2	8888 8888 8888	39.4 39.4 39.4	19.4 33.9 25.7 21.1	35.2 42.2 6.1 6.1	20.8 23.0 15.7 0 8 15.7 0 8 9	10.7 22.6 33.9 33.7	25.5 25.5 15.3 15.3	37.7 40.9 14.3 7.0	22.28.4 22.28.4 9.72	11.4 27.1 34.6 26.9	23.1 25.5 15.3	40.7 8.8.2 8.4 - 7	27. 2 41. 3 24. 0 24. 0	01 28 28 0 4 8 88 0 4 8 88 0
A remain a sey we. Blood-pressure reachings Abdominal axamination Weitshing of patient. Petvis measured. Attendant:	81.2 77.3 77.3 77.3 60.9 60.9 16.7	91.2 86.5 67.7 24.4	87.7 83.7 84.9 17.8 17.8 17.8 17.8	72.6 69.2 68.6 47.7 13.	88.88 88.89 89.64 89.64 89.64 89.64 89.64 89.64 80 80 80 80 80 80 80 80 80 80 80 80 80	92.6 92.6 81.3 881.3 88.8 8.8 8.8 8.8 8.8 8.8 8.8 8 8.1 8 8 8 8	91. 9 88. 5 87. 5	70.2 71.5 71.0 21.0 21.4 21.4	90.1 88.8 89.0 41.5	96. 5 93. 6 90. 9 42. 1 8 7. 8 8 7. 8 8 7 8 7 8 7 8 7 8 9 0. 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	94. 2 83. 3 82. 3 82. 3 44. 6	81.4 80.6 62.4 36.8 36.8	91. 1 90. 1 90. 1 87. 4 87. 4	97.8 94.9 93.2 93.2 93.2	95.0 94.9 92.0 831.5 837.1	8 8 8 8 8 8 9 9 8 8 8 8 8 9 9 9 9 9 8 9 9 9 9 8 9 9 9 9 8 9 9
Member of American Medical Member of American Medical Association Nonmember Doctor of osteopathy	79.0 16.0 2.9	80.5 16.5 1.39 1.62	81.3 14.9 2.7 1.12	76.6 3. 4 3. 1	86.3 11.5 .80 .80	92.2 7.4 .43	88. 1 10. 4 1. 13 . 38	81.7 14.5 1.62 1.62	90.7 7.2 1.54	93.0 5.6 5.88 5.88 5.88 5.88 5.88 5.88 5.88	91.8 6.0 1.43	88.1 9.8 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	67.1 29.5 2.7 .75	80.3 2.2 54	21.0 3.0 3.0 3.0	51.4 7.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1
Operations and the structure of the stru	1.18 8.4 15.0	2.8 7 .4 8	1.79 10.6	6.5 5.5 5.5	1.20 12.5 26.5	3.9 32.6 32.2	10.8 28.9	.20 14.3	23.9 23.9	20.5 25.7 18.1	11.6 24.3	3.5 22.5	10.2 15.3	22.4 10.6 13.6	10.4 18.0	4.7 11.4 7 0
All specialists and partial special- lats Hospitalization for confinement	25.5 26.1	28.3 40.0	29.3 29.3	22.2 18.9	40.2 44.5	48. 7 65. 7	40.6 50.2	36.0 28.7	54.9 58.5	64.3 78.4	60.0 66.8	43.3	35.2 60.6	52.6 77.2	39.1 61.0	23.1 52.8
Person of procedure: 2 Forcens. Repart of perheum. Postpartum examination.	11.7 11.9 28.9 55.4	18.3 17.5 33.8 65.3	14. 0 13. 5 33. 4 64. 6	7.7 8.8 21.7 44.2	22.4 15.3 33.9 66. 2	20.20 20.20 25.30 20.20 25.30 20.20	27.5 19.8 74.7 74.4	13.3 19.8 49.2 2	31. 1 16. 5 44. 2 78. 0	44.4 30.2 58.1 87.3	35.9 17.8 50.3 85.3	17.8 8.6 63.9 63.3	27.2 15.2 39.4 83.0	46.7 20.9 83.8 83.8	30.2 45.8 85.5 85.5	15.0 28.2 75.3

1 Size is based on city proper (1:30 census) but maternal cases in suburbs are included.
2 For Cessrean section and version, the number of cases was small; hence, rates according to subclassification have not been included.

		First pre	gnancy		Secon	d or sub	sequent cy ¹	preg
Maternal service	Com- fort- able	Mod- erate	Poor	Relief	Com- fort- able	Mod- erate	Poor	Relief
Prenatal care classification: Group A Group B Group C Group D	45.9 38.6 11.6 4.0	34. 1 42. 1 16. 1 7. 7	19.9 35.4 28.1 16.6	13. 4 25. 5 29. 3 31. 8	29.9 41.8 18.2 10.2	18.7 36.1 29.0 16.2	8.9 24.1 38.0 29.1	6.6 17.0 30.8 45.6
Prenatal service: Urinalyses	96.8 93.2 93.8 86.4 92.6 45.4	94.9 94.2 92.5 81.8 91.7 40 1	90.7 88.1 87.7 71.5 90.1 37.1	79.2 75.0 76.7 60.4 80.6 29.7	94.6 90.9 88.3 76.3 82.7 35.4	90.6 88.0 84.4 70.8 75.3 29.5	81.5 79.0 77.5 61.2 68.4 26.4	67.8 65.5 64.7 46.6 64.3 24.0
Vascrianti di Rain devenine Doctor of medicine- Member of American Medical Association Nonmember Doctor of osteopathy Other and unspecified	86.6 11.6 1.58 0.32	82.4 14.7 2.5 0.35	80. 2 15. 9 3. 1 0. 83	77.5 19.2 1.67 1.67	83. 8 13. 9 1. 30 1. 08	82.7 14.1 2.2 0.98	76.6 18.7 3.6 1.19	73.3 21.3 2.1 3.4
Bpecialist attendant— Obstetrician Partial specialist in obstetrics Specialists, or partial specialists,	15. 3 14. 4	8.5 17.5	4.6 14.9	0.42 11.3	12.8 16.7	6.0 15.7	3.3 13.9	0.54 11.1
All specialists and partial special- ists	20. 1 49. 8 79. 3	19.0 45.0 67.3	13.4 32.9 47.7	20.0 31.7 38.3	17. 1 46. 5 56. 0	16.7 38.5 42.0	14. 5 31. 7 26. 8	14. 1 25. 8 25. 4
Episiotomy Forceps Repair of perineum Postnartum examination	54.4 36.9 67.0 90.5	47.6 28.7 64.6 86.7	38.2 22.9 57.7 78.1	25.9 17.8 40.9 58.1	22.5 11.5 33.0 78.7	11.8 7.7 27.6 72.5	6.8 7.1 16.4 55.9	4.4 5.5 11.7 44.8

 TABLE 2.—Percentage of parturient women receiving specified maternal services, according to order of their pregnancy and economic status of family

¹ Includes persons unknown as to order of pregnancy (less than 1 percent of the cases with obstetric histories). ² For Cesarean section and version, the number of cases was small; hence, rates according to this sub-

classification have not been included.

NOTES ON THE FLEAS OF PRAIRIE DOGS, WITH THE DESCRIPTION OF A NEW SUBSPECIES*

By WILLIAM L. JELLISON, Assistant Parasitologist, Rocky Mountain Laboratory, United States Public Health Service

Three closely related ceratophylline fleas are found with considerable frequency on prairie dogs, *Cynomys* spp. As these include a species of which the male had not been described and an undescribed subspecies this paper will present descriptions and figures that will aid in their determination. Certain records of fleas found infesting prairie dogs are listed here.

Opisocrostis hirsutus (Baker)

- 1895. Pulex hirsutus Baker. Canadian Entomologist, 27: 130-132.
- 1898. Ceratophyllus hirsutus (Baker). Wagner: Horae Societatis Entomologicae Rossicae, 31: 560.
- 1904. Ceratophyllus hirsutus (Baker). Baker: Proceedings United States National Museum, 27: 392–393.
- 1912. Ceratophyllus hirsutus (Baker). Hall: Colorado College Publication General Series Nos. 59 and 60.
- 1933. Opisocrostis hirsutus (Baker). Jordan: Novitates Zoologicae, 39: 73.

*Contribution from the Division of Infectious Diseases, National Institute of Health, Rocky Mountain Laboratory, Hamilton, Mont. Baker described, and later redescribed with figures, the female of this species from prairie dogs in Larimer County, Colo. Jordan has since designated it as the type of his genus *Opisocrostis*.

The male has not been described or figured.

Male: Frontal tubercle distinct at mid-level on frons. Antennal groove extending nearly to dorsal margin of head, bordered posteriorly with row of setae, bristles on second segment of antennae about one-fourth length of club. Club of antenna relatively long, three divisions extending beyond gena.

Other characters as in the female, except the modified abdominal segments. Sternite VIII long and slender with median pair of ventral bristles, three pairs of subterminal bristles, and a pair of long terminal filaments which are branched at their extremity; considerable variation occurs in the arrangement of its bristles. One large antepygidial bristle on either side. Clasper (see figure) with immovable process rounded at apex, extending about to middle of movable process and bearing several fine setae. Movable process long, widest at level of accetabular bristles, posterior margin slightly concave, anterior margin forms a very obtuse angle slightly below middle. Three long and several short bristles along upper posterior margin and at apex.

Allotype male from *Cynomys ludovicianus*, Jefferson Canyon, Broadwater Co., Montana 1934, collected by the writer.

The collection of the Rocky Mountain Laboratory contains the following series, all from various species of *Cynomys:* Coconino County, Ariz., June 1935, collected by G. M. Kohls; Conejos County, Colo., July 1932, collected by Dr. R. A. Cooley; Broadwater, Carter and Yellowstone Counties, Mont., September 1935, collected by the writer; Dawes County, Nebr., 1930, collected by Dr. C. B. Philip; Bernalillo and Taos Counties, N. Mex., July 1935 and August 1931, respectively, collected by G. M. Kohls; Garfield, Iron, Millard, and Wayne Counties, Utah, 1936, from the collection of Dr. C. R. Eskey.

Opisocrostis labis (Jordan and Rothschild)

- 1922. Ceratophyllus labis Jordan and Rothschild. Ectoparasites, 1: 275.
- 1929. Ceratophyllus labis Jordan and Rothschild. Jordan: Novitates Zoologicae, 35: 32.
- 1930. Oropsylla labis (Jordan and Rothschild). Stewart: Canadian Entomologist, 62: 152.
- 1933. Opisocrostis labis (Jordan and Rothschild). Jordan: Novitates Zoologicae, 39:73.

The female first described as *O. labis* belongs to a different species, as pointed out by Jordan (1929), who described and figured the true female.

Ground squirrels, *Citellus* spp., are the usual hosts of *O. labis*, but this species and the species listed below were about equally abundant on prairie dogs in southern Wyoming.



RECEPTACULI AND STERNITES VI OF FEMALES

Opisocrostis hirsulus from Cynomys ludovicianus, Jefferson Canyon, Broadwater County, Montana, March 1934.

Opisocrostis labis from Cynomys sp., Hattie Lake, Albany County, Wyoming, May 1938.

Opisocrostis tuberculatus cynomuris from Cynomys ludoricianus, Jefferson Canyon, Broadwater County, Montana, March 1934.

Opisocrostis tuberculatus tuberculatus from Citellus columbianus, near Moscow, Latah County, Idaho, April 1938. While the modified abdominal segments of the male are very distinctive (see figure), the females closely resemble *O. hirsutus*. Typical specimens may be distinguished by the shape of sternite VII (see figure); however, a number of specimens in the collection of the Rocky Mountain Laboratory are scarcely distinguishable from *O. hirsutus* in this character. Specimens from the following hosts and localities are in the collection:

Cynomys sp.: Albany and Laramie Counties, Wyo., May, June, and July, 1938. Collected by Dr. G. E. Davis.

Citellus sp.: Albany and Laramie Counties, Wyo., May, June, and July, 1938; Larimer County, Colo., June and July 1938. Collected by Dr. G. E. Davis.

Citellus richardsoni: Beaverhead County, Mont., July 1935, June, July, and September, 1936; Gallatin County, Mont., March 1934; Sweetgrass County, Mont., September 1935. Collected by the writer.

Citellus columbianus: Silver Bow County, Mont., August 1936. Collected by the writer.

Mustela sp. (weasel, accidental host): Beaverhead County, Mont., July 1935. Collected by the writer.

Opisocrostis tuberculatus cynomuris new subspecies

Prairie dogs are also infested with a third form of *Opisocrostis* that is here described as a new subspecies. It is closely related to *O. tuberculatus* (Baker) 1904. Specimens of the latter from the type host, *Citellus columbianus*, and type locality, Moscow, Latah County, Idaho, are available for comparison. The new subspecies is distinguished by the modified abdominal segments, especially in the female.

Female: Sternite VII (see figure) with sinuate dorsal margin, deep posterior sinus, upper lobe subtruncate, while sternite VII of *t. tuberculatus* (see figure) has a straight dorsal margin, slightly wider sinus, and upper lobe very acute.

Male: Movable process of clasper (see figure) about equal in width throughout, posterior margin nearly straight, rounded at apex. In O. t. tuberculatus the movable process is sickle shaped, posterior margin semicircular, apex acute.

Holotype female and allotype male, seven female and two male paratypes from *Cynomys ludovicianus*, Jefferson Canyon, Broadwater County, Mont., collected by the writer, May 1934. Types deposited at the Rocky Mountain Laboratory. A pair of paratypes deposited at the United States National Museum. The species is also represented by the following collections:

Cynomys sp.: Custer County, Mont., April 1916. Collected by Dr. R. R. Parker. Antonito, Conejos County, Colo., July 1932. Collected by Dr. R. A. Cooley. Albany and Laramie Counties, Wyo., June and July 1938. Collected by Dr. G. E. Davis.

Citellus richardsoni: Albany and Laramie Counties, Wyo., June and July 1938. Collected by Dr. G. E. Davis.

The above collections from Albany and Laramie Counties, Wyo., which are adjacent to Larimer County, Colo., the type area of O. hirsutus, contained only O. labis and O. t. cynomuris. As Baker's description of O. hirsutus, based on females only, applies equally well to the subspecies here described, representatives of each species were sent to Dr. E. A. Chapin at the National Museum for comparison with types of O. hirsutus, and the writer's identification of O. hirsutus was verified.

OTHER SPECIES

Prairie dogs are occasionally infested with other fleas from their rodent neighbors. The human flea, *Pulex irritans* L., has become established in a prairie-dog colony in Jefferson Canyon, Broadwater County, Mont., as reported by Jellison and Kohls (1936). Of 140 specimens collected from 10 prairie dogs in this town, 124 were *P. irritans*.

Dr. C. R. Eskey of the Plague Laboratory of the United States Public Health Service, San Francisco, Calif., reports (correspondence) *P. irritans* as abundant on *Cynomys gunnisoni*, in Apache County, Ariz., 1938.

BIBLIOGRAPHY

Jellison, Wm. L., and G. M. Kohls: Distribution and hosts of the human flea, *Pulex irritans* L., in Montana and other Western States. Pub. Health Rep., 51:842-844 (1936).

DEATHS DURING WEEK ENDED APRIL 29, 1939

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

	Week ended Apr. 29, 1939	Correspond- ing week, 1938
Data from 88 large cities of the United States: Total deaths	8, 680	¹ 8, 459
A verage for a prior years Deaths under 1 year of age	158, 642 500	150, 849 518
Deaths under 1 year of age, first 17 weeks of year	9, 257 67 385 436	9, 227 60, 407, 184
Number of death claims. Death claims per 1,000 policies in force, annual rate. Death claims per 1,000 policies, first 17 weeks of year, annual rate	15, 976 12, 4 11, 7	13, 272 10. 0 10. 0

¹ Data for 87 cities.

³ Data for 86 cities.

MATERNAL MORTALITY IN RURAL AND URBAN AREAS— CORRECTION

In the article entitled "Maternal mortality in rural and urban areas," published in the Public Health Reports for April 28, 1938, the legends for figures 3 and 4, pages 689 and 690, were reversed. The data for figure 3 are for the *rural* population, while the data plotted on the map in figure 4 are for *urban*.

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.

the state nearth ouncers. 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 May 6, 1939, rates per 100,000 population (annual basis), and comparison with corresponding week of 1938 and 5-year median

		Diph	theria			Influ	enza			Me	asles	
Division and State	May 6, 1939, rate	May 6, 1939, cases	May 7, 1938, cases	1934– 38, me- dian	May 6, 1939, rate	May 6, 1939, cases	May 7, 1938, cases	1934– 38, me- dian	May 6, 1939, rate	May 6, 1939, cases	May 7, 1938, cases	1934- 38, me- dian
NEW ENG.												
Maine New Hampshire Vermont Massachusetts Rhode Island Connecticut	0 0 13 6 0 0	0 0 1 5 0 0	3 0 1 0 7	1 0 6 0 5	929 9	154 3	2 5	2 1	338 20 590 1, 486 504 2, 757	56 2 44 1, 264 66 929	177 64 83 257 3 56	176 64 683 36 167
MID. ATL.												
New York New Jersey Pennsylvania	6 6 17	15 5 33	39 13 20	41 13 36	1 10 7 	1 14 6 	16 3 	17 12	873 43 69	2, 181 36 135	3, 615 1, 070 5, 699	2, 825 1, 070 3, 306
E. NO. CEN.												
Ohio Indiana Illinois Michigan ¹ Wisconsin	23 12 13 5 2	30 8 20 15 1	23 5 25 6 1	23 5 31 11 3	16 25 	11 38 56	2 6 	6 16 39 3 33	32 28 21 617 1, 411	42 19 32 584 803	1, 468 867 1, 781 2, 714 3, 086	1, 468 771 1, 781 281 1, 727
W. NO. CEN.												
Minnesota Iowa Missourt North Dakota South Dakota Nebraska. Kansas	2 6 1 15 0 4 17	1 3 1 2 0 1 6	3 0 27 0 1 2 6	3 2 27 1 3 3 6	2 4 3 88 15 34 8	1 2 12 2 9 3	3 1 24 8 	2 6 49 3 	907 525 6 146 1, 495 931 173	468 259 5 20 199 244 62	254 253 598 152 	302 186 528 30 6 233 621

See footnotes at end of table.

Cases of certain discases reported by telegraph by State health officers for the week ended May 6, 1939, rates per 100,000 population (annual basis), and comparison with corresponding week of 1938 and 5-year median—Continued

	1	Dipl	ntheria			Infl	uenza			М	easles	
Division and State	May 6, 1939, rate	May 6, 1939, cases	May 7, 1938, cases	1934- 38, me- dian	May 6, 1939, rate	May 6, 1939, cases	May 7, 1938 case	7 1934- 38, me- dian	- May 6, 1939, rate	May 6, 1939, cases	May 7, 1938, cases	1934– 38, m e - dian
50. ATL.												
Delaware. Maryland ^{3 3 4} Dist. of Col. ⁴ Virginia. West Virginia. North Carolina ³ Georgia ³ Florida ³	10 10 11 11 23 14 5 0				$ \begin{array}{c} $	2 3 4 2 5 4 4 7 4 7 2 5	7 4 8 2 1 4 1 10 0	8 1 0 2 9 3 8 21 2	8 90 1 2,53 1,51 1 1 1 1 0 1,26 1 3 1 8 2 63	0 29 8 31 3 80 1 5 86 6 1; 4 11 0 20	- 10 2 77 4 8 7 450 4 570 6 2,040 3 208 1 260 9 210	0 24 2 342 8 97 8 490 9 341 9 341 3 63
E. SO. CEN.												l .
Kentucky Tennessee Alabama ³ Mississippi ³	7 7 2 18		13 3 3		52 130 737	2 30 74 41		7 0 4 9 6	9 12 7 7 3 46	7 73 9 44 5 264	3 206 5 179 4 342	6 445 84 175
W. SO. CEN.												
Arkansas. Louisiana ³ Oklahoma Texas ³	17 22 12 16	7 9 6 19	11 11 4 22	4 14 4 34	375 73 282 442	151 30 140 533	l 19 0 7 8 190	9 19 9 9 5 74 0 222	384 223 505 3 410	15% 92 251 495	5 316 2 75 251 5 167	38 70 194 584
MOUNTAIN												
Montana Idaho 4 Wyoming 4 Colorado 4 4 New Mexico Arizona Utah ? 4	9 0 44 77 0 12 0	1 0 2 16 0 1 0	3 0 2 10 1 3 1	3 0 1 5 3 1 1	599 10 39 62 613 258	64 1 8 50 26		5 18 5 1 	459 969 2, 509 1, 849 247 478 765	49 95 115 384 20 39 77	35 30 25 331 128 18 267	35 29 25 247 111 76 36
PACIFIC												
Washington 4 Oregon 4 California	0 0 23	0 0 28	2 0 28	2 0 29	184 30	37 36	28 27	25 49	2, 590 437 2, 192	840 88 2, 673	38 47 686	240 79 930
Total	12	295	346	400	142	3, 019	693	1,068	639	15, 821	30, 034	30, 034
18 weeks	18	8, 180	9, 654	10, 159	371	141, 425	39, 725	98, 034	545	242, 810	586, 013	471, 265
	Mer	ningitis Coc	, meni cus	ngo-		Poliom	velitis			Scarle	t fever	
Division and State	May	May	May	1934-	May	May	May	1934-	May	May	May	1934-

Division and State	May 6, 1939, rate	May 6, 1939, cases	May 7, 1938. cases	1934– 38, me- dian	May 6, 1939, rate	May 6, 1939, cases	May 7. 1938, cases	1934– 38, me- dian	May 6, 1939, rate	May 6, 1939, cases	May 7, 1938, cases	1934- 38, me- dian
NEW ENG.												
Maine New Hampshire Vermont Massachusetts Rhode Island Connecticut	0 0 2.4 0 0	0 0 0 2 0 0	1 0 1 0 0	0 0 4 1 0	0 0 0 0 0	000000000000000000000000000000000000000	0000000	0 0 1 0 0	115 0 54 183 53 229	19 0 4 156 7 77	18 0 16 325 12 84	18 9 251 18 84
MID. ATL.												
New York New Jersey Pennsylvania	2 4 2.5	5 3 5	7 0 1	9 3 9	0.8 0 0	2 0 0	2 0 2	2 0 0	245 265 197	613 223 388	769 135 801	910 177 642

Cases of	' certain dis	eases report	ed by tele	graph by	State hea	lth officers	for the	week
ended	May 6, 195	9, rates per	100,000 1	population	n (annual	basis), and	l compa	rison
with c	orrespondin	g week of 19	38 and 5-	year med	ian—Con	tinued	-	

<u></u>	Me	ningiti co	s, men ccus	ingo-		Polion	ayelitis	3		Scarl	et fever	
Division and State	May 6, 1939, rate	May 6, 1939, cases	May 7, 1938, cases	1934– 38, me- dian	May 6, 1939, rate	May 6, 1939, cases	May 7, 1938, cases	1934– 38, me- dian	May 6, 1939, rate	May 6, 1939, cases	May 7, 1938, cases	1934- 38, me- dian
B. NO. CEN.												
Ohio Indiana Illinois Michigan ³ Wisconsin	0.8 0 2 1.1 4	1 0 3 1 2	2 2 2 1 1	0 2 13 2 1	0 0 0 0	0 0 0 0 0	1 0 0 1	0 0 1 0 0	254 248 296 475 362	330 167 451 449 206	226 73 398 374 128	674 150 618 374 296
W. NO. CEN.												
Minnesota Iowa Missouri North Dakota South Dakota Nebraska Kansas	0 0 0 0 0 0	0 0 0 0 0	3 0 1 1 0 0 1	3 0 1 0 0 2 1	0 0 0 0 0 0	0 0 0 0 0 0	0 1 0 0 0 0 0	0 0 0 0 0 0	149 286 104 22 105 88 168	77 141 81 3 14 23 60	142 137 241 41 13 21 98	142 137 192 30 13 57 96
50. ATL.												
Delaware Maryland *** Dist. of Col.* Virginia West Virginia North Carolina * Georgia *	20 3 8 0 8 1.5 5 0 3	1 1 0 3 1 2 0 1	0 2 1 10 2 1 1 1 0	0 6 1 8 9 2 1 1 1	0 0 1.9 0 1.5 36 5 9	0 0 1 0 1 13 3 3 3	0 0 0 0 0 1 1	0 0 0 0 1 0 0 0	98 120 113 58 81 31 5 20 15	5 39 14 31 30 21 2 12 5	8 86 20 24 36 19 1 5 6	5 72 20 34 46 19 2 5 6
E. SO. CEN.												
Kentucky Tennessee Alabama ³ Mississippi ³	5 0 1.8 2.5	3 0 1 1	7 1 6 0	7 7 3 1	0 0 1.8 2.5	0 0 1 1	0 0 1 0	000000	66 74 7 3	38 42 4 1	19 27 4 6	33 23 4 6
W. 80. CEN.												
Arkansas Louisiana ³ Oklahoma Texas ³	0 5 2 0.8	0 2 1 1	0 0 3 2	0 0 4 8	2.5 0 2 0.8	1 0 1 1	1 0 0 0	1 0 0 0	2 19 40 34	1 8 20 41	4 4 15 73	4 13 15 73
MOUNTAIN										1		
Montana Idaho 4. Wyoming 4. Colorado 4 4. New Mexico. Arizona. Utah 2 4.	0 0 0 0 0 0	000000000000000000000000000000000000000	000000000000000000000000000000000000000	0 0 0 0 0 0	0 0 0 12 0	0 0 0 0 1 0	0 0 0 0 1 0	0 0 0 0 0 0	178 20 240 188 25 258 109	19 2 11 39 2 21 11	21 10 11 37 11 5 15	17 10 18 87 12 11 15
PACIFIC	•											
Washington 4 Oregon 4 California	3 0 0.8	1 0 1	1 1 1	2 0 1	0 0 2.5	0 0 3	0 0 0	0 0 3	96 60 121	81 12 148	21 41 226	49 89 201
Total	1.7	43	64	138	1.3	32	12	21	163	4, 099	4, 807	6, 338
18 weeks	2	897	1, 480	2, 487	0.7	324	359	376	200	90, 400	105,200	123, 493

See footnotes at end of table.

Cases of certain diseases reported by telegraph by State health officers for the week ended May 6, 1939, rates per 100,000 population (annual basis), and comparison with corresponding week of 1938 and 5-year median—Continued

									_		
		Sma	llpor		Тур	hoid and fe	l paraty ver	phoid	Wł	ooping	cough
Division and State	May 6, 1939, rate	May 6, 1939, cases	May 7, 1938, cases	1934- 38, medi- an	May 6, 1939, rate	May 6, 1939, cases	May 7, 1938, cases	1934- 38, medi- an	May 6, 1939, rate	May 6, 1939, cases	May 7, 1938, cases
NEW ENG.											
Maine New Hampshire Vermont. Massachusetts Rhode Island Connecticut	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 13 0 0 0	0 0 1 0 0 0	1 1 0 1 0 0	0 0 1 0 1	404 0 442 181 481 137	67 0 33 154 63 46	36 0 58 124 20 91
MID. ATL										1	
New York New Jersey Pennsylvania	0	1 0 0	0000	000	2 5 4	4	6 4 8	7 3 8	179 315 166	446 265 327	546 244 319
E. NO. CEN.			.								
Unio Indiana Illinois Michigan ³ Wisconsin	19 52 3 13 0	25 35 4 12 0	6 47 20 5 11	5 7 1 11	7 1 6 3 0	9 1 9 3 0	5 7 1 4	6 1 4 5 1	121 88 130 151 244	157 59 198 143 139	113 17 120 243 179
W. NO. CEN.										1	1
Minnesota Iowa Missouri North Dakota South Dakota Nebraska Kansas	19 87 53 7 150 8 6	10 43 41 1 20 2 2 2	11 36 19 15 18 36 7	11 20 11 4 11 17 15	0 12 4 7 8 0 3	0 6 3 1 1 0 1	1 4 1 0 0 0 1	0 2 0 0 0 2	58 20 19 29 8 8 89	30 10 15 4 1 2 82	23 31 25 57 25 6 162
80. ATL.						1		1		1	1
Delaware	0 0 0 0 0 0 0 3	0 0 0 0 0 0 0 1	000000000000000000000000000000000000000	0 0 0 0 0 0 0 0	0 3 8 2 8 3 8 2 12	0 1 1 3 2 3 1 4	0 2 1 10 5 7 8 5	0 2 0 5 5 2 3 7 3	197 74 226 114 54 416 270 65 208	10 24 28 61 20 285 99 39 69	8 64 5 88 59 497 108 71 17
E. SO. CEN.											
Kentucky Tennessee Alabama ³ Mississippi ³	2 2 2 0	1 1 1 0	10 2 0 5	0 0 0 0	10 4 9 3	6 2 5 1	0 3 6 5	4 3 3 1	10 71 70	6 40 40	59 29 34
W. SO. CEN.					_						
Arransas Louisiana ³ Oklahoma Texas ³	0 99 12	0 49 14	8 1 82 18	1 0 3 7	7 17 6 8	3 7 3 10	4 7 3 18	2 9 3 18	35 15 8 115	14 6 4 139	26 2 85 267
MOUNTAIN											
Montana Idaho 4 Wyoming 4 Colorado 4 4 New Maxico Arizona Utab 3 4	0 31 0 0 49 0	0 3 0 0 4	11 25 2 5 1 6	8 0 4 5 0	9 0 22 5 12 37	1 0 1 1 3	1 0 7 3 1	1 0 0 4 1	37 0 44 332 507 159	4 0 2 69 41 13	54 12 6 40 35 44
PACIFIC	Ĩ	Ĩ	Ĭ	Ĩ	Ŭ	Ň	Ů	v	-201	"	
Washington 4	9	8	10	10	3	1	4	3	83	27	0
California	60 • 9	12 11	18 75	10 12	30 7	6 8	0	05	75 215	15 262	11 536
Total	12	296	454	239	5	125	158	138	144	3, 555	4, 661
18 weeks	14	6, 446	9, 507	3,947	5	2,076	2, 204	2, 204	163	72, 625	76, 547

¹ New York City only.
 ² Period ended earlier than Saturday.
 ³ Typhus fever, 24 cases as follows: Maryland, 1; South Carolina, 2; Georgia, 8; Florida, 3; Alabama, 5; Louisiana, 1; Texas, 4.
 ⁴ Rocky Mountain spotted fever, 19 cases as follows: Maryland, 3; District of Columbia, 2; Idaho, 1; Wyoming, 4; Colorado, 1; Utah, 1; Washington, 1; Oregon, 6.
 ⁴ Colorado tick fever, Colorado, 4 cases.

SUMMARY OF MONTHLY REPORTS FROM STATES

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

the second se											
State	Menin- gitis, menin- gococ- cus	Dipt theri	1- ia	Influ- enza	Ma- laria	Mea- sles	Pel- lagra	Polio- mye- litis	Scarlet fever	Small- pox	Ty- phoid and paraty- phoid fever
February 1939											
Puerto Rico	1	3	14	131	2, 651	11		. 0	0	0	19
March 1939											
Alaska Wisconsin	0 8		3	8 3, 537		1 3, 055		01	2 815	0 18	02
April 1939		1									
Arlansas Connecticut Delaware Indiana Missouri Vermont	4 0 4 6 0	1 4 3	6 1 1 6 8 2	1, 140 47 330 57 33	264 1 4	299 3, 699 12 100 61 225	53	2 0 0 2 0	26 386 28 961 381 41	13 0 220 144 0	13 2 0 6 9 1
February 193	9			March 1	959—Cor	nainued		April	19 5 9—C	ontinued	
Puerto Rico Chickenpox Dysentery Mumps		Cases 25 4 1	v	Vhooping Alask Wisco	cough:		Cases 14 937	Mumps Indi Mis Veri	-Contin ana souri	ued.	Cases 270 577 99
Ophthalmia n um Puerperal fever	eonator-	1	c	hickenp	April 193 0X:	y	242	Rables I Ark Indi	n animai ansas ans	s: 	21 27
Tetanus		7		Conne	cticut		354	Ark	ansas		42
Whooping coug	b	110		Delaw Indiau	elaware			- Con Indi	necticut.		2
March 195	9			Misso	uri		223 49	Missouri Tetanus:			14
Chickenpox: Alaska		21	C	Conjuncti	vitis: eticut		. 14	Arka Miss Trachon	ansas souri na:		3 1
Wisconsin	mic or	1, 1/0	1-	Arkar	isas (amo	ebic)	- 2	Ark	ansas		5
lethargic:				Arkan Conne	isas (baci ecticut (b	llary) acillary)	- 29 - 4	Mis	souri		87
Wisconsin German measles:		1	E	Incephali lethargio	tis, epic :	lemic o	r	Tularae Arka Indi	nna: ansas ana		6 1
Wisconsin		96		India			. i	Undular	nt fever:		~ •
Mumps:			G	lerman n	neasles:			Con	necticut.		
Wisconsin		1, 086		Arkan	sas		- 4	Indi	ana		5
Septic sore throat:		,		Verme	ont		10	Whoopi	ng cough	 :	1
Wisconsin		8	E	lookwori	n disease	:		Ark	ansas		83
Trachoma:			۱.	AIKSI Jumps:	1585		- 1	Uon Dels	ware		047
Wisconsin		1	1 "	Arkan	sas		. 89	Indi	ana		245
Undulant fever:				Conne	cticut		- 396 70	Miss	souri nont		- 83
W INCOMMENTAL COMPANY				T)CIG M							

PLAGUE INFECTION IN NEVADA AND NEW MEXICO

IN FLEAS FROM DESERT RATS IN CLARK COUNTY, NEV.

Under date of May 5, 1939, Senior Surg. C. R. Eskey reported plague infection proved in pools of fleas from *Neotoma desertorum* (desert wood rats) in Clark County, Nev., as follows: 79 fleas from 44 desert rats trapped April 7, 15 miles north of Las Vegas; 74 fleas from 54 desert rats trapped April 8, 17 miles northwest of Las Vegas; and 8 fleas from 1 desert rat found dead April 8, 17 miles northwest of Las Vegas.

IN KANGAROO RAT IN DONA ANA COUNTY, N. MEX.

Under date of May 5, 1939, Senior Surg. C. R. Eskey reported plague infection proved in tissue from 1 *Dipodomys ordii* (kangaroo rat) trapped April 15, 1939, 10 miles west of Las Cruces, Dona Ana County, N. Mex. Dr. Eskey states that this focus of infection is believed to be farther south and east than any other area in which plague in wild rodents has been demonstrated to exist in the United States, and that this is the first instance of the proof of plague among kangaroo rats in this country.

WEEKLY REPORTS FROM CITIES

City reports for week ended April 29, 1939

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.

	Diph-	Infl	uenza	Mea-	Pneu-	Scar-	Small-	Tuber-	Ty-	Whoop-	Deaths.
• State and city	theria cases	Cases	Deaths	sles cases	monia deaths	fever cases	pox cases	culosis deaths	fever cases	cough cases	all causes
Data for 90 cities: 5-year average. Current week ¹ .	161 94	153 176	61 37	7, 605 4, 601	749 503	2, 363 1, 508	21 19	417 349	25 22	1, 437 1, 145	
Maine: Portland	o		0	0	1	1	0	0	0	5	30
Concord Manchestor Nashua Vermont:	0 0 0	 	0 1 0	0 0 0	2 0 0	0 0 0	0 0 0	0 1 2	0 0 0	0 0 0	15 30 8
Barre Burlington Rutland Massachusetts:	0 0	 	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	9 E
Boston Fall River Springfield Worcester	1 0 0	 	0 0 0 0	182 1 46 3	22 0 3 9	51 2 2 12	0 0 0 0	5 2 3 1	1 0 0 0	26 0 0 34	254 34 41 52
Rhode Island: Pawtucket Providence Connecticut:	0 0	<u>-</u> 1	0 1	3 17	0 3	1 9	0 0	0 1	0 1	0 77	17 67
Bridgeport Hartford New Haven	0 0 0	3 	1 0 2	16 68 344	2 5 1	11 8 10	0 0 0	1 3 2	0 0 0	1 6 7	37 34
New York: Buffalo New York Rochester Syracuse New Jorsey:	0 13 0 0	25 	2 4 0 0	222 169 98 173	12 85 7 1	31 231 12 11	0 0 0 0	5 76 0 1	0 4 0 0	14 80 11 48	129 1, 579 69 55
Camden Newark Trenton	1 1 0		0 1 0	0 6 0	2 1 1	7 57 5	0 0 0	0 5 5	0 0 0	4 52 1	29 102 41
Philadelphia Pittsburgh Reading Scranton	5 0 6 0	 4 	3 1 0	27 7 1 1	23 6 2	66 29 1 18	0 0 0 0	18 7 1	2 2 0 0	109 38 0 1	470 158 24
Ohio: Cincinnati Cleveland Columbus Toledo	2 1 2 0	4 26 1	2 0 0 1	6 4 2 4	6 13 4 5	25 76 9 10	0 1 2 1	5 8 6 5	2 0 0 1	4 40 2 31	129 177 78 70
Anderson Fort Wayne Indianapolis Muncie South Bend Terre Haute	0 2 2 0 0 0		1 0 2 0 0 0	0 0 12 0 0 0	0 2 14 0 2 1	3 9 51 2 1 2	0 3 0 0	0 1 7 1 0	1 0 0 0 0	2 0 32 0 1 0	4 24 122 11 21 16

¹ Figures for Barre and Topeka estimated; reports not received.

City reports for week ended April 29, 1939-Continued

	Diph-	Inf	luenza	Mea-	Pneu-	Scar-	Small-	Tuber-	Ty-	Whoop-	Deaths.
State and city	theria cases	Cases	Deaths	sles cases	monia deaths	fever cases	pox cases	culosis deaths	fever	cough cases	all causes
Illinois.											
Alton	0	1	1	0	0	1	0	0	0	0	3
Chicago	13	5	2	19	37	235	• 0	34	1	87	742
Eigin Moline	N N	1	l 0			0		0	0	4	11
Springfield	l i		ŏ	1	2	2	ŏ	Ň	Ň	2	29
Michigan:	-	1	-	-	-	-		Ĭ	, i	-	-~
Detroit	9	8	2	15	19	134	0	11	1	74	273
Fint Crond Papide				42	5	29			0	2	27
Wisconsin:	ľ		•	3	- 1		v	l V	U	-	
Kenosha	0		0	0	0	4	0	0	0	9	8
Madison	0		0	31	0	4	0	0	0	13	12
Milwaukee	ļ ļ	1		7	11	41	0	4	0	47	123
Superior	6		ŏ	1	ŏ	2	ŏ	ŏ	ŏ	ů	10
	· ·			-		-		Ť	, e	-	
Minnesota:											
Minneepolie	0		0	170	Q Q	0	U	Ŷ	0	0	27
St. Paul	6	i	ĩ	140	6	7	ő		ŏ	02 5	120
Iowa:	Ŭ	-	-		Ů	•	, v	-	v	Ŭ	
Cedar Rapids	0			1		2	0		0	1	
Davenport	0		0	0		3	8	0 0	0	1	1
Siour City	Ň			2	U U	30 0	39	U U	ŏ	3	27
Waterloo	2			2		12	õ		ŏ	4	
Missouri:											
Kansas City	0		0	2	7	15	0	3	0	1	103
St. Joseph	1	i-	1	1	1	28	2	7	ŏ	10	228
North Dakota:	•		•	•	ı "	~	-	•	Ŭ		
Fargo	0		0	0	0	1	0	0	0	0	9
Grand Forks	0			0		1	0		0	0	
South Dakota:	U		U	U	0	2	v	U	U	U	2
Aberdeen	0			136		0	9	0		0	
Sioux Falls	0		0	1	0	7	0	0	0	0	10
Nebraska:	,			000			•				
Omaha	0			200	4	6	1		ŏ	1	59
Kansas:	v		Ť	°.	•	Ť	-	ů	Ť	-	
Lawrence	0	1	0	0	0	0	0	0	0	0	6
Topeka											
WICHILB	U		0	1	2	0	U U	U		•	24
Delaware:											
Wilmington	0		0	0	4	3	0	1	0	1	
Maryland:			.	202	10	24		10	<u> </u>	20	997
Cumberland	ŏ		ő l	200	10	6	ŏ	10	ŏl	6	10
Frederick	ŏ		ŏ	ĭ	ō	ō	ŏ	ŏ	ō	Ō	2
Dist. of Col.:	ا ر										150
Wasnington	4		0	292	8	18	0			33	103
Lynchburg	2		0	93	0	2	0	0	0	12	4
Norfolk	ī	3	ŏ	52	i	3	Ō	3	0	7	32
Richmond	0		0	291	0	2	0	0	0	0	39
KOSNOKC	U		U	T	3	- 1	υļ	- 1	۷I	1	22
Charleston.	0	3	ol	0	4	1	ol	0	0	2	23
Huntington	ĭ			ŏ		ī	Ő		0	0	
Wheeling	0		0	2	2	0	0	2	0	15	21
North Carolina:									6	,)	
Raleigh	2			Ň		2	ŏ	<u>0</u>	ŏ	3	14
Wilmington	ŏ		ŏ	5	īl	3	ŏ	ŏ	ŏ	7	8
Winston-Salem.	1		0	25	1	1	0	1	0	0	16
South Carolina:		14			_	<u>_</u>		,	1	2	9A
Florence	Ň	13	ŏ I	ŏ	ő	ĭ	ŏ	ő	ôl	õl	10
Greenville	ŏ		ŏ	ŏ	ŏl	ōl	ŏl	öl	Ó	8	· 4

State and city	Diph-	Diph- heria		Mea- sles monia	Scar- let 8	Small-	Tuber- culosis	Ty- phoid	Whoop- ing	Deaths, all	
	Cases	Cases	Deaths	cases	deaths	fever cases	cases	deaths	fever cases	cough cases	causes
Georcia: Atlanta Brunswick Savannah Florida: Miami	000000000000000000000000000000000000000	27 20	000000	2 8 2 1	6 0 2 1	2000	000000000000000000000000000000000000000	5 0 1 2	0000	1 0 12 10	79 2 36 26
Tampa Kentucky: Ashland Covington Lexington	2 1 1 0		0	78 0 0 0	1 2 0 1	1 0 1 1	0	0 1 5 0	1 0 0	7 0 0	20 7 19 18
Louisville Tennessee: Knorville Memphis Nashville Alabama:	0 0 2	1 5 	0 1 0 1	1 2 1 9	4 1 11 1	7 7 11 15	0 4 0	1 0 3 2	0 0 0 0	7 0 15 5	53 22 63 66
Birmingham Mobile Montgomery	0 0 1	14 2 	2 0	2 1 1	2 4	3 0 1	0 0 0	2 0 	1 0 0	3 0 1	52 17
Arkansas: Fort Smith Little Rock	1 0	2	ō	8 1	3	0 0	0	0	0 0	2 0	
Lake Charles New Orleans Shreveport Oklahoma:	0 8 0	i 	0 0 0	13 57 16	2 15 7	1 11 0	0 0 0	1 8 0	0 5 0	1 20 0	9 135 60
Oklahoma City_ Tulsa Texas:	0 1	2	0	18 37	3	4 7	1 1	1	0 0	0 0	46
Dallas Fort Worth Galveston Houston San Antonio	2 0 0 0 1	1 	1 0 0 1	30 28 0 22 0	3 0 0 7 5	2 7 0 1 2	0 0 0 0 0	6 0 2 3 7	0 0 0 0 0	3 3 0 2 0	56 30 16 102 75
Montana: Billings Great Falls Helena Missoula	0 0 0 0		0 0 0 0	0 61 7 4	0 0 1 0	0 2 2 0	0 0 0 0	0 1 0 0	0 0 0 0	0 0 0 0	3 5 5 6
Boise Colorado:	0		0	7	0	0	0	0	0	1	8
Springs Denver Pueblo New Mexico:	1 5 1		0 0 0	28 63 268	2 6 1	4 9 2	0 0 0	1 5 1	0 0 0	2 19 23	13 92 6
Albuquerque Utah: Salt Lake City	0 1		0	2 11	1 3	0 7	0	6 1	0	0 4	22 36
Washington: Seattle Spokane Tacoma Oregon:	0 0 0		0 0 0	289 198 3	6 3 0	4 1 1	0 0 0	2 0 0	0 0 0	5 0 0	84 34 39
Portland Salem	2 0	1	0	4	4	8 1	1	1	8	4	69
Los Angeles Sacramento San Francisco	1 0 1	12 	1 0 0	467 107 65	12 3 6	42 5 42	0 0 0	16 2 13	0 0 0	30 0 9	714 34 183

City reports for week ended April 29, 1939—Continued

State and city	Meni mening	ngitis, sococcus	Polio- mye- litis cases	State and city	Meni mening	Polio- mye-	
	Cases	Deaths			Cases	Deaths	Cases
Maine: Portland	1 0 1 2 2 1 0	0 0 0 1 0 1	0 1 0 0 0 0	North Carolina: Wilmington South Carolina: Charleston Georgia: Savannah Louisiana: New Orleans Bhreveport Utah: Salt Lake City Washington: Spokane	1 0 1 0 1	0 0 0 1 0 1	0 6 1 1 0 0
District of Columbia: Washington	2	1	0				

City reports for week ended April 29, 1939-Continued

Encephalitis, epidemic or lethargic.—Cases: Philadelphia, 1; Springfield, Ill., 1; Fort Worth, 1. Pellagra.—Cases: Columbus, 1; Wilmington, N. C., 1; Winston-Salem, 1; Atlanta, 2; Savannah, 1. Typhus feer.—Cases: New York, 1.

FOREIGN AND INSULAR

CANADA

Provinces—Communicable diseases—Week ended April 15, 1939.— During the week ended April 15, 1939, 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	New Bruns- wick	Que- bec	On- tario	Mani- toba	Sas- katch- ewan	Alber- ta	British Colum- bia	Total
Cerebrospinal meningitis. Chickenpox Diphtheria Dysentery		1 3 3	1	139 33	2 108 1	4 3	37 1	3	56 1 6	8 351 42 6
Influenza Measles Mumps Pneumonia		427 105 	1	440 29	529 745 56 47	2 3 20 2	7 1 5 8	14 3	119 1 4 15	1,084 1,310 117 105
Poliomyelitis Scarlet fever Smallpox		8	23	1 63	126	12 1	11	11	2	1 256 1
Tuberculosis. Typhoid and para- typhoid favor	1	13	5	43 25	59 9	12	38	5	7	183
Whooping cough		9	5	62	135		29	11	48	299 299

CUBA

Provinces—Notifiable diseases—4 weeks ended January 7, 1939.— During the 4 weeks ended January 7, 1939, cases of certain notifiable diseases were reported in the Provinces of Cuba as follows:

Disease	Pinar del Rio	Habana	Matan- zas	Santa Clara	Cam- aguey	Oriente	Total
Cancer Cerebrosyinal meningitis Diphtheria Leprosy Malaria	1	2 11 1 90	1	8 	1 	1	12 2 11 5
Maisria Measles Scarlet fever	 11 7	29 1 2 63 43 3	10 12 8 	152 20	15 15 11 	103 29 32 	185 1 282 121 8 2

SWITZERLAND

Communicable diseases—February 1939.—During the month of February 1939, cases of certain communicable diseases were reported in Switzerland as follows:

Disease	Cases	Disease	Cases
Cerebrospinal meningitis Chickenpox Diphtheria German measies Influenza Measles Mumps	3 146 83 24 38, 331 27 198	Paratyphoid fever Scarlet fever Tuberculosis Typhoid fever Undulant fever Whooping cough	1 400 227 8 12 142

NOTE.—A table giving current information of the world prevalence of quarantinable diseases appeared in the PUBLIC HEALTH REPORTS for April 28, 1930, pages 711-723. A similar cumulative table will appear in future issues of the PUBLIC HEALTH REPORTS for the last Friday of each month.

Cholera

China—Hong Kong.—During the week ended May 6, 1939, one case of cholera was reported in Hong Kong, China.

India.—During the week ended April 22, 1939, one imported death from cholera was reported in Delhi, and during the week ended April 29, 1939, four cases of cholera were reported in Rangoon, India.

Plague

Brazil.—During the month of January 1939, plague was reported in Brazil as follows: Alagoas State, 19 cases, 3 deaths; Parahiba State, 1 case; Pernambuco State, 15 cases, 4 deaths.

Indochina (French)—Pnom-Penh.—During the week ended April 29, 1939, one case of plague was reported in Pnom-Penh, French Indochina.

United States.—A report of plague infection in Nevada and New Mexico appears on pages 849-850 of this issue of PUBLIC HEALTH REPORTS.

Smallpox

Mexico.—During the months of January and February 1939, smallpox was reported in Mexico as follows: Aguascalientes, Aguascalientes State, 15 cases, 16 deaths; Chihuahua, Chihuahua State, 1 case, 1 death; Guadalajara, Jalisco State, 1 case; Matamoras, Tamaulipas State, 2 cases; Mexico, D. F., 7 cases, 1 death; Pachuca, Hidalgo State, 29 cases, 3 deaths; Queretaro, Queretaro State, 1 case, 1 death; San Luis Potosi, San Luis Potosi State, 16 cases, 7 deaths; Tampico, Tamaulipas State, 9 cases, 1 death.

Typhus Fever

Mexico.—During the months of January and February 1939, typhus fever was reported in Mexico as follows: Aguascalientes, Aguascalientes State, 11 cases, 8 deaths; Matamoras, Tamaulipas State, 1 case; Mexico, D. F., 14 cases, 6 deaths; Pachuca, Hidalgo State, 2 cases, 1 death; Queretaro, Queretaro State, 4 cases, 1 death; San Luis Potosi, San Luis Potosi State, 8 cases; Toluca, Mexico State, 8 cases, 2 deaths.

Yellow Fever

Brazil—Espirito Santo State.—Yellow fever has been reported in Espirito Santo State, Brazil, as follows: Castelo, April 2, 1939, 1 death; Siqueira Campos, April 2-3, 1939, 2 deaths.