An Ecological Survey of Milwaukee Mental Disease Patients in Public Hospitals in Wisconsin

by

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Introduction

In April 1938 at the Mid-West Sociological convention, a cooperative research project on the subject of mental disease was undertaken. Stuart Queen of Washington University was appointed chairman of the project. Research studies were undertaken in several cities including Omaha, Kansas City, Peoria, St. Louis and Milwaukee.

In Milwaukee a mental disease study was made in 1930. Miss Marguerite Reuss made a study of first admissions to the Milwaukee County Hospital for Mental Diseases and made comparisons with population. In 1939, Mr. William Birdsall conducted a study of mental disease in Milwaukee, limiting his data to the records of the Milwaukee County Hospital for Mental Diseases and the Milwaukee County Asylum for Chronic Insane. This year an attempt has been made to complete the study in Milwaukee by including data from the private mental hospitals in Milwaukee and Milwaukee County patients in the county asylums throughout the state. This thesis is concerned with the latter, namely, Milwaukee patients in county asylums throughout the state.

Recently, the concept of ecology has been applied to many social phenomena, including juvenile delinquency, marriage and divorce, suicide and others. The relation of ecology to mental disease compromises an extremely significant relationship. The research is valuable in that it has

been conducted in more than one city, and each student's findings serve as a basis of comparison and check upon the findings of the other.

The writer wishes to thank the superintendents of the county hospitals throughout the state who so willingly cooperated in making available the data for this thesis. Also, Miss Marguerite Reuss and Dr. Paul J. Mundie for their kind assistance and guidance.

CHAPTER I.

Ecology and Other Ecological Studies.

Chapter I

The term "ecology" was first applied to the plant and animal kingdom. It refers to the relation of plant to habitat, whether it be natural or modified by cultivation.[1]

1. Weaver and Clements, Plant Ecology, p. ix.

Biologically, ecology is defined as "that phase of biology that considers plants and animals as they exist in nature, and studies their interdependence, and the relation of each kind and individual to its environment."[2]

2. Park, The City, p. 63.

The studies of plant and animal ecology have become conspicuous since the beginning of the present century. Professor Eugenius Warming, the father of modern plant ecology, published his work on Ecological Plant Geography in the late nineteen-eighties. Recently, Wheeler's study of animal ecology and Clement's work on plant succession has been published. Warming observed that plants occupy fairly well-defined physiographic areas.[3]

3. L. L. Bernard, Fields and Methods of Sociology, p. 286.

Clements discusses plant migration and colonization and describes in great detail the processes of invasion and succession in his book, Plant Ecology.

The term "ecology" as applied to human beings explains how human beings assume their characteristic patterns of distribution in space at a given time. It is also concerned with the organic relations of the distributed units.[4] The

4. Carl Dawson and Warner Gettys, Introduction to Sociology, p. 122.

basic difference between human ecology and ecologies of the lower organisms lies in the fact that man is capable of a higher level of behavior in his adaptation process.[5] Human

5. L. L. Bernard, Fields and Methods of Sociology, pp. 58-59.

ecology is fundamentally interested in the effect of position in both time and space, upon human institutions and human behavior.[6] It makes necessary a closer working rela-

6. Robert Park and Ernest Burgess, Introduction to the Social Sciences, p. 509.

tionship with the geographer, the economist, and the student of population.[7] R. D. McKenzie states that the human ecolo-

7. L. L. Bernard, op.cit., p. 286, written by Dawson.

gist is concerned with the nexus of sustenance and place relations of individuals and institutions which give the community its characteristic form and organization.

It was in Great Britain rather than in America that the cross fertilization of sociology and ecology took place.

This movement was called the Regional Survey. The first maps of Christopher Saxon were drawn and published in 1574 and 1578. Patrick Geddes gave leadership to the development of plant ecology and to the regional survey in the human field. Ratzel and Brunhues, before the social survey began, were observing the relations of human beings to their physical habitat. Both were cognizant of the distribution of population units and social phenomena with reference to natural regions and they sought to represent these facts by density, language, political maps and charts of settlement routes.[8]

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8. L. L. Bernard, The Fields and Methods of Sociology, pp. 287-289.

The processes of human ecology are specialized forms of the competitive process with particular reference to the spatial patterns which arise from the operation of the latter. The ecological processes include concentration, centralization, segregation, invasion, and succession. Concentration is the tendency toward marked population density in certain geographic areas. Centralization refers to the tendency of basic types of institutional services to locate at focal points of transportation and communication. Segregation is that phase which reveals the tendency of like units to form a cluster. Invasion is the process by which new types of institution or population groups penetrate an area already occupied and displace its institutions and population groups. Succession if the complete displace-

ment by means of invasion.[9]

9. Dawson and Gettys, Introduction to Sociology, pp.123-129.

The subject matter of human ecology can be classified under three general categories: ecological organization, which represents the spatial arrangements of population and institutions at any given time either within a local community or within a larger constellation of communities; ecological dominance, which represents the dynamic or functional aspects of spatial relationship, and ecological succession, which describes temporal changes in the human community.[10]

10. R. D. McKenzie, Encyclopedia of Social Sciences, Vol. V.,p. 314.

The work done thus far pertaining to the ecology of the community tends to fall into two different groups: studies of the spatial distribution of bio-social phenomenon within the urban area and studies pertaining to the determination of the natural--as opposed to political boundaries of the local communal organism.

The first group of studies originated in the social surveys. The studies dealing with segments of life in the city are of the second type. For example, Galpin outlined a technique for determining the boundary of the actual as opposed to the legal village community. His study is entitled "The Social Anatomy of an Agriculture Community".[11]

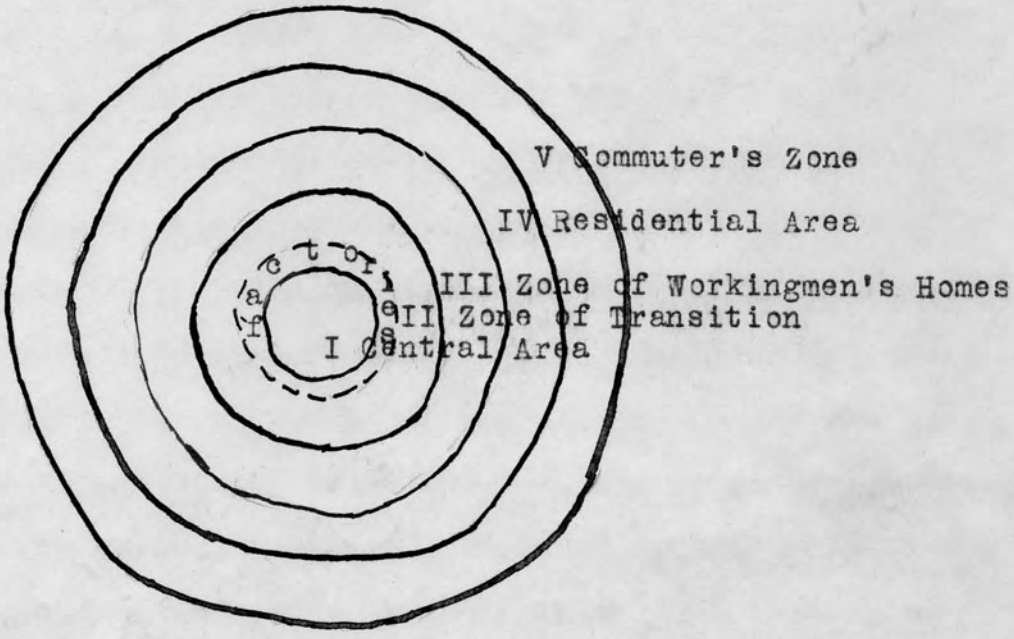
11. L. L. Bernard, The Fields and Methods of Sociology, pp. 57-58.

A study made by McKenzie falls in the second group. Also, McKenzie's study of the neighborhood took account not only of the diverse natural divisions of the city, but also of the spatial distribution of population elements and institutions. He advanced the notion that the city is a configuration of central business, industrial and residential areas. He observed that the city expands radially from the geographic center of the city. It is surrounded by a more or less disintegrated area inhabited by migratory groups with low buying power. Out from these areas range other residential and industrial areas. Population elements are sifted to these areas in terms of their economic status and racial sentiments. As a check on his approach, he and his assistants made an intensive field study of 1,000 households, and a study of institutions. It became clear that a close relationship existed between population mobility, economic status, and institutional disorganization. The spatial institutional clientele was mapped to show distribution trends. McKenzie was studying the configuration of areas and typical segregations of population elements.[12]

12. L. L. Bernard, The Fields and Methods of Sociology, pp. 291-292.

The approach to the study of the city as an expanding

Illustration 1



Ideal Pattern of Urban Expansion

Robert E. Park, The City

whole and its ecology received further definition in the conceptual scheme of Ernest W. Burgess. He constructed a chart which represents an ideal construction of the tendencies of any town or city to expand radially from its central business district. Encircling the downtown area is an area in transition, normally, which is being invaded by business and light manufacture. A third area is inhabited by the workers in industries who have escaped from an area of deterioration (II), but who desire to live in easy reach of their work. Beyond this zone is the "residential area" (IV) of high class apartment buildings or of exclusive "restricted" districts of single family dwellings. Still farther, out beyond the city is the commuters' zone--suburban areas--a thirty to sixty minute ride of the central business district. Neither Chicago nor any other city fits perfectly into this ideal scheme, as complications arise from the lake front, historical factors in the location of industry, and the relative degree of the resistance of communities to invasion.[13] Burgess takes

13. Carl Dawson and Warner Gettys, Introduction to Sociology, p. 131.

up in detail the resulting effects of the ecological processes.

Criticisms on the Ecological Method

Dr. Ernest Burgess' concept of the five concentric zones in the city has been the subject of comment by many

sociologists.

One of the frequent objections made to the Burgess zonal hypothesis (illustration 1) is that various cities do not actually conform to an ideal circular spatial pattern. Local irregularities do occur. However, numerous observations show decided tendencies for most American cities to conform roughly to the essential pattern described by Burgess. Even the supporters of the method admit readily the existence of numerous irregularities however.

The criticism might be divided into two types: those that contend no ideal pattern whatsoever exists, and those that hold the existence of severe distortions destroy the value of the hypothesis although a tendency toward an ideal pattern might be admitted.

Considerable confusion results from the fact that at present no clear cut distinction is made between ecological distance and linear distance. McKenzie states that ecological distance must be measured in terms of time and cost.[14] No adequate formula has been devised for measuring

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14. R. D. McKenzie, "The Scope of Human Ecology", Publ. American Sociology Society, 1926, p. 144.

---

time and cost combined as a measure of ecological distance.

A criticism against the pattern of circular urban zones is based upon the contention that heavy industry should be counted as a normal part of urban organization rather than as an abnormal distorting factor. Since the Burgess hypo-

thesis applies to modern American commercial-industrial cities, for that reason, heavy industry should be treated as a part of normal urban structure. Another criticism made against Burgess' concentric theory is that it fails to emphasize an important factor, that of historical inertia. The spatial and ecological structure of a city at any given time depends upon its past history. Therefore, functions which were located in conformity with ecological principles when the city was smaller appear to be seriously misplaced after the city has grown. Therefore, a series of time-cost maps for various periods of urban growth are necessitated.

The concentric zone theory is based upon the hypothesis that zones are natural areas, characterized by definite combinations of ecological and social criteria. Implied in studies of urban zones is the notion that ecological and social phenomena are so closely linked that the former may serve as indices of the latter. This close connection between ecological and social phenomena has never been demonstrated through concrete investigations and analyses.

There has been no conclusive evidence proving or disproving the theory that ecological zones take circular form. However, it possesses sufficient merit to warrant extensive research.[15]

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15. James Quinn, "The Burgess Zonal Hypotheses and Its Critics", American Sociological Review, April, 1940, Volume V, pp. 210-218.

Ecology has been utilized in approaches to other phases of social phenomena, as for example, in regard to suicide, delinquency etc. Included in the following pages are ecological studies made by Ruth Cavan on suicide, Frederick Thrasher on the gang, Ernest Mowrer on the family, and Clifford Shaw on delinquency areas.

Study by Ruth Cavan

Dr. Ruth Cavan has applied the ecological approach to the incidence of suicide. She deals with the problems of suicide under two different aspects, as regards social disorganization and personal disorganization. In her study she found Chicago to be a "normal" city as regards suicide. Chicago has four suicidal areas: the Loop or central business district, and its periphery of cheap hotels for men and sooty flats over stores; (see No. 1 on map) the Lower North Side, particularly the central part of this district, which includes a shifting population of unattached men and an equally shifting population of young men and women in the rooming house area; (No. 64 on map) the Near South side linking the Loop on the North with the Negro area to the South and having one-fourth of its population negro; (No. 2 on map) the West Madison area, with its womanless street of flophouses, missions, cheap restaurants, and hundreds of men who drift in aimless, bleary-eyed abandon, (No. 40 on map.)

For purposes of statistical and community studies, the city of Chicago has been divided into 72 areas. While the

statistical districts used in the census enumeration have in part determined the boundaries of these areas, these small statistical districts have been combined in such a way that significant units are outlined.

Of these 72 communities, as shown on the map, all but 9 had an average annual rate of suicide less than 20 per 100,000. These 63 communities with a rate less than 20 suicides per 100,000 per year, compromise 8/9ths of the area and also 8/9ths of the people of Chicago.

Of peculiar interest are areas 49 and 3, both Negro areas. The two compact negro areas show the tendency for the negro sections to be below the rate in the white sections. The Negroes of Chicago tend to become segregated into compact colored areas; hence, the suicide rates for these communities show the tendency for Negro rates in general to be below the white rate.

Except in a few instances, the community rates for suicide do not show the national groupings with any clearness, although the statistical tables show the foreign born as a group have in each community higher rates than the native born in the same community. The failure of the map to show nationality groupings is due in part to the fact that the national groups with high suicide rates are scattered over the city and cannot be isolated into communities. The foreign communities, instead of coinciding with the areas of suicide rates, surround these areas which are for the most part made up of native born.

The foreign born do not account for the high suicide rate in the communities 2, 40, and 64, nor the white rates in the community 3, of the four suicidal areas.

Several points may be noted:

(1) Males predominate in all four areas, and to a degree not found elsewhere in the city. In the Loop (1) 78% of the population is male, in the Near South Side (2) 58% is male; in the West Madison Area (40) 57%, and on the Lower North Side (64), the males outnumber the females by 55%. The predominance of men contributes somewhat, but is by no means entirely responsible for the high rate.

(2) All four areas are adult areas. Their population is chiefly of the age groups which commit suicide.

The result from considering population groups is mainly negative; immigration groups, male predominance, adult groups, although known to contribute do not seem to account for the high rates in these communities.

A second approach was considered by means of characteristic activities found in these areas:

(a) the lodging house areas. Actual figures show these four areas to contain an extremely high proportion of the lodging houses in Chicago. Lodging house people are a restless moving throng. One of the suicidal areas has a complete turnover every four months in lodgers, and one-half the rooming-house keepers every six months. For the most part, the people are not married, or if so, are not living together. The lodging house area is without a neighborhood

life. These areas are shown in illustration 3.

(b) divorce areas. One area of the highest rate of divorce corresponds to the Loop (a high suicidal rate area.) Divorces are an indication of the breakdown of organized family life. Rates for Chicago communities show in 1919 there were 3 small areas of high divorce rates (illustration 4) communities numbers 1, 70, and 13. An area of slightly less high rate is the Lower North Side (64).

The high rate is all the more remarkable because of the lack of family life in them.

(c) pawnshop areas. Pawnshop areas coincide with the high suicide rate areas. Forty-four of the fifty-four listed pawnshops are in the four suicidal areas with the highest rates. The concentration of one particular type of institution ore industry into definite centers indicates that in those communities where the concentration occurs there is need for the definite kind of service.

The pawnshops are filled with petty articles which indicate the economic status of the people of the community. The pawnshops show a hand-to-mouth existence and the possession of very little personal property.

(d) murders. Murders, as well as suicide occur most frequently in proportion to the population in the Loop (No. 1), the Lower North Side (64), West Madison Area (40) and the Douglas Area (3). However, other communities have high rates of muder without the high suicidal rate. The partial coincidence is significant however, for it indicates

that in certain communities not only suicide, but other aberrant forms of behavior occur, and hence these communities have those characteristics of social organization which permit such behavior.

(e) death due to alcohol. Various overt types of activity are indexes of the degree of personal disorganization and even demoralization. A startling coincidence in locus of high suicide rates and high alcoholic death rates appeared. The Loop (1) has 57.2 deaths from alcohol per 100,000 population; West Madison Area (40) next with 47.8 deaths; the Near South Side with 28.7, and the Lower North Side (64) 12.5.

Similarly, the use of drugs, and all the drug peddling centers were found in the high suicidal rate area. The use of drugs as well as alcoholic drinks is a means of escape. There are three dope centers in Chicago, one in each of the communities, 64, 30 and 3.

A third type of activity indicative is prostitution. The highest areas include communities 3 and 40, each having 54 houses of prostitution. The Lower North Side had 23; the Loop had 19 (chiefly in hotels.)

Four types of people have been drawn to areas of the highest suicidal rates; young people with ambition, and ideals and little money (the Lower North Side); Italians and Poles, immigrant groups, (South of West Madison Area); Hobos, and homeless men (West Madison Area) and white permeating the black belt (South of Loop).

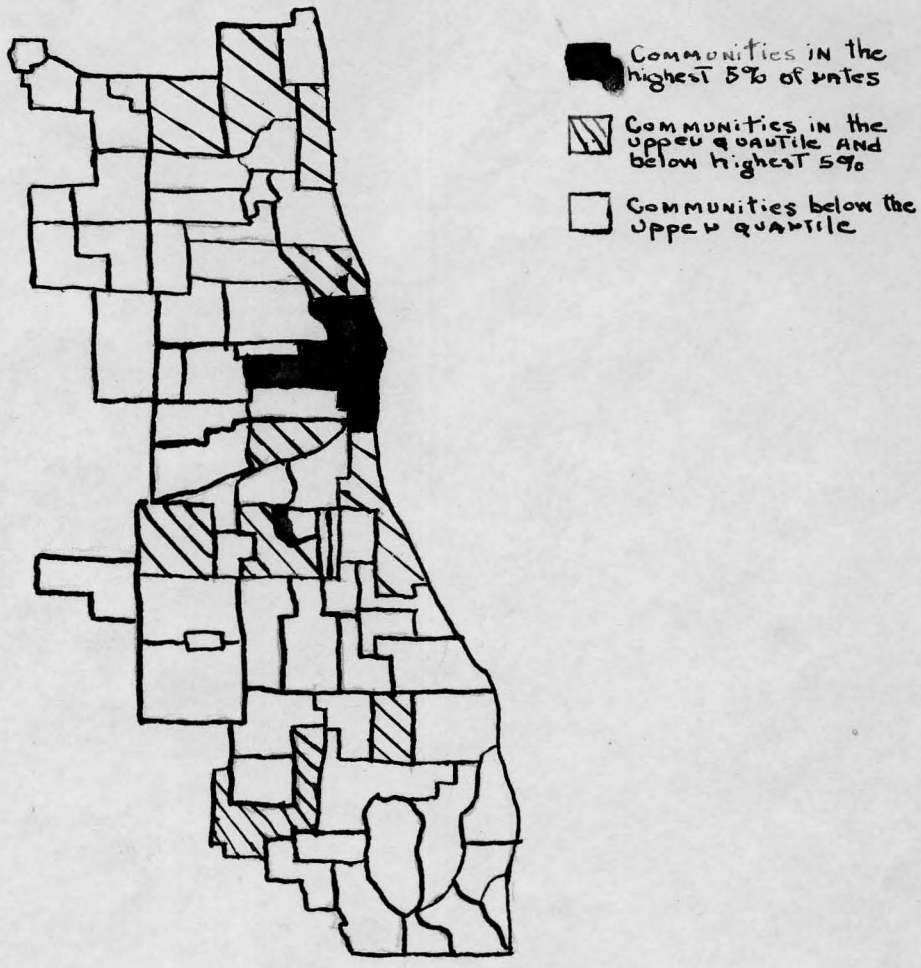
The low economic status and detached condition of the persons in these areas contribute to their restlessness and mobility. Organized life has no place.

It is not to be though that these institutions and types of conduct that are typical of the high rate suicidal areas, cause suicide, rather they are symptoms of a general condition of personal and social disorganization which in the end may lead to suicide.

Therefore, only certain sections of large cities, if Chicago is typical, have suicide rates higher than in smaller places where disorganization is assumed to exist in lesser quantity and degree than in the city.

Ruth Cavan, Suicide, pp. 77-105.

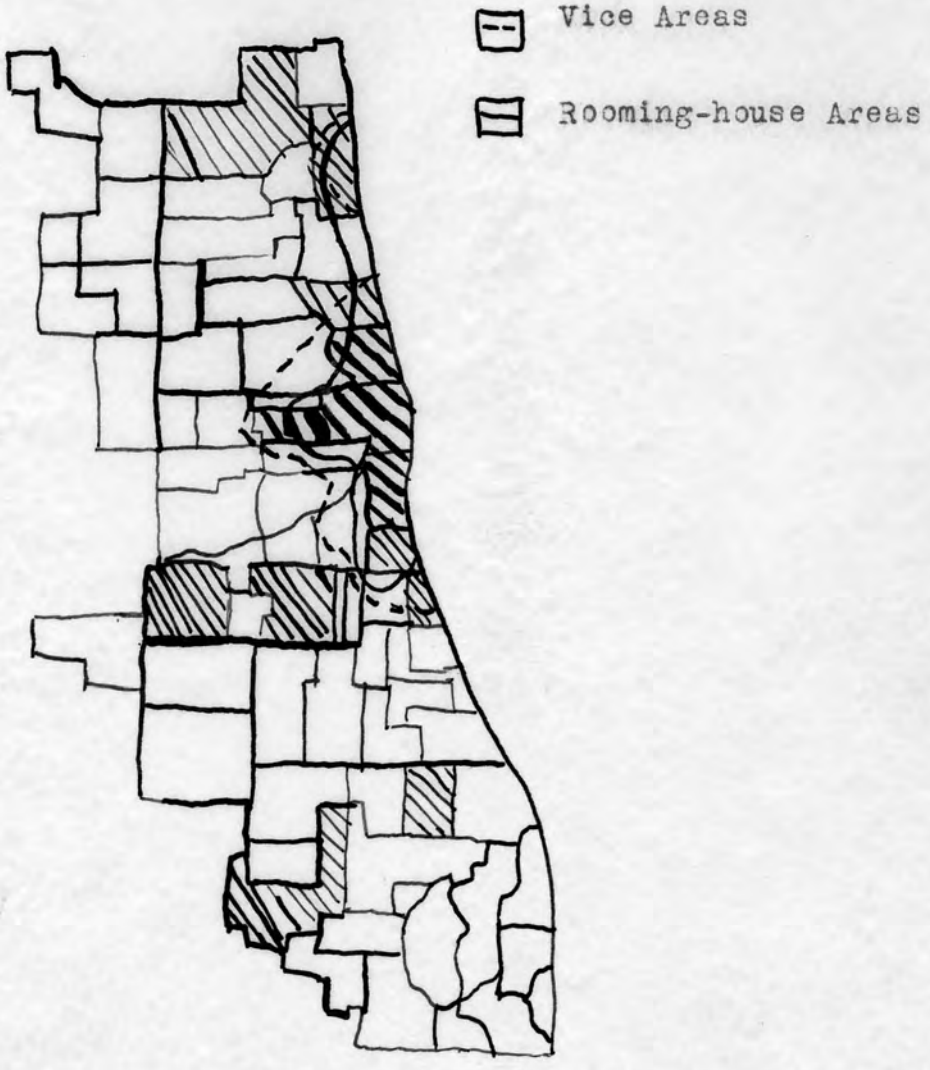
ILLUSTRATION - 2



Rates of Suicide in Chicago , 1920-1921

Ruth S. Cavan, Suicide

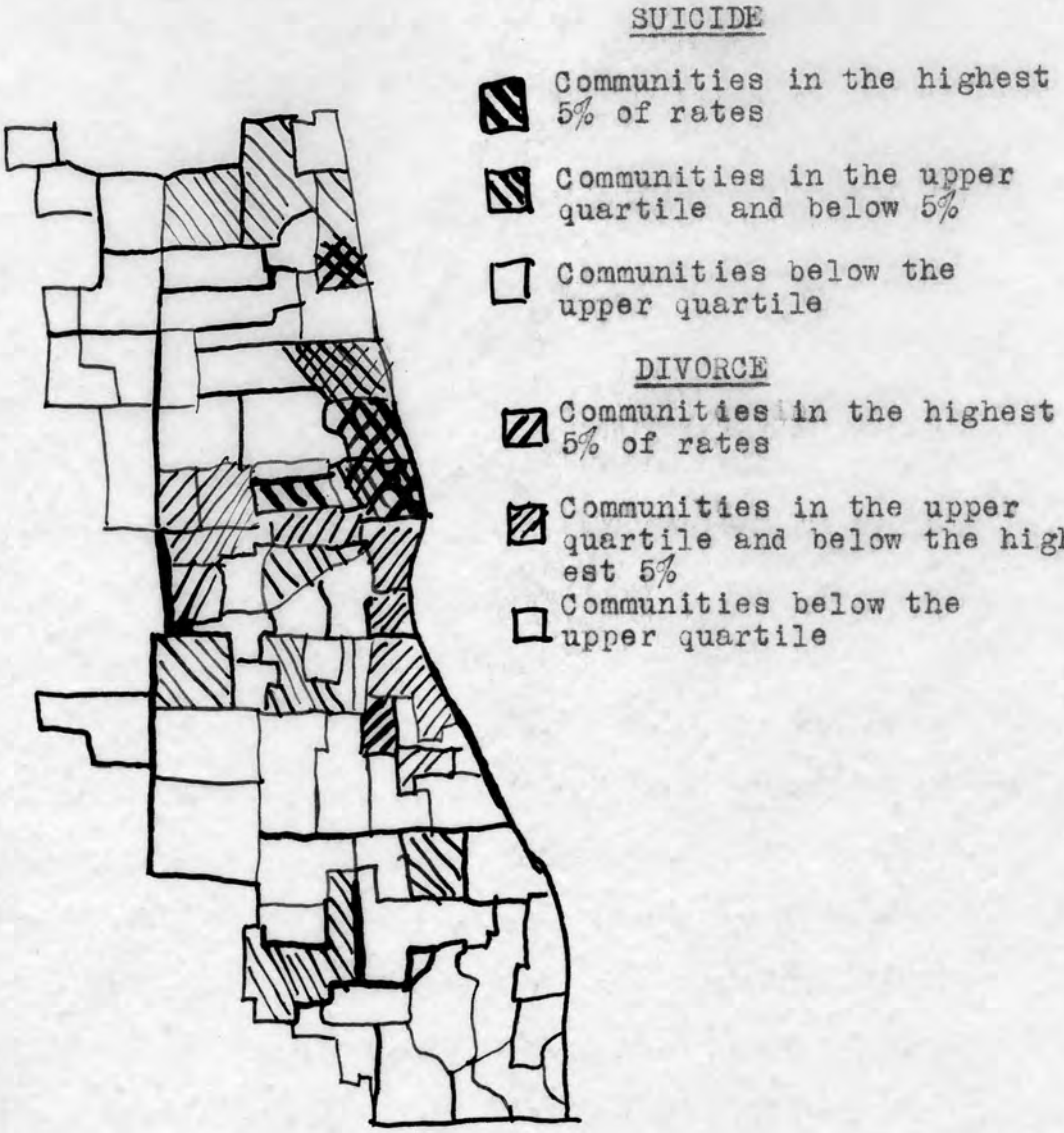
Illustration 3



Comparison of Suicide and Other Indications of Disorganization in Chicago by Communities, 1920-1921

Ruth S. Cavan, Suicide

Illustration 4



Comparison of Divorce and Suicide Rates in Chicago, 1920-1921

Ruth S. Cavan, Suicide

Study by Frederick M. Thrasher

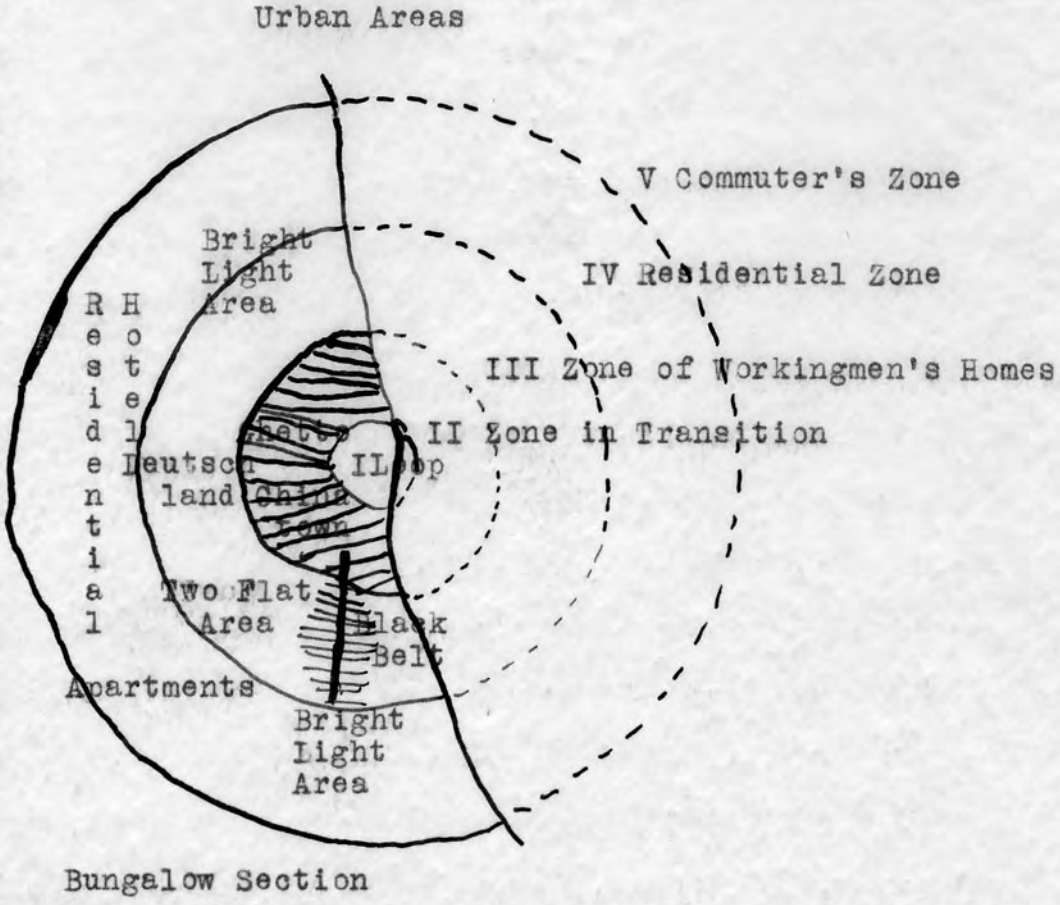
Dr. Frederick M. Thrasher has been concerned with the relation of ecology to the gang. He has superimposed upon the chart of E. W. Burgess showing urban areas in the development of the city, the approximate location of gangs in Chicago. The shaded portions of the chart show the location of gangs.

Gangland stretches in a broad semicircular zone about the central business district (the Loop) and in general forms a sort of interstitial barrier between the Loop and the better residential areas. The empire of the gang in Chicago may be divided into three divisions, the North Side, the West Side, and the South Side.

The North Side area of gangs lies north of the Loop and the Chicago River, and east of the north branch of the river. It includes Hobohemia, a cosmopolitan and rooming-house area which includes the haunts of a gang of dope-peddlers serving North Side addicts, and "Bughouse Square", a center for hobo intellectuals. This region serves also as a base for such notorious bootlegging groups as the Clark and Erie gangs. The gangs are most numerous between this region and the north branch of the river, in "Little Sicily". North and westward of "Little Sicily" gangs fringe the industrial properties along the river. All the gangs of this region together are known as the "North Siders".

The West Side gangs are found in the district which lies south and west of the north branch of the Chicago River,

Illustration 5



GANGLAND

Gangland is shown by the shaded portions on the map.

Frederick Thrasher, The Gang

West of the Loop. It is the district of the crowded river wards. Population density is more than 50,000 to the square mile. Life is enmeshed in a network of tracks, canals, and docks, factories and breweries. The Polish colony lies in this area with a gang in almost every block. The majority of gangs in Chicago are of Polish stock but this may be due to the fact that there are in the city more than 150,000 persons of Polish extraction more than of any other nationality. Below the Chicago and North-Western railroad tracks, the southern boundary of Little Italy lies a region with relatively few gangs. West of the industrial section of this area is a negro colony whose gangs, are marooned among white gangs. In the northwest portion of this area a gang of dope-peddlers pay their trade. West of the Hull-house community and extending south is the Ghetto. The Jewish gangs, which belong to this area are less numerous than those of other slum areas, due, it is said to the more individualistic spirit of the Jew, but more likely to the better organized recreation and family life than is found among the poorer classes of other immigrant groups. These numerous gangs make up the West Siders.

The South side gangs are found south of the Loop and southeast of the branch of the Chicago river. South of the Loop is Chicago's most extensive negro area. In this region of contrasting social conditions are high-class colored residential neighborhoods, as well as the worst type of slum. Gangs are most numerous in the poorer sections.

Gangs of mixed membership are also found in this area. The history of the region is interesting in the light of gang development for here the first gang of which we have record had its beginning. West of the odorous expanse of pens and packing houses of the Union Stock Yards is an immigrant colony dominantly Polish, in which are found not only street gangs but a large number of gang clubs which rent rooms in times of prosperity but give them up when work is slack.

In addition to these three major divisions of gangs, certain boundary lines between the non-gang areas of the city develop gangs. Threads of social disintegration tend to follow alongside rivers, canals, railroad tracks, and business streets whose borders are manifestly undesirable for residential purposes and permit gangs to thrive in the interstices between very good residence areas. For example, in Hyde Park, one of the best residential areas in the city, there are a number of gangs along the business street and in the sections adjacent to the Illinois Central Railroad. In the satellite communities near Chicago areas, gangs develop under certain conditions not unlike those in Chicago. Purely residential and well-organized suburbs of the better type such as Oak Park and Evanston are practically gangless, but even in these regions, however, gangs develop in interstitial zones.

The most important conclusion suggested by a study of the location and distribution of the 1,313 gangs investigated in Chicago is that gangland represents a geographically

and socially interstitial area in the city. The gang is almost invariably characteristic of regions that are interstitial to the more settled, more stable, and better organized portions of the city. The greatest number of gangs occupy what is often called the "poverty belt" -- a region characterized by deteriorating neighborhoods, shifting populations, and the mobility and idsorganization of the slum. Abandoned by those seeking homes in the better residential districts, encroached upon by business and industry this zone is distinctly interstitial phase of the city's growth. It is to a large extent isolated from the wider culture of the larger community by the processes of competition and conflict which have resulted in selection of its population. Gangland is a phenomenon of human ecology. As better residential districts recede before the encroachments of business and industry, the gang develops as one manifestation of the economic, moral and cultural frontier which marks the interstice.

This process is seen too, in the way in which a business street, stream, canal, or railroad track running through a residential area tends to become a "finger" of the slum and an extension of gangland. Borderlands and boundary lines between residential areas and business areas, between immigrant or racial colonies, tend to assume the character of the intramural frontier.

Frederick M. Thrasher, The Gang, pp. 1-25.

Study by Ernest Mowrer

Ernest R. Mowrer has applied the ecological approach to family life in an urban area. He states that the distribution of family areas may be represented by a series of concentric circles as in illustration 6.

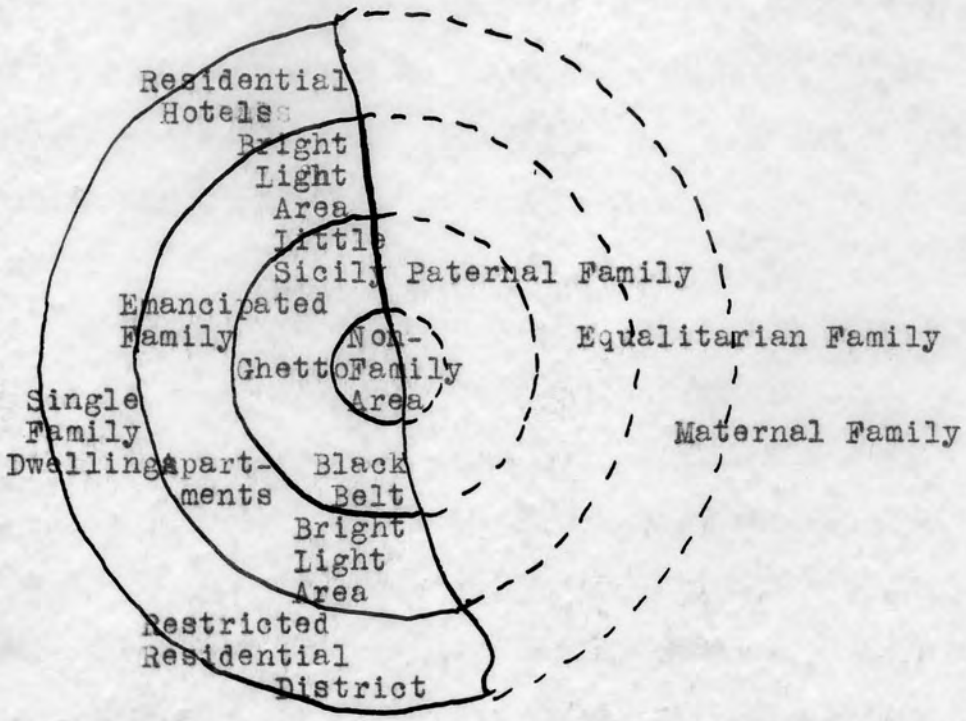
The non-family areas are to be found in the center of the city, in and adjoining the central business district - in Chicago, the Loop. They tend to be one-sex areas - predominantly male, such as Greektown, Chinatown, and Hobohemia.

The areas of the emancipated family are the districts of rooming houses and kitchenette apartments and residential hotels. These attract the emancipated family because they offer the isolation from local primary contacts and freedom from group control upon which this type of family is based. In the organization of the city these areas represent the interstitial sections.

Paternal family areas are those of the worker, characteristic of the tenement areas and the immigrant colonies, such as the Ghetto, and Little Sicily, where the husband rules the home. Contacts in these sections approach those characteristic of rural areas more closely than any of the other family areas.

The equalitarian family areas are the residential districts wherein live the middle and professional classes. There are children though families tend to be small, and this makes for less movement in an effort to stabilize school contacts. Greater interest is therefore taken in

Illustration 6



Family Areas in Chicago

Ernest Mowrer, The Family

the neighborhood institutions that is characteristic of the emancipated family.

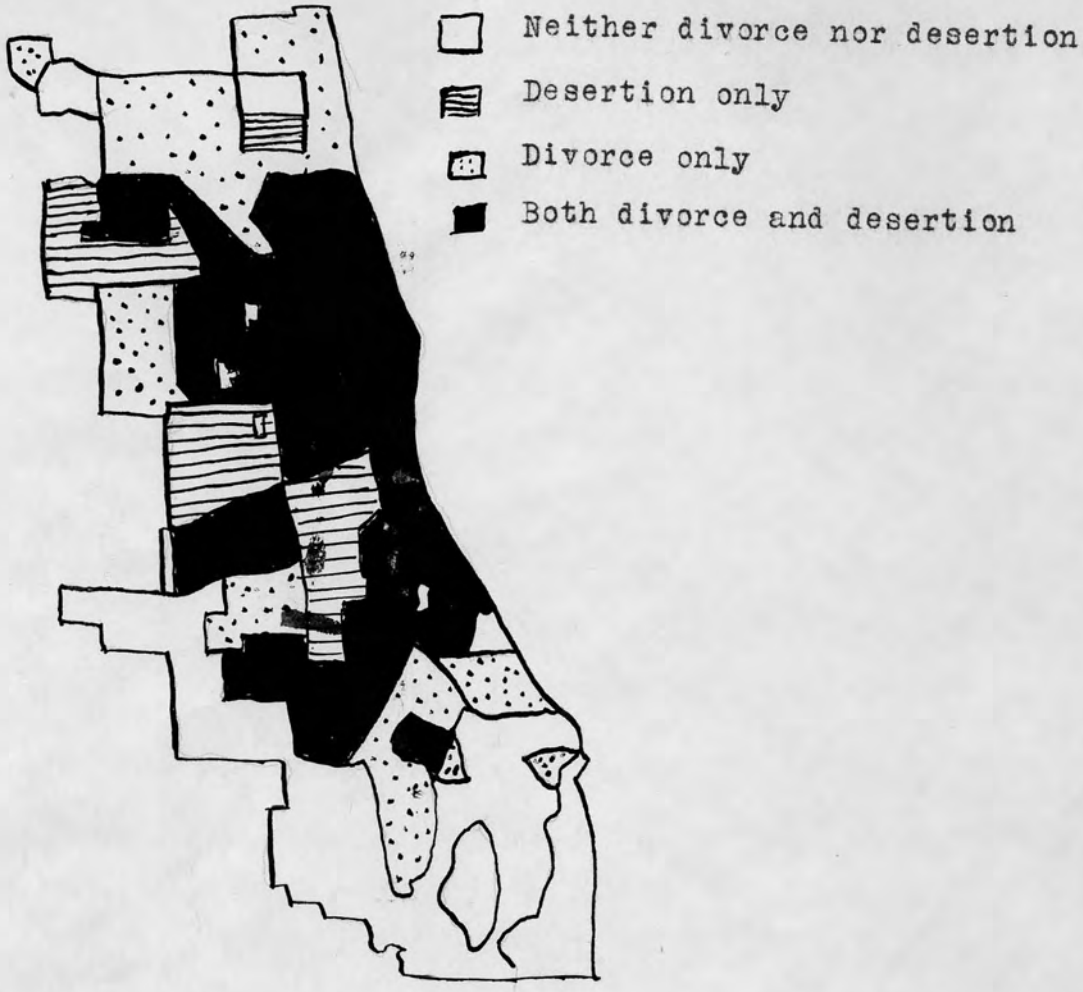
The maternal family areas are those of the commuter, primarily the neighborhoods of the upper bourgeoisie. These outlying districts are characterized by single houses, typically bungalows, and large yards. Neighborhood opinion and conformity to the accepted patterns of social intercourse are rigidly held to. Family prestige is largely a matter of family connections and the type of home which is maintained.

How the amount and form of family disorganization are related to the type of family organization may be seen by comparison with illustration 5 and illustration 6. The highest rates of family disorganization tend to be found in the areas of the emancipated family, through the equalitarian family areas are not far behind. Family disintegration takes the form of divorce, chiefly, though mingled with some desertion and non-support.

Intermediate rates, on the other hand, tend to characterize the areas of the paternal family which are also the desertion areas of the city. Religious and social taboos against divorce tend to persist in these areas and so prevent a high rate of family disintegration, if not disorganization.

The lowest rates of family disorganization are to be found in the maternal family areas. These areas are marked by their conservatism and the control of the primary group.

Illustration 7



Areas of Family Disintegration in Chicago, 1920

Ernest Mowrer, The Family

While these areas are relatively free from either divorce or desertion, when the family disintegrates, it tends to culminate in divorce rather then in desertion.

These findings, accordingly, show an association between the ecological organization of the city and the distribution of family disorganization which suggests an explanation in terms of mobility. How far can it be said, therefore, that family disorganization is associated with such forces producing mobility as the expansion of industrial organization, the extension of the money economy to an increasing number of the interests in life, the increase in communication and the breakdown of neighborhood contacts with its accompanying disappearance of the restrictive force of neighborhood opinion?

Ernest R. Mowrer, The Family, pp.183-194.

Study by Clifford R. Shaw

Clifford Shaw has made an extensive study of juvenile delinquency with reference to the configuration of the city as represented by Ernest Burgess's five main areas of the city based on radial expansion.

Methods of Investigation

The study is based on studies of eight series of individual offenders and their geographic location. The eight series include:

Series I - male school truants brought before the Juvenile Court.

Series II - delinquent boys (10-16) dealt with by juvenile police probation officers in 1926.

Series III - deals with the same during the year 1927.

Series IV - delinquents brought before the Juvenile Court from 1917- 1923.

Series V - delinquents brought before the Court from 1900-1906.

Series VI - males (17-21) brought before the Boys Court of Chicago on felony charges.

Series VII - adult offenders placed in the Cook County Jail, during 1920.

Series VIII - girls brought before the Juvenile Court during 1917-1923.

Sources of Primary data

The primary data used in this study were procured

directly from records of the juvenile probation officers, the Juvenile Court, the Boys' Court, and the Cook County Jail. The home address given was in almost all cases accurate, as home visits had been made.

Maps

The home addresses of the individuals in each of the eight series were plotted on social research maps of the city of Chicago. The plotting was done by street and number, each spot being placed at or as close as possible to the exact number.

Series I

The study of case histories of school truants has indicated that truancy from school is frequently closely associated with other forms of delinquent behavior. By observing a map showing the residence of approximately 5,000 school truants it is apparent the distribution is not uniform throughout the city, but rather there are certain areas in which there are sparse distributions and also decided concentrations. The greatest concentrations are found in areas surrounding the Loop and contiguous to large industrial districts such as the Stock Yards and South Chicago steel mills. If the Loop is taken as a focal point, the greatest concentrations fall within a zone surrounding the Loop and having a radius ranging from three to six miles.

Series II

The data for this series was based on the juvenile pro-

bation officers' records showing 9,243 individual boys as delinquent during the year 1926. A map showing distribution by place of residence indicates that the distribution closely parallels that of the truancy series. Rather than being uniform, the distribution shows decided concentrations in the areas immediately surrounding the Loop and the large industrial districts such as the Stock Yards and the South Chicago steel mills. It is interesting also that in the areas where the distribution is relatively dispersed, small clusters of spots may be noted and that these smaller constellations often occur at points adjacent to railroads, business, and industrial properties. A radial map shows the rates are highest at the Loop and decrease as the suburbs are approached. Thus as in the case of truants, the rate of delinquents tends to vary inversely with the distance from the Loop.

Series III

This data was included to serve as a check upon the data presented in Series II. A map was included to show the distribution of 8,000 male delinquents dealt with by the police in 1927. It is noted that as was observed in Series II, the areas of greatest concentration are found adjacent to the Loop and the industrial districts, and there being relatively few plottings in the outlying districts. The radial maps for both Series II and III also show the same general trend. By the process of correlation, Series II and Series III have a correlation of a positive .96 and

when Series III is compared with the truancy Series I the correlation is .88, both showing a marked similarity.

Series IV

In the two preceding series some minor offenders were included who were released without court action. However, in this series, delinquents who had been taken to the Juvenile Court were included for the years 1917-1923, since there can be no doubt they constitute a group of serious offenders. A map indicating the distribution by place of residence of the 8,141 boys brought to the Juvenile Court during the seven year period, 1917-1923, shows greatest concentrations in the areas adjacent to the industrial districts and particularly the Loop. This was previously observed in the other series. By means of radial maps, it is seen that the highest rate along each radial occurs in the area adjoining the Loop district. Proceeding outward along the radials the rates decrease in proportion to the distance from the Loop, as in the truant and police series.

Series V

Series V deals with 8,056 delinquent boys brought before the Juvenile Court during 1900-1906. Plotting on a map the residence of the boys, shows again a preponderance of the boys living in the areas adjacent to the Loop and the large industrial areas. In this series, the areas are clearly defined and less diffused. While following the same general pattern noted in the previous series, the

concentrations are restricted to the areas more immediate to industrial centers. This tendency is especially noticeable with reference to the Loop district. This data however antedates the other series by about twenty years, and the more recent expansion of delinquency areas reflects the extension of the deteriorated districts about the Loop and industrial centers. The radial maps show again the tendency for the rates to vary inversely with the distance from the Loop.

Series VI

This series presents somewhat older offenders, thus far juvenile delinquents under 17 years of age have been considered. In this series, the distribution of male offenders, ages, 17-21, brought to the Boys' Court on Felony charges during 1924-1926 are the object of investigation. A map based on the home addresses of the 6,398 offenders shows a distribution markedly similar to the distribution in the other series. The greatest concentration occurs in the areas adjacent the Loop and the large industrial centers. From plottings on radial maps, it is also noted that the rates in this series of older offenders, as in the series of juvenile delinquents, show a marked decrease from the Loop outward along the radials. In contrast to the previous series, the highest rate occurs in the Stock Yards area, although this rate is only slightly higher than those in the area adjacent to the Loop.

Series VII

This material was presented to determine what correspondence if any existed in the distribution of adult offenders as compared with juvenile offenders. The series includes 7,541 male adults placed in the Cook County Jail during the year 1920. From a map showing the distribution of home addresses of adult offenders, four distinct areas of marked concentration are noted. Three of these areas lie within one mile of the Loop, while the fourth is approximately three miles south of the Loop. Aside from the decided concentration in these four restricted areas, the distribution of adult offenders shows a marked similarity to that of the juvenile delinquents. The usual concentration in the areas along the north and south branches of the Chicago River and adjacent to the industrial districts of the Union Stock Yards and South Chicago is noted. The four areas of greatest concentration of adult cases are in Chicago's rooming-house district. By comparison of a map showing hotel and rooming house locations with these four areas of concentration of adult offenders, the areas are found to be identical. The radial map showed much the same distribution for adult offenders as for juvenile delinquents, both having the highest rates in the Loop district.

Series VIII

Series VIII which deals with the distribution of delinquent girls was investigated to determine the correspondence of the distribution with delinquent boys. The

distribution by place of residence of 2,869 girls presents a general configuration that corresponds quite closely to that previously noted in each of the series of male juvenile delinquents. Here again, the delinquents, rather than being uniformly distributed, show marked concentrations in the areas adjacent the Loop and especially in the zone of deterioration around the Loop.

Summary of Findings and Tentative Interpretation

1. The first and perhaps most striking findings of that study is that there are marked variations in the rate of school truants, juvenile delinquents, and adult criminals between areas in Chicago. Some areas are characterized by very high rates, while others show very low rates. These differences are seen in all of the series studied.

2. A second major finding is that the rates of truancy, delinquency, and adult crime tend to vary inversely in proportion to the distance from the center of the city. In general the nearer to the center of the city a given locality is, the higher will be its rate of delinquency and crime.

3. Another striking finding in this study is the marked similarity in the distribution of truants, juvenile delinquents, and adult criminals in the city. Those communities which show the highest rates of juvenile delinquency also show, as a rule, the highest rates of truancy and adult crime. There are, of course, exceptions, but the correlations indicate the rates of all of the series vary rather consistently.

4. A fourth finding of this study is that the difference in rates of truancy, delinquency and crime reflect differences in community backgrounds. High rates occur in the areas which are characterized by physical deterioration and declining populations. The high rates delimit areas which should be studied more thoroughly for the situational factors accompanying delinquent behavior.

5. It is interesting to note the main high rate areas of the city--those near the Loop, around the Stock Yards, and the South Chicago steel mills--have been characterized by high rates over a long period. The data are based on records that go back thirty years showing that many of the areas have been characterized by high rates throughout the entire period. It should be remembered that relatively high rates have persisted in certain areas notwithstanding the fact that the composition of the population has changed markedly.

Interpretation

Since delinquents are largely concentrated in characteristic areas, it may be assumed that delinquent behavior is very closely related to certain community situations which arise in the process of city growth. The way the elements in these situations become involved in the development of delinquent behavior trends can be understood only after thorough studies of community backgrounds have been made.

Under the pressure of the disintegrative forces which

act when business and industry invade a community, the community thus invaded ceases to function effectively as a means of social control. Traditional forms and standards of the conventional community weaken and disappear. Resistance on the part of the community to delinquent and criminal behavior is low, and such behavior is tolerated and may even become accepted and approved.

Moreover, many of the people who come into the deteriorated section are European immigrants or southern Negroes. All of them come from cultural and social backgrounds which differ widely from the situations in the city. In the conflict of the old with the new the former cultural and social controls in these groups tend to break down.

It has been quite common in discussions of delinquency to attribute causal significance to such conditions as poor housing, low living standards, low educational standards, etc. But these conditions themselves probably reflect a type of community life. By treating them one treats only symptoms of more basic processes.

Finally, with the process of growth of the city the invasion of the residential communities by business and industry causes a disintegration of the community as a unit of social control. This disorganization is intensified by the influx of foreign and racial groups whose old cultural and social controls break down in the new cultural and racial situation of the city. In this state of social disorganization, community resistance is low. Delinquent and

criminal patterns arise and are transmitted socially just as any other cultural and social pattern is transmitted. In time these delinquent patterns may become dominant and shape the attitudes and behavior of persons living in the area. Thus, the section becomes an area of delinquency.

Clifford R. Shaw, Delinquency Areas, pp. 5-214.

Chapter II.

Ecological Studies in Milwaukee Other than Mental Disease.

Chapter II

The ecological movement in regard to Milwaukee data has not been developed to a great extent. However, four ecological studies of Milwaukee are available. They include an ecological study of juvenile delinquency in Milwaukee, blighted areas in Milwaukee, nationality in Milwaukee and a population density study.

Juvenile Delinquency

The ecological study of juvenile delinquency in Milwaukee was prepared by N. Y. A. Activity Survey. The map following on page 55 shows heavy concentration within the area surrounding the center of the city and a tendency to for rates to decrease as one proceeds from the center of the city. The rates vary from .05 to over .30 percent of 1930 population by census tracts.

Blighted Areas

A study of Milwaukee to determine in what areas living conditions are poorest, showed the resulting map, page 56. Five outstanding areas of extremely poor living conditions resulted. These five blighted areas are the shaded portions on the map (illustration 8).

Nationality

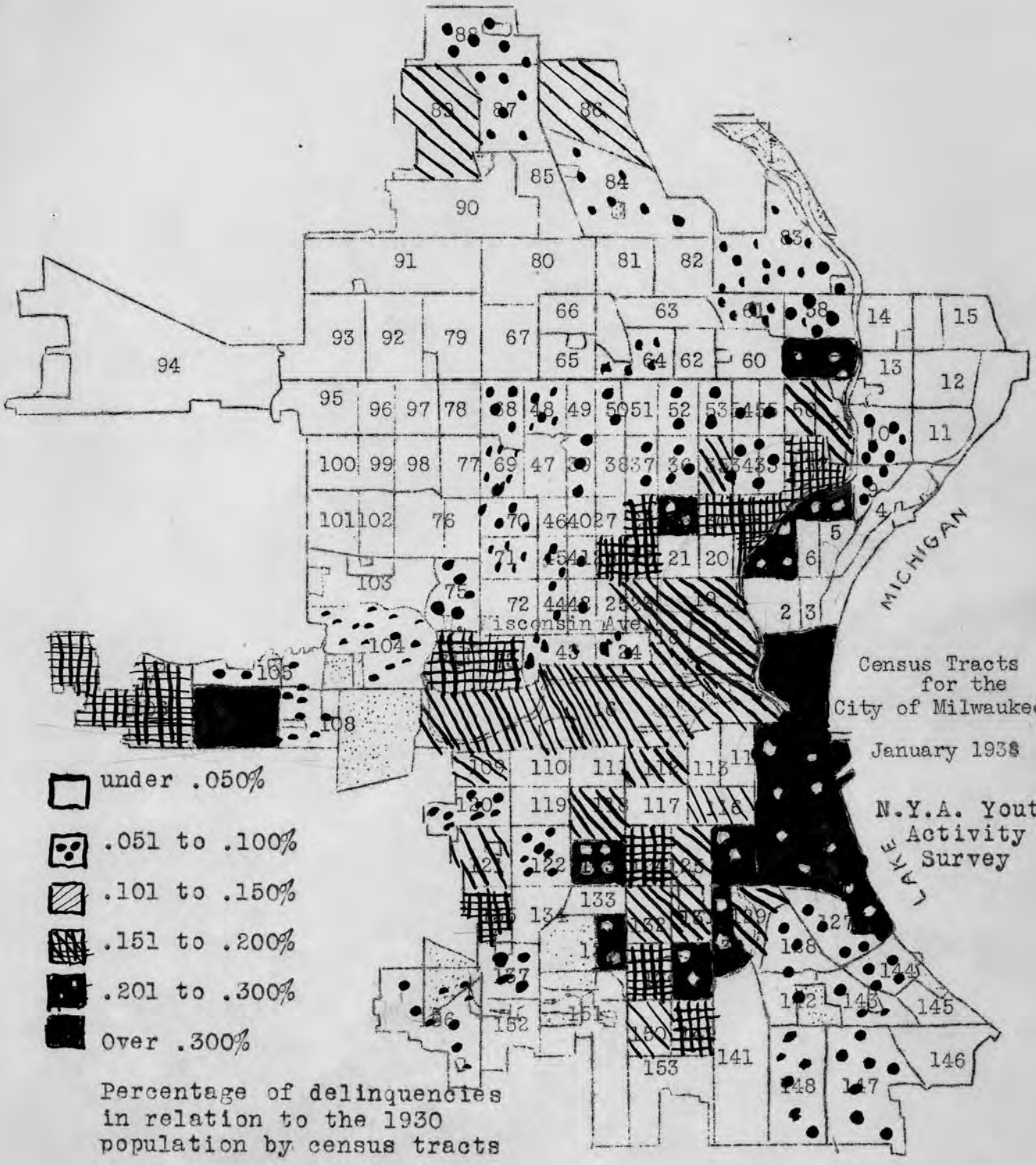
Milwaukee was divided into 24 districts, and the number of persons of each nationality was determined.

The resulting map shows the German nationality to predominate in 16 of the 24 districts. Of the remaining districts, five are Polish, one Yugoslavian, and two, Italian. The map shows the general prevalence of the German nationality in Milwaukee in contrast to all others.

The population density study was based on 15 divisions with the average number of persons per net acre. The divisions varied from 20 persons per net acre in the upper North side of Milwaukee to 73 persons per net acre in the lower South side starting with the lake front.

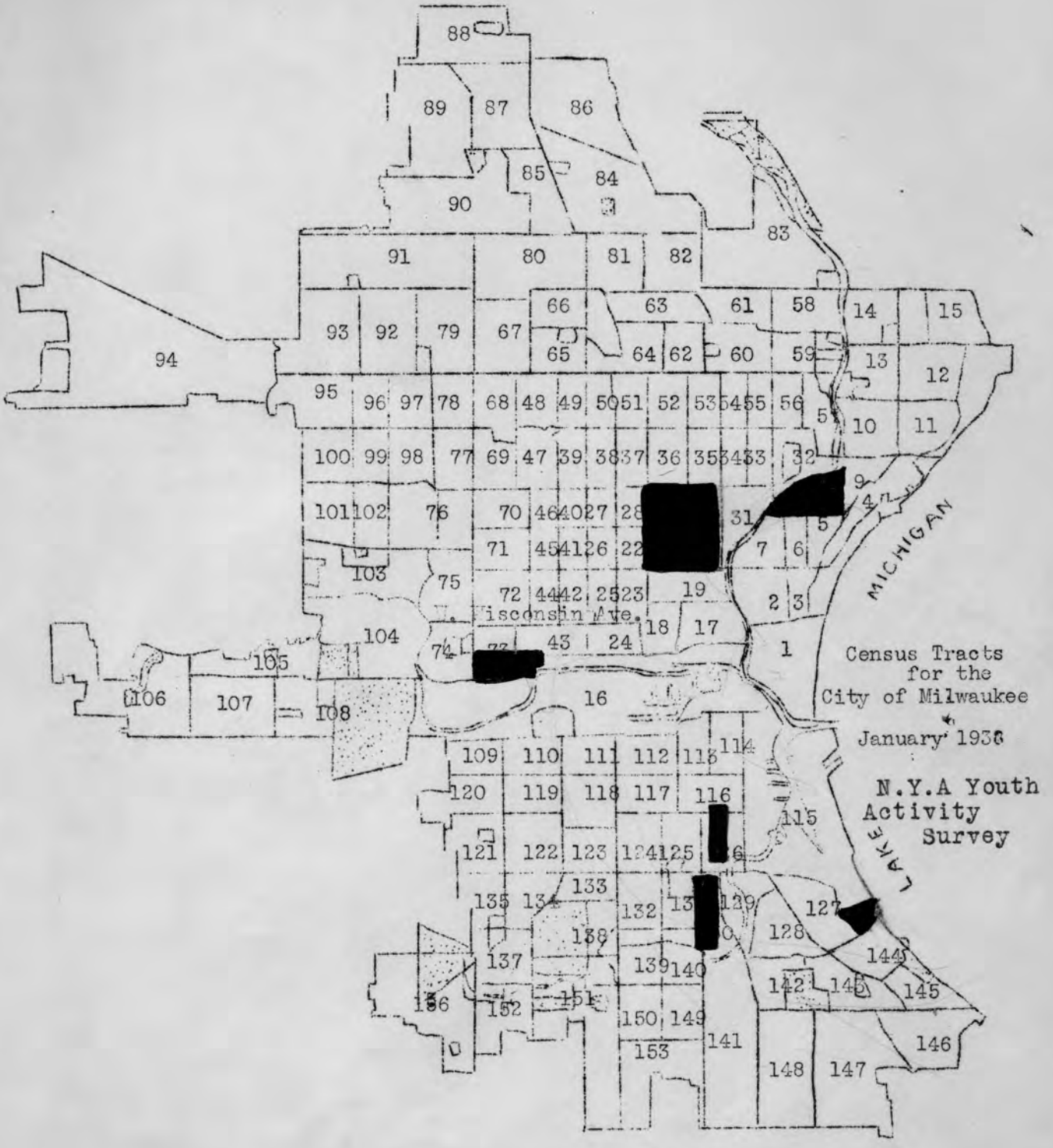
The following maps show in detail the findings of the four studies in Milwaukee in regard to juvenile delinquency, blighted areas, nationality and population density.

Illustration 8



Juvenile Delinquency in Milwaukee

Illustration 9

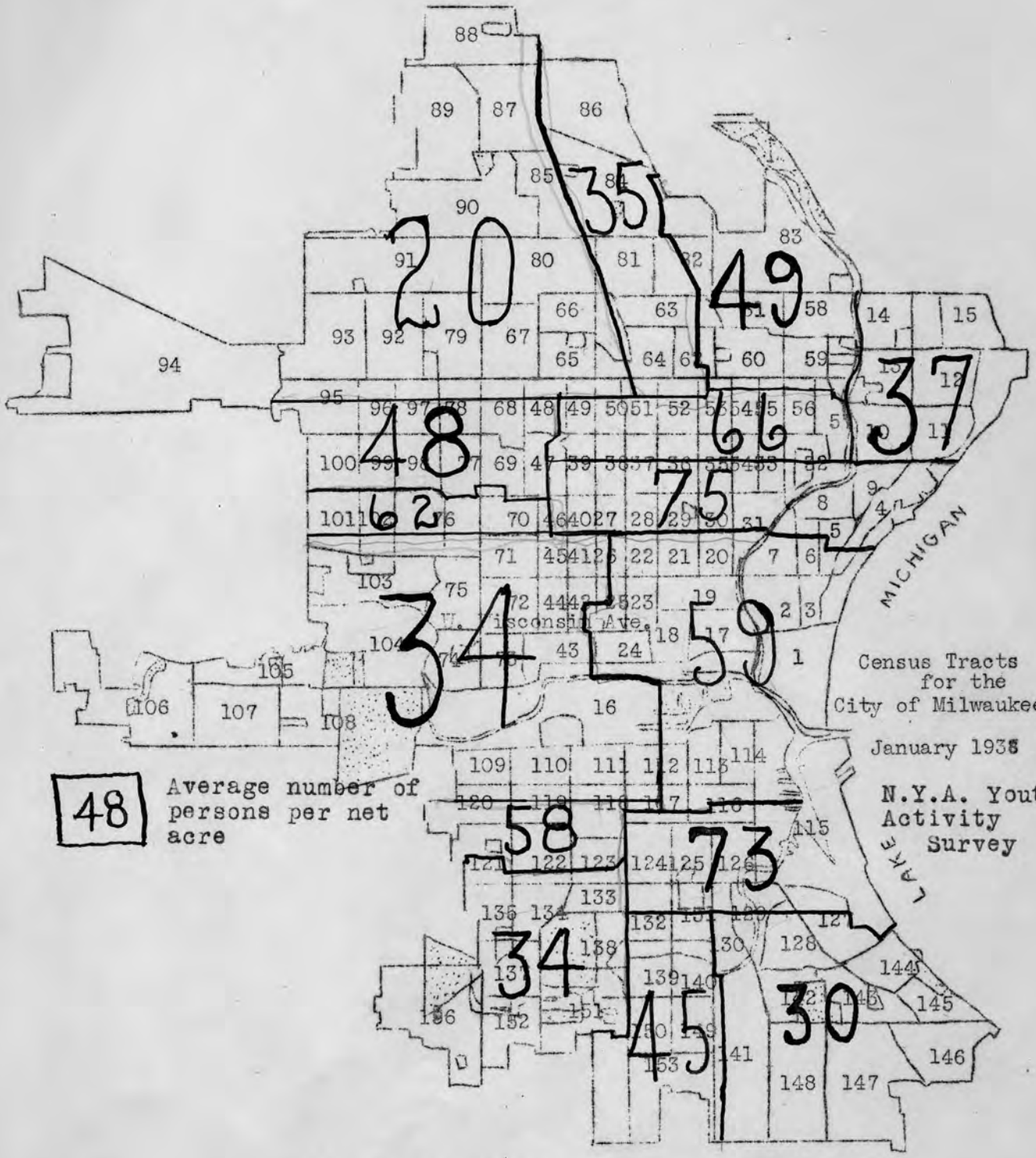


Blighted Areas in Milwaukee

Illustration 10

Nationalities (foreign-born) in Milwaukee

Illustration 11



Population Density in Milwaukee

Chapter III.

Ecological Studies of Mental Disease in Other Cities.

Chapter III

Ecological Pattern of Mental Disease in Chicago

Study by Faris and Dunham

The work on mental disease in Chicago was done by Robert Faris and H. Warren Dunham. Their factual findings constitute a significant contribution to the knowledge of mental life in the large city.

Out of the interaction of social and economic forces that cause city growth, a pattern is formed in these large expanding American cities which is the same for all cities, with local variations due to topographical and other differences. This pattern is not planned or intended, and to a certain extent resists control by planning. The understanding of this order is necessary to the understanding of the social disorganization that characterizes urban life. This has been represented by E. W. Burgess, in his chart on the Pattern of Urban Expansion. (Mowrer uses Burgess's pattern to show the natural urban areas and types of families.)

These natural areas can be identified by the use of certain mathematical indices for different types of social phenomena. Such indices as the median rentals paid, the density of population, the rate of mobility, the percentage of rooming-houses and hotels, and the percentage of condemned buildings tend to identify these areas and to differentiate between them. These indices might be regarded as ones which measure the extent of social disorganization be-

tween the different communities and natural areas of the city. Other types of objective data representing such social problems as juvenile delinquency, illegitimacy, etc. might be considered as indices representing effects or results of certain types of social processes. (For example, see Cavan's study of suicide.)

Method

Faris and Dunham have applied the ecological approach to the study of mental disease in Chicago. The resulting rates are based on adult population 21 years of age and over. Census tract maps have been used on which the addresses of the mental disease patients are plotted. The data are divided into sextiles to show the concentration of race. Sub-communities have been combines to show significant concentrations. Correlation methods have been applied to private hospital rates and state hospital rates, and also with respect to mobility indices. Tables are presented to show the rate per community by multiplying the 1930 population by 13 and dividing by the number of cases in each community. The method of quartile grouping has been applied to total insanity and the incidence of the various psychoses are considered in detail.

General Insanity Rates

Map 1 shows the distribution of insanity for four state and eight private hospitals which were included in the survey of Faris and Dunham. The concentration of high rates

in the rooming house districts is striking. Negro areas have high rates and the foreign born slum areas are almost as high as the low rates are in the outlying residential sections and the lake-front, hotel and apartment-hotel communities.

Although the rates in the Negro areas are high, the high incidence of mental disorder does not appear to be due to any racial factor, for within this area there is a considerable variation of rates. The most deteriorated parts are near the central business district. High insanity rates appear to cluster in the deteriorated regions in and surrounding the center of the city, no matter what race or nationality inhabits that region.

Conclusions for Schizophrenia

The typical pattern in the distribution of schizophrenia is next considered. This psychosis constitutes between 25 and 40% of the first admissions to hospital for mental disorders in the United States. In general it was found that the female cases of schizophrenia have a somewhat older average than do the male cases. The bulk of the schizophrenic cases in both sexes apparently falls between the ages of 20 - 40 years.

The rates of schizophrenia show a great variation for the different local communities in the city. The extreme are in Community 1, a high-rental apartment-house district with a rate of 111 per 100,000 of adult population, and in Community 32, the hobo and central business district with

a rate of 1,195. The rates follow the same general pattern as the rates for general insanity. The high rates are in and near the center of the city and the low rates consistently occur at the city periphery. The highest rate occurs in the hobohemia communities. The central rooming-house districts also have very high rates. The rates above the average are also found in first-settlement immigrant communities near the center of the city and in the deteriorated parts of the Negro area immediately south of the central business district. The three Negro communities have such wide variance in rates, that the gradation would require an explanation in terms of some other factor than racial tendency toward this psychosis. The pattern of female schizophrenic rates is quite similar to that of the male schizophrenic rates with few exceptions. The central business district with its nearby hobo area has a low rate for females and the highest for males. This is explained by the fact that there are practically no women residing in this area. When the rates for schizophrenia are distributed for average yearly rates, the same skewed distribution is found, and the same concentration is noticed, with the high average rates falling near the center of the city and low rates on the periphery.

The objective findings in connection with the ecology of schizophrenia can be stated as follows:

1. The high rates for schizophrenia are concentrated in communities of extreme social disorganization in Chicago.

2. The distribution for male and female schizophrenic cases separately shows the same concentration in the disorganized areas of the city.

3. The distribution of rates show the same pattern and concentrations by both local and subcommunities.

4. All distributions of schizophrenic rates show a skewed frequency distribution with the bulk of the communities having low rates and a few of the communities having high rates.

5. The rates of schizophrenia for the foreign born by total number and by sex in the different housing areas of the city indicate that the variation between rates is due to other factors than the varying proportions of foreign-born.

6. Not only are the high rates near the center of the city but the upper quartile of the communities contains 40% of the cases and only 24 per cent of the population.

7. The rates according to race and nativity in the different housing areas of the city show constant high rates in the extremely disorganized parts of the city.

8. The rate for each white group is the highest in the Negro area, although the rate for Negroes in their own area is low.

Conclusion for Manic-Depressive

The distributions of the schizophrenic rates attain an additional significance when compared with the other main functional psychosis, manic-depressive. The factor of sex

is found to be quite different for manic-depressive as compared with schizophrenia. While the rates for males and females were practically the same for schizophrenia, the rates for manic-depressive are 68 males to 100 females. The age group from which manic-depressives came also differed from the schizophreniacs. The manic-depressive rates were highest in the age group 35 to 50. The community rates for manic-depressive differ in many respects from the rates of all schizophrenic cases. The range is low, the rates varying from 59 per 100,000 in an area of second-immigrant settlement, to 84 in a foreign born district. The characteristic skewed distribution is lacking. The distribution shows no marked concentration of high rates at the center of the city. Though the highest rate is in a community near the center of the city and the next highest in an adjacent one, there is no regular patterning. When the manic-depressive cases are separated into the two main types of manic and depressed and are distributed on the map the same random pattern is formed. In contrast to the schizophrenia rates the absence of the typical ecological pattern is also noticeable in the manic-depressive rates. While the first zone or central business district still has the highest rate in the city, the rates do not decline in magnitude as a function of the distance traveled from the center of the city.

The objective findings in connection with the manic-depressive psychosis can be stated as follows:

1. The pattern formed by the manic-depressive rates is

a random one. Neither high nor low rates are distributed in any systematic fashion throughout the city.

2. The distribution for male and female manic-depressive cases separately show the same typical random and unsystematic distribution.

3. The distribution of rates for private and state hospitals exhibit the same random pattern for both local communities and subcommunities.

4. The rates for the separate types, both manic and depressed, are also extremely random in their distribution.

5. Both distributions of manic-depressive rates show an absence of skewness in their frequency distributions, with approximately the same number of communities having high rates as low rates.

6. The percentage of cases in each quartile is approximately the same for each of the two main types of the manic-depressive psychoses.

7. The rates for nativity and race by housing areas show the same lack of consistency and absence of pattern.

Comparison of Schizophrenia and Manic-depressive

In comparing manic-depressive rates and schizophrenic rates, there appears a marked lack of similarity in the pattern formed. In other words when any sample of schizophrenic cases is distributed a definite pattern appears which follows the ecological structure of the city; when any sample of manic-depressive cases is distributed, there is no pattern formed which fits into this ecological

structure of the city. When a comparison is made with other social indices, the manic-depressive cases seem to come from a higher cultural and economic level than the schizophrenic cases. Finally, the manic-depressive rates according to rave and nativity within the housing areas of the city show a lack of consistency and pattern while the schizophrenix rates tend to show that a rate for a given nativity group increases in areas not primarily populated by members of that group.

Conclusion for Alcoholic Psychoses

Faris and Dunham also were interested in the incidence of the alcoholic psychoses. The alcoholic psychoses were found to have their highest rates in and near the center of the city. In this sense the patterns of their rates are quite similar to those patterns found in the schizophrenic series, but unlike the patterns found in the manic-depressive series. In the alcoholic psychoses the rates by housing areas for the different nativity classification indicated that there was some relationship between liability to the psychosis and the fact that the person does not live in a community primarily populated by his own nativity or racial group. The distribution of drug addicts while representing a definite selection of cases, shows a pattern similar to the alcoholic psychoses. Not only do high rates occur in the zone of transition but also the bulk of the cases are to be found in this zone. The fact that the next highest rate for drug addiction is in the apartment-hotel and hotel

area would seem to indicate that drug addicts tend to select the more mobile areas of the city where their habits and activities are less likely to be scrutinized.

Conclusion Regarding General Paralysis

A detailed study was also made of general paralysis. General paralysis is an organic disease, the result of a syphilitic infection. Out of the total number of cases, 94% were cared for in state hospitals and only 6% in private hospitals. Therefore, a higher proportion of persons on the lower-income levels develop general paralysis. The possibility, however, must be considered that persons with syphilis eventually lose their earning power, and find it impossible to compete successfully and tend to drift into the low-income group. This disorder constitutes between 9 and 20% in the hospitals throughout the United States. The rates per 100,000 adult population range from 27 in an apartment-house community to 628 in a hobohemia community. It is noted that the high rates are concentrated in communities at and contiguous to the center of the city. In fact the highest-rate communities are the hobo areas, the rooming-house areas, at the center, and the Negro areas, extending southward from the central business district. In general, the high rates start at the center of the city and decline in every direction with few exceptions as one travels toward the periphery. The configuration formed by the rates is not quite as consistent as the configurations for some of the other types of mental disorder, but this is apparent-

ly due to the distribution of different ethnic groups in the city population. The high rates for this form of mental disorder are also in the same areas as the high rates for the different veneral diseases. The presence of vice establishments is not the only factor to account for the high rates. This is especially seen in contrasting the rates in the Italian and Jewish communities. The rates are high in the Italian communities near the center of the city, while they are fairly low in the Jewish communities. As in the case of the alcoholic psychoses, there is almost a total absence of Jewish paretics. The general paralysis rates for the Negro areas in Chicago, however, vary from near the highest rate to a moderately low rate. Although the rates in the Negro areas are higher in general than the rates in the white areas, there is still a considerable amount of fluctuation by community. This fact would seem to indicate that the rate for this disorder tends to decrease among Negroes as their cultural and economic level rises and they become more like the whites in their cultural patterns. The age rates are highest between the ages of 35 to 64, with the group forty-five to fifty-four years having the highest rate.

By correlating the rates for general paralysis for the foreign-born, it is indicated that the foreign-born within their respective immigrant colonies are not likely to develop general paralysis. The strong family ties and primary group relationships apparently protect their members from coming

in contact with sexual vice. The data shows that high general paralysis rates are connected with fairly low-income areas as well as with a disproportion of the sexes. This latter point would indicate that isolation from normal contacts with members of the opposite sex tends to foster a situation conducive to the development of prostitution and consequently to a certain amount of syphilitic infection.

Conclusion Regarding Senile Psychoses

The findings for senile psychoses include the fact that the ages of this group are higher than for any other form of mental disorder. The rates begin to be high over the age of sixty-five years and are much higher at ages of 75 and over. The two flat community had the lowest rate and the rooming house area the highest. The rates for the native-born whites of foreign parentage and for the foreign-born white within the foreign-born area are the lowest for any of the areas of the city. The rate for Negroes within their own area is one of the highest in the city for this racial grouping. When senile psychoses rates are compared with the percentage of home-ownership, a high negative correlation results indicating that the high rates of this psychosis appear in areas of high mobility.

Significance of the Data

In conclusion, in interpreting the data, an attempt was made to find a separate explanation for each psychosis.

The explanations of the concentration of general paralysis, drug addiction, and alcoholic psychoses rates according to this hypothesis are roughly similar. Different combinations of social factors, however, are no doubt functioning in the case of each of these psychoses. However, probably the most important findings in this study result from a comparison of the distribution of the manic-depressive and schizophrenic rates. The absence of any pattern in the manic-depressive series makes the interpretation difficult. Although the statistical evidence does not bring out any relationship between this disorder and the social milieu, it does not follow that there is no such relationship. Manic-depressive psychoses may be connected with a different type of social process than is the case with schizophrenic disorders. A possible explanation might be found in the suggestion that precipitating factors are causal in relation to these psychoses. Such precipitating factors occur in all social and economic levels of life and consequently are not so likely to have a definite connection with the community situation but rather with the interplay of personality and psychological factors of family relationships and intimate personal contacts. Such a theory tends to connect the manic-depressive disorder with extremely intimate and intense social contacts. This is apparently just the opposite from the situation of the schizophrenic, where isolation from such contacts appears to be an associated condition. The hypothesis that forms of isolation are significant

factors to account for the high rates of schizophrenia in certain parts of the city is strengthened by the studies which have shown that the conditions producing isolation are much more frequent in the disorganized communities. The fact that the rates for Negro, foreign-born, and native born are all significantly higher in areas not primarily populated by their own members tends to support this hypothesis.

Robert E. Faris and Warren E. Dunham, Mental Disorders in Urban Areas, pp. 1-178.

The Pattern of Mental Disease in St. Louis

Study by William L. Dee

The work on mental disease in St. Louis was done by William L. Dee. The results of his study show that the pattern of mental disease did not fit the ecological pattern of St. Louis extremely well. However, Mr. Dee's findings are a significant contribution to the study of mental disease research.

Method

The mental disease rates are based on population 21 years of age and over for each census tract. Three public and four private institutions were included in the survey. The period covered includes January, 1931 through December 31, 1935. The rate for each tract was computed by dividing the number of cases in it by its adult population. The decimal obtained by the division by the population was then magnified by multiplying by 100,000. This gave a rate per 100,000 adult population. In each diagnosis the rates of each census tract were ranked; the highest being ranked No. 1 and the lowest rate, number 128. The resulting array was then divided into octiles, each octile thus contains 16 tracts. Octile ranking makes it possible to show relative concentration. The average deviation was calculated from the median. Differential coloring was applied to the census tract maps on the basis of the octile groupings.

General Insanity Rates

A total of 2,457 cases were included in the study. After rates per 100,000 of adult population were computed for each census tract, it is found that they range from 2213 in tract 8f to 86 in 3f. Inspection of Map 1 shows that the concentration of rates in the center of the city is rather heavy. Eight of the tracts in the first octile and eight of the tracts of the second octile are grouped together in the near-downtown section. However, six of the tracts of the first octile are found near the periphery of the city, as are four of the tracts of the next to the highest octile. This distribution does fit the ecological pattern only fairly well with notable exceptions.

Conclusions for Schizophrenia

959 cases of schizophrenia were included in the study, 823 of which were white and 149 were negro. In tracts where the population of negroes is disportionately low, the schizophrenia rates for negroes is high. The same is true for a disportionately number of whites. The evidence bears out the observation made by Faris and Dunham that there is a tendency of white schizophrenics to be disproportionately more frequent in heavily populated Negro districts and vice versa. The rates for schizophrenia vary from 0 in nine scattered districts to 597 in tract 25d. The frequency distribution shows a moderately symmetrical distribution, and indicates that only a relatively few tracts have very high rates. Map 2 showing the distribution of rates shows

concentration of high rates around the center of the city, but with numerous exceptions, (3 tracts near the western edge of the city, three in the far northern parts of the city, and five in the midtown section of the city, are in the first octile.) At the other extreme there are two tracts of the fifth octile that turn up where higher rates are usually found.

Coefficients of correlation between schizophrenia and two different indices of economic status by census tracts are, plus .44, between schizophrenia and relief and family service cases, and a minus .33 between schizophrenia and median rentals. The correlation between schizophrenia and such indices of stability-mobility, as percentages of men married and mobility give the respective coefficients, minus .40 and plus .39.

Two indices of disorganized personal behavior are correlated with schizophrenia. The index for suicide gives a coefficient of plus .17 while the index for juvenile delinquency gives a coefficient of plus .39.

The pattern of schizophrenia rates fits the typical ecological pattern of St. Louis only moderately well. In no case does the schizophrenia series correlate significantly with any of the other socio-economic series used for St. Louis. The high rates are confined to a relatively few tracts, while most of the tracts vary from each other relatively little.

Conclusions for Manic-depressive

The total number of manic-depressive cases, 266, includes 141 from public hospitals and 125 from private hospitals. The number of negro cases is very small, only 5.3% of the total. The highest rate is found in the downtown section, with a rate of 140 and the lowest of 0 in 33 different tracts. By computing the average deviation, a fairly large spread will be noted. Manic-depressive rates have greater dispersion than do the schizophrenia rates. By mapping it is seen a random pattern is formed, without an apparent explanation on social bases, instead of an ecological pattern.

The coefficient of correlation with relief and family service cases, has a correlation of a minus .74. Too much weight cannot be given this high correlation as an index of economic status because the correlation with median monthly rentals, an index of the same nature produces a coefficient of plus .33. Other coefficients show with relation to manic-depressive, that for example, the coefficient for mobility (an index of social disorganization) is plus .06, the percent of married men, (index of stability, is a minus .03, with suicide, (index of personal disorganization) plus .01, and with juvenile delinquency, a minus .10. All of these figures indicate that there is no correlation whatsoever between manic-depressive and the various indices cited.

Significance of the Data

It was found that the distribution of all psychotics in one large groups of cases from the St. Louis Sanitarium did form a pattern that fit the general ecological pattern in St. Louis well, though with certain noted exceptions.

The schizophrenia distribution's fit to the ecological pattern is only fair and cannot be said to be conclusive, since there are many exceptions. In addition the correlations with indices of social disorganization failed to give statistically significant results.

The manic-depressive psychoses spatial distribution will not fit into the ecological pattern since the rates are scattered at random throughout the city. Of course, the disorders shows an entirely different pattern from that of schizophrenia.

Senile dementia likewise forms a random pattern which will not fit in to the ecological pattern of the city. In addition, this psychosis failed to show any correlation with low economic status, as it had been suggested it would.

The distribution of paresis rates makes a partial fit to the ecological pattern by showing concentration in the center of the city, but it lacks the typical westward salient which follows the east-west string of streets.

In none of the separate parts of this study, did the distribution of county data show any apparently significant connection with the distribution in the city proper. This investigation does not show that there are any definite causative factors existing in the social setting of those

persons who have developed mental diseases.

William J. Dee, M.A. Thesis, 1939, Mental Disorders in St. Louis.

The Pattern of Mental Disease in Kansas City

Study by Ernest Manheim

The study in Kansas City made by Ernest Manheim is not yet completed. However, the following data is included to show general ecological findings in regard to mental disease.

Method

Included in the study are five hospitals, both public and private. The data is based on records for the period of 1925 through 1938. Approximately 2900 cases are used in the study. All psychoses have been included, although cases in sufficient numbers to justify their ecological use are available for only five diagnostic groups; for senile psychoses, psychoses with cerebral arteriosclerosis, general paralysis, manic-depressive psychoses and schizophrenia. The addresses were plotted on the basis of census tract maps.

Rates

Schizophrenia correlates with low rents, with mobility, and transiency, and to some extent with a high sex ratio. It correlates with population density in so far as density coincides with mobility or with low rents, that is, with hotels, rooming houses, and apartment houses. Racial heterogeneity is an important factor. General paralysis correlates with transiency, and foreign nativity, particularly with Russian and Italian nativity. Rates are also high in Negro areas. Manic-depressive diagnosis are distributed

in an irregular fashion and that disorder occurs with high and low rates both in the most disorganized areas and in the more stable one family home areas, although neighborhoods with high class homes are comparatively less affected.

Comparison with the Chicago Study

The Kansas City picture is parallel to that in Chicago. There are some differences---differences in the distribution of old age psychoses, somewhat of the manic-depressive cases and general paralysis cases, but the parallel is all the more conspicuous as Kansas City is a different type of community. It has a large middle class population and a comparatively small working class sector. It is more homogeneous than Chicago; it has a considerable rural background, and it is chiefly a commercial center for a large region.

Ernest Manheim, "Insanity in the Urban Environment", Speech at the American Sociological Convention, December 28, 1939.

Mr. Manheim's study is not dealt with in detail, as it is not far enough advanced to offer conclusive findings.

Mental Disease Report at the Mid-West Sociological Convention

On April 19, 1940, a report of the cooperative research project on mental disease was made at Des Moines, Iowa. Those reporting included Marguerite Reuss on the Milwaukee study, Ernest Manheim on the Kansas City study, T. Earl Sullenger on the Omaha study, C. W. Schroeder on the Peoria study, and William Dee on the St. Louis study.

In general the studies seemed to bear out the conclusions drawn by Faris and Dunham in their Chicago study, however, there were exceptions.

In Kansas City, Milwaukee, and Omaha the rates for total insanity and for schizophrenia fit the ecological pattern of the city very well. However, in St. Louis and Peoria no definite ecological pattern was observable for either total insanity rates or schizophrenia. The Milwaukee pattern also showed a slight concentration of manic-depressive about the center of the city and also in outlying areas, which did not appear in the other cities. In Peoria the only psychosis that followed the ecological pattern to any extent was the alcoholic psychosis. (Peoria was the smallest city included in the cooperative project.) The ecological pattern of arteriosclerosis and senile dementia were plotted for Kansas City but not for the other cities, and they showed a random pattern.

In some of the studies correlations were worked out between median rentals, relief, home ownership and factors of mobility. The correlations for the St. Louis data were so low as not to be significant. These correlations were not available for the Milwaukee data for the reason that the Milwaukee data is based on wards study and spot maps and thus cannot be correlated. In Kansas City the correlation with mental disease and home ownership showed a high negative correlation. Dr. Manheim presented data on suicide and compared it with mental diseases. He found a high correlation between manic-depressive and suicide but no relation with other psychoses. He suggested the need for further study by means of the case history technique.

The various ecological patterns of the five cities showed striking similarities, all showing influence of river systems. An identical method was used in each study and thus an excellent basis of comparison is provided.

Chapter IV.

Classification of Mental Diseases.

Chapter IV

Nosology in mental diseases is necessarily inexact. In psychiatry the deficiences of information possessed in regard to causation, pathology and even symptomatology prevent irreproachable classification of mental diseases. However, most psychiatrists agree on the classification of all psychoses as either functional or organic. In the organic types the brain or nervous system is imperfect, while only the manner in which an apparently healthy organism performs is faulty in the functional disorders. The organic psychoses are classified as to those which are due to structural damage to the brain, and those which are due to toxi-infectious conditions.[1]

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1. R. W. Murray, Introductory Sociology, pp.188-189

Organic psychoses always show a definite pathology of the brain present. The characteristic mental symptoms are emotional instability, and a general reduction in mental capacity and ability as shown in the marked defects of memory, retention, grasp of general information and judgment. The physical symptoms of the toxic psychoses are significant since, they are indicative of definite toxic processes. They include fever, loss of weight, and leucocytosis.[2]

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2. E. A. Strecker and F. G. Ebaugh, Clinical Psychiatry, pp. 188-189.

Strictly speaking the functional psychoses should be described as "mostly functional" rather than entirely functional in their origin, because the possibility of some unidentified factor of a physical nature, may be partially responsible. Depending upon the particular type of faulty emotional habit, which is adopted in these early years, there are three main classes of functional disorders appearing at maturity, --dementia praecox, manic-depressive psychosis, and paranoia.[3]

3. R. W. Murray, Introductory Sociology, p. 173.

Dementia praecox, meaning precocious mental deterioration, manifests itself at an earlier age than other psychoses, usually between the age of 18 and 35. A "splitting of the mind" seems to take place. A strange indifference to surroundings and the gradual growth of this "shut-in" personality, accompanied probably by excessive daydreaming, or perhaps a morbid curiosity about sex is characteristic.[4]

4. R. W. Murray, Introductory Sociology, p. 194.

Discrepancies between thought, silliness and indifference are among the distinguishing features of the dementia praecox patient. In the paranoid type of dementia praecox delusions particularly of persecution or grandeur often well systematized for a time at least, and hallucinations are present. In the catatonic type there is negativism and conduct peculiarity with phases of stupor or excitement marked by impulsive, queer, stereotyped behavior and

hallucinations. The hebephrenic type is characterized by silliness, unexplained smiling, laughter, grimacing, mannerisms and peculiar and changeable ideas which have an absurd and grotesque content. Interest at a low ebb, apathy and strange behavior represent the simple type of dementia praecox. Delusions and hallucinations are either absent entirely or fragmentary.[5] Dementia praecox is the reaction of an

5. E. A. Strecker and F. G. Ebaugh, Clinical Psychiatry, pp.29-31.

inadequate personality to difficulties in the environment.[6]

6. James May, The Dementia Praecox-Schizophrenia Problem, American Journal of Psychiatry, 1931, Vol. , p. 466.

The manic-depressive psychoses are marked by emotional oscillations of a recurrent type. The patient is, so to speak, either over-excited and elated or marked by extreme depression or apathy. According to the American Psychiatric Association, there are at least five types of manic-depressive including; the manics who exhibit only the elated state, the depressive type whose reaction is essentially despondent, the mixed type which combines the symptoms of both, the stupor reaction, which is characterized by extreme depression accompanied by muscular inactivity, and the circular type in which the manic phase is followed immediately by the depressive phase or vice versa. The manic-depressive psychoses have been regarded by many psychiatrists as an extreme or exaggerated type of extro-

vertive reaction. In the manic phase a flight into reality is represented and is characterized by excessive activity rather than excape from the world. Unlike many psychoses, the manic-depressive type tends to have attacks followed by lucid intervals in which there is little or no indication of mental instability. The manic-depressive types constitutes one of the largest groups committed to hospitals for treatment.[7] The patient who is in the manic phase of the

7. M. A. Elliot and F. E. Merrill, Social Disorganization, pp. 361-362.

disease has a feeling of well-being or is emotionally very mercurial; the ideation shows distractibility or flight of ideas with motor inactivity. In the depressive stage, the patient is despondent, sad or hopeless, and there is retardation and slowing of thought and movement. They also find the mixed types in which the basix symptoms of mania and depression are variously interchanged.[8]

8. E. A. Strecker and F. G. Ebaugh, Clinical Psychiatry, pp. 228-229.

Paranoia insanity is characterized by systematized delusions, which in general are delusions of persecution or of grandeur. The disease seems to be precipitated at times by other disorders. There are basic and essential differences between paranoia and "paranoid". The former is an extremely rare psychosis; the latter is a common syndrome of mental symptoms which may occur in almost any psychosis.

Henri Claude points out some of the distinctions in his book, The Paranoid Psychoses. In regard to paranoia, contact with reality is preserved, there is logical development of delusions upon false premises, possibility of intellectual growth, and the delusional system is fixed and well constructed. On the other hand, paranoid conditions show a loss of contact with reality, looseness of systematization, loss of intellectual activity, and the delusions change and are polymorphic.[9] Expansive ideas play a prominent role in paranoia. There is complete preservation of the personality, and, with the exception of persecutory ideas, the behavior talk, activity, affect, and intellectual resources are all intrinsically normal. Paranoia although very rare occurs more frequently among men than women, and the onset of the disease usually occurs in the thirties.[10]

9. M. A. Elliot and F. E. Merrill, Social Disorganization, p. 366.

10. E. A. Strecker and F. G. Ebaugh, Clinical Psychiatry, pp. 342-344.

The above material on classification of mental diseases has been included as background for the ecological approach to mental disease. The thesis is chiefly concerned with all types of mental disease, although several maps are included to show the specific incidence of dementia praecox and manic-depressive.

Chapter V.

Ecological Pattern of Mental Disease in Milwaukee.

Chapter V

Ecological Pattern of Mental Disease Based on Milwaukee County Hospital Cases

Study by William Birdsall

Mr. William Birdsall made a study of mental disease in Milwaukee for his Ph. B. thesis at Marquette University in 1939. He secured his data from the records of the Milwaukee County Asylum for the Chronic Insane and from the Milwaukee County Asylum for the Acute Insane, for the years 1925 through 1938. He was interested in the ecological distribution of all cases of mental disease, and also the distribution of dementia praecox and manic-depressive cases.

Method

The addresses of patients are plotted on maps covering a period of two years, the complete study covering a twelve year period. Six maps represent the data for two year periods for the chronic hospital and six maps for the acute hospital. Composite maps representing the entire period are included. The division used on the maps is the census tract divisions of Milwaukee County.

General Insanity Rates

In Chapter VIII, the total mental disorder for the chronic hospital and the total disorder for the acute hospital are plotted on the census tract maps. For the chronic

hospital with respect to total mental disorder, section 2, which extends east from the Milwaukee river to Van Buren Street, and north from Wisconsin Avenue to Juneau, and another area Section 44, extending from 24th Street west to 27th Street, and from Wisconsin Avenue north to Juneau Street. For the acute hospital, section 2 was again found to be an area of particularly high concentration and also section 16, which is the area surrounding the Menominee from 44th Street east until it joins the Milwaukee river. 16+17

Conclusions for Dementia Praecox

In Chapter VIII, findings for the entire twelve year period in regard to dementia praecox are plotted. The map representing the incidence of dementia praecox based on the data of the chronic hospital shows no area of concentration and very few cases. However, the map representing data for the acute hospital shows again decided concentration in district 16, (the one following the Menominee river), and also in section 18, which is the area from 8th to 13th Street and from Wisconsin Avenue, north to Kilbourn. It is noted that the cases plotted based on data from chronic hospital show no area of concentration while the data from the acute hospital showed definite concentration in the particular section cited, and near the center of the city.

Conclusions for Manic-depressive

The maps based on the data from the chronic hospital, show no regular patterning. The number of cases found is

relatively small. The number of cases of manic-depressive is much larger from the acute hospital than from the chronic. However, the cases still show a random distribution and no decided area of concentration. The rates for the periphery of the city are not highly distinctive from those in the center of the city.

Comparison with the Chicago Study

In comparing the Chicago findings with the Milwaukee study, it is noted that the general rates of insanity and dementia praecox rates are highest in and near the center of the city, and the manic-depressive rates show no regular pattern. Both in Chicago and Milwaukee, the area is one of light manufacturing with old and run down dwellings of the cheap hotel and rooming house type. However, in the Chicago study the plottings seem to cluster more closely to the center of the city while in Milwaukee it extends in a narrow rectangular area starting in the center of the city and following the Menominee river.

Significance of the Data

Some of the generalizations made by author from the study include: the rates of dementia praecox in Milwaukee County follow the same general pattern as the rates for the total insanity series, the high rates are in or near the center of the city. The low rates are almost consistently found in the cities outer extensions. In all cases the incidence of mental disease is highest in the areas bordering

on and immediately adjacent to the Menominee River.

The next highest rates are found in the areas surrounding tracts, 29 and 40, the negro section of Milwaukee. The relationship between the colored areas and mental disorder is striking, and until the high rates in this area are accounted for in the future in another way, it is safe to conclude that colored areas are higher in mental disorder rates because they are colored sections.

The distribution of dementia praecox becomes more striking when compared with the other functional psychosis, manic-depressive. The dementia praecox rates show the typical ecological pattern and are concentrated in the disorganized and deteriorated areas of the city, while the manic-depressive psychosis does not show a typical pattern nor any definite concentration in the disorganized and poverty-striken areas. There is a tendency, also for the manic-depressive cases to come from a higher cultural and economic level than the dementia praecox cases. The manic-depressive cases, too, come from. The manic-depressive rates show a lack of consistency and pattern while the dementia praecox rates show no such tendency.

Criticism

The conclusion that colored areas have high rates of insanity because they are colored areas does not coincide with the findings for colored areas in Chicago. It may be due to other factors other than racial, for example, poor housing conditions, poverty etc. The mere incidence of

high rates in the colored district is not sufficient evidence to suggest that the race factor is all important.

In the conclusion it was also stated that manic-depressive cases tend to come from a higher cultural and economic level than the dementia praecox cases. However, no mention was made of the cultural and economic indices employed in the study upon which this statement might be based.

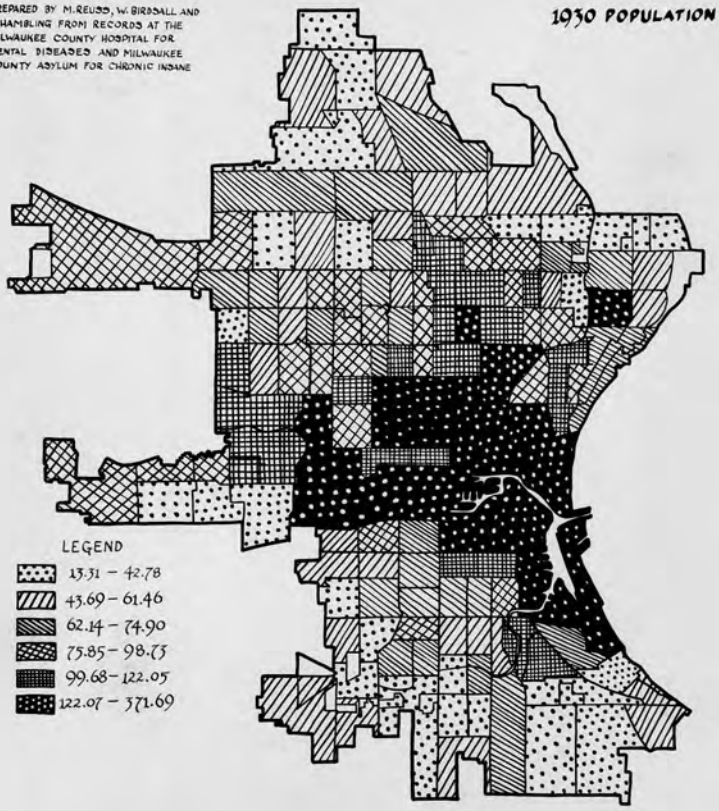
William B. Birdsall, Ph.B. Thesis, The Relationship Between Ecology and Mental Disorder in Milwaukee County, pp. 1 - 82.

MAP IV

INSANITY RATES OF MILWAUKEE PATIENTS IN THE TWO MILWAUKEE COUNTY HOSPITALS 1925-1938 PER 100,000 ADULT POPULATION

PREPARED BY M. REUSS, W. BIRDSALL AND S. HAMBLING FROM RECORDS AT THE MILWAUKEE COUNTY HOSPITAL FOR MENTAL DISEASES AND MILWAUKEE COUNTY ASYLUM FOR CHRONIC INSANE

1930 POPULATION

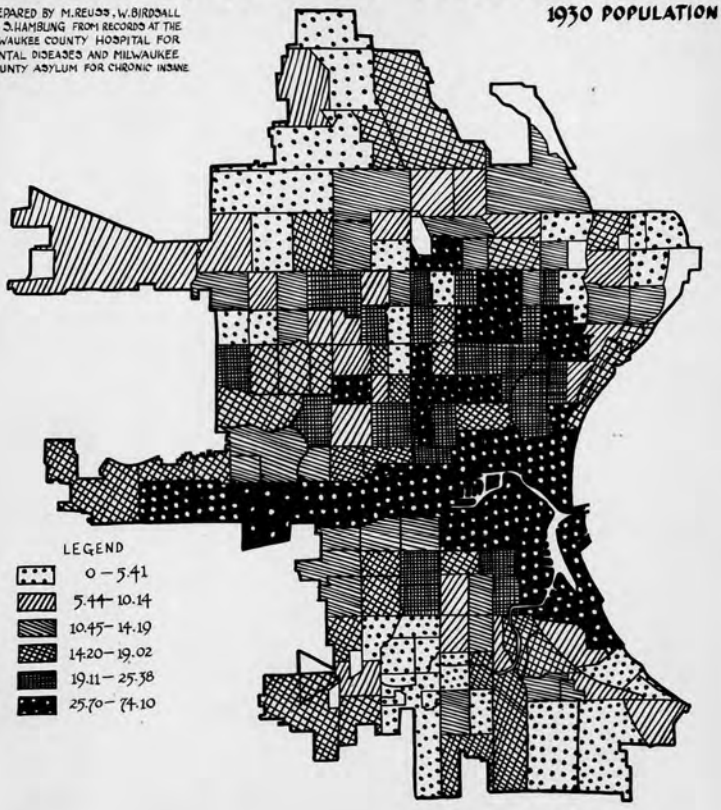


MAP V

SCHIZOPHRENIA RATES (ALL TYPES) OF MILWAUKEE PATIENTS IN THE TWO MILWAUKEE COUNTY HOSPITALS 1925-1938 PER 100,000 ADULT POPULATION

PREPARED BY M. REUSS, W. BIRDSALL AND D. HAMBLING FROM RECORDS AT THE MILWAUKEE COUNTY HOSPITAL FOR MENTAL DISEASES AND MILWAUKEE COUNTY ASYLUM FOR CHRONIC INSANE

1930 POPULATION

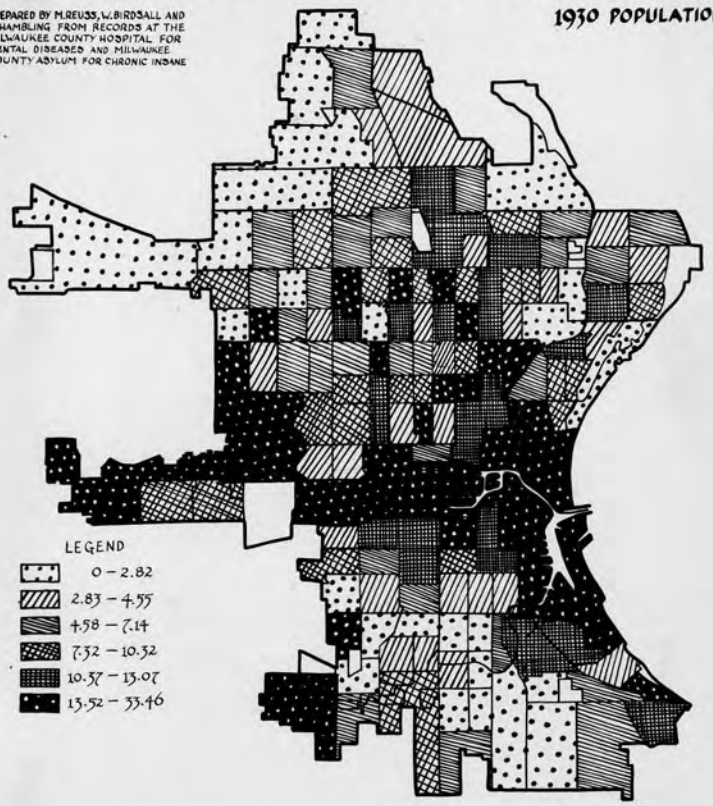


MAP VI

MANIC-DEPRESSIVE RATES OF MILWAUKEE PATIENTS IN THE TWO MILWAUKEE COUNTY HOSPITALS 1925-1938 PER 100,000 ADULT POPULATION

PREPARED BY M.REUSS, W.BIRDSALL AND S.HAMBLING FROM RECORDS AT THE MILWAUKEE COUNTY HOSPITAL FOR MENTAL DISEASES AND MILWAUKEE COUNTY ASYLUM FOR CHRONIC INSANE

1930 POPULATION



Ecological Pattern of Mental Disease Based on State and County (other than Milwaukee) Hospital Cases

The writer of this thesis made a survey of Milwaukee County patients in 39 state and county hospitals throughout the state (other than Milwaukee county.) The reason this data is included in the ecological study of mental disease in Milwaukee, is for the reason that by including data from county hospitals throughout the state, a complete basis of comparison between public and private hospital data is possible.

Method

The data consists of first admissions to the state and county hospitals from January 1, 1925 through December 31, 1938. The three state hospitals are: Mendota State Hospital, Winnebago Northern, Waupun Central. The thirty-six county hospitals include: Chippewa County, Clark County, Columbia County, Dane County, Dodge County, Douglas County, Douglas County Asylum for the Tubercular Insane, Dunn County, Eau Claire County, Fond du Lac County, Grant County, Green County, Iowa County, Jefferson County, La Crosse County, Marinette County, Marathon County, Manitowoc County, Monroe County, Outagamie, Racine County, Richland County, Rock County, St. Croix County, Sauk County, Shawano County, Trempealeau County, Vernon County, Walworth County, Washington County, Waukesha County, Waupaca County, Winnebago

34

County and Wood County.

The total number of cases included in the study is 235 cases of first admissions. In addition 108 cases had no addresses given, and therefore, could not be plotted on the map. The large number of unknown cases is due to the lack of information in county hospital records.

The Milwaukee address of each patient is plotted in the census tract to which it corresponds. The numbers that appear on the various county mental hospital maps are the actual number of cases found in the tracts over a fourteen year period. The rates are computed on the basis of adult population 21 years of age and over. This is secured by taking the 1930 estimate of the population in each census tract. Then the number of cases in each census tract is divided by the 1930 adult population in the tract multiplied by fourteen (fourteen years). The resulting decimal was multiplied by 100,000 to secure the rate per 100,000. Census tracts, 85-86, 93-94, 105-106, 107-108, 128-129, 135-136, 140-141, and 152-153 are combined because 86, 94, 106, 107, 129, 136, 141 and 152 had less than 1,000 population, leaving 145 divisions. An array was made of the rates per 100,000. Division into sextiles on the basis of number not division of range followed. The first five sextiles have 24 cases each, the sixth includes 25 cases.

General Insanity Rates

The general rates of insanity for other than Milwaukee County hospitals throughout the state, vary from 0 in 61

census tracts to 26.73 in census tract 16. The general pattern formed by plotting the data on census tracts show a tendency for general insanity rates to concentrate about the center of the city with few exceptions. However, a tendency was also noted for high insanity to extend westward to census tracts 105-106, and 107-108, which are poor industrial areas.

Conclusions for Schizophrenia

The array for schizophrenia rates based on Milwaukee County patients in hospitals other than county hospitals shows them to vary from 0 in 100 census tracts to 14.82 per 100,000 adult population in census tract 16. The total cases of schizophrenia when plotted show concentration about the center of the city, but the concentration is not as decided as is the case when total cases are plotted. This is explained partially by the fact that only 78 cases of dementia praecox are found in county hospitals other than Milwaukee County.

Conclusions for Manic-depressive

The total number of manic-depressive cases in this study are 12. The manic-depressive data, when put in the form of an array show a range of 0 cases per 100,000 population in 133 census tracts to 5.4 per 100,000 in census tract 10. No pattern is observable in regard to manic-depressive rates. High rates are found scattered throughout the entire city. A characteristic pattern of distribution for manic-depressive rates is not discernible.

Illustration 15

Brown County Asylum

General Insanity - Total Cases

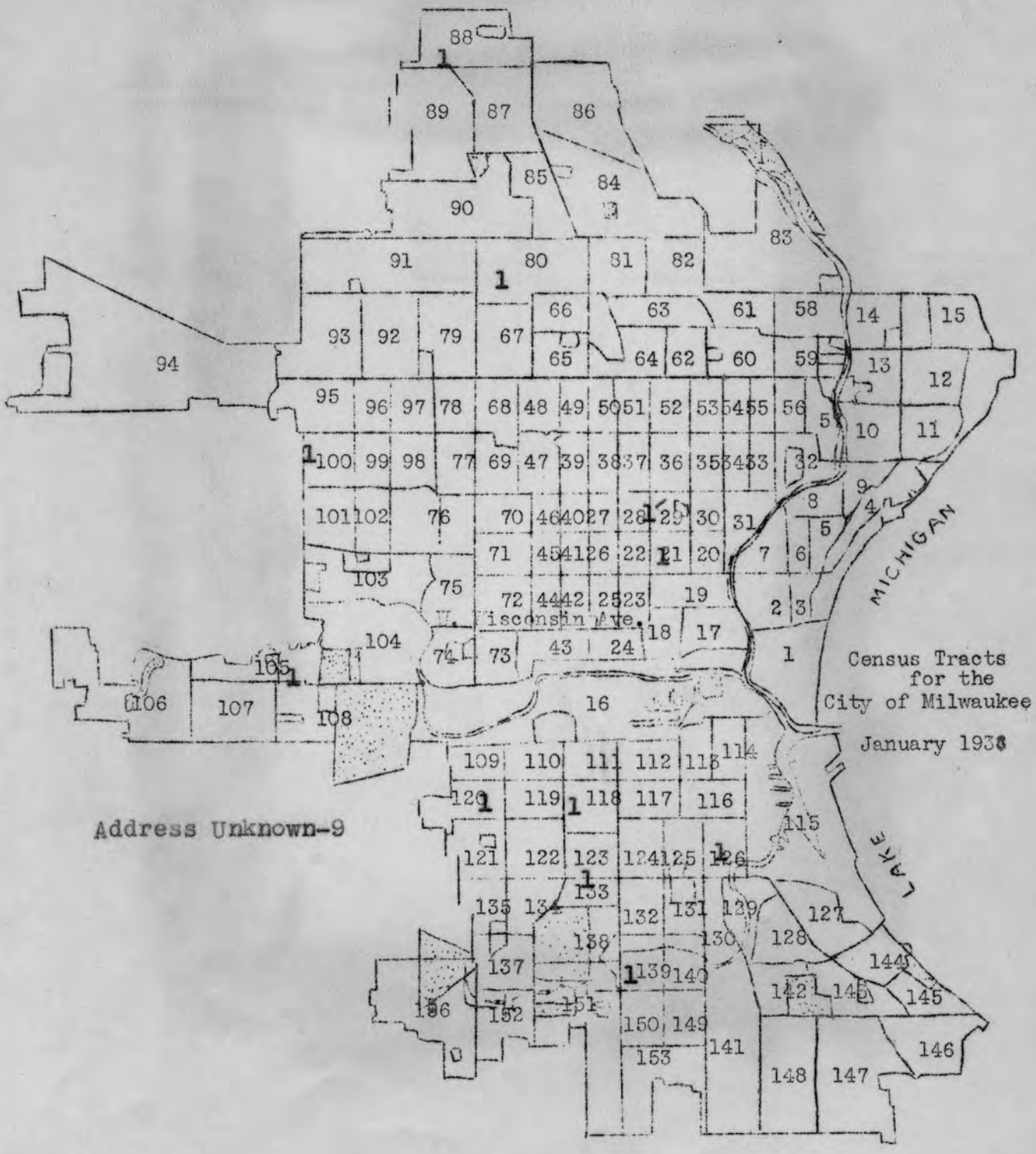


Illustration 16

Central Hospital for the Criminal Insane

General Insanity - Total Cases

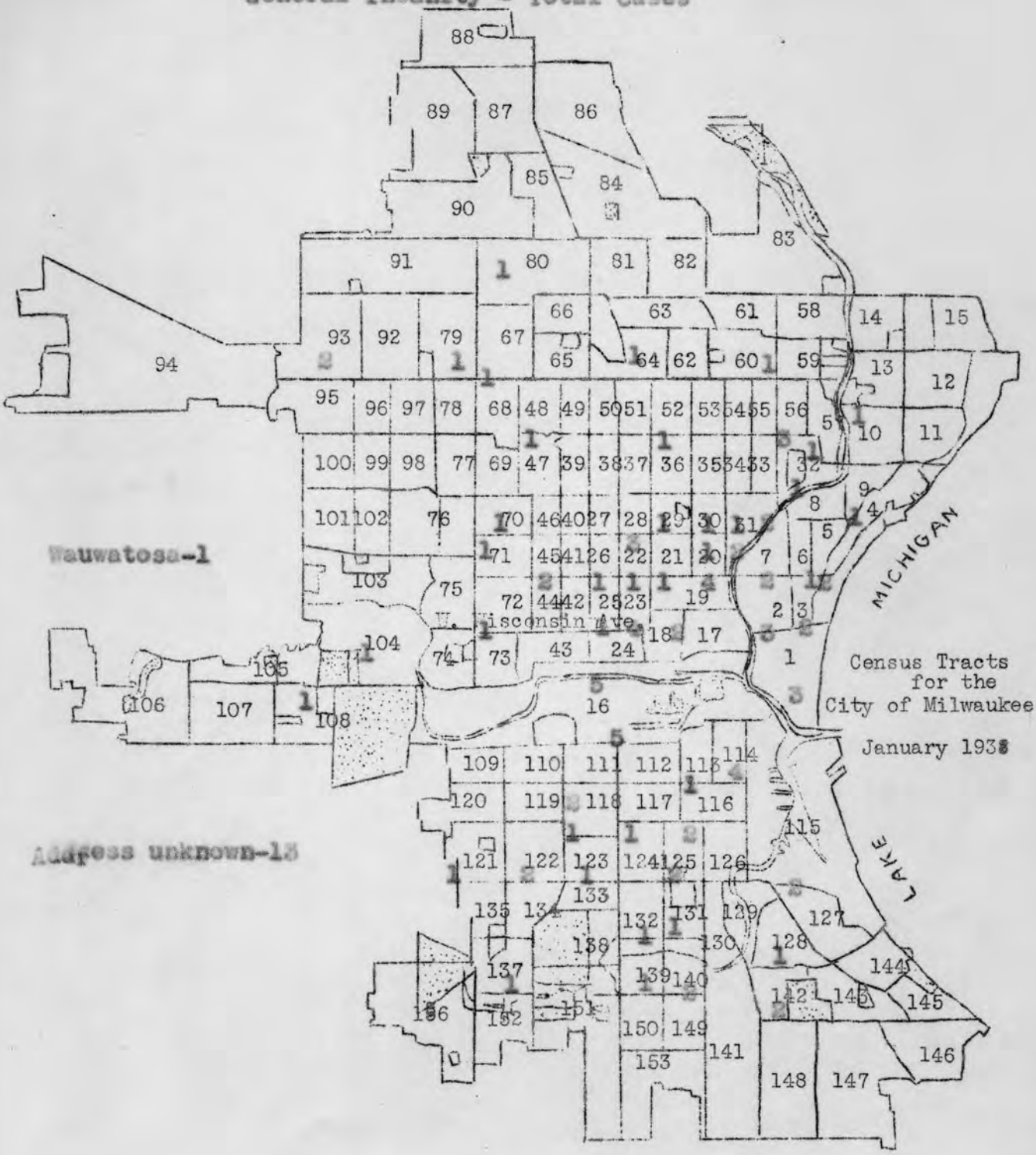


Illustration 17

Central Hospital for the Criminal Insane

Dementia Praecox Psychoses

Illustration 18

Central Hospital for the Criminal Insane

Manic Depressive Psychoses

Illustration 19

Chippewa County Asylum

General Insanity- Total Cases

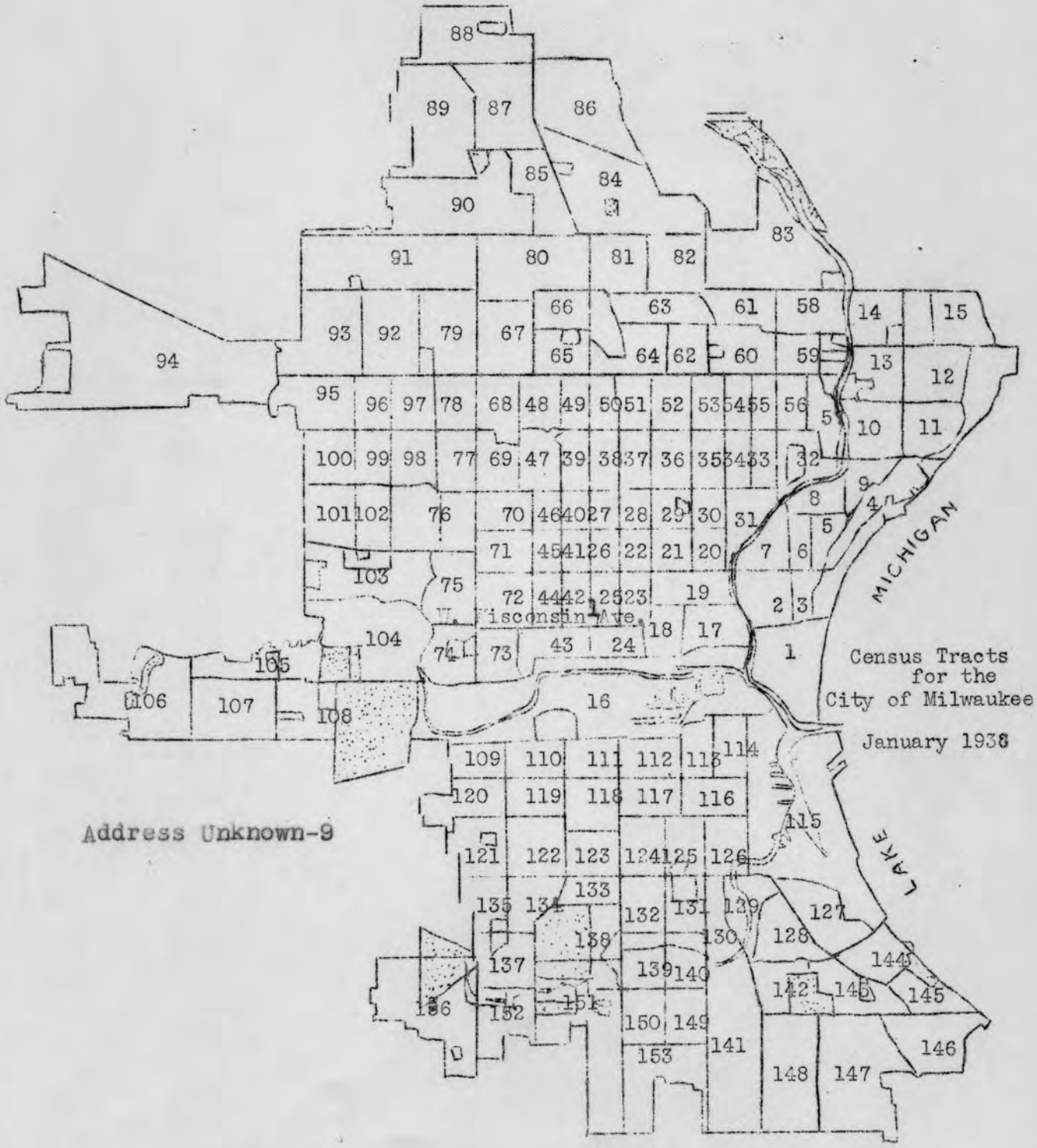
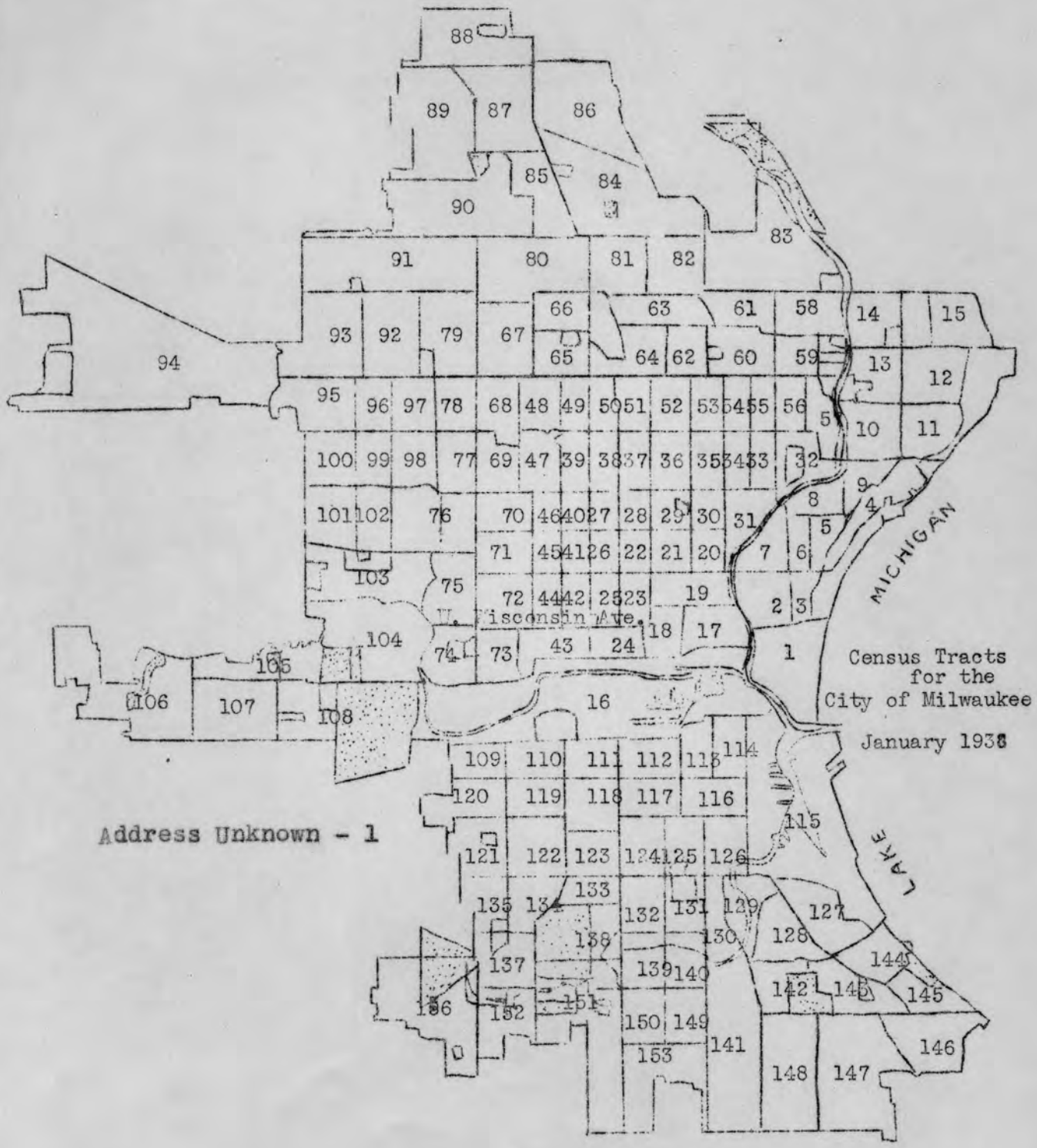


Illustration 20

Chippewa County Asylum

Dementia Praecox Psychoses



Address Unknown - 1

Illustration 21
Clark County Asylum

General Insanity - Total Cases

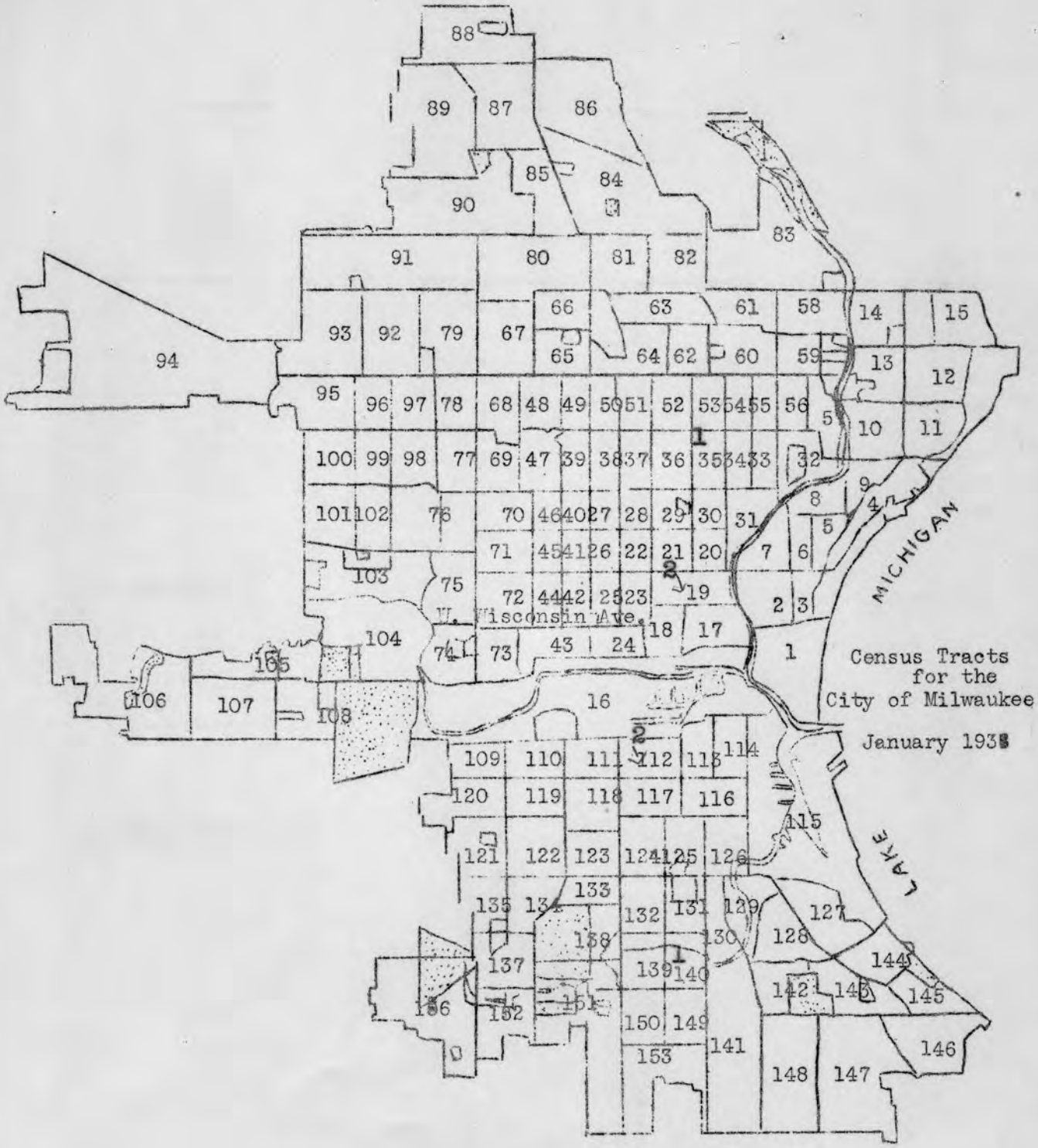


Illustration 22

Columbia County Asylum

General Insanity - Total Cases

Illustration 23

Columbia County Asylum

Dementia Praecox Psychoses

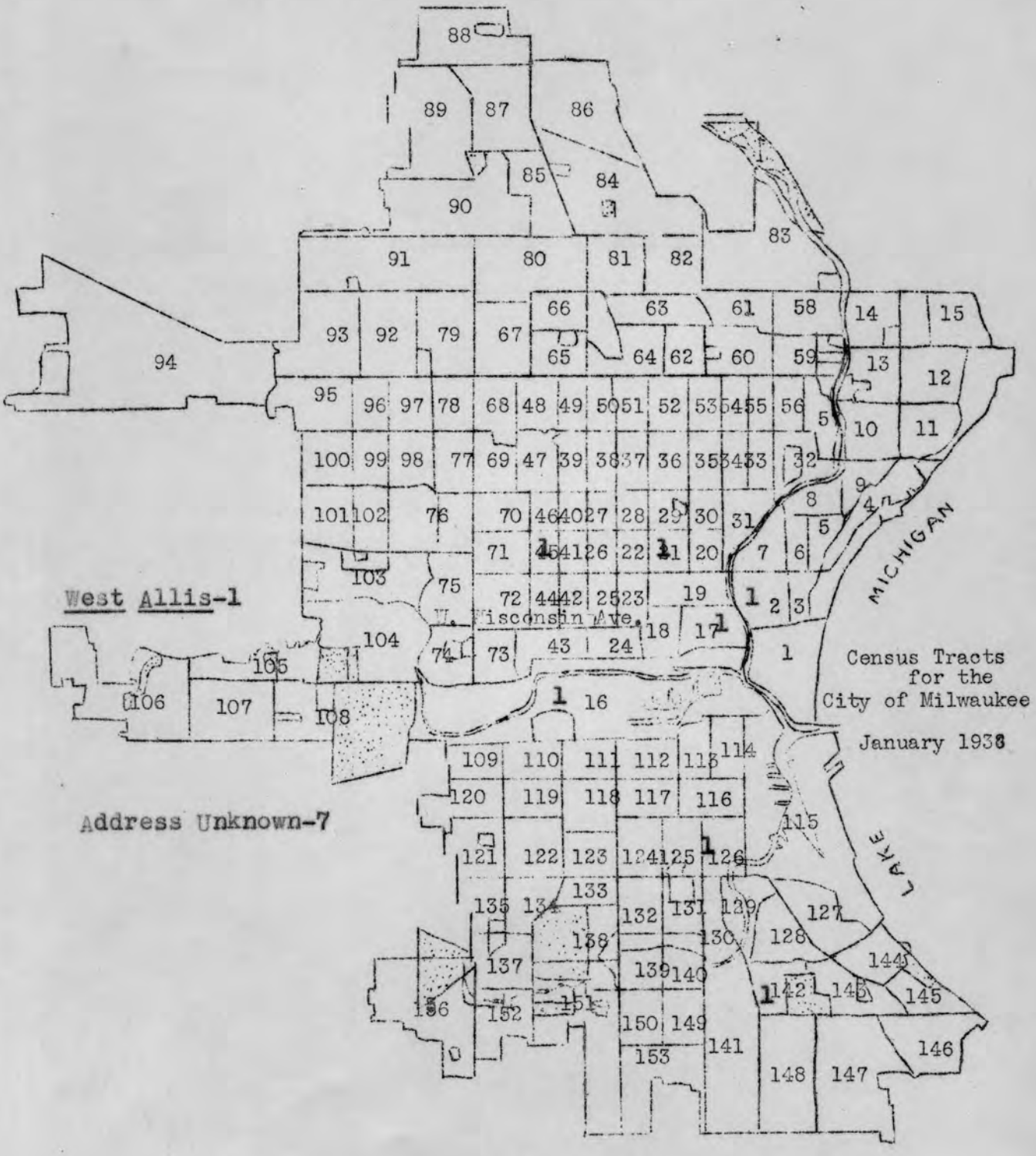


Illustration 24

Dane County Asylum

General Insanity - Total Cases

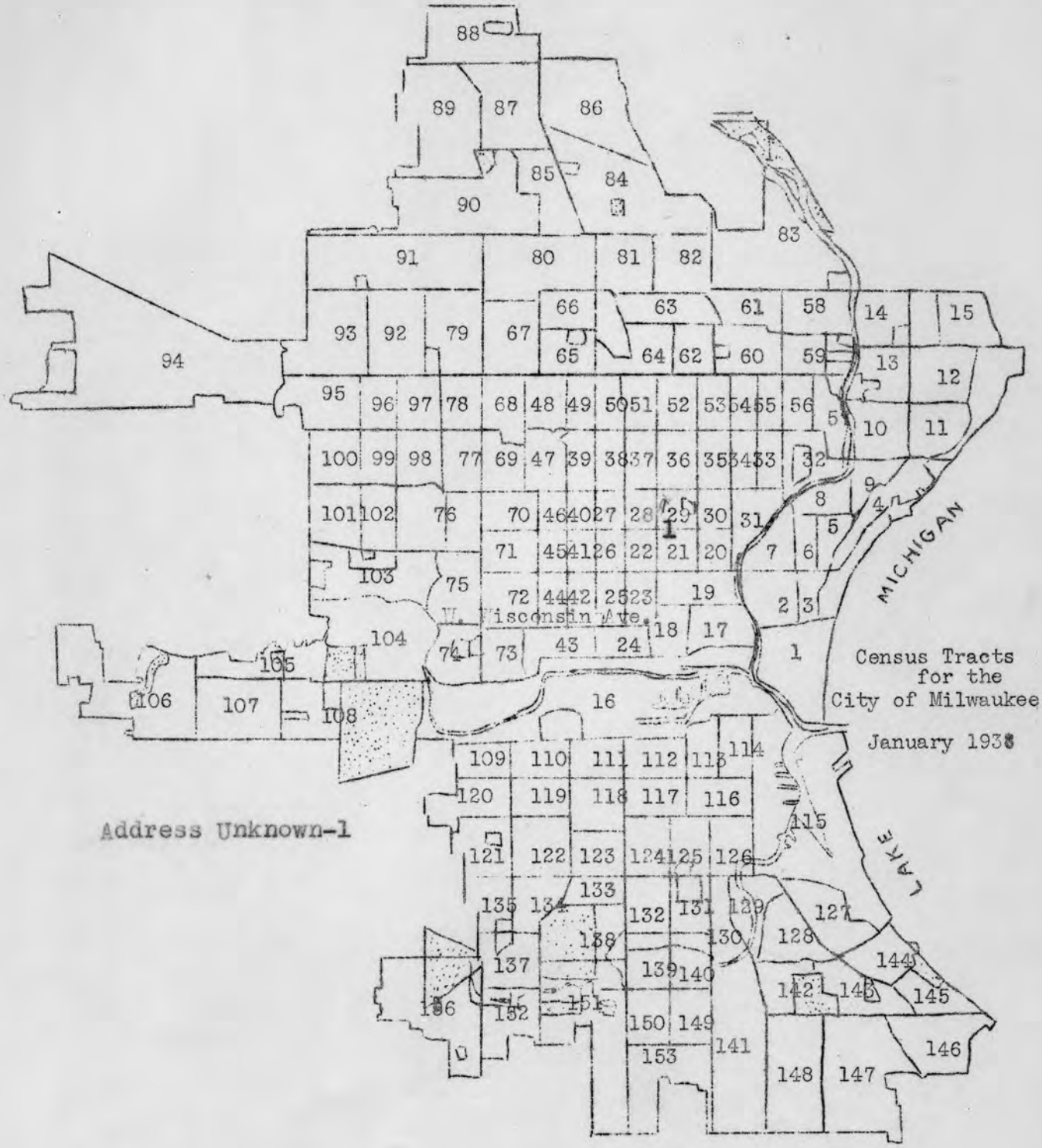


Illustration 25

Dane County Asylum

Dementia Praecox Psychoses

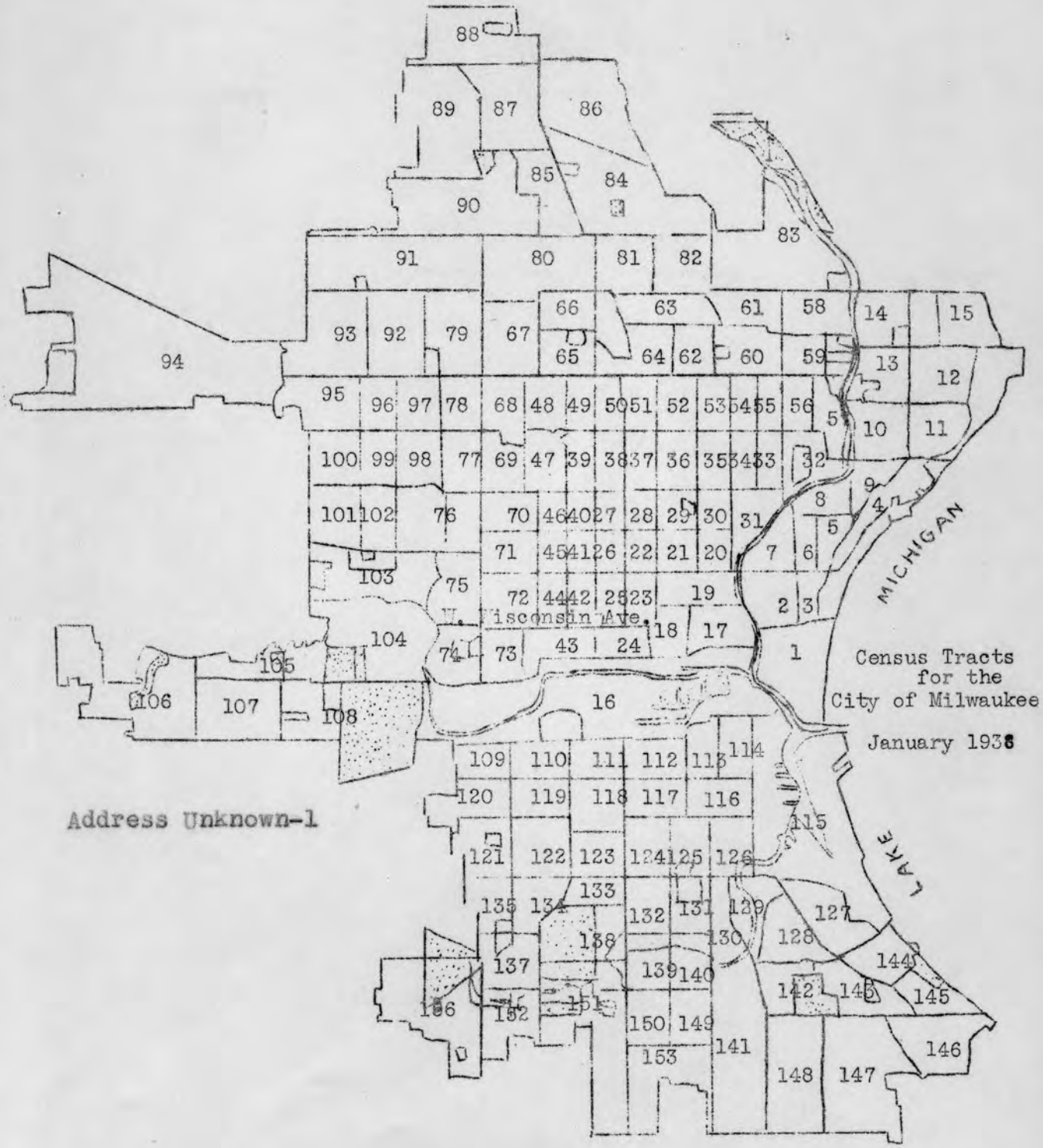


Illustration 26
Eau Claire Asylum

General Insanity - Total Cases

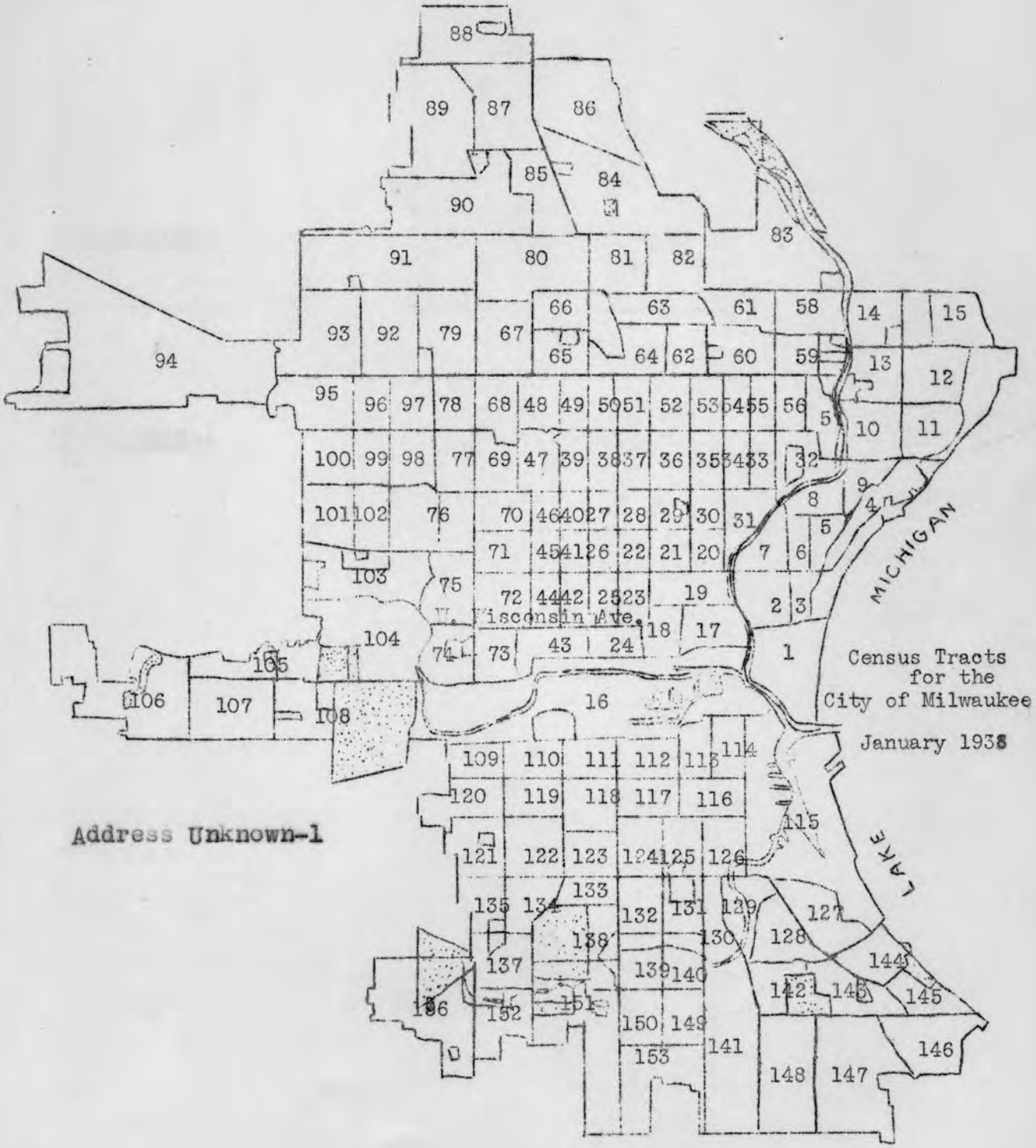


Illustration 27

Fond du Lac County Asylum

General Insanity - Total Cases

Illustration 28

Fond du Lac County Asylum

Manic-Depressive Psychoses

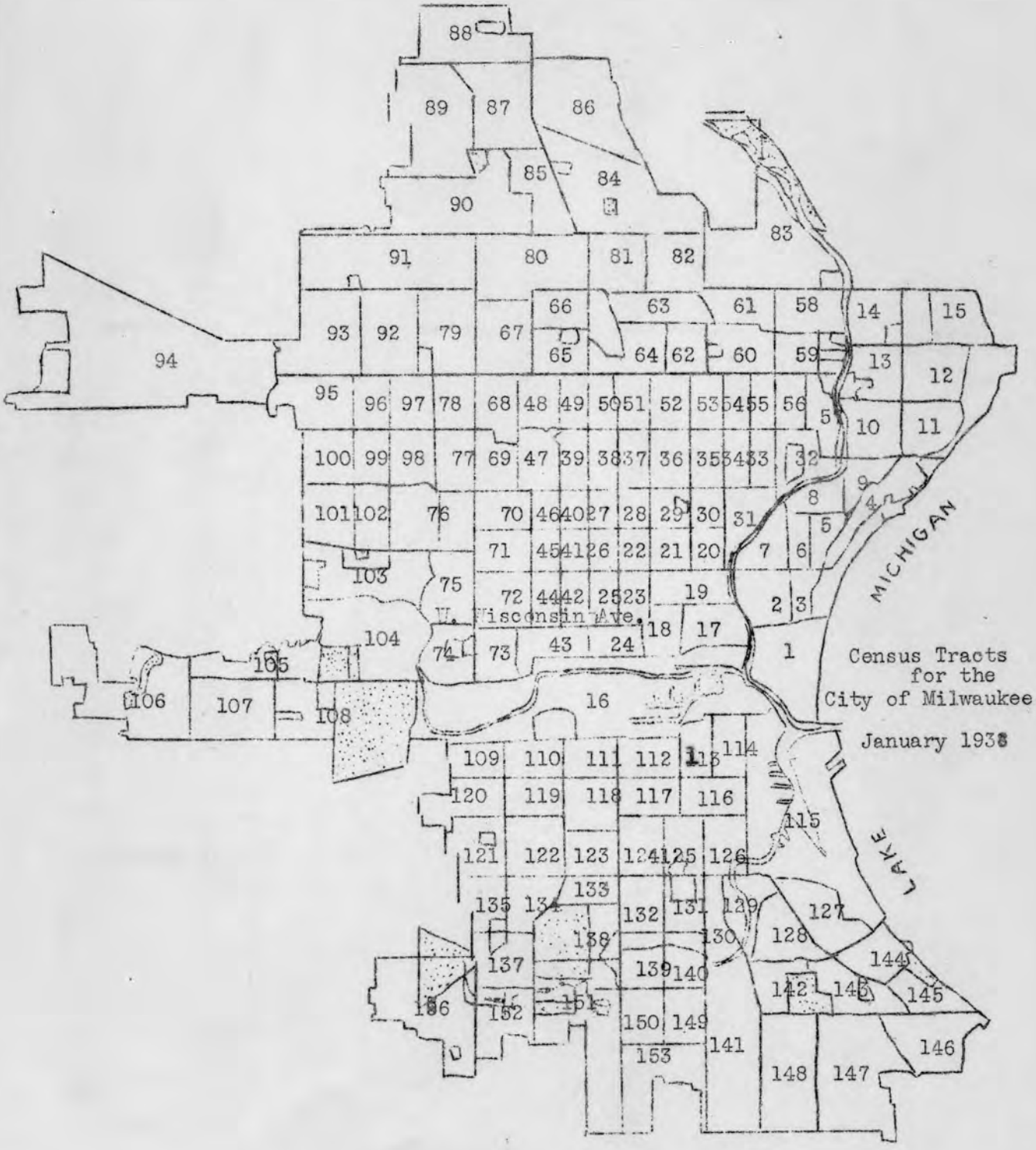


Illustration 29

Grant County Asylum

General Insanity - Total Cases

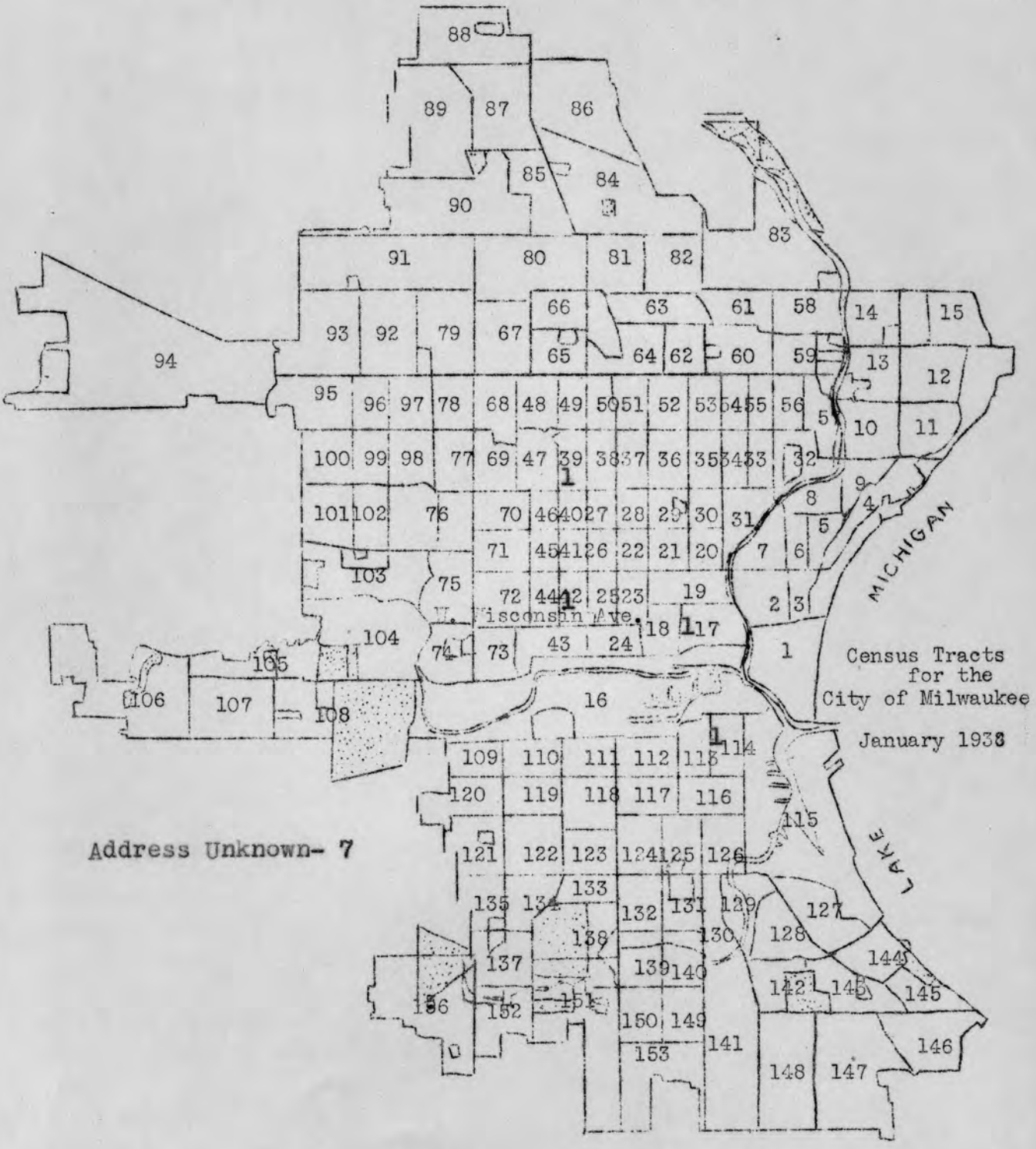


Illustration 30

Grant County Asylum

Dementia Praecox Psychoses

Census Tracts
for the
City of Milwaukee

January 1938

Address Unknown-1

Illustration 31

Green County Asylum

General Insanity - Total Cases

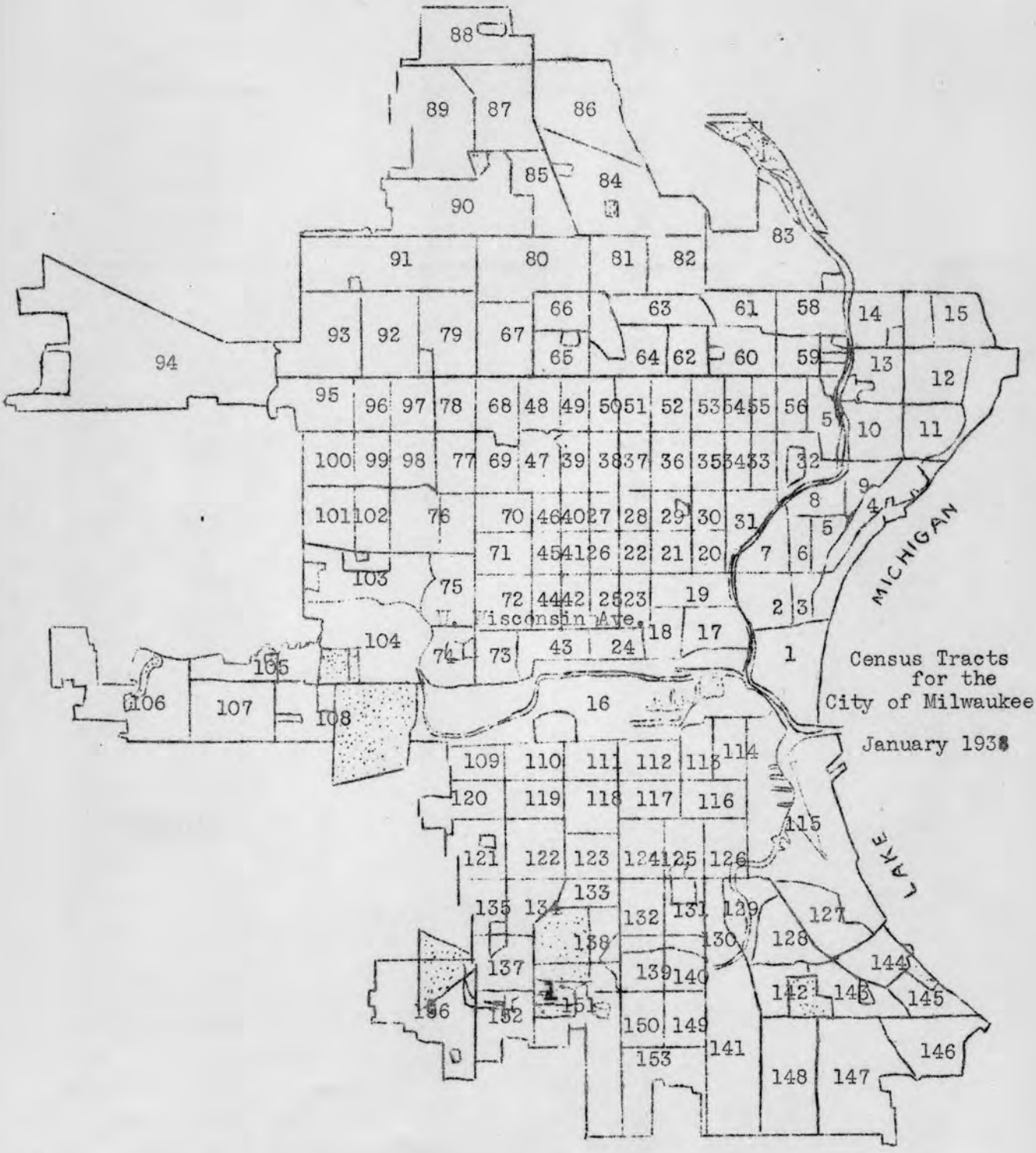


Illustration 32

Iowa County Asylum

General Insanity - Total Cases

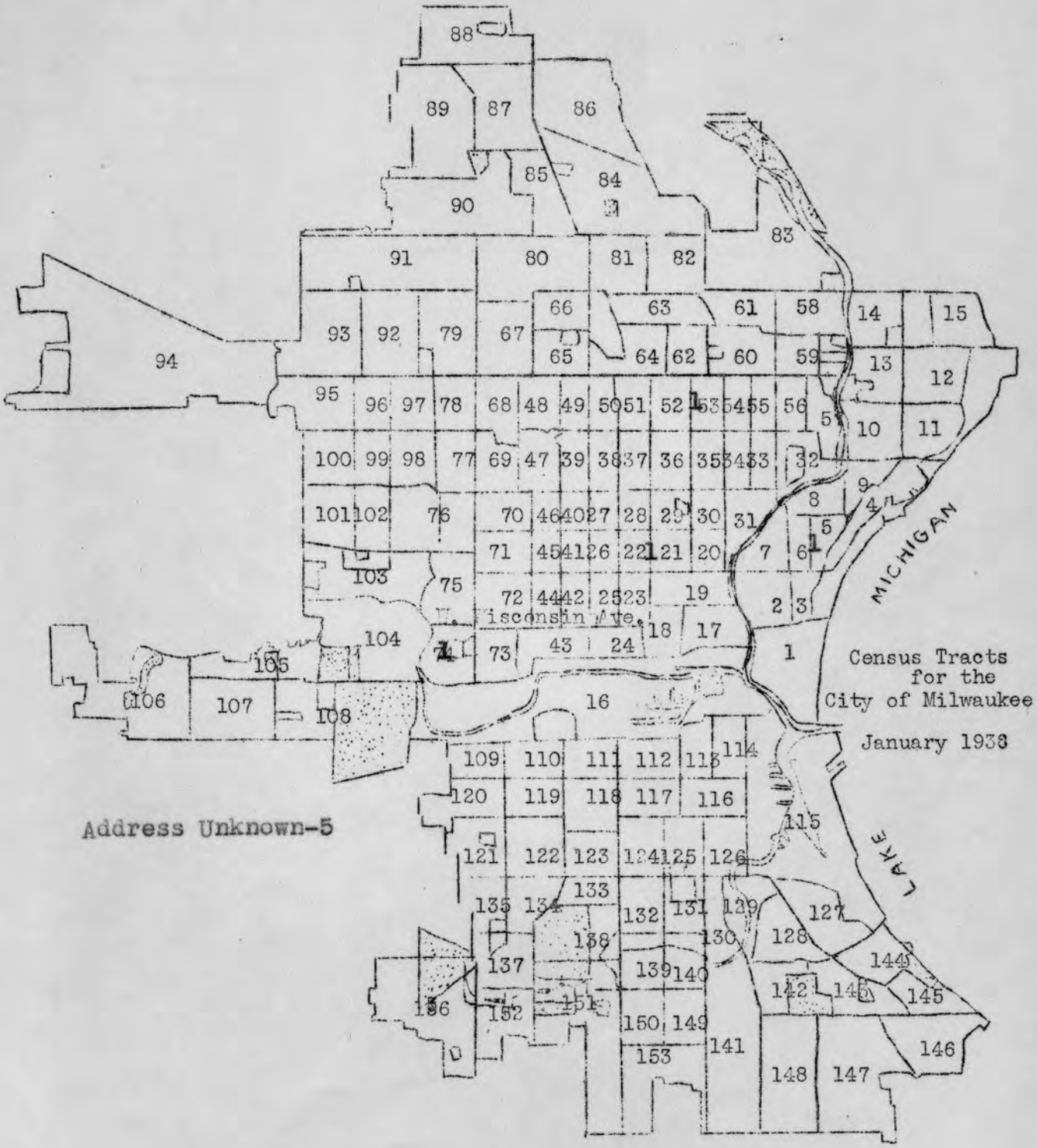
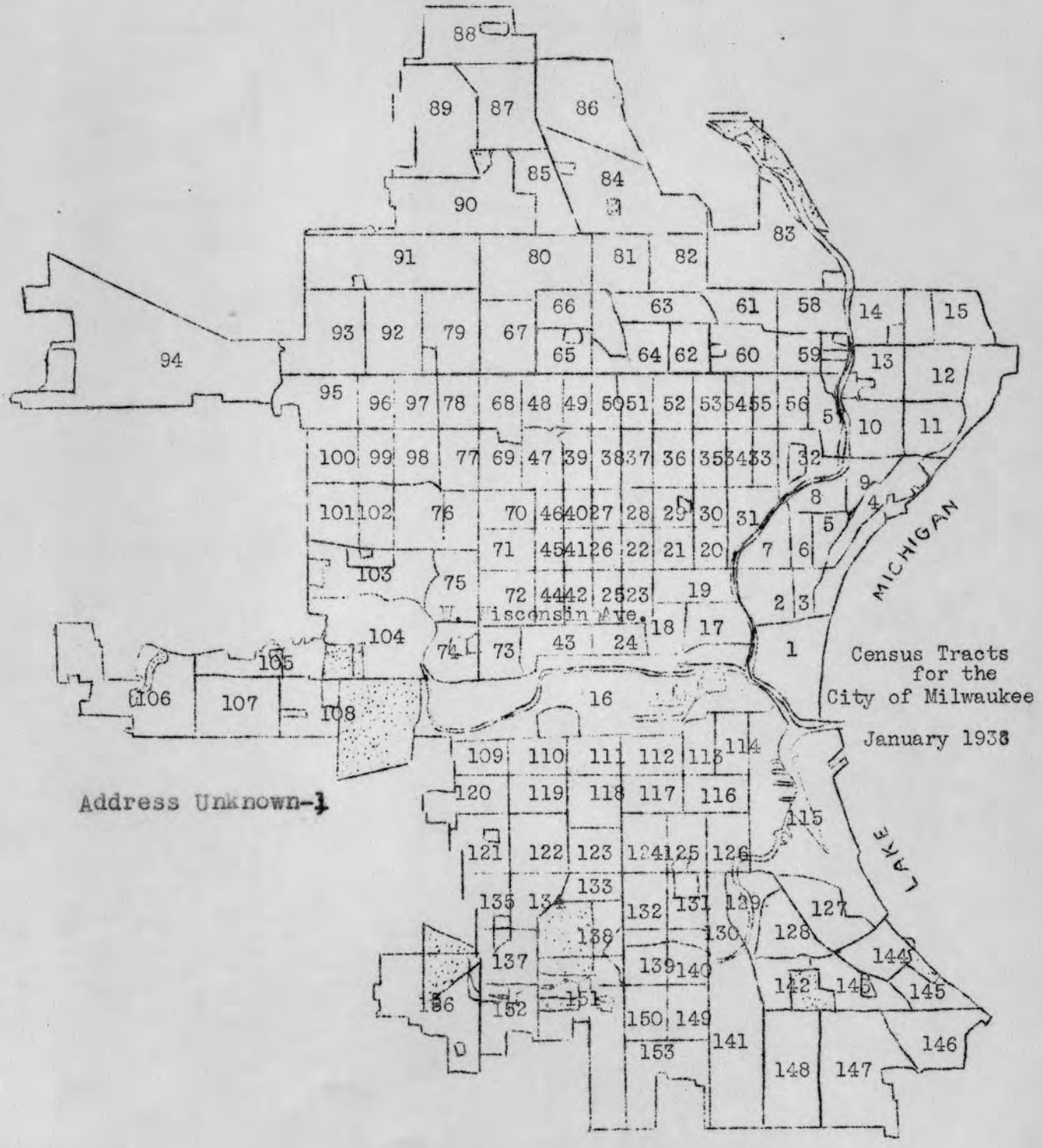


Illustration 33

Jefferson County Asylum

General Insanity - Total Cases



Address Unknown-1

Illustration 34

Manitowoc County Asylum

General Insanity - Total Cases

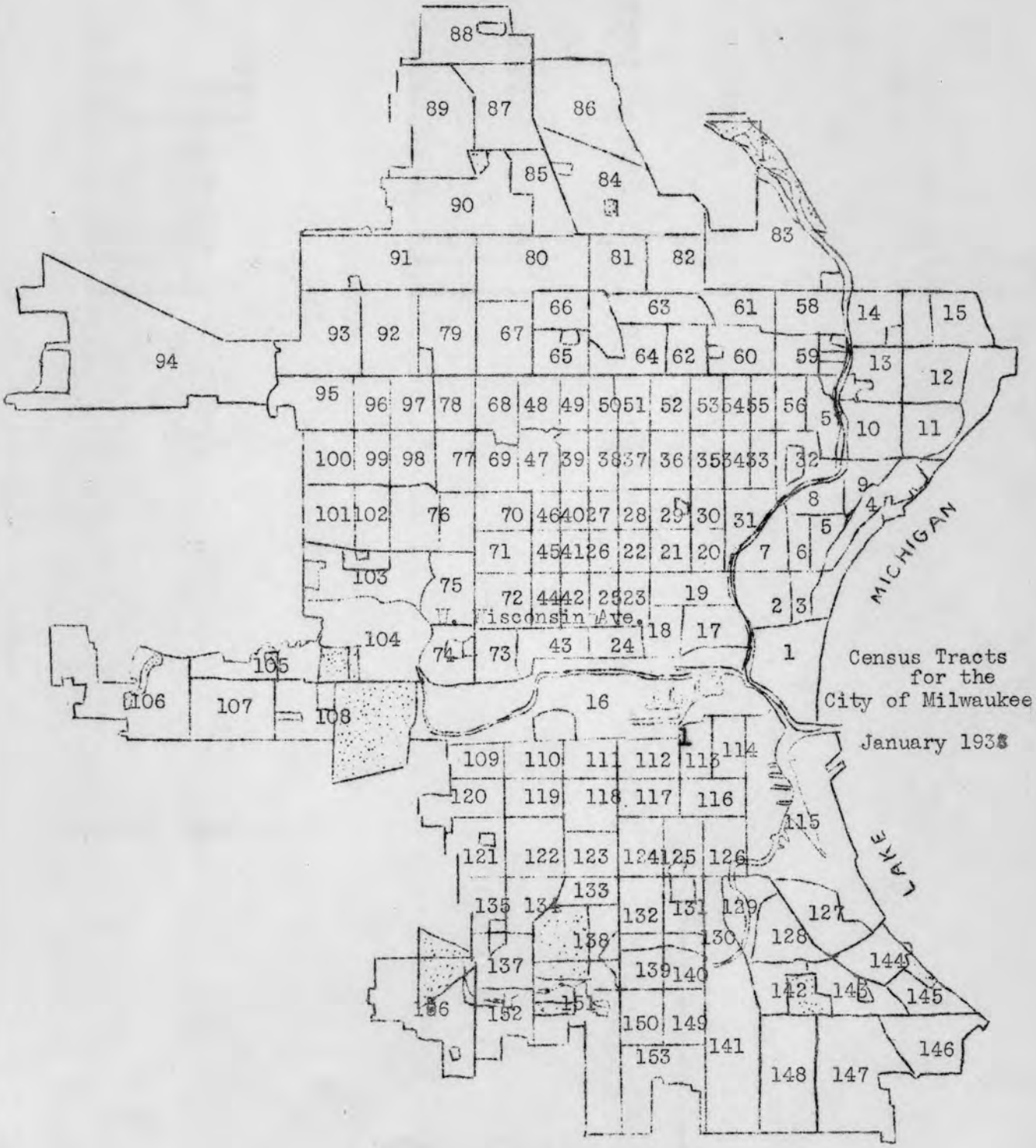
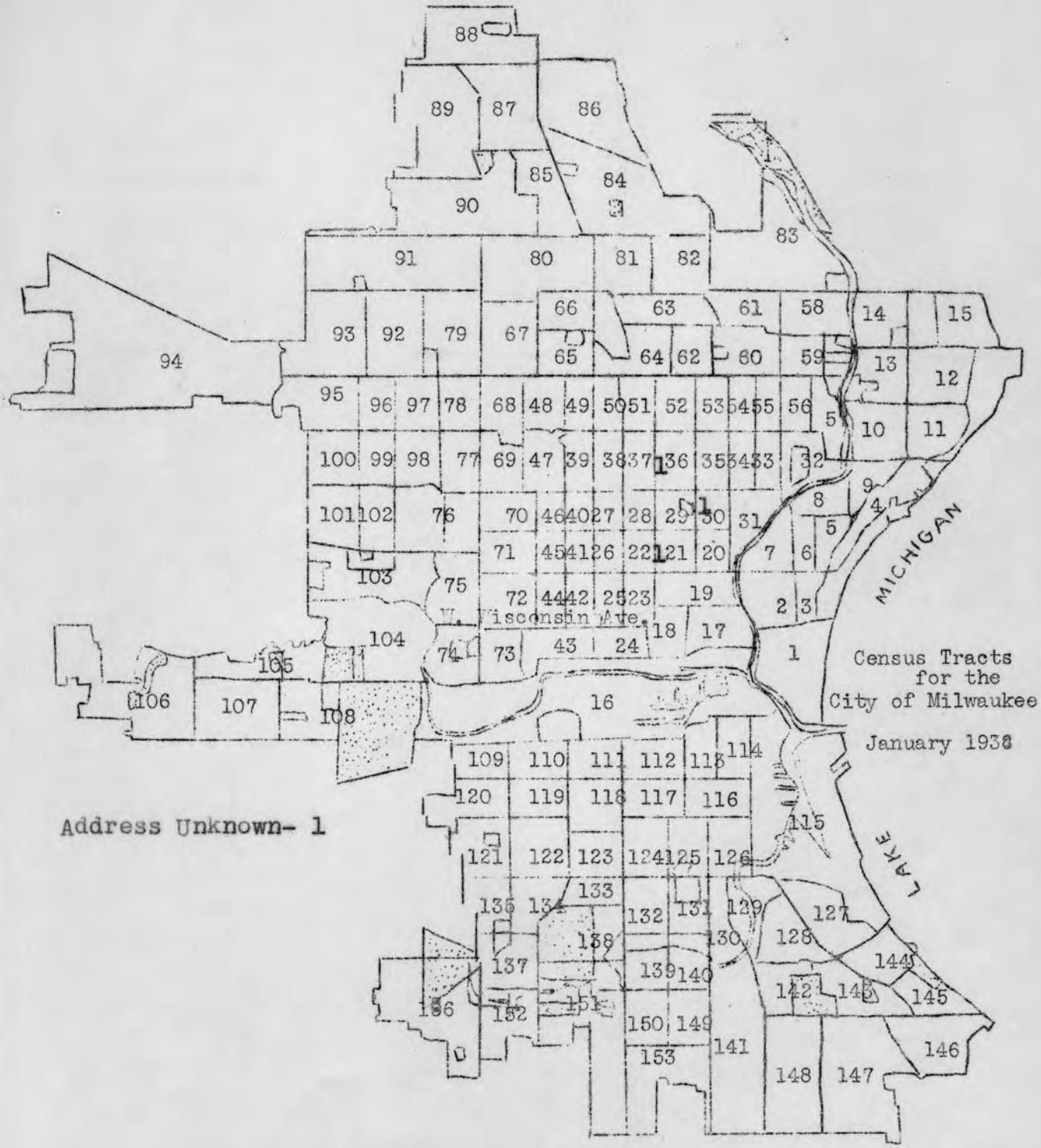


Illustration 35

Marinette County Insane Asylum

General Insanity - Total Cases



Address Unknown- 1

Illustration 36

Marinette County Insane Asylum

Manic Depressive Psychoses

Illustration 37

Mendota State Asylum

General Insanity - Total Cases

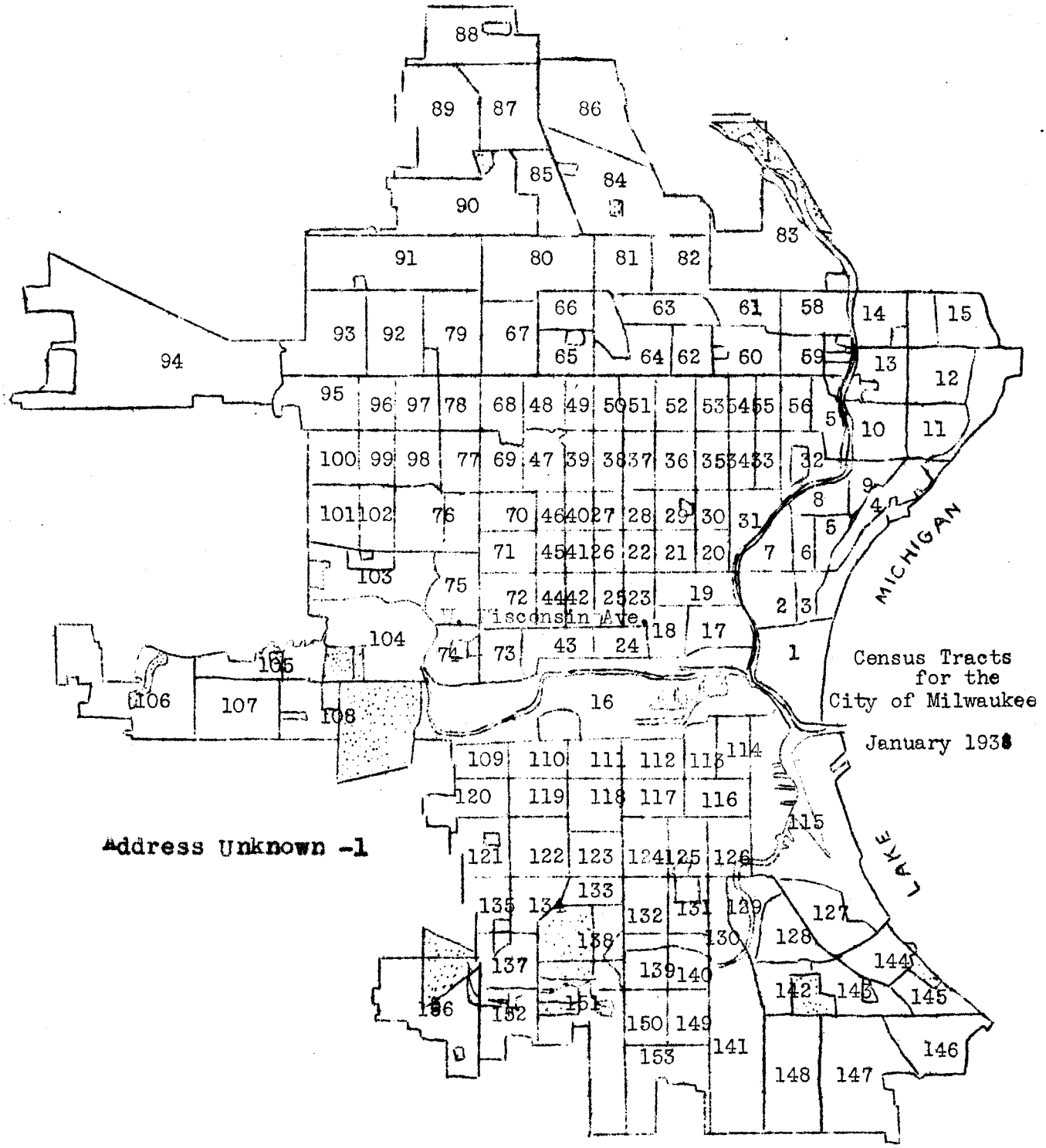
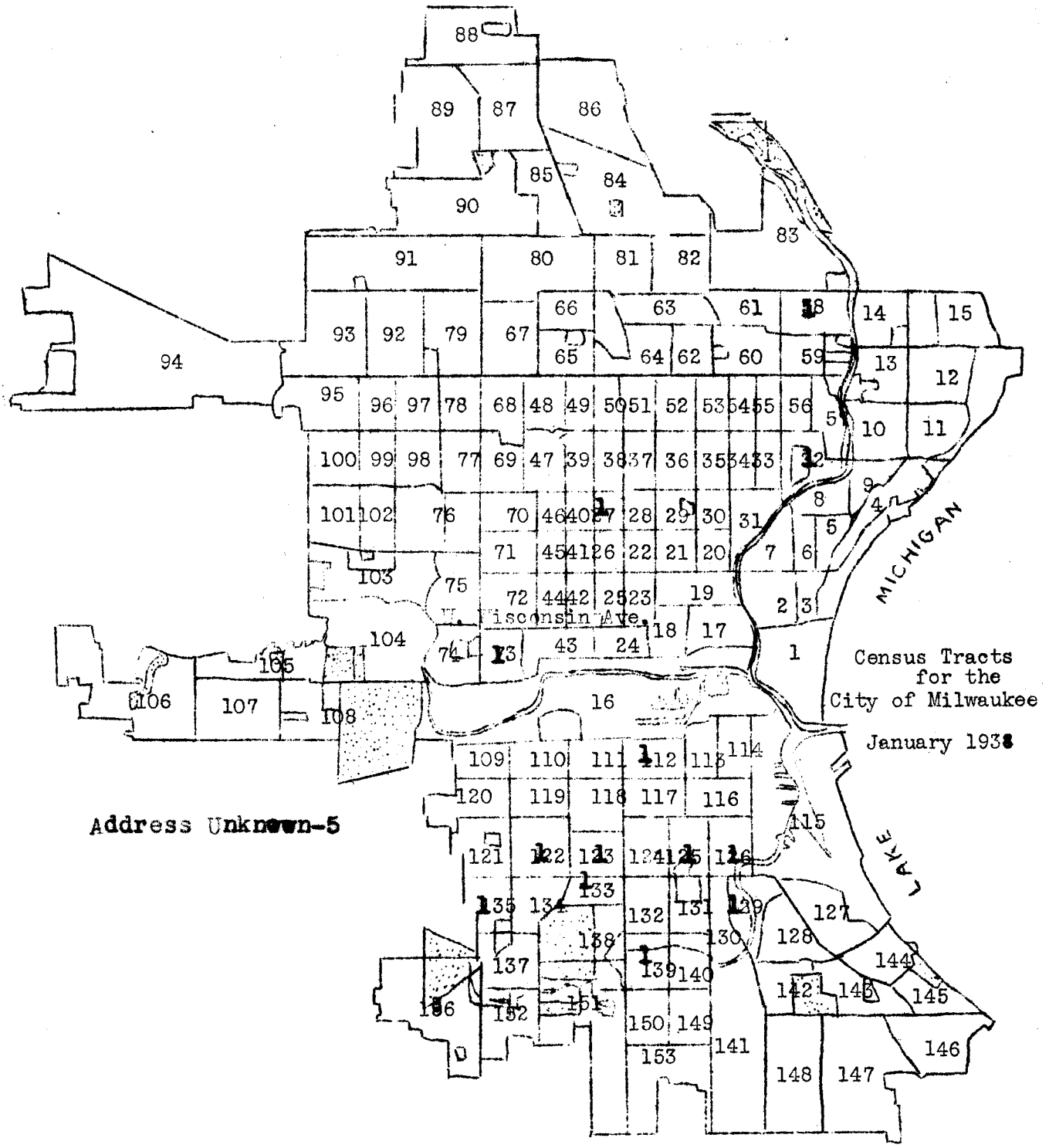


Illustration 38

Outagamie County Asylum

General Insanity - Total Cases



Census Tracts for the City of Milwaukee

January 1938

Address Unknown-5

Greendale -1

Ilustration 39

Outagamie County Asylum

Dementia Praecox Psychoses

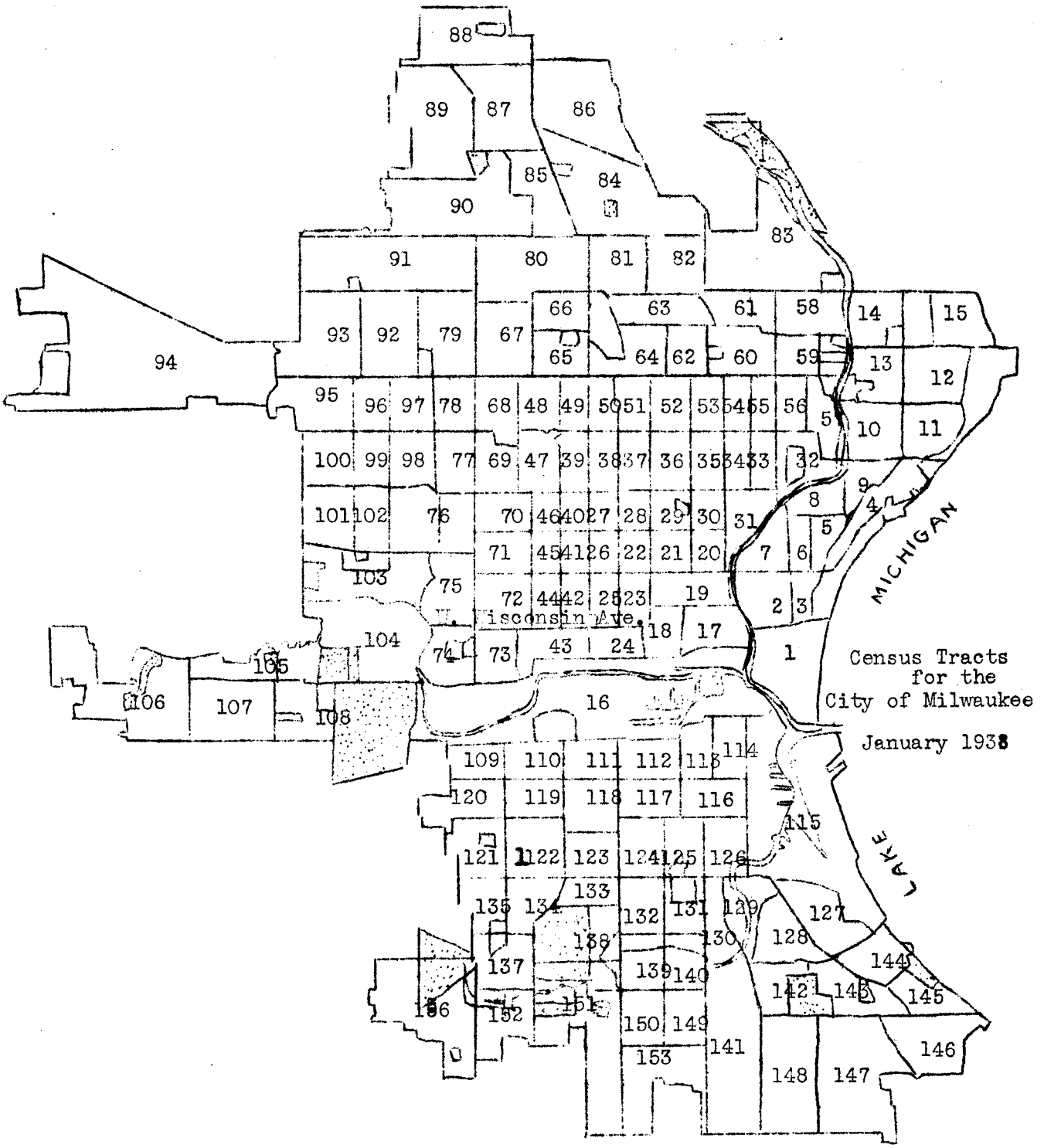


Illustration 40

Racine County Asylum

General Insanity - Total Cases

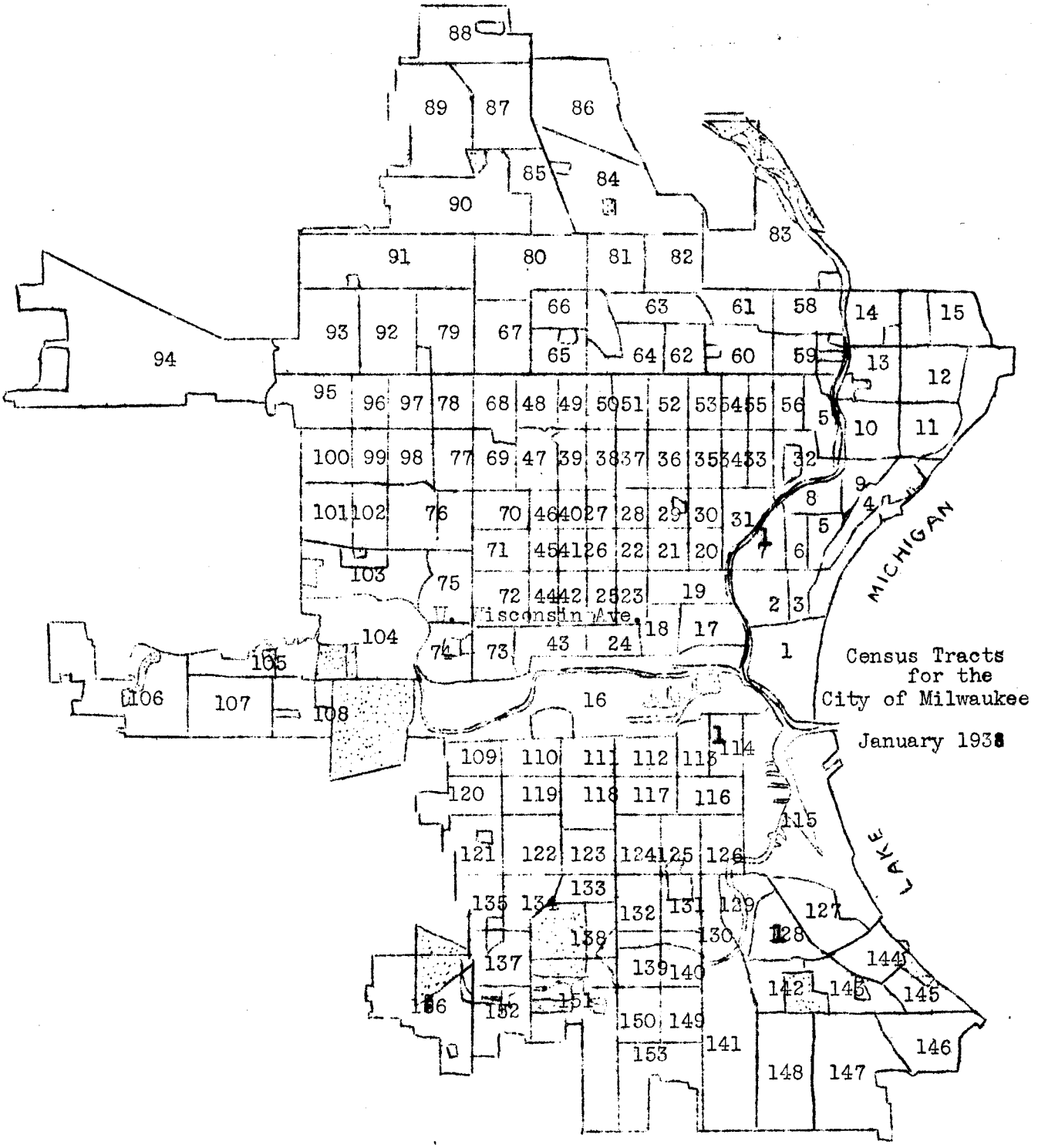


Illustration 41

Racine County Asylum

Dementia Praecox Psychoses

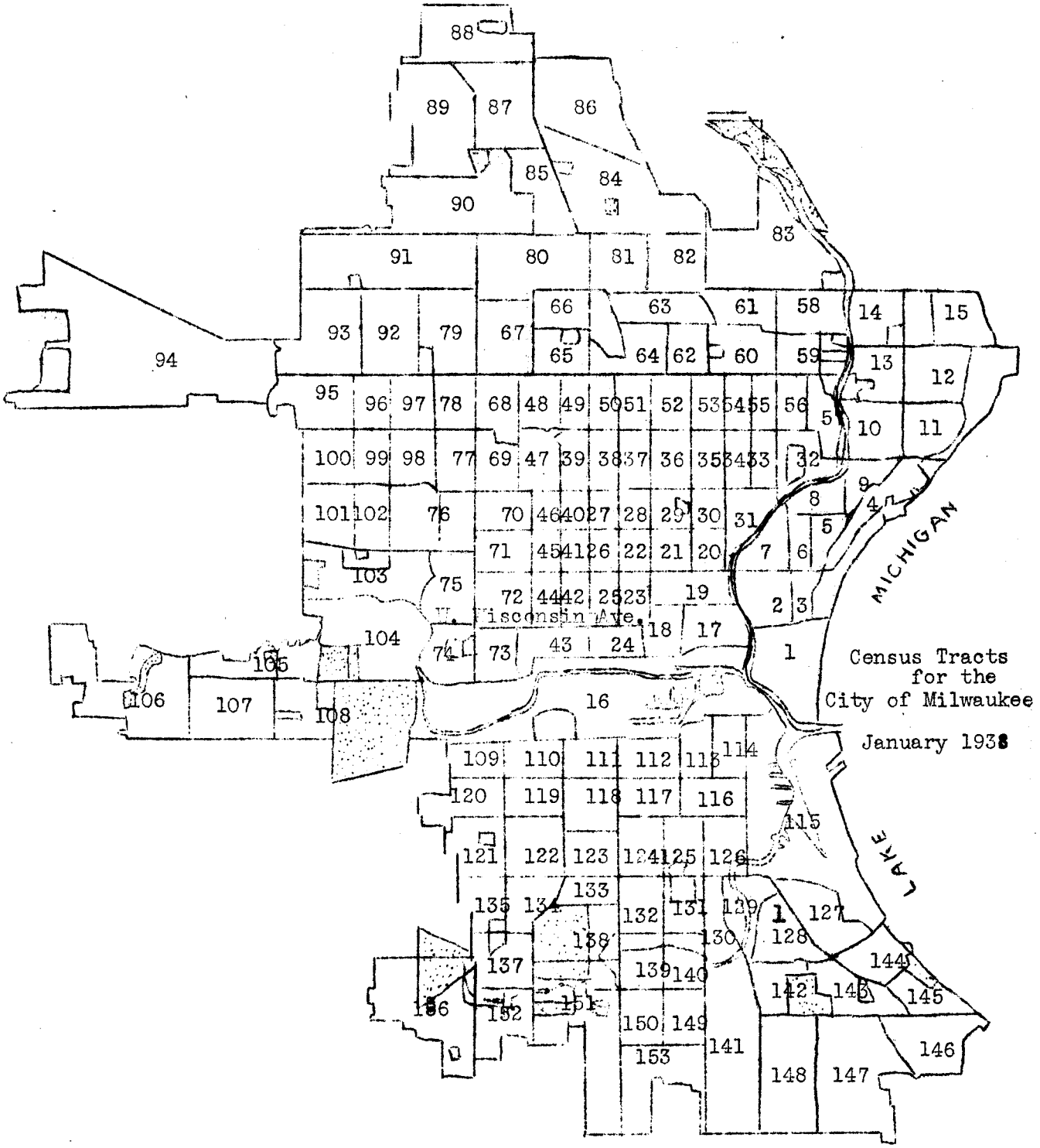


Illustration 42

Richland County Asylum

General Insanity - Total Cases

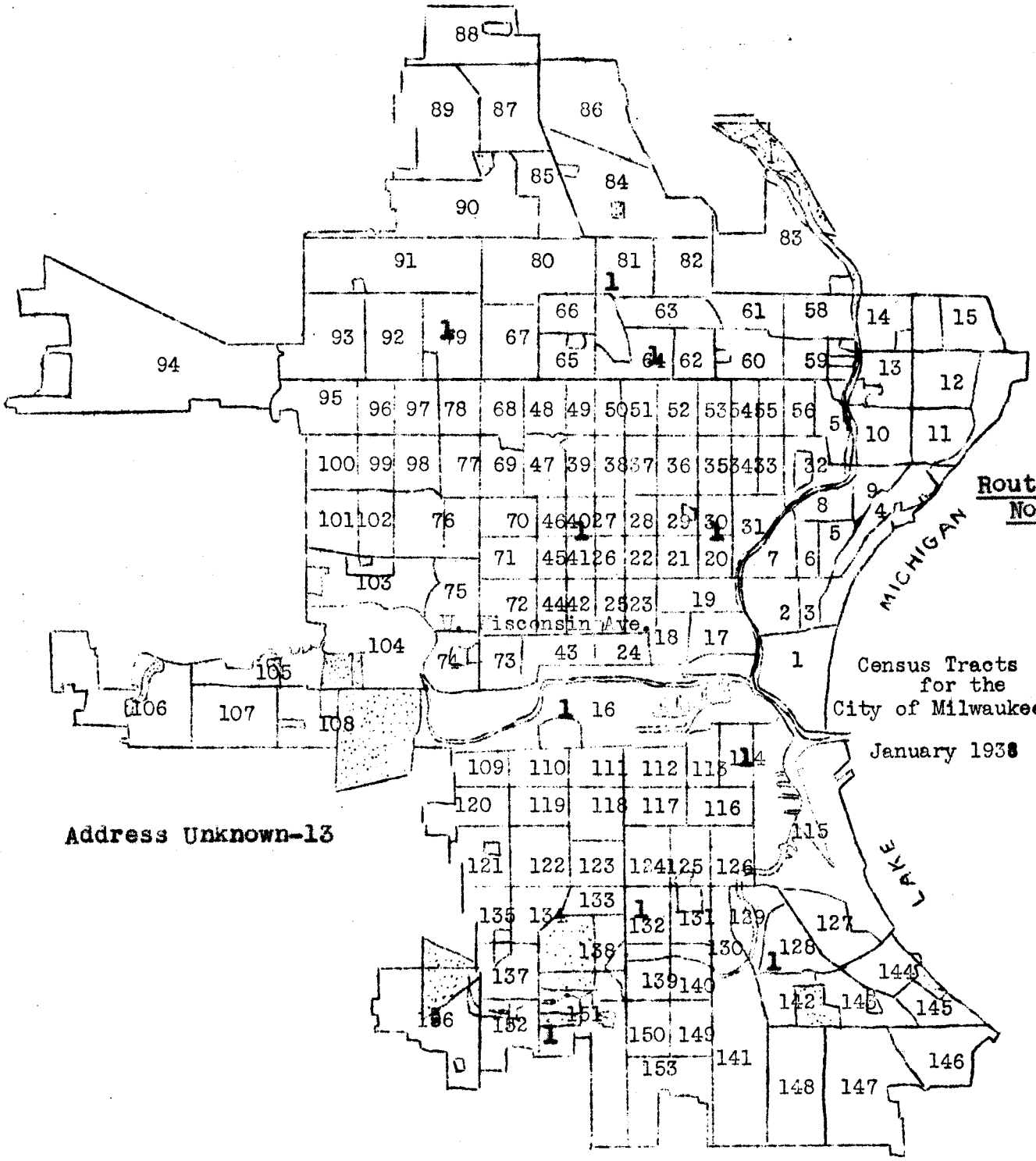


Illustration 43

Rock County Asylum

General Insanity - Total Cases

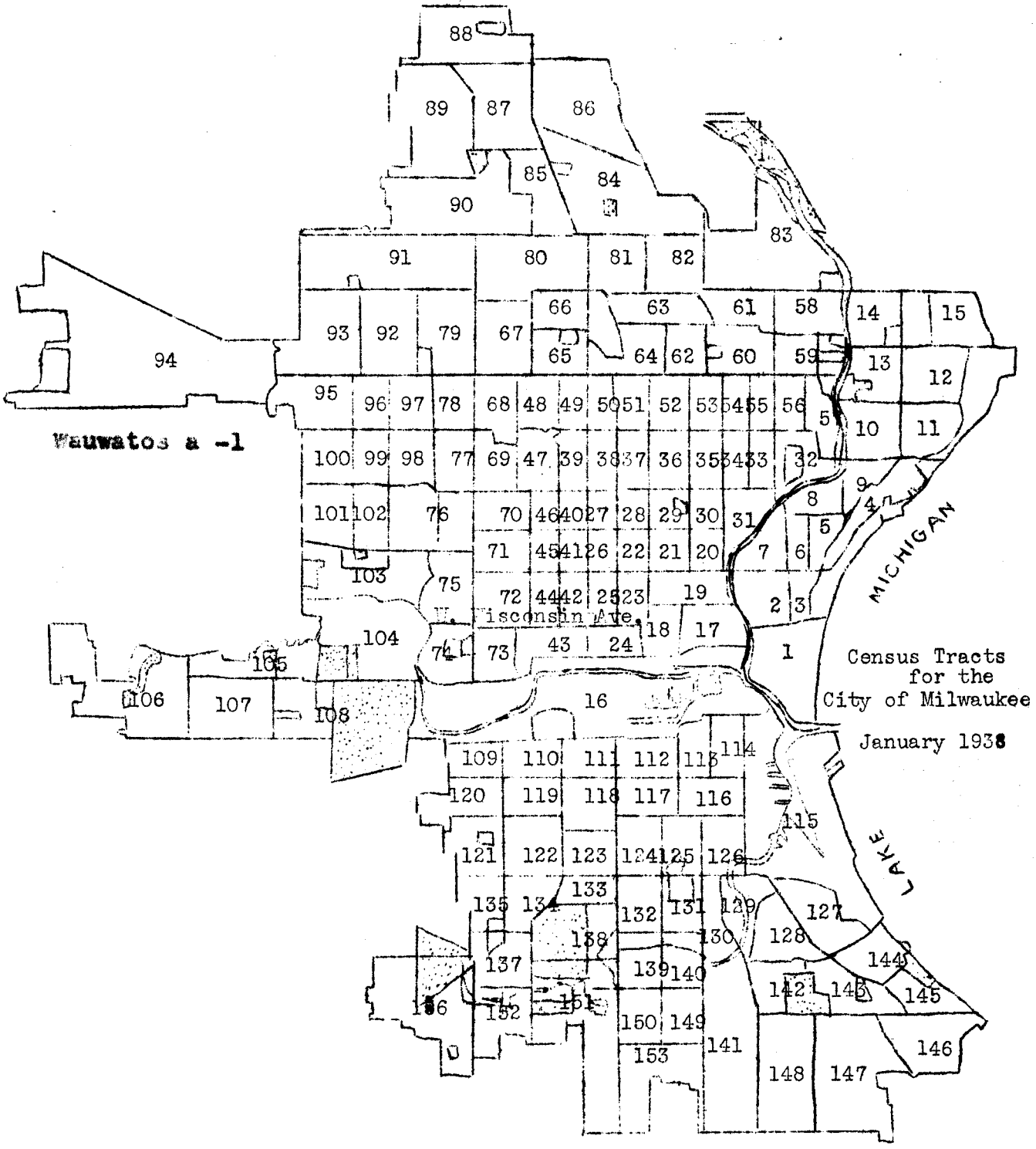


Illustration 44

Rock County Asylum

Dementia Praecox Psychoses

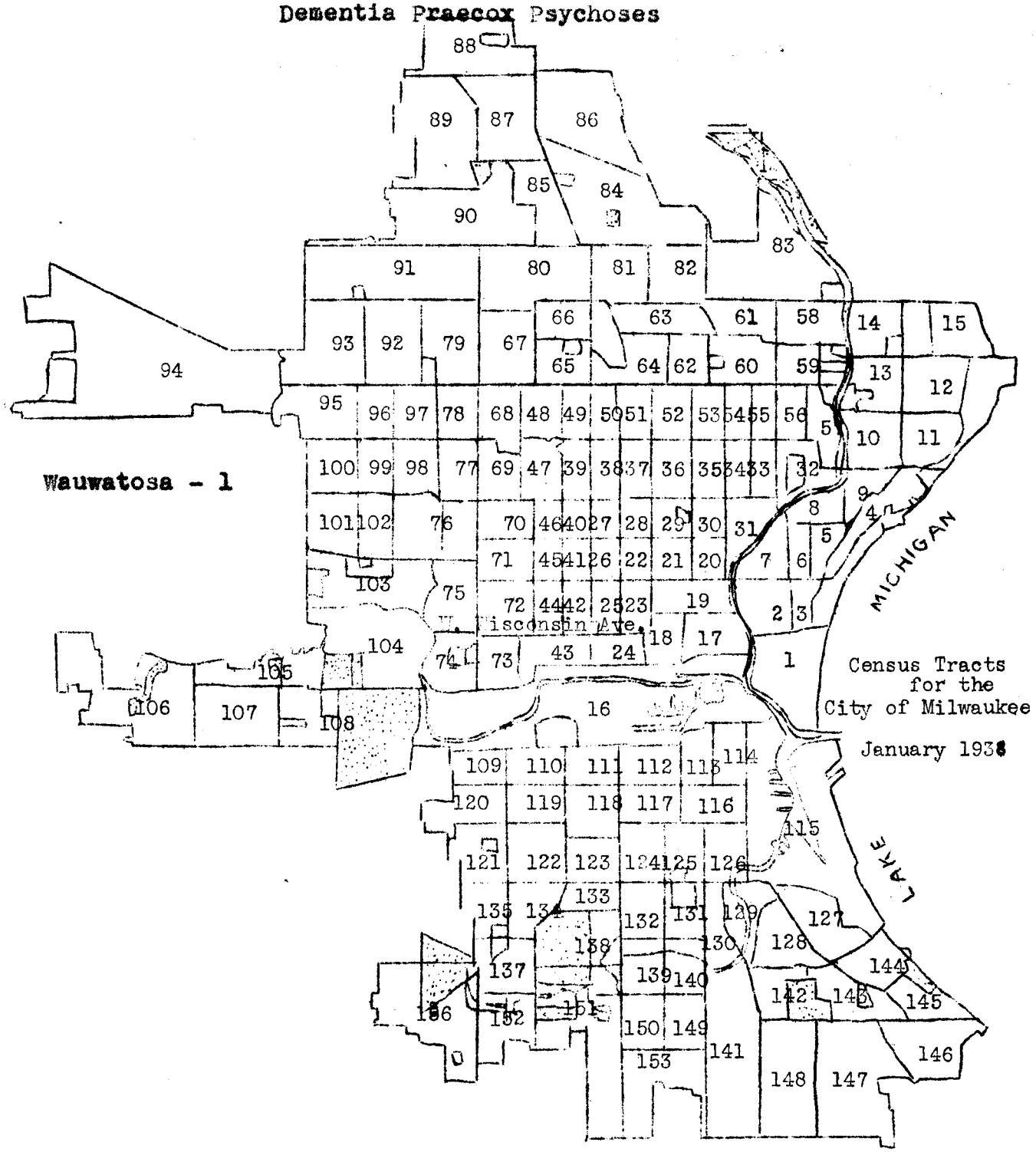
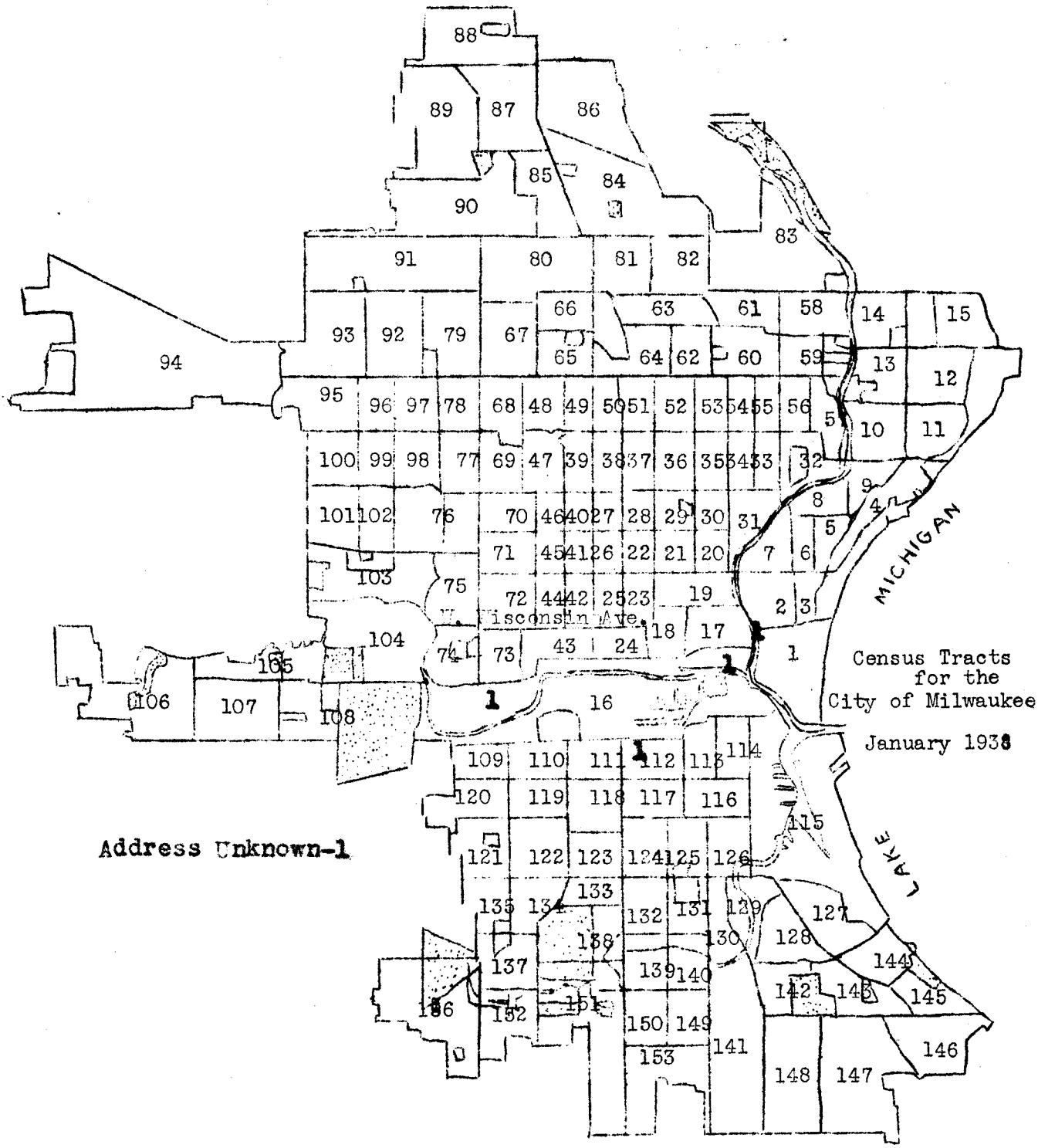


Illustration 45

Sauk County Asylum

General Insanity - Total Cases



Census Tracts
for the
City of Milwaukee

January 1938

Address Unknown-1

Illustration 46

Sauk County Asylum

Dementia Praecox Psychoses

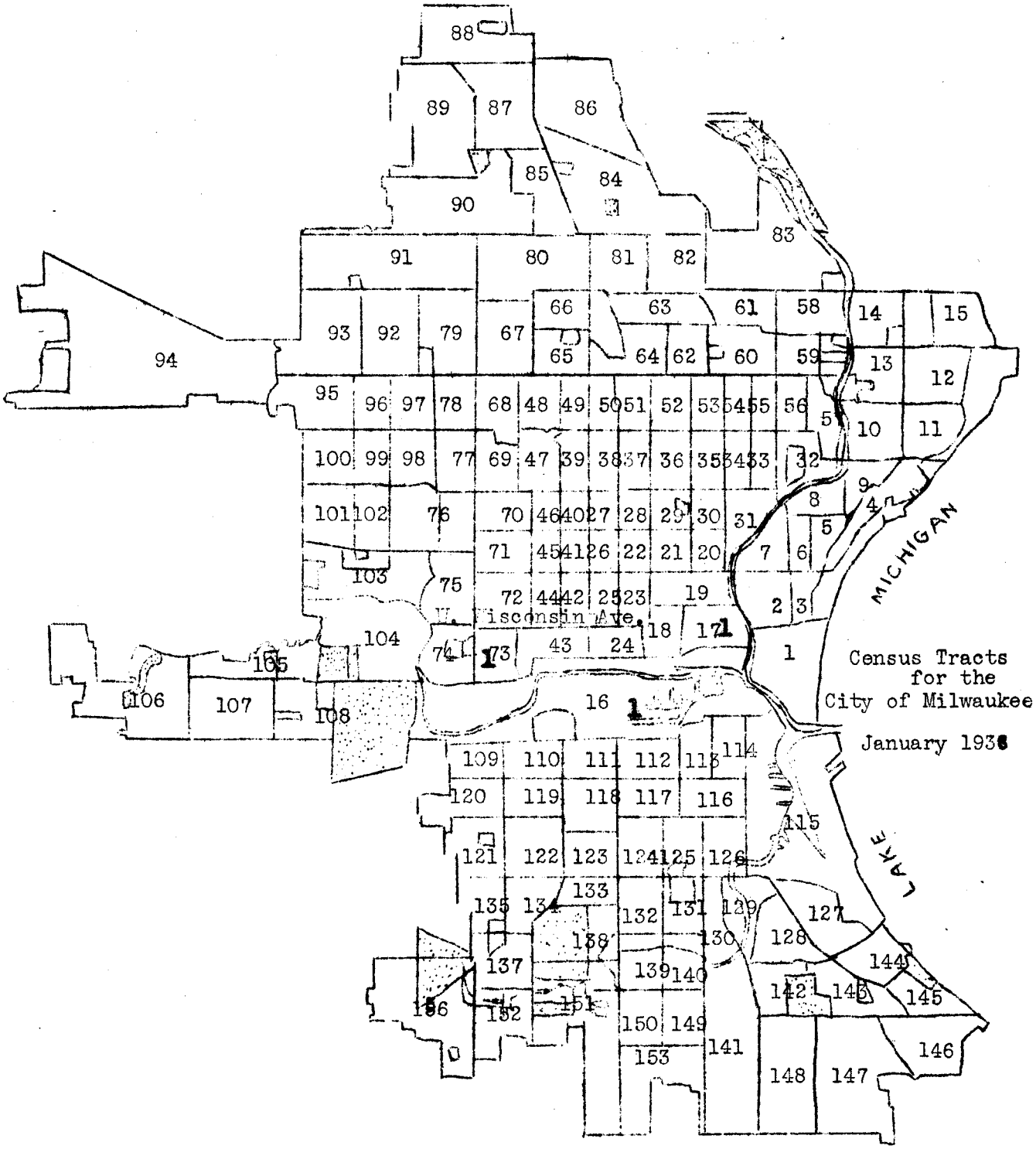


Illustration 47

Sheboygan County Asylum

General Insanity - Total Cases

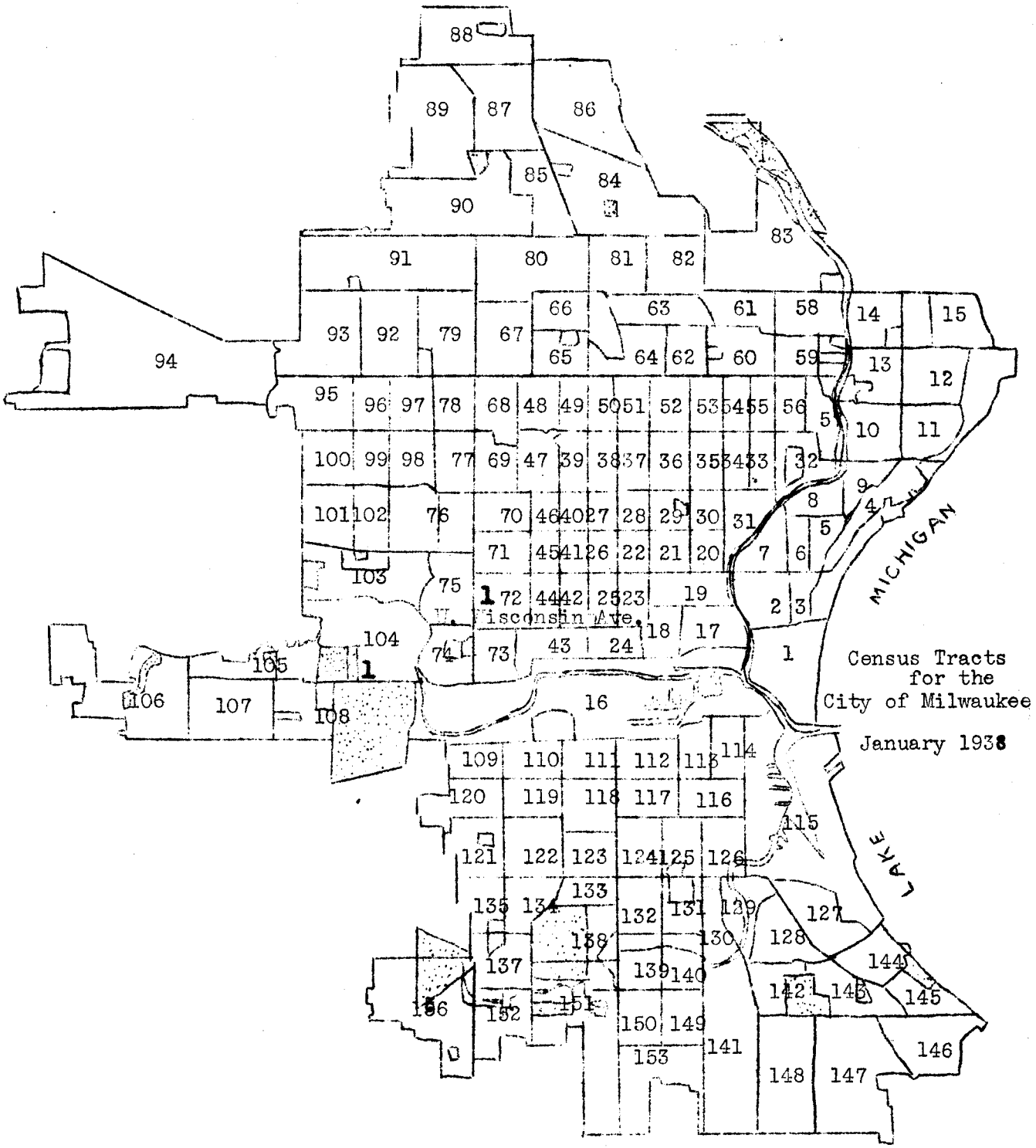
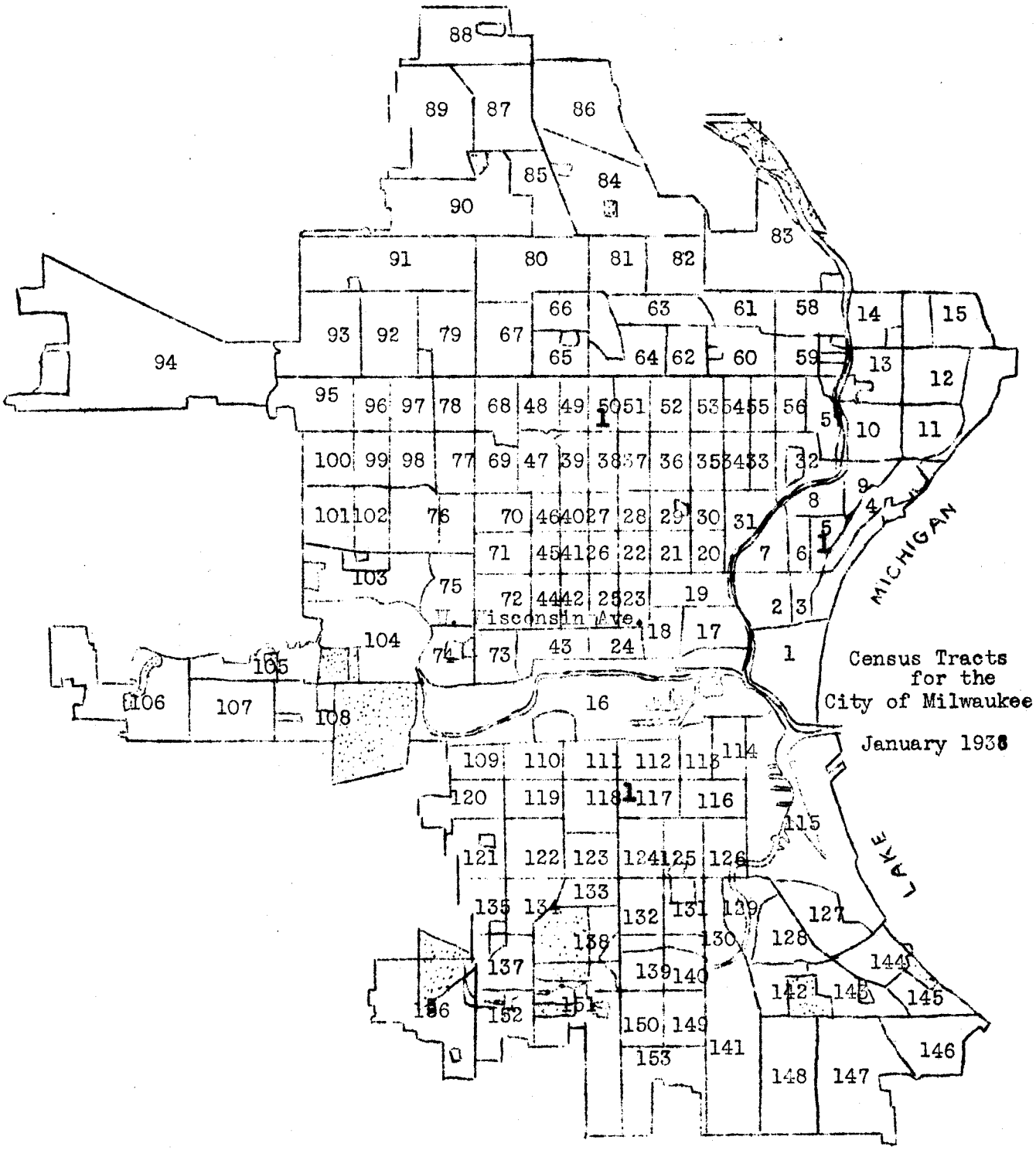


Illustration 48

Vernon County Asylum

General Insanity- Total Cases



Census Tracts
for the
City of Milwaukee

January 1938

Illustration 49
Walworth County Asylum

General Insanity - Total Cases

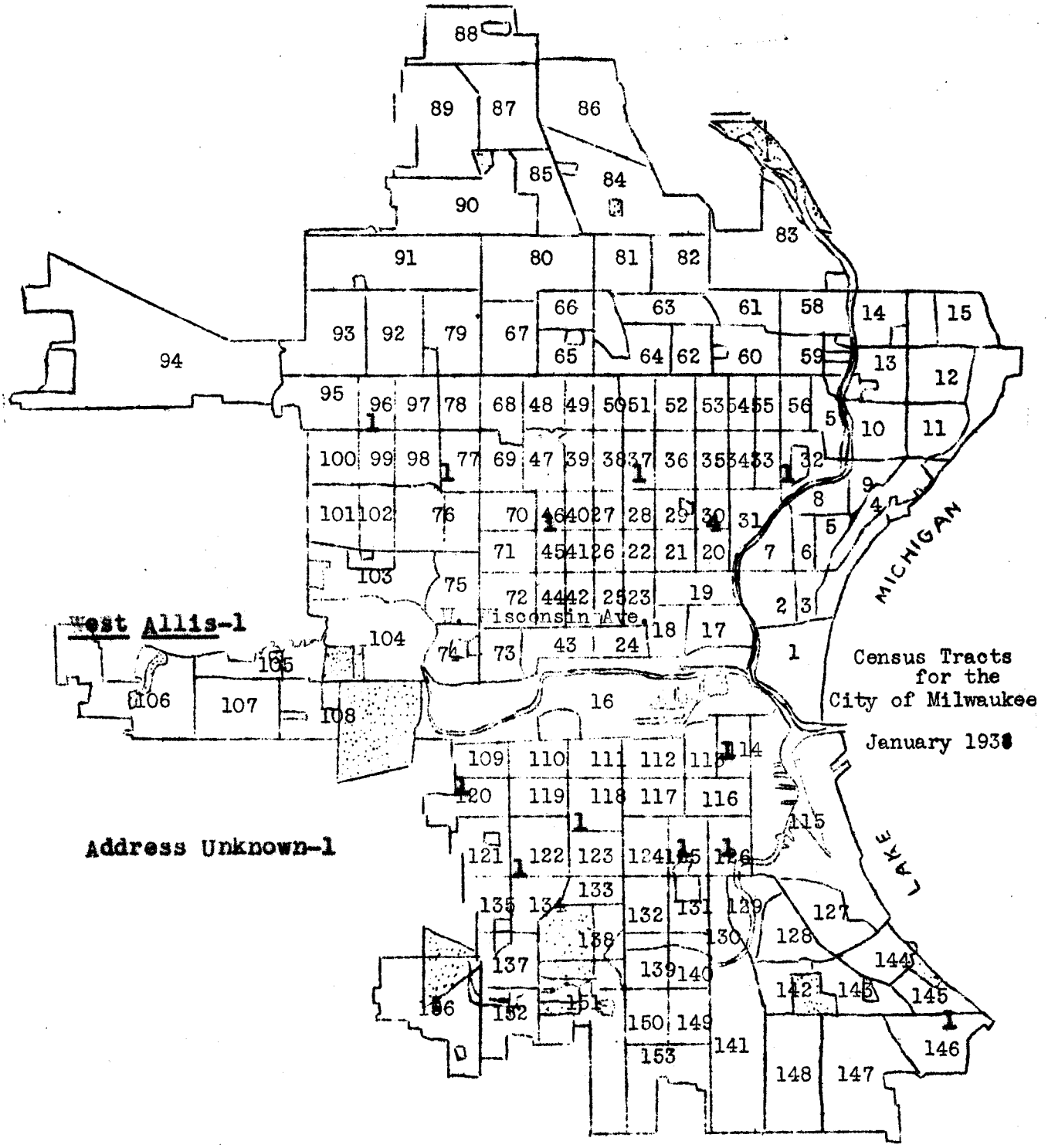


Illustration 50

Waukesha County Asylum

General Insanity - Total Cases

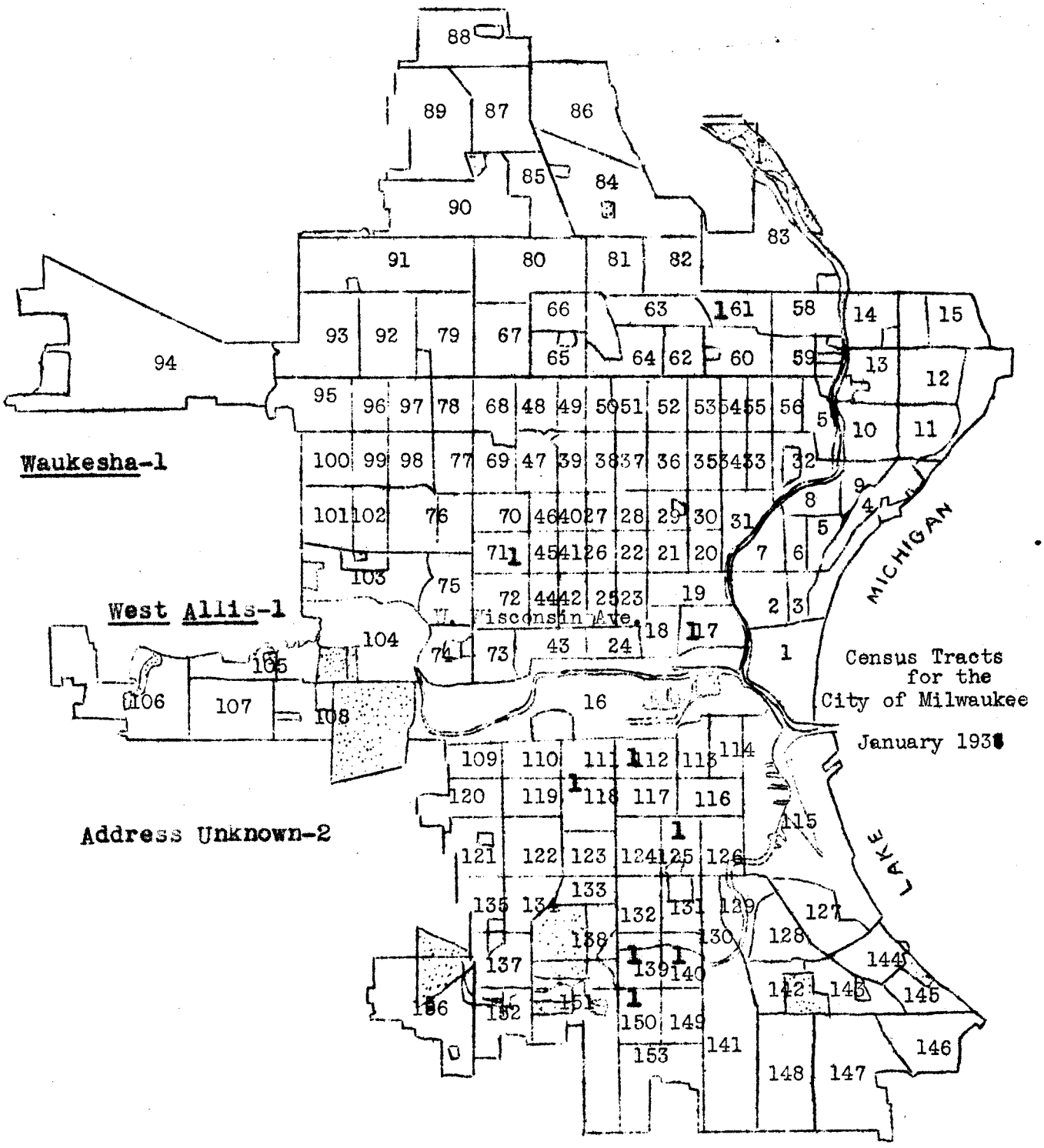


Illustration 51

Waukesha County Asylum

Dementia Praecox Psychoses

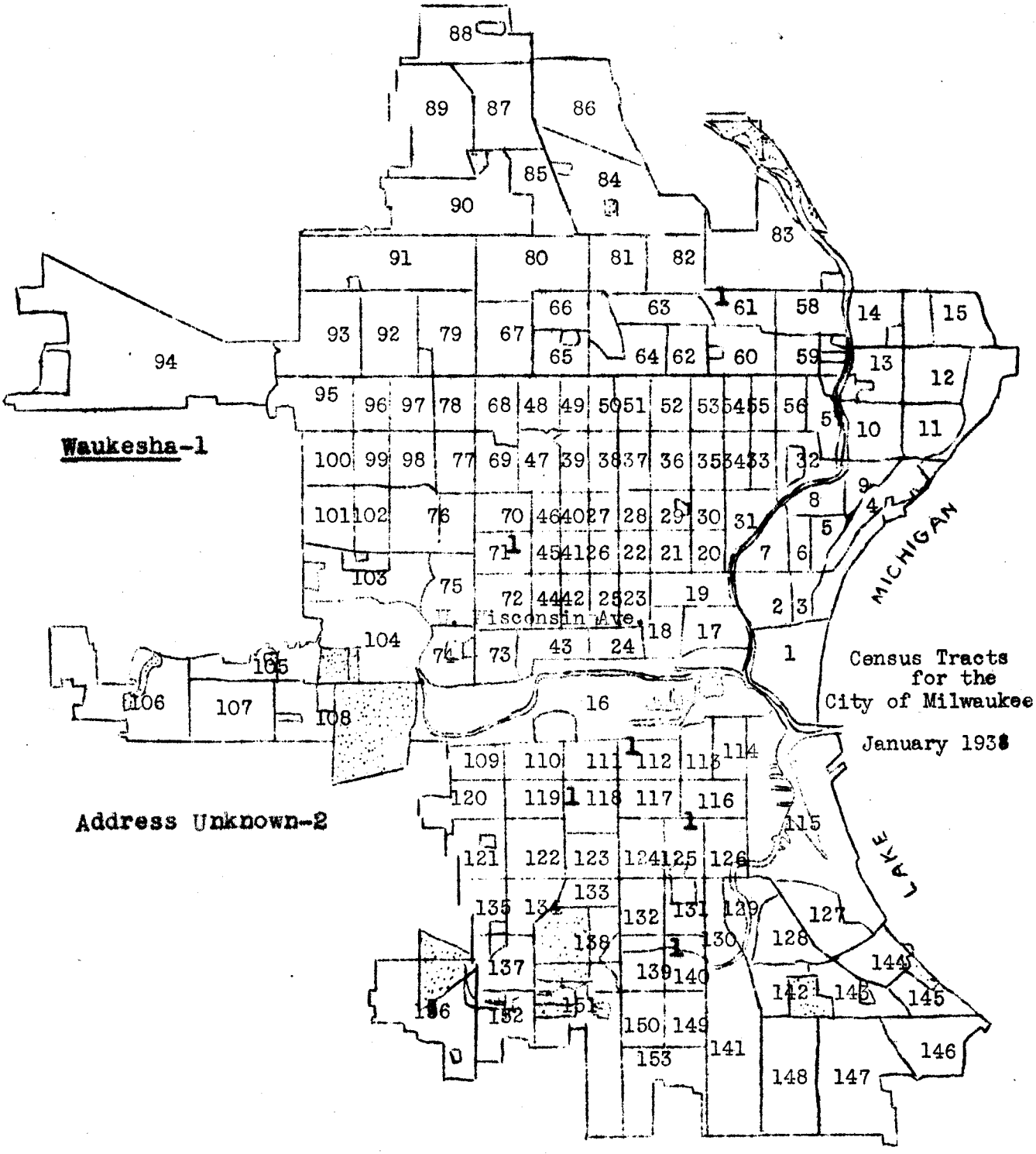


Illustration 52

Winnebago Northern County Asylum

General Insanity - Total Cases

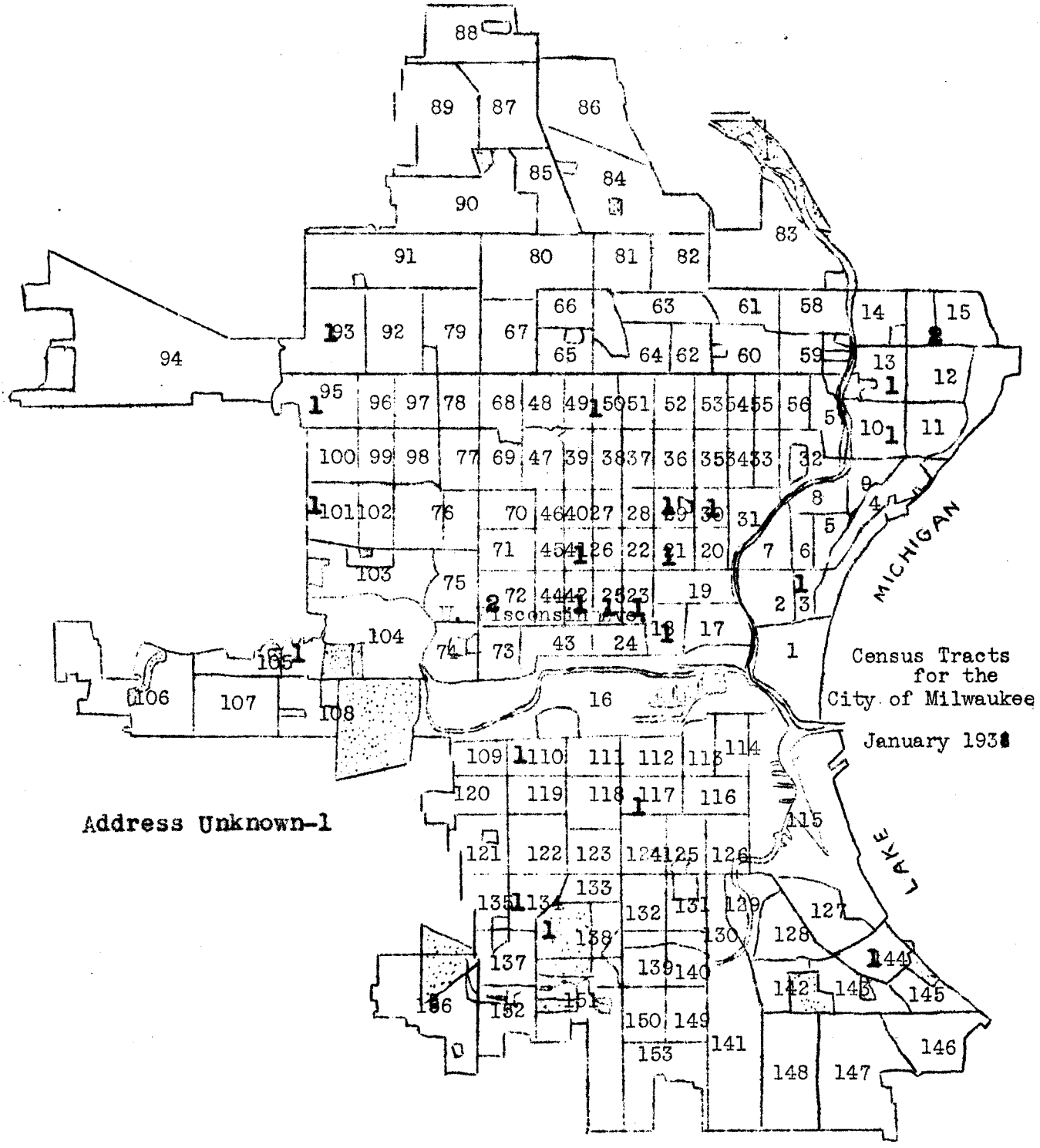


Illustration 53

Winnebago Northern County Asylum

Dementia Praecox Psychoses

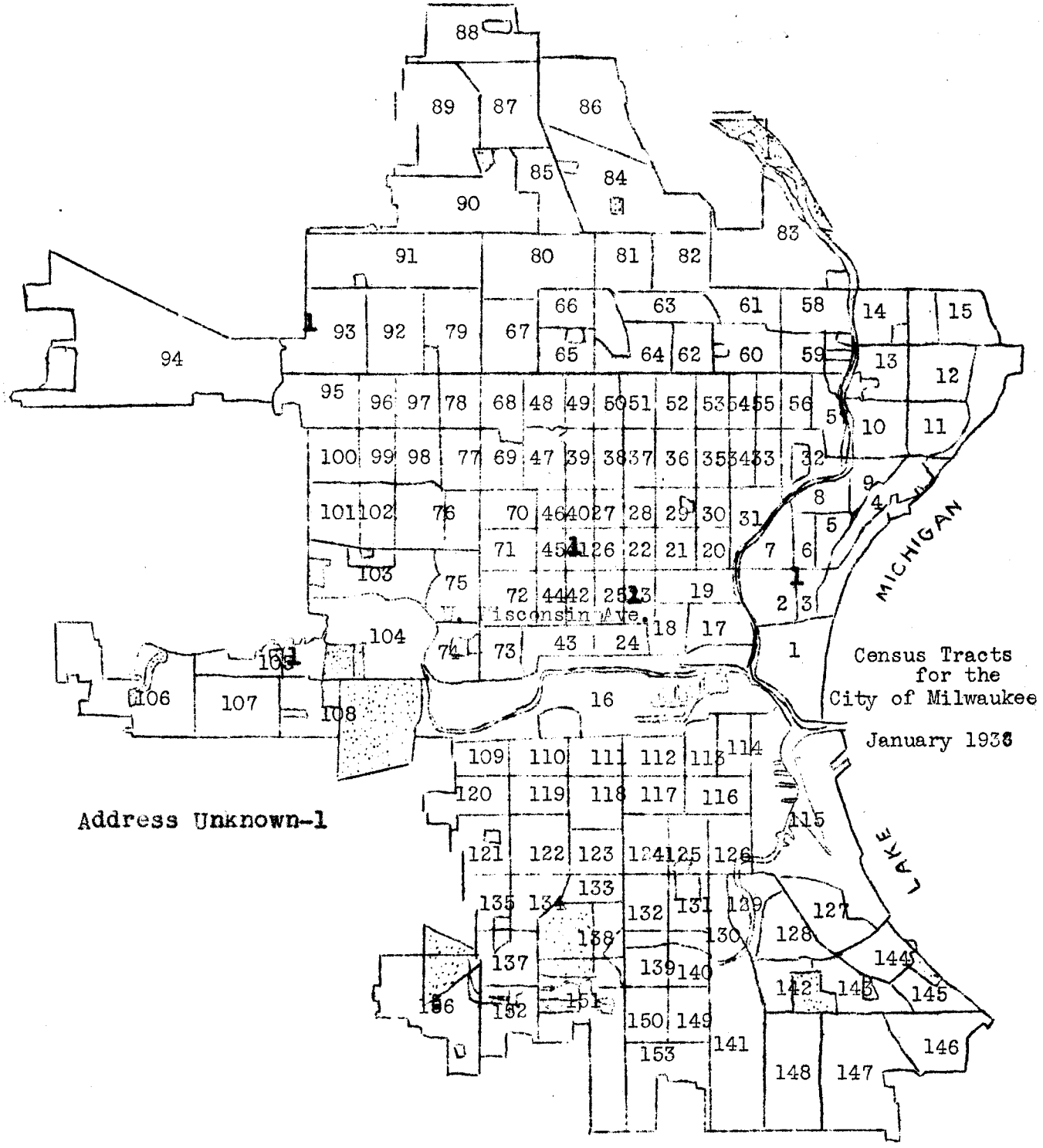
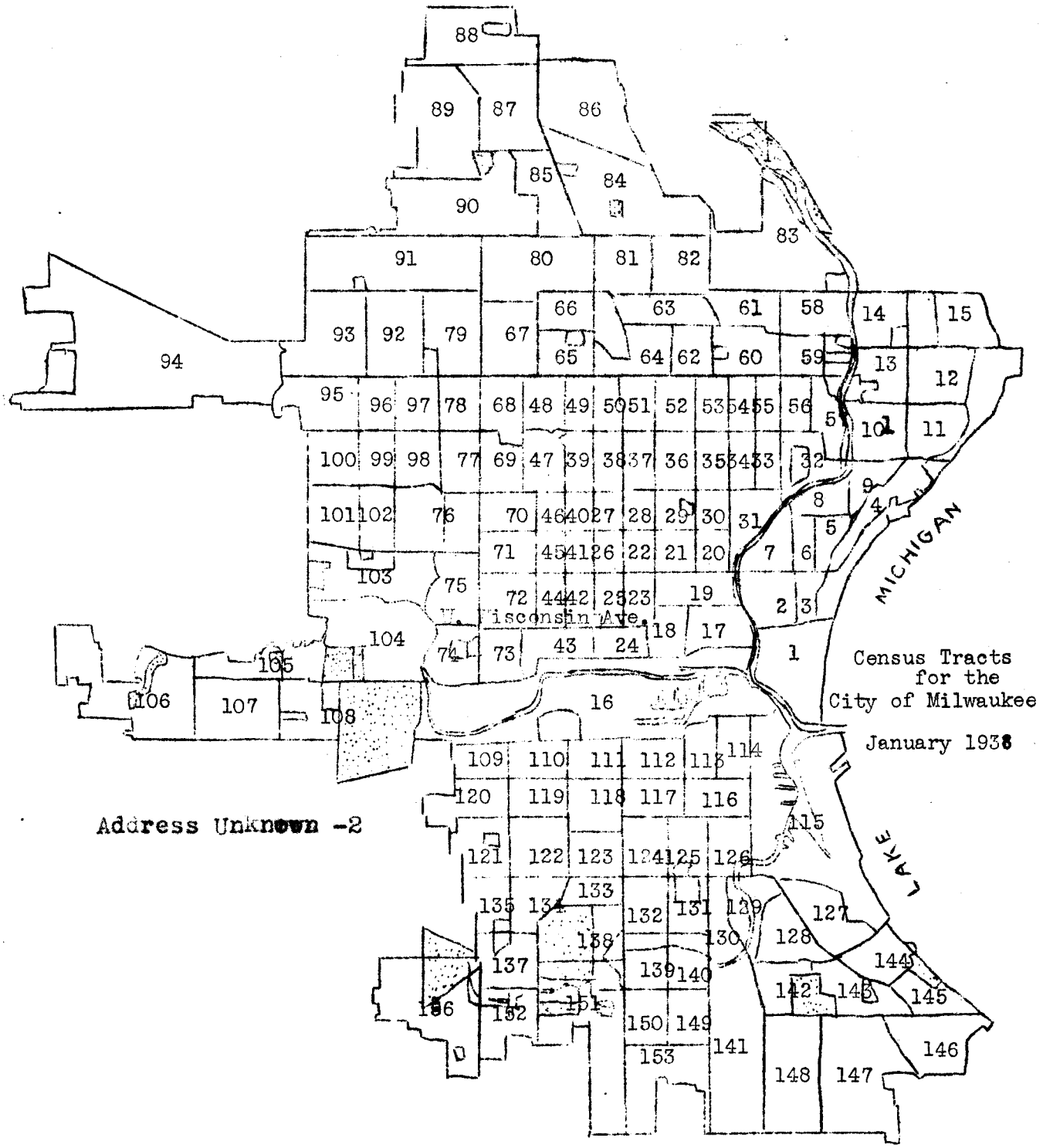


Illustration 54

Winnebago Northern County Asylum

Manic Depressive Psychoses



Census Tracts
for the
City of Milwaukee

January 1938

Address Unknown -2

Cudahy-1

The following county asylums had no cases of dementia praecox:

Brown County Asylum
Clark County Asylum
Eau Claire County Asylum
Fond du Lac County Asylum
Green County Asylum
Iowa County Asylum
Jefferson County Asylum
Manitowoc County Asylum
Marinette County Asylum
Richland County Asylum
Sheboygan County Asylum
Vernon County Asylum
Walworth County Asylum

Mendota State Hospital for the Insane

The following county asylums had no cases of manic-depressive:

Brown County Asylum
Chippewa County Asylum
Clark County Asylum
Columbia County Asylum
Eau Claire County Asylum
Grant County Asylum
Green County Asylum
Iowa County Asylum
Jefferson County Asylum
Manitowoc County Asylum
Racine County Asylum
Richland County Asylum
Rock County Asylum
Sauk County Asylum
Sheboygan County Asylum
Vernon County Asylum
Walworth County Asylum
Waukesha County Asylum

Mendota State Hospital for the Insane

The following county asylums had no first admissions from Milwaukee County for the period, January 1, 1925 through December 31, 1938:

St. Croix County Asylum
Dodge County Asylum
Douglas County Asylum
Dunn County Asylum
La Crosse County Asylum
Marathon County Asylum
Monroe County Asylum
Shawano County Asylum
Trempaleau County Asylum
Washington County Asylum
Waupaca County Asylum
Wood County Asylum

Mendota Memorial Hospital (out of existence)

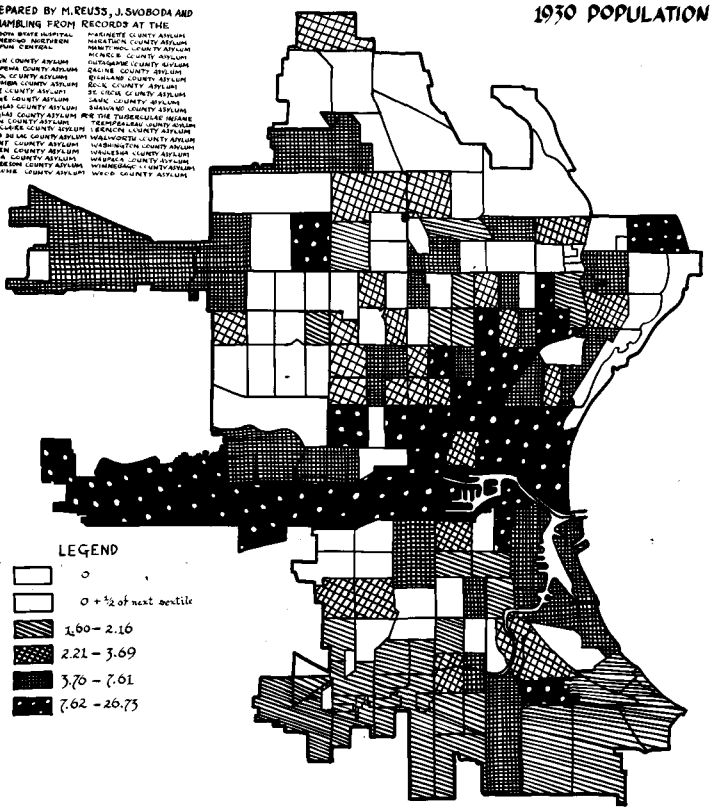
MAP VII

INSANITY RATES OF MILWAUKEE PATIENTS

IN 39 STATE AND COUNTY HOSPITALS OTHER THAN MILWAUKEE COUNTY 1925-1938 PER 100,000 ADULT POPULATION

PREPARED BY M. REUSS, J. SVOBODA AND S. HAMBLING FROM RECORDS AT THE

1930 POPULATION



MAP VII

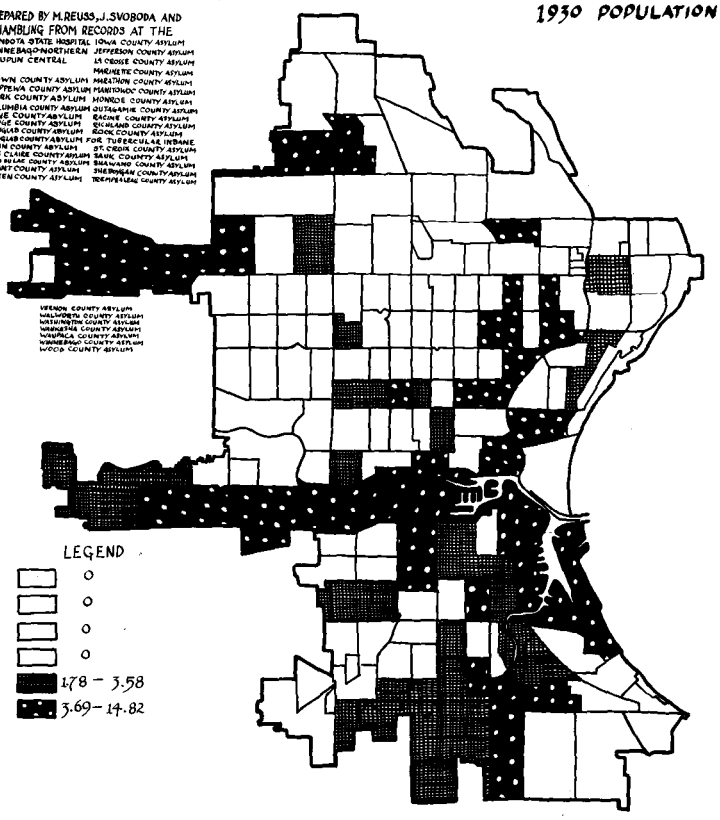
SCHIZOPHRENIA RATES (ALL TYPES) OF MILWAUKEE PATIENTS

IN 39 STATE AND COUNTY HOSPITALS OTHER THAN MILWAUKEE COUNTY 1925-1938 PER 100,000 ADULT POPULATION

1930 POPULATION

PREPARED BY M. REUSS, J. SVOBODA AND S. HAMBLING FROM RECORDS AT THE

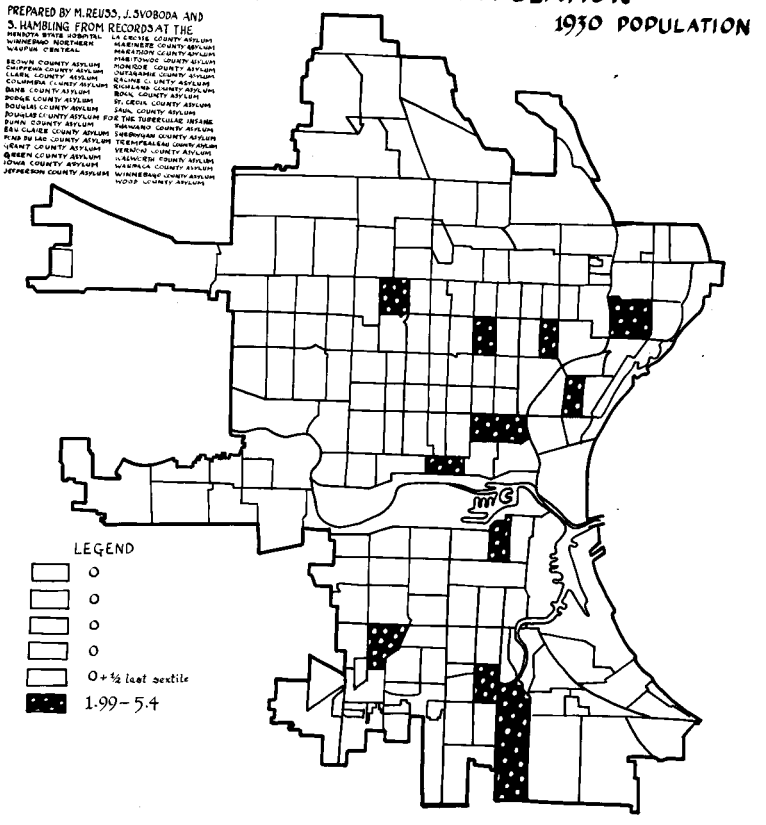
MENDOTA STATE HOSPITAL
WINNEBAGO-NORTHERN
WAUPUN CENTRAL
BROWN COUNTY ASYLUM
CHIPPEWA COUNTY ASYLUM
CLARK COUNTY ASYLUM
COLUMBIA COUNTY ASYLUM
DANE COUNTY ASYLUM
DODGE COUNTY ASYLUM
DOUGLAS COUNTY ASYLUM
DOUGLAS COUNTY ASYLUM
DUNN COUNTY ASYLUM
EAU CLAIRE COUNTY ASYLUM
FOND DU LAC COUNTY ASYLUM
GRANT COUNTY ASYLUM
GREEN COUNTY ASYLUM
IOWA COUNTY ASYLUM
JEFFERSON COUNTY ASYLUM
LA CROSSE COUNTY ASYLUM
MARINETTE COUNTY ASYLUM
MARATHON COUNTY ASYLUM
MANITOWOC COUNTY ASYLUM
MONROE COUNTY ASYLUM
OUTAGAMIE COUNTY ASYLUM
RACINE COUNTY ASYLUM
RICHLAND COUNTY ASYLUM
ROCK COUNTY ASYLUM
FOR TUBERCULAR INSANE
ST. CROIX COUNTY ASYLUM
SAUK COUNTY ASYLUM
SHAWANO COUNTY ASYLUM
SHEBOYGAN COUNTY ASYLUM
TREMPEALEAU COUNTY ASYLUM
VERNON COUNTY ASYLUM
WALWORTH COUNTY ASYLUM
WASHINGTON COUNTY ASYLUM
WAUKESHA COUNTY ASYLUM
WAUPACA COUNTY ASYLUM
WINNEBAGO COUNTY ASYLUM
WOOD COUNTY ASYLUM



MAP IX

MANIC-DEPRESSIVE RATES OF MILWAUKEE PATIENTS

IN 39 STATE AND COUNTY HOSPITALS OTHER THAN MILWAUKEE COUNTY 1925-1938 PER 100,000 ADULT POPULATION



Ecological Pattern of Mental Disease Based on Private Hospital Cases

Miss Mary Mulloy has made a study of mental disease patients from Milwaukee in private hospitals. The seven private hospitals included in the survey are: Alexian Brothers Hospital, Milwaukee Sanitarium, Normandale, Rogers Memorial, St. Mary's Hill, Shorewood Hospital, and Waukesha Springs Sanitarium.

Method

The data consisted of first admissions to private hospitals from January 1, 1925 through December 31, 1938. The method applied to private hospital data is the same as for county hospital data. The data are tabulated by census tracts. For comparisons adult population 21 years of age and over is used. This is secured by taking the 1930 estimate of the population in each census tract. Then the number of cases in each census tract. Then the number of cases in each census tract is divided by the 1930 adult population in the tract multiplied by fourteen (fourteen years, the period which the study covers). The resulting decimal is multiplied by 100,000 to secure the rate per 100,000. Census tracts have been combined in cases where the total population is less than 1,000. This occurs in 8 of the 153 tracts, reducing the total number of tracts to 145. The data is then put into an array ranging from the lowest to the highest number of cases. Sextiles were formed

by dividing the number of tracts into groups of 6. The first five sextiles contain 24 cases each, and the last sextile contains 25.

General Insanity Rates

The number of cases of total insanity include 1,249 cases plotted on census tract maps. Forty-two cases in addition had unknown addresses, and therefore could not be plotted. The data when placed in the form of an array show the rates for total insanity to vary from 1 per 100,000 population in census tract 82 to 113.8 per 100,000 in census tract 15. The private cases do not show a tendency to concentrate in the center of the city, but rather tend to emphasize the outlying districts.

Conclusions for Schizophrenia

The rates per 100,000 population of schizophrenia vary from 0 in the first sextile to 20.43 in census tract 42. The rates for schizophrenia are lowest in the private hospital series. The rates for schizophrenia when plotted on the census tract show none of the characteristic concentrations found with respect to private data. There is a wide scattering with few tracts located near the center of the city that fall into the highest sextile.

Conclusions for Manic-depressive

The incidence of the manic-depressive psychosis is found to be more prevalent among private hospital mental patients than schizophrenia. The range of rates is wider

for manic-depressive rates than schizophrenia. The rates for manic-depressive vary from 0 in the first sextile, and one-half of the second sextile (similar to schizophrenia) to 43.41 in census tract 15, which is considerably higher than 20.43 found in census tract 42 for schizophrenia. Manic-depressive rates show the same random pattern with no areas of concentration as does schizophrenia for private hospital cases.

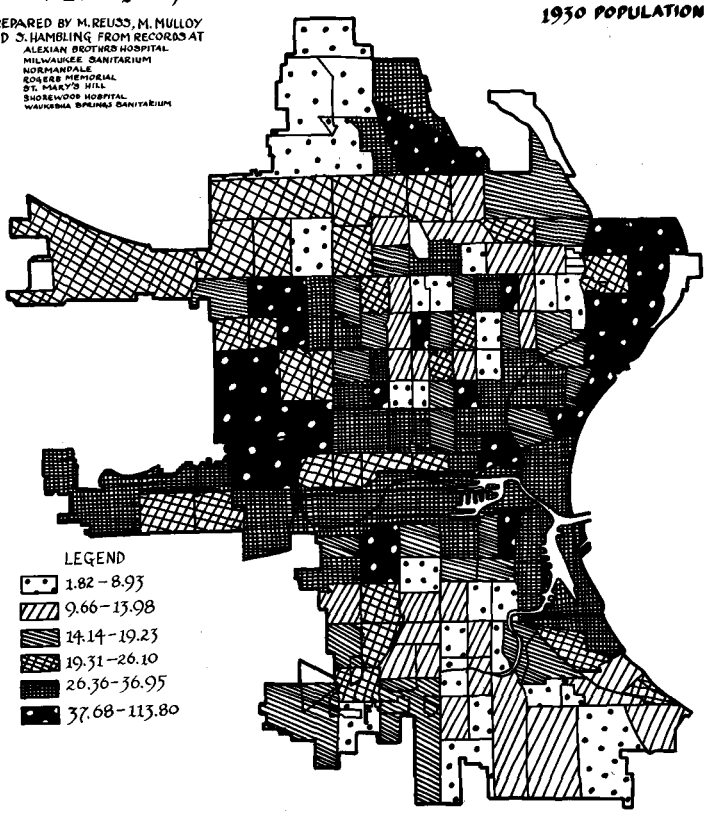
The private hospital cases show only a random pattern when total cases are plotted, when schizophrenia cases are plotted, and finally, when manic-depressive cases are plotted.

MAP X

MENTAL DISEASE RATES OF MILWAUKEE PATIENTS IN THE 7 WISCONSIN PRIVATE HOSPITALS 1925-1938 PER 100,000 ADULT POPULATION

1930 POPULATION

PREPARED BY M. REUSS, M. MULLOY AND S. HAMBLING FROM RECORDS AT
ALEXIAN BROTHRS HOSPITAL
MILWAUKEE SANITARIUM
NORMANDALE
ROHRR MEMORIAL
ST. MARY'S HILL
SHOREWOOD HOSPITAL
WAUKESHA SPRINGS SANITARIUM

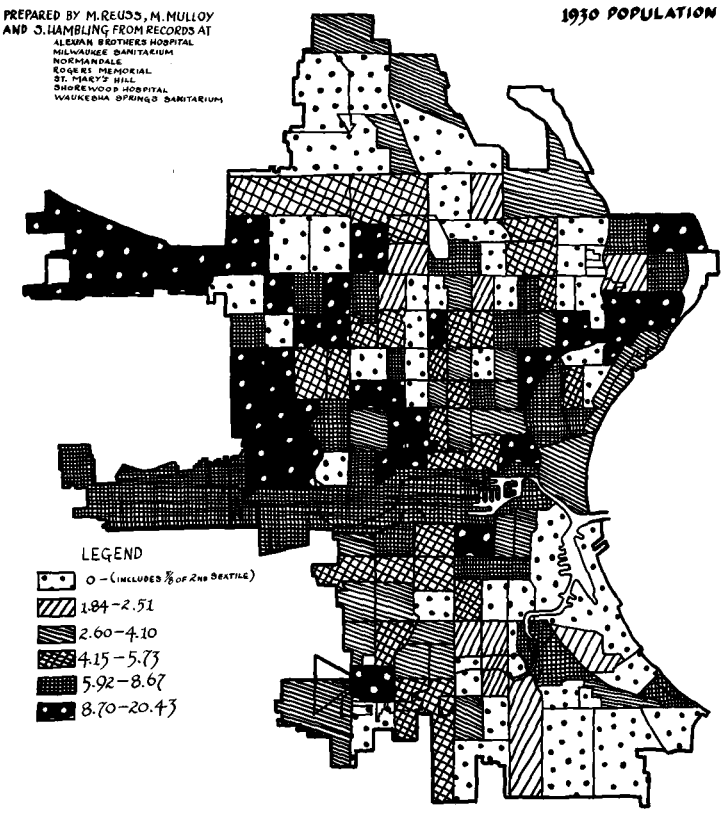


MAP XI

SCHIZOPHRENIA RATES (ALL TYPES) OF MILWAUKEE PATIENTS IN THE 7 WISCONSIN PRIVATE HOSPITALS 1925-1938 PER 100,000 ADULT POPULATION

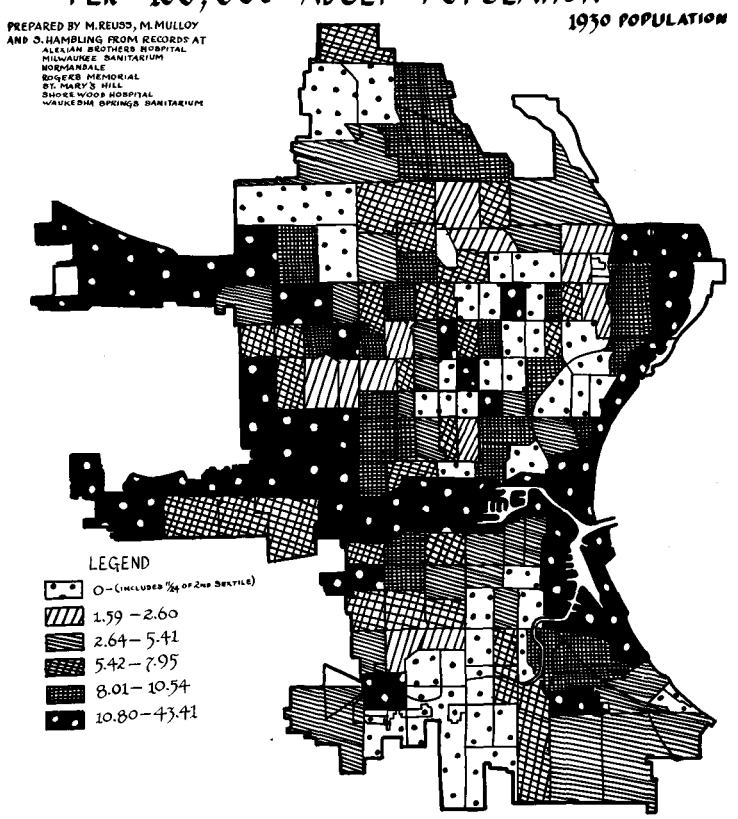
PREPARED BY M. REUSS, M. MULLOY AND J. HAMBLING FROM RECORDS AT
ALEXIAN BROTHERS HOSPITAL
MILWAUKEE SANITARIUM
NORMANDALE
ROGERS MEMORIAL
ST. MARY'S HILL
SHOREWOOD HOSPITAL
WAUKESHA SPRINGS SANITARIUM

1930 POPULATION



MAP XII

MANIC-DEPRESSIVE RATES OF MILWAUKEE PATIENTS IN THE 7 WISCONSIN PRIVATE HOSPITALS 1925-1938 PER 100,000 ADULT POPULATION



CONCLUSIONS

Conclusions

The maps based on the data of the Milwaukee County Hospitals, data of the state and county hospitals other than Milwaukee, and data of private hospitals show the complete findings for Milwaukee in regard to the incidence of mental disease. These combined maps are compiled from the individual ones. The three series of data are comparable because they are each expressed in rates per 100,000 of population.

General Insanity Rates

The total insanity map of Milwaukee is based upon 6,142 cases plotted on the census tract map of Milwaukee. The rates are per 100,000 adult population 21 years of age and over. The total number of unknown addresses is 311. The rates vary from 28.58 cases in census tract 144 to 429.90 in census tract 17, per 100,000 of population. The rates for general insanity tend to show a definite tendency to concentrate about the center of the city and in the downtown area. For example, census tracts 1, 2, 3, 4, 115, 114, 13, 112, 16, 17, 18, 19, all surround the central business district and are found in the last sextile including the highest rates. These areas tend to follow the Milwaukee and Menominee River areas. There is in addition to this central business district concentration, a spread to the western part of the city. The areas included in the last sextile are rooming house areas, areas in transition and industrial

areas. Areas included in the first and second sextile are found at the periphery of the city.

In comparison with Faris and Dunham's study in Chicago, the incidence of general insanity forms a definite ecological pattern in Milwaukee with the highest rates near the center of the city and resembles the Chicago findings rather closely. However, the total data when broken down into public and private cases does not show the same pattern for private cases as for public cases, and when the two are combined the resulting pattern differs from the pattern of private cases. For example, census tracts included in the last sextile follow no definite pattern for private cases, but are scattered throughout the city. Also, the rates for private cases are not as high as for public cases.

Conclusions for Schizophrenia

Since schizophrenia is a functional psychoses, the environment in the urban area where it occurs is of particular significance. The pattern formed when all cases of schizophrenia including state and county hospital cases and private county cases are plotted on census tract maps of Milwaukee shows a tendency for the areas of highest rates to be located in and near the center of the city with also an area extending to the west. By comparison with the study made of juvenile delinquency, it is of interest to note that the areas with high rates of juvenile delinquency are the same areas which have high rates of schizophrenia. If the total map is compared with the map showing private cases,

again the following difference is apparent, the private cases do not show the concentration at the center of the city that the total and public hospital data do. The schizophrenia rates toward the outer limits of the city are considerably lower than those at and near the center of the city, for all cases, both public and private.

Conclusions for Manic-depressive

Manic-depressive rates totally show a random pattern of distribution with some concentration in the center of the city. The private cases for both schizophrenia and manic-depressive show a typical pattern of distribution. Faris and Dunham in their study found no well-defined pattern for manic-depressive, for either public or private cases. When totals for manic-depressive are plotted, the rates vary from 0 to 57.05.

Finally, the Milwaukee study seems to confirm Faris and Dunham's study in Chicago. They find the same discrepancy between public and private hospital data. There is some question of differential diagnosis in public and private hospitals. Private hospitals tend to diagnose cases as manic-depressive more often than schizophrenia, and the opposite is true for public hospitals. Faris and Dunham also find a random pattern of distribution for manic-depressive and a well-defined area of concentration for schizophrenia. In the Milwaukee study, schizophrenia was found to be highest in the rooming house area, areas of transition, areas surrounding the Milwaukee and Menominee

rivers, and the industrial areas. For example, census tracts 16 (an area including "the valley"), 17 (negro district), 1 (the Italian district) and 115 (docks and industrial area) were included in the first sextile on all three of the composite maps showing total insanity, schizophrenia, and manic depressive. As a whole, manic depressive rates show an atypical pattern of distribution while schizophrenia rates fit very well the ecological pattern of the city.

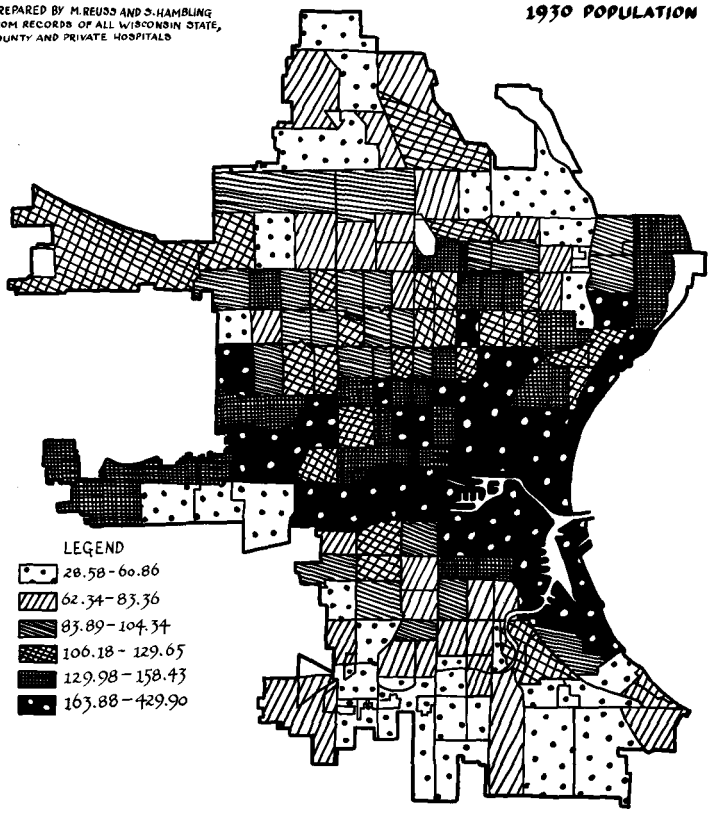
MAP I

TOTAL MENTAL DISEASE RATES OF MILWAUKEE PATIENTS

IN ALL 48 WISCONSIN PUBLIC AND PRIVATE HOSPITALS 1925-1938 PER 100,000 ADULT POPULATION

PREPARED BY M. REUSS AND S. HAMBLING FROM RECORDS OF ALL WISCONSIN STATE, COUNTY AND PRIVATE HOSPITALS

1930 POPULATION

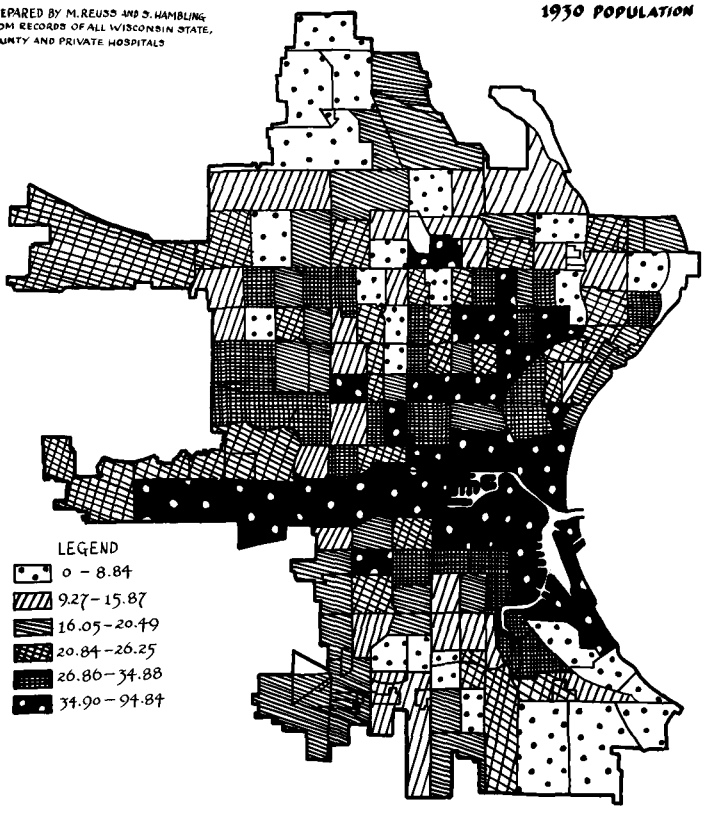


MAP II

TOTAL SCHIZOPHRENIA RATES (ALL TYPES) OF MILWAUKEE PATIENTS IN ALL 48 WISCONSIN PUBLIC AND PRIVATE HOSPITALS 1925-1938 PER 100,000 ADULT POPULATION

PREPARED BY M. REUSS AND S. HAMBLING FROM RECORDS OF ALL WISCONSIN STATE, COUNTY AND PRIVATE HOSPITALS

1930 POPULATION

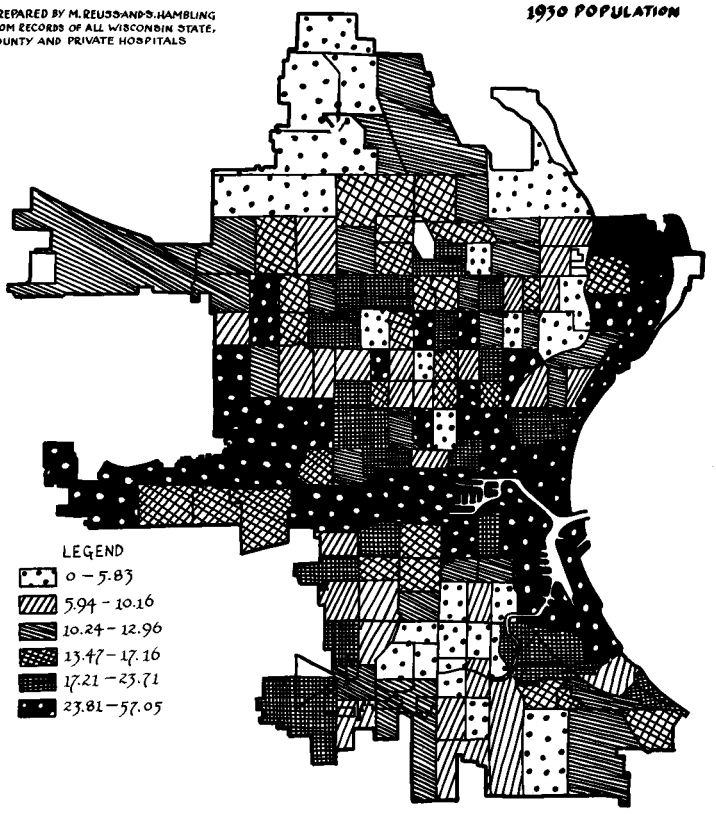


MAP III

TOTAL MANIC-DEPRESSIVE RATES OF MILWAUKEE PATIENTS IN ALL 48 WISCONSIN PUBLIC AND PRIVATE HOSPITALS 1925-1938 PER 100,000 ADULT POPULATION

PREPARED BY M. REUSS AND S. HAMBLING FROM RECORDS OF ALL WISCONSIN STATE, COUNTY AND PRIVATE HOSPITALS

1930 POPULATION



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APPENDIX

Total Cases of Manic-Depressive

Census Tract	Hospitals: Milwaukee County	Hospitals: Other County	Hospitals: Private	TOTAL
1	19.38	0	16.23	35.61
2	15.26	0	4.36	19.62
3	7.82	0	10.43	18.25
4	0	31.56	0	31.56
5	7.32	0	0	7.32
6	8.60	2.86	0	11.46
7	6.57	0	0	6.57
8	11.78	0	0	11.78
9	3.03	0	9.09	12.12
10	10.83	5.4	8.13	24.36
11	8.34	0	19.47	27.81
12	2.84	0	28.42	31.29
13	6.08	0	8.12	14.20
14	3.07	0	18.41	21.48
15	5.42	0	43.31	48.83
16	20.74	0	14.85	35.59
17	31.33	0	0	31.33
18	10.54	0	10.54	21.08
19	12.10	3.02	9.08	24.20
20	12.31	0	4.11	16.42
21	21.32	0	12.18	33.50
22	13.52	0	0	13.52
23	3.48	0	1.74	5.22
24	5.53	2.76	0	8.29
25	21.11	0	7.92	29.03
26	9.04	0	0	9.04
27	5.64	0	0	5.64
28	3.17	0	12.68	15.85
29	8.82	0	0	8.82
30	19.71	0	0	19.71
31	33.46	0	9.55	43.01
32	0	0	0	0
33	2.82	2.82	5.64	11.28
34	3.69	0	0	3.69
35	11.05	0	0	11.05
36	22.53	3.21	9.66	35.40
37	12.96	0	6.48	19.44
38	2.89	0	20.92	23.81
39	10.38	0	5.11	15.49
40	6.77	0	3.39	10.16
41	9.64	0	0	9.64
42	2.91	0	2.92	5.83
43	14.50	0	5.80	20.30
44	11.52	0	8.92	20.44

Total Cases of Manic-Depressive

Hospitals

Census Tract	Milwaukee County	Other County	Private	TOTAL
45	10.91	0	3.62	14.53
46	15.90	0	7.95	23.85
47	2.34	0	2.34	4.68
48	8.84	2.21	8.84	17.68
49	17.79	0	5.92	23.71
50	8.92	0	5.91	14.83
51	14.48	0	0	14.48
52	10.28	0	0	10.28
53	11.62	0	11.62	23.24
54	7.95	0	1.59	9.54
55	8.32	0	8.32	16.64
56	3.28	0	6.56	9.84
57	0	0	2.05	2.05
58	5.20	0	2.60	7.80
59	6.44	0	3.22	9.66
60	10.80	0	0	10.80
61	7.98	0	2.66	10.64
62	2.83	0	0	2.83
63	12.88	0	2.14	15.02
64	13.00	0	6.50	19.50
65	8.59	0	8.57	17.16
66	6.78	0	7.01	13.79
67	7.14	0	5.35	12.49
68	15.82	0	6.32	22.14
69	12.27	0	9.81	22.08
70	4.81	0	2.40	7.21
71	7.45	0	9.93	17.38
72	10.12	0	8.09	18.21
73	4.29	0	8.58	12.87
74	3.76	0	11.30	15.06
75	8.59	0	25.80	34.39
76	4.73	0	2.36	7.09
77	4.06	0	14.22	18.28
78	5.24	0	5.24	10.48
79	9.76	0	0	9.76
80	9.18	0	6.88	16.06
81	12.04	0	2.40	14.44
82	6.04	0	6.02	12.06
83	0	0	2.64	2.64
84	4.26	0	8.52	12.78
85-86	2.92	0	8.78	11.70
87	4.81	0	0	4.81
88	0	0	5.66	5.66
89	0	0	0	0
90	0	0	3.90	3.90

Total Cases of Manic-Depressive

Hospitals

Census Tract	Milwaukee County	Other County	Private	TOTAL
91	0	0	0	0
92	5.70	0	8.58	14.28
93-94	2.16	0	10.80	12.96
95	8.88	0	2.99	11.87
96	4.98	0	19.95	24.93
97	0	0	13.47	13.47
98	5.22	0	10.44	15.66
99	19.79	0	7.90	27.69
100	2.79	0	5.42	8.21
101	18.78	0	16.10	34.88
102	3.55	0	7.11	10.66
103	20.44	0	11.65	32.09
104	22.85	0	34.20	57.05
105-106	26.26	0	13.13	39.39
107-108	7.98	0	7.09	15.07
109	2.89	0	5.80	8.69
110	11.20	0	8.01	19.21
111	11.08	0	5.54	16.62
112	25.23	0	5.04	30.27
113	12.66	3.14	3.17	18.97
114	22.58	0	3.22	25.80
115	28.88	0	21.66	50.54
116	10.96	0	0	10.96
117	7.89	0	3.94	11.83
118	10.37	0	4.15	14.52
119	4.58	0	9.35	13.93
120	8.38	0	11.19	19.57
121	2.76	0	5.55	8.31
122	3.01	0	6.02	9.03
123	5.94	0	5.93	11.87
124	3.44	0	0	3.44
125	3.90	0	3.91	7.81
126	4.19	0	0	4.19
127	13.07	0	8.72	21.79
128-129	10.75	0	8.95	19.70
130	4.69	0	0	4.69
131	2.51	0	2.51	5.02
132	0	0	0	0
133	2.69	0	2.60	5.29
134	2.50	2.50	2.50	7.50
135-136	14.34	0	2.87	17.21
137	0	0	10.88	10.88
138	3.48	0	0	3.48
139	4.55	0	0	4.55

Total Cases of Manic-Depressive

Hospitals

Census Tract	Milwaukee County	Other County	Private	TOTAL
140-141	1.98	1.985	1.97	5.94
142	0	0	16.25	16.25
143	6.95	0	3.51	10.46
144	3.51	0	3.58	7.15
145	21.43	0	0	21.43
146	10.43	0	3.49	13.92
147	5.12	0	5.12	10.24
148	0	0	5.41	5.41
149	0	0	0	0
150	0	0	6.72	6.72
151	10.32	0	0	10.32
152-153	6.58	0	0	6.58

Total Cases of Dementia Praecox

Census Tract	Hospitals: Milwaukee County	Hospitals: Other County	Private	TOTAL
1	42.20	0	3.24	45.44
2	19.62	8.72	6.54	34.88
3	31.31	10.43	7.82	49.56
4	15.78	0	3.15	18.93
5	7.32	2.44	0	9.76
6	20.08	0	5.73	25.81
7	22.66	0	6.80	29.46
8	25.93	0	0	25.93
9	9.09	3.03	9.09	21.21
10	13.54	0	10.83	24.37
11	13.09	0	16.69	29.78
12	0	0	8.53	8.53
13	10.14	2.02	2.02	14.18
14	15.34	0	6.13	21.47
15	0	0	16.25	16.25
16	74.10	14.82	5.92	94.84
17	58.21	8.95	8.95	76.11
18	44.80	0	5.27	50.07
19	15.13	0	3.02	18.15
20	57.45	8.20	4.10	69.75
21	30.45	6.09	6.09	42.63
22	32.86	0	5.47	38.33
23	24.37	1.74	3.48	29.59
24	24.88	5.46	5.52	35.86
25	26.39	0	5.27	31.66
26	36.19	3.01	3.01	42.21
27	25.70	0	5.64	31.34
28	19.02	0	3.17	22.19
29	19.87	0	0	19.87
30	22.53	0	2.81	25.34
31	19.11	9.55	9.55	38.21
32	28.66	4.77	9.55	42.98
33	25.38	0	2.82	28.20
34	36.99	3.69	7.39	48.07
35	27.07	3.81	7.62	38.50
36	38.62	0	4.83	43.45
37	17.28	0	4.32	21.60
38	20.29	0	8.75	29.04
39	2.59	0	0	2.59
40	1.69	0	0	1.69
41	16.08	3.21	0	19.29
42	23.35	0	20.43	43.78
43	14.50	0	8.70	23.20
44	20.16	0	11.23	31.39

Total Cases of Dementia Praecox

Census Tract	Hospitals: Milwaukee County	Hospitals: Other County	Private	TOTAL
45	7.27	7.27	10.91	25.45
46	15.90	0	7.95	23.85
47	21.11	0	4.69	25.80
48	6.63	0	2.21	8.84
49	12.18	0	0	12.18
50	20.81	0	0	20.81
51	0	0	2.89	2.89
52	23.03	0	2.05	25.08
53	29.03	0	0	29.03
54	31.83	3.97	7.95	43.75
55	12.48	0	4.16	16.64
56	22.66	6.56	0	29.22
57	4.10	0	0	4.10
58	2.60	0	0	2.60
59	12.28	0	0	12.28
60	17.58	0	4.39	21.97
61	7.98	5.32	5.32	18.62
62	11.35	0	0	11.35
63	14.19	0	0	14.19
64	30.33	0	8.67	39.00
65	2.14	0	2.14	4.28
66	9.04	0	4.52	13.56
67	10.71	0	10.71	21.42
68	22.12	0	6.32	28.44
69	7.36	2.45	4.91	14.72
70	9.64	0	0	9.64
71	32.30	2.48	9.93	44.71
72	10.12	0	4.04	14.16
73	17.16	2.14	8.58	27.88
74	11.30	0	0	11.30
75	21.56	0	8.62	30.18
76	14.20	0	4.49	18.69
77	6.09	0	10.16	16.25
78	23.09	0	10.49	33.58
79	16.59	3.25	0	19.84
80	11.48	0	4.58	16.06
81	7.22	0	0	7.22
82	10.06	0	2.01	12.07
83	13.23	0	2.64	15.87
84	17.05	0	0	17.05
85-86	17.57	0	2.92	20.49
87	0	0	0	0
88	2.98	0	2.68	5.66
89	5.75	0	0	5.75
90	0	3.90	0	3.90

Total Cases of Dementia Praecox

Census Tract	Hospitals: Milwaukee County	Hospitals: Other County	Hospitals: Private	TOTAL
91	5.01	0	5.01	10.02
92	2.85	0	0	2.85
93-94	8.42	4.32	10.80	23.54
95	11.85	0	0	11.85
96	9.97	0	19.95	29.92
97	10.88	0	6.72	17.60
98	10.45	0	13.05	23.50
99	0	0	0	0
100	2.71	0	8.12	10.83
101	21.47	0	10.73	32.20
102	14.23	0	17.78	32.01
103	14.60	0	14.60	29.20
104	11.42	0	10.52	21.94
105-106	16.412	3.28	6.56	26.25
107-108	31.94	13.31	7.96	53.21
109	11.59	0	2.89	14.48
110	11.24	0	8.01	19.25
111	11.08	5.54	5.54	22.16
112	27.75	2.52	15.13	45.40
113	31.73	0	3.17	34.90
114	48.39	9.67	3.22	61.28
115	57.77	7.23	0	65.00
116	20.10	1.83	7.16	29.09
117	17.75	1.97	7.89	27.61
118	20.75	4.15	4.15	29.05
119	16.94	0	4.68	21.62
120	13.99	0	5.58	19.57
121	13.80	2.76	2.82	19.38
122	16.57	3.01	3.01	22.59
123	19.80	0	0	19.80
124	8.47	0	5.10	13.57
125	13.65	5.85	0	19.50
126	25.03	2.08	0	27.11
127	6.53	0	2.17	8.70
128-129	16.12	3.58	7.16	26.86
130	9.38	0	0	9.38
131	12.55	0	2.51	15.06
132	9.10	1.82	1.84	12.76
133	13.45	0	2.60	16.05
134	5.00	0	5.00	10.00
135-136	14.34	0	2.87	17.21
137	5.44	0	10.88	16.32
138	0	0	3.49	3.49
139	2.27	2.27	0	4.54

Total Cases of Dementia Praecox

Census Tract	Hospitals: Milwaukee County	Hospitals: Other County	Hospitals: Private	TOTAL
140-141	17.74	3.97	1.97	23.68
142	10.83	10.83	0	21.66
143	6.99	0	3.51	10.50
144	0	0	0	0
145	0	0	8.57	8.57
146	6.99	0	0	6.99
147	0	0	0	0
148	5.41	0	0	5.41
149	2.96	0	0	2.96
150	13.54	0	3.39	16.93
151	5.16	0	5.15	10.31
152-153	16.46	0	0	16.46

Total Cases of Insanity

Hospitals

Census Tract	Milwaukee County	Other County	Private	TOTAL
1	146.07	9.74	29.22	185.03
2	194.05	13.08	15.26	222.39
3	120.04	9.46	46.97	176.48
4	72.59	0	91.53	164.12
5	87.88	7.32	14.64	109.85
6	120.48	2.86	34.13	157.47
7	95.20	6.80	29.46	131.46
8	115.51	0	14.14	129.65
9	69.70	6.06	39.39	115.15
10	135.48	2.70	37.93	176.11
11	50.08	0	92.82	141.90
12	54.06	0	82.52	136.50
13	71.04	4.05	22.24	97.33
14	30.69	0	73.65	104.34
15	27.09	10.83	113.80	151.72
16	314.20	26.73	35.86	376.79
17	371.69	17.91	40.30	429.90
18	173.95	2.60	26.40	202.95
19	190.67	12.10	33.29	236.06
20	201.10	16.42	28.78	246.30
21	188.85	18.27	42.64	249.76
22	145.15	2.73	19.17	167.05
23	125.35	8.76	19.15	153.26
24	110.61	13.82	24.88	149.31
25	118.75	8.18	36.95	163.88
26	138.75	3.01	6.32	148.08
27	76.25	2.82	11.29	90.36
28	117.30	9.51	22.19	149.00
29	110.36	6.62	11.03	128.01
30	160.54	22.53	5.60	188.67
31	133.77	9.55	28.66	171.98
32	98.73	14.33	16.92	129.98
33	92.47	6.26	11.09	109.82
34	110.51	3.69	15.21	129.41
35	113.19	7.62	4.52	125.33
36	143.24	1.60	19.31	164.15
37	101.52	2.16	19.23	122.91
38	81.13	0	37.68	118.80
39	67.50	2.59	13.86	83.95
40	108.37	6.77	13.54	128.68
41	125.42	3.21	2.90	131.53
42	148.87	8.75	32.10	189.72
43	121.80	0	26.10	147.90
44	123.84	0	34.59	158.43

Total Cases of Insanity

Census Tract	Hospitals: Milwaukee County	Hospitals: Other County	Private	TOTAL
45	193.12	7.27	48.41	248.80
46	71.58	3.97	27.80	103.35
47	77.25	0	18.76	96.01
48	66.36	2.21	19.88	88.45
49	59.20	0	11.86	71.06
50	95.15	5.09	5.94	106.18
51	113.05	0	5.798	118.85
52	111.02	2.05	18.09	131.16
53	122.05	2.90	31.97	156.92
54	91.52	3.97	43.77	139.26
55	112.38	0	12.49	124.87
56	45.97	9.85	6.52	62.34
57	38.96	2.05	4.10	45.11
58	36.49	2.60	15.64	54.73
59	64.43	0	9.66	74.19
60	76.92	0	13.12	90.04
61	39.90	5.32	23.93	69.15
62	96.52	0	5.67	102.19
63	92.31	2.14	12.86	107.31
64	99.68	4.33	28.12	132.13
65	62.14	0	17.16	79.30
66	56.74	0	13.56	70.30
67	41.06	1.78	21.51	64.35
68	75.85	0	18.01	93.86
69	83.48	2.45	29.48	115.41
70	77.11	2.40	17.18	96.69
71	109.31	2.48	29.80	141.59
72	87.01	8.09	30.35	125.45
73	122.07	4.20	25.74	152.01
74	94.23	3.76	22.61	120.60
75	142.42	0	56.70	199.12
76	94.73	0	23.06	117.79
77	67.05	2.03	34.54	103.62
78	81.34	0	28.86	110.20
79	55.64	9.76	6.50	71.90
80	68.58	2.29	21.10	91.97
81	48.16	2.40	21.67	72.23
82	46.13	0	12.08	58.21
83	44.99	0	15.87	60.86
84	62.49	0	44.10	106.59
85-86	43.94	0	26.36	70.30
87	28.89	0	4.816	33.71
88	23.85	2.98	8.93	35.76
89	57.51	0	5.75	63.26

Total Cases of Insanity

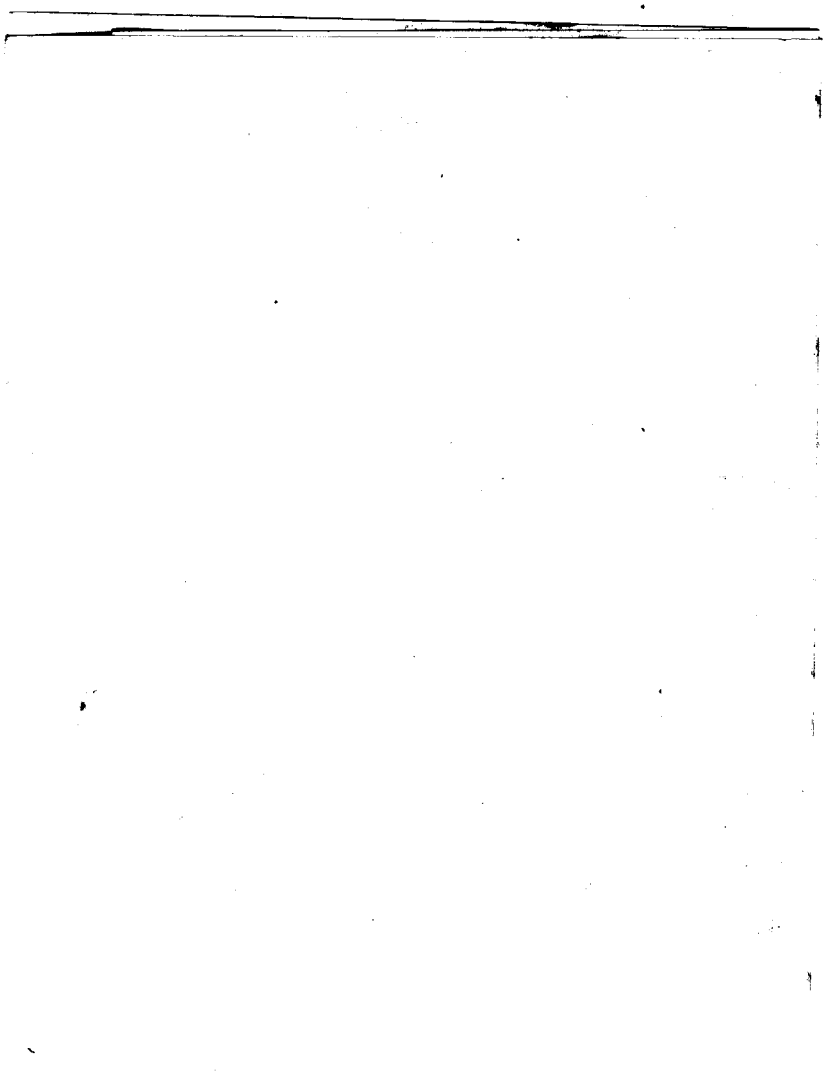
Hospitals

Census Tract	Milwaukee County	Other County	Private	TOTAL
90	35.18	3.90	3.90	42.98
91	65.16	0	25.06	91.22
92	34.23	0	22.80	57.03
93-94	77.79	6.48	25.93	110.20
95	62.22	3.90	17.77	83.89
96	74.82	0	69.82	144.64
97	43.69	0	57.14	100.83
98	52.23	0	41.78	94.01
99	63.31	0	19.76	83.07
100	29.80	2.70	21.64	54.14
101	110.05	0	56.62	166.67
102	55.10	0	46.24	101.34
103	119.72	0	37.93	157.65
104	110.47	7.61	99.09	217.17
105-106	88.62	9.84	32.87	131.33
107-108	13.31	18.63	21.20	53.14
109	60.89	0	14.49	75.38
110	84.03	0	42.01	126.04
111	74.83	5.54	19.12	99.49
112	153.90	2.52	30.27	186.69
113	165.00	0	15.86	180.86
114	219.38	9.67	64.52	293.57
115	216.67	7.22	35.10	258.99
116	120.63	1.82	16.45	138.90
117	112.51	1.97	17.75	132.23
118	66.41	4.15	8.30	78.86
119	44.42	0	79.26	123.68
120	61.46	0	36.03	97.49
121	38.65	2.75	11.04	52.44
122	63.25	3.01	25.46	91.72
123	69.31	0	13.82	83.13
124	74.90	0	13.60	88.50
125	70.23	5.85	5.08	81.16
126	77.19	2.08	2.08	81.35
127	71.27	0	21.78	93.05
128-129	107.51	3.58	17.91	129.00
130	49.29	0	2.34	51.63
131	55.25	0	12.55	67.80
132	60.08	1.81	1.82	63.71
133	86.09	0	10.73	96.82
134	35.03	0	22.52	57.55
135-136	54.52	0	14.64	69.16
137	16.32	0	21.76	38.08
138	62.90	0	13.97	76.87
139	25.04	2.27	2.04	29.35

Total Cases of Insanity

Census Tract	Hospitals: Milwaukee County	Hospitals: Other County	Hospitals: Private	TOTAL
140-141	65.50	3.97	13.89	83.36
142	37.82	10.83	6.255	54.91
143	31.46	0	13.98	45.44
144	17.86	0	10.72	28.58
145	55.73	0	21.43	77.16
146	59.22	0	10.49	69.71
147	30.72	0	5.12	35.84
148	43.30	0	10.83	54.13
149	32.88	0	2.99	35.57
150	42.78	0	13.53	56.31
151	36.12	0	15.43	51.55
152-153	49.39	0	6.58	55.97

Sample Map

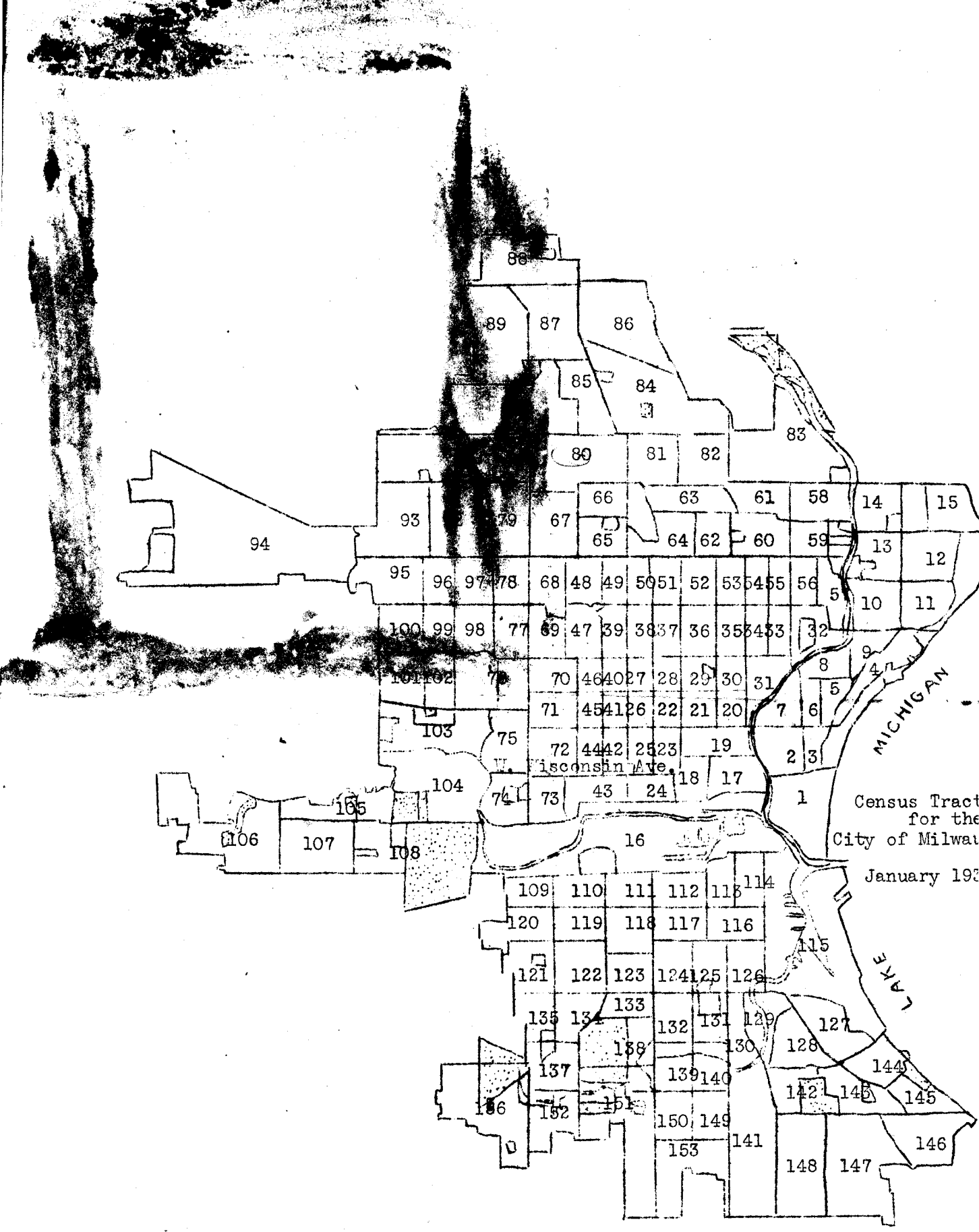


Sample Card

Hospital: ~~Chronic~~ Acute Admission Date

1. Initials
2. Street Address
3. City or Town
4. County: Milwaukee
5. Hospital Case No.
6. Psychosis & sub - type

7. Sex: male female
8. Date of Birth
9. Race: White Black Yellow



Census Tract
for the
City of Milwau

January 193