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AN APPRAISAL TECHNIQUE FOR URBAN PROBLEM AREAS AS A BASIS FOR HOUSING POLICY OF LOCAL GOVERNMENTS

Report of the SUBCOMMITTEE ON APPRAISAL OF RESIDENTIAL AREAS,* *Committee on the Hygiene of Housing, American Public Health Association*

III. USE OF THE TECHNIQUE IN PLANNING REMEDIAL ACTION FOR A REPRESENTATIVE PROBLEM AREA [1]

Essentials in the analysis of survey data.—The touchstone of any survey is the readiness with which the collected data lend themselves to analysis—the process which brings order and meaning into masses of raw data. A scheme of analysis that will reveal significant relationships in lucid and economical fashion must be an integral part of a good survey procedure.

In qualitative appraisals such as the technique under discussion, the use of index items and rating scores contributes to the desired clarity and economy of interpretation in two fundamental ways. First, it gives summary expression to the over-all quality of the observed phenomena; second, it facilitates the analysis of interrelationships among these phenomena.

In the preceding section of this report it was shown that penalty scores for survey areas taken as a whole *do* give summary expression to the over-all character of these areas and facilitate the comparison of their housing quality. But for full understanding of the internal problems of an area, and for the shaping of official policy with respect to it, the over-all ratings must be supplemented by more detailed examination.

The point of view from which analyses are made is most important, since the choice of a principal classification for tabulation of the data implies that study of this particular category will yield both valid generalizations and guides to concrete action.

Three basic classifications for the analysis of housing data which may be expected to reveal significant relationships are: (1) character of the dwellings, (2) character of the families housed, and (3) areal subdivisions of the district surveyed.

1. Analysis by character of dwellings is based on the assumption that in any area a given type of housing accommodation (tenement, one-family dwelling,

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[1] The earlier sections of this report appeared in the PUBLIC HEALTH REPORTS, 57: 285-296 (1942).

rooming house, building with mixed residential and business uses, etc.) may have inherent qualities which differentiate it from other types, and that these qualities should govern the formulation of official policy and action. Aside from the type of building, other characteristics such as monthly dwelling rental or age of building may provide revealing subclassifications.

2. Since housing problems derive not only from physical conditions but also from social and economic relationships, it is important to analyze the data in terms of the principal sociological characteristics of the families housed. Tabulation of essential data according to differences in race or nationality, income, and size of family may be needed to disclose important housing problems associated with these characteristics.

3. Underlying the analysis by areal subdivisions is the hypothesis that the district surveyed may contain subareas which are relatively homogeneous with respect to significant attributes, and within which more or less uniform action can be taken. For this type of determination, essential data should ordinarily be tabulated by city blocks, but where conditions vary greatly within the blocks it may be preferable to break the data down by street frontages. It will then be seen whether blocks or frontages with similar characteristics fall into larger homogeneous subareas for treatment.

The central substandard district previously described (survey area II)[2] well illustrates the range of housing deficiencies which make a slum area the daily concern of one city department or another. Area II will therefore now be briefly appraised by means of selected analyses under the three headings just mentioned. It is not intended here to develop the findings in such detail as would be required to form the basis for a fully integrated housing program. It is rather the purpose to show that interpretation of basic data under even a few subclassifications will disclose the nature of an area's housing problem and will produce usable directives for remedial action.

Analysis by character of dwellings—type of structure.—In area II the number of structures is about equally divided between tenement (three-or-more-family) and nontenement types. Thirty percent of the buildings which contain residences, however, also have business or other nonresidential uses, and this condition is by no means restricted to the tenements. In the belief that significant problems might be associated with these mixed uses, the following classification of structure types was used for tabulation of the data on physical deficiencies:

Dwelling structure without business	*Dwelling structure with business*
1-family	1-family
2-family	2-family
3-or-more-family (tenement)	3-or-more-family (tenement)

Review of conditions according to this classification revealed that physical deficiencies are far worse in buildings with mixed residential

[2] This mixed business and residential district of a Connecticut city, comprising 849 dwelling units, is described in the issue of the PUBLIC HEALTH REPORTS previously cited. The general characteristics of the area are given on page 290, and the salient housing characteristics are shown in figure 1, page 291.

and business uses than in the purely residential buildings. The poorest of all types was the tenement with mixed uses. In the purely residential class of structures, tenements were worse on the whole than the one- and two-family houses. The distribution of selected deficiencies in the various types of buildings is presented in figure 1.

In tenements with mixed business and residential uses, one-half or more of the dwelling units have the following deficiencies: No bathing facilities; toilets outside the dwelling unit; toilets shared by two or more families; toilets in poor sanitary condition. Fifty-seven

PERCENTAGE OF DWELLING UNITS WITH SELECTED DEFICIENCIES IN VARIOUS TYPES OF STRUCTURES IN SURVEY AREA II

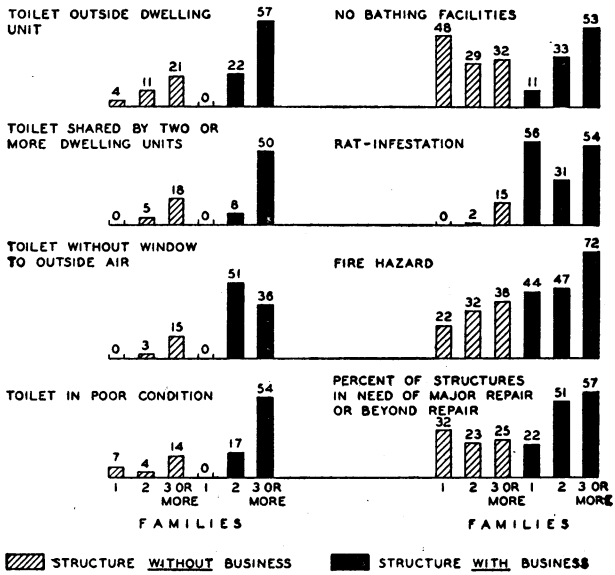

FIGURE 1.

percent of these tenements with mixed uses are reported either in need of major repairs or beyond repair; the proportion of dwelling units subject to fire hazard is nearly twice as large as in purely residential tenements; and more than half of these mixed tenements are infested with rats. Rat infestation, however, is marked in all types of mixed residential and business buildings, largely because of the nature of businesses conducted on the premises, which include numerous food-handling and junk-storage establishments.[3]

It is evident that enforcement or other remedial action for this area must recognize the concentration of physical deficiencies in

[3] The field schedules for this technique (appended hereto) are designed to record infestation only as reported by the householder. (See dwelling-unit schedule, item F.) In this particular area, however, the health department inspector confirmed the infestation before recording it. Thus the figures on infestation for area II may be taken as authentic and conservative.

tenements and other buildings with mixed uses, although basic deficiencies among the dilapidated one-family houses without business will also need serious attention. (See figure 1 for condition of repair and bathing facilities.)

In addition to the type of structure, the dwelling rent is often used as a basis for tabulation and analysis, on the assumption that rental values will reflect the quality of dwellings. In fact, it is often contended that rental alone is a valid indicator of problem areas. It is therefore worthy of note that in area II as a whole the rents bear little relation to the quality of dwellings, as to either their facilities or their general condition. The reason for this anomalous situation will appear in considering the racial problem of the area.

Analysis by character of family—race.—In districts inhabited by both Negroes and whites, the housing conditions and needs of these two groups may differ so radically that it is essential to recognize the

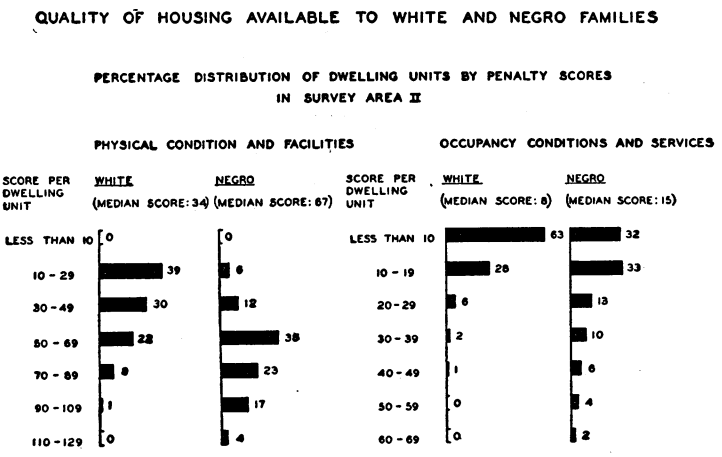

FIGURE 2.

race difference as one of the basic factors in analysis. This is not merely a theoretical venture but is a necessary step toward practical action, for the Negro housing problem is usually both more acute and more difficult to cope with than that of any other population group.

In area II, about 30 percent of the dwelling units are occupied by Negroes. Had these units been concentrated in a distinct Negro district, as is so often the case, the tabulation of penalty scores and basic deficiencies by areal subdivisions, as considered in later paragraphs, might have served to clarify the Negro housing problem of the area. The dwellings of colored families, however, were found generally intermingled with those of whites, and separate analysis by race of families was required.

Results of this study are the most striking of any obtained in the three test surveys. Tabulation of penalty scores for the physical condition of dwelling units of whites and Negroes shows both an appalling discrepancy between the quality of housing available to these two groups and clear evidence that Negroes on the average pay higher rents for the same quality of housing.

Whereas the median physical penalty score for all dwelling units in the area is 50 points, it is 67 for units occupied by Negroes and only 34 for those of whites. As shown in figure 2, 69 percent of the units occupied by whites have penalty scores of less than 50 points, as against only 18 percent of the Negro accommodations. Every fifth Negro dwelling unit incurs a physical penalty of 90 points or over—possible

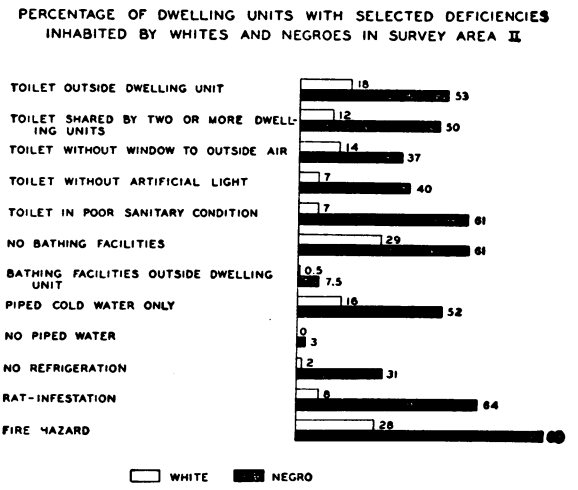

FIGURE 3.

only in houses of the most primitive or degraded type—whereas only one of every hundred white units has such a high penalty score.

The median occupancy penalty score is 15 points for Negroes as compared with 8 for whites. One-eighth of the colored families live under conditions characterized by occupancy penalties of 40 points or more. Penalties of this magnitude generally occur only where every form of crowding is extreme and where landlord services are completely lacking.

The incidence of selected deficiencies in dwellings occupied by Negroes and whites is shown in figure 3, which tells its own story of inequality.

In addition to the conditions indicated in figure 3, the majority of Negro dwellings are located in structures reported either in need of major repairs or beyond repair. Only a negligible proportion of the

Negroes live in structures in good condition. Doubling of families in a dwelling unit, generally a most serious form of overcrowding and one which may result either from housing shortage or from a need to share excessive rents, was found in less than 1 percent of the dwelling units of white families but in over 7 percent of the Negro units.

The table below reveals still further the qualitative gap between the housing facilities available to whites and Negroes in this area.

White and Negro dwellings in 4 rent classes by physical penalty scores

Net rent per dwelling unit	Penalty score—points			Net rent per dwelling unit	Penalty score—points		
	Minimum	Median	Maximum		Minimum	Median	Maximum
$10.00–$14.99:				$20.00–$24.99:			
White	51	57	91	White	22	24	70
Negro	62	81	121	Negro	42	63	88
$15.00–$19.99:				$25.00–$29.99:			
White	21	47	85	White	15	29	44
Negro	54	74	114	Negro	24	41	99

In each rent class, the penalty scores for physical condition are far higher for Negro dwellings than for those of whites. The most striking case occurs in the $20–$25 rent group, where the median penalty is 63 points for Negro dwellings, as against 24 points for those occupied by whites.

In short, the housing occupied by Negroes in this slum area, as measured by our provisional rating scale, is physically about twice as bad over-all as that of the whites; in the various rental brackets the median Negro dwelling shows from about 1⅓ to over 2½ times as heavy a physical penalty score as that of the median white dwelling. Overcrowding and other occupancy problems in general are also about twice as serious for colored families as for whites. It is clear that a drastic solution is needed for the Negro housing problem here: either new public housing facilities or other truly low-rent schemes adapted to the needs of this particular group of the population.

Analysis by areal subdivisions—blocks.—For systematic law enforcement and various other kinds of housing action it is essential to know whether a major survey area contains subareas of sufficiently distinct character to require differential treatment. To illustrate the results yielded by analysis of areal subdivisions, an area comprising 14 representative blocks in the heart of the central substandard district has been studied.

The average physical-condition penalty score of dwelling units in these blocks was 51 points, which is so high that the area may be considered seriously substandard. The individual blocks, however, differ considerably and seem to fall into three classes according to the average penalty score within the blocks. These classes are shown in

figure 4 as A, B, and C. In class A the average physical penalty score per block is 29 points, the averages of individual blocks ranging from 24 to 36 points. Class B has a range of block averages from 43 to 59 penalty points, with a class average of 53. Blocks in class C average 81 points, and range from 72 to 96 points.

While the housing in class A blocks thus appears only moderately deficient on the physical side, the blocks in group C reveal an extreme slum character. It is doubtful that any remedy less drastic than complete demolition of the housing structures can be applied to blocks in this latter class, where further analysis of deficiencies has shown that all structures are in serious disrepair; where 90 percent of dwellings are deficient in toilet facilities and 85 percent lack bathing facilities; where, further, 30 percent of the units occur in daylight-crowded structures.

Although conditions in class B blocks are slightly better, it seems improbable that the majority of substandard structures could be re-

CLASSIFICATION OF BLOCKS IN CENTRAL SUBSTANDARD AREA BY PHYSICAL QUALITY OF HOUSING

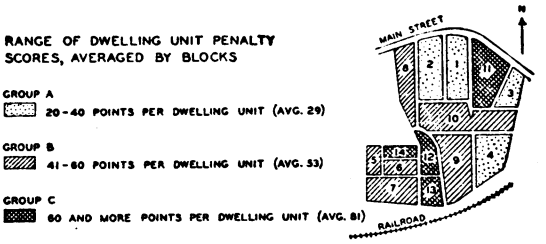

FIGURE 4.

habilitated on any profitable basis, for many of them are characterized by serious lack of repair and by primitive toilet, bathing, and heating facilities.

Even in the A blocks, 20 percent of the dwellings have penalty scores of 40 points or more, but this class as a whole shows distinctly better characteristics than the remainder of the area. In this group of blocks only 14 percent of dwellings are deficient in toilet facilities and 21 percent in bathing facilities; need of major repairs is reported for one-third of the units. The indication is, therefore, that conditions in these blocks could be brought up to an acceptable standard by demolition of a few of the worst structures and by improvements of sanitary facilities and some structural repair in others. The demolition of structures beyond rehabilitation would also somewhat alleviate daylight-crowding, and might tend to retard further blighting within these blocks. A glance at the map, however, shows that the blocks

in these three classes do not form compact subareas. Therefore, while remedial action might prolong the useful life of class A blocks, these are so intermixed with blocks of definite slum character that it would be unsound policy to plan for their improvement without further considering the ultimate fate of the area as a whole.

This area is located between a main railroad line and the principal downtown business street, and is traversed by main trucking arteries. Approximately half of the buildings in the district are entirely business or industrial—a condition inimical to a satisfactory housing environment. Although further studies from the city-planning viewpoint would be needed to determine the specific uses for which this area should be replanned, even a cursory review of neighborhood characteristics indicates that it is not suitable for continued residential use. Any schemes of rehabilitation or mandatory repair should therefore be keyed to the possibilities of converting the area to purposes other than housing.

Implications for early official action.—It is believed that even this partial interpretation of the data has demonstrated the value of this appraisal technique as a diagnostic tool in the hand of official agencies, both for the broad evaluation of housing quality in terms of healthfulness, safety, and livability, and for consideration of specific enforcement and rehabilitation problems in a slum area. Aside from questions of basic housing policy which will be considered in the closing section, there become evident several types of action which should be taken immediately by local agencies of the city studied, in order to remove threats to human health and safety or to conserve marginal dwellings which must be kept in use during the war emergency.

1. *Housing inspection and law enforcement.*—Numerous hazards and legal violations were revealed by this health department survey which warrant special enforcement measures by that department or further appraisal and appropriate action by the technical personnel of other city departments concerned with housing. Within the province of the health department would lie reinspection and abatement in dwellings where serious crowding was indicated, a drive against rat infestation in tenements and other premises with mixed uses, special sanitary policing of structures having shared toilets and of those showing insanitary condition of toilets or garbage accumulations in the yard, and other measures to enforce specific provisions of present laws.

The building department should make skilled appraisals and issue appropriate enforcement orders with respect to buildings where extreme structural deterioration has been reported. The fire department should undertake similar enforcement in those premises where specific fire hazards were observed.

The basic appraisal should be extended, with similar cooperation between the city departments on technical refinements, to all other problem areas in the city—either as known to local officials to be substandard or as shown by the block data tabulations of the 1940 Federal housing census to be of doubtful quality.

2. *Formulation of an official minimum housing standard.*—An early step should be the review of the appraisal data as the basis for setting a local standard below which dwellings would be closed or demolished as fast as new construction or

rehabilitation permitted rehousing the families concerned. Present laws and ordinances deal with various deficiencies as separate problems, but they give no objective basis for determining the point at which the combined defects, or over-all quality, of a dwelling render it unfit for human habitation. A new type of standard is therefore needed, which will set forth the minimum combination of facilities and conditions prerequisite to continued occupancy—a standard of *over-all fitness for habitation.*[4]

Because of the power of the building department to order demolition of unsafe buildings and the power of the health department to order the closing of insanitary structures or those otherwise unfit for human habitation, the minimum standard for human occupancy should be arrived at jointly by these two agencies; it would be highly desirable to enlist the cooperation of the fire department in formulating those elements of the standard concerned with fire hazard.

Once this standard is established, the penalty scores for individual buildings in area II, together with the data on individual deficiencies of each building, will reveal those structures which should be demolished or vacated and those where compliance with the new standard could be ordered.

3. *New legal controls.*—In this particular community, as in many others, the principal weakness of existing laws and ordinances lies in their failure to require in one- and two-family houses some of the basic safeguards and amenities prescribed for tenements. This survey has shown that nontenement dwellings need protection under the law no less than tenements with respect to condition of repair, fire hazards, and infestation; certain toilet conditions in nontenement dwellings should also be dealt with by the legal regulations.

The prevalence of highly unsatisfactory occupancy conditions has suggested the need for a new type of overcrowding regulation; perhaps one under which the maximum capacity, in persons, of at least each multiple dwelling must be posted as a stimulus to observation by inspectors and a deterrent to willful violation by either landlord or tenant.

4. *Measurement of the need for new low-rent housing facilities.*—It has been shown that perhaps half of the dwellings in this central district are physically so defective as to preclude their rehabilitation on any economic basis. Extension of the appraisal to other problem areas would make it possible to judge the total number of structures in the city which should be demolished as part of a long-range program, as well as the number of families in need of housing assistance because of poor facilities, overcrowding, or an intolerably high ratio of rent to income. Such investigation should, of course, pay particular attention to the problems of Negro families, for 80 percent of them in area II have been shown to live in dwellings of a character which may be irremediable except by demolition.

IV. OBJECTIVE APPRAISAL—A TOOL FOR SHAPING BASIC HOUSING POLICIES

Housing betterment has long pivoted around two poles: enforcement of the restrictive powers exercised by health or building departments and development of constructive measures such as govern-

[4] While the Committee on the Hygiene of Housing has dealt with the subject of housing standards in its Basic Principles of Healthful Housing, no attempt is made here to define substandard housing conditions as the basis for legal action. The subcommittee believes that housing standards which are to form the basis for law enforcement should be formulated locally in terms of prevalent housing deficiencies and with due regard to actual possibilities of enforcement. The rating system of this technique is, of course, intended to be used both in formulating standards and in measuring degrees of substandardness in specific structures, blocks, or larger areas.

mental subsidy for new housing facilities. Forty years ago it was inconceivable that large-scale housing progress in America could come about through any better means than well-drawn regulations under the police power. Ten years ago progressive housers concerned themselves primarily with public housing, and the improvement or extension of regulatory measures fell somewhat out of fashion, for in the minds of many the housing problem was to be solved categorically by the employment of governmental subsidies for new construction.

A balance between these two schools of thought is now being achieved, to which the war lends added meaning. A strengthening of regulatory measures becomes vital for the conservation of our housing resources in a period marked by cessation of normal building, while constructive programs have broadened from public housing alone to cover neighborhood rehabilitation and the replanning of entire communities. The distinction between restrictive and constructive measures has therefore lost its traditional sharpness. During the war and for post-war housing programs both types of action will be needed.

Determining the extent to which conservation or construction should be pursued is one of the first problems encountered in a comprehensive approach to housing. To make such determinations possible was a primary objective of the subcommittee in the development of this appraisal method. Rough descriptions such as the standard real property inventories are not sufficiently precise or adaptable tools for the varied requirements of modern urban planning. A procedure is needed which will express fine distinctions between various housing areas or between major categories of shelter, and which at the same time can serve as a basis for the qualitative classification of individual dwellings, structures, or areas.

The study of one substandard area above has shown some of the types of local action which may immediately arise out of basic surveys and appraisals in limited survey areas—without important changes in the viewpoints, organization, or policies of official agencies. The following are suggestions of more far-reaching consequences which may result if the idea of qualitative appraisal is adopted as a foundation-stone of housing policy, and if the various bodies concerned with housing develop further the trend toward cooperative effort already evident in many places.

1. *Systematic inspection and coordinated enforcement.*—Sporadic enforcement of housing regulations has been characteristic of most cities. One reason has been the chronic shortage of replacement dwellings for families in structures ripe for condemnation; other factors have been the resistance of the courts to vigorous action against an owner's rights in property, the lack of reasonably precise tools for

measurement of over-all housing quality, and the tradition that inspection and enforcement need be put in motion only upon receipt of specific complaints.

Responsible city officials have come to recognize that certain types of housing deficiency are detrimental to families or to the community whether or not complaints are made. In a growing number of cities, therefore, enforcement based on complaints is being supplanted by systematic inspection, coupled with appropriate routine enforcement, throughout districts of poor quality or among types of dwellings presenting special problems.

Such measures should not be, as they often are, the sole concern of one city bureau which happens to have some curiosity about its housing job. The health department, the building department, the fire department, and newer bodies like the housing authority and the planning commission have interdependent responsibilities. In treating its own aspect of the problem each can be effective only if it has reasonable knowledge of the basic facts and some understanding of their policy implications. Cooperation between these agencies should be axiomatic, for it will make enforcement schemes more complete, more effective, and more economical.

A technique for objective appraisal of housing adequacy not only lends itself to the promotion of cooperative effort, but is close to being the kernel of it. Such appraisal permits the designation and classification of problem areas which call for different types of administrative action appropriate to various official or unofficial agencies, and it produces basic records around which a central repository can be maintained, accessible to all groups concerned.

In some cities the data from quite limited surveys, or even the findings on flagrantly bad individual properties, have been used with notable effect as publicity material to muster public sentiment in support of adequate enforcement. Surveys which both measure the full extent of the local housing problem and lay the foundation for a comprehensive solution should be invaluable in gaining popular support for needed enforcement programs, including needed appropriations for personnel to carry them out.

2. *Housing standards for other purposes than law enforcement.*— Official housing standards of the type discussed above will be useful to numerous organizations aside from those normally charged with housing enforcement, especially if the standards be related to a scheme of appraisal which permits measurement of degrees of substandardness.

Public and private welfare agencies are generally aware that seriously substandard housing facilities or extreme overcrowding may tend to undermine the health and morale of their client families. Many of these bodies are developing or wish to develop housing

standards according to which rental payments for dependent families may be scaled. Relief agencies are particularly important among the potential supporters of official standards and discriminating appraisal methods, for in the long run they can bring tremendous leverage to bear for housing improvement through their rent-paying relationship to large numbers of property holders. The support of official and private welfare groups for the promulgation of official standards and also their help in drafting such standards should be more widely cultivated.

Local housing authorities might embody the official standards in their tenant-selection regulations for new projects and could recognize the appraisal ratings of individual family conditions as a primary measure of housing need. Rent-control boards could similarly use the standards and the ratings in rent disputes, adopting official substandardness as a ground for revoking unjust rent increases.

It may be impossible as a general thing to interest local tax officials in checking their assessed values for low-grade dwellings against a basic appraisal of healthfulness and livability. Pressure can and should be brought to bear on these officials, however, as it has been in at least one housing-conscious city, to the end that if incurably substandard structures revert to the city for delinquent taxes they shall promptly be destroyed rather than thrown back on the real-estate market because the city's left hand knows not the business of its right hand.

3. *Synthesis of regulatory and constructive powers.*—A general limitation of housing regulations is their failure to develop possible punitive actions beyond demolition, closure, or token fines. Housing consciousness, on the part of both the general public and the courts, has reached an all-time high, and it is reasonable to expect that broad support would be given to measures calling for a policy of discrimination as well as overt action, stipulating, for example, that in premises where substandardness is established by objective appraisal, rents may not be increased[5] or possibly even that they may not be maintained above a level set to penalize substandardness.

A second and striking weakness of restrictive housing laws is their general lack of any intent to employ the sanctions of police power in support of constructive programs such as those of public housing authorities and planning agencies. This weakness is to be expected, for our pattern of housing regulation has been largely handed down from a time when there was no climate of constructive public policy for housing and city planning. Increased governmental aid on the constructive side, represented in the past few years by the public

[5] An act embodying substantially this principle, the so-called Minkoff Law, has been in force for several years in New York State: Laws of New York 1938, ch. 675.

housing program and by Federal aid to planning bodies, has brought strong potential forces into play for the strengthening and broadening of police-power controls. If fully recognized and exploited, these forces may revolutionize our attitude toward law enforcement and the instruments under which it is carried out.

The development of official local housing standards coupled with sound appraisal techniques should warrant the drafting and testing in court of laws which provide that buildings and areas below a certain standard shall be taken out of housing use after a limited period allowed for amortization of any remaining economic value of the structures. Not only should such laws, if sustained, help in deflating speculative property values which have blocked the replanning of slum areas, but they would serve notice on communities as to the number of dwellings to be replaced by a given date. Local housing and planning bodies would thus be stimulated to more vigorous programming and search for funds. Furthermore, since the economic value of the worst buildings would presumably have been liquidated during the period of grace, it should be possible within a reasonable period to clear slums without payment for many of the structures. This is accepted practice in British slum clearance, and the lack of similar powers in America is estimated [6] to have cost our public housing program, in a typical year, over $400 per new dwelling unit built.

We must begin to think of comprehensive housing programs in which official designation of substandardness by areas will serve as a beacon to guide the agencies of reconstruction into those districts whose improvement under the police power may be hopeless, but which offer prime opportunity for private and governmental rehabilitation schemes, including housing projects as a basic form of public works.

In other words, imaginative exercise of restrictive powers may supply for the first time a method of earmarking whole districts so as to indicate both the relative urgency and the types of constructive programs needed for their improvement or rebuilding.[7]

4. *Post-war reconstruction of substandard urban areas.*—Official bodies and individual leaders in the fields of public administration, city planning, economics, and public health, concerned with the spread of detrimental housing conditions over large areas of our cities, recognize that constructive urban rehabilitation and replanning schemes on a vast scale are needed to cope with the steady physical

[6] William J. Barron: Low Cost Housing and Slum Clearance. Unpublished doctoral dissertation, Yale School of Law, 1941.

[7] The paragraphs under topic 3 have been adapted from a forthcoming report of the Subcommittee on Housing Legislation and Administration of the Committee on the Hygiene of Housing, "Principles and Policies underlying the Elimination of Substandard Housing Conditions by the use of the Police Power."

and economic deterioration of central urban districts. Not only is it one of the democratic peace aims to provide shelter and environment which will promote healthful living for all families, but the execution of large-scale urban reconstruction projects immediately after the war is now being advocated by many economists as a primary type of public works to stabilize our post-war economy.[8]

The need for advance planning of local public works programs calls for early consideration of urban rehabilitation schemes by city administrations. Such planning is not different in kind from efficient day-to-day municipal administration, but is merely an extension of a constructive rehousing function that many cities have undertaken in recent years.

While the problem areas to be dealt with in post-war reconstruction are usually known in a general way, sound planning on the scale contemplated will require closer definition and measurement of substandard housing than is now employed, both to delimit the areas needing rehabilitation and to reveal the nature of remedies required. Good techniques for measuring the quality of houses and their neighborhood environment will supply many of the judgments needed in selecting slum-clearance sites, in considering the suitability of areas for continued housing use, and in determining possibilities for rehabilitation of existing structures.

Basic housing inventories conducted routinely under the inspection powers of law-enforcement agencies (and interpreted by them jointly with public housing and planning authorities) can be made to provide in a year or two the basic elements of long-range plans for critical areas. By utilizing the resources of permanent local agencies, these plans may be kept up-to-date, whatever the duration of the war, to be effectuated promptly at the end of it.

In view of the huge capital expenditures required at best for large-scale reconstruction, every effort must be made to reduce property acquisition costs to reasonable levels. Post-war programs should be able to operate with reference to legal standards which carry effective economic sanctions, to obviate the payment of public works funds for the purchase of dwellings maintained in gross violation of the law. Therefore local participation in Federal or State benefits under these programs might well be made conditional upon the development of adequate housing standards, systematic appraisal in problem areas, and effective legal means for bringing down the price to be paid for seriously defective houses.

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[8] See, for example, Guy Greer and Alvin H. Hansen: Urban Redevelopment and Housing, Planning Pamphlet No. 10, National Planning Association, Washington, D. C. December 1941.

ACKNOWLEDGMENTS

The subcommittee wishes to express to the health officers and health department staffs of Waterbury, New Haven, and Stamford its appreciation for their assistance in providing field personnel for test surveys needed to develop the subcommittee's appraisal technique. Special thanks are also due the Connecticut Department of Health, which contributed both the field services of its housing engineer and funds for analysis of certain field data.

The primary purpose of these demonstration surveys was to test the diagnostic value of the subcommittee's technique, and no effort has been made by the committee to secure adoption of the recommendations made in section III of the report with respect to the central substandard district. It is worthy of note, however, that the health department of the city concerned undertook on its own initiative to carry out several of the recommended steps as their desirability became apparent during the course of the survey.

A NOTE ON THE APPENDED SCHEDULE FORMS AND FURTHER DEVELOPMENT OF THE TECHNIQUE

Two field schedules are used, in the subcommittee's technique, to enumerate the characteristics of dwelling units and dwelling structures. The structure and premises schedule is filled out once for each building, whether containing one or more than one dwelling unit. This schedule is in the form of a folder, into which the dwelling unit schedules—one for each flat, apartment, or other unit in the structure—are slipped for filing.

The dwelling unit schedule is reproduced here in full, whereas for the structure schedule only the principal page for field entries can be shown. The portion omitted provides for entry of address and other structure-identification data, computed penalty scores, area covered by buildings, recorded legal violations, appraisal of fire hazards, and tax assessment and delinquency data. Space is also provided for photographs of the structure if desired. Items on physical and occupancy conditions are not segregated in the field schedules, but they appear as separate groups in the penalty rating column.

Omitted also is the block schedule, now in the experimental stage, which carries various environmental appraisal data and summarizes the character of housing in the block.

The subcommittee is now undertaking further demonstration surveys in cities where cooperation of law-enforcement and planning agencies is assured, with the primary purpose of finally developing the environmental appraisal portion of the technique. These further surveys will also make it possible to validate a revised penalty rating scale, check the total unit-cost of complete appraisals, and test the enumerators' instructions, tabulation plans, etc., to the point where these can be released, with the field schedules, for general use.

U.S.H. 1/42

HOUSING SURVEY • DWELLING UNIT City_____ State_____

Ward No._____ Premises No._____ Address_____

Block No._____ Structure No._____ Floor_____ Location_____ Dwelling Unit No._____

A) OCCUPANCY:

Vacant.....
Tenant-occupied.....
Owner-occupied.....
Occupied by janitor or caretaker.....

B) HEAD OF FAMILY:

Name_____

White ☐ Negro ☐ Other_____

Country of birth_____

C) HOUSEHOLD COMPOSITION:

	MALE			FEMALE	
	Age	Rel.		Age	Rel.
1			11		
2			12		
3			13		
4			14		
5			15		
6			16		
7			17		
8			18		

(Note: Encircle head of principal family)

Total No. of persons..... _____
No. of lodgers..... _____
Two or more man-wife families..... Yes ☐ No ☐

D) RENT:

Rent..... $_____ per _____
If owner-occupied, estimated rent equivalent..... $_____ per _____
Included in rent:

	Yes	No		Yes	No
Water.....	☐	☐	Refrigerator	☐	☐
Heat.....	☐	☐	Refr. fuel..	☐	☐
Hot water...	☐	☐	Cooking fuel	☐	☐
Light.....	☐	☐	Furniture...	☐	☐
			Garage.....	☐	☐

E) INCOME:

Reported income of economic household for past 12 months:

Under $600.....
$600 but less than $1200.....
$1200 but less than $1800.....
$1800 but less than $2400.....
$2400 and up.....
No. of persons in economic household..____

F) OCCUPANT REPORTS:

	Yes	No
Leaks or obstructions in plumbing..	☐	☐
Low water pressure.....	☐	☐
Infestation by rats.....	☐	☐
Dampness from walls or ceilings....	☐	☐

G) INSTALLED LIGHTING FACILITIES:

Electricity.....
Gas only.....
None.....

H) INSTALLED HEATING EQUIPMENT:

Central.....
Local only.....
None.....

I) WATER SUPPLY:

Piped in d.u.: hot and cold.....
Piped in d.u.: cold only.....
Piped in structure only.....
Outside structure only.....

J) BATHING FACILITIES

(Installed Tub or Shower):

Location:

Inside dwelling unit.....
Inside structure only.....
Outside structure only.....
None on premises.....
Private to this d.u. ..... Yes ☐ No ☐
No. of d.u. sharing.....____

	Yes	No
Facilities enclosed.....	☐	☐
Piped hot water to tub or shower	☐	☐

K) TOILET FACILITIES:

Location:

Inside dwelling unit.....
Inside structure only....
Outside structure only...
None on premises.....
Private to this d.u. Yes ☐ No ☐
No. of d.u. sharing.... _____

	Yes	No
Flush toilet.....	☐	☐
If flush toilet:		
In working order....	☐	☐
Toilet compartment enclosed.....	☐	☐
Window to outside air	☐	☐
Inst. wash basin in same compartment..	☐	☐

L) KITCHEN AND LAUNDRY FACILITIES:

	Yes	No
Inst. sink with running water.....	☐	☐
Inst. range.....	☐	☐
Mechanical refrig. ..	☐	☐
Ice-box.....	☐	☐
Inst. laundry tub in d.u. or structure..	☐	☐

M) ROOM FACILITIES:

Total No. of Rooms_____	K	LR	DR	Bedrooms 1	2	3	4	5	Other
Rooms in d.u. (check)									
Window to outside (check)									
Heating installed (check)									
Closet built in (check)									
Room dimensions									
Computed area (office entry)									

N) INDICES OF DETERIORATION:

No.	Item	Deterioration None	Degree
1	Weak spots in floor, or ceiling sagging		
2	Floor surface missing or holes in floors		
3	Plaster missing		
4	Plaster loose		
5	Decorative finish missing or loose		
6	Window or door frames, trim, or sash deteriorated		

REMARKS: _____

Enumerator_____ Date_____

FIELD SCHEDULE

HOUSING SURVEY • STRUCTURE AND PREMISES • Structure No._____ G.S.H. 1/42

1) LOCATION:

Premises frontage on block boundaries:

	Street Identification	Length in ft.
1		
2		
3		
4		
	Total	

Structure frontage:

Street..... ☐
Alley..... ☐
Rear yard..... ☐

2) LAND USE:

Land Use of Premises

Dwellings exclusively..... ☐
Hotel or lodging place..... ☐
Mixed residential and business.. ☐
Business or industrial..... ☐
Public or semi-public..... ☐
Unused land..... ☐

Describe all uses: _____

Structures on Premises

No.	Use and Type	Area (Office entry)

3) TYPE OF STRUCTURE:

Dwellings Exclusively:

1-family: detached..... ☐
semi-detached..... ☐
attached..... ☐
2-family: detached..... ☐
side by side..... ☐
other..... ☐
3-or-more-family: No. of d.u.... ____
Other dwelling place: No. of d.u. ____
(specify)_____
Hotel or Lodging Place: No. of units ____

Mixed Residential and Other Uses

No. of dwelling units..... ____
No. of business units..... ____
No. of rooming units..... ____

4) AVAILABILITY STATUS:

Available for occupancy..... ☐
Under construction..... ☐
Legally closed..... ☐
Abandoned or vandalized..... ☐

5) STRUCTURAL CHARACTERISTICS:

Exterior Material

Wood ☐ Masonry ☐ Stucco ☐
Other_____

No. of stories..... ____

	Yes	No
Basement.....	☐	☐
Elevator (if more than 3 stories)	☐	☐

6) SERVICES REGULARLY PROVIDED BY LANDLORD (if 3-or-more-family structure):

	Yes	No
Public hall lighting.....	☐	☐
Public hall cleaning.....	☐	☐
Garbage and rubbish removal from dwelling units.....	☐	☐

7) SANITARY FACILITIES:

No. of flush toilets in str. but not in d.u. ____
No. of inst. baths in str. but not in d.u. ____

8) WATER SUPPLY:

	Yes	No
Public supply available.....	( )	( )
Premises connected to public supply....	☐	☐
Private supply used or piped.....	☐	☐
Private supply acceptable.....	( )	( )
Water pressure adequate (transfer).....	( )	( )

9) SEWAGE DISPOSAL:

	Yes	No
Sanitary sewer available.....	( )	( )
Premises connected to sanitary sewer or other water-carriage system.....	☐	☐
Privy on premises.....	☐	☐
Privy acceptable.....	( )	( )
No justified complaints recorded during past two years.....	( )	( )

10) INDICES OF DETERIORATION:

	No.	Item	Deterioration: None	Degree
Exterior:	7	Exterior material deteriorated		
Main Staircase:	8	Steps deteriorated		
Public Halls (if 3-or-more-family):	9	Decorative finish missing or loose		
	10	Window or door frames, trim or sash deteriorated		
	11	Door panels broken or cracked		

11) DAYLIGHT OBSTRUCTION:

	This Structure	Adjacent Structures or Major Obstructions		
	Number of windows	Height (stories)	Dist. to (feet)	Overlaps this str. by
Front				
Left side.				
Right side				
Rear				

(Note: Encircle southerly side or sides)

12) SANITATION OF PREMISES:

	Yes	No	Remarks
Infestation by rats reported (transfer).....	( )	( )	
Within floodable area.....	( )	( )	
Evidence of stagnant water or poor drainage	☐	☐	
Hazardous condition of surface.....	☐	☐	
Refuse containers unacceptable.....	☐	☐	
Accumulation of garbage.....	☐	☐	
Accumulation of inflammable refuse.....	☐	☐	
Accumulation of other junk or rubbish.....	☐	☐	
Animals or poultry kept on premises.....	☐	☐	

GENERAL REMARKS: _____

Enumerator_____ Date_____

FIELD SCHEDULE

HISTOGENESIS AND REPAIR OF THE HEPATIC CIRRHOSIS IN RATS PRODUCED ON LOW PROTEIN DIETS AND PREVENTABLE WITH CHOLINE[1]

By R. D. LILLIE, *Senior Surgeon*, L. L. ASHBURN, *Passed Assistant Surgeon*, W. H. SEBRELL, *Surgeon*, F. S. DAFT, *Senior Biochemist*, and J. V. LOWRY, *Passed Assistant Surgeon, United States Public Health Service*

In 1940 (*1*), we succeeded in producing a peculiar type of hepatic cirrhosis in rats by feeding a low protein diet and giving 20 percent alcohol or water to drink. Further experimentation has reduced the time necessary to produce such a cirrhosis to an average period of less than 3 months, some animals coming down in as little as 5 weeks. The details of the dietary experiments have been published elsewhere (*2*), the purpose of this paper being to set forth the anatomic and histologic details of the disease process and the apparent sequence of events in their development and in regeneration when the animals are placed on high protein or high choline diets.

The earliest evident change is the accumulation of fat globules of varying size in the liver cells, generally first about the hepatic venules, often irregularly, and later diffusely throughout the parenchyma. Larger fat globules tend to occur in the centrolobular areas, smaller droplets toward the portal areas. Somewhat after the appearance of the centrolobular fatty alterations, small globules of a peculiar hyaline basophilic substance appear.

To this material we are giving the name "ceroid" (κηρὸς=wax+εἶδος=form, appearance). This material occurs in fine to fairly large, round and oval globules up to 20μ in diameter. These hyaline globules stain deep to very pale blue green with eosin and polychrome methylene blue. They are often brownish orange rather than orange-red with sudan IV, and still stain in the same way with this dye in paraffin sections. However, the latter must be mounted in Apathy's syrup as are frozen sections, since exposure to such organic solvents as alcohol, acetone, and xylol promptly removes the stain. They contain no iron when the acid ferrocyanide test is applied, but the same phagocytes may occasionally contain hemosiderin between the hyaline globules which stain pink with the basic fuchsin counterstain. When stained with hot carbol fuchsin, decolorized with hydrochloric acid alcohol and counterstained with methylene blue, the hyaline globules are pink to deep red in color. Smaller isolated globules in liver cells stain the deepest red. Globules in the lungs are also usually deep red, while those in the spleen may be paler. It is our impression that staining by Ziehl Neelsen is more brilliant in biopsy material and in well preserved than in autolyzed tissue.

[1] From the Divisions of Pathology and of Chemotherapy, National Institute of Health.

This ceroid apparently appears first as isolated fine droplets in liver cells, clearly so in non-fatty areas, less evidently, of course, in cells distended by large globules of fat. Only occasionally may these ceroid droplets be seen in liver cells only. Very promptly after its first appearance multiple globules of ceroid appear in phagocytes lying between the liver cell cords. These phagocytes are probably Kupffer cells. When they first appear these ceroid phagocytes are scattered irregularly, then tend to accumulate in the sheaths of the hepatic venules and in foci beneath the liver capsule. Later they form cellular strands proceeding in the midst of the centrolobular fatty areas, or through the now diffusely or irregularly fatty liver, to form trabeculae. These trabeculae proceed not only from the sheaths of hepatic veins and the capsule but also may abut on portal areas containing mature ducts and arterioles. As these primarily cellular trabeculae develop, delicate connective tissue fibrils appear among them, perhaps at first stainable only with silver or picroanilin blue, later staining with picro-acid fuchsin also. The connective tissue may increase greatly in amount so as to predominate in the trabeculae, or may remain inconspicuous. In addition to the dominant ceroid phagocytes, the trabeculae also enclose numbers of isolated necrotic or surviving liver cells, some of which possess compact cytoplasm, others being filled with fat globules. Small clumps of liver cells are also included. Sometimes there are numerous slender, often double strands of narrow fusiform cells with leptochromatic nuclei which we are more inclined to interpret as proliferating capillaries than as ducts, as well as increased numbers of obvious bile ducts with cuboidal epithelium.

These trabeculae segregate small and large, angular and rounded nodules of fat-laden or fat-free liver cells. Ceroid globules still occasionally appear in liver cell cytoplasm and in clusters in phagocytic Kupffer cells. These segregated areas not infrequently contain apparently normal portal areas with duct, vein, and perhaps artery, even in advanced cirrhosis.

In places the trabeculae broaden out into bulky areas of replacement of hepatic parenchyma by a variably dense fibrillar connective tissue irregularly permeated by ceroid phagocytes, isolated and clumped liver cells, proliferating strands of slender fusiform cells, bile ducts, and small masses of liver tissue which may sometimes show diffuse interstitial infiltration by ceroid phagocytes and even fusiform fibroblasts. Also there are often numbers of apparently free fat globules staining solidly scarlet with sudan IV, or, not infrequently, as an orange-red rim of variable width about a central clear area. Similar pictures to the last are also seen in paraffin sections, the rim of lipoid material in this case staining blue-green with the Romanowsky and acid fast with Ziehl Neelsen. Occasionally there are also

numbers of multinucleate giant cells with their nuclei in a regular peripheral ring. Such replacement areas are of variable size, up to perhaps two-thirds of a lobe in extent. They occur more often near the hilus of the liver, near the ventral surfaces of lobes, and in ventral lobes, particularly the caudate lobes, but may sometimes occupy the free anterior margin of a lobe.

REPAIR CHANGES

Material for biopsy was taken from the livers of a number of animals on the cirrhosis-producing diet. Some of the animals were then put on a high protein diet and others were given a supplement of choline. A preliminary report of the results of this study has been published (*3*). The findings are given here because of their bearing on the histogenetic picture.

Following the biopsy, the animals died or were killed at intervals varying from 2 to 42 days. In the first 3 days there is a slight decrease in the amount of fat in liver cells. By the sixth day this change is prominent and in addition there is slight liver cell hyperplasia. In 16 to 18 days most livers show complete disappearance of this fat. However, in a very few livers it is present in very small amounts, usually as fine droplets, and in the vicinity of the trabeculae. Liver cells show marked increase in size, up to 50μ in diameter, have amphophilic granular cytoplasm, and larger and more deeply stained nuclei. Cells with more than one nucleus are present in moderate numbers and 5 or 6 nuclei per cell are occasionally seen; they are usually round to oval, but are rarely knobbed or incompletely lobated. Rarely a nucleus measures 25μ in diameter; however, a moderate number are present measuring 15μ. In contrast to the shrunken angular isolated cells in trabeculae seen in the untreated animals, they are often quite large, round to polygonal, and grouped to form sharply marginated hyperplastic nodules. Liver nodules, although still showing some irregularity of shape, have convex margins. This is most distinct where the hyperplastic trabeculated parenchyma borders on areas of fairly dense fibrous tissue replacement.

The amount, distribution, and density of the fibrous tissue, and the number and distribution of the ceroid phagocytes do not appear to be affected. A longer period of treatment will be necessary to determine the disposition of the phagocytes and to observe any possible alteration in the fibrous element.

OTHER ORGANS

Aside from the liver, the principal changes are the occurrence of ascites and hydrothorax in some of the animals with more advanced cirrhoses, and enlargement of the spleen.

The principal microscopic changes in the spleen are a reduction almost to the vanishing point of microscopically evident ferric iron in the pulp reticulo-endothelium in advanced cirrhoses, and the presence of a more or less pronounced sinus reticulo-endotheliosis with phagocytosis of variable quantities of ceroid. Ceroid globule accumulation is particularly prominent around the fibromuscular trabeculae but occurs throughout the pulp and also at times in swollen phagocytes within the often atrophic splenic follicles. When hemosiderosis is present at the same time, fine hemosiderin granules are often seen in the same cells between the larger, iron-negative, basophilic, ceroid globules. Even when the hepatic changes are only centrolobular fatty infiltration with scattered ceroid phagocytes, some of this material is often found in the spleen pulp.

Small abdominal (pancreatic and inter-renal) and peribronchial lymph nodes encountered in sections of the other viscera of animals with cirrhotic livers often show patches of sinus reticulo-endotheliosis with phagocytosis of variable numbers of ceroid globules.

Scattered ceroid phagocytes are seen also infrequently interstitially in the adrenal cortex, and more often in the solidly cellular marrow of the tibia and femur. In the lungs one often finds ceroid phagocytes in the septa where they often form small nodules, and in addition one finds larger, apparently free globules of acid-fast material within the septa.

Various degenerative changes were noted in the epithelium of the renal convoluted tubules, but as most of the animals were allowed to die and obvious autolytic changes were often present in other viscera, not much significance was attached to these. The acute nephrosis of choline deficiency was encountered in a few animals.

Altered blood was sometimes found in the stomach, and occasional mucosal hemorrhages and necroses were demonstrated. The significance of these is not clear at this time.

DISCUSSION

Among the more noteworthy features of the hepatic cirrhosis described are the absence of hemorrhages and, in the earlier stages, of evident necrotic liver cells, the absence of evident biliary obstruction even in the most advanced stages seen, the presence of ascites in some of the animals, the apparent centrolobular and interstitial origin of the trabeculation, and the constant presence of a peculiar acid-fast hyaline material, here designated as "ceroid," which apparently originates in liver cells, but is most abundant in phagocytes between cell cords especially in the trabeculae in the liver and in reticulo-endothelial phagocytes in the spleen, lymph nodes, and lungs.

This ceroid has been seen in some other experimental material in smaller amounts, and usually in association with low protein diets

which might conceivably have produced this same type of cirrhosis had the experiments been continued longer. This substance was not identified in any of the cirrhoses occasioned by seleniferous wheat studied by Lillie and Smith (*4*, *5*) and by Franke and his co-workers (*6*, *7*) and also the hemorrhages and cell necroses of selenium cirrhosis were not present in the condition described here.

The dietary cirrhosis described by Rich and Hamilton (*8*) in rabbits differs from the foregoing in the absence of acid-fast hyaline material, in the apparently primarily periportal location of the proliferation, in the inconstancy of fatty changes in hepatic cells, in the frequent occurrence of biliary stasis, and in the frequency of hemosiderin pigmentation. The diet was similar to the diet of the present experiment in its low protein content.

The high fat plus alcohol and high fat diets of Connor and Chaikoff (*9*, *10*) produced in dogs fatty livers with a primarily periportal fibrous trabeculation, or later, a diffuse fine trabeculation, not evidently perilobular or periportal, in which biliary stasis was evident.

Connor (*11*) also reports the production of hepatic cirrhosis in rabbits on a high protein diet by feeding alcohol. He describes in some animals a periportal and interlobular scarring with much duct proliferation, isolated single and clumped liver cells, and fairly regular trabeculation. Hyaline and fatty liver cells were common.

It is questionable whether the amount of "fibrosis" reported by György and Goldblatt (*12*) in their dietary liver necrosis constitutes a true hepatic cirrhosis. Certainly rats studied by us showing apparently the same centrolobular coagulative to hemorrhagic necrosis of the liver have shown no gradation of this process into clearly defined hepatic cirrhosis, although under certain, now well defined, dietary conditions, both processes may be seen in the same liver (unpublished data).

In von Glahn and Flinn's rabbits treated with lead arsenate (*13*), fibrosis was confined largely to portal areas and found only occasionally in interlobular areas. Lobulation remained regular, in contrast to the irregular trabeculation seen in the foregoing experimental cirrhoses or in human cirrhoses.

The cirrhosis produced in rats by Earle and Victor (*14*) by a low protein diet with 5 to 10 percent added cystine resembles that produced by selenium in similar diets in respect to cell necroses, hemorrhages, and irregular trabeculation.

Various authors have worked with copper poisoning in rabbits. Among these Oshima and Siebert (*15*), Flinn and von Glahn (*16*), Herkel (*17*), Ellenberger and von Hofmeister (*18*), Polson (*19*), and Brandl (*20*) saw no cirrhosis. Baum and Seeliger (*21*) reported liver degeneration, necrosis, fat deposition, interstitial connective tissue proliferation, and mixed iron-free and iron-positive pigmentation of

liver cells in various larger animals. Filehne (*22*) reported cirrhosis of periportal type in one rabbit; Adrianoff and Ansbacher (*23*) reported cirrhosis in 3 rats. Hall and Butt (*24*) produced pigmentation and some periportal fibrosis but no definite cirrhosis in a considerable number of rabbits, but no significant changes in rats, and later Hall and MacKay (*25*) produced pigmentation in 18 of 21 rabbits with cirrhosis in 9 of them, and none in 21 controls. Mallory and coworkers (*26–29*) had variable success in the production of pigment cirrhosis in rabbits and sheep, less in guinea pigs and rats.

This peculiar experimental hepatic cirrhosis of rats has no counterpart in the usually described varieties of hepatic cirrhosis in man. Careful restudy of 76 cases of cirrhosis and primary liver carcinoma with cirrhosis failed to reveal any cases which could be identified with the experimental condition. In no case was hyaline, basophilic and sudanophilic, acid-fast material identified in liver cells, Kupffer cells, or phagocytes.

CONCLUSIONS

In rats low protein, choline-poor diets produce a peculiar hepatic cirrhosis characterized particularly by fatty infiltration and by the appearance of a peculiar hyaline substance, designated as "ceroid," in liver cells and various phagocytic cells in the liver and in other viscera, notably spleen and lungs.

Correction of the major dietary defects results in quite prompt regression of the fatty changes, increases in size and, apparently, number of liver cells and persistence of the fibrous trabeculation and of the ceroid phagocytes.

This experimental cirrhosis is not identifiable with any of the previously described experimental toxogenic cirrhoses nor with any of the usual varieties of hepatic cirrhosis in man.

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DEATHS DURING WEEK ENDED MARCH 21, 1942

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

	Week ended Mar. 21, 1942	Corresponding week, 1941
Data from 87 large cities of the United States:		
Total deaths	8,836	9,008
Average for 3 prior years	9,046	
Total deaths, first 11 weeks of year	101,461	105,251
Deaths per 1,000 population, first 11 weeks of year, annual rate	12.9	13.4
Deaths under 1 year of age	545	536
Average for 3 prior years	512	
Deaths under 1 year of age, first 11 weeks of year	6,211	5,954
Data from industrial insurance companies:		
Policies in force	64,938,889	64,594,526
Number of death claims	13,541	13,208
Death claims per 1,000 policies in force, annual rate	10.9	10.7
Death claims per 1,000 policies, first 11 weeks of year, annual rate	10.3	11.1

PREVALENCE OF DISEASE

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

UNITED STATES

REPORTS FROM STATES FOR WEEK ENDED MARCH 28, 1942

Summary

The current incidence of measles, meningococcus meningitis, and poliomyelitis and the cumulative figures for these diseases to date this year are above the 5-year (1937–41) medians for the corresponding periods.

The number of cases of meningococcus meningitis reported for the current week (90) is above that for any corresponding week since 1937. The largest numbers of cases and the highest case rates are reported from the New England, Middle Atlantic, South Atlantic, and Pacific States (New York 20 cases, Massachusetts 8, Pennsylvania 8, Maryland 6, and California 6).

Although the incidence of poliomyelitis is not alarmingly high (23 cases, widely distributed), it is above that for any corresponding week of the preceding 5 years. The total number of cases reported to date (289) is, however, below that for the corresponding period of both 1941 (293) and 1940 (311).

The incidence of both smallpox and typhoid fever for the current week is the lowest on record for the corresponding week. Of 19 cases of smallpox, the 4 West South Central States reported 10 (Texas 4, Arkansas, Louisiana, and Oklahoma 2 each).

Other reports include 2 cases of anthrax (1 each in Massachusetts and Pennsylvania), 17 cases of amebic dysentery (5 each in New York and Georgia), 72 cases of bacillary dysentery (33 in Texas, 15 in Georgia, 8 in Louisiana, 7 in New York), 43 cases of unspecified dysentery (22 in Arizona, 19 in Virginia), 1 case of Rocky Mountain spotted fever (in Wyoming), 14 cases of tularemia, and 37 cases of endemic typhus fever.

The crude death rate for the current week for 88 large cities in the United States is 12.5 per 1,000 population, as compared with 12.4 for the preceding week and 12.6 for the 3-year (1939–41) average.

Telegraphic morbidity reports from State health officers for the week ended March 28, 1942, and comparison with corresponding week of 1941 and 5-year median

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

Division and State	Diphtheria			Influenza			Measles			Meningitis, meningococcus		
	Week ended—		Median	Week ended—		Median	Week ended—		Median	Week ended—		Median
	Mar. 28, 1942	Mar. 29, 1941	1936–41	Mar. 28, 1942	Mar. 29, 1941	1936–41	Mar. 28 1942	Mar. 29, 1941	1936–41	Mar 28, 1942	Mar. 29, 1941	1936–41
NEW ENG.												
Maine	1	1	2	2	1	13	151	41	41	1	0	0
New Hampshire	0	0	0	5	------	------	18	83	47	0	0	0
Vermont	0	0	0	------	------	------	39	27	24	0	0	0
Massachusetts	1	2	3	------	------	------	929	787	782	8	3	3
Rhode Island	1	0	0	------	2	------	243	5	18	0	0	0
Connecticut	0	1	2	------	8	8	518	126	134	2	1	0
MID. ATL.												
New York	31	22	30	[1]11	28	28	563	8,831	1,615	20	4	4
New Jersey	1	11	11	16	15	15	672	3,244	1,156	3	1	1
Pennsylvania	10	9	30	------	------	------	1,206	5,659	333	8	10	7
E. NO. CEN.												
Ohio	12	7	7	14	16	16	260	7,818	238	0	2	2
Indiana	14	19	12	36	33	33	155	1,095	84	0	1	2
Illinois	29	34	33	35	94	94	741	4,497	82	2	0	1
Michigan [2]	6	11	11	3	28	6	232	5,896	318	2	1	2
Wisconsin	3	0	0	24	324	202	886	1,447	769	1	0	0
W. NO. CEN.												
Minnesota	5	1	2	1	7	3	786	12	120	0	0	0
Iowa	4	6	2	------	71	9	395	270	169	0	0	0
Missouri	5	3	10	1	9	71	645	146	27	2	0	0
North Dakota	1	5	1	5	------	6	78	1	1	0	0	0
South Dakota	7	1	0	1	2	1	14	13	2	0	0	0
Nebraska	3	5	3	19	------	------	239	3	58	0	0	0
Kansas	2	8	7	12	13	13	608	1,133	434	0	1	1
SO. ATL.												
Delaware	0	0	0	------	------	------	7	337	24	0	0	0
Maryland [2]	1	4	4	8	176	28	632	393	393	6	0	1
Dist. of Col	0	2	3	4	2	2	88	276	68	2	0	1
Virginia	6	14	12	524	441	441	298	2,547	427	4	5	5
West Virginia	4	9	9	67	29	118	280	612	19	2	3	3
North Carolina	8	12	20	68	59	59	1,028	1,600	1,313	2	3	3
South Carolina	3	5	5	435	713	713	259	598	32	2	0	1
Georgia	6	2	8	84	201	201	216	692	155	2	1	1
Florida	2	6	6	4	165	19	171	1,337	193	0	3	2
E. SO. CEN.												
Kentucky	4	6	6	19	26	64	106	1,280	151	4	5	2
Tennessee	6	11	7	47	220	184	118	712	66	0	0	3
Alabama	5	4	12	228	883	883	495	829	210	4	4	4
Mississippi [2]	2	3	6	------	------	------	------	------	------	0	2	0
W. SO. CEN.												
Arkansas	4	13	8	172	195	254	172	352	88	1	1	1
Louisiana	10	3	8	------	8	31	100	69	32	1	1	1
Oklahoma	7	2	7	143	201	97	264	44	48	0	1	1
Texas	35	34	34	1,049	1,173	1,166	2,914	1,825	518	2	2	2
MOUNTAIN												
Montana	3	0	1	14	10	40	53	44	60	0	0	0
Idaho	1	0	0	3	------	------	92	17	25	0	0	0
Wyoming	2	1	0	130	------	------	71	126	37	0	0	0
Colorado	10	10	9	56	48	11	238	363	234	0	0	0
New Mexico	1	3	3	18	------	1	13	342	68	0	0	0
Arizona	0	2	2	165	96	102	204	109	104	0	0	0
Utah [2]	0	1	0	39	18	13	266	31	127	0	0	0
Nevada	0	0	------	------	------	------	52	11	------	0	0	------
PACIFIC												
Washington	1	3	1	5	13	13	291	40	40	3	1	0
Oregon	0	3	3	36	22	33	144	361	68	0	1	1
California	15	12	20	252	253	221	6,343	359	444	6	0	2
Total	272	311	380	3,755	5,603	5,603	24,293	56,440	15,779	90	57	57
12 weeks	3,814	3,619	6,208	57,885	459,538	139,399	182,906	319,867	152,500	842	594	683

See footnotes at end of table.

Telegraphic morbidity reports from State health officers for the week ended March 28, 1942, and comparison with corresponding week of 1941 and 5-year median—Con.

Division and State	Poliomyelitis			Scarlet fever			Smallpox			Typhoid and para typhoid fever		
	Week ended—		Median 1936–41	Week ended—		Median 1936–41	Week ended—		Median 1936–41	Week ended—		Median 1936–
	Mar. 28, 1942	Mar. 29, 1941		Mar. 28, 1942	Mar. 29, 1941		Mar. 28, 1942	Mar. 29, 1941		Mar. 28, 1942	Mar. 29, 1941	
NEW ENG.												
Maine	0	0	0	20	5	17	0	0	0	0	0	1
New Hampshire	0	0	0	36	1	4	0	0	0	0	1	0
Vermont	0	0	0	5	16	10	0	0	0	0	0	0
Massachusetts	0	0	0	388	166	194	0	0	0	1	0	0
Rhode Island	0	0	0	16	7	17	0	0	0	0	0	0
Connecticut	0	0	0	41	71	108	0	0	0	1	0	1
MID. ATL.												
New York	2	0	0	545	640	994	0	0	0	4	10	9
New Jersey	0	1	0	174	346	225	0	0	0	1	1	1
Pennsylvania	0	0	0	603	400	548	0	0	0	7	7	7
E. NO. CEN.												
Ohio	0	0	1	261	297	339	0	2	3	2	1	2
Indiana	1	0	0	132	190	190	2	1	8	3	1	0
Illinois	2	1	2	311	512	592	1	7	7	1	3	3
Michigan [2]	1	1	0	284	396	508	1	0	12	2	2	2
Wisconsin	0	0	0	148	156	159	0	7	5	0	0	0
W. NO. CEN.												
Minnesota	0	0	0	95	63	97	0	3	7	1	0	1
Iowa	0	0	1	79	64	145	0	4	23	0	0	1
Missouri	1	1	0	125	40	109	2	17	22	1	1	2
North Dakota	1	0	0	23	9	9	0	0	3	0	0	0
South Dakota	0	0	0	46	10	13	0	0	1	0	0	0
Nebraska	0	0	0	54	55	41	0	0	3	0	0	0
Kansas	1	0	0	106	61	135	0	1	2	0	2	1
SO. ATL.												
Delaware	0	0	0	60	11	10	0	0	0	0	0	0
Maryland [2]	0	1	0	81	49	39	0	0	0	0	1	2
Dist of Col	0	0	0	13	14	16	0	0	0	0	2	0
Virginia	0	1	0	33	76	30	0	0	0	2	3	3
West Virginia	1	0	0	31	58	41	0	0	0	1	2	2
North Carolina	0	2	0	25	32	37	0	1	0	0	2	2
South Carolina	1	0	0	0	8	5	0	0	0	1	1	2
Georgia	1	0	0	10	9	9	0	0	1	6	3	3
Florida	0	2	1	1	6	8	0	0	0	5	8	2
E. SO. CEN.												
Kentucky	0	0	0	81	180	111	1	0	0	0	1	2
Tennessee	0	0	0	47	130	37	1	0	0	2	2	2
Alabama	2	2	1	18	25	18	0	0	1	4	3	3
Mississippi [2]	0	2	0	6	0	7	1	0	0	4	0	1
W. SO. CEN.												
Arkansas	0	0	0	2	7	8	2	0	1	1	5	5
Louisiana	0	0	0	1	5	11	2	1	1	2	2	6
Oklahoma	0	1	1	17	18	19	2	0	3	0	1	1
Texas	2	0	1	40	71	83	4	3	7	6	5	9
MOUNTAIN												
Montana	0	1	0	23	34	29	0	0	0	0	0	0
Idaho	0	1	0	6	7	14	0	0	1	0	0	0
Wyoming	0	0	0	9	20	16	0	0	0	0	0	0
Colorado	1	0	0	37	24	44	0	0	3	0	0	0
New Mexico	0	0	0	10	4	22	0	0	0	2	2	2
Arizona	0	0	0	8	9	9	0	0	0	0	0	0
Utah [2]	0	0	0	42	11	12	0	0	0	0	0	0
Nevada	0	0	------	2	0	--------	0	0	------	0	1	------
PACIFIC												
Washington	1	0	0	53	12	32	0	1	1	1	0	0
Oregon	0	1	1	13	7	31	0	0	14	0	0	0
California	5	1	0	99	133	186	0	0	8	4	4	3
Total	23	19	19	4,260	4,465	5,416	19	48	270	65	77	95
12 weeks	289	293	255	48,344	44,579	63,907	290	928	3,654	907	904	1,308

See footnotes at end of table.

Telegraphic morbidity reports from State health officers for the week ended March 28, 1942—Continued

Division and State	Whooping cough		Week ended Mar. 28, 1942								
	Week ended—		Anthrax	Dysentery			Encephalitis, infectious	Leprosy	Rocky Mountain spotted fever	Tularemia	Typhus fever
	Mar. 28, 1942	Mar. 29, 1941		Amebic	Bacillary	Unspecified					
NEW ENG.											
Maine	43	54	0	0	0	0	0	0	0	0	0
New Hampshire	24	9	0	0	0	0	0	0	0	0	0
Vermont	47	27	0	0	0	0	0	0	0	0	0
Massachusetts	251	207	1	0	0	0	1	0	0	0	0
Rhode Island	49	19	0	0	0	0	0	0	0	0	0
Connecticut	72	67	0	0	1	0	0	0	0	0	0
MID. ATL.											
New York	455	334	0	5	7	0	0	0	0	0	1
New Jersey	236	98	0	0	0	0	0	0	0	0	0
Pennsylvania	211	430	1	0	0	0	1	0	0	0	0
E. NO. CEN.											
Ohio	195	322	0	0	0	0	0	0	0	0	1
Indiana	41	25	0	0	0	0	0	0	0	0	0
Illinois	194	95	0	1	0	0	2	0	0	2	0
Michigan [2]	201	427	0	2	5	0	0	0	0	0	0
Wisconsin	146	101	0	0	0	0	0	0	0	0	0
W. NO. CEN.											
Minnesota	38	90	0	0	0	0	0	0	0	0	0
Iowa	19	49	0	0	0	0	0	0	0	0	0
Missouri	20	42	0	0	0	1	0	0	0	0	0
North Dakota	8	26	0	0	0	0	0	0	0	0	0
South Dakota	9	13	0	0	0	0	0	0	0	0	0
Nebraska	27	50	0	0	0	0	0	0	0	0	0
Kansas	32	119	0	0	0	0	0	0	0	0	0
SO. ATL.											
Delaware	3	7	0	0	0	0	0	0	0	0	0
Maryland [2]	42	80	0	0	0	1	1	0	0	0	0
Dist. of Col	19	6	0	0	0	0	0	0	0	0	0
Virginia	23	99	0	0	0	19	0	0	0	1	0
West Virginia	48	134	0	0	0	0	0	0	0	0	0
North Carolina	152	307	0	0	0	0	0	0	0	0	0
South Carolina	57	159	0	0	0	0	0	0	0	0	1
Georgia	29	27	0	5	15	0	0	0	0	4	11
Florida	20	18	0	0	0	0	0	0	0	0	5
E. SO. CEN.											
Kentucky	105	82	0	0	1	0	0	0	0	1	0
Tennessee	23	78	0	0	0	0	0	0	0	0	0
Alabama	40	83	0	0	0	0	0	0	0	0	5
Mississippi [2]	----	----	0	0	0	0	0	0	0	0	0
W. SO. CEN.											
Arkansas	8	17	0	0	0	0	0	0	0	3	0
Louisiana	7	12	0	0	8	0	0	0	0	1	8
Oklahoma	22	81	0	0	0	0	0	0	0	0	0
Texas	187	322	0	3	33	0	0	0	0	0	5
MOUNTAIN											
Montana	5	9	0	0	0	0	0	0	0	0	0
Idaho	12	5	0	0	0	0	0	0	0	0	0
Wyoming	7	0	0	0	0	0	1	0	1	2	0
Colorado	18	94	0	0	0	0	0	0	0	0	0
New Mexico	11	31	0	0	0	0	0	0	0	0	0
Arizona	60	40	0	0	0	22	0	0	0	0	0
Utah [2]	44	90	0	0	0	0	0	0	0	0	0
Nevada	11	0	0	0	0	0	0	0	0	0	0
PACIFIC											
Washington	77	79	0	0	0	0	0	0	0	0	0
Oregon	18	9	0	0	0	0	0	0	0	0	0
California	319	564	0	1	2	0	3	0	0	0	0
Total	3,685	5,037	2	17	72	43	9	0	1	14	37
12 weeks	47,294	52,769									

[1] New York City only.

[2] Period ended earlier than Saturday.

CONSOLIDATED MONTHLY STATE MORBIDITY REPORTS FOR THE YEAR 1941

The figures in the following table are the totals of the monthly reports, and are therefore preliminary and incomplete. It is requested that each State include in the monthly reports all the diseases that are required to be reported in the State. Although the diseases required by law or regulation to be reported are not the same for each State, and other differences exist among the States with reference to the requirements regarding morbidity reporting, these consolidated reports have been found of value in presenting early information regarding the prevalence of a large group of diseases and in providing a comparison with similar figures for prior years.

	Actinomycosis	Chickenpox	Diphtheria	Dysentery, amebic	Dysentery, bacillary	Dysentery, undefined	Encephalitis, infectious	German measles	Hookworm disease	Influenza	Malaria	Measles	Meningitis, meningococcus	Mumps	Ophthalmia neonatorum	Pellagra	Pneumonia, all forms	Poliomyelitis
NEW ENG.																		
Maine		2,716	11		1		1	1,085		4,372	1	4,645	9	2,199	1		516	41
New Hampshire		281	6	1				26		1,178	2	1,065	4	821	1		44	31
Vermont		1,470	27					1,598		403		1,355	1	1,574			38	14
Massachusetts	4	11,808	128	3	306		21	2,333			5	22,347	111	10,494	[1]192	18	3,621	182
Rhode Island		1,364	82		3		5	178		433	2	604	6	287			319	37
Connecticut	1	5,922	36	6	103		3	1,448	1	4,914	10	6,998	25	5,581	2		2,811	115
MID. ATL.																		
New York		27,563	517	59	1,580		110	29,747			80	120,697	219		105		26,757	1,114
New Jersey		17,979	297	19	13		13	29,933		4,794	13	50,748	56	10,800	68		4,746	349
Pennsylvania		32,858	608	16	27		35	10,287		4	10	115,257	185	28,058	9	5	6,508	730
E. NO. CEN.																		
Ohio		18,701	521	9	80		21	2,283		11,386	19	91,930	53	4,871	35	2	4,389	484
Indiana		3,295	540	2	1		6	885		2,762	18	16,614	36	1,145	1		896	116
Illinois	8	16,167	945	77	186		43	4,315	1	1,402	88	57,075	69	13,065	43	12	12,449	376
Michigan	7	19,219	238	36	254		8	4,230		1,819	29	70,748	49				4,348	270
Wisconsin		19,499	47	3			50	34		4,726	1	34,815	29	15,170			841	98
W. NO. CEN.																		
Minnesota	21	5,835	138	38	16		543		3	4,658	4	948	18		2		1,303	283
Iowa	2	3,295	199	1	12	3	129	101		4,079	21	5,376	9	5,532		2	1,680	45
Missouri		2,272	300	2	9	92	8			1,339	59	7,824	29	863	1	3	2,116	40
North Dakota	2	1,561	84				1,089	34		1,096		1,471	3	601			1,039	17
South Dakota		507	164		2		197			75		413	7	556			282	28
Nebraska		1,020	92				53	4		187	1	429	1	536			59	13
Kansas		5,566	193	4	5		75	175		7,900	18	15,451	31	1,705		8	2,345	50

SO. ATL.																		
Delaware		608	26	1	1			24		150	1	4,073	3	148		1	86	26
Maryland		3,889	259	13	151	67	4	9,991		3,008	22	8,298	105	2,348	7	4	3,826	238
District of Columbia		1,091	74	4	2		1			849		4,434	13	389		2	1,097	76
Virginia		2,780	754	4	5,579					64,906	75	35,572	101	1,859		59	4,197	157
West Virginia		1,376	309		94		3			45,441	7	12,605	58	1,632		7	809	49
North Carolina		4,725	1,629		12			12,769		5,837	237	27,764	46			60	457	168
South Carolina		1,693	1,843	18			7	5,501	1,316	56,202	9,830	11,622	39	1,529	24	1,227	5,805	165
Georgia		1,190	710	52	330	29	12		6,938	35,150	1,065	10,831	21	1,079		169	2,247	735
Florida		925	223	48	16		3	1,400	9,122	3,963	141	11,224	25	665	6	37	1,140	273
E. SO. CEN.																		
Kentucky		3,127	360	7	335		5	1,305		22,291	25	20,656	73	6,992		10	1,105	220
Tennessee	1	1,868	486	16	264		5	2,288	23	20,743	476	9,545	74	2,458	16	122	4,590	536
Alabama		1,147	731	9			15	776		34,646	4,835	9,921	70	2,734	7	209	4,080	873
Mississippi		5,404	435	1,978	10,294				7,881	91,657	36,039	19,267	60	9,537	126	3,768	10,912	152
W. SO. CEN.																		
Arkansas		823	510	91	226		1	948	172	26,033	3,426	6,348	24	2,565	6	222	2,026	59
Louisiana		321	252	14	70		1		620	12,353	391	1,042	49	297	16	24	1,475	69
Oklahoma		736	412	19	281		14		16	14,298	1,911	2,401	19	1,036	9	50	2,609	49
Texas		7,506	1,902	341	3,198		92			128,372	8,063	23,221	86	7,421	94	1,612	10,037	123
MOUNTAIN																		
Montana	1	2,889	133	2	17		91	212		3,847	1	956	7	534			128	30
Idaho		653	22	1			2	73		1,218		536	3	474			52	10
Wyoming	1	1,043	58			2	30	86		9,676	2	1,440	9	312			276	12
Colorado		4,373	472	3	27		157			5,702	2	8,692	12	2,399			919	28
New Mexico		1,040	56	22	96	7	9	339		915	39	4,488	8	977		11	1,114	10
Arizona		1,268	130		79	1,260	32	378		7,861	41	4,009	6	1,534	8	79	1,649	15
Utah		5,529	34	4		1	5	2,508		5,512		1,087	5	1,907	1		429	41
Nevada		293	4	1			1			409		439	1	192			118	0
PACIFIC																		
Washington		7,159	65	7	21		46	11,268		1,329	8	1,857	26	8,337		1	361	76
Oregon		2,358	107	21	5		4			2,333	40	5,852	13	2,217		1	813	82
California	2	35,273	770	223	585		95	21,800		22,946	162	16,061	78	32,774	30		2,829	242
Total 1941	50	299,985	17,939	3,175	24,281	1,461	3,045	160,362	26,093	685,226	67,225	891,051	1,984	198,264	810	7,725	142,293	8,947
Total 1940	37	279,159	16,252	2,991	19,152	1,484	911	9,682	35,536	423,072	77,553	286,791	1,631	117,693	1,038	8,688	141,939	9,781
Median, 1936-40		272,472	28,551				911		30,940	277,823	82,123	297,378	2,638	145,620	2,142	9,301	127,933	7,281
Alaska		300	12					2,053		5,860		534	6	223			175	5
Hawaii	1	897	107	22	144		4	835	75	467	3	3,026	1	182			163	34

[1] Reports for 6 months only.

CONSOLIDATED MONTHLY STATE MORBIDITY REPORTS FOR THE YEAR 1941—Continued

	Puerperal septicemia	Rabies in animals	Rabies in man	Rocky Mountain spotted fever	Scarlet fever	Septic sore throat	Smallpox	Tetanus	Trachoma	Trichinosis	Tuberculosis, respiratory	Tuberculosis, all forms	Tularemia	Typhoid and paratyphoid fever	Typhus fever	Undulant fever	Vincent's infection	Whooping cough
NEW ENG.																		
Maine					390	17		2		2	412	621		31		32	37	1,222
New Hampshire					229	17						194		13		27		393
Vermont					298	2					20	103		24		62	63	622
Massachusetts		32		1	7,164	171		19	19	45	3,266	3,595	1	145	1	87		9,792
Rhode Island		6			435	98					465	2,130		12		11	3	1,466
Connecticut		1			1,758	241		4	1	12	1,276	1,339	2	49	1	126		2,857
MID ATL.																		
New York		131	1	9	14,851	810		59		193	14,090	15,235	2	517	44	289	556	18,164
New Jersey		305		5	7,796	140		11	5	31		3,566	1	121	3	58		6,775
Pennsylvania	1		2	11	10,903			8	4	7		2,297	29	467	3	64		16,010
E. NO. CEN.																		
Ohio	13		6	10	9,778	135	22	10	10	46	5,075	5,297	208	353	2	115		15,211
Indiana		19		6	4,261	6	49		5		1,419	1,431	88	112		24	1	1,221
Illinois		350	1	17	11,605	86	102	32	284	12	8,178	9,460	109	296	1	218	206	7,709
Michigan	1	62	1		8,747	1,176	114	13	89	11		5,371	42	212	2	142	172	16,512
Wisconsin					5,067	80	157		2			1,092	25	42	1	130		9,392
W. NO. CEN.																		
Minnesota		15			2,316	111	129	8	7	8		2,036	22	27		162		3,711
Iowa		45		14	1,910	192	114	2			552	552	30	93		354		1,737
Missouri		1		13	3,333	114	137	4	494			2,379	60	216		32		1,989
North Dakota				1	313	22	10	1	2		286	316	16	17		7	56	925
South Dakota				6	709	20	68	1	26			239	5	16		9		602
Nebraska					844	9	10				5	176		21		5		682
Kansas		20			2,388	90	36	7	4		767	850	31	77	5	91	134	5,039
SO. ATL.																		
Delaware		10	1	6	596						179	179		12		1		276
Maryland		1		43	1,983	279		18		1	2,944	3,047	14	228	3	30	224	3,499
District of Columbia				4	596						1,901	1,986	2	33	1	3		736
Virginia				34	1,753	2,596		7	12		2,704	2,704	36	378	17	16		4,289
West Virginia			1	7	1,940	103	5					1,893	13	232		7		2,220
North Carolina				20	2,166	139	4		2		2,001	2,426	22	209	78	12	85	10,934
South Carolina		278	1	1	429	50	10	33				701	7	254	105	11		5,020
Georgia	2		2	3	1,062	534	11	11	3	3		1,775	65	380	927	122		1,254
Florida					204	10		7		1		989	2	178	192	21	70	754

E. SO. CEN.																		
Kentucky				9	3,733	390	24		86		1,721	1,749	120	410	1	20		3,477
Tennessee	5		3	10	3,197	332	26	22	37	5		3,556	62	387	45	27	85	2,652
Alabama		169	1	1	1,180		9	31	1			2,824	16	170	299	45		1,663
Mississippi	271	5		1	480		31		67		1,339	1,383	38	199	83	34		9,272
W. SO. CEN.																		
Arkansas	9	259	1	2	349	1,015	36	9	1,908	1	993	1,051	97	331	4	22		1,166
Louisiana	1	43		1	290	125	9	24	2		1,349	1,349	29	400	196	64	1	391
Oklahoma			1	13	840	745	32	4	1,166	4		1,732	43	213	2	106	101	937
Texas		69		1	2,061		47		148			2,840	46	815	733	330		11,012
MOUNTAIN																		
Montana				98	1,046	87	4		12	1		438	33	26		11	4	1,069
Idaho	1			10	350	16	8		1		32	32	5	22		10	16	632
Wyoming				90	310	35	2		5			76	70	17		13	1	408
Colorado				23	1,102	43	41				860	860	5	97		36		5,065
New Mexico	11	125	2		231	39	4	2	7		918	960	3	113		8		1,179
Arizona					212	20	23		800			1,257		42	2	22		1,281
Utah				12	383	69	1		25		147	177	44	28		11		2,726
Nevada				4	30	1	2		1			68	4	15		2	13	266
PACIFIC																		
Washington		64		6	1,148	45	31	3	28	1	1,568	1,777	4	82		41	35	4,959
Oregon		42		11	411	50	45		7			620	11	72		19	76	1,099
California		442	1	2	5,341	85	15	74	156	80	9,197	9,644	20	281	29	319		21,323
Total 1941	315	2,494	25	505	128,518	10,345	1,368	426	5,426	464	63,664	106,372	1,482	8,485	2,780	3,408	1,939	221,590
Total 1940	427	2,761	31	417	155,707	10,198	2,764	412	4,489	521	57,245	103,348	1,641	9,658	1,879	3,358	2,167	183,273
Median 1936-40	427			380	183,893		9,738			331	56,406	103,718	1,641	13,767	1,879	3,358		183,273
Alaska					8	112					672	731		10		1	7	70
Hawaii					29	1		24	6	21		779		74	81	6		477

Anthrax: Vermont, 1; Massachusetts, 7; New York, 17; New Jersey, 10; Pennsylvania, 38; Iowa, 2; Missouri, 1; South Dakota, 1; Delaware, 3; District of Columbia, 1; West Virginia, 1; North Carolina, 1; Florida, 1; Louisiana, 3; Texas, 6; Arizona, 1; Oregon, 1; California,1.

Botulism: Illinois, 1; North Dakota, 3; New Mexico, 1; California, 17.

Colorado tick fever: Wyoming, 8; Colorado, 7.

Dengue: South Carolina, 30; Florida, 1; Alabama, 3; Mississippi, 14; Arkansas, 1; Louisiana, 25; Oklahoma, 1; Texas, 526; Arizona, 7; California, 1.

Diarrhea: Ohio, (under 2 years) 1,297; Michigan, (infant diarrhea) 61; Maryland, 281; South Carolina, 11,500; New Mexico (enteritis included) 147; Nevada (infant diarrhea) 15; California (epidemic diarrhea of newborn) 36.

Enteritis: Kansas, 5; New Mexico (diarrhea included) 147; Washington, 115 (under 2 years, 52; over 2 years, 63); Alaska, 15.

Food poisoning: Ohio, 13; Illinois, 31; Kansas, 7; Louisiana, 27; New Mexico, 9; Nevada, 4; Washington, 4; California, 714.

Granuloma, coccidioidal: California, 39.

Leprosy: Rhode Island, 1; New York, 4; Pennsylvania, 1; Minnesota, 1; Florida, 2; Mississippi, 1; Louisiana, 12; Texas, 14; Wyoming, 1; Washington, 1; California, 11; Hawaii Territory, 31.

Plague, human: California, 2.

Psittacosis: Connecticut, 1; New York, 4; Pennsylvania, 1; Ohio, 1; Illinois, 1; District of Columbia, 1; Florida (suspected) 1; California, 2.

Weil's disease: Michigan, 29; Maryland, 5; Washington, 17; Hawaii Territory, 7.

WEEKLY REPORTS FROM CITIES

City reports for week ended March 14, 1942

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

	Diphtheria cases	Encephalitis, infectious, cases	Influenza		Measles cases	Meningitis, meningococcus, cases	Pneumonia deaths	Poliomyelitis cases	Scarlet fever cases	Smallpox cases	Typhoid and paratyphoid fever cases	Whooping cough cases
			Cases	Deaths								
Atlanta, Ga	0	0	32	3	0	0	10	0	2	0	0	1
Baltimore, Md	1	1	6	0	395	1	27	0	26	0	0	25
Billings, Mont	0	0	----	0	0	0	1	0	0	0	0	0
Birmingham, Ala	0	0	13	1	2	1	6	0	4	0	0	4
Boise, Idaho	0	0	----	0	0	0	0	0	0	0	0	0
Boston, Mass	2	0	----	0	120	0	15	0	123	0	0	42
Bridgeport, Conn	0	0	----	0	14	0	4	0	2	0	0	0
Brunswick, Ga	0	0	----	0	24	0	0	0	0	0	0	0
Buffalo, N. Y	0	0	1	0	6	0	20	0	18	0	0	4
Camden, N. J	0	0	----	0	9	0	3	0	15	0	0	1
Charleston, S. C	0	0	38	1	0	0	2	0	1	0	0	1
Chicago, Ill	2	0	6	0	104	0	31	0	123	0	0	91
Cincinnati, Ohio	0	0	----	4	5	0	10	0	22	0	0	15
Cleveland, Ohio	1	0	9	0	8	0	8	0	75	0	2	19
Columbus, Ohio	2	0	1	1	15	0	5	0	5	0	0	1
Concord, N. H	0	0	----	0	0	0	3	0	2	0	0	0
Cumberland, Md	0	0	----	0	0	1	1	0	2	0	0	0
Dallas, Tex	3	0	----	0	266	0	10	0	5	0	0	3
Denver, Colo	3	0	20	0	114	0	4	0	11	0	0	6
Detroit, Mich	6	0	2	1	85	1	21	0	145	0	0	40
Duluth, Minn	0	0	----	0	2	0	1	0	14	0	0	0
Fall River, Mass	0	0	----	0	10	0	2	0	53	0	0	0
Fargo, N. Dak	0	0	----	0	1	0	1	0	0	0	0	0
Flint, Mich	0	0	----	1	5	0	3	0	1	0	0	2
Fort Wayne, Ind	0	0	----	0	1	0	3	0	1	0	0	0
Frederick, Md	0	0	----	0	7	0	0	0	0	0	0	0
Galveston, Tex	0	0	----	0	0	0	2	0	0	0	0	0
Grand Rapids, Mich	0	0	----	1	10	0	3	0	1	0	0	4
Great Falls, Mont	0	0	----	0	41	0	0	0	0	1	0	1
Hartford, Conn	0	0	----	0	32	0	0	0	1	0	1	2
Helena, Mont	0	0	----	0	0	0	0	0	0	0	0	3
Houston, Tex	2	0	----	0	84	0	8	0	4	0	0	3
Indianapolis, Ind	1	0	----	1	25	0	10	0	26	0	0	11
Kansas City, Mo	0	0	----	0	29	0	7	0	33	0	0	6
Kenosha, Wis	0	0	----	0	1	0	0	0	1	0	0	7
Little Rock, Ark	0	0	7	0	146	0	2	0	0	0	0	1
Los Angeles, Calif	3	0	18	2	447	0	24	1	28	0	0	23
Lynchburg, Va	0	0	----	0	0	0	2	0	0	0	0	8
Memphis, Tenn	0	0	4	1	9	0	9	0	7	1	1	5
Milwaukee, Wis	0	0	----	0	84	0	0	0	34	0	0	37
Minneapolis, Minn	0	0	----	0	119	0	9	0	25	0	0	15
Missoula, Mont	0	0	----	0	0	1	0	0	1	0	0	0
Mobile, Ala	1	0	----	1	5	0	6	0	1	0	0	0
Nashville, Tenn	0	0	----	1	0	0	5	0	2	0	0	7
Newark, N. J	0	0	2	0	101	1	4	0	25	0	0	28
New Haven, Conn	0	0	1	0	134	0	1	0	4	0	0	8
New Orleans, La	0	0	1	1	0	1	16	0	6	0	1	0
New York, N. Y	26	1	12	5	40	8	80	1	296	0	3	241
Omaha, Nebr	2	0	----	0	78	0	3	0	5	0	0	0
Philadelphia, Pa	2	0	7	3	23	0	27	0	304	0	2	52
Pittsburgh, Pa	1	0	3	1	21	0	21	0	10	0	2	9
Portland, Maine	0	0	----	0	12	2	2	0	1	0	0	1
Providence, R. I	0	0	----	0	181	0	2	0	6	0	0	38
Pueblo, Colo	0	0	----	0	17	0	0	0	2	0	0	8
Racine, Wis	0	0	----	0	4	0	2	0	1	0	0	11
Raleigh, N. C	0	0	----	6	1	0	0	0	1	0	0	0
Reading, Pa	1	0	----	0	10	0	0	0	3	0	0	7
Richmond, Va	1	0	2	2	2	0	5	0	6	0	0	0

City reports for week ended March 14, 1942—Continued

	Diphtheria cases	Encephalitis, infectious, cases	Influenza		Measles cases	Meningitis, meningococcus, cases	Pneumonia deaths	Poliomyelitis cases	Scarlet fever cases	Smallpox cases	Typhoid and paratyphoid fever cases	Whooping cough cases
			Cases	Deaths								
Roanoke, Va	0	0	------	0	0	0	2	0	0	0	0	0
Rochester, N. Y	0	0	------	0	6	0	2	0	9	0	0	13
Sacramento, Calif	2	0	------	0	115	0	2	0	0	0	0	9
St. Joseph, Mo	0	0	------	0	8	0	3	0	1	0	0	0
St. Louis, Mo	0	0	------	0	204	0	8	0	28	0	1	6
St. Paul, Minn	0	0	------	0	493	0	6	0	8	0	0	27
Salt Lake City, Utah	0	0	------	1	17	0	1	0	3	0	0	21
San Antonio, Tex	0	0	5	2	18	0	7	0	1	0	0	1
San Francisco, Calif	2	0	------	0	152	0	5	0	12	0	0	0
Savannah, Ga	0	0	34	4	34	0	2	0	2	0	0	0
Seattle, Wash	0	0	------	0	10	2	10	0	2	0	0	36
Shreveport, La	1	0	2	0	6	0	6	0	0	0	0	0
South Bend, Ind	0	0	------	0	1	0	0	0	30	0	0	4
Spokane, Wash	0	0	------	1	6	0	2	0	2	0	0	3
Springfield, Ill	0	0	------	0	159	0	4	0	0	0	0	0
Springfield, Mass	0	0	------	0	25	0	5	0	13	0	0	13
Superior, Wis	0	0	------	0	1	0	0	0	1	0	0	0
Syracuse, N. Y	0	0	------	0	33	0	2	0	14	0	0	42
Tampa, Fla	0	0	2	2	5	0	0	0	1	0	1	2
Terre Haute, Ind	0	0	------	0	0	0	1	0	0	0	0	0
Topeka, Kans	0	0	------	0	3	0	0	0	7	0	0	3
Trenton, N. J	0	0	1	0	2	0	4	0	10	0	0	13
Washington, D. C	0	0	2	0	51	2	17	0	16	0	0	26
Wheeling, W. Va	0	0	------	0	32	1	4	0	2	0	0	1
Wichita, Kans	0	0	1	0	23	0	5	0	3	0	0	3
Wilmington, Del	0	0	------	0	0	0	6	0	10	0	0	0
Wilmington, N. C	0	0	------	0	116	0	6	0	0	0	0	0
Winston-Salem, N. C	0	0	1	0	64	0	1	0	1	0	0	0
Worcester, Mass	0	0	------	0	24	0	6	0	7	0	0	61

Dysentery, amebic.—Cases: New York, 2; St. Louis, 1; San Francisco, 1.
Dysentery, bacillary.—Cases: Los Angeles, 4.
Typhus fever.—Cases: Charleston, S. C., 1; New York, 1.

Rates (annual basis) per 100,000 population for the group of 87 cities in the preceding table (estimated population, 1942, 33,901,316)

Period	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Typhoid fever cases	Whooping cough cases
		Cases	Deaths						
Week ended Mar. 14, 1942	10.00	35.84	6.31	685.52	85.82	256.40	0.31	2.15	165.34
Average for week 1937–41	17.54	98.12	16.46	1227.38	113.80	280.53	4.19	4.03	177.29

FOREIGN REPORTS

CANADA

Provinces—Communicable diseases—Week ended February 28, 1942.—During the week ended February 28, 1942, cases of certain communicable diseases were reported by the Dominion Bureau of Statistics of Canada as follows:

Disease	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Total
Cerebrospinal meningitis		3	2		5		1	1	2	14
Chickenpox		19	41	103	308	57	33	40	127	728
Diphtheria		8		13	6	3	2		8	40
Dysentery				7						7
German measles		2			72	13	27	5	50	169
Influenza		19			21	4	34		14	92
Measles	1	24		203	124	212	73	22	20	679
Mumps	3	11		403	332	114	276	74	396	1,609
Pneumonia		12			15	1			49	77
Poliomyelitis					1					1
Scarlet fever	8	15	11	77	307	57	75	64	29	643
Tuberculosis	2	4	10	60	46		2			124
Typhoid and paratyphoid fever			3	21					1	25
Undulant fever			1	2	3				2	8
Whooping cough		21		72	76	3		2	19	193
Other communicable diseases		7		3	218	26	17	1	5	277

COSTA RICA

Notifiable diseases—January 1942.—During the month of January 1942, certain notifiable diseases were reported in Costa Rica as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Chickenpox	1		Scarlet fever	1	
Diphtheria	24		Typhoid and paratyphoid fever	17	1
Measles	13		Whooping cough	17	

MALTA

Notifiable diseases—December 1941.—During the month of December 1941, certain notifiable diseases were reported in the island of Malta, including the island of Gozo, as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Cancer		26	Nephritis		2
Cerebrospinal meningitis	2	1	Pneumonia	30	5
Chickenpox	3		Puerperal fever	6	
Diabetes mellitus		19	Scarlet fever	1	
Diarrhea and enteritis (under 2 years of age)		34	Tetanus		1
Diphtheria	31	6	Trachoma	70	
Dysentery		1	Tuberculosis (respiratory system)		11
Erysipelas	6	1	Typhoid fever	25	7
Gastroenteritis		51	Undulant fever	33	1
Influenza	13		Whooping cough	25	1
Measles	2				