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A B S T R A C T

THE DEMOGRAPHY OF THE CORN BELT OF THE NORTH AMERICAN MIDDLE WEST

The objective of research was a detailed analysis of the demography of the Corn Belt at the time of the latest available census. This necessitated a description of the spatial variation in demographic characteristics together with a consideration of the causative factors involved and the relationship between demographic features and other socio-economic phenomena in the distinctive agricultural economy of the Corn Belt.

Despite the distinctiveness of the Corn Belt the area was shown to be in no sense a uniform demographic region. In all aspects of demography significant contrasts occurred spatially and these were shown to be related to numerous differential factors of which the most important were residence, cultural composition, age and sex, occupational characteristics and contrasts in the date and nature of the initial occupance. Of these the type of residence was found to be the most consistent differential factor in demographic characteristics.

In addition, migration was shown to be a demographic constant in the evolution of the population of the Corn Belt

and in particular was a vital factor in the development of the present complex pattern of distribution and density. The latter was shown to be a composite structure in which an irregular urban and suburban distribution was superimposed on a relatively uniform distribution of rural population composed of the agricultural labour force and rural service centres.

The evolution of this composite pattern was related to the differential growth of urban and rural population and involved considerable redistribution by internal migration. The result has been a concentration of the majority of the population in urban centres in activities unrelated directly to the agricultural economy, while in the basic rural distribution rural depopulation was shown to have regional significance.

I.B. THOMPSON,
December, 1960.

A STUDY OF THE DEMOGRAPHY OF THE CORN BELT OF THE NORTH AMERICAN MIDDLE WEST

A thesis submitted for the degree of Doctor of Philosophy in the University of Durham by I.B. Thompson, B.A. Dunelm, M.A. Indiana.

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INTRODUCTION

The value of a geographical approach to the study of human populations has become firmly recognised and has given validity to the concept of population geography. It is the purpose of population geography not only to describe the areal variations in the demographic characteristics of a population but also to attempt an interpretation of the organic relationships between a given population and the features of the physical and cultural environment in which it is distributed.

There has been a tendency among social scientists to treat census data in an abstract, theoretical and purely statistical manner without reference to the realities of the geographical setting and its influence on population characteristics. Moreover in the attempt to establish demographic principles there has been a reliance on enunciation from census data at the national level, representing the averaging of a great number of contrasted socio-economic environments, rather than an anxiety to test the validity of theoretical situations by reference to the detailed characteristics of the component parts of a given

total population. It is the Writer's contention that the study of the population geography of a distinctive socio-economic environment is a corrective to both these deficiencies and is the contribution that the geographer is most fitted to make to the deeper understanding of demographic phenomena.

Despite the availability of the most comprehensive census enumeration in the world, thelack of regional population studies in the United States is remarkable. In fact a systematic detailed description of the national population was not achieved until 1959 with the publication of "The Population of the United States", by D.J. Bogue, Associate Director of the Scripps Foundation for Research in Population Distribution at Miami University at Oxford, Ohio.[1] Even this publication, some nine hundred pages in content, contained only eleven maps of which three alone achieved a finer areal breakdown than the State. The lack of detailed regional studies is a real obstacle to the fuller understanding of the demographic characteristics of the United States and attention has been drawn to this situation by Bogue himself.

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1. Bogue, D.J. "The Population of the United States". Free Press of Glencoe, Illinois, 1959.

"The demographers who will place the most valid and lasting interpretation upon this remarkable set of population changes will not be those who operate at the national level, but those who insist upon breaking the nation up into its parts and who relate population changes to environmental changes." [2]

It was with this lack of detailed regional population study in mind that the Writer commenced research into the demography of the Corn Belt of the Middle West in the belief that its originality lay in the contribution towards the removal of a serious omission in the literature on the population of the United States. Moreover, the approach adopted was designed to further the argument for interpreting demographic material in the context of its environmental setting. The Corn Belt was selected for demographic research by virtue of its distinctiveness as a socio-economic environment arising from the degree of consistency in the basic agricultural economy. However, within this structure of a characteristic agriculture considerable variety exists in the Corn Belt in physical features and economic activity and therefore afforded an ideal case study for research into the relationship between population characteristics and the factors of the environment.

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2. Bogue, D.J. "The Geography of Recent Population Changes in the United States". Annals of the Association of American Geographers, Volume 44, 1954.

For convenience of arrangement the thesis has been subdivided into three sections but this does not imply a rigid division of material or treatment. On the contrary, a continuum of inter-related and inter-acting factors is implicit in the mechanism of population growth. The three major sections are however contrasted in emphasis and a statement of the purpose and content precedes each section. The essential approach in demographic research must be to elaborate, stage by stage, the conditions which have determined the characteristics of population evolution crystallised in the present day distribution and density, and to this extent the analysis must be a cumulative process. Accordingly each chapter includes a summary of the major findings which must be "carried forward" to subsequent chapters.

The latest available census material was the 1950 enumeration which formed the primary statistical reference for the entire work.[3] Obviously, since 1950 important demographic changes have occurred since population is by no means static. Rather than consider subsequent population estimates which did not facilitate a detailed breakdown and were based on extrapolation and sampling techniques, it has

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3. U.S. Bureau of the Census, Census of Population, 1950. Volume ii. "Characteristics of the Population". Parts 1,13,14,15,16,17,22,23,25,27,35,41,49. Washington D.C.1952.

been considered that a more valuable contribution to the understanding of the demographic characteristics of the Corn Belt would by made by a detailed analysis of the 1950 situation. In this way a more complete comparison with the 1960 census data may be facilitated when it becomes available.

In an area as extensive as the Corn Belt the amount of detail that can be described within the scope of a dissertation is limited. To alleviate this limitation maps were constructed and tables compiled in the fullest possible detail for the sake of completeness even though generalisation was inevitable in the written analysis. Further, although the basis of the thesis was the Writer's personal calculations, running to some scores of thousands and for which he must take full responsibility, a considerable volume of literature was available on the Middle West in general, on specific demographic topics and on related matters. Reference was made to published material and has been indicated where appropriate in the text and in concise form as a Bibliography.

That there are inadequacies in the content and presentation the Writer is well aware and this partly stems from limitations imposed by the nature of the available census material and also problems inherent in the treatment

of so extensive an area. Consolation is gained from the fact that to the Writer's personal knowledge no comprehensive treatment of the evolution of the demographic characteristics of this heart land of the North American continent exists and the present work is considered a modest contribution to the fuller understanding of the regional geography of the United States.

Department of Geography,
Leeds University,
NOVEMBER, 1960.

SECTION ONE

BACKGROUND STUDIES IN THE EVOLUTION OF THE POPULATION GEOGRAPHY

It is the purpose of the primary section of the thesis to present a aeries of background studies to provide an introduction and control to subsequent detailed analysis.

Chapter 1 seeks to establish the basic control of definition and sub-division of the Corn Belt. The precise areal extent of the Corn Belt is defined and various sub-divisions proposed. In addition the most important census definitions are clarified in terms of their geographical expressions.

Chapter 2 expands the particular sub-division into geographical regions so as to provide a detailed reference framework based on the major contrasts in the physical and socio-economic environments.

The Corn Belt has been settled in entirety for less than a century and many of the present characteristics of population are directly related to the initial settlement phase. Accordingly Chapter 3 describes the evolution of the Corn Belt population from the first pioneer settlers until 1900. The objective is not a completeness of historical detail but an assessment of the historical influences relevant to the understanding of the present population situation.

Finally it is considered necessary to provide a general regional description and density of population at the latest census as a framework for analysis in finer detail. This is provided by the closing chapter of the first section.

CHAPTER ONE

THE DEFINITIONS AND SUBDIVISIONS OF THE CORN BELT

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CHAPTER ONE

THE DEFINITION AND SUBDIVISION OF THE CORN BELT

The large scope of the discipline of demography and the immense areal extent of the Corn Belt necessitate that in the following analysis a consistent and precise series of definitions and subdivisions be employed. It is the aim of this first chapter to provide these basic controls.

A. PROBLEMS OF DEFINITION

In an analysis of the population geography of the Corn Belt the problem of definition arises in two quite distinct aspects. Firstly it is necessary to define the physical extent of the "Corn Belt", and secondly in view of the statistical basis of the source material it is necessary to examine the geographical expression of the more significant census definitions.

1. The definition of the Corn Belt in 1950

The term "Corn Belt" has a variety of definitions and connotations. Many of those who use the term would find it difficult to determine its geographical extent

and others would question the many boundaries that have been proposed. Warntz [1] has traced the origins of the use of the words "Corn" and "Corn Belt", and finds some evidence for the use of the term "Corn Belt" before 1900 but notes that in the 1900 U.S. Census of Agriculture there was no reference to a "Corn Belt". Although by 1910 the term "Corn Belt" was in common use to denote the area of greatest corn production in the American Middle West it was not precisely defined until 1926 when Baker produced his classic "Agricultural Regions of North America". [2] The major problem was, and still remains, the determination of the criteria by which a boundary can be drawn. These problems have been discussed recently in relation to the Corn Belt and other regions by Buchanan [3] but the problem of delimiting agricultural regions is still unsolved. [4] In the case

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1. Warntz, W. "An Historical Consideration of the terms 'Corn' and 'Corn Belt' in the United States". Agricultural History, Volume 31, 1957.

2. Baker, O.E. "Agricultural Regions of North America, Part IV, The Corn Belt". Economic Geography, Volume 3, 1927, pp. 446-465.

3. Buchanan, R.E. "Some Reflections on Agricultural Geography". Geography, Number 203, Volume XLIV, Part 1, January, 1959, pp. 1-13.

4. Vide Weaver, J.C. "Crop Combination Regions in the Middle West", for a consideration of the difficulties of exactly delimiting agricultural regions, especially in the case of the Corn Belt. Economic Geography, Volume 30, 1954.

of the Corn Belt most writers have attempted to justify boundaries on a statistical basis by assessing the dominance of corn in the acreage of crops and thus delimiting the area of major production. It is the writer's view that although this is a realistic approach, a variety of factors must be considered in order to arrive at a system of agricultural production rather than the maximum concentration of the particular crop. It is also held that the arbitrary nature of boundaries drawn on statistical criteria must be accepted and that this does not entirely discredit their value. Since Baker first described the agricultural regions of the United States thirty years have elapsed during which time considerable research has been achieved in the Department of Agriculture on the problem of delimiting the boundaries of such regions. The work culminated in 1950 in a Bulletin[5] which restated the generalised types of farming in the United States. In the introduction to this work the writer, F.F. Elliott, states,

> "Investigations concerning types of farming have brought into focus a strong tendency toward regional specialisation". [6]

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5. Elliott, F.F. "Generalised Types of Farming in the United States". Agricultural Information Bulletin, Number 3, U.S. Department of Agriculture, Washington D.C., 1950.

6. Elliott, F.F. Op.Cit., 5 supra, Forward.

In a subsequent section the Corn Belt is treated as such an area of regional specialisation. Accordingly this study offers the most useful source of guidance on the problem of delimiting the Corn Belt. The method of definition is fully described in the Introduction of the bulletin and it will suffice at this stage to cite some of the advantages offered to our present study by the methods employed in the preparation of this bulletin.

1. The criteria adopted are very wide and consider physical, biological and economic conditions. This fulfills the writer's contention that the Corn Belt must be defined as an area with a uniform system of agriculture in relation to these factors.

2. The study is based on fifty years of research and embodies refinements of previous studies.

3. Recognising that within the nine major regions defined there are considerable variations these regions are subdivided into sub-regions based on the varying conditions of edaphic and biotic factors, systems of land-holding and the nature of commercial enterprise. This affords an essential breakdown within the Corn Belt into "type of farming sub-regions", which is of great value as a background to regional analysis within the Corn Belt.

4. Finally, the boundaries are drawn with respect to county limits and although such lines are arbitrary, they are definitive and are amenable to accurate plotting. Moreover, the statistics used in the determination of the boundaries were those for 1950 and thus this boundary is the most appropriate one to use in conjunction with 1950 Census figures. Since, by the adoption of statistical criteria to draw boundaries, the actual boundary will fluctuate slightly from year to year this is a significant consideration.

For the above reasons the writer has adopted the boundary for the Corn Belt that as defined by the United States Department of Agriculture in their Bulletin "Generalised Types of Agriculture in the United States" [7], as being the most realistic and reliable. This boundary is adopted without any further modification and for detail concerning the method of delimitation reference should be made to this publication.

2. <u>The Definition of Census Terms, 1950.</u>

The principal statistical basis of this research is the 1950 Census of Population, Volume ii,"Characteristics

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7. Elliott, F.F. "<u>Generalised Types of Farming in the United States</u>". Agricultural Information Bulletin, Number 3, U.S. Department of Agriculture, Washington D.C., 1950.

of Population".[8] The completeness of the detail in this census inevitably results in a complexity of definition. The criteria involved in each definition are stated in the introduction to the volume. It is the purpose of this present section to clarify two main points. Firstly certain changes of definition between the censuses of 1940 and 1950 are of great importance and must be stressed. Secondly it is necessary to draw attention to the exact geographical expression of certain census terms especially those involving particular forms of residence.

1. "Urban" Residence

Urban population in the 1950 census consisted of the inhabitants of:

(a) Places of 2,500 inhabitants or more incorporated as cities, boroughs and villages.

(b) Incorporated towns of 2,500 inhabitants or more.

(c) The densely settled "Urban Fringe", including both incorporated and unincorporated areas, around cities of 50,000 inhabitants or more.

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8. United States Bureau of the Census, Census of Population, 1950, Volume 2, "Characteristics of the Population", Washington D.C., 1952.

(d) Unincorporated places of 2,500 inhabitants or more outside any urban fringe. 9.

The remaining population is classified as "Rural".

2. Urban Place

Since the distinction physically between incorporated and unincorporated towns is negligible, a useful collective category is the "urban place". This in the 1950 Census refers to any place of over 2,500 inhabitants, whether incorporated or not.

3. Comparability of "Rural" and "Urban" definitions with those of previous censuses.

Significant changes in the definition of "urban" population were introduced in the 1950 Census. In the 1940 Census the urban category included all population living in incorporated places of 2,500 or more, and inhabitants in areas classified as urban under special rules relating to population size and density. All definitions of "urban" population in previous censuses were substantially in accordance with this definition and are therefore comparable. However, in the case of the 1950 definition some re-calculation is necessary to facilitate accurate comparison. A further divergence is in the case of the

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9. Note on Incorporation. An "Incorporated" place refers to a concentration of population within legally prescribed limits and with appropriate local powers and functions. An "Unincorporated" place bears identical physical resemblance but does not have legally defined borders. Unincorporated places are much less numerous; in 1950 in the entire United States there were some 17,118 incorporated places, but only 1,430 unincorporated.

allocation of residence of university populations. In 1950 Census these were allocated to the place of study, whereas in previous enumerations they were allocated to their home residence. This affects counties containing large educational institutions and the appropriate corrections must be made to facilitate accurate comparison.

4. Subdivision of Urban Population

In the case of small urban settlements the definition of "urban place" is satisfactory in that the geographical expression is simply a small township. In the case of larger cities and urban agglomerations a more sophisticated enumeration is required. The 1950 Census recognises the composite nature of the large city and in particular the geographical distinction between the populous core and the less densely populated fringe. To this geographical concept the Census gives the inclusive term of urbanised area, within which there is a sub-division into "Central City" and "Urban Fringe".

(a) Urbanised Areas

An urbanised area consists of a "central city" together with the "urban fringe" surrounding it. By definition each urbanised area contains at least one central city of 50,000 inhabitants or more. The urban

fringe consists of the surrounding closely settled vicinity, which is demographically and geographically related to the city and may include both incorporated or unincorporated places. The boundaries of each individual urban fringe were plotted by fieldwork to coincide as closely as possible with the boundary of the thickly settled territory around the central city.[10.]

The concept of the urbanised area with the statistical breakdown into central city and urban fringe is extremely valuable in view of the strict geographical connotation. Earlier census enumerations of large cities had little relevance to their composite structure.[11.]

An extension of the concept of the urbanised area is made by the census bureau in the definition of the Standard Metropolitan Area, which is an attempt to enumerate the population of the large city together with that of its tributary area or hinterland.

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10. Details of the criteria adopted in plotting the urban fringe appear in the United States Bureau of the Census, "Census Areas of 1950", Series G.E.O., Number 1, Washington D.C., 1951.

11. Mark Jefferson was critical of the discrepancies in the previous censuses in failing to distinguish between the "political" city and the geographical extent of the densely settled area, thus making quantitive comparison impossible. Vide. Jefferson, M., "The Anthropogeography of Some Great Cities", Bulletin of the American Geographical Society, Volume 41, 1909.

(b) Standard Metropolitan Areas

A "Standard Metropolitan Area" is defined as a county, or group of contiguous counties, which contain at least one city of 50,000 inhabitants or more. In addition to the county or counties containing such a city, or cities, contiguous counties are included in a Standard Metropolitan Area if according to definite criteria [12.] [13.] they are essentially "metropolitan" in character [14.] and socially and economically integrated with the central city. Although there may be several cities within the Standard Metropolitan Area of more than 50,000 inhabitants, not all are necessarily central cities. The largest city in the Standard Metropolitan Area is termed the "principal central city" and any other city of 25,000 or more inhabitants having a population amounting to more than one third of that of the principal central city is also considered a "central city".

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12. Vide Clove, R.C., "The Definition of the Standard Metropolitan Area", Economic Geography, Volume 28, 1952, for a detailed description of the 1950 definition of the Standard Metropolitan Area with criticism of the criteria employed.

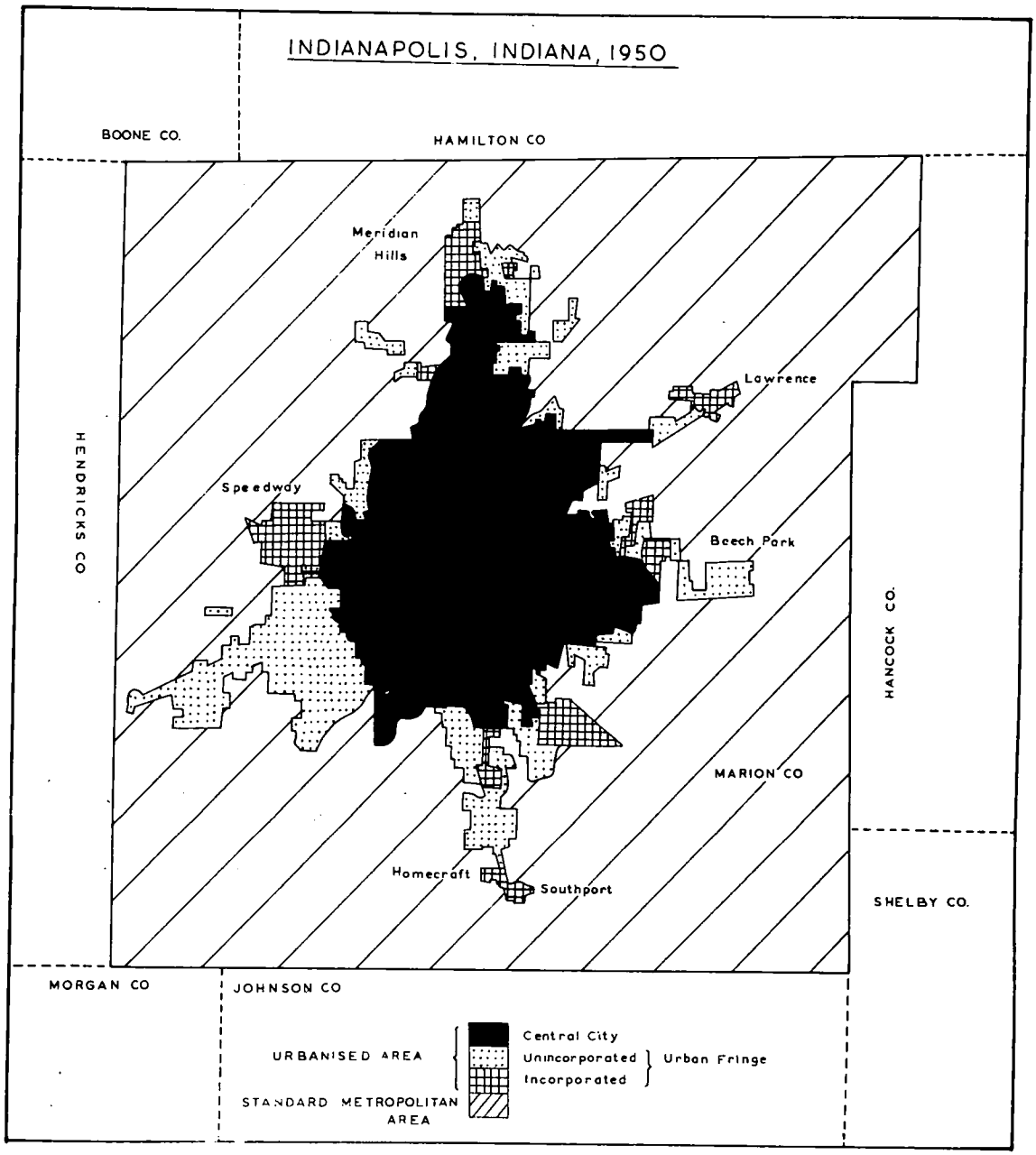
13. Vide Von Struve, A.W., "Geography in the Census Bureau" Economic Geography, Volume 16, 1940, for notes on previous definitions of metropolitan character.

14. An earlier study of the criteria of metropolitan status was made by Dickinson, vide Dickinson, R.E., "The Metropolitan Regions of the United States", Geographical Review, Volume 24, 1934. His criteria are more varied and less arbitrary than those of the 1950 Census, but pose the intractable problem of obtaining sufficient data to facilitate comparison.

The criteria involved in the definition are extremely involved. The criteria determining the "metropolitan" character of contiguous counties concern both population density, and physical contiguity to the central city, and also the number of agricultural workers resident in the county. The criteria for determining the integration of contiguous counties to the central city are as varied as for instance, the number of people employed in the central city, and the number of telephone calls to the county containing the central city.

The geographical expression of the Standard Metropolitan Area is less precise than that of the Urbanised Area, but approximates to the hinterland of the central city concerned. As an illustration of the spatial relationships involved in these census definitions, Map 1 shows the Urbanised Area and Standard Metropolitan Area of Indianapolis, Indiana. The Metropolitan Area of Indianapolis includes the whole of Marion County, Indiana, but none of the contiguous counties. In the case of the Urbanised Area, the distinction between the central city and urban fringe is shown. It is evident that many large residential areas are unincorporated while several incorporated places, for instance Lawrence and Southport, have been included in the Urbanised Area. The population statistics for the various components in 1950 were as below:

MAP I.


INDIANAPOLIS, INDIANA, 1950
BOONE CO.
HAMILTON CO
HENDRICKS CO
HANCOCK CO.
MARION CO
SHELBY CO.
MORGAN CO
JOHNSON CO
Meridian Hills
Lawrence
Speedway
Beech Park
Homecraft
Southport
URBANISED AREA
Central City
Unincorporated
Incorporated
Urban Fringe
STANDARD METROPOLITAN AREA

The Population of Indianapolis, Indiana, 1950

Standard Metropolitan Area	551,777
Total Urbanised Area	502,375
Central City	427,173
Urban Fringe	75,202

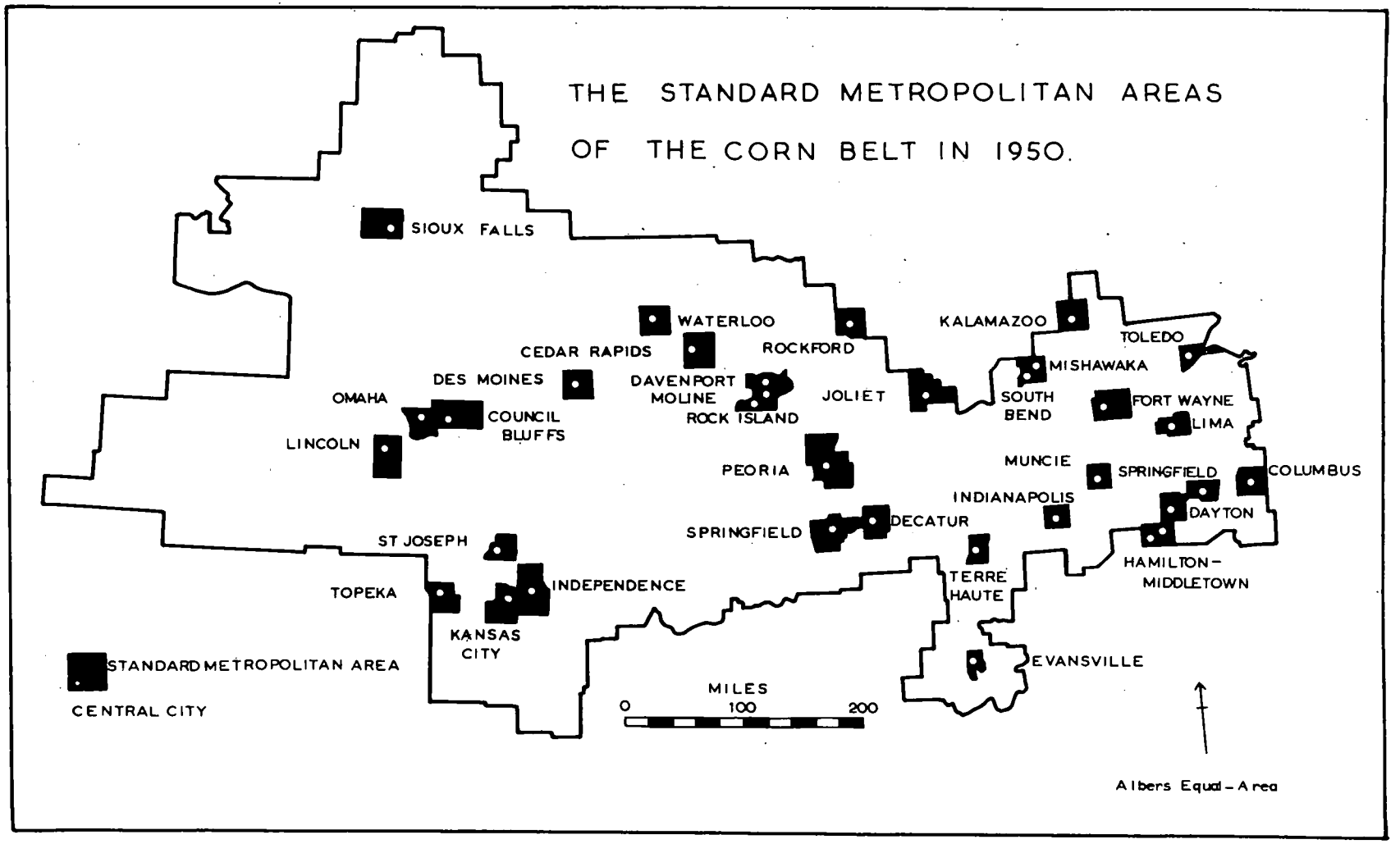
The distribution of other Standard Metropolitan Areas of the Corn Belt and their central cities is illustrated by Map 2.

5. "Rural" Population

All population which was resident outside centres of more than 2,500 inhabitants and which was not resident in the urban fringe of an urbanised area was defined in 1950 as "rural". A further distinction was made between population resident in farms and that resident outside farms. To these two categories the terms "Rural Farm" and "Rural Non-Farm" were applied.

(a) Rural Farm

The rural farm group in 1950 included all rural persons resident on farms irrespective of their actual occupation. Virtually all the farm population of the United States is "rural farm", however some farms do exist within the limits of urban places and to these residents the term "urban farm" is applied. In the United States in 1950 1.2% of the farm population fell into this


THE STANDARD METROPOLITAN AREAS
OF THE CORN BELT IN 1950.
SIOUX FALLS
WATERLOO
CEDAR RAPIDS
ROCKFORD
KALAMAZOO
TOLEDO
MISHAWAKA
DES MOINES
DAVENPORT
MOLINE
ROCK ISLAND
JOLIET
SOUTH BEND
FORT WAYNE
LIMA
OMAHA
COUNCIL BLUFFS
LINCOLN
PEORIA
MUNCIE
SPRINGFIELD
COLUMBUS
INDIANAPOLIS
DAYTON
SPRINGFIELD
DECATUR
ST JOSEPH
TERRE HAUTE
HAMILTON-MIDDLETOWN
TOPEKA
INDEPENDENCE
KANSAS CITY
EVANSVILLE
STANDARD METROPOLITAN AREA
CENTRAL CITY
MILES
0
100
200
Albers Equal-Area

MAP 2.

category. The urban farm category has little functional value as most of the residents are not concerned with agriculture and are related demographically to the urban place. [15] [16]

(b) Rural Non-Farm

The rural non-farm group consists of rural population in a variety of residences, as for instance isolated non-farm houses in rural areas, villages and hamlets and some in the fringe areas surrounding the smaller incorporated places. Some changes have been made in the 1950 census definition by which residents in the suburbs of urban areas, previously enumerated as rural non-farm, are now classified as urban. Accordingly corrections for this have to be made to comparison with previous censuses. Although not resident on farms

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15. Nevertheless, the "urban farm" element adds to the difficulty of defining the rural-urban fringe. The problems of making an adequate definition were discussed by Wehrwein with reference to Indianapolis. Vide Wehrwein, G.S., "The Rural-Urban Fringe", Economic Geography, Volume 18, 1942.

16. Vide also Dickinson, R.E., "City, Region and Regionalism", Routledge, Kegan Paul, 1947, Chapter 4, pp. 120-123 for further discussion of the concept of rural-urban fringe.

a significant proportion of the rural non-farm population is engaged in agriculture but in many ways, in terms of function, this group is more closely related to urban centres.[17]

SUMMARY

The census terms discussed in this section are those which have a basic geographical expression and these to which most constant reference will be made. In the detailed demographic analysis there is a considerable complexity of definition but reference to these more specific definitions is deferred to the appropriate chapter.

B. PROBLEMS OF THE SUB-DIVISION OF THE CORN BELT

The total area of the Corn Belt as defined in this study is 276,982 square miles, within which over 16 million persons resided in 1950. In an area so huge, it is inevitable that, despite a certain geographical uniformity, there should be contrasts in detail in the physical and economic characteristics of the region. The detailed variation of environmental and economic

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17. The problem of the definition and description of the rural non-farm element has been attempted by Hart in relation to Indiana. Vide Hart, J.F., "The Rural Non-Farm Population of Indiana". Proceedings of the Indiana Academy of Science, Volume 65, 1955.

factors, together with the influence of historical events, has a significant effect on demographic matters. To facilitate analysis of demographic characteristics in relation to causative factors it is necessary to sub-divide the Corn Belt into valid regional components. It is the writer's opinion that no single regional sub-division is adequate in order to investigate the detail of every aspect of the population geography. Accordingly, it is proposed to consider several sub-divisions on varying bases, applied where appropriate and where the resultant analysis is most accurate and realistic.

It is suggested that a sub-division into Geographical Regions is the most convenient and useful framework on which to base a description of the regional distribution of population. Further it is considered that variation in the type of farming is a significant breakdown in relation to rural population characteristics. Furthermore, although in terms of areal extent agriculture dominates the Corn Belt, there is considerable variation in the nature of economic activity, especially in the eastern sectors of the Belt. The variations in population characteristics related to these economic considerations are best analysed by reference to Economic Sub-Regions.

It is the purpose of this final section to describe

the various sub-divisions of the Corn Belt that are proposed and to state the criteria by which they have been adopted. The principle unit area of reference throughout this study is the county. The county unit is ideal in that it is sufficiently small in order to record great detail and minor variation in detail, but is not too minute to hinder cartographic representation. It is a feature of the Corn Belt that where there is the greatest concentration of population and complexity of economic activity the county unit is conveniently small and facilitates a detailed analysis. Where, on the other hand, there is a sparse distribution of population and a uniformity of economic activity the county size tends to be much larger, thus introducing an economy in statistical operations without undue generalisation. [18]

1. The Geographical Regions of the Corn Belt

It is not considered necessary to define in detail the theory of the Geographical Region beyond the consideration that it is an area with a general uniformity of physical environment and economic activity, since it is only intended that such a sub-division should be used

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18. Vide Weaver J.C. "The County as a Spatial Average in Agricultural Geography", Geographical Review, Volume XLVI, 1956. for a discussion of the county unit as a basis for statistical analysis.

as a reference framework for general description rather than detailed analysis. In the case of the Corn Belt a particular difficulty arises due to the peripheral nature of large areas, especially in the eastern sectors where, although the agriculture is typically "Corn Belt" in character, the economy is dominated by manufacturing and the landscape by industrial urban centres. Such a region is that to the south of Lake Michigan which although in terms of its agriculture is part of the Corn Belt, its economy is more directly influenced by proximity to Chicago. Such areas as this must be delimited by realistic boundaries and considered as being in many respects peripheral to the Corn Belt and having a regional extent beyond that of the Corn Belt. Such for instance is the area of the confluence of the Ohio and Wabash Rivers, which although within the Corn Belt, belongs geographically to the Ohio Valley region. The inclusion of peripheral areas within the study leads to difficulties but has the advantage of offering comparison with the more purely "Corn Belt" regions.

Table 1 below indicates the area and population of the Geographical Regions of the Corn Belt and Map 3 indicates their relative location.

MAP 3.

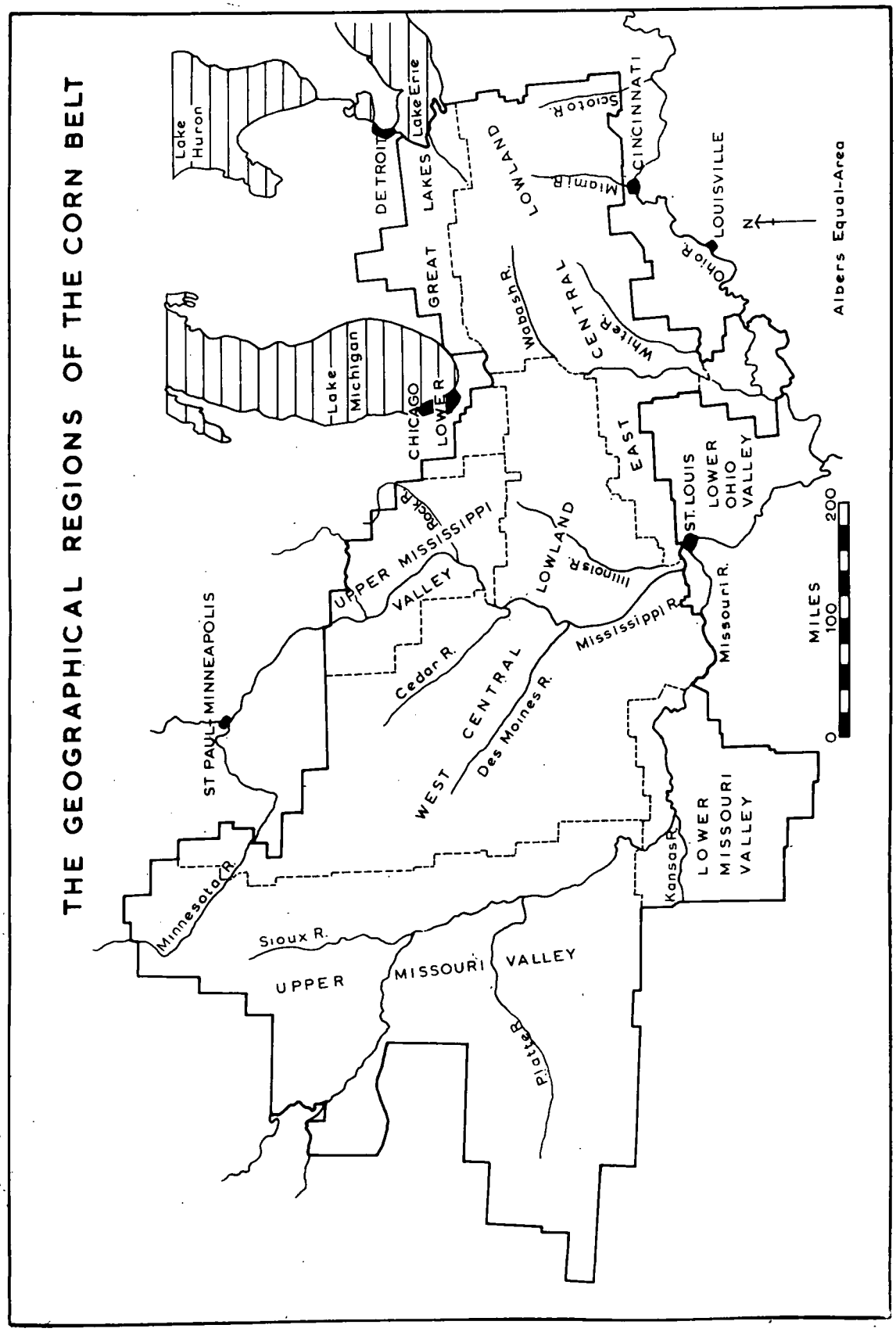
THE GEOGRAPHICAL REGIONS OF THE CORN BELT
Lake Huron
Lake Michigan
Lake Erie
DETROIT
CHICAGO
GREAT LAKES
LOWER
LOWLAND
Scioto R.
Miami R.
CINCINNATI
LOUISVILLE
Ohio R.
Wabash R.
White R.
CENTRAL
EAST
ST. LOUIS
LOWER OHIO VALLEY
Rock R.
UPPER MISSISSIPPI VALLEY
LOWLAND
Illinois R.
Mississippi R.
Missouri R.
MINNEAPOLIS
ST PAUL
Cedar R.
WEST CENTRAL
Des Moines R.
LOWER MISSOURI VALLEY
Kansas R.
Minnesota R.
Sioux R.
UPPER MISSOURI VALLEY
Platte R.
N
Albers Equal-Area
MILES
0
100
200

TABLE 1

THE AREA AND POPULATION OF THE GEOGRAPHICAL REGIONS OF THE CORN BELT IN 1950

Geographical Region	Area in sq. miles	Population 1950	Number of counties
East Central Lowland	43,345	4,852,361	99
West Central Lowland	85,362	3,840,195	149
Upper Mississippi Valley	15,334	1,146,604	26
Upper Missouri Valley	84,355	2,438,082	142
Lower Missouri Valley	24,909	1,883,975	37
Lower Great Lakes (1)	18,229	1,823,064	26
Lower Ohio Valley (1)	5,445	465,429	15
TOTAL CORN BELT	276,982	16,049,710	494

Source: Calculated from United States Bureau of the Census, Census of Population, 1950, volume ii, "Characteristics of the Population", Table 12.

(1) Peripheral regions

The detailed characteristics of the Geographical Regions of the Corn Belt are described in the following chapter, "The Geographical Regions".

2. The Agricultural Sub-Regions

A sub-division of the Corn Belt into agricultural regions can be made with considerably more precision than in the case of Geographical Regions. Since the boundary adopted in this study for the Corn Belt is that proposed by the Department of Agriculture the sub-division proposed in the same report will be used. The method used was the same as in the division into major agricultural regions

and for details of the individual types of farming areas within the Corn Belt the reader is referred to the Department of Agriculture Bulletin.[19] In the same way that differing conditions of environment and economy necessitated the demarcation of peripheral areas in the sub-division into Geographical Regions, so in the case of type of farming regions there is considerable variation from the most characteristic conditions. The most characteristic "Corn Belt" regions are those occupied by the Cattle Feeding and Hogs, Cash Corn, Oats and Soybeans, and Hogs and Soft Winter Wheat type of farming areas. The agricultural sub-regions of the Corn Belt are illustrated by Map 4, and their area and population is illustrated by Table 2 below.

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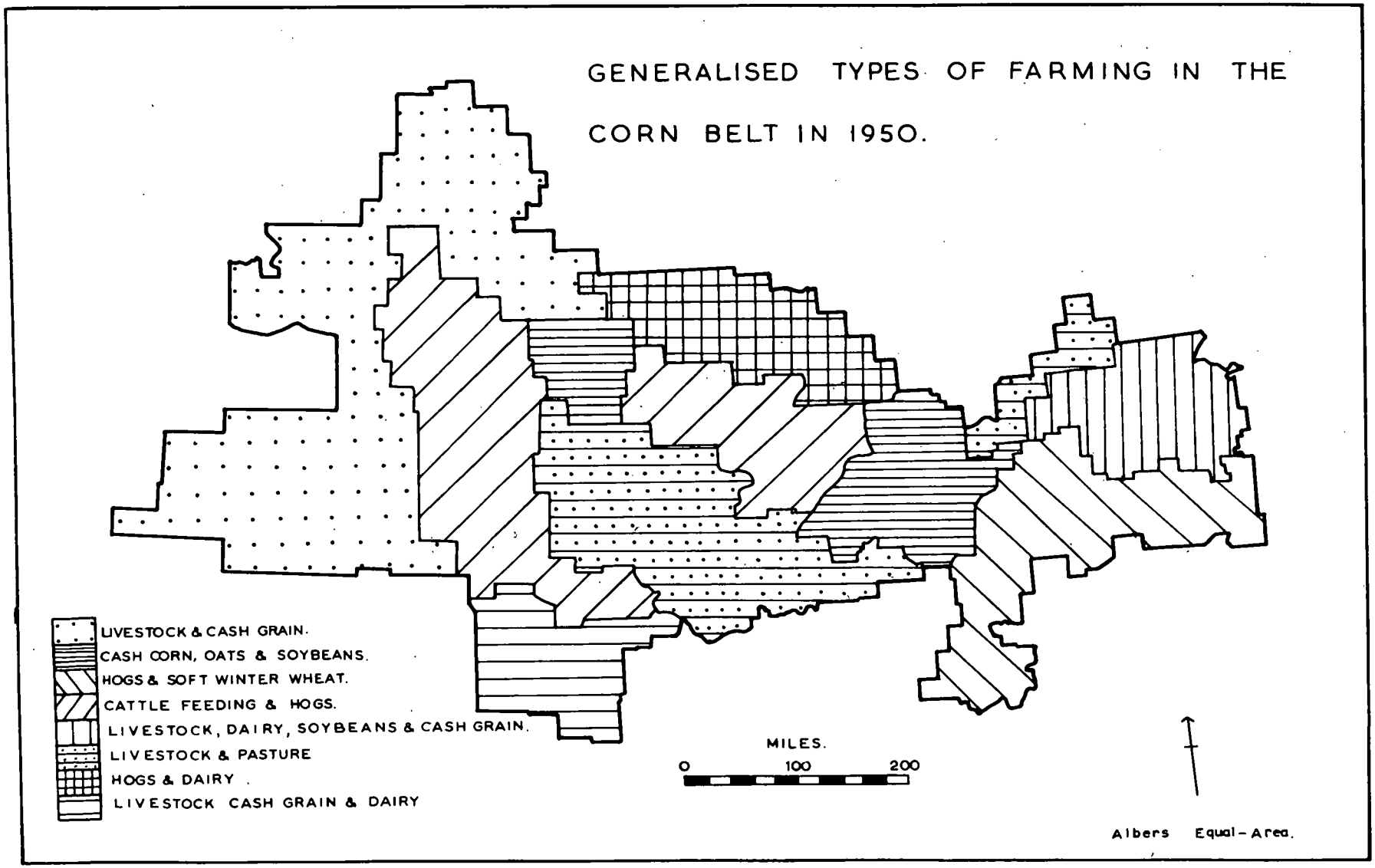
19. Elliott, F.F., Op. Cit. 5. supra, pp.6-7


GENERALISED TYPES OF FARMING IN THE CORN BELT IN 1950.
LIVESTOCK & CASH GRAIN.
CASH CORN, OATS & SOYBEANS.
HOGS & SOFT WINTER WHEAT.
CATTLE FEEDING & HOGS.
LIVESTOCK, DAIRY, SOYBEANS & CASH GRAIN.
LIVESTOCK & PASTURE
HOGS & DAIRY
LIVESTOCK CASH GRAIN & DAIRY
MILES.
0
100
200
Albers Equal-Area.

MAP 4.

TABLE 2

THE AGRICULTURAL SUB-REGIONS OF THE CORN BELT, 1950

Agricultural sub-region	Area sq. miles	Population	Number of counties
Cattle Feeding and Hogs (1)	55,654	3,372,962	99
Cash Corn, Oats and Soybeans (1)	24,346	1,762,049	41
Hogs and Soft Winter Wheat (1)	30,153	4,034,870	74
Livestock, Dairy, Soybeans and Cash Grain	17,890	1,894,482	41
Hogs and Dairy	19,941	1,160,300	33
Livestock and Cash Grain	72,705	1,286,589	104
Livestock, Pasture and Dairy	15,507	739,915	26
Livestock and Pasture	40,786	1,798,041	76
TOTAL CORN BELT 2/	176,982	16,049,710	494

Source: Calculated from United States Bureau of the Census, Census of Population, 1950, Volume ii, "Characteristics of the Population", Table 12.

(1) The "heart" regions of the Corn Belt.

3. The Economic Sub-Regions and State Economic Areas of the Corn Belt

The geographical and agricultural regions of the Corn Belt are essentially generalised and the areas that they delimit are extremely large and use of these sub-divisions will be restricted to purposes of general description as a framework for more detailed analysis. A further sub-division which has been much used by the Census Bureau is that of the Economic Sub-Region. The Economic Sub-Region is a relatively large area of homogeneous economic activity. As in the case of geographical and agricultural regions they represent only the major contrasts and submerge the detailed variations.[20] However the Economic Sub-Regions themselves are sub-divided into State Economic Areas. The State Economic Area represents the sub-division of a state into areas of distinctive economic activity which differentiate them from contrasted areas within the Economic Sub-Region.[21] In general they consist of two types, non-metropolitan areas (which coincide with variations in the type of farming), and

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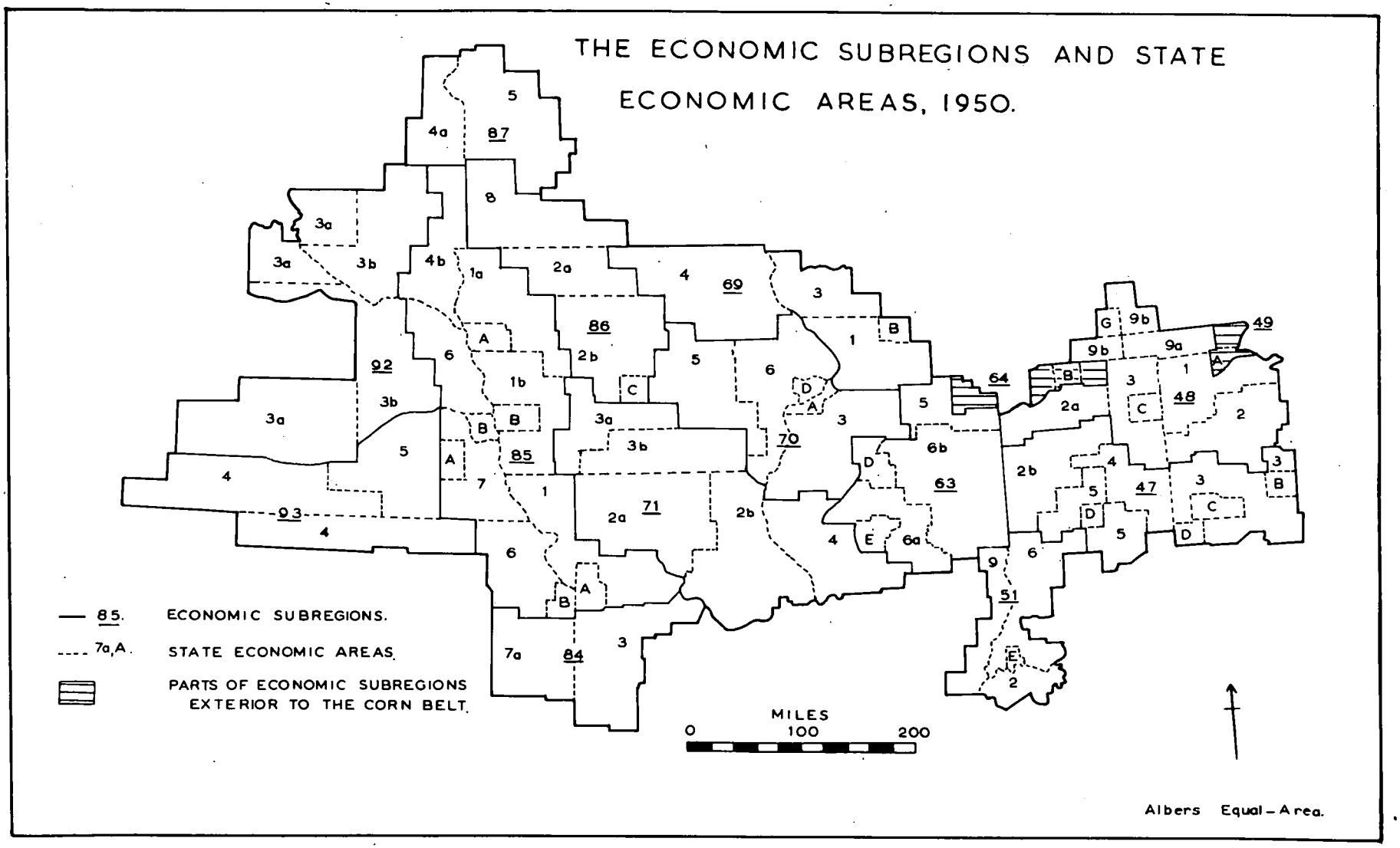
20. Bogue, D.J., "A Description of the Economic Regions and Economic Sub-Regions of the United States". Scripps Foundation for Research in Population Problems, Miami University, Oxford.Ohio

21. Bogue, D.J. "State Economic Areas, A Description of the Procedures used in making a functional grouping of the counties of the United States". U.S. Bureau of the Census, Washington, D.C. 1951.

metropolitan areas (which coincide with the distribution of Standard Metropolitan Areas).

Within the general framework of Economic Sub-Regions, the State Economic Area affords a useful and reliable breakdown into distinctive units which are sufficiently detailed often to obviate the need to refer to the county unit. Much statistical census material is presented on the basis of State Economic Areas in the Census Reports of both Agriculture and Population, and in the Special Reports of both. The State Economic Area and the Economic Sub-Region will be used in this study in two main circumstances. Firstly in the case of Special Census Reports relating to the entire nation the smallest unit for which statistics are presented is frequently the State Economic Area and the use of this breakdown is unavoidable, and in any case usually quite justifiable. Secondly in the consideration of population matters in relation to economic characteristics the State Economic Area is most valuable.

The thirteen Economic Sub-Regions of the Corn Belt are illustrated in Map 5. Since the chief criterion in delimiting the State Economic Areas is the type of farming it will be noticed that there is complete coincidence with the boundary of the Corn Belt with the exception of two


THE ECONOMIC SUBREGIONS AND STATE ECONOMIC AREAS, 1950.
85. ECONOMIC SUBREGIONS.
7a,A. STATE ECONOMIC AREAS.
PARTS OF ECONOMIC SUBREGIONS EXTERIOR TO THE CORN BELT.
MILES
0
100
200
Albers Equal-Area.

MAP 5.

areas, shaded in the map, which come within the Economic Sub-Regions of Chicago and Detroit. The numerical denominations are those used by the Census Bureau in their tabulations of statistics, and they are listed below with the names suggested for their description by Bogue.[22]

THE ECONOMIC SUB-REGIONS OF THE CORN BELT, 1950

47. West Central Ohio-Central Indiana
48. Michigan-Ohio-Indiana Tri State
51. Lower Wabash Valley
63. East Central Illinois
69. Corn Belt - Dairy Transition
70. Eastern Iowa-West Illinois
71. Southern Iowa-Northern Missouri-West Central Illinois
84. Kansas-Missouri Corn Belt Border
85. Central Missouri River Valley
86. North Central Iowa-South West Minnesota
87. Minnesota-South Dekota Corn Belt Margin
92. Nebraska-South Dakota Corn Belt Margin
93. Kansas-Nebraska Corn Belt - Winter Wheat Transition

64. Chicago and Environs (1)
49. South Eastern Michigan (1)

(1) Only the southern extremities of these regions extend into the Corn Belt

The definitions set out in this chapter have been used consistently throughout the thesis and further specific matters of definition have been included where

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22. Vide Bogue, D.J., Op. Cit. 20 Supra

necessary in subsequent chapters. The sub-divisions outlined have also been used consistently where most appropriate or where dictated by the nature of the statistical breakdown of available material.

In the case of geographical regions some further expansion is considered essential since at all times reference to geographical space relationships is implicit in descriptive analysis. Accordingly, Chapter 2 is devoted to an elaboration of the geographical regions proposed above.

CHAPTER TWO

THE GEOGRAPHICAL REGIONS OF THE CORN BELT

CHAPTER TWO

THE GEOGRAPHICAL REGIONS OF THE CORN BELT

The purpose of this chapter is to provide a detailed reference framework on a geographical basis for subsequent analysis of the spatial variations in population characteristics. It is not intended as a complete geography of the Corn Belt but rather to provide a description of the major regional contrasts in the geographic background. The regional division is based on the major variations and although it is considered that the regions described are distinctive the boundaries selected are essentially arbitrary and have been drawn to coincide with county administrative boundaries for statistical purposes. Since so much published work on the geography of the Middle West is available the present description has been reduced to a minimum and references are indicated as to sources of more detailed information.[23 and 24]

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23. The most recent and comprehensive geography of the Middle West, including all of the Corn Belt as defined in 1950, is that edited by John Garland - "The North American Middle West". Wiley, New York, 1955.

24. A more general study is the section on the Corn Belt in a symposium edited by Carl C. Taylor, "Rural Life in the United States", Chapter XI, p.360, et Sequa Knopf, New York, 1955.

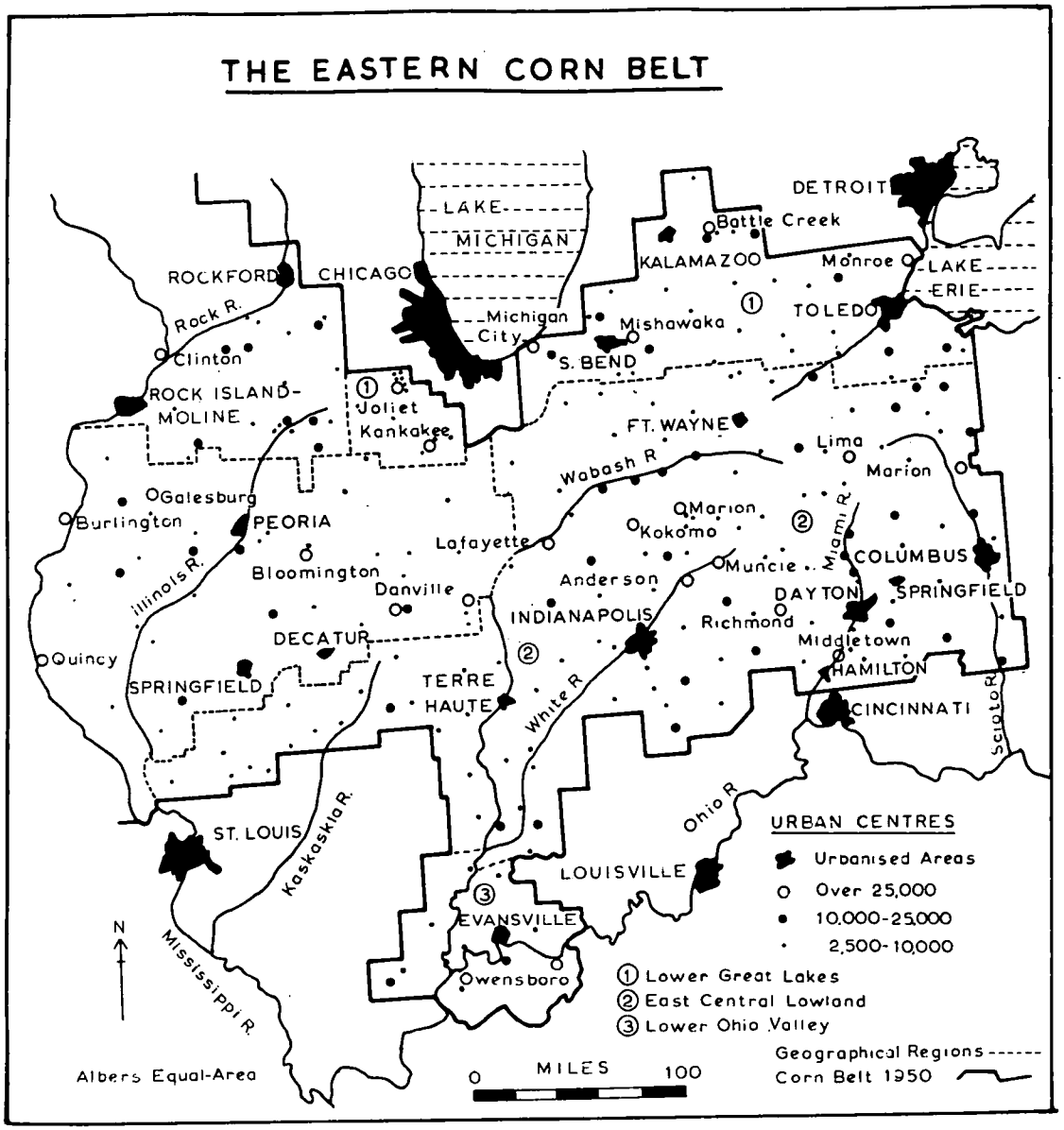
Map 3 indicated the location and extent of the geographical regions and Maps 6, 7 and 8 illustrate greater detail within the individual regions.

The greater part of the Corn Belt is made up of three enormous regions distinguished from each other by virtue of physical and economic contrasts. These are the East Central Lowland, the West Central Lowland, and the Upper Missouri Valley. These regions represent the heart of the Corn Belt and in particular have developed the most distinctive and characteristic "Corn Belt" landscape. North and South of this linear belt are four smaller regions which although still part of the Corn Belt as far as their type of agriculture are concerned must be regarded geographically as peripheral to the Corn Belt proper, and transitionary in economy to quite different economic and physical provinces. These include the Upper Mississippi Valley, the Lower Great Lakes Region, the Lower Missouri Valley and the Lower Ohio Valley. It is convenient firstly to describe the three major regions of the Corn Belt.

1. The East Central Lowland

This region occupies the East Central portion of the Corn Belt including most of Western Ohio, all of Central Indiana and protruding as a narrow belt across

MAP 6.


THE EASTERN CORN BELT
LAKE
MICHIGAN
DETROIT
Battle Creek
KALAMAZOO
Monroe
LAKE
ERIE
TOLEDO
ROCKFORD
CHICAGO
Rock R.
Michigan City
Mishawaka
S. BEND
Clinton
ROCK ISLAND-MOLINE
Joliet
Kankakee
FT. WAYNE
Lima
Wabash R
Marion
Galesburg
Burlington
PEORIA
Marion
Kokomo
Miami R.
Lafayette
Muncie
COLUMBUS
Illinois R.
Bloomington
Danville
Anderson
DAYTON
SPRINGFIELD
INDIANAPOLIS
Richmond
DECATUR
Middletown
Quincy
HAMILTON
SPRINGFIELD
TERRE HAUTE
White R
CINCINNATI
Scioto R.
Ohio R
ST. LOUIS
Kaskaskia R.
LOUISVILLE
EVANSVILLE
Owensboro
N
Mississippi R.
URBAN CENTRES
Urbanised Areas
Over 25,000
10,000-25,000
2,500-10,000
① Lower Great Lakes
② East Central Lowland
③ Lower Ohio Valley
Geographical Regions
Corn Belt 1950
Albers Equal-Area
0 MILES 100

Central Illinois to the Mississippi, covering in all an area of 43,435 square miles. The lowland is essentially an undulating till plain with an elevation varying between 500 and 1,000 feet, bounded to the south in Indiana and Ohio by the more rugged topography of the foothills of the Apallachians. Almost all the drainage is southwards by tributaries of the Ohio, of which the Wabash and White rivers in Indiana, the Miami and Scioto in Ohio and the Kaskaskia in Illinois are the most significant. The region has a mantle of glacial drift, which more especially east of the Wabash yields silty loams of high fertility.

Within the East Central Lowland are parts of three types of farming regions.[25] On the better soils of Northern Indiana and North West Ohio, livestock, dairy and cash grain enterprises characterise the agriculture. South of this, in South West Ohio, and Central Indiana, the lighter soils are more suited to soft winter wheat and the chief enterprise is a combination of soft winter wheat and hog rearing. Finally, to the west of the Wabash, the East Central Lowland impinges on the Cash Grain area of the Grand Prairie of Illinois where cash grain, oats and soybeans are grown on large, highly-

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25. The regional variations in farming are described in U.S. Department of Agriculture, Agricultural Information Bulletin No.3. "Generalised Types of Farming in the United States", Washington D.C., 1950.

mechanised farms.

The East Central Lowland is the most populous of the geographical regions and has experienced the highest degree of urbanisation. The region had a total population of 4,852,361 in 1950 of which nearly three million persons lived in urban places. The region had 30.2% of the total population of the Corn Belt and 33.5% of the total urban population. This high urban proportion was related to the inclusion in the region of the western extensions of the "American Manufacturing Belt", [26] and [27] in Indiana and Ohio, and to a lesser degree the location of part of the Eastern Interior Coalfield[28] in Central Illinois. The impact of this industrialisation and urban development on population characteristics distinguishes the regions demographically from the central and western areas of the Corn Belt and accounts for the chief contrast in the population geography of the entire Corn Belt.

2. The West Central Lowland

In most senses this region can be regarded as

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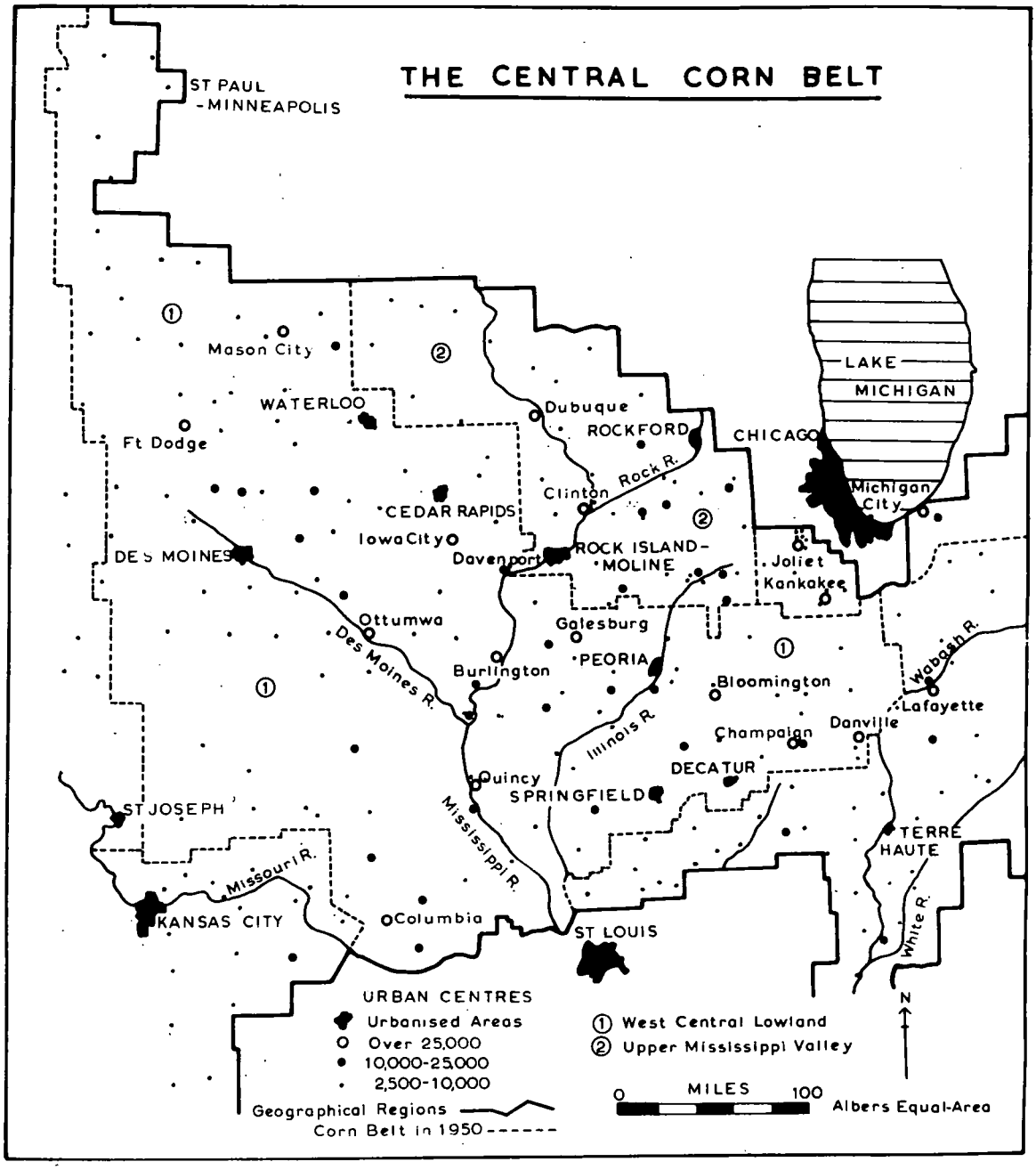
26. Vide White, C.L. and Foscue, E.J. "Regional Geography of Anglo-America". Second Edition, 1956. Map on page 34 for an illustration of the extension of the manufacturing belt in the Corn Belt.

27. Vide also Garland, Op.Cit., 23, Chapter 5, "The Structure of Industry", for a detailed description of industry within the Corn Belt.

28. For further detail of the extent of the coalfield Vide Roepke, H.G. "Changing Patterns of Coal Production in the Eastern Interior Field". Economic Geography, Vol.31, p.234, 1955.

MAP 7.


THE CENTRAL CORN BELT
ST PAUL
-MINNEAPOLIS
Mason City
WATERLOO
Ft Dodge
Dubuque
ROCKFORD
CHICAGO
LAKE
MICHIGAN
Michigan City
Rock R.
Clinton
CEDAR RAPIDS
Iowa City
DES MOINES
Davenport
ROCK ISLAND-
MOLINE
Joliet
Kankakee
Ottumwa
Des Moines R.
Galesburg
PEORIA
Burlington
Bloomington
Wabash R.
Lafayette
Danville
Champaign
Illinois R.
DECATUR
Quincy
SPRINGFIELD
ST JOSEPH
Mississippi R.
TERRE
HAUTE
Missouri R.
KANSAS CITY
Columbia
ST LOUIS
White R.
URBAN CENTRES
Urbanised Areas
Over 25,000
10,000-25,000
2,500-10,000
Geographical Regions
Corn Belt in 1950
① West Central Lowland
② Upper Mississippi Valley
N
0 MILES 100
Albers Equal-Area

the heart of the Corn Belt. Extending from the western boundary of Indiana to Western Iowa and from Central Missouri northwards to Southern Minnesota, it is the largest of the geographical regions and has an area of 85,362 square miles.

Physically it consists of three clearly differentiated components. Contiguous to the East Central Lowland, occupying the eastern quarter of the region is the Grand Prairie of East Central Illinois. The western and southern boundaries of the Grand Prairie are demarcated by the Shelbyville Moraine marking the most southerly extension of the Wisconsin drift.[29] The entire prairie is covered by this new drift and the deep black soil developed on this drift has contributed to making the Grand Prairie one of the chief areas of cash grain production in the Corn Belt. In the north western quarter of the West Central Lowland is a second similar prairie area covered by Wisconsin drift and drained by tributaries of the Mississippi, chiefly the Des Moines River, and usually termed the Iowa Prairie. Here despite certain similarities with the Grand Prairie, livestock farming assumes more importance. Finally, between the two

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29. For a discussion of this and other significances of the Wisconsin glaciation Vide Whitbeck, R. "Economic Aspects of the Wisconsin Glaciation". Annals of the Association of American Geographers, Vol. 11, 1913.

prairies, overlain with Wisconsin drift, is situated a much larger area of older drift, drained and deeply dissected by the Mississippi and its tributaries. This area, which may be termed the Middle Mississippi Borders includes much of Central Iowa, West Central Illinois and Northern Missouri. The cultivation of fodder crops is characteristic of the agriculture of the Iowan and Illinois sections, and southwards the quality of the cropland pasture deteriorates and more emphasis is placed on grazing than on cattle fattening.

Although twice the areal extent of the East Central Lowland the West Central Lowland had over one million fewer inhabitants in 1950. The proportion of urban population was much smaller and was concentrated in a small number of large towns which were regional centres located in a primarily rural area. The Grand Prairie had the largest number of towns, the highest density of population and the greatest amount of industry. To this extent the Grand Prairie marks the transition which occurs in the region between the densely peopled urbanised eastern section of the Corn Belt and the less densely populated primarily rural areas of the Central and Western Corn Belt.

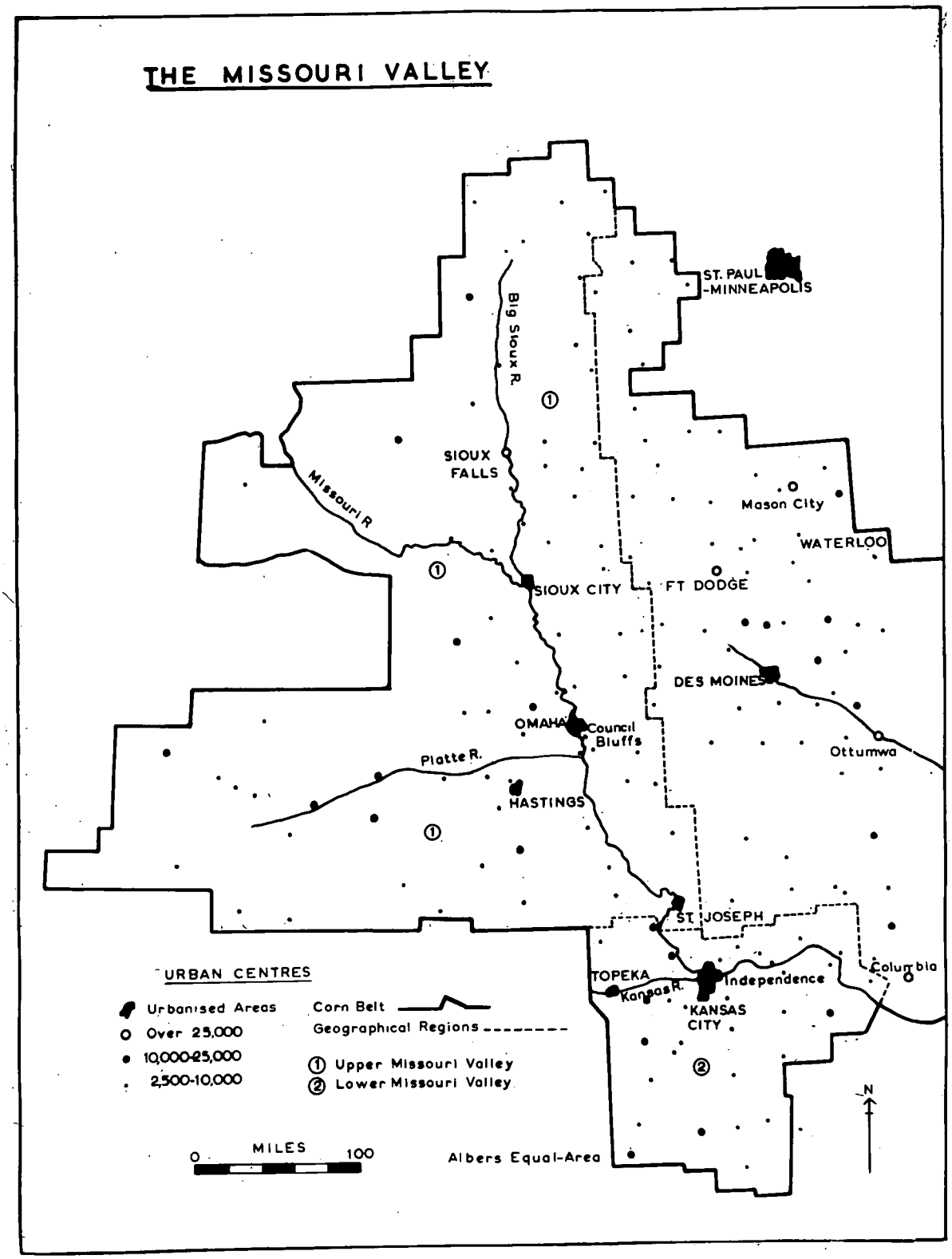
3. The Upper Missouri Valley

The Upper Missouri Valley is the most Western of the three major regions of the Corn Belt and marks the transition to a changed agricultural economy consisting of cattle grazing and extensive wheat cultivation. The Missouri Valley and its borderlands has extensive loess deposits and a rolling topography so that much of the area is devoted to pasture and protective forage crops. Accordingly much of this eastern section of the region is characterised by cattle feeding and hog rearing.

West of the Missouri River, low and unreliable rainfall results in a low productivity of hay and pasture and a reduced carrying capacity, while the lower yields of corn results in a decrease in the number of hogs reared. The numbers of livestock raised are accordingly lower than in the West Central Lowland and a higher proportion of the grain cultivated, especially corn, is sold off the farm.

The region is only slightly smaller in area than the West Central Lowland and covers some 84,355 square miles. The region is moreover almost entirely rural and agricultural in character and had the highest proportion of rural farm to total population in the whole of the Corn Belt. Several very large regional centres are located in the region, as for instance, Lincoln and

MAP 8.


THE MISSOURI VALLEY
ST. PAUL
-MINNEAPOLIS
Big Sioux R.
SIOUX FALLS
Missouri R
Mason City
WATERLOO
SIOUX CITY
FT DODGE
DES MOINES
OMAHA
Council Bluffs
Ottumwa
Platte R.
HASTINGS
ST JOSEPH
TOPEKA
Kansas R.
Independence
KANSAS CITY
Columbia
URBAN CENTRES
Urbanised Areas
Over 25,000
10,000-25,000
2,500-10,000
Corn Belt
Geographical Regions
① Upper Missouri Valley
② Lower Missouri Valley
0 MILES 100
Albers Equal-Area
N

Omaha, but despite this the urban proportion of the total population was the lowest of all the geographical regions.

The Peripheral Regions

4. The Lower Missouri Valley

The section of the Corn Belt bordering the Lower Missouri Valley and drained by the Missouri and its tributaries the Osage and Kansas Rivers is distinguished geographically from the Upper Missouri Valley by contrasted physical conditions, a different type of agricultural economy and by the dominance in the region of Kansas City.

It is a region of undulating topography and brown prairie soils of lower fertility than the black soils of the Grand and Iowa prairies. Accordingly, dairying and poultry raising are important and large acreages of hay are combined with sorghum and wheat. Livestock enterprises are essential in order to improve and maintain the soil fertility.

The area of the region is 24,909 square miles and in 1950 the population numbered 1,483,975 persons. The location of Kansas City within the region resulted in the highest urban proportion in all the regions of the Corn Belt, with 67.4% of the total population. Kansas City dominates the region as a marketing and distributing

centre and Topeka, in the west of the region has a lesser significance as a marketing centre for the livestock rearing areas to the west. The region was one of low population density and one of the few areas of the Corn Belt with a high proportion of negro population in rural areas. The southernmost sections of Missouri mark the transition to the less favoured environment of the Ozark province.

5. The Upper Mississippi Valley

The chief factors distinguishing the Upper Mississippi Valley are the abrupt change in the physical geography and an equally emphatic change in the type of farming.

The area of 15,334 square miles is almost equally divided between a drift covered area in the east, and a rugged, dissected driftless area of leached acid soils in the west. The drift covered area of Northern Illinois is distinguished from the West Central Lowland by the greater amplitude of relief as a result of the dissection by the Rock River, and by its poorly drained and stony soils. Both areas of the region are poorly suited to mechanised and intensive agriculture and accordingly dairying is more significant than cattle feeding as a result of the high ratio of pasture and roughage to concentrated feed crops. Corn andOats are the chief

crops and are used for hog rearing, but the predominant enterprise is dairying and much of the milk is delivered to the local creameries and condensaries for transhipment out of the region.

This region is essentially transitional to the Dairy Belt of the Northern states, which at this point is rather abrupt because of the changes in relief and soils. The region had a population of 1,146,604 persons, of which 55% were urban residents, in 1950. The chief urban centres are Davenport, Rock Island-Moline, Dubuque, and Clinton on the Mississippi and Rockford on the Rock River. They are all regional trade centres with important communications and with significant agricultural and engineering industries.

6. The Lower Ohio Valley

In most respects this small region of some 5,445 square miles and only half a million population, is an extension of the East Central Lowland. It occupies 15 counties in Illinois, Indiana and Kentucky marking the transition from hog and winter wheat farming of the East Central Lowland, to the general farming, mainly small grains and truck farming of the more rugged landscape of the Ohio Valley and the West Kentucky Coalfield.

Physically the region consists of the dissected

uplands of the unglaciated area of Southern Indiana and North West Kentucky bordering the Ohio Valley and the alluvial lowlands of Indiana and Illinois at the confluence of the Wabash and Ohio Valleys.

The high proportion of urban population, 53% of the total is partly accounted for by the location of Evansville and to a lesser extent Owensboro within the region.

Despite its small size it is geographically distinct from the East Central Lowland as a result of its very rugged relief and poor soils except in the valley bottoms, and in economic matters is influenced by its location on the great routeway of the Ohio Valley. In cultural matters it marks the transition to a more "southern" province in the dialect, the proportion of negro population and in the farming landscape.

7. <u>The Lower Great Lakes</u>

The Lower Great Lakes region is the name given to the area of North East Illinois, Northern Indiana, North West Ohio and Southern Michigan extending from the base of Lake Michigan east to the western shores of Lake Erie at Toledo. The region does not include the Chicago Conurbation. Although it is located in the Corn Belt from the point of view of its agriculture the economic

activity of the region is dominated by a number of large industrial towns.

The chief geographical feature of the region, extending into four states and with an area of 18,229 square miles is the high degree of urbanisation. 60.8% of the total population of 1,823,064 was urban in residence in 1950. The region as well as containing large industrial cities, as Toledo, South Bend, Mishawaka, is situated astride one of the nation's routeways of commerce and industry, connecting the Eastern United States industrial region via Detroit and Toledo with Chicago. It is obvious that in this region economic forces exerted from outside the region are stronger than those that are internal. In particular the focus of routes on Chicago and the external influence of Chicago and Detroit affect economic enterprise, including agriculture.

Agriculture tends to be highly specialised in the region. The proximity of large cities has encouraged the production of milk and dairy produce and livestock and pasture assume more significance than in the East Central Lowland. In consequence of this the Lower Great Lakes Region is in a sense the most peripheral region of the Corn Belt. 30, 31 and 32.

/over.

30. Further sources of information of a general nature on the geography and economy of the Corn Belt may be indicated. For the significance of corn production in the Corn Belt in the national production Vide Grotewold, A. "Regional Changes in Corn Production in the United States from 1909-1949." University of Chicago, Research Papers in Geography, Number 40, University of Chicago, 1955.

31. For a description of the agricultural economy of the Corn Belt Vide. Haystead and Fyte, "Agricultural Regions of the United States," University of Oklahoma Press, Norman, 1955.

32. For a well written description of the social characteristics of the Mid-West, embracing the Corn Belt area, Vide Hutton, G., "Mid-West at Noon", University of Chicago Press, Chicago, 1946.

CHAPTER THREE

THE PEOPLING OF THE CORN BELT, 1790-1900

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THE PEOPLING OF THE CORN BELT, 1790-1900

A historical background is not always relevant in a regional population study, but in the case of the Corn Belt it is imperative since many of the characteristics of the present pattern were evolved many decades ago, and under vastly different physical and social conditions from those of the present. The treatment which follows is partly historico-geographical and is selective, in that the aim is not for completeness of historical detail but the description of the most relevant historical circumstances which have had a strong influence in population matters. Nevertheless it has been found necessary to preserve a historical chronology.

The starting point of this study is 1790, the year in which the first federal census was taken, though this census did not include any of the present Corn Belt. 1790 has been selected as post-dating the War of Independence and marking the approximate time when interest in the area occupied by the Corn Belt in 1950 began to heighten. By 1790 the frontier had already crossed the Alleghenny

Mountains and there were enclaves of settled land to the south and east of the present Corn Belt and a few tiny isolated settlements within its limits. By 1860 all but the most northern and western fringes of the Corn Belt had been settled. Moreover, by 1860 what had been a wilderness had been pioneered and supported a stable agriculture in which corn was the dominant crop. This movement of the frontier was not continuous. By 1840 the pioneers had moved out of the woodlands into the totally unfamiliar environment of the prairies, and ironically the prairie environment, eventually the most fertile in the Corn Belt, was, for a decade or more, a barrier until innovation in agricultural practices and transport facilitated its subordination. The period from 1840 to 1860 witnessed a re-appraisal of the environment and eventually a resurgence as it became understood. If the period 1790 to 1860 marked the birth of the Corn Belt, then the period 1860 to 1900 marked its growth. The Civil War was an impetus to the commerical development of the economy and the railroads crossing the continent established the Corn Belt as the heart of the nation rather than the periphery. The period 1860 to 1900 was one of vast population increase, both by natural increase and to an unprecendented extent, by immigration. During the fifty years from 1900 until the last census there has been

continued numerical growth but this may be regarded as a period of trends on a basic pattern that already existed.

In this outline of the evolution of the Corn Belt a basic sub-division into two contrasted periods is proposed, with 1860 as the critical date. The selection of the year 1860 is considered amply justified by the following considerations.

Firstly, it marks the onset of the Civil War, which was a significant stimulus to agricultural development to maintain the war effort, and at a later date, to aid the rehabilitation of the Southern states during the Reconstruction.

Secondly, during and after the war there was a vast expansion in railroad construction which transformed the level plains of the Corn Belt from one of the most difficult environments in terms of access into one of almost unrestricted ease of movement.

Thirdly, the year 1860 marks the virtual completion of the pioneer settlement of the Corn Belt after which date settlement took the form of an increased density of population on land that had already been pioneered.

Fourthly, although foreign immigration into the

Corn Belt was by no means insignificant before 1860, the real inrush of foreign settlers began after the close of the Civil War.

Finally, by 1860 corn had been establied as the predominant crop in the farming economy. Warntz[33] has shown that by 1860 "a definite continuous region of concentrated corn production existed in the Middle West", which by the close of the Civil War had essentially the same distribution as the Corn Belt of today.

The chronological sequence which will be followed in this chapter is indicated below, and the source materials consulted in the preparation of this

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33. Warntz, W. "An Historical consideration of the terms "Corn" and "Corn Belt" in the United States." Agricultural History, Vol.31, No.1.

chapter are indicated in a footnote[34].

1. 1790-1840 A period of frontier expansion over the Alleghenny Mountains and into the Corn Belt during which the frontier moved from the Ohio to the Mississippi excluding the prairies. Essentially it was a phase of woodland agriculture and slow development due mainly to the poor state of communications.

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34. Notes on source material in Chapter Three

(a) Literary Source Material

Due to the efforts of numerous distinguished historians the history of the Middle West is well documented and understood. In particular considerable reference was made to the works of Turner, Paxston, Bond, Alvord, Buck, Esarey, Abernethy, Barnhart, Fox and Hulbert. Reference was made to the works of these writers and the references are included in the general bibliography. On particular topics reference was made to several specialised studies.

(b) Statistical Sources

The primary reference for statistics of population was the various censuses and census reports of the United States Bureau of the Census.

(c) Lectures and Fieldwork

The writer was privileged to receive tuition from John D. Barnhart, Professor of History in the University of Indiana. Dr. Barnhart is a protagonist of the "Frontier Theory" as propounded by F.J. Turner, and is author of "Valley of Democracy". The writer is indebted to Dr. Barnhart for much information concerning sources and for the approach in this chapter, though he is in no way responsible for the opinions held.

Finally the writer had the opportunity of visiting the area of early settlement which gave some insight into the significance of physical geography in the expansion of settlement into the Corn Belt.

2. 1840-1860 A period of re-appraisal and then re-surgence as prairie agriculture evolved and communications improved firstly with the development of canals and later, railroads.

3. 1860-1900 A period of growth and expansion. By 1860 the Corn Belt had appeared in embryo and the economy assumed many of its present characteristics in this period. In the growth of population the contribution of foreign immigrants was conspicuous.

1. 1790-1840. THE OCCUPATION OF THE SOUTH EASTERN WOODLANDS

(a) The Political framework of early frontier expansion

The significant fact about the occupation of the area between the Ohio and the Mississippi Rivers, that is present day Ohio, Indiana and Illinois, is that it was planned by federal authority. In order to appreciate the effects of this it is necessary to understand the political situations.[35]

In 1783 the area now occupied by the Corn Belt was located partly in the territory of the United States and partly in Louisiana Territory, claimed by Spain. This

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35. An appreciation of the political aspects of population expansion is aided by reference to maps of the territorial extent of the states and the date of their creation. Such maps are to be found in:
Paullin, C.O. "An Atlas of Historical Geography", plates 61-63, New York, 1932, and "A Century of Population Growth in the United States". pp.52-53, U.S. Bureau of the Census, Washington D.C., 1909

political dichotomy was of little real significance since with the exception of Indians, missionaries and fur traders, the area was unsettled. The United States section formed part of the North West Territory, that is North and West of the Ohio River, and it was in this section that the first intrusion of settlement into the Corn Belt occurred.

By 1784, when Virginia ceded her claims based on the expeditions of George Rogers Clark, the North West Territory became federal land and the first public domain. In relation to its size the population was very small and overwhelmingly Indian. In the first national census of 1790 there was no enumeration of the population of the North West Territory, but several estimates are available. White settlement was restricted to a number of tiny settlements, all of which were located on the banks of rivers, and contained missionaries, fur traders and coureurs des bois, illicit traders, who lived partly in association with and partly in spite of the Indians. These settlements included Kaskaskia, at the confluence of the Mississippi and Kaskaskia Rivers, Cahokia, situated on the site of present day St. Louis, and Prairie Du Rochers, St. Phillip and Grand Ruisseau, all further upstream on the Mississippi. In addition, Vincennes existed close to its present site on the Wabash in Indiana[36]. Two other areas of significant

36. Vide Gentilcore, R.L., "Vincennes and French Settlements in the Old Northwest." Annals of the Association of American Geographers". Volume 47, 1957.

settlement were located in the Ohio Valley. These were the lands purchased by the Ohio Company of Associates at Marietta, and by Colonel John Symmes, located further west.

These represent the chief areas of white settlement in the North West Territory which was otherwise given over to Indians of the Delaware, Wyandott, Miami, Shawnee, Potawotami, Kaskaskia, Kickapoo, Mascauten and Piankishaw tribes[37]. The various estimates of the population of the North West Territory are worthy of consideration.

Beverley Bond has estimated that the Indian population at the time of Clarks' expedition in 1783 was 45,000.[38] A rather higher figure was given by a contemporary writer, Winterbotham, who considered that there were 65,000 Indians in the territory in 1792.[39] The Governor of the Territory, St. Clair, estimated that in 1790 there were 4,000 white inhabitants, a figure which later historians

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37. These represent only the more important tribes and those which occupied the greatest geographical extent. There is considerable variation in the spelling of the tribal names. The distribution of these tribes and of white settlers is shown in Map 9.

38. Bond, B., "The Civilisation of the Old Northwest". p.3. New York, 1934.

39. Winterbotham, "View of the United States", 1796.

have considered conservative. The most detailed estimate is that provided by Jedediah Morse, writing in 1797.[40]

MORSE'S ESTIMATE OF THE POPULATION OF THE NORTH WEST TERRITORY, CIRCA 1790

Indians (supposed)	65,000	
Ohio Company's Purchase	2,500	
Colonel Symmes' Settlements	2,000	
Galliopolis (French settlement opposite the mouth of the Kanawha River)	1,000	1792
Vincennes and vicinity on the Wabash River	1,500	
Grand Ruisseau, St. Phillip and Prairie Du Rocher	240	
Kaskaskia and Cohokia	680	1790
TOTAL WHITE POPULATION CIRCA 1790	7,820	

From the conflicting estimates available it is clear that some doubt attaches to the actual population of the North West Territory in 1790. It seems certain that the white population was centred on some five or six localities and totalled between six and eight thousands and that the Indian population was seven or eight times as large. What is obvious is that the area now occupied by over 20 millions only held a population of some 70,000 in 1790 of whom the overwhelming majority were Indians.

The first political events in the North West Territory had far reaching effects on settlement, and their influence is still apparent in the present population pattern. In 1790 there was little white settlement in the

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40. Jedediah Morse, "American Gazeteer", Boston, 1797.

Territory, but the campaigns of the previous decade had aroused considerable interest in the area and several tidewater states had claims to land beyond the Appalachian divide. With the secession of the last state claim in 1784 the Territory became Federal property and Congress determined that a vigorous land policy was required. Accordingly the Ordinance of 1784 was drafted concerning the settlement of the North West Territory and the creation of new states within its limits. The terms of this act had great constitutional significance,[41] but the chief interest from a geographical standpoint was the introduction of the rectangular land survey system.[42] In the revised Ordinance of 1785 the same system with its characteristic grid pattern was retained, with the "Township" as the chief element. By the terms of these Ordinances the most characteristic feature of the Corn Belt was initiated, the grid iron pattern of fields, communications and settlement distribution. So emphatic a cultural feature is the rectangular pattern, and so significant its influence in population matters, that some further description is necessary.

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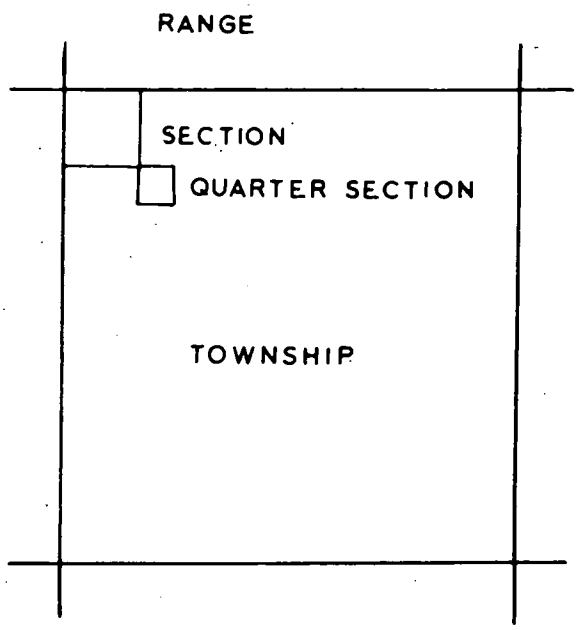
41. A full discussion of the terms of the 1784, 1785 and 1787 Ordinances is given by Barnhart. Vide Barnhart, J.D. "Valley of Democracy", p.124 et sequa. Indiana University Press, 1953.

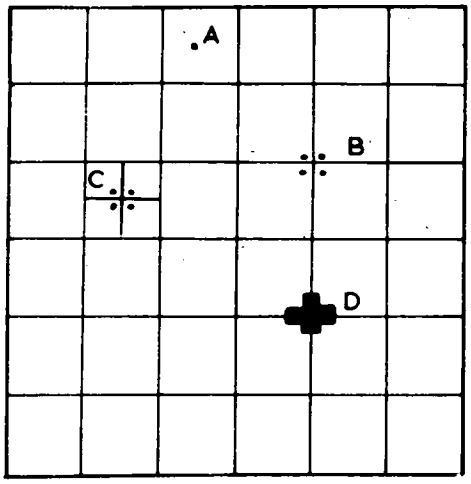
42. A comprehensive study of the Rectangular Land Survey System has been made by Pattison Vide. Pattison, W.D. "The Beginnings of the American Rectangular Land Survey System, 1784-1800, Research Paper in Geography, No.50. Chicago University, Illinois, 1957.

The terms of the 1785 Ordinance involved the surveying of land into "Townships" six miles square which were to be subdivided into "Sections" one mile square. The Ordinance of 1785 was concerned solely with the so-called Seven Ranges in the south east of present-day Ohio, but the system was subsequently extended to the whole of the United States public domain as the frontier receded westwards. The effects of this survey system were far reaching, and the rectangular disposition of fields, roads and rural settlement is the most striking feature in the cultural landscape of the Corn Belt.

The township was sold in sections of 640 acres, which in turn were subdivided and generally sold as quarter-sections, that is units of 160 acres. When the land was occupied the section lines were preserved as field boundaries, many of which were followed by roads, and the rectilinear pattern was crystallised. The effect on settlement was profound. In general it tended to disperse settlement with a farmstead in each quarter-section. This was not always the case however; the need for communal life and mutual assistance among the early settlers often resulted in the grouping of a number of farmsteads in clusters, for instance at the intersection of contiguous quarter sections. The relationships of range, township,

THE RANGE & TOWNSHIP SURVEY SYSTEM





A Isolated farmstead on 640 acre section.

B Nucleated farmsteads on adjacent sections.

C Nucleated farmsteads on adjacent quarter sections.

D Urban centre of township.

section and quarter-section, and some of the effects on settlement patterns are indicated by Diagram 1. Frequently one of the clusters described above would form the nucleus of a town, usually occupying a central position in the township. The general rule of one farmstead per 160 or 80 acres resulted in a low but uniform density of population. Later circumstances have done much to obliterate this element as a determinant of population density, but over vast areas of the Corn Belt the rectangular pattern is still dominant in the landscape and exerts a consistent influence on population distribution and density.

A further political development with geographical implications was the legislation of the North West Ordinance of 1787. This ordinance provided for the creation of no more than five and no less than three new states in the territory. Meridians were to be drawn from the confluence of the Miami and the Ohio and from the Wabash at Vincennes. A parallel was to be drawn through the southern tip of Lake Michigan. By producing this line west of the Mississippi the outlines of the future states of Ohio, Illinois and Indiana were substantially drawn. Congress also reserved the right to create one or two states north of the parallel, subsequently Michigan and Wisconsin. The Ordinance stated that the territories would be eligible for statehood on

attaining a population of 60,000 free inhabitants. A further section of this same ordinance was to prove of national significance half a century later, and still remains a major factor in population characteristics today; this was the forbidding of slavery in the newly-created states. This had two major effects on population matters. Firstly, in part it accounts for the low proportion of negroes in the present Corn Belt population. Secondly, it discouraged the migration of slave-owning southerners into the Corn Belt. The statistics below indicate the effectiveness of the legislation in the period 1787-1860.

TABLE 3

NUMBER OF SLAVES IN SELECTED CORN BELT STATES 1800-1860

STATE	1800	1810	1820	1830	1840	1850	1860
Ohio				6	3		
Indiana	28	237	190	3	3		
Illinois	107 (1)	168	917	747	331		
Michigan		24		1			
Wisconsin				31 (3)	11		
Missouri		2,875 (2)	10,222	25,091	58,240	87,422	114,931
Iowa					16		
Nebraska							15
Kansas							2

Source: U.S. Bureau of the Census, "A Century of Population Growth, 1790-1900". Washington D.C. 1909. Extracted from Table 60, p.133

(1) Then part of Indiana Territory
(2) Then part of Louisiana Territory
(3) Then part of Michigan Territory

Table 3 indicates the relative insignificance of slaves in the Corn Belt states with the exception of Missouri which was a "slave" state, and still has a higher proportion of negro population than any other Corn Belt state.

The continuous hostility of the Indians to settlers in the Old North West and their open allegiance with the British, who, although technically defeated still held several forts on American soil in 1790, led to conflict with the federal power. By the end of the century, by a series of voluntary secessions and inflicted treaties[43] the Indians had been pushed back beyond the limits of present-day Ohio. In particular the victory of General Wayne at Fallen Timbers in 1795 and the resultant Treaty of Greenville excluded the Indians from the land first surveyed under the new ordinance.

SUMMARY

By the close of the century the political framework for the settling of the land which is now the Corn Belt had been determined. The ordinances of 1784 and 1785 had instructed the way in which the land was to be occupied,

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43. These treaties were Ft. McIntosh, 1785, Ft. Finney, 1786, and Ft. Greenville, 1794. The terms of these treaties are discussed in Barnhart, Op. Cit. 41 and a map of the treaty lines appears in Pattinson Op.Cit 42, p.12

while the 1787 Act had outlined the future state boundaries and excluded slavery from them. Numerous treaties had excluded the Indians from the lands to be first settled. By 1790 the way was clear for settlement to spread through the mountain passes and into the Old North West and the determined settlement of the Corn Belt had begun.

(b) The Breakthrough the Mountains and the Environment of Early Settlement, 1790-1840

The routes of entry and early settlement nuclei

By the Treaty of Fort Stanwix, 1768, the boundary for white settlement had been fixed at the Ohio River, north and west of which had been designated as Indian Territory.[44] South and east of the Ohio white settlement became increasingly significant after 1775, facilitated by the development of trails through the Appalachians into the Ohio Valley, which was to act as the springboard for the settlement of the Corn Belt region itself. The pioneers travelled via three main routes to the trans-Appalachian settlements south of the Ohio, while the Ohio River itself was used for movement despite the hazards of Indians and the river itself. These routes were:-

Braddock's and Forbe's Trails

These two trails were of military origin and formed

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44. Vide Bond, Op. Cit.38. Chapter 1, p.243, for a discussion of this and later treaties with the Indians in the North-West Territory.

in effect a single channel of movement from the northern limit of the Great Appalachian Valley to the forks of the Ohio west of Pittsburg. By 1790 this latter area had become a nucleus of settlement and a dispersal centre for movement down the Ohio Valley to Kentucky.

Boone's Wilderness Road

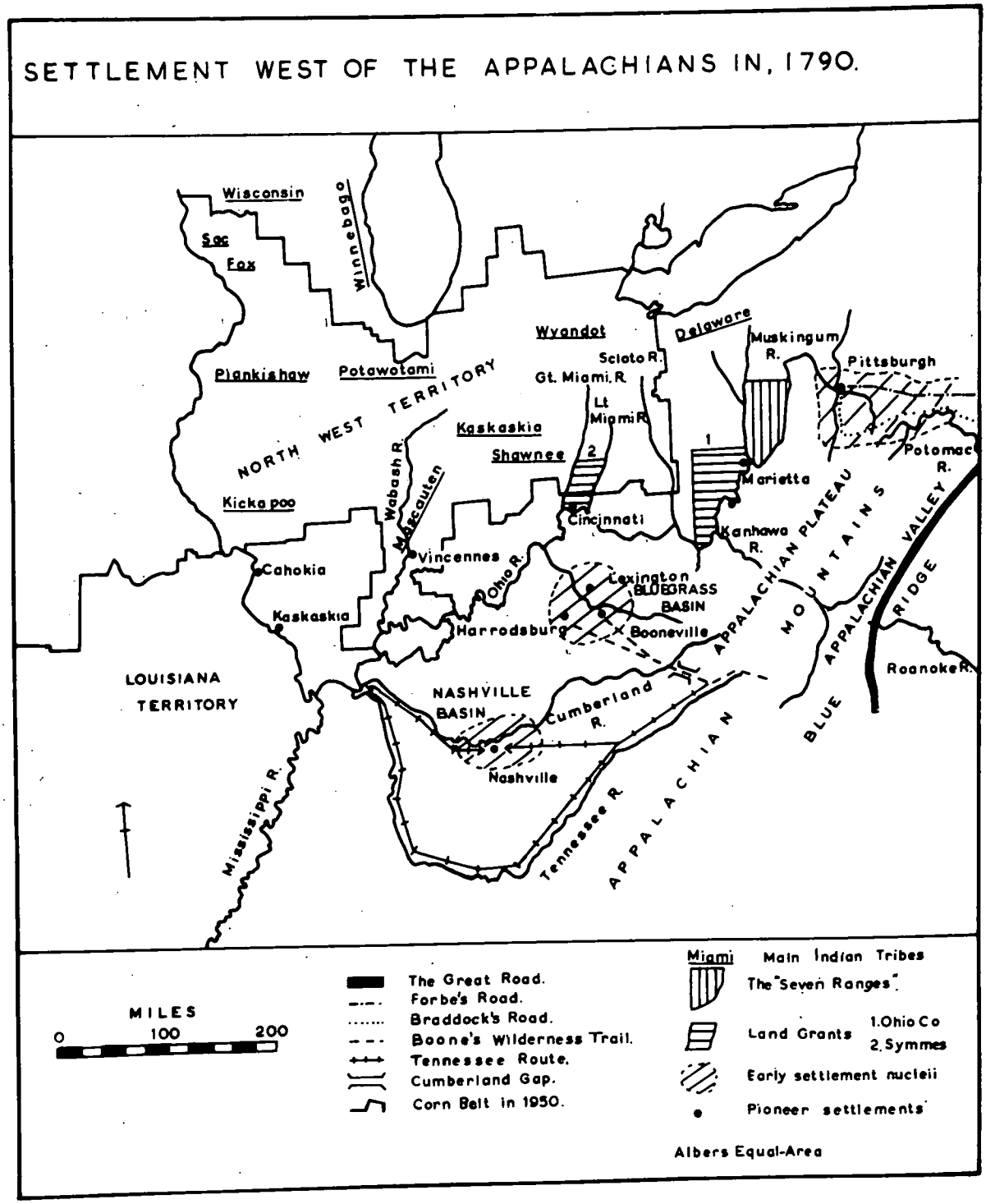
This trail had been pioneered by Daniel Boone on behalf of the Transylvania Company to its land in the Kentucky Bluegrass Region. From the Great Valley south of the Roanoke Gap the trail crossed the Appalachian Ridges via the Cumberland Gap and on reaching the Bluegrass Basin divided, one branch reaching Lexington via Boonesboro and the other terminating further south at Harrodsburg. This route gave rise to a second nucleus of settlement in Kentucky.

The Tennessee Route

A third, more southerly, route developed after 1780 via the headwaters of the Tennessee to its confluence with the Ohio and up the Cumberland River to the Nashville Basin, which was settled as a third nucleus, the precursor of the state of Tennessee.

These early routes of settlement, the nuclei of settlement and pioneer towns are illustrated in Map 9.

MAP 9.


SETTLEMENT WEST OF THE APPALACHIANS IN, 1790.
Wisconsin
Sac
Fox
Winnebago
Plankishaw
Potawotami
NORTH WEST TERRITORY
Kickapoo
Wabash R.
Mascouten
Kaskaskia
Shawnee
Wyandot
Delaware
Sciotoe R.
Gt. Miami R.
Lt Miami R.
Muskingum R.
Pittsburgh
Potomac R.
Marietta
Cincinnati
Kanhawa R.
Vincennes
Ohio R.
Cahokia
Kaskaskia
Lexington
BLUEGRASS BASIN
Harrodsburg
Booneville
APPALACHIAN PLATEAU
MOUNTAINS
BLUE
APPALACHIAN
VALLEY
RIDGE
Roanoke R.
LOUISIANA TERRITORY
NASHVILLE BASIN
Cumberland R.
Nashville
Tennessee R.
APPALACHIAN
Mississippi R.
MILES
0
100
200
The Great Road.
Forbe's Road.
Braddock's Road.
Boone's Wilderness Trail.
Tennessee Route.
Cumberland Gap.
Corn Belt in 1950.
Miami
Main Indian Tribes
The "Seven Ranges".
Land Grants
1. Ohio Co
2. Symmes
Early settlement nucleii
Pioneer settlements
Albers Equal-Area

Summary of Settlement in 1790

Three nuclei of early settlement have been denoted south of the Ohio River, from which population was later to move into the Corn Belt. The population of these nuclei has been estimated by Barnhart.[45]

Monongahela-Ohio Region.....	100,000
Kentucky Bluegrass Region....	73,000
Nashville Basin of Tennessee.	70,000

In addition, under the terms of the 1785 Ordinance surveying began north of the Ohio in the "Seven Ranges" and this was followed by two significant land purchases north of the Ohio. The first of these was the Ohio Company of Associates Grant extending from the Muskingum River westwards to the Seven Ranges. This land was developed by the Ohio Company and Marietta developed as an urban centre at the mouth of the Muskingum. This was followed by a similar grant to John Cleves Symmes of New Jersey located on the Ohio and extending between the Little and Great Miami Rivers and known as the Miami Purchase. This second tract contained the town of Cincinnatti which was to develop as the largest city of the Ohio Valley.[46]

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45. Vide Barnhart. Op. Cit 41. pp. 43-44. Figures are based on the "Twelth Census of the United States, 1900", Table 4, pp. 9-47.

46. Vide Pattinson, Op. Cit. 42. pp. 169-171 for details of the Ohio Company and Miami Purchases.

Finally, as was described earlier, there existed a small number of isolated villages in the Old North West of which Kaskaskia, Cahokia and Vincennes were the most significant. The population of the two land grants and the villages has been calculated by Morse as 7,800. This gives a total white population west of the Appalachians in 1790 of over a quarter of a million. The composition of this population was extremely varied in origin. Through Braddock's and Forbe's Trails came Pennsylvanians and Virginians while to Kentucky and Tennessee came a Southern element.

The Environment of Early Settlement

After the ordeal of crossing the mountains the early settlers of the Ohio Valley were rewarded with an environment generally favourable to agriculture. The abundant rainfall and long summers suited the cultivation of cereals, especially maize, but there was considerable variation in soil conditions. In Eastern Kentucky and Tennessee the rugged terrain made tillage practicable only in the valley bottoms. In the unglaciated area south of the Ohio, the coal measures of Eastern Kentucky and Central Tennessee yielded poor soils, but the limestones of the Kentucky Bluegrass offered a much more fertile soil and supported excellent pasture. North of the Ohio, in the glaciated area of the North West Territory a thick mantle

of silt and boulder clay provided the best soils of all the new land. On crossing the Appalachians the settlers emerged onto thickly wooded plateaus dipping gently to the Mississippi. The presence of woodland was of great significance since it represented an environment with which the pioneers were accustomed and in which their agricultural techniques had evolved. The wooded, dissected plateaus of Southern Indiana and Southern Ohio were the first site of agriculture in the Corn Belt. This phase of woodland agriculture lasted until 1840 by which time the frontier of settlement had reached the prairies in Illinois.

The form of agriculture practised in the first intrusion into the present Corn Belt was little different from that which the settlers had practised east of the mountains. The chief crops were wheat and corn, the former being a cash crop, while corn if marketed at all, was sold in the form of pork or whisky. The woodlands of this virgin land were not without clearings but these were generally left for grazing and the newly cleared land was cultivated. Although the economy was initially pioneer and subsistence, in time agricultural surpluses were transported to the markets of the Eastern Seaboard and to New Orleans. The pioneer farmer had serious difficulties. Although land was cheap and environmental conditions favourable

transport was extremely costly and laborious to the distant markets.

By 1810 the frontier of settlement had advanced into the area defined as the Corn Belt in 1950. The approximate position of the settled area in 1810 is indicated in Map 10 by the distribution of the area with a density of more than 2 persons per square mile.[47] In 1810 the frontier, thus demarcated, extended in an arc from Lake Erie, through Central Ohio and Southern Indiana to the Mississippi. A further tongue of settlement extended along the Mississippi and included the old villages of Kaskaskia and Cahokia. As yet urban centres were few, small, and essentially riverine in their distribution. Cincinnati was the largest settlement in 1810 north of the Ohio but had only 2,540 inhabitants. Dayton, the only town in the present Corn Belt, had only 383 inhabitants. Nevertheless, a considerable expansion of settlement had taken place since 1790. Ohio had gained statehood under the terms of the North West Ordinance in 1803 and by 1810 its population reached 230,760. By 1810 the territories of Indiana, Illinois and Michigan were organised and were to achieve statehood within the next decade.

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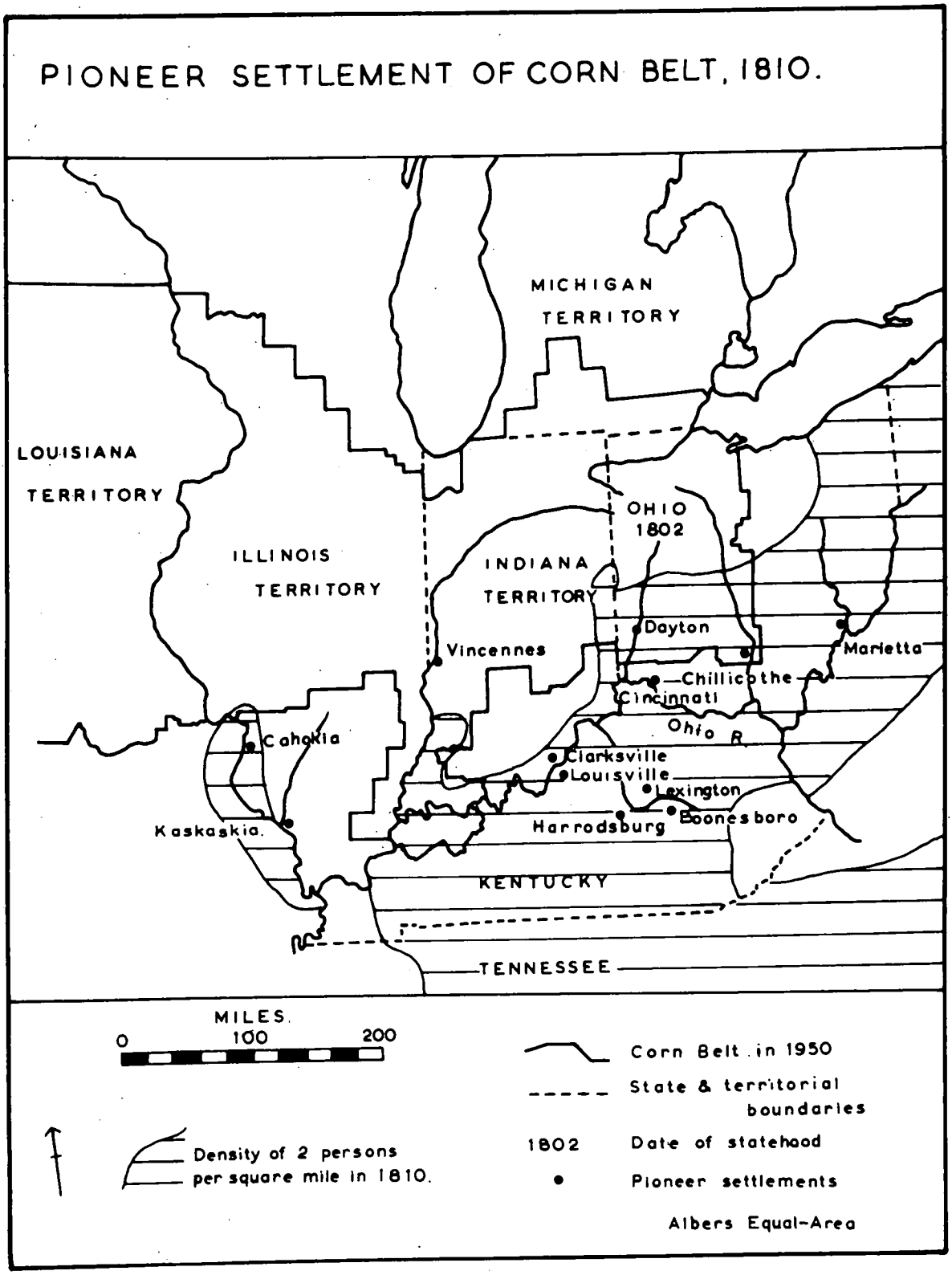
47. This "frontier" line and that of subsequent maps has been derived from Paullin, Op. Cit., 35 plates 76-78.

MAP 10.


PIONEER SETTLEMENT OF CORN BELT, 1810.
MICHIGAN TERRITORY
LOUISIANA TERRITORY
ILLINOIS TERRITORY
INDIANA TERRITORY
OHIO 1802
Dayton
Marietta
Vincennes
Chillicothe
Cincinnati
Ohio R.
Cahokia
Clarksville
Louisville
Lexington
Boonesboro
Harrodsburg
Kaskaskia.
KENTUCKY
TENNESSEE
MILES.
0
100
200
Corn Belt in 1950
State & territorial boundaries
1802 Date of statehood
Pioneer settlements
Density of 2 persons per square mile in 1810.
Albers Equal-Area

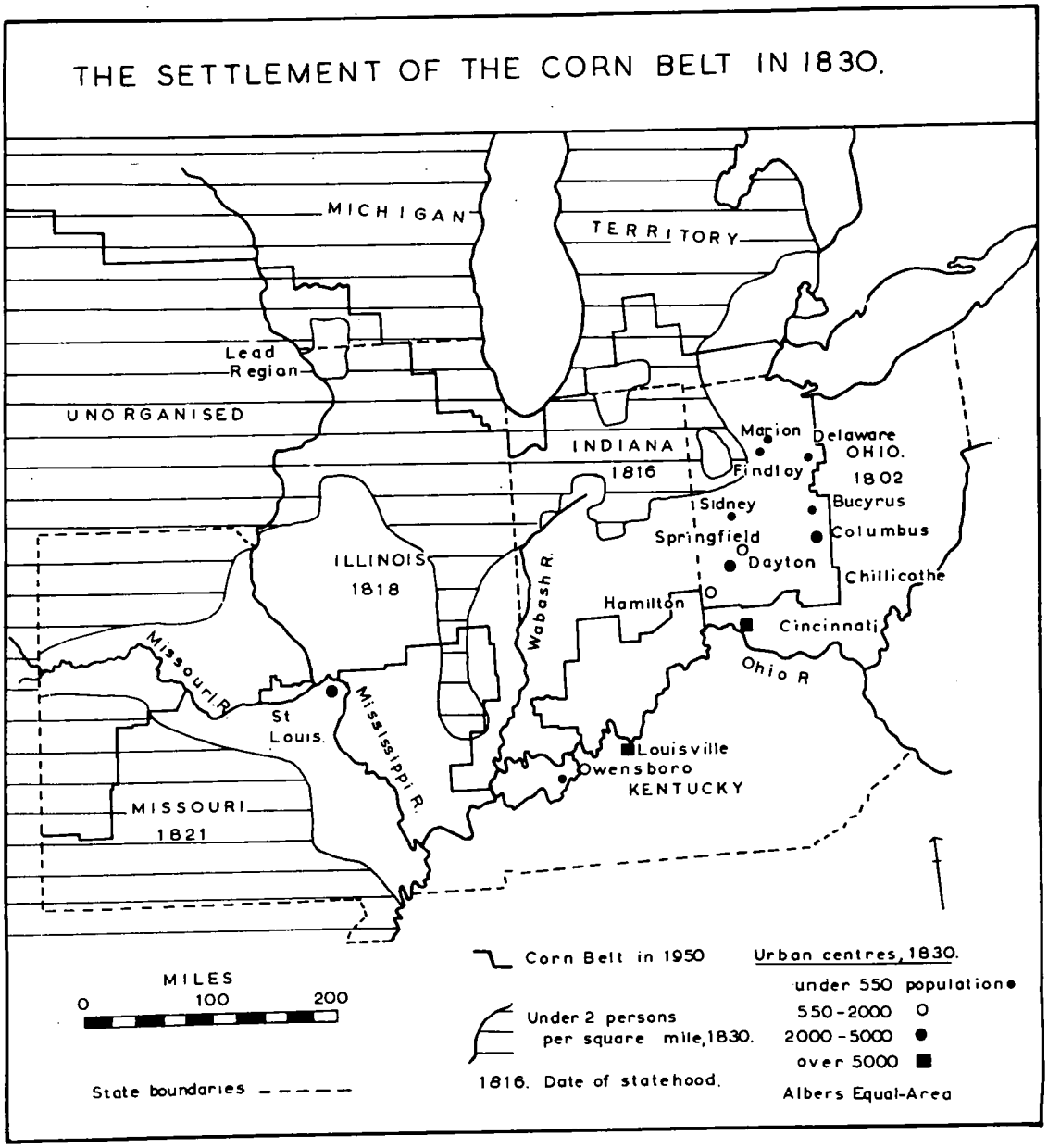
Woodland Farming and the expansion of the Frontier, 1810-1840

By 1830 the frontier of settlement had reached the edge of the prairies in Illinois, and the period 1810 - 1840 saw the completion of the settlement of the woodland zone. By this time Indiana (1816), Illinois (1818), and Missouri (1821) had joined Ohio in statehood. Travel was still very difficult, though as the frontier advanced trails of varying quality were demarcated. In the decade 1820 - 1830 there was an increasing use of the steamboat and the pioneers advanced up the Mississippi and Missouri to the edge of the woodland, but halted at the unfamiliar environment of the prairies. The main settlements were still restricted to river locations and the interfluves were only lightly settled.

Map 11 indicates the extent of settlement in 1830. By this time the frontier had penetrated to the edge of the prairies in Central Illinois and North West Indiana, while Central Missouri was settled along the Missouri Valley. A significant "outlier" of settlement existed in the lead mining region of North West Illinois and South West Wisconsin (then part of Michigan Territory). The early settlement of this region has been described by Dr. G.H. Smith:-

"A few miners had reached Wisconsin by 1820, but

MAP II.


THE SETTLEMENT OF THE CORN BELT IN 1830.
MICHIGAN
TERRITORY
Lead Region
UNORGANISED
INDIANA
1816
ILLINOIS
1818
MISSOURI
1821
Wabash R.
Missouri R.
Mississippi R.
St Louis.
Marion
Delaware
OHIO.
1802
Findlay
Sidney
Bucyrus
Springfield
Columbus
Dayton
Chillicothe
Hamilton
Cincinnati
Ohio R
Louisville
Owensboro
KENTUCKY
MILES
0
100
200
State boundaries
Corn Belt in 1950
Under 2 persons per square mile, 1830.
1816. Date of statehood.
Urban centres, 1830.
under 550 population
550-2000
2000-5000
over 5000
Albers Equal-Area

it was not until after 1825 that the frenzied movement began. As the frontier of settlement approached the Lead Region the pioneers attracted by the prospect of wealth, threw out a salient in advance of the agricultural frontier".[48]

Urban settlement was still restricted in 1830 and lagged far behind the advance of the frontier. The only areas of significant urban settlement in the Corn Belt were the Miami and Scioto Valleys of Ohio, where the chief towns were Columbus (2,435), Chillicothe (2,426), on the Scioto, and Dayton (2,950), on the Miami. Far more significant centres were located on the southern fringe of the present Corn Belt. These were St. Louis (4,971), Louisville (10,341), and Cincinnati (24,831) all situated on important river communications. Not until the construction of canals and more especially railroads was there any significant development of urban centres on the plains.

Until 1830 the settlers had practised woodland agriculture, but as the woodland zone filled up and new land became scarce, and as more settlers poured into the Corn Belt after the completion of the Erie Canal, it became evident that a determined attempt to settle the prairies was inevitable. The reasons for the lack of settlement on

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48. Smith, G.H. "The Populating of Wisconsin", American Geographical Review, Volume 18, p.405, 1928.

the prairies before 1830 may be summarised briefly:

1. The greatest single deterrent was probably the lack of wood and water, essential commodities to the frontier farmer. Moreover on the thick mantle of glacial till there was an absence of stone as an alternative building material for wood.

2. The heavy prairie soil, with its thick sod and grass cover was almost impossible to till with the wooden mouldboard plough or even the cast iron plough that had been used in the forest soils.

3. The lack of adequate communications on the prairies made the possibility of marketing extremely difficult. Not only were extensive areas remote from navigable water, but the spring rains made the roads impassable due to mud.

4. There was considerable antipathy on the part of the early farmers to the unfamiliar environment. The first yields proved to be low and some doubt was cast as to the fertility of prairie soils as evinced by these low yields and the absence of trees.

Despite these considerable deterrents the settlement of the prairies was well advanced by 1840, although the characteristic prairie agriculture did not evolve

until after 1840.

The Early Settlement of the Prairies 1830 - 1840

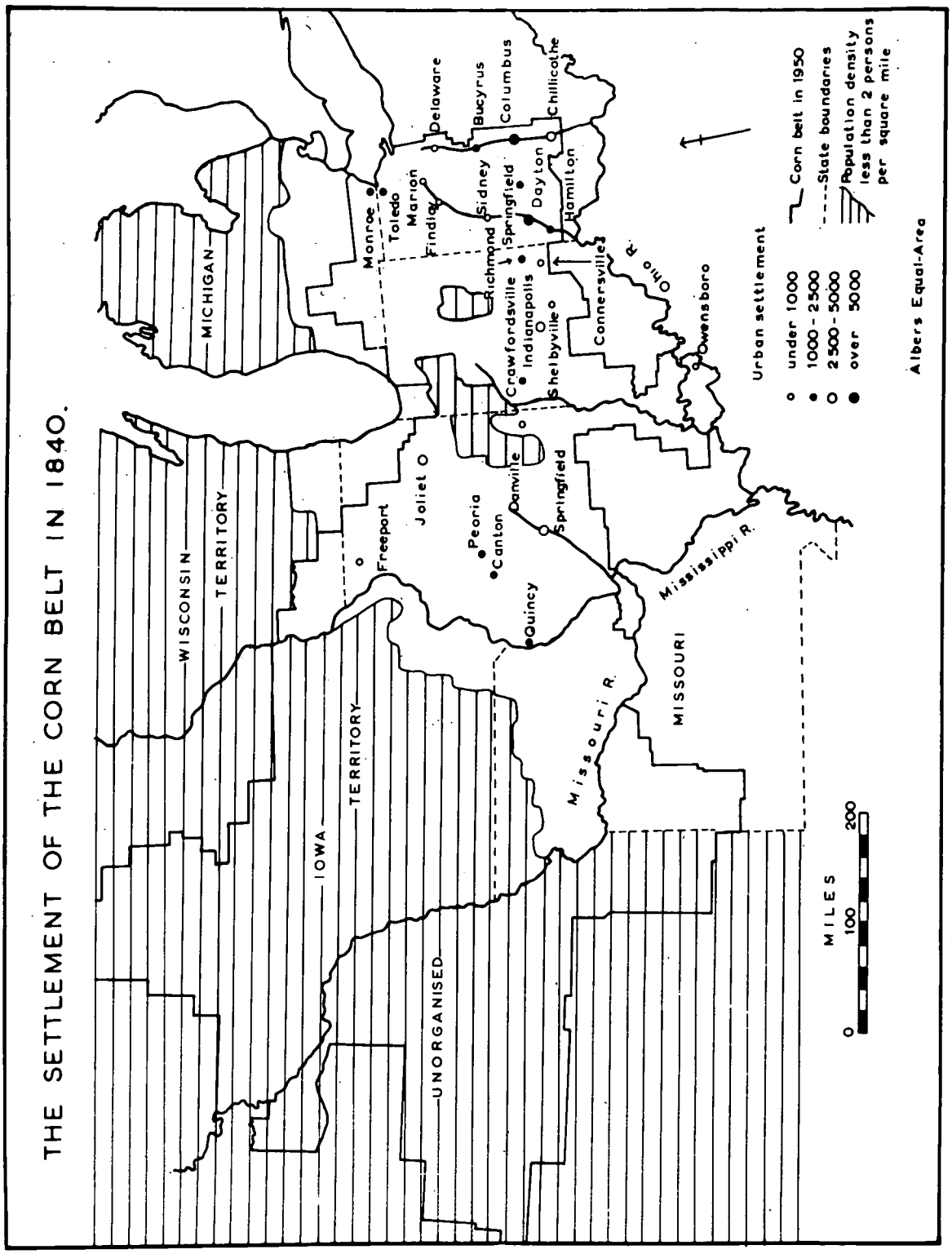
The major impetus for the settling of the prairie grasslands after 1830 was expediency. The opening of the Erie Canal in 1825 heralded a fresh surge of immigration, this time from the Northern States. In fact up until 1850 the Erie Canal was more significant for immigration than as an outlet for trade. The volume of trade down the Mississippi to New Orleans exceeded that on the Erie Canal until this date. The effect of this increase in immigration into the present Corn Belt was to fill up the little woodland still unsettled in North West Ohio and Northern Indiana, and to channel the new settlers in to the prairies of Illinois. Two major advances in the decade 1830 - 1840 facilitated the settlement of the prairies. The first of these was the introduction of the steel plough which rendered the prairie soil as workable as those of the woodlands. This coincided with a period in which the price of wheat was at a high level on the eastern seaboard markets which encouraged an extension of wheat growing on the prairies. Secondly, the improvement of communications by 1840 facilitated the transport of vital materials especially fuel and building materials to the prairies and the lack of natural woodland was no longer

an obstacle to settlement. The extent of settlement by 1840 is shown in Map 12.

By 1840 throughout the Corn Belt the frontier had crossed the Mississippi. Missouri was almost completely settled and the frontier had moved into Eastern Iowa. Indiana and Illinois were completely settled but for the last remnants of the prairies. There was an extension in the growth of towns though as yet most were small. It was symptomatic of changing conditions that the largest town on the prairies, Springfield (2,579), was not located on a large navigable river. The largest towns were located in the earliest settled areas of the Miami and Scioto Valleys, where Dayton and Columbus had populations exceeding 6,000. These towns were insignificant however compared with Cincinnati (46,338), and Louisville (21,210).

Some two thirds of the present Corn Belt had been settled by 1840. However, the Corn Belt form of agriculture had not evolved by this date and the largest towns in the Middle West were situated outside the present belt. Wheat was the principal cash crop in 1840, especially on the prairies, and corn was grown as a subsistence and fodder crop. The production of corn was far more significant in the areas of woodland agriculture south of the Ohio and in 1839 North Carolina produced almost as

MAP 12.


THE SETTLEMENT OF THE CORN BELT IN 1840.
MICHIGAN
WISCONSIN
TERRITORY
IOWA
TERRITORY
UNORGANISED
MISSOURI
Monroe
Toledo
Findlay
Marion
Delaware
Sidney
Bucyrus
Columbus
Chillicothe
Richmond
Springfield
Dayton
Hamilton
Crawfordsville
Indianapolis
Shelbyville
Connersville
Ohio R.
Owensboro
Freeport
Joliet
Peoria
Canton
Danville
Springfield
Quincy
Missouri R.
Mississippi R.
MILES
0
100
200
Urban settlement
under 1000
1000-2500
2500-5000
over 5000
Corn belt in 1950
State boundaries
Population density less than 2 persons per square mile
Albers Equal-Area

much corn as Indiana, as is shown in Table 4.

TABLE 4

PRODUCTION OF INDIAN CORN IN 1839 FOR THE TEN LEADING STATES

(in millions of Bushels)

1.	Tennessee	45
2.	Kentucky	40
3.	Virginia	34.5
4.	Ohio	33.5
5.	Indiana	28
6.	North Carolina	24
7.	Illinois	22.5
8.	Alabama	21
9.	Georgia	21
10.	Missouri	17

TOTAL NATIONAL PRODUCTION 337,531,875 bushels

Source: "Agriculture of the United States in 1860", Washington D.C.1864, Vol.1. .49.

2. THE COMPLETION OF THE OCCUPANCE OF THE CORN BELT 1840 - 1860

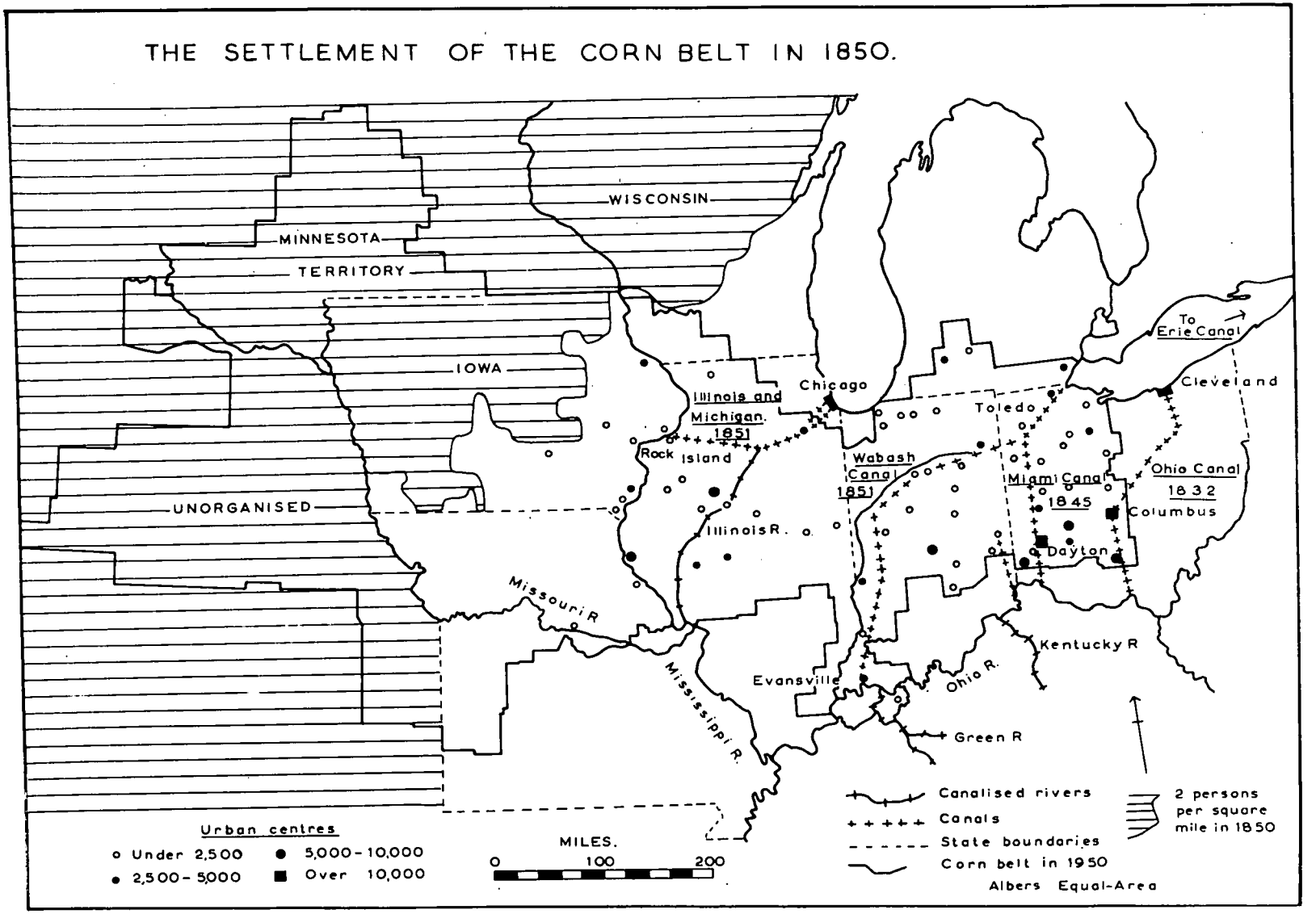
In the twenty year from 1840 - 1860, all but the most western sections of the present Corn Belt had been settled. This final stage of settlement was facilitated by three major considerations:- the expansion and improvement of communications, the evolution of commercial agriculture on the prairies, and the continued entry of settlers from the East, which by 1860 included an increasing proportion of foreign immigrants

49. Quoted by Warntz, Op. Cit. 33, p.26.

The expansion and improvement of communications

The expansion of communications during this period consisted of two phases; a canal building period followed by a railroad building period when the canal system proved inadequate. During the decade 1840 - 1850 there was a vast increase in waterborne transport. Since 1825 the Erie Canal had provided an outlet for agricultural produce to the eastern seaboard. To this route was added an internal network of canals and canalised rivers which greatly increased transport facilities and reduced costs. Moreover, this network gave the agricultural producer some flexibility in his choice of market since the eastern and southern seaboards were now equally accessibly even from the prairies. The chief developments were the Miami, Wabash, Illinois and Michigan and Chicago canals which together with the navigable waters of the Mississippi, Missouri, Illinois, Wabash and Ohio Rivers afforded north-south communications, and via the Great Lakes - Erie Canal, a route to the Atlantic coast. The location of these canals is indicated on Map 13.

By 1850 the canal system had proved inadequate for the needs of the expanding production of the present Corn Belt and in the next decade many fell into disuse. They were replaced by one of the most remarkable developments


THE SETTLEMENT OF THE CORN BELT IN 1850.
WISCONSIN
MINNESOTA
TERRITORY
IOWA
UNORGANISED
Chicago
Illinois and
Michigan.
1851
Rock Island
Illinois R.
Missouri R
Mississippi R.
Evansville
Wabash
Canal
1851
Toledo
Miami Canal
1845
Dayton
Ohio Canal
1832
Columbus
Cleveland
To
Erie Canal
Ohio R.
Kentucky R
Green R
Canalised rivers
Canals
State boundaries
Corn belt in 1950
Albers Equal-Area
2 persons
per square
mile in 1850
Urban centres
Under 2,500
2,500 - 5,000
5,000 - 10,000
Over 10,000
MILES.
0
100
200

MAP 13.

of railroad construction ever undertaken. In 1850 the railroads of the Corn Belt were largely restricted to Ohio and Michigan, where they connected Cincinnati, Dayton and Columbus with Lake Erie, while further lines served the hinterland of Detroit. The only other construction was localised on Chicago, Springfield (Illinois), and Indianapolis. By 1860 some 9,500 miles of railroad had been constructed in Ohio, Indiana, Illinois, Michigan and Wisconsin. The implications of the provision of a rail net within ten years were numerous but the chief effect was the confirmation of a commercial agriculture. Moreover the labour involved in the construction of railroads was a factor in the entry into the area of many foreign immigrants while the fate of many embryo towns was determined by the routes followed by the new railroads. The distribution of railroads is indicated in Map 14 below.

The Development of Commercial Agriculture, 1840 - 1860

The decade 1840 - 1850 was essentially one of establishment during which the settlement of the Illinois prairies was completed and attention focussed on the problems of cultivation in the new environments. Until 1850 the surplus production on the prairies was comparatively small and yields were low. This acted as a stimulus to improvements which came to fruition in the next decade.

Despite the abundance of cheap land there was a shortage of labour on the prairie farms, especially in the laborious task of harvesting, which acted as an impetus for the development of machinery. The innovations of the decade 1850 - 1860 in the field of agricultural machinery brought about a vast increase in production on the prairies.[50] Chief of these was the introduction of the steel plough and the mechanical harvester; the latter to a large degree alleviating the problem of labour shortage and facilitating an expansion in the acreage under cereals.

Further developments within the system of husbandry were to prove significant. Although wheat remained the chief cash crop by virtue of consistent high prices, in terms of the acreage planted by 1860 corn had established itself as the primary crop, with ten times the acreage planted to wheat in most Corn Belt states. Corn was fed to livestock and marketed in the form of cattle and hogs; a pattern that has persisted for a century. Moreover the nation's corn production was centred in the present Corn Belt by 1860 as is shown by Tables 5 and 6. It remains to describe the completion of the settlement to justify 1860 as marking the approximate date in which the Corn Belt had appeared in essence.

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50. The details of the technical developments in agriculture are extremely extensive and the reader is referred to Bidwell and Falconer, "A History of Agriculture in the Northern United States", Chapter XIII, p.281 et sequa for a detailed account.

TABLE 5

PRODUCTION OF INDIAN CORN IN 1849: THE TEN LEADING STATES

(millions of Bushels)

Ohio	59
Kentucky	58.5
Illinois	57.5
Indiana	53
Tennessee	52
Missouri	36
Virginia	35
Georgia	30
Alabama	28.5
N. Carolina	28

TOTAL NATIONAL PRODUCTION 592,071,104

TABLE 6

PRODUCTION OF INDIAN CORN IN 1859: THE TEN LEADING STATES

(millions of Bushels)

Illinois	115
Ohio	73.5
Missouri	73
Indiana	71.5
Kentucky	64
Tennessee	52
Iowa	42.5
Virginia	38
Alabama	33
Georgia	30

TOTAL NATIONAL PRODUCTION 838,792,740

Source:- Vide Table 1 and 2

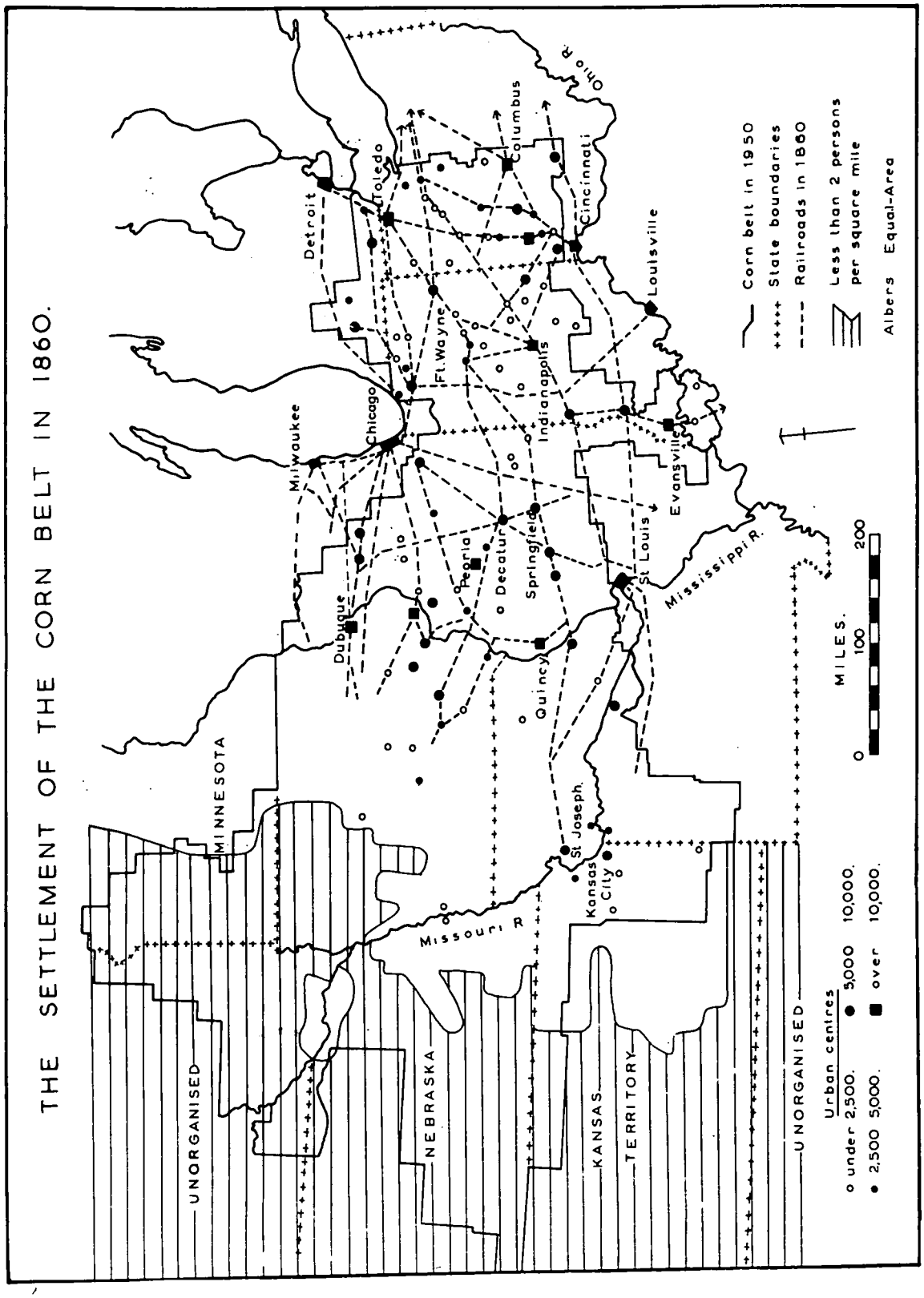
The Expansion of Settlement 1840 - 1860

From Map 13 it is seen that in 1850 the frontier had advanced into Southern and Central Iowa, which had

gained statehood in 1846. The state of Missouri had been entirely settled as had much of Southern Wisconsin. Moreover urban centres had developed west of the Mississippi and in particular along the Mississippi Valley route which by 1851 was connected by canal with the Great Lakes. The correlation between the distribution of urban centres and that of river and canal routes was still marked, especially in the Mississippi, Wabash, Miami, and Scioto valleys, though the significance of urban settlement on the plains of the prairies of Illinois and Northern Indiana had increased. Columbus and Dayton experienced a doubling of their population in the decade 1840 - 1850 but were still the only towns of the present Corn Belt with more than 10,000 inhabitants. Cincinnati was still the metropolis of the Eastern Corn Belt with a population of 115,435 and was the chief marketing centre. St. Louis with a population of 77,860 occupied a similar position further west.

By 1860 (map 14), all but North West Iowa was settled and the frontier had advanced into Kansas and Nebraska. The frontier had extended up the Missouri Valley in to South Dakota and in Kansas the frontier had reached the Great Plains. Significant developments had occurred also in the distribution of urban centres, though the contrast east and west of the Mississippi was profound. East of

MAP 14.


THE SETTLEMENT OF THE CORN BELT IN 1860.
Corn belt in 1950
State boundaries
Railroads in 1860
Less than 2 persons per square mile
Albers Equal-Area
MILES.
0
100
200
Urban centres
o under 2,500.
• 2,500 5,000.
● 5,000 10,000.
■ over 10,000.
Ohio R.
Mississippi R.
Missouri R.
Detroit
Toledo
Columbus
Cincinnati
Louisville
Ft. Wayne
Indianapolis
Chicago
Milwaukee
Evansville
St Louis
Springfield
Decatur
Peoria
Dubuque
Quincy
St Joseph.
Kansas City
MINNESOTA
UNORGANISED
NEBRASKA
KANSAS
TERRITORY
UNORGANISED

the Mississippi some fifty urban centres had developed integrated by a railroad network focussing on Chicago, by this time rivalling Cincinnati as a marketing centre. West of the Mississippi the distribution of urban centres was much less dense, but already the railroad routes were penetrating into the heart of the Corn Belt and had reached the Missouri at St. Joseph. A line of urban centres comparable to that which had existed in the Mississippi Valley a decade before had developed in the Missouri Valley by 1860.

The Growth of Urban Population in the Corn Belt 1810 - 1860

Since few "towns" in the early phase of the settlement of the Corn Belt totalled 2,500 inhabitants the 1950 Census definition of "urban" population is obviously inapplicable, and it has been replaced by a consideration of those settlements which were later to achieve urban status.[51] The calculations below are applicable to those parts of the individual states which constituted the Corn Belt in 1950 and not to the entire states. Table 7 indicates the growth of urban population of the Corn Belt from 1810 - 1860 and the trend is illustrated graphically by Diagram 2.

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51. This table indicates the increase in population since the earliest census of towns with a population exceeding 10,000 in 1950. This therefore does not represent an absolutely complete enumeration of urban population, but the under-enumeration is probably very small.

TABLE 7

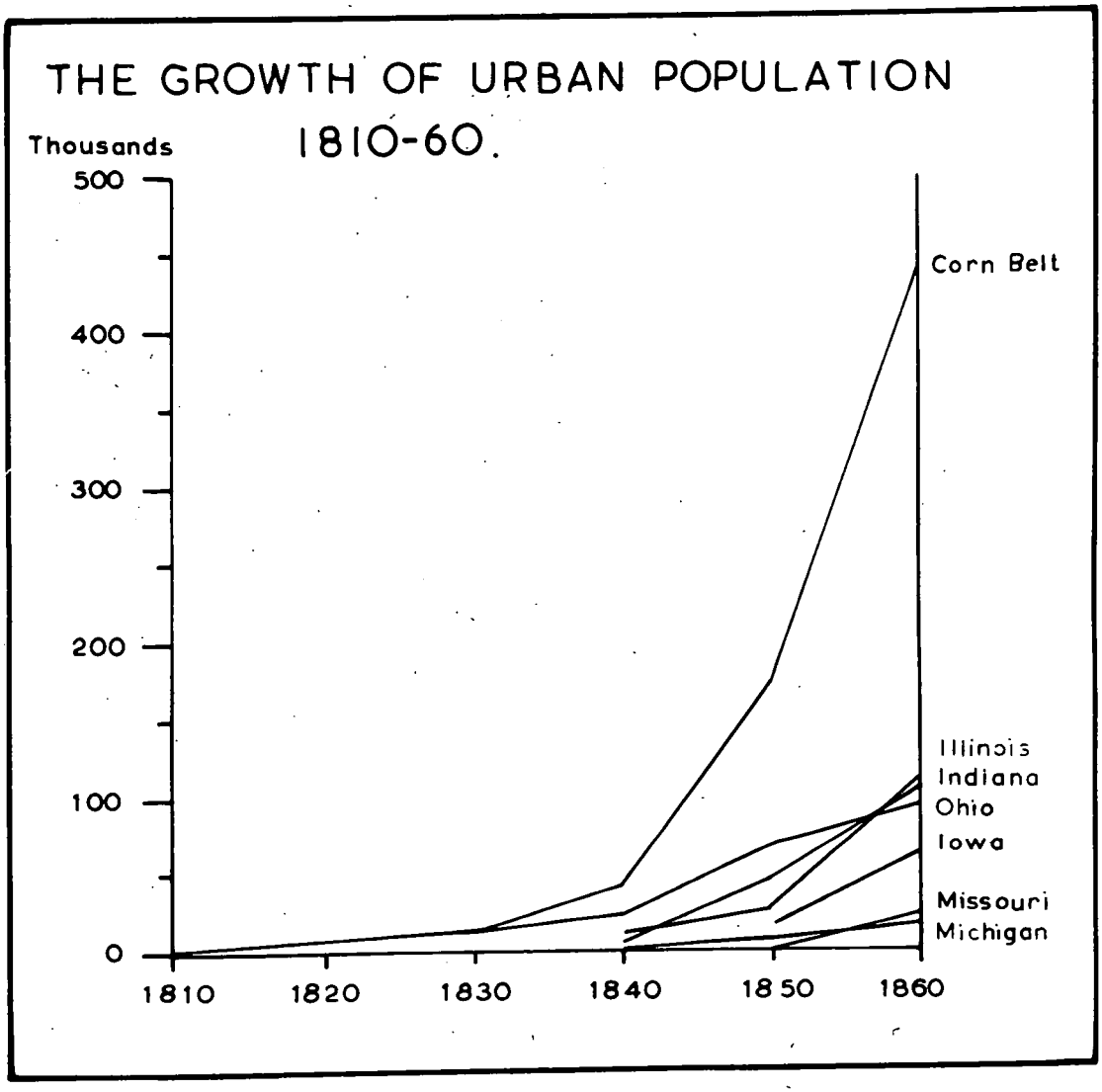
THE GROWTH OF URBAN POPULATION IN THE CORN BELT, 1810 - 1860

STATE	1810	1820	1830	1840	1850	1860
Ohio	583	6,323	11,899	25,069	70,982	99,164
Kentucky			299	500	2,990	4,805
Indiana				7,176	48,950	107,638
Illinois				10,679	30,389	108,666
Michigan				1,703	6,384	19,180
Missouri					2,671	25,251
Iowa					17,440	69,636
Kansas						12,611
Nebraska						1,883
TOTAL	583	6,323	12,128	43,127	179,806	448,834

Source: Calculated from U.S. Bureau of the Census, Census of Population, 1950. Volume 11, Characteristics of the Population, Table 4.

From Table 7 and Diagram 2 it is apparent that urban settlement was insignificant in the area now occupied by the Corn Belt before 1840. However, by 1860 the total had increased by 1,000% to almost half a million. This period is coincident with the development of canals and railroads and the settlement of the prairies in Illinois, but it also represents a vast rate of increase in the urban population of Ohio and Indiana. In particular the vast increase in the urban population of the prairie states of Illinois and Iowa in the decade 1850 -1860 is indicated.

The changing characteristics of urban settlement during the half century can be shown in relation to the


THE GROWTH OF URBAN POPULATION
1810-60.
Thousands
500
400
300
200
100
0
1810
1820
1830
1840
1850
1860
Corn Belt
Illinois
Indiana
Ohio
Iowa
Missouri
Michigan

distribution of urban population by town size. This is indicated in Table 8 below, and illustrated in Diagrams 3 and 4.

From Diagram 3 is seen that until 1820 the "urban"population of the Corn Belt was exclusively located in towns of less than 2,500 inhabitants. By 1830 there was an even distribution between the population in towns of under 2,500 and that in towns of from 2,500 to 5,000. In the period 1850 - 1860 there was a rapid decline in the proportion in towns under 5,000 which was balanced by a rapid increase in the proportion residing in towns of 5,000- 10,000 and by the category residing in towns of over 10,000, the latter category accounting for 30,3% of the total urban population by 1860.

Diagram 4 illustrates the absolute values of these proportions, and from this the numerical insignificance of the population resident in towns of less than 2,500 inhabitants is apparent. The greatest numerical significance of this group was experienced in 1850 at a time when many new settlements were developing on the prairies, but they rapidly passed the 2,500 figure to swell the values of the larger categories.

TABLE 8

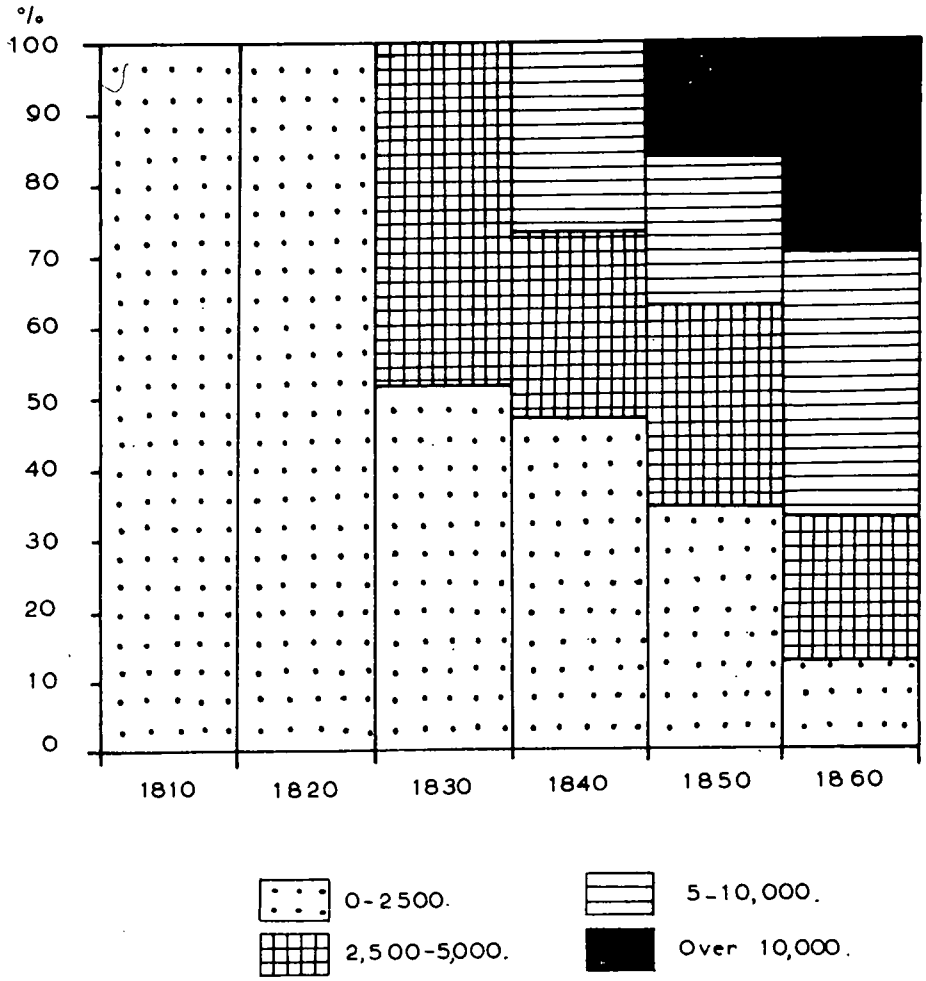
THE GROWTH OF THE CORN BELT POPULATION 1810 - 1860 IN RELATION TO TOWN SIZE

	SIZE OF TOWN				PERCENTAGE DISTRIBUTION			
	UNDER 2,500	2,500-10,000	5,000-10,000	OVER 10,000	UNDER 2,500	2,500-10,000	5,000-10,000	OVER 10,000
1810	583				100.0			
1820	6,323				100.0			
1830	6,237	5,796			51.5	48.5		
1840	21,206	11,806	12,115		46.7	26.2	27.1	
1850	61,852	50,659	38,246	28,859	34.5	28.6	20.8	16.1
1860	54,693	91,788	167,825	134,834	12.4	20.4	36.8	30.3

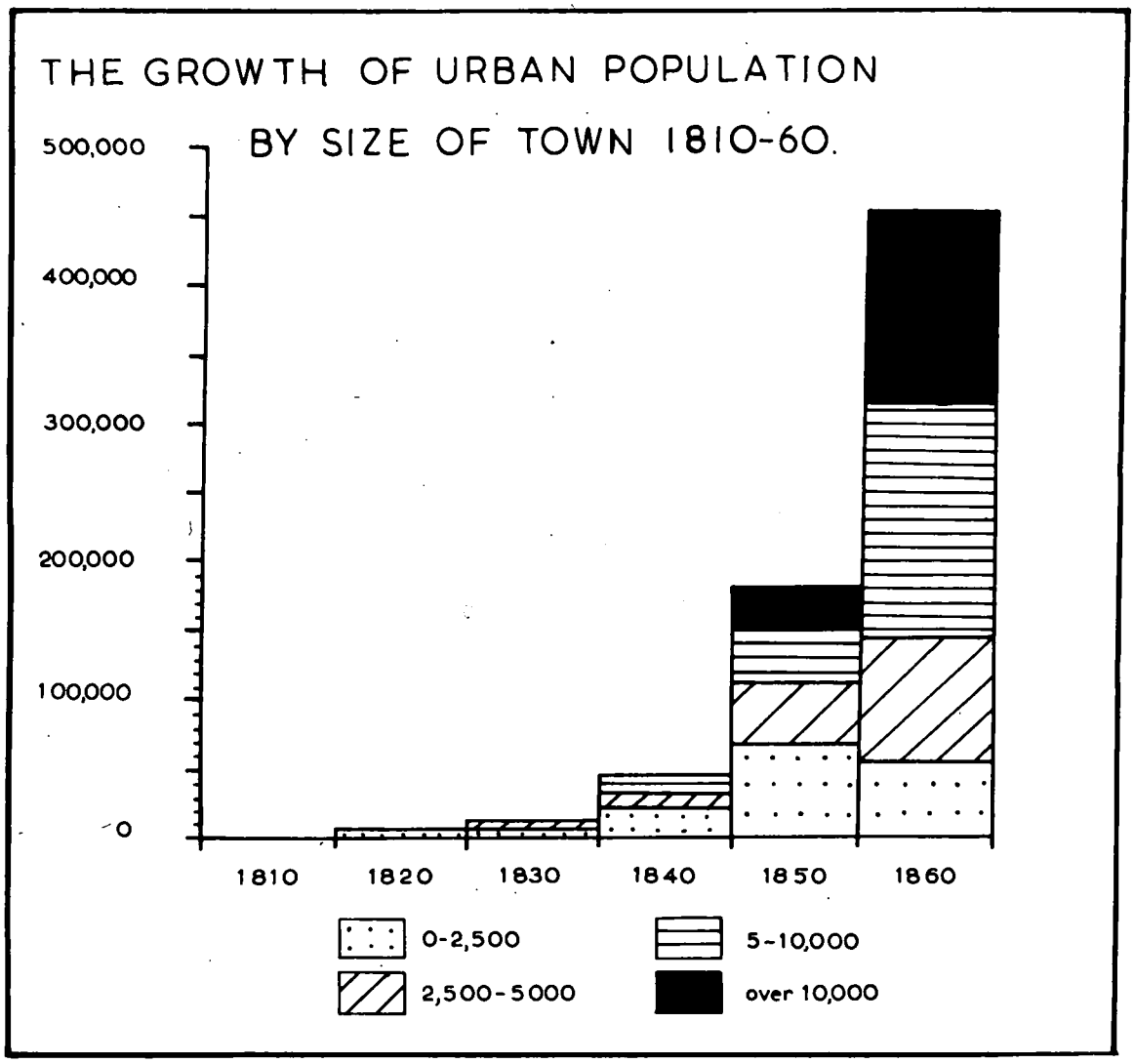
Source:- Calculated from U.S. Bureau of the Census, Census of Population, 1950, Volume ii, Characteristics of the Population, Table 4.

DIAG. 3.

THE COMPOSITION OF URBAN POPULATION BY SIZE OF TOWN 1810-60



DIAG. 4.


THE GROWTH OF URBAN POPULATION
BY SIZE OF TOWN 1810-60.
500,000
400,000
300,000
200,000
100,000
0
1810
1820
1830
1840
1850
1860
0-2,500
2,500-5000
5-10,000
over 10,000

Tables 9 and 10 in the Appendix, show the actual number of settlements and the population in each size category by states. From Table 9 the rapid increase in urban settlement after 1850 is apparent while Table 10 indicates the trend towards concentration in larger settlements, occurring first in Ohio and by 1860, in Indiana and Illinois.

Finally, Table 11, in the Appendix, indicates for reference the growth of selected larger urban centres in the Corn Belt which are compared with the growth of four cities peripheral to the present Corn Belt but in 1860 dominating the urban distribution west of the Appalachians.

Summary of Urban Development 1810 - 1860

In the first half-century of settlement within the present Corn Belt the characteristics of urban development may be summarised as follows:-

1. There was no significant urban development before 1840.

2. There was a considerable increase in the number of towns and amount of urban population between 1840 and 1860.

3. This increase coincided with an expansion of communications and the settling of the prairies.

4. The early towns were very small and consequently their rate of increase was very great, but this does not represent a large numerical growth until after 1840.

5. The trend in the distribution of population in relation to town size was for more and more population proportionately and absolutely to be concentrated in larger and larger towns. This coincided with the rapid growth in town size after 1840 and represented the passing of the frontier pioneer stage and the entry into the development phase.

6. By 1360 there were 104 towns in the present Corn Belt of which 59 had populations of over 2,500, that is "urban" according to the present census definition. In an areas as immense as the Corn Belt this represents a very low degree of urbanisation. This is indicated by Table 12. This table is based on the 1950 census definition and therefore does not include settlements in the under 2,500 category but gives a realistic summary of the low degree of urbanisation. The highest proportion of urban population was found in Ohio, dominated by Cincinnati and Missouri, dominated by St. Louis, and in all the Corn Belt states the urban proportion was less than 20%

TABLE 12

THE PROPORTION OF URBAN AND RURAL POPULATION IN SELECTED CORN BELT STATES, 1810 - 1860

STATE	1810		1820		1830		1840		1850		1860	
	URBAN	RURAL	URBAN	RURAL	URBAN	RURAL	URBAN	RURAL	URBAN	RURAL	URBAN	RURAL
Ohio	1.1	98.9	1.7	98.3	3.9	96.1	5.5	94.5	12.2	87.8	17.1	82.9
Indiana		100.0		100.0		100.0	1.6	98.4	4.5	95.5	8.6	91.4
Illinois		100.0		100.0		100.0	2.0	98.0	7.6	92.4	14.3	85.7
Missouri		100.0		100.0	3.5	96.5	4.3	95.7	11.8	88.2	17.2	82.8
Iowa								100.0	5.1	94.9	8.9	91.1

Source: Calculated from U.S. Bureau of the Census, Census of Population, 1950, Volume ii, Characteristics of the Population, Table 1.

The Settlement of the Corn Belt 1790 - 1860, Summary of Influences on the Present Pattern

1. By 1860 the area defined as the Corn Belt in 1950 had been settled and the basis of the present settlement pattern was in existence; that is, a dispersed pattern of rural settlement with small towns and scattered farmsteads over which was superimposed a less regular urban distribution.

2. The rural distribution and density pattern which has survived until the present has as its roots the Range and Township system of survey as embodied in the 1785 Land Act and this forms a principal factor in the extremely regular distribution of rural settlement over large areas of the Corn Belt.

3. The contrast in urban settlement between the relatively dense urban net east of the Mississippi and the relatively sparse distribution west of the Mississippi existed by 1860 and is in part related to the earlier date of settlement of the eastern sections of the Corn Belt, though this contrast was confirmed and exaggerated by factors of economic geography after 1860.

4. The legislation under the North West Ordinance which forbade slavery in the states constituted in the North West Territory is in large measure the reason

for the small proportion of negro population in the Corn Belt as compared with the states immediately to the south. An equally compelling factor was the nature of occupance in that the settlers were landholders of comparatively small farms which in the pioneer stage were subsistence. Nevertheless, the fact that until approximately 1840 there was a severe shortage of labour in the newly settled lands suggests that some degree of slavery might have been introduced had not the southern landowner class been discouraged from purchasing land in the new territory by the anti-slavery terms of the North West Ordinance.

5. Although the negro population in 1860 was insignificant, the cultural composition of the area was extremely complex and represented a fusing of northern and southern tidewater settlers together with an increasing number of foreign immigrants. This cultural complexity was increased in the next decades by a rapid increase in the immigration of foreign settlers, and this is the background of the present diversity of cultural elements described in a later chapter.

6. Although the general pattern of settlement was established in embryo by 1860, the degree of urbanisation was low and the period 1860 - 1900 witnessed the final stage in the evolution of the settlement pattern - the spread of

urbanisation into the Corn Belt which by 1950 accounted for over half of the total population in terms of residence.

3. THE GROWTH OF THE CORN BELT POPULATION, 1860 - 1900

The previous sections of this chapter have been relatively detailed since no comprehensive study of the early settling of the Corn Belt in its geographical context was available for reference. However, the same does not apply to the growth of the Corn Belt from 1860 - 1900. A wealth of statistical and literary material related to this period is available and it is therefore possible to concentrate purely on the demographic aspects of this growth period. Nevertheless some methodological problems previously encountered still obtain. Firstly the problem of defining the Corn Belt at any given time still remains, and this will be dealt with by reference to selected states. Secondly, in relation to foreign immigration there are very real statistical problems. The total immigration into the United States during this period is known with some accuracy but the dispersion of the immigrants in the nation is less well documented, and the dispersion of the immigrant settlers according to their national origins is especially difficult to study precisely.

The historical, political and economic background

to population growth after the Civil War is well documented and little reference is necessary. It is the purpose of this final section to state the general demographic features of population growth and to assess the significance of immigration as a factor in this population increase.

The Increase of Population 1860 - 1900

The statistics used in this section are for selected states so that the whole of the heart of the Corn Belt is included and the general trends are inferred.

TABLE 13

INCREASE OF POPULATION IN SELECTED CORN BELT STATES, 1860-1900

STATE	1860	1870	1880	1890	1900
Ohio	2,339,511	2,665,260	3,198,062	3,627,329	4,157,545
Indiana	1,350,428	1,680,637	1,978,301	2,192,404	2,516,462
Illinois	1,711,951	2,539,891	3,077,871	3,826,352	4,821,550
Nebraska	28,841	122,993	452,402	1,062,656	1,066,300
Missouri	1,182,012	1,721,295	2,168,380	2,679,189	3,106,665
Iowa	674,913	1,194,020	1,624,615	1,912,297	2,231,853
TOTAL	7,287,656	9,924,096	12,497,631	15,345,223	17,900,375

Source: U.S. Census of the Population, 1950, Volume ii. Characteristics of Population, Table 1.

TABLE 14

RATE OF POPULATION INCREASE, 1860 - 1900, SELECTED CORN BELT STATES

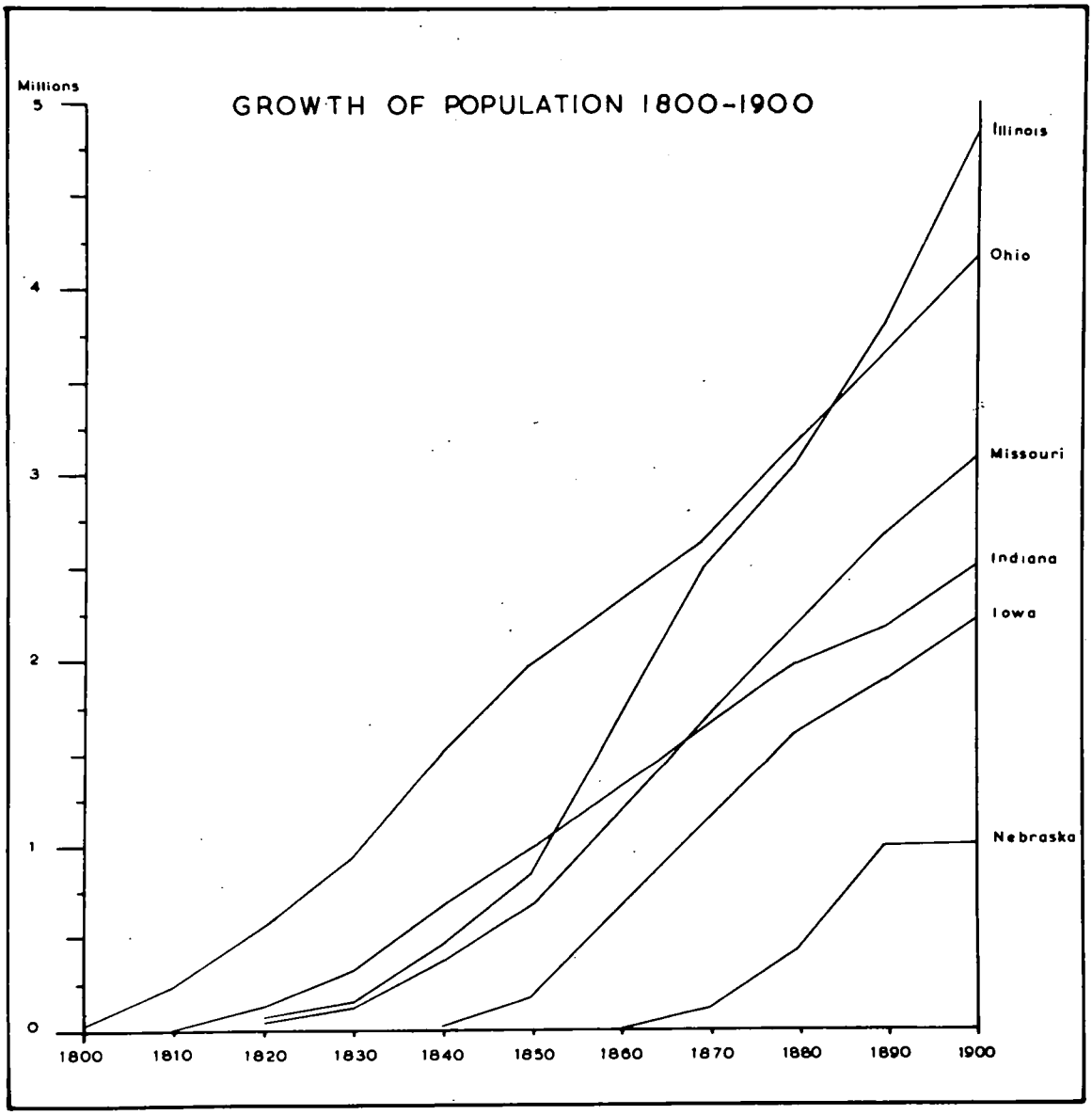
Increase % over preceding census

STATE	1860	1870	1880	1890	1900
Ohio	18.1	13.9	20.0	14.8	13.2
Indiana	36.6	24.5	17.7	10.8	14.8
Illinois	101.1	48.4	21.2	24.3	26.0
Nebraska	-	326.5	267.8	134.9	0.3
Missouri	73.3	45.6	26.0	23.6	16.0
Iowa	251.1	76.9	36.1	17.7	16.7

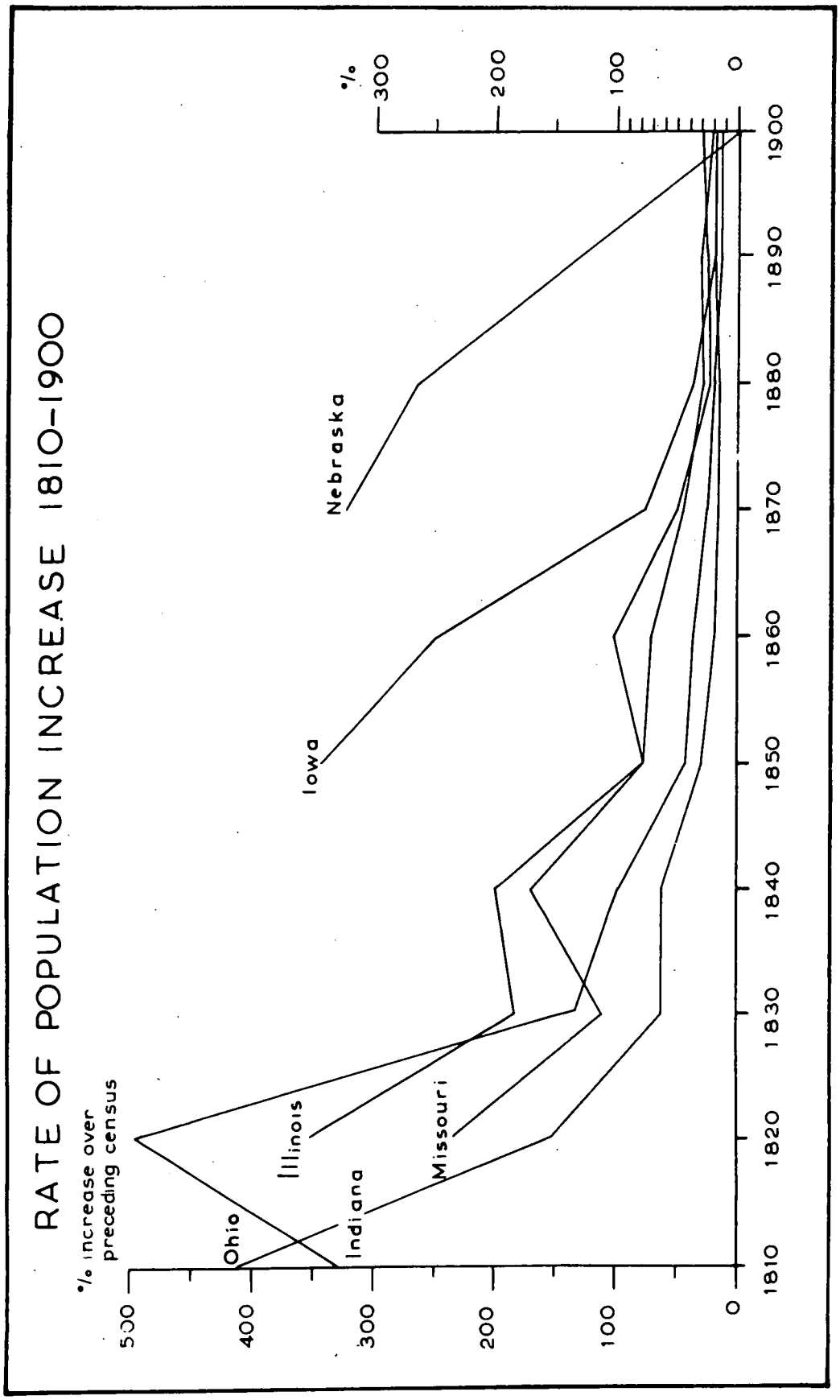
Source: Calculated from Table 13 above

Table 13 indicates the numerical increase in selected Corn Belt states during the period from 1860 to 1900. The trend is illustrated by Diagram 5. In the 40 year period all the states witnessed great numerical increases. This increase was greatest in Illinois, Iowa and Missouri, all of which added more than two millions to their populations. When the rate of increase is considered (Table 14, Diagram 6), some marked contrasts occur. From Diagram 6 it is apparent that the rate of increase was highest in the preceding years of early settlement after which there was a decline to a constant rate of from 10 - 25% per decade. There was therefore a discrepancy at any given census, on a basis of the stage of settlement in the rates of increase, between the earlier

DIAG. 5.


GROWTH OF POPULATION 1800-1900
Millions
5
4
3
2
1
0
1800
1810
1820
1830
1840
1850
1860
1870
1880
1890
1900
Illinois
Ohio
Missouri
Indiana
Iowa
Nebraska

DIAG. 6.


RATE OF POPULATION INCREASE 1810-1900
% increase over preceding census
500
400
300
200
100
0
1810
1820
1830
1840
1850
1860
1870
1880
1890
1900
Ohio
Illinois
Indiana
Missouri
Iowa
Nebraska
%
300
200
100
0

settled states such as Ohio,, (with a rate of increase from 1860 - 70 of 13.9%), and those states still in the earlier stages of settlement, as Nebraska (with a rate of increase of 326.5% from 1860 - 70).

For the entire area occupied by these selected Corn Belt states the population increased from 7 millions to almost 18 millions between 1860 - 1900, though it is significant that included in this area are large sections outside the present Corn Belt containing many large cities, chiefly Chicago. It is suggested that in the area now defined as the Corn Belt, the population doubled in the period 1860 - 1900, and that the rate of increase was greatest in the newly settled western lands of Nebraska and Iowa but that the greatest numerical increase was in the more urbanised sectors of Illinois, Indiana and Ohio. This latter contrast between urban and rural growth can be considered further.

Urban and Rural Population Growth

It has been shown in a previous section that until 1860 the settlement of the present Corn Belt was overwhelmingly rural in character. The forty years from 1860 - 1900 witnessed drastic changes in the proportions of urban and rural population. This is indicated in Table 15 and in Diagram 7.

TABLE 15

THE PROPORTIONS OF URBAN AND RURAL POPULATION IN SELECTED CORN BELT STATES 1860 - 1900

STATE	1860		1870		1880		1890		1900	
	RURAL	URBAN	RURAL	URBAN	RURAL	URBAN	RURAL	URBAN	RURAL	URBAN
Indiana	91.4	8.6	85.3	14.7	80.5	19.5	73.1	26.9	65.7	34.3
Illinois	85.7	14.3	76.5	23.5	69.4	30.6	55.1	44.9	45.7	54.3
Ohio	82.9	17.1	74.4	25.6	67.8	32.2	58.9	41.1	51.9	48.1
Missouri	82.8	17.2	75.0	25.0	74.8	25.2	68.0	32.0	63.7	36.3
Iowa	91.1	8.9	86.9	13.1	84.8	15.2	78.8	21.2	74.4	25.6
Nebraska	100.0	-	82.0	18.0	86.4	13.6	72.6	27.4	76.3	23.7

Source: U.S. Bureau of the Census, Census of Population, 1950, Washington D.C. Volume ii, Characteristics of the Population, Table 1.

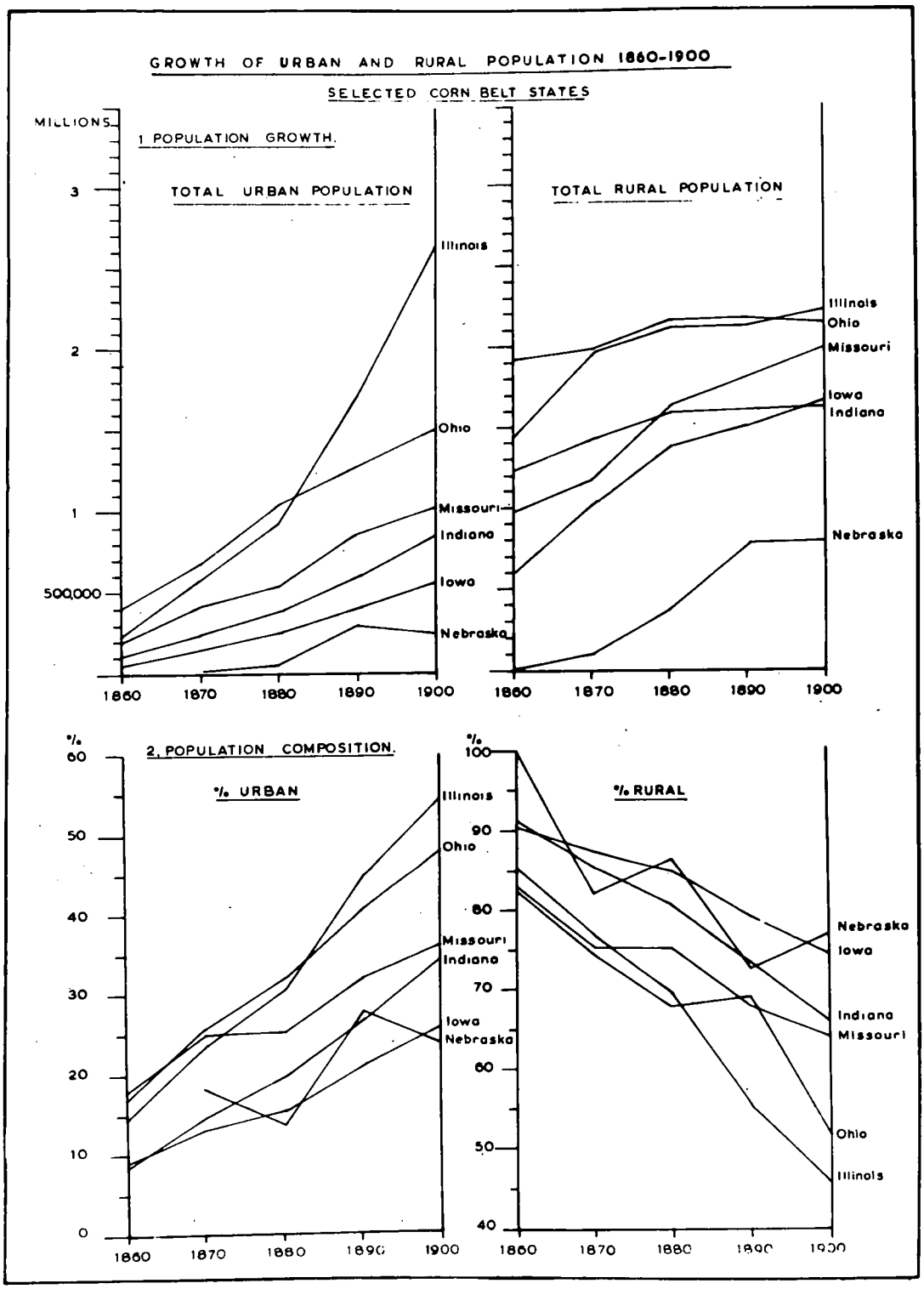
The period 1860 - 1900 witnessed a substantial increase in the urban proportion in the selected Corn Belt States. This was most marked in Indiana, Ohio and Illinois with 34.3%, 48.1% and 54.3% of their population urban in 1900. In Missouri a third of the population was urban by 1900 and in Iowa and Nebraska one quarter. In the period therefore there was a strengthening of the contrast in urbanisation between the sectors of the Corn Belt east and west of the Mississippi. Diagram 7 indicates the significance of 1860 as the year in which the rapid urban increase began and after which rural population increase became stable with the exception of the newly settled western states.

Diagram 7 indicates the changes in the rural and urban composition by the trend of the relative rates of increase. In particular the trend towards increased urbanism since 1840 until 1900 is characteristic of each of the states though the time lag between the earlier and later settled states is apparent.

Foreign Immigration to the Corn Belt, 1860 - 1900

A small number of foreign immigrants had settled in the Corn Belt before 1860, but the real inrush was delayed until after the Civil War. By this time the greater part of the Corn Belt had been pioneered but after the

DIAG. 7.


GROWTH OF URBAN AND RURAL POPULATION 1860-1900
SELECTED CORN BELT STATES
MILLIONS
1 POPULATION GROWTH.
TOTAL URBAN POPULATION
TOTAL RURAL POPULATION
3
2
1
500,000
Illinois
Ohio
Missouri
Indiana
Iowa
Nebraska
1860
1870
1880
1890
1900
2. POPULATION COMPOSITION.
% URBAN
% RURAL
%
60
50
40
30
20
10
0
100
90
80
70
60
50
40

Civil War the cheap land available under the Homestead Act was an incentive for foreign immigrants to settle in the northern and western fringes of the Corn Belt. Many other immigrants were attracted by the possibility of employment on the railroads as constructional labourers while other sought industrial employment in the expanding towns.

Demographers recognise two phases in the foreign immigration into the United States, the "old" and the "new".[52] The "old" immigration from 1830 to approximately 1885 had as its source North Western Europe. However, after 1885 the "new" immigrants were preponderantly from Eastern and Southern Europe. The reasons for the shift in the source of immigrants and the ensuing quota system are not relevant to this present study [53 and 54] since the immigrants that settled in the Corn Belt were almost exclusively of the "old"

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52. For a full description of immigration and a guide to relevant material Vide Bogue, D.J., "The Population of the United States", Chapter 14, Free Press, Illinois, 1959

53. and Vide Hanson, M.L. "The Immigrants in American History", Harvard University Press, 1940.

54. Vide also "The American Melting Pot, 1850-1950", Editor Robert C. Cook, Population Bulletin, Volume XIII, Number 7, November, 1957, for a discussion of trends in immigration cultural implications of regional redistribution and the significance of legislation and quota restrictions.

phase. The reasons for this chiefly concern the date of settlement of the Corn Belt in that the areas had been completely settled by the time this change in national composition of immigrants occurred. The number of "new" immigrants that settled in the Corn Belt before 1900 were comparatively small and almost exclusively urban where they formed small minority groups.

Some idea of the relative distribution of the foreign immigrants can be gained from Table 16.

TABLE 16

YEAR OF PEAK ENTRY OF FOREIGN BORN WHITE POPULATION INTO SELECTED CORN BELT STATES

STATE	YEAR OF PEAK ENTRY	% FOREIGN-BORN OF TOTAL POPULATION	% FOREIGN-BORN WHITE IN 1950
Minnesota	1870	35+	7.0
Indiana	1860	10 - 24.9	2.5
Ohio	1870	"	5.6
Missouri	1860	"	2.3
Illinois	1890	"	9.0
Iowa	1870	"	3.2
Kansas	1870	"	2.0
Nebraska	1870	25 - 34.9	4.3
S. Dakota	1890	"	4.7
Wisconsin	1850	"	6.4

Source: Taeuber and Taeuber, "The Changing Population of the United States", Census Mongraph Series, 1958. Chapter 3, page 35.

The peak year of entry of foreign-born white immigrants was earlier in the eastern than the western states. Illinois is an exceptional case in that the peak year was delayed until 1890 and this is related to the fact that Chicago continued to attract immigrants in the second "new" phase of immigration from Southern and Eastern Europe. It is significant that the foreign-born element constituted a greater proportion of the total population at the year of peak entry in the north western states of Wisconsin, Minnesota, S. Dakota and Nebraska, than in the case of the eastern states, although numerically they were less significant. This is related to the fact that these states were in the early years of occupance and one result has been the preservation of pronounced national cultural groups in these sectors of the Corn Belt while in the eastern states the foreign-born white element has been absorbed culturally or forms tiny minority groups chiefly in the cities.

Further detail of the national origin and the numerical significance of foreign immigrants is given in Table 17.

TABLE 17

NATIONAL ORIGINS OF THE FOREIGN-BORN WHITE POPULATION OF SELECTED CORN BELT STATES, 1910
AS A PERCENTAGE OF TOTAL FOREIGN-BORN WHITE

STATE	GERMANY	ENGLAND, WALES AND SCOTLAND	IRELAND	NORWAY	SWEDEN	DENMARK	NETHERLANDS	OTHER NATIONS
Iowa	35.9	8.9	6.5	8.0	9.8	6.6	4.1	20.2
Minnesota	18.4	3.2	2.9	19.4	22.5	3.0	0.7	29.9
S. Dakota	21.0	5.6	3.0	20.8	9.9	6.3	2.6	30.7
Wisconsin	39.3	4.0	2.7	11.1	5.0	3.2	1.4	33.3
Nebraska	31.8	6.3	4.6	1.6	13.2	7.8	0.5	43.1
Missouri	37.7	8.3	10.2	0.3	2.5	0.8	0.4	39.8
Kansas	25.2	12.2	6.0	1.0	9.8	2.0	0.7	43.1
Indiana	35.5	9.2	7.1	0.3	3.2	0.6	1.3	43.8
Illinois	23.1	7.1	7.8	2.7	9.6	1.4	1.2	47.1
Ohio	27.5	10.7	6.7	0.2	0.9	0.3	0.4	53.5

Source: Calculated from U.S. Bureau of the Census, Census of Population, 1950, Washington D.C., Volume ii, Characteristics of the Population, Table 24.

The above table indicates the proportion of foreign-born white by national origins for selected Corn Belt states for the year 1910, that is, after the first phase of the predominance of North West European immigration had ended. In particular Germany was prominent as a source nation, followed by the British Isles and Ireland as consistent contributors to immigration. The Scandinavian element was also significant but varied regionally, being particularly dominant in the north western states where as pioneer farmers a considerable number of Scandinavians occupied new land under the Homestead Act.

The topic of the cultural significance of this, and later immigration, is treated in a later chapter devoted to the cultural composition of the Corn Belt population. It remains to complete this survey of immigration with an assessment of the significance of foreign immigration as a factor in the total population growth. Table 18 is an attempt to enumerate the total immigration in this period.

Table 18 indicates the total foreign-born white population for selected Corn Belt states from 1880 - 1900, and also the proportion of foreign-born in the total population. By 1900 the total foreign-born white population was almost three millions, or 15.1% of the total population. A large amount of the area included in these states lies

TABLE 18

FOREIGN-BORN WHITE POPULATION IN SELECTED CORN BELT STATES 1880 - 1900

STATE	TOTAL FOREIGN-BORN WHITE POPULATION			% FOREIGN-BORN WHITE OF TOTAL POPULATION		
	1880	1890	1900	1880	1890	1900
Indiana	144,034	146,003	141,861	7.3	6.7	5.6
Illinois	582,979	840,975	964,635	18.9	22.0	20.0
Ohio	394,338	458,553	457,900	12.3	12.5	11.0
Missouri	211,359	234,282	215,775	9.7	8.7	6.9
Iowa	261,554	323,932	305,782	16.1	16.9	13.7
Nebraska	97,351	202,244	177,117	21.5	19.0	16.6
Minnesota	267,511	467,057	504,935	34.3	35.6	28.8
TOTAL	1,959,126	1,673,046	2,965,705	-	-	15.1

Source: U.S. Bureau of the Census, Census of Population, 1950, Washington D.C. Volume ii, Characteristics of the Population, Table 14.

outside the Corn Belt as defined in 1950, (especially this involves Chicago and some of the large towns of Ohio, which have large foreign-born populations), but when those states almost entirely within the present Corn Belt are considered the significance of immigration is seen to be great. Iowa for instance in 1900 had 305,782 foreign-born whites, 13.7% of her total population, while Nebraska, with all of its more densely settled sectors situated within the Corn Belt had a foreign-born white proportion of 16.6%.

In the absence of precise statistical information and in view of problems of defining the Corn Belt at any particular time, no accurate statement is possible as to the exact significance of immigration in the growth of the Corn Belt and only generalisation is possible. It is apparent that immigration into the Middle West by the close of the 19th century had exceeded three millions, and that a large proportion of this was located within the present Corn Belt. In fact the total population growth within the states selected in Table 18 from 1880 to 1900 was almost exactly 5 millions; of this 1,006,579 was accounted for by immigration. It seems valid to suggest that in the area under consideration, constituting most of the present Corn Belt, the immigration in the period from 1880 - 1900 accounted for some 20% of the total population growth.

It has been shown in this chapter that by 1860 the area now comprising the Corn Belt had been pioneered and settled and the dominance of corn in the agricultural economy established. The period 1860 - 1900 was one of population growth on this established pattern and particularly a period of urban growth. It is suggested that the period of population growth from 1900 - 1950 was one of trends on an established pattern but which consisted of an increase in the degree of urbanisation and some concommitant redistribution of population, especially in the rural sector. Accordingly this period is treated as a separate topic in a later chapter. It is now necessary to complete this study of the background to detailed analysis of the population geography of the Corn Belt at the last census with a brief description of the regional distribution and density of population in 1950.

CHAPTER FOUR

THE REGIONAL DISTRIBUTION AND DENSITY OF POPULATION, 1950

CHAPTER FOUR

THE REGIONAL DISTRIBUTION AND DENSITY OF POPULATION, 1950

It is the purpose of this chapter to provide a concise factual description of the regional distribution and density of population in the Corn Belt at the last census. The object is to provide a base and an introduction for the analysis of those causative factors which have brought about the detailed variation in distribution and density. Accordingly, only general conclusions have been inferred and detailed analysis is deferred until a later chapter. The regional description has been based on the geographical and agricultural regions of the Corn Belt as defined in Chapter One and the differential distribution of the major residential groups as defined in the same chapter has been attempted.

In 1950 the total population of the Corn Belt was 16,049,210 persons, resident in 494 counties of parts of twelve states of the Middle West, occupying an area of 276,982 square miles.

The Distribution of Population by Geographical Regions, 1950

The distribution of population by geographical

regions in 1950 is indicated in Tables 19 and 20, and illustrated by proportional symbols in Map 15.

TABLE 19

DISTRIBUTION OF POPULATION IN THE CORN BELT BY GEOGRAPHICAL REGIONS . 1950

GEOGRAPHICAL REGION	RURAL FARM	RURAL NON-FARM	URBAN	TOTAL POPULATION
East Central Lowland	807,012	1,139,156	2,906,193	4,852,361
West Central Lowland	1,085,090	979,947	1,775,158	3,840,195
Upper Missouri Valley	809,320	587,875	1,040,887	2,438,082
Lower " "	247,754	236,278	999,943	1,483,975
Upper Mississippi Valley	253,630	255,820	637,154	1,146,604
Lower Ohio Valley	90,647	126,545	247,737	465,429
Lower Great Lakes	264,137	449,349	1,109,578	1,823,064
TOTAL CORN BELT	3,557,590	3,774,970	8,716,650	16,049,210

Source: Calculated from U.S. Bureau of the Census, Census of Population, 1950, Vol. ii. Characteristics of the Population. Table 12.

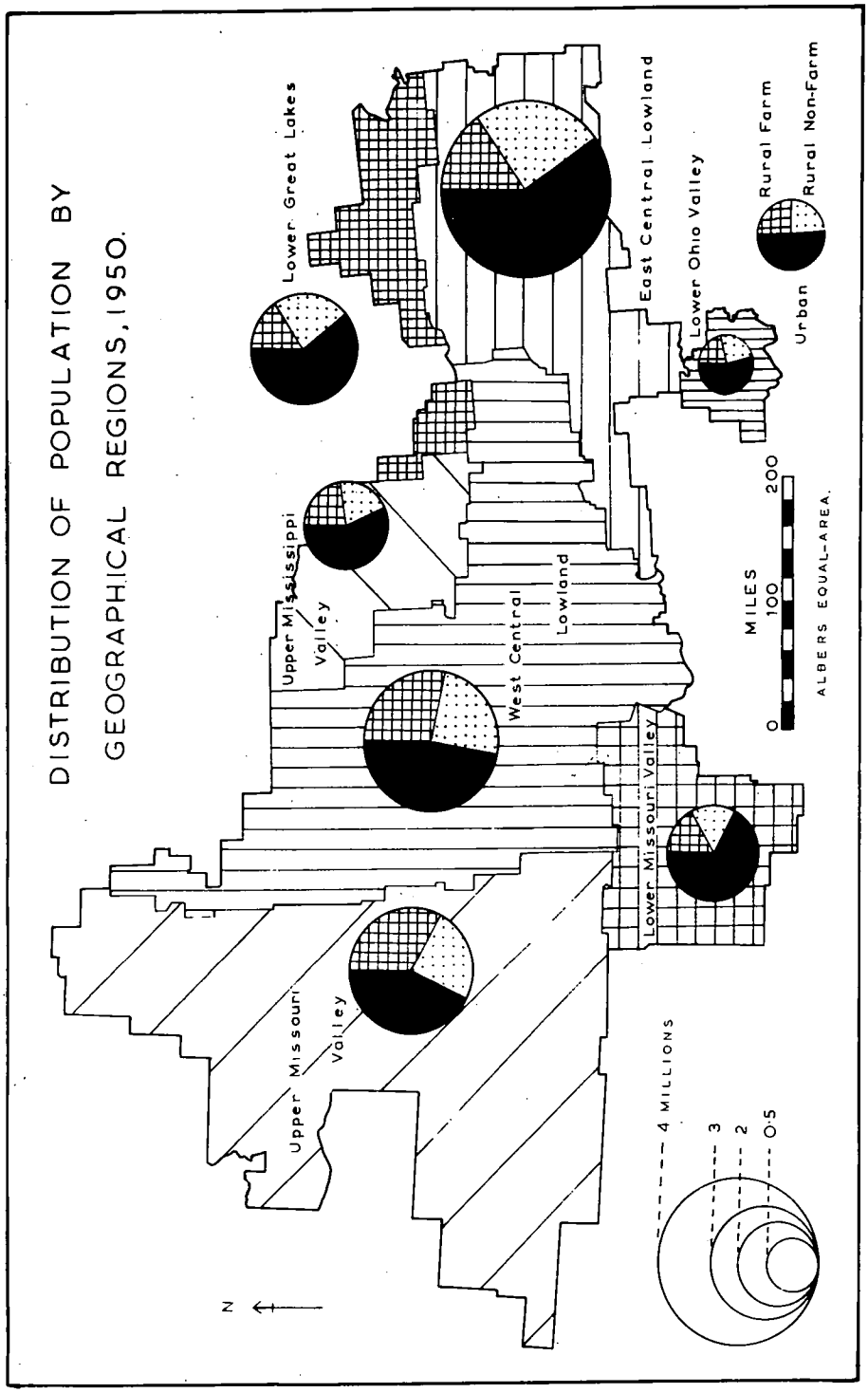
DISTRIBUTION OF POPULATION BY
GEOGRAPHICAL REGIONS, 1950.
Lower Great Lakes
East Central Lowland
Lower Ohio Valley
Rural Farm
Rural Non-Farm
Urban
Upper Mississippi Valley
West Central Lowland
Lower Missouri Valley
Upper Missouri Valley
MILES
0
100
200
ALBERS EQUAL-AREA.
4 MILLIONS
3
2
0·5
N

TABLE 20

DISTRIBUTION OF CORN BELT POPULATION BY GEOGRAPHICAL REGIONS, 1950

Geographical Region	% RURAL FARM	% RURAL NON-FARM	% URBAN	% TOTAL
East Central Lowland	22.7	30.2	33.5	30.2
West Central Lowland	30.4	26.4	20.4	23.9
Upper Missouri Valley	22.6	15.7	11.8	15.3
Lower Missouri Valley	6.9	6.4	11.5	9.1
Upper Mississippi Valley	7.2	6.9	7.3	7.2
Lower Ohio Valley	2.7	3.5	2.8	2.9
Lower Great Lakes	7.5	11.9	12.7	11.4
TOTAL CORN BELT	100.0	100.0	100.0	100.0

Source: Calculated from Table 17 supra 91

From Tables 19 and 20 it is evident that in 1950 the highest proportion of the population of the Corn Belt was located in the East Central Lowland Region of Western Ohio, Indiana and Central Illinois. Within this region resided almost 5 million inhabitants, 30.2% of the total population of the Corn Belt.

In the West Central Lowland, the geographical heart of the Corn Belt, with twice the area of the East Central Lowland, resided over one million less inhabitants. Continuing westwards, the Upper Missouri Valley, again with almost twice the area of the East Central Lowland had

only half as much population in 1950.

Thus, within the three major geographical regions above resided 69.4% of the total population of the Corn Belt in 1950, leaving 30.6% in the peripheral regions. The smaller populations of the peripheral regions were chiefly a function of their much smaller size. However, in relation to their areal extent their populations were in fact very large as a result of the location in the peripheral regions of many of the largest urban concentrations of the Corn Belt.

Considering the regional distribution on a basis of the three major residential groups, urban, rural farm and rural non-farm, further regional contrasts emerge. Table 21 adds further information of the composition of the geographical regions on a basis of residence.

TABLE 21.

COMPOSITION OF THE POPULATION OF THE CORN BELT BY GEOGRAPHICAL REGIONS, 1950

Geographical Region	RURAL FARM	RURAL NON-FARM	URBAN	TOTAL
East Central Lowland	16.6	23.5	59.9	100.0
West Central Lowland	28.3	25.4	46.3	100.0
Upper Missouri Valley	33.2	24.1	42.7	100.0
Lower Missouri Valley	16.7	15.9	67.4	100.0
Upper Mississippi Valley	22.0	22.5	55.5	100.0
Lower Ohio Valley	19.5	27.3	53.2	100.0
Lower Great Lakes	14.5	24.7	60.8	100.0
TOTAL CORN BELT	22.2	23.3	54.5	100.0

Source: Calculated from Table 19 above.

1. URBAN POPULATION

From Table 21 it is apparent that of the total population of the Corn Belt, just over half, 54.5% resided in urban centres in 1950, but there were considerable variations regionally. Considering the three largest regions there was a decrease in the proportion of the total urban population of the Corn Belt from 33.5% in the East Central Lowland, 30.4% in the West Central Lowland, to 11.8% in the Upper Missouri Valley coinciding with the westward decrease in total population (Table 20). From Table 21 it is seen that this decrease in the proportion of the total urban population for the Corn Belt was paralleled by a westward decrease in the urban proportion of the regions themselves from 59.9% in the East Central Lowland, 46.3% in the West Central Lowland and 42.7% in the Upper Missouri Valley.

In the case of the peripheral regions, there was a contrast in terms of the proportion of the total urban population of the Corn Belt between the Upper Mississippi Valley and Lower Ohio Valley on the one hand which together had only 10.1% of the total urban population of the Corn Belt, and on the other hand, the Lower Great Lakes and Lower Missouri Valley which together had 20.5% of the total urban population. In the case of the urban proportion within these regions however it is seen from Table 21

that in all four cases the urban proportion was high, and the Lower Missouri Valley had the highest urban proportion of all the regions of the Corn Belt at 67.4%. This was due however to the location of Kansas City, the largest city of the Corn Belt within the region and illustrates the danger inherent in regional generalisation.

2. RURAL FARM POPULATION

Table 19 indicates that the rural population of the Corn Belt in 1950 was almost equally divided between farm and non-farm by residence; for the total population the difference was only 1.1%.

Considering the entire rural farm population of the Corn Belt it is seen from Table 20 that 30.4% of the total was resident in the West Central Lowland. To the west the lower proportion of 22.6% reflected an overall decrease in total population, while to the east, the lower proportion of 22.7% in the East Central Lowland represented a proportionate increase in the urban and rural non-farm groups. Together, these three regions accounted for over 75% of the rural farm population of the Corn Belt. In the individual regions it is seen from Table 21 that the Upper Missouri Valley and West Central Lowland had a marked predominance of rural farm population as opposed to rural

non-farm. In the case of the Lower Missouri Valley and the Upper Mississippi Valley the proportions were approximately equal while in the remaining regions there was a heavy preponderance of the rural non-farm proportion.

3. RURAL NON-FARM POPULATION

Virtually the reverse regional distribution applied in the case of the rural non-farm population to that described above of the rural farm. The highest absolute and proportional concentrations were located in the East Central Lowland and in the peripheral regions and an obvious statistical correlation between the distribution of urban population and predominance of rural non-farm over rural farm is inferred.

The regional distribution of the major population groups on a basis of residence can be re-stated to advantage as ratios of urban-rural and farm-non-farm as indicated in Table 22 below.

TABLE 22

THE URBAN-RURAL AND FARM-NON-FARM COMPOSITION OF THE GEOGRAPHICAL REGIONS OF THE CORN BELT IN 1950

Geographical Region	A Percent		B Percent	
	URBAN	RURAL	FARM	NON-FARM
East Central Lowland	59.9	40.1	16.0	84.0
West Central Lowland	46.3	53.7	28.3	71.7
Upper Missouri Valley	42.7	57.3	33.2	66.8
Lower Missouri Valley	67.4	32.6	16.7	83.3
Upper Mississippi Valley	55.4	44.5	22.0	78.0
Lower Ohio Valley	53.2	46.8	19.5	81.5
Lower Great Lakes	60.8	39.2	14.5	85.5
TOTAL CORN BELT	54.5	45.5	22.2	77.8

Source: Calculated from Table 19 above.

A. THE URBAN-RURAL RATIO

There was an absolute and proportional predominance of urban population over rural in all the regions of the Corn Belt but the West Central Lowland and the Upper Missouri Valley while for the Corn Belt as a whole the urban population exceeded the rural by 9%. However, this urban predominance was essentially a feature of the Eastern Corn Belt, and throughout the much larger area of the Central and Western Corn Belt there was in fact a rural predominance.

B. FARM - NON-FARM RATIO

The overall predominance of the urban population is further strengthened when the rural non-farm element, which in many ways is more closely related to urban functions and not directly with agriculture, is added to the urban group and stated as the ratio of farm - non-farm, as in column B. In fact in 1950 almost 80% of the population of the Corn Belt did not reside on farms and only in the Upper Missouri Valley did the farm element equal one third of the total population.

Finally, in this brief description of the major regional contrasts in the distribution of population, some re-statement is possible by reference to the agricultural regions of the Corn Belt.

The Distribution of Population by Agricultural Regions, 1950

The characteristics of the distribution of population by agricultural regions are summarised in Tables 23, 24 and 25 in the Appendix.

From Table 24 it is seen that in terms of the proportion of the total Corn Belt population located in each region three groups may be delimited.

1a. Hogs and Soft Winter Wheat
b. Cattle Feeding and Hogs .....with over 20% of the total population

2a. Cash Corn, Oats and Soybeans
b. Livestock, Dairy, Soybeans and Cash Grain
c. Livestock and Pasture .....each with 11% of the total

3a. Hogs and Dairy
b. Livestock and Cash Grain
c. Livestock, Cash Grain and Dairy...each with less than 10% of the total

These groups may be further described with reference to Tables 23, 24 and 25.

1a. Hogs and Soft Winter Wheat

This agricultural region, one of the largest of the Corn Belt occupies South Central Indiana and the central section of Western Ohio and therefore includes the industrial zones centred on Dayton, Indianapolis and Columbus. Accordingly this region had the highest proportion of the urban population of the Corn Belt, 29.4%, and also had the highest proportion of urban population within the region, 63.3%. The rural farm and rural non-farm proportions were approximately equal in the region but the total population not resident on farms, 86.3% was the highest in the Corn Belt.

1b. Cattle Feeding and Hogs

This type of farming had two separate regional

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components, the Upper Missouri Valley and the much less extensive central portion of the West Central Lowland in Western Illinois and Eastern Iowa. In total population the Missouri Valley had almost exactly double that of the Iowa-Illinois region. The Missouri Valley had an even more dominant proportion of urban population since it contained many of the larger regional centres of the Western Corn Belt and following a pattern already observed, associated with this urban dominance was a high proportion of rural farm. The more rural Eastern Iowa-Western Illinois region had the largest proportion of rural farm, 12.9% of the total rural farm of the Corn Belt. Whereas the Missouri Valley component had 62% urban and only 11.9% rural farm the Eastern Iowa - Western Illinois component only 54.3% urban, but 35.0% rural farm. It is apparent that the high urban proportion representing several very large cities in the Missouri Valley distorts the proportionate distribution and points the need for detailed examination.

2a. Cash Corn, Oats and Soybeans

This type of farming also has two separate regional components, the Grand Prairie of Illinois and the Iowan Prairie. The population characteristics of the two regions were comparable in 1950 with the much larger Grand Prairie

being approximately twice as populous. Moreover, a third of the urban population of the Iowan Prairie was located in one town, Des Moines, giving a high urban proportion for the region of 60.5%. In both cases a low proportion of rural farm population was notable. This infers a relationship between agricultural economy and rural population characteristics in that these prairies consist of large, but highly mechanised farms concentrating on cash grain production rather than livestock and where consequently labour needs are reduced to a minimum.

2b. Livestock, Dairy, Soybeans and Cash Grain

This region is similar in character to the Cash Corn, Oats and Soybeans regions in that it occupies an area of level plain supporting a highly mechanised agriculture devoted to cash grain production and the production of dairy produce. The urban proportion of the region was also comparable at 54.3% but the rural non-farm element exceeded the rural farm substantially. The farm population was a mere 20% of the total population, one of the lowest proportions of all the agricultural regions. Again a relationship between the type of agriculture, the proximity to large towns and the characteristics of population composition is proposed.

2c. Livestock and Pasture

Despite their comparable types of farming the two regional components of Livestock and Pasture farming in the Corn Belt are contrasted physically and economically. The Northern Indiana - Southern Michigan component was highly urbanised with 61.2% of its population resident in urban centres while the rural farm population was a mere 14.6%. However, this was one of the most important part-time farming areas of the Corn Belt. In the case of the much larger component in the South Central Corn Belt the urban proportion was much lower at 35% compared with a rural farm proportion of 36.7%.

3a. Hogs and Dairy

This region represents the northern transition from Corn Belt agriculture to the Hay and Dairy Belt. The urban and rural proportions were approximately equal and the region accounted for 7.3% of the total Corn Belt population.

3b. Livestock and Cash Grain

The Livestock and Cash Grain type of farming region is substantially the largest of the Corn Belt and marks the transition to the cattle and wheat lands of the west. In 1950 this region had the highest rural farm proportion

of all the agricultural regions at 45% and the lowest urban proportion at 41.9%. It provided the only instance where the rural farm element was the largest proportion of the total population and it also had the highest ratio of farm to non-farm in the Corn Belt. Despite its enormous size of 70,000 square miles only 8% of the total population of the Corn Belt resided in this region in 1950. The population characteristics were obviously related to the extensive nature of the agriculture and offered the complete antithesis to conditions in the Eastern Corn Belt.

3c. Livestock, Cash Grain and Dairy

This region was the smallest of the Corn Belt, and despite the location of Kansas City within its boundaries was the least populous in 1950 with only 4.6% of the total population of the Corn Belt. The high urban proportion of 56.7 indicates the exaggerated effect due to Kansas City. In fact the region was predominantly rural with the farm and non-farm sectors approximately equal.

Before summarising the characteristics of population distribution on a regional basis, it is convenient to indicate the major variations in population density since the two phenomena are so closely related.

Density of Population in the Corn Belt, 1950

As in the case of distribution of population the aim of this section is to give a general framework for later detailed analysis. The concept of density is in itself a generalisation of more specific conditions in that it is a ratio.

Density of Population by Geographical Regions

(a) Density of Total Population

Table 26 illustrates the wide range of population density in the Corn Belt in 1950. The mean density for the entire belt was 57.8 persons per square mile. However, the East Central Lowland had a density almost double this figure while in the Upper Missouri Valley the density was only half that of the Corn Belt average.

TABLE 26

DENSITY OF POPULATION BY GEOGRAPHICAL REGIONS

Persons per square mile

Geographical Region	RURAL FARM	RURAL NON-FARM	URBAN	TOTAL DENSITY
East Central Lowland	18.4	26.0	66.4	110.8
West Central Lowland	12.6	11.4	20.7	44.7
Upper Missouri Valley	9.5	6.9	12.2	28.6
Lower Missouri Valley	9.7	9.3	39.5	58.5
Upper Mississippi Valley	6.1	16.2	40.5	72.8
Lower Ohio Valley	16.7	23.1	45.1	84.9
Lower Great Lakes	14.1	24.1	59.6	97.8
TOTAL CORN BELT	12.8	13.6	31.4	57.8

Source: Calculated from U.S. Bureau of the Census, Census of Population, 1950, Vol.ii. "Characteristics of the Population", Table 12.

The greatest density was found in the Eastern regions of the Corn Belt, the East Central Lowland, the Lower Ohio Valley and the Lower Great Lakes. The lowest density was found in the Upper Missouri Valley with only 18.6 persons per square mile. The remaining regions occupied an intermediate position between these two extremes. The peripheral regions of the Upper Mississippi and Lower Missouri had mean densities rather higher than the average for the Corn Belt, while the West Central Lowland, the heart of the belt had a rather lower mean density than that of the entire Corn Belt.

(b) Density of Urban Population

The mean urban density is an artificial and fallacious concept in that it generalises a highly localised situation since the vast majority of urban population is located in a small number of concentrations. Moreover, the inclusion of one very large city in an otherwise rural region gives a false impression of urbanisation. Accordingly, it is not proposed to consider urban density at this stage but defer this consideration until a more detailed analysis is attempted. It is however relevant to indicate that the urban population influences total density and therefore distorts the reality in any generalised density map.

(c) Rural Non-Farm Density

Since the rural non-farm population is closely associated with urban development the density tends to vary according to proximity to urban centres and the same localisation is concealed by regional values. However since many rural non-farm people commute long distances this localisation is not as extreme and the distortion is accordingly less severe. From Table 26 it is noticed that the rural non-farm density varied directly with urban density.

(d) Density of Rural Farm Population

The mean density of rural farm population in the Corn Belt was extremely low and in all but the most rural regions was lower than the rural non-farm figure. The fact emerges from Table 24 that the highest densities of rural non-farm occurred in regions of high total density. This is readily explained by geographical factors in that although the eastern section of the Corn Belt contains a large amount of industry and urban development it also contains some of the best agricultural land and is favoured economically by the proximity to towns, consequently the agriculture is intensive and the size of farms smaller than elsewhere. In the western sections where there is no large urban market nearby and where environmental conditions are less favourable the density of agricultural population was much lower due to the extensive agriculture and large farm size.

It is obvious that in an attempt to describe the general features of variation in population density a regional description is useful but not fully adequate. The chief reason for this is the fact that since half the population of the Corn Belt was urban in 1950 the greatest single factor in determining mean regional densities was the distribution of towns. This urban influence resulted in a completely unrealistic picture.

To complete this section it is proposed to attempt a more precise representation of the major contrasts in population density.

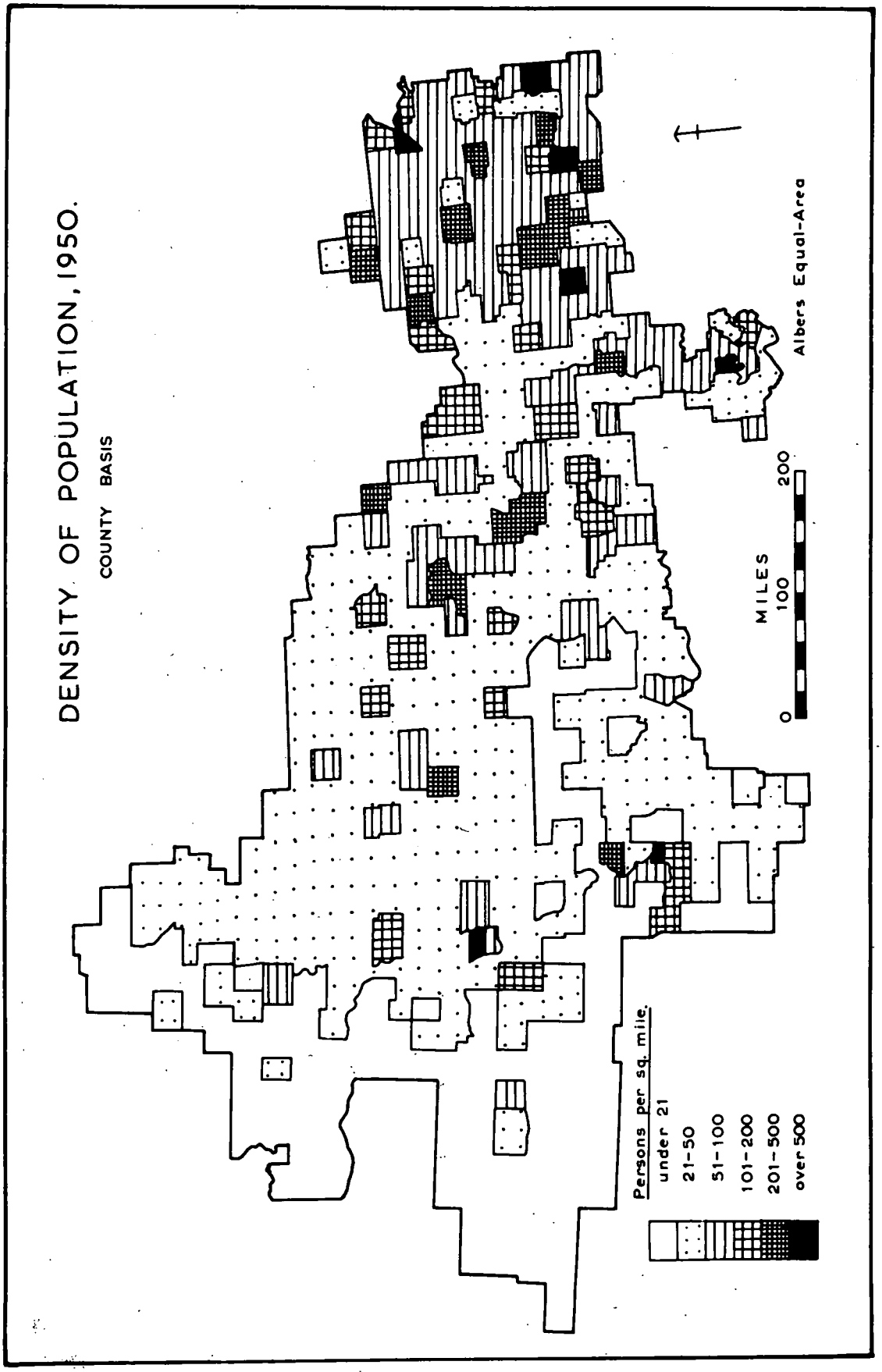
The major difficulty is to eliminate the effects of urban settlement from a consideration of general density. This may be attempted in two ways at this stage.

Firstly, by using a county breakdown the effect of a large urban centre can be restricted to the county in which it is located. Secondly, the urban population can be eliminated statistically and the variations in rural population plotted. In some ways this second method is the most realistic since the density of population within most towns is fairly constant and their distribution and total population are of more significance than their density of population. It is proposed therefore to use both methods (Map 16 and 17) in order to summarise the general features of density of population.

Density of Population by Counties

From Map 16 a more detailed picture of the variation in population density may be obtained. The density of population has been plotted for each of the 494 counties of the Corn Belt and from this a division into density areas may be made for descriptive purposes.

MAP 16.


DENSITY OF POPULATION, 1950.
COUNTY BASIS
Persons per sq. mile.
under 21
21-50
51-100
101-200
201-500
over 500
MILES
0
100
200
Albers Equal-Area

Areas of Dense Population (over 100 persons per square mile)

The overruling factor here is the urban influence and accordingly the areas of manufacturing cities stand out. These occur in three main groups.

1. The Lower Great Lakes Margin

The belt of very dense population extending from Toledo (Ohio) to Rockford (Illinois), and including the cities of Toledo, Kalamazoo, South Bend, Joliet and Rockford, represents the outer fringe of the Chicago conurbation and also forms an important part of the region of manufacturing extending from Detroit to Chicago.

2. Central Indiana - West Central Ohio

This belt of high density was orientated again east-west along an axis of large manufacturing cities, Columbus, Dayton, Springfield, Hamilton, Richmond and Indianapolis.

Between the two axial lines of dense population dominated by large cities was an area of North East Indiana and North West Ohio in which the population was consistently dense and contained many large manufacturing cities, as Fort Wayne and Terre Haute. In addition this area had a dense rural population including a large non-farm element connected with the urban centres. This however

was more exclusively agricultural in economy, than the two zones described above.

3. Central Illinois

A further area of dense population though much less well-defined existed in Central Illinois from the Wabash to the Mississippi but separated from the Chicago conurbation by an area of lower population density. Again this was due to the distribution of large towns on the Illinois prairie which are outliers of the manufacturing regions to the east but are more specifically regional centres for the agricultural prairie. The chief centres are Davenport, Rock Island, Springfield, Peoria and Decatur. Here the map is misleading in that the urban population increased the density of the counties in which they are located and between the prairie towns were large rural areas with a density of less than fifty per square mile. The situation was in fact essentially a pattern of regional centres overlying a prairie area of low population density in Central Illinois unlike the case in Indiana and Ohio where a large number of small towns increased the overall density to above 50 per square mile. The Illinois prairies are in fact a transitional stage to the contrasted conditions west of the Mississippi.

4. Regional Centres West of the Mississippi

West of the Mississippi areas of dense population were restricted to the vicinity of the large regional centres, which occur at ever increasing distances apart westwards and southwards from the Mississippi. In particular Kansas City and Omaha stood out with Des Moines and St. Joseph followed by a large number of smaller centres.

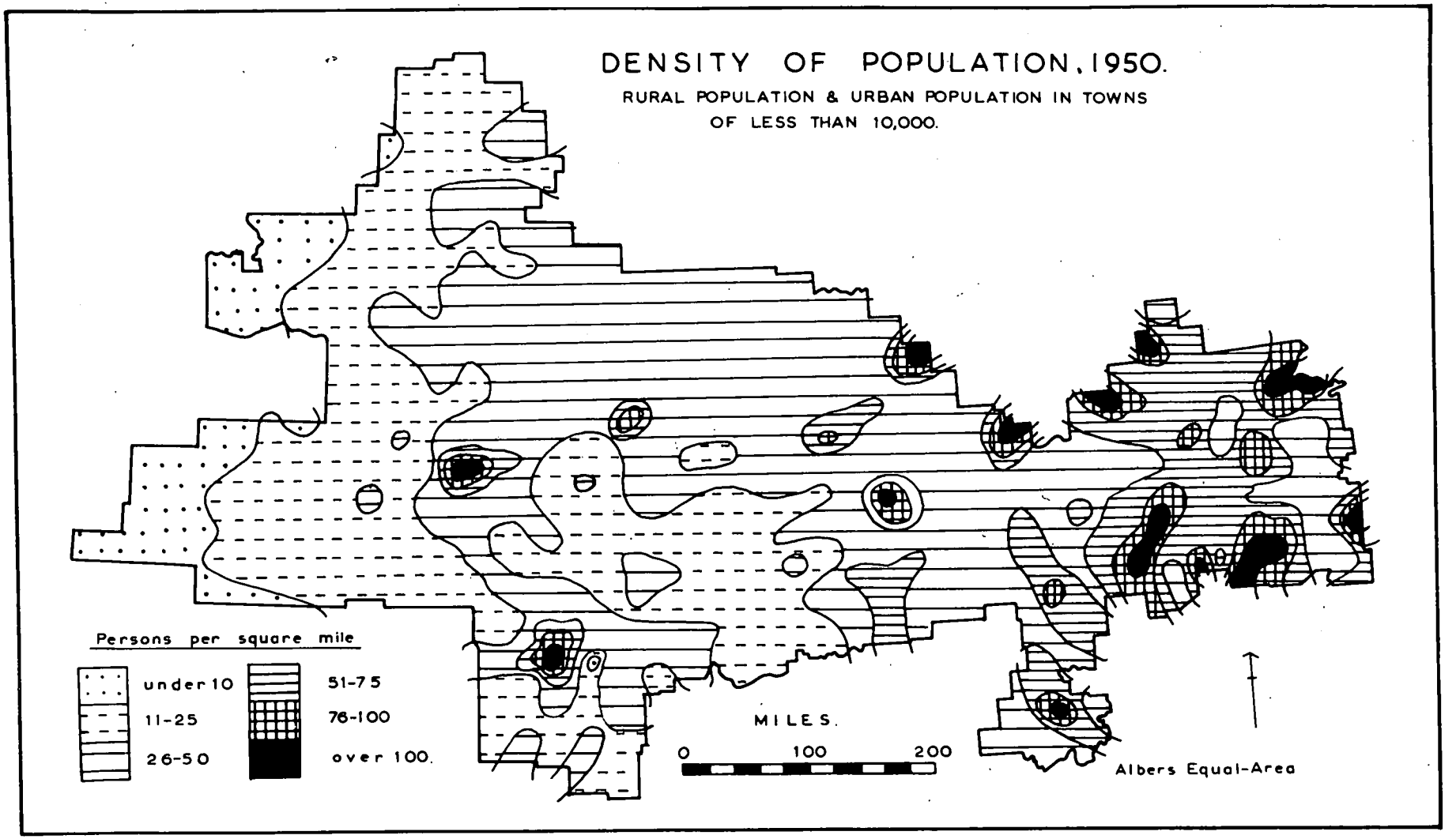
Areas of Low Population Density (less than 50 per square mile)

Virtually all the area of the Corn Belt west of the Mississippi had a low population density. In fact the same was true of large areas of the Illinois Prairies. Two areas of a relatively higher density (over 21) and two of a relatively lower density (under 21 per square mile) were notable.

The whole of Iowa and South West Minnesota had a density of from 21 - 50 persons per square mile except where large regional centres increased the density in individual counties. Secondly, the density of population in the Missouri Valley was less consistently higher than 21 persons per square mile and also had regional centres which increased the population density in isolated counties. In contrast with this, the area north of the Missouri River in Missouri, and west of the Missouri Valley in Kansas, Nebraska and South Dakota had an incredibly low density of under 21 persons per square mile.

It is obvious that the distribution of urban population is the chief determinant of overall density over large areas of the Corn Belt. Accordingly in Map 17 urban centres of more than 10,000 population have been excluded in order to show more realistically the variations in density that exist beneath the urban net. Towns of less than 10,000 inhabitants have been included as being agricultural centres rather than having significant industries and since their effect on overall density is less significant.

In Map 17 rather similar density zones appear though with an overall reduction in values to a more realistic level. The influence of large towns was still apparent and it is suggested that this influence was exerted through the rural non-farm population concentrated in the vicinities of the large towns. Essentially the same density zones emerge but further detail can be added. In the relatively dense population zone of Western Ohio and Indiana two significant areas of low density, 26 - 50 persons per square mile, were prominent. Firstly, the divide between the Miami and Scioto Valleys of Ohio and secondly the Till Plain of North West Indiana. The map also suggests that the entire extent of Iowa and Illinois might be considered as one density zone with a density of 26 - 50 persons per square mile and only isolated centres of higher density. Moreover the Missouri Valley belonged


DENSITY OF POPULATION, 1950.
RURAL POPULATION & URBAN POPULATION IN TOWNS OF LESS THAN 10,000.
Persons per square mile
under 10
11-25
26-50
51-75
76-100
over 100.
MILES.
0
100
200
Albers Equal-Area

MAP 17.

to this same density zone with a rapid shading off westwards to less than 10 persons per square mile.

SUMMARY AND CONCLUSIONS

A consideration of the distribution and density of population with reference to the regions of the Corn Belt in 1950 has suggested the following conclusions.

1. The population of the Corn Belt was unevenly distributed between the component regions both with respect to the geographical regions and also in relation to the major variations in types of agriculture. In particular there was a contrast between the heavy concentration of population in the East Central Lowland, Lower Great Lakes and Lower Ohio Valley, and the much less numerous population of the Upper Missouri Valley. The West Central Lowland occupied an intermediate position between a more populous eastern sector and less populous western sector. This general regional contrast is readily explained in relation to differing economic conditions. In particular the heavy concentration in the East Central Lowland and Lower Great Lakes was related to the fact that located in these regions were parts of three major industrial belts, the Chicago Conurbation, the South Michigan and the Indiana-Ohio manufacturing zones with a consequent degree of urbanisation. The smaller amount of population in the

Upper Missouri Valley was related to a comparative absence of large industrial towns and the existence of an extensive form of agriculture.

2. As a consequence of this contrast between an urbanised eastern sector in which industry was significant and the more exclusively agricultural western and central sectors there was a strong tendency for the proportion of urban population to exceed rural population in the eastern regions and a less pronounced tendency for rural population to predominate in the central and western regions. The fact that the urban proportion was still high in the predominantly agricultural regions was due to the distribution of a small number of very large regional centres at considerable intervals in these regions, as for instance, Des Moines in the West Central Lowland, Omaha in the Upper Missouri Valley, and Kansas City in the Lower Missouri Valley.

3. There was a tendency for the rural farm and rural non-farm populations to be approximately equal in each region. However the non-farm element varied in significance directly with the size of the urban element while the rural farm population tended to have an inverse relationship. Thus in general as the urban proportion decreased from east to west so the rural non-farm also decreased while the rural farm increased in the same proportion. It is proposed that this reflected a

functional relationship between the rural non-farm population and urban centres of employment.

A consideration of the distribution by agricultural regions added the following conclusions:-

4. Certain relationships between population characteristics and type of farming may be suggested. For instance in the Northern Indiana - Southern Michigan Livestock and Pasture region a relationship between the proximity of large urban markets and a concentration on dairy farming is suggested. Conversely, in the Livestock and Cash Grain region of the Western Corn Belt margin there was an obvious relationship between an extensive agriculture and a low rural population density and a high proportion of rural farm population. A further relationship is suggested between a low proportion of rural farm population and an intensive mechanised agriculture as for instance in the Cash Corn, Oats and Soybeans region.

5. It may be suggested that a highly complex series of functional relationships exist within the population geography of the Corn Belt. These require detailed analysis.

6. The overall density of population was comparatively low in the Corn Belt, especially when the urban populations were excluded from regional analysis. The overall density

was highest in the Eastern Corn Belt even with the exclusion of urban centres, and lowest in the Western Corn Belt, while much of the Central Corn Belt had a uniform density of 26 - 50 persons per square mile.

7. The distribution of urban population was the chief influence on population density as it exerted a strong influence on rural non-farm density also.

8. The rural farm density was extremely low and was influenced by the characteristics of agriculture, though a more detailed analysis of these relationships is necessary. It may be suggested in fact that there was a different distribution and density range for each of the three residential groups, urban, rural farm and rural non-farm and further detail is necessary both to indicate these characteristics and the causative factors involved. This is attempted in a later chapter after the demographic mechanics concerned have been analysed.

SECTION TWO

THE STRUCTURE OF THE POPULATION OF THE CORN BELT

The first section has attempted to provide a control for the detailed study of the population of the Corn Belt by considering the implication and relevance of the appropriate census definitions and the provision of consistent sub-divisions for spatial analysis. The sub-division into geographical regions was expanded in more detail so as to form a comprehensive reference framework as well as to indicate the major contrasts in the environmental and economic background. The evolution of the population geography of the Corn Belt from the frontier period until 1900 was described. Finally, a brief chapter indicated the major contrasts in population distribution and density at the latest census.

It is the purpose of this second section to analyse the structure of the population of the Corn Belt from those standpoints which shed light on the qualitative and quantitative composition. Accordingly the detailed cultural composition has been summarised in relation to causative factors. Secondly, the employment structure has been summarised and the spatial variations in occupational

functions described. Finally the age, sex and marital structure has been analysed as a dynamic factor in the evolution of the Corn Belt.

In particular these elements have been shown to be inter-related and will be examined in relation to the total pattern of population distribution and density in the Corn Belt. In addition certain characteristics of population structure of an individual nature have been examined for their intrinsic interest.

CHAPTER FIVE

THE CULTURAL COMPOSITION OF THE CORN BELT POPULATION, 1950

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THE CULTURAL COMPOSITION OF THE CORN BELT POPULATION, 1950

The complex cultural composition of the Corn Belt population is a consequence of its history of occupation and population growth and especially is a result of the settling in the Corn Belt of a large number of foreign immigrants. Something of this background has been indicated in Chapter Three.[55] It is the purpose of this present chapter to analyse in detail the characteristics of the cultural composition of the Corn Belt in 1950, to describe the distribution of the cultural groups and to assess the significance of the various cultural groups in determining the overall pattern of population distribution and density.

As a starting point it is necessary to consider some of the relevant census definitions and to indicate the relationship between the foreign-born cultural elements and past immigration into the Corn Belt.

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55. Vide Chapter Three. "The Peopling of the Corn Belt", pp. 83-90

1. The Definition of Cultural Groups

In detail the cultural composition of the Corn Belt is so complex that some generalisation is unavoidable, and in fact many of the census definitions are generalised to some extent. In general four major cultural groups, distinguished in the census reports, may be recognised.[56]

(1) White Population

(a) Native-Born

Any persons born in the United States or any of its territories is counted as a native, as is any person born abroad but of American parents. The small number of persons for whom place of birth was not reported were assumed in the 1950 Census to be native born.

(b) Foreign-Born

Persons living in the United States who were not born in the United States and its territories.

(2) Negro

In addition to full-blooded negroes this category includes all persons of mixed negro and white parentage.

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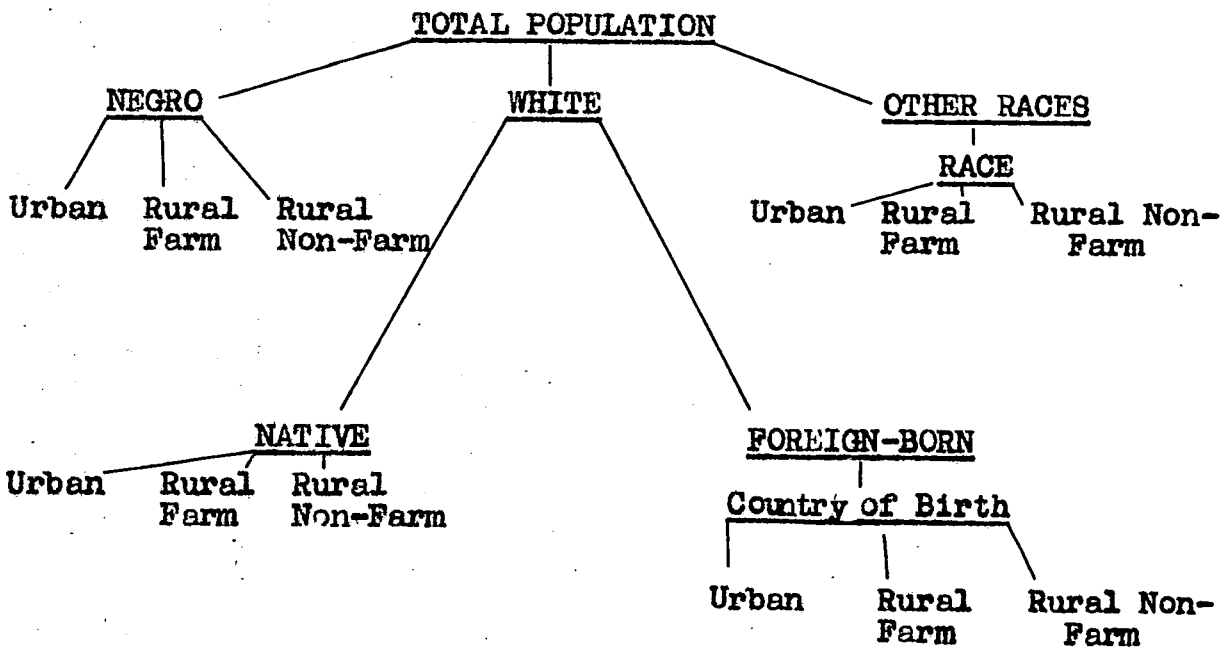
56. For full definitions of cultural groups, Vide U.S. Bureau of the Census, Census of Population, 1950, Vol. ii. "Characteristics of the Population". Introduction, section on 'Race and Colour'.

(3) Other Races

All persons who are neither white nor negro, irrespective of whether they were born in the United States or not, are included in this category. No scientific meaning attaches to the word 'race' in the census in terms of biological stock and some categories obviously refer to national groups. Similarly 'colour' is not a scientific term but is used to facilitate a meaningful division into 'white' and honwhite' groups.

These four basic groups can be further subdivided by criteria of race, nationality and residence to give a realistic and comprehensive breakdown as indicated below:.

THE MAJOR CULTURAL GROUPS OF THE CORN BELT IN 1950



Some further comments are necessary concerning the 'Foreign-Born White' group. Although our interest is in the 1950 situation the picture is not static and the present characteristics must be viewed in relation to causative factors of the preceding decades. It must be remembered that the foreign-born white element essentially represents immigration into the Corn Belt of persons born outside the United States and the total foreign-born white element reflects the scale of this immigration over the past fifty or more years. The present total foreign-born white population does not represent the exact total immigration of the past fifty years since several significant elements are not enumerated.

(1) Those immigrants who died since their arrival in the Corn Belt and who are therefore not enumerated in the 1950 census.

(2) Those immigrants to the Corn Belt who have later migrated to other regions of the United States.

(3) The children of foreign-born whites born subsequent to their arrival in the United States and therefore enumerated as Native White, although culturally they should more realistically be considered, in the first generation at any rate, as a foreign element.

Assuming a normal life expectancy and the fact

that the vast majority of the foreign-born white would have been in their early middle years when they emigrated from their home nations the total foreign-born white population in 1950 represented the number of white people who were born abroad who have migrated to the Corn Belt since approximately 1900 with the exclusion of those who died before the 1950 enumeration. It is obvious that the addition to this total of children born to foreign-born white parents in the United States (and therefore native-born) would further increase this total. It must also be appreciated that the descendants of some of the earlier 19th century foreign immigrants still preserve their cultural characteristics often as communities, serve as foci for the current immigrants of the same nationality.

To summarise, it is apparent that the category of 'foreign-born white' may well represent only part of the greater cultural group in which individual national cultures may persist through three generations of ancestors, contemporaries, and children, of which only the middle generation is enumerated as foreign-born white by the census.

However, this does not invalidate the category since the 'foreign-born white' category as defined in 1950 does include the vast majority of the white immigrant cultural group and it is likely that the children of

immigrants born in the United States will in their life time become assimilated Americans, thus justifying their categorisation as native-born white.

The population of the Corn Belt in 1950 was by no means equally divided between the main cultural groups as defined above. Although there was a diversity of cultural elements to be found in the Corn Belt, in terms of relative preponderance there was remarkable homogeneity, with 94.1% of the total population being native-born white. In every region the native white element exceeded 90% and the highest proportion, 95.9% was found in the heart of the Corn Belt in the West Central Lowland. It is obvious that any discussion of the characteristics of the native white group would not differ from that of the total population and accordingly the emphasis in this chapter is on the characteristics of the 5.9% of the total population, almost exactly one million persons, who were not native white and who comprised the minority cultural groups of the Corn Belt. The regional distribution of these groups - foreign-born white, negro and other races is indicated in Tables 27, 28 and 29 and illustrated by Map 18.

TABLE 27

THE REGIONAL DISTRIBUTION OF THE MAJOR CULTURAL GROUPS OF THE CORN BELT POPULATION 1950

Geographical Region	Total Population	Native White	Foreign-Born White	Foreign-Born Negro	Other Races
East Central Lowland	4,852,361	4,548,169	80,780	221,267	2,145
West Central Lowland	3,840,195	3,680,908	98,196	58,460	2,631
Upper Missouri Valley	2,438,082	2,295,718	105,130	27,049	10,185
Lower Missouri Valley	1,483,975	1,335,100	33,636	113,098	2,141
Upper Mississippi Valley	1,146,604	1,092,846	43,169	10,166	423
Lower Ohio Valley	465,429	441,145	2,842	21,347	95
Lower Great Lakes	1,823,064	1,667,936	89,306	64,378	1,444
TOTAL CORN BELT	16,049,210	15,061,322	453,059	515,765	19,064

Source: Calculated from U.S. Census of Population, 1950, Volume ii. Characteristics of Population, Table 42.

TABLE 28

PROPORTIONAL DISTRIBUTION OF THE MAJOR CULTURAL GROUPS OF THE CORN BELT BY GEOGRAPHICAL REGIONS, 1950

Geographical Regions	% White		% Negro	% Other Races
	Native-Born	Foreign-Born		
East Central Lowland	93.7	1.7	4.6	-
West Central Lowland	95.9	2.6	1.5	-
Upper Missouri Valley	94.1	4.3	1.1	0.5
Lower Missouri Valley	90.0	2.2	7.6	0.2
Upper Mississippi Valley	95.4	3.7	0.9	-
Lower Ohio Valley	94.8	0.6	4.6	-
Lower Great Lakes	91.5	4.9	3.5	-
TOTAL CORN BELT	94.1	2.8	3.1	-

Source: Calculated from Table 27 above

TABLE 29

PROPORTIONAL DISTRIBUTION OF POPULATION BY GEOGRAPHICAL REGIONS BY INDIVIDUAL CULTURAL GROUPS, 1950

Geographical Regions	Native White	Foreign-Born White	Negro	Other Races
East Central Lowland	30.0	17.8	43.5	11.5
West Central Lowland	24.5	21.7	11.5	13.9
Upper Missouri Valley	15.3	23.2	5.3	52.9
Lower Missouri Valley	8.8	7.5	22.4	11.4
Upper Missouri Valley	7.4	9.5	0.4	2.1
Lower Ohio Valley	2.9	0.6	4.2	0.5
Lower Great Lakes	11.1	19.7	12.7	7.7
TOTAL CORN BELT	100.0	100.0	100.0	100.0

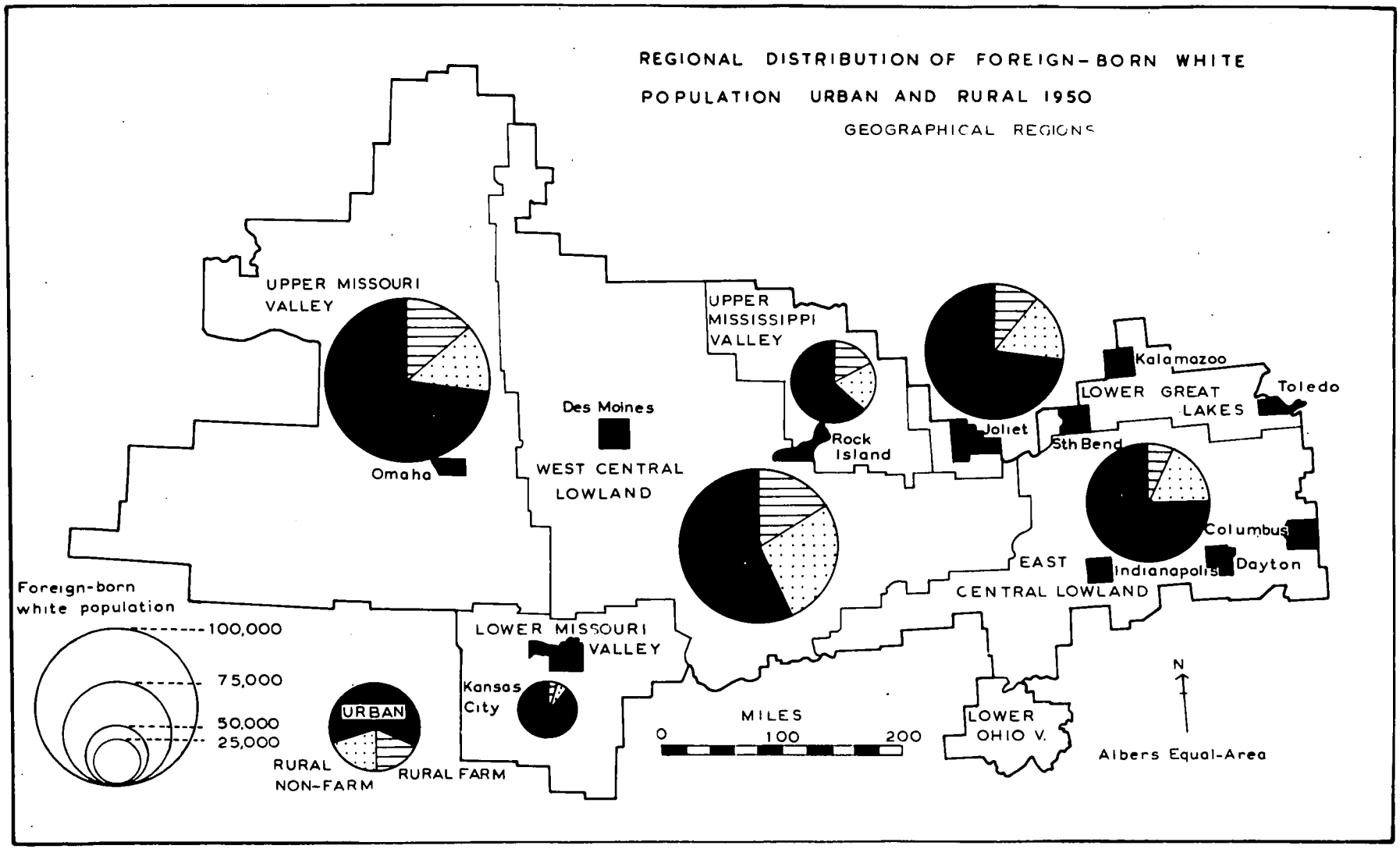
Source: Calculated from Table 27 above

1. Regional Distribution of Foreign-Born White Population, 1950

The Foreign-born white group numbered 453,059 persons in 1950, some 2.8% of the total Corn Belt population (Table 27 and 28). Table 29 showing the relative distribution indicates that there was considerable variation in the regional distribution of the foreign-born white element.

The Upper Missouri Valley had the highest number of foreign-born white and had the highest proportion of the total population in this group.

In terms of the preponderance of foreign-born


REGIONAL DISTRIBUTION OF FOREIGN-BORN WHITE
POPULATION URBAN AND RURAL 1950
GEOGRAPHICAL REGIONS
UPPER MISSOURI VALLEY
Omaha
Des Moines
WEST CENTRAL LOWLAND
UPPER MISSISSIPPI VALLEY
Rock Island
Joliet
Kalamazoo
LOWER GREAT LAKES
Toledo
Sth Bend
Columbus
Dayton
Indianapolis
EAST CENTRAL LOWLAND
LOWER MISSOURI VALLEY
Kansas City
LOWER OHIO V.
Foreign-born white population
100,000
75,000
50,000
25,000
URBAN
RURAL NON-FARM
RURAL FARM
MILES
0
100
200
N
Albers Equal-Area

MAP 18.

white in the total population, the Lower Great Lakes led with 4.9% in 1950. Moreover despite its relatively small size the Lower Great Lakes Region had almost 20% of the total foreign-born white population.

The fact that this group is 'foreign-born' implies diffuse origins and often the only affinity is racial. The treatment of the national groups within the foreign-born white category is more realistic, since language and cultures differ enormously and especially as there are contrasted distributions on a national basis. In a later section therefore, the detailed analysis of the characteristics of the foreign-born white is attempted on a nationality basis, by country of origin.

2. Regional Distribution of Negro Population, 1950

In relation to the national distribution of negro population the Corn Belt was situated outside the major areas of concentration. Nevertheless the negro population of the Corn Belt exceeded half a million in 1950 and represented 3.1% of the total population. In relation to the national proportion of 10% this figure indicates the lesser significance of the negro element in the Corn Belt.[57]

57. Vide Calef, W.C., and Nelson, H.J., "The Distribution of Negro Population in the United States", Geographical Review, Volume 46, 1956.

Within the Corn Belt therewere remarkable regional variations. A particular feature was the concentration of negro population in the East Central Lowland and Lower Great Lakes Regions, with 43.5% and 12.7% of the total negro population (Table 29). A second concentration was located in the Lower Missouri Valley, with 22.4% of the total negro population.

It is necessary to draw attention to three other large concentrations of negro population all urban, and all peripheral to the Corn Belt, but which exerted an influence on the distribution of negro population within the Corn Belt. These were Chicago (590,000 negroes in 1950), Detroit (374,000) and St. Louis (205,000).

The negro population is, for racial and social reasons, the most distinctive minority cultural group of the Corn Belt, and the economic and human implications of this are far-reaching. Accordingly the characteristics of the negro population have been analysed in some detail in the final section of this chapter.

3. Other Races

This category virtually represents the remnants after the native white, foreign-born white and negro have been eliminated. It is essentially oriental but few details were

given in the census volumes. The only national groups indicated were Chinese, Japanese and Indian. In total the 'other races' category is not significant in the Corn Belt.[58] The total figure of 19,064 was only equivalent to that of a small Corn Belt town and was less than 1% of the total population in the belt in 1950.

Accordingly the category is considered too insignificant to warrant detailed analysis and in the remainder of this chapter the detailed characteristics of the foreign-born white and negro elements have been examined.

The Detailed Distribution of Foreign-Born White Population 1950

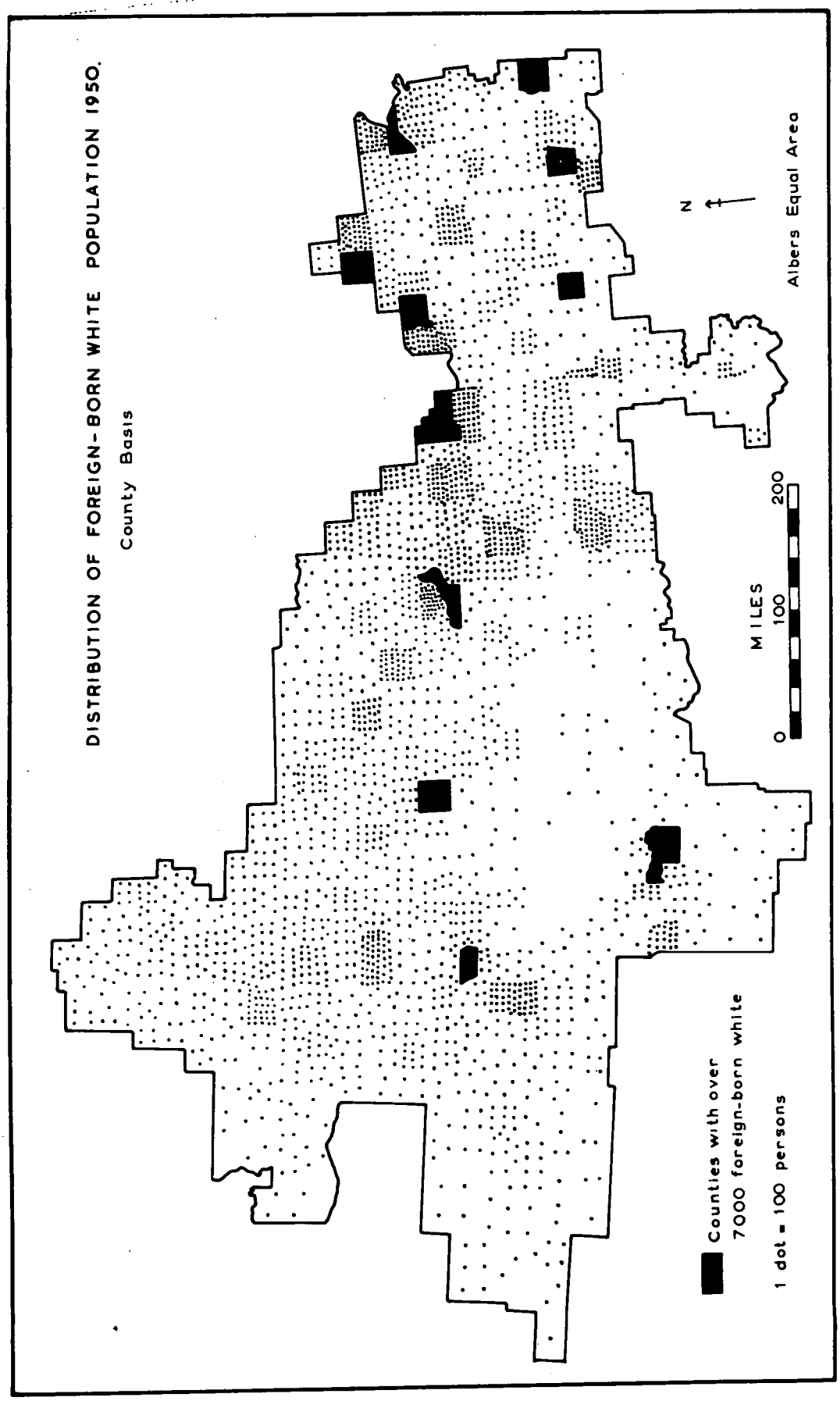
The distribution of cultural groups has been shown to have two aspects; firstly the absolute distribution of a particular group, and secondly the proportional distribution relative to other population groups. These two aspects are examined separately below.

(a) The Absolute Distribution

Map 19 shows the distribution of foreign-born white population by the dot method. A single dot represents

58. In fact the Corn Belt stands out in the United States as an area of relatively honogeneous racial composition. Vide Hartshorne R., "Racial Maps of the United States", Geographical Review, Volume 28, 1938. A comparison of Hartshorne's Maps with those of the present study indicate that the negro population has increased in sections of the Corn Belt.

MAP 19.


DISTRIBUTION OF FOREIGN-BORN WHITE POPULATION 1950.
County Basis
Albers Equal Area
N
MILES
0
100
200
Counties with over 7000 foreign-born white
1 dot = 100 persons

100 persons while the shaded counties contained more than 7,000 persons most of whom were resident in one city, as tabulated in Table 30 below.

TABLE 30

FOREIGN-BORN WHITE IN 1950, IN COUNTIES CONTAINING OVER 7,000 FOREIGN-BORN WHITE

STATE	COUNTY	CITY	TOTAL FOREIGN-BORN WHITE IN COUNTY	IN CITY	% OF TOTAL IN CITY
Ohio	Lucas	Toledo	23,116	22,592	96.2
Ohio	Franklin	Columbus	13,750	12,740	92.7
Ohio	Montgomery	Dayton	10,750	10,735	99.9
Michigan	Kalamazoo	Kalamazoo	7,109	7,109	100.0
Indiana	St.Joseph	South Bend	13,699	12,184	89.1
Indiana	Marion	Indian-apolis	10,897	10,007	92.1
Illinois	Rock Island	Rock Island (1)	8,977	6,046	67.3
Illinois	Will	Joliet	10,218	4,893	47.9
Iowa	Polk	Des Moines	7,481	6,728	89.9
Nebraska	Douglas	Omaka	18,695	17,304	92.9
Missouri	Jackson	Kansas City	17,477	15,836	90.6
Kansas	Wyandotte	Kansas City	5,598	4,731	84.8

Source: Calculated from U.S. Bureau of the Census, Census of Population, 1950, Vol. ii. Characteristics of Population, Table 34 and 42.

(1) Including Moline Urban Area

Map 19 indicates that outside the large cities there was a fairly regular absolute distribution of foreign-born white population throughout the Corn Belt, with one major exception, the south-central portion of the Corn Belt extending into Kansas, but mainly in Missouri. In fact this area had an overall low density of population and the relative significance of foreign-born white population will

be shown to be not unduly low.

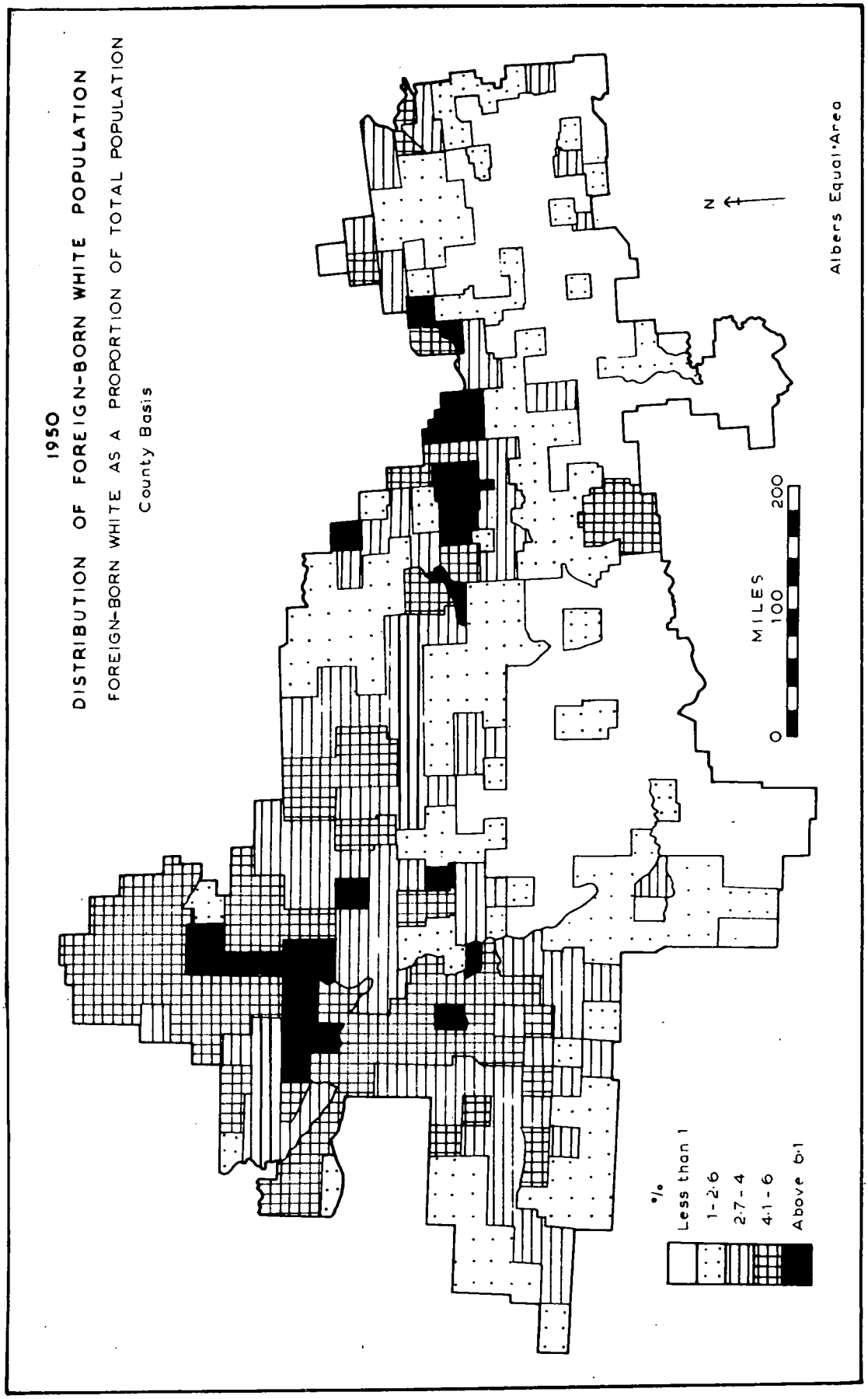
From Table 30 it is evident that the highest concentrations of all were in counties containing the largest cities of the Corn Belt, and in fact in most cases more than 90% of the total foreign-born white was resident in one large city. The twelve counties enumerated in Table 30 contained 147,403 persons, 32.5% of the total foreign-born white.

In general terms the foreign-born white population was distributed more densely in the northern than southern sections of the Corn Belt and a third of the total was resident in twelve cities. Individual concentrations in 1950 were located in the Lower Great Lakes Regions and in the East Central Lowland and Central Illinois in counties containing large towns. A more even distribution occurred in the Upper Missouri Valley and West Central Lowland with the exception of the urban concentrations noticed, of which Omaha and Kansas City were the most significant in 1950.

(b) <u>The Relative Distribution</u>

Map 20 indicates the relative significance of foreign-born white population as a factor in its distribution. Foreign-born white population is shown as a percentage of total population, again on a county basis.

MAP 20.


1950
DISTRIBUTION OF FOREIGN-BORN WHITE POPULATION
FOREIGN-BORN WHITE AS A PROPORTION OF TOTAL POPULATION
County Basis
N
Albers Equal-Area
MILES
0
100
200
%
Less than 1
1-2·6
2·7-4
4·1-6
Above 6·1

This shows some contrasted features when compared with Map 19.

From Map 20 it is apparent that the relative distribution of foreign-born white population was extremely uneven. In particular the Upper Missouri Valley was prominent in 1950 as the major relative concentration of foreign-born white population. The majority of the counties in this region had more than 4% and many more than 6% of their population as foreign-born white in 1950.

A second concentration took the form of a linear belt extending east-west from South Bend, Indiana to Rock Island, Illinois, including many of the large towns within the Chicago hinterland. South of these two zones of concentration there was a marked and almost uninterrupted decrease in the proportion of foreign-born white population. Most of the southern and central sections of the Corn Belt had a proportion of less than 2.7% and much had less than 1% of its population as foreign-born white. It is significant that the East Central Lowlands and Lower Missouri Valley had the lowest proportion of foreign-born white population despite the large absolute numbers of foreign-born white in the towns.

Summary of Distributional Characteristics

1. Although in terms of absolute numbers there was a high concentration of foreign-born white

population in the urban areas of the East Central Lowland, Lower Great Lakes and in the large cities of the Corn Belt in terms of the proportional distribution the most significant concentrations occurred in 1950 in the predominantly rural Upper Missouri Valley.

2. There were contrasts in the significance of foreign-born white population in individual urban centres. Whereas Indianapolis, Dayton and Columbus have high absolute figures but low proportionate values, the cities of the Lower Great Lakes have high concentrations of foreign-born white both absolutely and relatively.

3. There was no consistent relationship between absolute and relative distributions.

4. Two variables may be suggested as influencing the distribution of foreign-born white population; firstly the contrasted distribution of individual national groups, and secondly, the concentration of foreign-born white population in towns. These two conditions are therefore analysed in further detail.

National Origins of the Foreign-Born White Population, 1950

A study of the national origins of the foreign-born white population is desirable for three main reasons.

Firstly it is important to know from which countries the foreign-born white population has come from in order to appreciate the cultural impact of the diverse languages, religions and traditions involved.

Secondly, the distribution of the individual groups is a factor determining the degree to which coherent national groups have survived.

Thirdly, the differential distribution of national groups is a factor influencing the overall regional variations in the distribution of foreign-born white population.

The regional distributions of selected nationalities are shown in Tables, 31, 32 and 33. Table 31 indicates the actual values. Table 32 indicates the regional values as a proportion of the total foreign-born white, and Table 33 shows the proportionate regional distribution of the individual nationalities.

TABLE 31

NATIONAL ORIGIN OF THE FOREIGN-BORN WHITE POPULATION OF THE CORN BELT, 1950, FOR SELECTED COUNTRIES

Geographical Region	England & Wales	Scotland	Ireland(2)	Canada (3)	Germany	Scandinavia (4)	Netherlands
East Central Lowland	8,041	2,805	2,701	5,738	17,420	2,096	1,019
West Central Lowland	7,734	2,149	2,528	5,216	24,349	20,147	2,992
Upper Missouri Valley	3,793	1,035	1,518	4,281	24,783	28,488	6,549
Lower Missouri Valley	2,467	662	1,379	2,096	4,988	2,417	172
Upper Mississippi Valley	2,589	626	920	1,887	10,272	13,477	1,212
Lower Ohio Valley(1)	266	149	50	158	697	374	508
Lower Great Lakes	5,420	1,729	1,812	8,056	12,648	5,159	3,829
TOTAL CORN BELT	30,310	9,155	10,808	27,432	95,157	72,158	16,191

Source: Calculated from U.S. Census of Population, 1950, Volume ii. Characteristics of the Population, Table 42a.

(1) The data for the Ohio Valley is incomplete as figures for Kentucky are not available.

(2) The vast majority were natives of the Irish Republic

(3) The vast majority were English, as opposed to French Canadians

(4) "Scandinavia" includes Denmark, Norway and Sweden

TABLE 32

THE NATIONAL ORIGINS OF THE FOREIGN-BORN WHITE POPULATION OF THE CORN BELT IN 1950; MAJOR NATIONALITIES BY PROPORTIONS

Geographical Region	England & Wales	Scotland	Ireland	Canada	Germany	Scandinavia	Netherlands	Others
East Central Lowland	10.0	3.5	3.4	7.1	21.6	2.6	1.3	50.5
West Central Lowland	7.9	2.2	2.6	5.3	24.8	20.6	3.1	33.5
Upper Missouri Valley	3.8	1.3	1.4	4.1	24.6	27.2	6.1	21.5
Lower Missouri Valley	7.3	1.9	4.1	6.2	14.8	7.2	0.5	58.0
Upper Mississippi Valley	6.0	1.5	2.1	4.4	23.9	31.2	2.8	28.1
Lower Ohio Valley	9.4	5.2	1.8	5.6	24.6	13.2	17.9	22.3
Lower Great Lakes	6.1	1.9	2.1	9.0	14.1	5.8	4.3	56.7
TOTAL CORN BELT	6.7	2.1	2.4	6.1	21.0	15.9	3.6	42.2

Source: Calculated from Table 31 above

TABLE 33

REGIONAL DISTRIBUTION OF THE FOREIGN-BORN WHITE POPULATION BY NATIONAL ORIGIN, 1950

Geographical Regions	England & Wales	Scotland	Ireland	Canada	Germany	Scandinavia	Netherlands
East Central Lowland	26.6	30.2	25.0	20.9	18.3	2.9	6.5
West Central Lowland	25.6	23.2	23.2	19.1	25.6	27.8	18.7
Upper Missouri Valley	12.4	11.3	13.7	15.7	26.0	39.6	40.2
Lower Missouri Valley	8.2	7.2	12.6	7.5	5.3	3.3	0.1
Upper Mississippi Valley	8.6	6.8	8.4	6.9	10.8	18.9	7.6
Lower Ohio Valley	0.6	1.6	0.4	0.6	0.7	0.5	3.2
Lower Great Lakes	18.0	19.7	16.7	29.3	13.3	7.0	23.7
TOTAL CORN BELT	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Calculated from Table 31 above

From Table 32 it is obvious that the major national groups were European and especially, West European. In fact almost 60% of the total foreign-born white were natives of the British Isles, Canada, Germany, Scandinavia and the Netherlands. These groups had the widest regional distribution and although other nationalities had local significance none were so numerous or so widespread in the Corn Belt in 1950.

(1) Germany

In 1950 there were almost 100,000 German-born persons resident in the Corn Belt, the largest individual national group, forming 21% of the foreign-born white element. The highest proportion of this total was located in the Upper Missouri Valley with some 26%, and in the West Central Lowland, 25.6%. The other major concentrations were 18.3% in the East Central Lowland and, more impressive, 13.3% in the Great Lakes Region despite its smaller size.

(2) Scandinavia

In 1950 there were over 70,000 persons resident in the Corn Belt of Scandinavian origin, some 15.9% of the total foreign-born white. In absolute terms the regional distribution was much more uneven than the German element and there was a heavy concentration in the West Central Lowland, 27.8% of the total, and the Upper Missouri Valley with 39.6%. From Table 32 it is obvious that the

Scandinavian element was dominant in the northern and western regions of the Corn Belt.

(3) British Isles

In 1950, 11.2% of the foreign-born white population was of British Isles origin, with the English and Welsh proportion being roughly three times as large as the Scottish and the Irish in all regions but the Ohio Valley, where the Scottish proportion was rather higher. There was a consistent regional distribution of the four nationalities; in all cases there was a heavy concentration in the East and West Central Lowlands and in the Lower Great Lakes with a marked decrease westwards and northwards.

(4) Canada

In 1950 the Canadian element formed 6% of the total foreign-born white population. There was a fairly regular distribution throughout the eastern and central sectors of the Corn Belt with the exception of a marked concentration in the Lower Great Lakes Regions, that is closest to the Canadian border, with 29.3% of all the Canadian-born population and 9% of the total foreign-born white population of that region.

(5) Netherlands

The population of the Corn Belt of Netherlands origin in 1950 amounted to 3.6% of the total foreign-born

white. There was a marked concentration in the Upper Missouri Valley with 40.2% of all the Netherlands population, though this represented only 6.1% of the total foreign-born white of that region.

(6) Other Nationalities

The complete list of nationalities represented in the foreign-born white population is probably over thirty, of which twenty five were listed in the census volumes. From Table 32 it is apparent that the seven nationalities selected accounted for over 50% of the total foreign-born white in all but the most urban regions. Accordingly two further lines of research have been followed. Firstly, more detailed consideration of three most significant nationalities numerically, the German, Scandinavian and British Isles is necessary since these three groups exerted the greatest influence on the overall density of foreign-born white. Secondly there are obvious indications that the most complex distributions are associated with the larger urban centres and this also will be examined in detail.

Distribution of German-Born White Population, 1950

It has been noted that the German-born section represented the largest national group of foreign-born white in the Corn Belt and in 1950 numbered 95,157 or

21.0% of the total foreign-born white population. Moreover it must be remembered that the descendents of German parents represented a far larger number and many of these preserved a German culture and often formed significant cultural groups in cities. Because of their numerical significance much research has been attempted on German immigration and the most useful reference work on the Middle West is that of H.B. Johnson[59] and the reader is referred to this work for a summary of the phases of German immigration and the detailed factors of location. However there have been significant changes since the publication of her research and a further analysis is now called for and is attempted below.

The movement of German-born population into the United States was a feature of the 19th century and especially of the latter half of the 19th century. In 1900 the total German born population in the U.S. was 2,666,990, the largest total ever recorded.[60] Of this 1900 total, 1,461,603 lived in a crescent consisting of the Missouri and Mississippi Valleys, to the mouth of the Ohio Valley, the southern shores of the Great Lakes, Central

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59. Johnson, H.B., "The Location of German Immigrants in the Middle West", Annals of the Association of American Geographers, Vol. XLI, 1951.

60. The figure for 1940 was 1,237,772, according to the "Statistical Abstract of the United States, 1950". Washington D.C. 1951.

Wisconsin and back to the Mississippi and Minnesota valleys;[61] that is in the region of the Middle West and largely within the present Corn Belt. The first German born moved into Ohio and Indiana after 1880, Missouri after 1820, Illinois in the 1830's, Iowa and Michigan in the 1840's and Minnesota, Nebraska and Kansas in the early years of the 1850's. The early movement was concentrated on the river valleys partly because these were the established river and canal routes, and also because they were the location of existing towns in which employment was available. The largest volume of German immigration was in the latter half of the 19th century when the railroad began to assume more significance. Essentially the bulk of the immigrants were farmers practising a corn-livestock economy on the better western lands of the Corn Belt. In 1900 there were three major areas of concentration within the Corn Belt.

(1) The Lower Missouri Valley, with in particular concentration in St. Louis (58,781) and Kansas City (4,816).

(2) South East Illinois, where Germans had arrived to work on the construction of the Illinois and Michigan canal and later settled as farmers on the new prairie lands.

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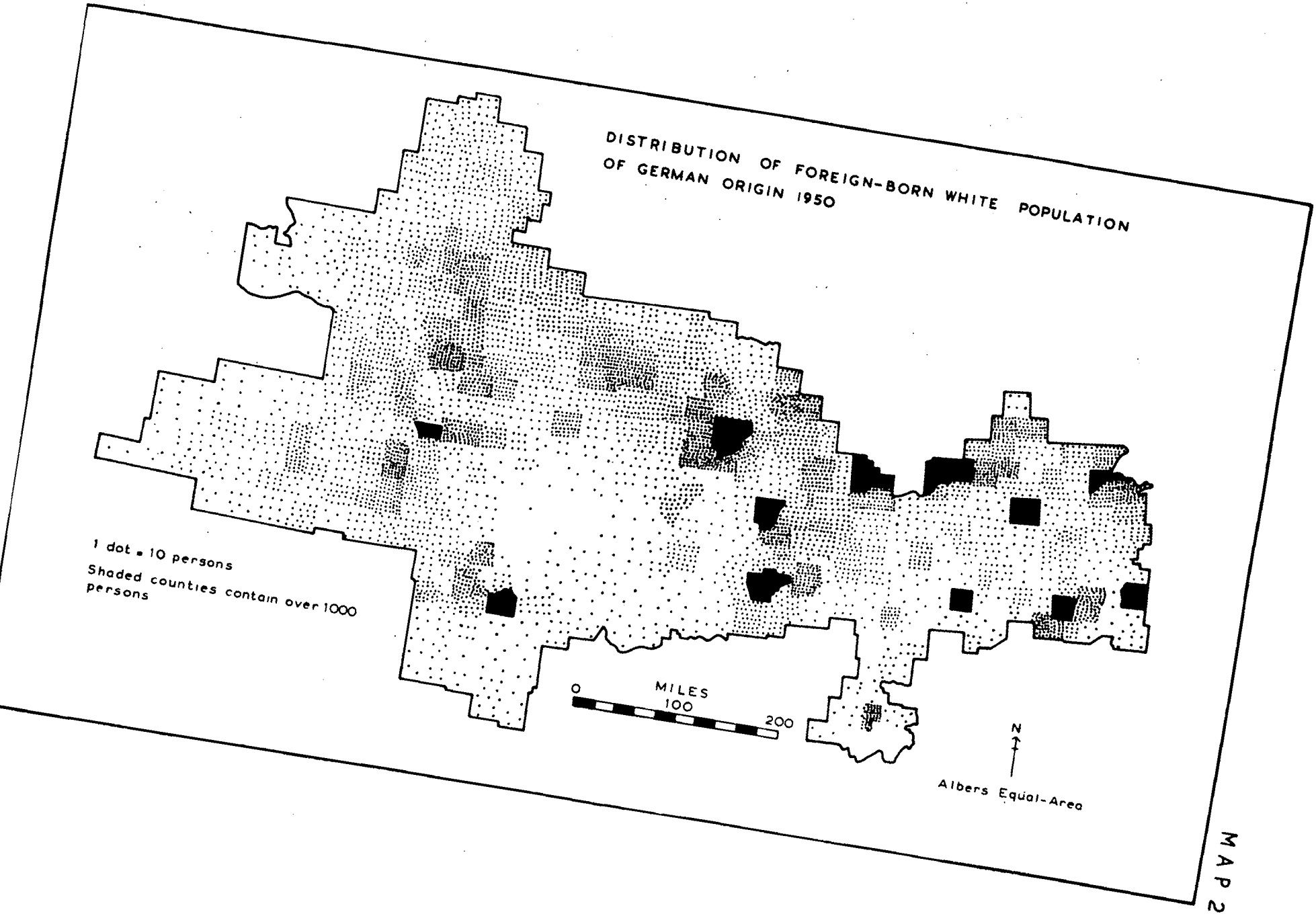
61. Johnson, H.B., Op. Cit. 59 supra p.4.

(3) The river counties of Eastern Iowa - again influenced initially by employment in the towns but later, when able to, the immigrants bought land and became farmers.

Since 1900 there has been considerable modification in the distribution of German-born population though it must be emphasised that these areas of early concentration still remain as areas where German culture is strong.

The detailed distribution of foreign-born white population of German origin is shown by Map 21. Counties with over 1,000 are shaded and the detail of these counties is indicated in Table 34. From Table 34 it is seen that 21,986 of the German-born white (23.2% of the total) was located in sixteen cities. The total urban proportion was probably very large. However from Table 34 it is seen that the number of German-born in the cities has decreased since 1870 and more especially since the peak of 1900 when the five selected cities alone had more than double the German population of the sixteen present major concentrations.


DISTRIBUTION OF FOREIGN-BORN WHITE POPULATION
OF GERMAN ORIGIN 1950
1 dot = 10 persons
Shaded counties contain over 1000 persons
0
MILES
100
200
N
Albers Equal-Area

MAP 21.

TABLE 34

THE DISTRIBUTION OF GERMAN-BORN POPULATION IN COUNTIES OF MORE THAN 1,000 GERMAN BORN, IN 1950

COUNTY	STATE	CHIEF CITY	1950 GERMAN-BORN IN COUNTY	1950 % GERMAN-BORN IN CHIEF CITY	GERMAN-BORN IN COUNTY 1870(1)	GERMAN-BORN IN COUNTY 1900
Lucas	Ohio	Toledo	4,057	92.6	6,804	14,306
Allen	Indiana	Ft. Wayne	1,511	81.3		
Marion	Indiana	Indianapolis	2,374	87.6	6,536	9,639
Montgomery	Ohio	Dayton	2,847	93.6	7,386	9,424
La Porte	Indiana	La Porte (2)	1,080	73.2		
St. Joseph	Indiana	South Bend (3)	1,180	86.6		
Scott	Iowa	Davenport	1,834	76.7		
Clinton	Iowa	Clinton	1,037	54.7		
Douglas	Nebraska	Omaha	2,311	86.0		
Sangamon	Illinois	Springfield	1,090	75.8		
Will	Illinois	Joliet	1,037	36.8		
Peoria	Illinois	Peoria	1,638	83.5		
Franklin	Ohio	Columbus	2,321	91.6	5,705	7,609
Jackson	Missouri	Kansas City	2,233	84.8	2,310	5,373
			26,550	82.9	31,741	49,081

Source: Calculated from U.S. Bureau of the Census, Census of Population, 1950, Volume ii. Characteristics of the Population, Table 34a and 42a.

(1) Vide Johnson, H.B. Op. Cit.59 Table 2.
(2) Including Michigan City
(3) Including Mishewaka

The reason for this trend is to be found in the changing pattern of immigration and the impact of the two world wars. The quota restrictions had less effect than the wars in restricting German immigration, but the result was a vast decrease in the amount of immigration. However this does not imply a decrease in the significance of the German cultural group. The children of the 1900 population were registered as native-born but still represented a continuation of German culture. It is noticeable that a comparison of the 1870, 1900 and 1950 figures shows that the major concentrations were in the same urban centres - Kansas City, Indianapolis, Dayton, Columbus and especially Toledo. The predominance of these cities is in part their situation in relation to the routes of immigration of Germans in the past and especially since 1900 the development of engineering and meat packing industries that attracted German labour.

Map 21 indicates that the German-born population of the Corn Belt was widely distributed and these particular patterns were apparent; (1) East of the Mississippi there was a marked concentration in the towns and a relatively sparse rural distribution. (2) West of the Mississippi and more evenly distributed, though the counties containing cities stood out. (3) It was noticeable that there was a sparsity in the Lower Missouri Valley section of the

Corn Belt. This reflected in part a lower population density (and therefore the relative significance of German population was still high) and also an absence in this region of large towns.

The pattern contrasted with the earlier concentrations described by Johnson. The Lower Missouri Valley was insignificant in 1950 with the exception of Kansas City, and the concentration of rural German-born population was more significant in the Upper Missouri Valley and the Iowan Prairie. The concentrations in South East Illinois, Eastern Iowa and the Lower Great Lakes remained, but were almost exclusively associated with urban centres.

Summary and Conclusions

(1) The German-born was the largest national group of the foreign-born white but was less significant numerically than in 1900 or even 1870.

(2) It was widely distributed over the Corn Belt but the urban proportion was high - 23% being in 16 cities.

(3) There have been changes in the distribution with a movement up the Missouri and Mississippi valleys and on the Iowan prairies, and greater concentration in towns.

(4) These changes are related to (a) the decrease

in immigration; (b) the changes in available employment; (c) the old routes along waterways are no longer implicit.

(5) However the children of German parents of the earlier migration were registered as native-born white and the inclusion of this group would give a more realistic picture of the extent of German culture.

The Scandinavians

The total Scandinavian-born white population in 1950 was 72,158 or 15.9% of the total foreign-born white population of the Corn Belt. This figure was less than that of German-born but ranked second in significance. Like the Germans the Scandinavian immigration has a long history and though less numerous, in proportion to the populations of their home countries the figures were extremely high. Moreover the contribution by Scandinavians culturally and the extent to which national community groups have survived is also significant.[62]

Map 22 shows the present distribution of Scandinavian-born in 1950. The shaded counties again represent counties with more than 1,000 persons and these again coincide with urban populations. The detail of these counties is shown in Table 35.

62. Vide for example, Van Cleef, E., "The Finn in America". Geographical Review, Volume 6, 1948.

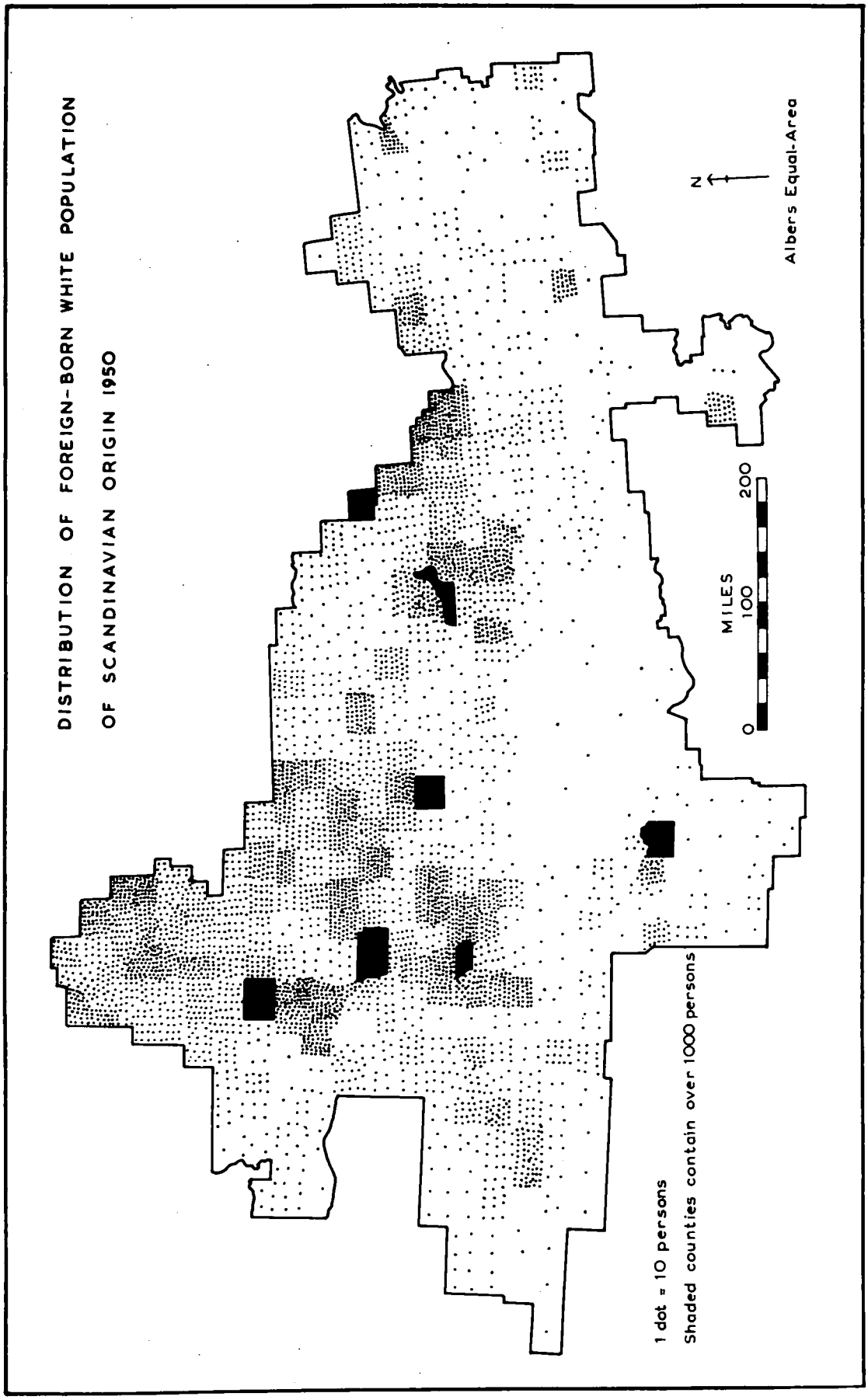

DISTRIBUTION OF FOREIGN-BORN WHITE POPULATION
OF SCANDINAVIAN ORIGIN 1950
N
Albers Equal-Area
0
100
200
MILES
1 dot = 10 persons
Shaded counties contain over 1000 persons

TABLE 35

SCANDINAVIAN-BORN POPULATION IN COUNTIES OF OVER 1,000 AND IN CITIES, 1950

COUNTY	CITY	TOTAL IN COUNTY	TOTAL IN CITY	% CITY
Minnehaha	Sioux Falls	1467	903	61.6
Woodbury	Sioux City	1534	1428	93.0
Douglas	Omaha	3183	2749	86.5
Jackson	Kansas City (1)	1235	1135	92.0
Polk	Des Moines	1513	1298	86.1
Rock Island	Rock Island	2219	1721	77.8
Winnebago	Rockford	6847	6282	92.0
		17,998	15,516	86.2

Source: Calculated from U.S. Bureau of the Census, Census of Population, Vol. ii. "Characteristics of the Population" Tables 34a and 42 a.

(1) Kansas City is based on the corrected S.M.A. figures, all others are figures for urban places or urbanised areas.

From Table 35 we see that the seven counties with more than 1,000 Scandinavian-born had a total of 17,998 and that of this 86.2% was located in the seven chief cities. Altogether the 15,516 Scandinavians in the cities represented 21.5% of the total Scandinavian-born white population. Of individual cities Rockford, an outstanding agricultural engineering centre, had the highest number with 6282 in its urbanised area.

The remaining 78.5% had a very marked distribution somewhat more well-defined than that of the German element.

The vast proportion of the Scandinavian element was concentrated in the north western section of the Corn Belt and there was a marked decrease southwards and to a lesser extent eastwards. The following heavy concentrations were notable.

1. The Rock river valley principally Vinnebago county centred on Rockford.

2. The Chicago fringe in Illinois and to a lesser extent in Indiana.

3. West Central Illinois especially Rock Island, Molino, Galesburg and Peoria. An area of intensive agriculture.

4. The North West plains of Iowa.

5. The Upper Missouri Valley especially the interfluves of the Sioux and Missouri Rivers.

6. The tributary headwaters of the Mississippi, especially the Minnesota in the South Dakota and Minnesota sections of the Corn Belt.

Summary and Conclusions

1. The Scandinavian element was the second most significant national group and had 15,9% of the total foreign-born white in 1950.

2. Unlike the German there was less concentration in the towns, especially in the eastern towns.

3. The distribution was much more distinctive and was essentially a northern and western distribution with a secondary concentration in the Upper Mississippi Valley and Chicago Fringe.

4. The Scandinavian element was still related to immigration history in that the early Scandinavian settlement was in the west and primarily agricultural dating from 1860 when the eastern sections had been filled. Migration in the past 50 years appears to have continued to these western districts rather than to the more populous and industrialised eastern sector.

The British Isles

Foreign-born white of the British Isles numbered some 50,273 or 11.2% of the foreign-born white of the Corn Belt. It is therefore the third largest group but considerably smaller than the German. The British element in the Middle West has not been as high proportionately as further east and the trend has been for British nationals to decrease

proportionately in relation to German, and Scandinavian nationals, though this is less true of Irish immigrants.

Map 23 shows the distribution of foreign white of British origin. Counties with over 800 persons are shaded and the detail is tabulated in Table 36.

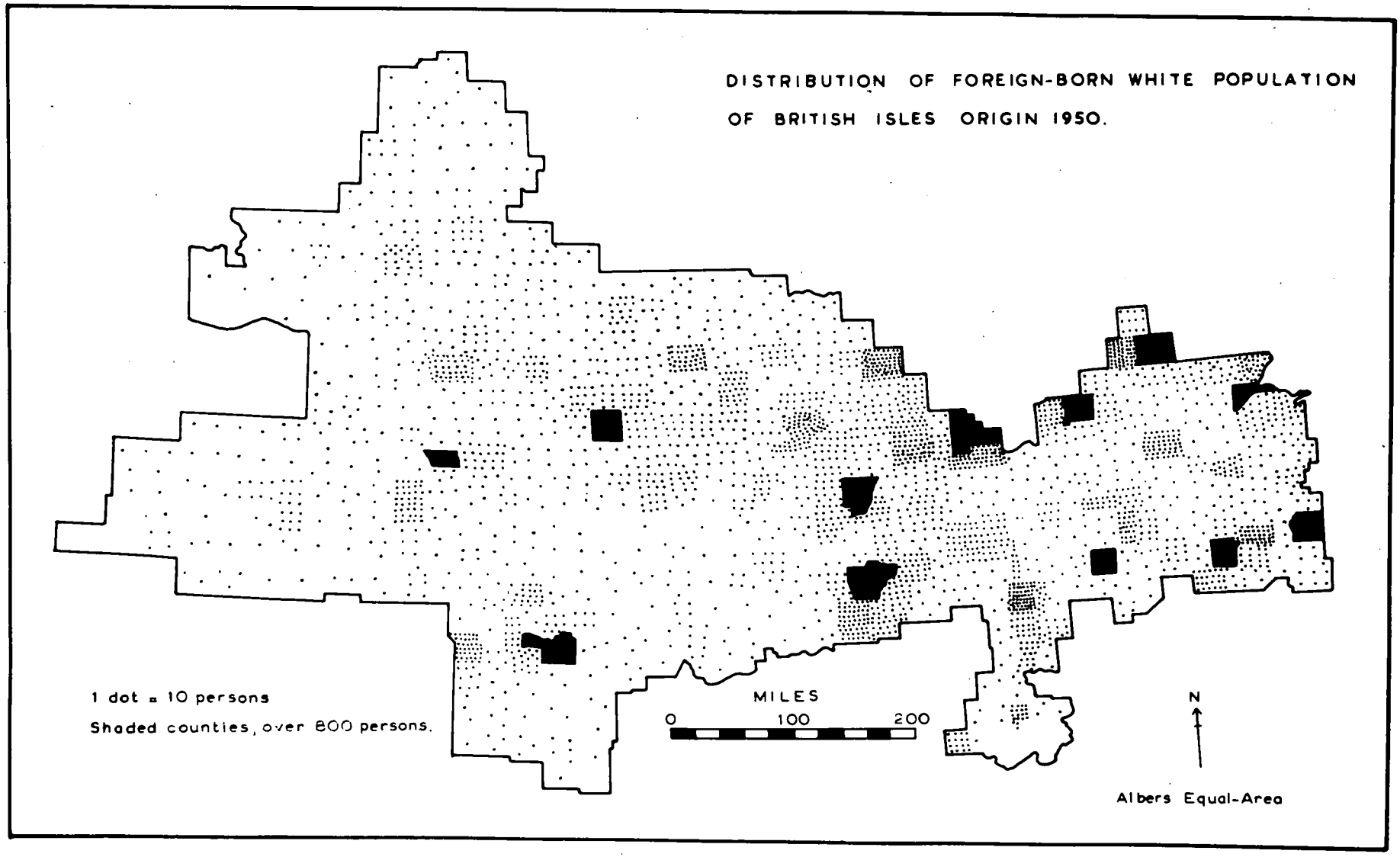
Table 36 shows that these 13 counties had 18,103 or 36.1% of the total British-born. Moreover 86.4% of these lived in the twelve major cities - a total of 15,609 or 31.1% of all the British-born. Moreover examination of Map 23 indicates that the highest concentration was in counties surrounding the 12 counties with large cities or with cities themselves, as in the Lower Wabash, Rock Island-Davenport, Topeka, Lincoln and Rockford. The British population therefore tended to be more highly urbanised than the Scandinavian and more widely distributed than both the Scandinavian and German nationals. In general it was concentrated in the central and eastern sections and the following agglomerations were notable.

1. The towns of Missouri Valley; Kansas City, Omaha, Lincoln and Sioux City.

2. The Iowan Prairie centred on Des Moines.

3. The Mississippi Valley centred on Rock Island.

4. Central Illinois centred on Springfield and Peoria.


DISTRIBUTION OF FOREIGN-BORN WHITE POPULATION
OF BRITISH ISLES ORIGIN 1950.
1 dot = 10 persons
Shaded counties, over 800 persons.
MILES
0
100
200
N
Albers Equal-Area

MAP 23.

TABLE 36

THE DISTRIBUTION OF BRITISH-BORN POPULATION IN COUNTIES OF MORE THAN 800 BRITISH-BORN 1950

COUNTY	CHIEF CITY(1)	TOTAL BRITISH-BORN IN COUNTY	BRITISH ~~ISLES~~ Born? IN CHIEF CITY	% IN CHIEF CITY
Calhoun	Battle Creek	987	493	49.9
Lucas	Toledo	2,369	2,284	96.5
Montgomery	Dayton	1,295	1,233	95.0
Franklin	Columbus	2,050	1,885	92.0
Marion	Indianapolis	2,233	2,086	93.5
St.Joseph	South Bend	807	720	89.2
Will	Joliet	905	460	50.8
Peoria	Peoria	1,102	958	86.2
Sangamon	Springfield	933	674	72.2
Polk	Des Moines	1,211	1,096	86.5
Wyandotte	Kansas City	537	459	85.5
Jackson	Kansas City	2,360	2,029	85.6
Douglas	Omaha	1,314	1,232	92.6
TOTAL		18,103	15,609	86.4

Source: U.S. Census of Population, 1950, Volume ii. Characteristics of Population. Tables 34a and 42a.

(1) Figures are for urbanised area and urban places

5. The Lower Great Lakes and Chicago Fringe.

6. The Lower Wabash Valley

7. Indianapolis, Dayton and Columbus

Summary and Conclusions

1. The British element was widely distributed but had large urban concentrations, especially in the Lower Great Lakes and East Central Lowland.

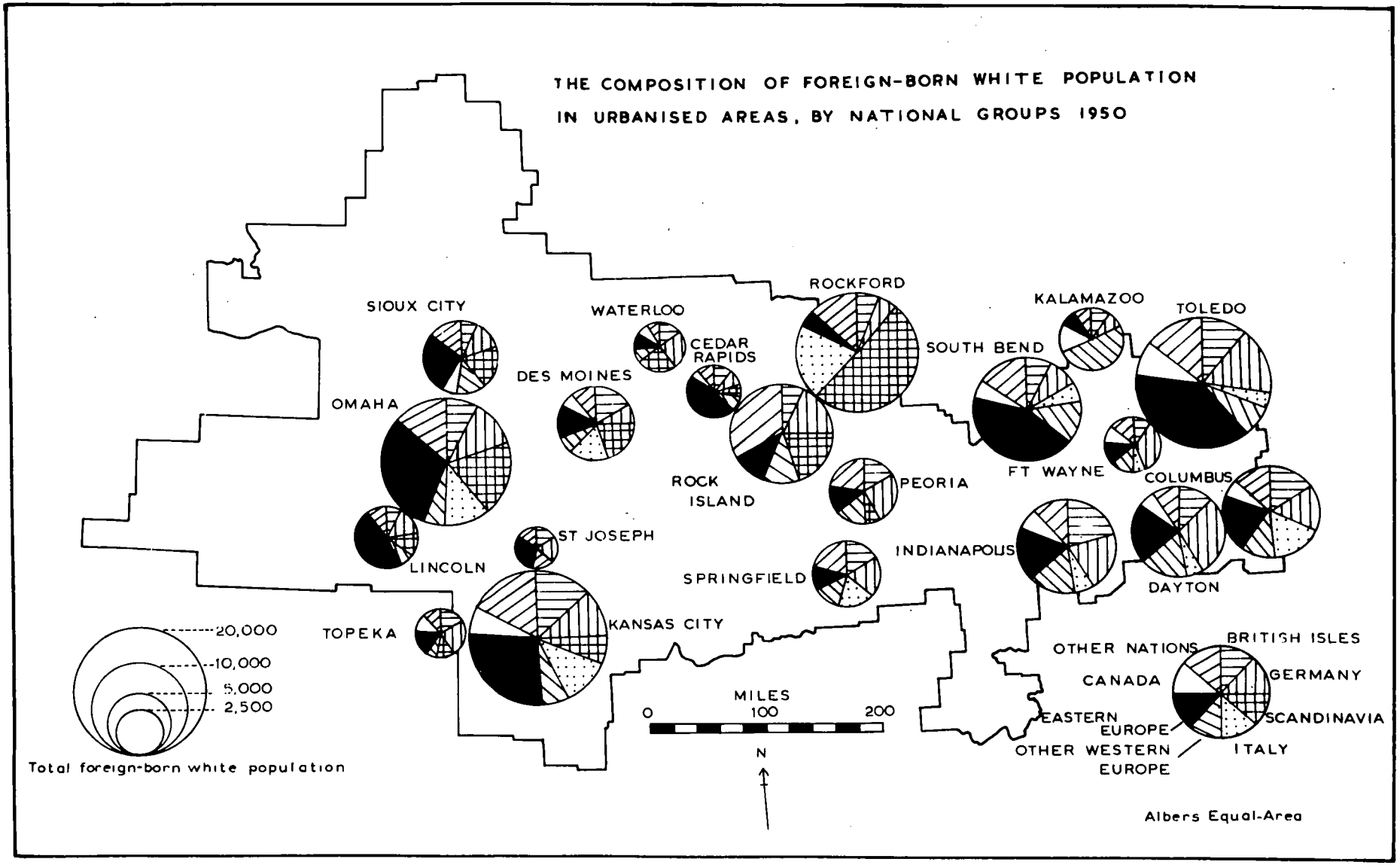
2. The distribution was more comparable to the German rather than the Scandinavian.

3. There was a predominant ratio of approximately two English (and Welsh) to one each of Scottish and Irish and a consistent association of the three national groups, though evidence will be shown below to indicate that the Irish proportion increased in the urban centres.

The Foreign-Born White Population of the Urban Centres of the Corn Belt, 1950

The Rural-Urban Distribution of Foreign-Born Whites, 1950

The regional distribution of the foreign-born white population in terms of residence is indicated in Table 37 below, and illustrated by Map 24.


THE COMPOSITION OF FOREIGN-BORN WHITE POPULATION
IN URBANISED AREAS, BY NATIONAL GROUPS 1950
SIOUX CITY
WATERLOO
CEDAR RAPIDS
ROCKFORD
KALAMAZOO
TOLEDO
SOUTH BEND
DES MOINES
OMAHA
ROCK ISLAND
PEORIA
FT WAYNE
COLUMBUS
ST JOSEPH
LINCOLN
INDIANAPOLIS
SPRINGFIELD
DAYTON
TOPEKA
KANSAS CITY
20,000
10,000
5,000
2,500
Total foreign-born white population
MILES
0
100
200
N
OTHER NATIONS
BRITISH ISLES
CANADA
GERMANY
EASTERN EUROPE
SCANDINAVIA
OTHER WESTERN EUROPE
ITALY
Albers Equal-Area

MAP 24.

TABLE 37

REGIONAL DISTRIBUTION OF FOREIGN-BORN WHITE POPULATION BY RESIDENCE, 1950

REGION	RURAL	RURAL NON-FARM	URBAN	% RURAL	% RURAL NON-FARM	% URBAN
East Central Lowland	7,403	14,704	58,673	9.2	18.3	72.5
West Central Lowland	18,837	27,873	51,486	18.3	28.4	53.3
Upper Missouri Valley	25,401	30,302	49,427	24.2	28.8	47.0
Lower Missouri Valley	2,799	3,169	27,668	8.4	9.5	82.1
Upper Mississippi Valley	6,860	9,491	26,818	16.0	20.8	63.2
Lower Ohio Valley	317	644	1,881	11.2	22.6	66.2
Lower Great Lakes	8,799	16,047	64,460	9.9	18.0	72.1
TOTAL CORN BELT	70,416	102,230	280,413	16.4	22.4	61.2

Source: Calculated from U.S. Bureau of the Census, Census of Population, 1950, Vol. ii. Characteristics of Population. Table 48 and 49.

Table 37 indicates that in 1950 of the total foreign-born white population of the Corn Belt, 61% was urban by residence and in all but two regions the proportion was much higher. Moreover, of the rural proportion of 38.8% ofthe total population the rural non-farm component represented 22.4% and in every single region the rural non-farm element exceeded the rural farm. From this it seems likely that a large proportion of the rural population was more intimately connected with urban rather than rural functions.

However, there were certain regional variations of

which the following were the most notable.

1. The high urban proportion of the Lower Missouri Valley was due to the influence of Kansas City and Topeka which had 74% of the foreign-born white of the region.

2. The principal influence on regional variations was the distribution of large towns. This adds emphasis to the necessity for separate studies of the urban areas with large foreign-born white populations since these groups were often related to a particular locality rather than any regional pattern of distribution.

3. The Upper Missouri Valley was prominent as having the highest rural farm proportion in its foreign-born white element. Elsewhere the picture was one of urban dominance with the non-farm component dominant in the rural population.

In view of this urban dominance it is necessary to consider the situation in the large cities of the Corn Belt.

The Foreign-Born White Population of the Urbanised Areas of the Corn Belt, 1950

The total urban foreign-born white population in 1950 was 280,000 of which 186,899 persons were resident in the Urbanised Areas. Detailed information is only available for urbanised areas in the census volumes and consequently

the analysis is restricted to these largest cities where, nevertheless, the most numerous and varied concentrations were located.

The amount of detail available for urbanised areas is substantial and some generalisation is first necessary. This is attempted in Table 38 below.

Table 38 indicates that in terms of total numbers Kansas City and Toledo were almost equal with over 22,000 foreign-born whites. Omaha ranked third with 19,000 but after that there was a considerable decline to Columbus, Ohio, with 12,000.

However in terms of the proportion of foreign-born white to total population Toledo and Kansas City ranked only 5th and 13th respectively. Of the towns with very large numbers of foreign-born white only South Bend and Omaha had a high proportion in relation to their total population. The highest proportions were found in the intermediate sized urbanised areas with large industries, as for instance Rockford (10%), Davenport, Rock Island, Moline (6.1%), and Kalamazoo (6.3%.)

The detailed nationalities in the urbanised areas are tabulated in Table 39 for 1950. Table 39, in the Appendix,

TABLE 38

THE FOREIGN-BORN WHITE POPULATION OF THE URBANISED AREAS OF THE CORN BELT, 1950

Urbanised Areas	Total Population	Total Foreign-Born White	Rank	% Foreign-Born White of total	Rank
Kansas City	698,350	22,753	1	3.3	13
Indianapolis	502,375	10,007	9	2.0	21
Columbus	437,707	12,734	4	2.9	16
Toledo	364,344	22,592	2	6.2	5
Dayton	346,864	10,235	8	2.9	16
Omaha	310,291	19,575	3	6.3	3
Des Moines	199,925	6,728	10	3.4	11
Davenport, Rock Island Moline	194,925	11,749	7	6.1	6
South Bend	168,165	12,184	6	7.2	2
Peoria	154,539	5,306	11	3.4	11
Fort Wayne	140,314	3,706	16	2.6	18
Evansville	137,573	1,132	25	0.8	24
Rockford	122,226	12,349	5	10.0	1
Lincoln	99,509	4,374	14	4.4	8
Springfield (Illinois)	97,371	4,245	15	4.4	8
Sioux City	90,101	5,049	13	5.6	7
Topeka	89,104	2,124	21	2.4	19
Waterloo	84,386	2,600	18	3.1	14
Kalamazoo	83,332	5,249	12	6.3	3
St. Joseph	82,290	2,174	20	2.6	18
Springfield (Ohio)	82,284	1,501	23	1.8	22
Cedar Rapids	78,212	3,353	17	4.3	10
Terre Haute	78,028	2,300	19	3.0	15
Decatur	73,713	1,548	22	2.1	20
Hamilton (Ohio)	63,270	1,332	24	2.1	20
TOTAL CORN BELT	4,779,187	186,899	-	3.9	-

Source: Calculated from U.S. Census of Population, 1950, Volume ii. Characteristics of Population, Table 34a.

indicates seventeen major nationalities and facilitates a description of the complex composition of foreign-born white population and something can be inferred of the apparent group association of certain nationalities. The major national concentrations are underlined and it suffices to summarise the more remarkable concentrations only.

(a) Scandinavian

Two remarkable concentrations were located in Rockford with over 6,000 and Omaha with 3,500.

(b) Netherlands

There was a concentration of 2,172 in Kalamazoo, a higher total than in all the remaining urbanised areas combined.

(c) German

The largest single concentration was 3,760 in Toledo, though 2,000 was exceeded in many urbanised areas.

(d) Polish

There was an outstanding concentration of 5,915 in South Bend.

(e) Italian

Columbus, Rockford, Omaha and Kansas City all had over 2,000.

(f) Canadian

The largest concentration in 1950 was located in

Toledo with over 2,000. This was related to Toledo's situation close to the Canadian border and on a major route between the United States and Canada.

(g) Czechoslovakian

Omaha had a third of the total Czech in 1950 with 2,281.

(h) Hungarian

South Bend had the highest number with 2,149, Toledo had 1,771 and Dayton 1,151.

(i) U.S.S.R.

Kansas City had over 2,500 and Lincoln nearly 2,000.

(j) Yugoslavia

Kansas City had 1,299 in 1950.

In addition to the concentrations of particular nationalities apparent from Table 39 certain group associations may be inferred. In particular:

1. England, Wales, Scotland, Ireland and Canada.
2. Germany, Poland and Austria.
3. Czechoslavakia, U.S.S.R., Hungary and Yugoslavia.
4. Scandinavia and the Netherlands.

These statistical associations were apparently based on linguistic and cultural affinities and were related also to

migration history.

Table 40 below presents a simplication of the information in Table 39 in a form suitable for cartographic representation, as in Map 24.

Map 24 illustrates the relative total foreign-born white populations of the urbanised areas and the proportional breakdown by individual nationalities. This forms a suitable framework for a summary of the urban distribution of the major national groups.

TABLE 40

MAJOR NATIONAL GROUPS OF FOREIGN-BORN WHITE POPULATION IN THE URBANISED AREAS OF THE CORN BELT IN 1950

Urbanised Areas	British Isles	Germany	Scandinavia	Italy	Other Western Europe (1)	Eastern Europe	Canada	Other Nations
COlumbus	14.7	16.7	- (3)	19.2	10.1	20.7	6.1	12.
Dayton	12.0	26.0	-	6.1	16.5	20.8	6.3	12.3
Toledo	10.3	16.7	-	3.7	8.3	38.6	8.9	13.5
Fort Wayne	10.4	33.1	-	5.8	14.5	11.7	9.4	15.4
Indianpolis	20.0	20.0	-	5.6	15.1	17.5	7.1	14.7
South Bend	7.2	8.3	-	5.8	13.2	44.1	5.5	15.9
Rock Island (2)	6.8	19.0	19.0	-	10.8	10.0	-	27.2
Peoria	16.1	25.8	6.5	-	15.4	12.7	-	23.5
Rockford	5.6	4.6	52.0	19.4	-	4.5	-	13.9
Springfield (Ill.)	15.8	19.4	-	17.5	13.4	11.1	-	22.8
Cedar Rapids	10.7	8.6	8.2	-	8.3	48.1	5.4	10.7
Des Moines	16.3	8.3	19.3	16.9	6.9	13.7	6.3	12.3
Omaha	7.3	12.0	18.2	12.5	4.4	30.6	-	15.0
Sioux City	8.5	11.3	28.3	-	11.3	22.2	5.7	12.7
Waterloo	14.2	25.1	25.2	-	9.6	10.0	7.6	8.3
Lincoln	7.8	14.4	11.0	-	5.2	48.0	-	13.6
Kansas City	12.7	11.7	6.4	10.9	7.4	27.2	5.9	17.8
St. Joseph	15.1	21.1	-	-	14.9	31.6	-	17.3
Topeka	15.9	25.0	11.6	-	5.4	16.8	12.8	12.5
Kalamazoo	9.4	7.0	-	-	51.2	14.7	9.5	8.2

Source: U.S. Census of Population, 1950, Volume ii, Characteristics of Population Table 34a.

(1) The distinction between Eastern and Western Europe is based on political affinity:- W. Europe: U.K. and Eire, Scandinavia, Netherlands, France, Germany, Greece, Italy and Austria. E. Europe: Poland, Czechoslovakia, Hungary, U.S.S.R. and Yugoslavia.

(2) Rock Island - Davenport urbanised area.

(3) - = less than 4% of the total foreign-born white.

Summary of Urban Distribution

(1) British Isles

Population born in the British Isles was located especially in the larger cities and more especially east of the Wabash River. In the cities west of the Wabash, although the proportion of British to other nationalities remained high, the actual numbers were much smaller than in the eastern cities. The British element was most prominent in these areas which were earliest settled but which are now the commercial and industrial nucleus of the Corn Belt and form part of an industrial zone extending much further east.

(2) German

The German element, as the British, was preponderant in the eastern sections of the Corn Belt in 1950, but retained of more significance west of the Mississippi than did the British.

(3) Scandinavian

The Scandinavian element had a more localised urban distribution and there was no concentration of Scandinavians in the cities of the more heavily urbanised eastern section of the Corn Belt, east of an axis from Peoria to Rockford. However, west of this axis there were significant urban concentrations, Rockford, Sioux City,

and Omaha, all located in the area settled after 1860 and in which Scandinavian immigration played a large part.

(4) Italian

The Italian element had an irregular urban distribution in 1950 but was most significant in the largest regional centres.

(5) Other Western Europe

This category includes all nations of Western Europe, with less than 4% of the total foreign-born white population in a given city. It represented a small element in all the cities in 1950 with the exception of the significant Dutch concentration in Kalamazoo.

(6) East European

The largest concentrations were in the largest and most industrialised cities, of which the most prominent were Kansas City, Omaha, Toledo and South Bend.

(7) Canada

The highest proportions were located in the industrial towns close to the border, especially South Bend, Kalamazoo and Toledo.

The Distribution of Negro Population

The foreign-born white element has been analysed

in some detail since although less numerous than the negro group it is more complex in view of the diffuse national origins. However, some attention must be devoted to the distribution of negro population since the Corn Belt has some special characteristics in this respect.[63 and 64.]

In 1950 there were some 515,765 negroes in the Corn Belt, 3.1% of the total population. Moreover the negro population to a far greater extent than the foreign-born white was localised in itsdistribution.

Map 25 shows the distribution of negro population in 1950. In general terms there were concentrations in the Lower Missouri Valley and to a lesser extent in the Lower Mississippi Valley, the Kentucky section of the Corn Belt, and above all in the counties containing large cities in the East Central Lowland especially in the valleys of the White, Miami and Scioto rivers. With the exception of Polk County, Iowa (Des Moines), and Douglas Co., Nebraska (Omaha), the whole of the central, northern and western sectors of the Corn Belt were without large numbers of negro population.

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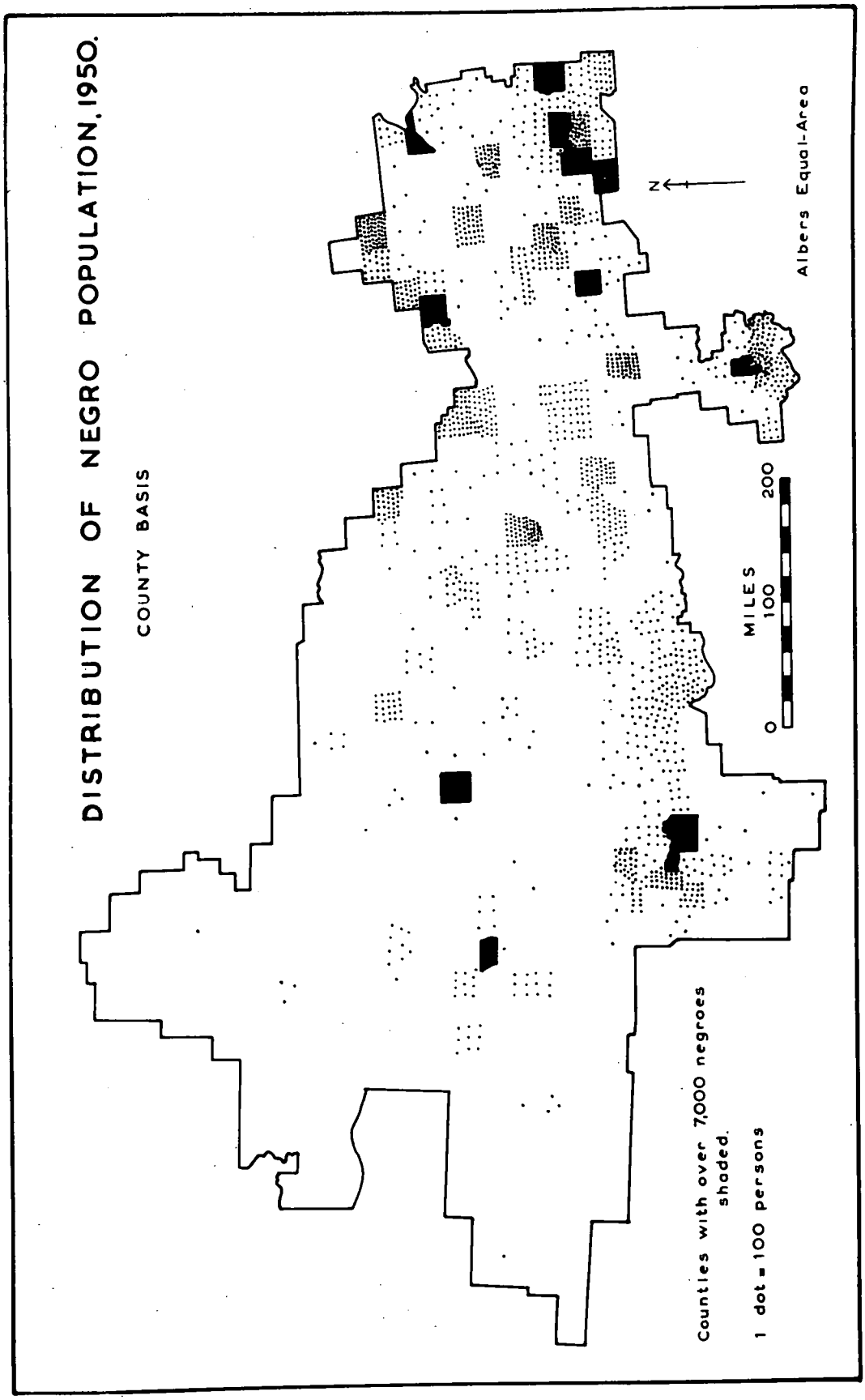
63. For a recent discussion of the national characteristics of Negro Population in the United States, Vide, Taveber, I.B., "Migration, Mobility and the Assimilation of the Negro" in "The American Negro at Mid Century", Population Bulletin, XIV, No.7. November, 1958.

64. For a more localised study of the social implications of negro mobility within the Middle West Vide Hart, J.F., "A Rural Retreat for Negroes", Geographical Review, Vol. 50. No.2. 1960.

MAP 25.


DISTRIBUTION OF NEGRO POPULATION, 1950.
COUNTY BASIS
N
Albers Equal-Area
0
100
200
MILES
Counties with over 7,000 negroes shaded.
1 dot = 100 persons

The concentrations may be summarised separately.

(1) The Lower Missouri Valley

The character of the distribution here was contrasted between the large urban concentrations of Kansas City, St. Joseph and Topeka, and the wider distribution of the Missouri Valley below Kansas City. The former concentrations were typical of the Corn Belt pattern of the concentrations of negroes in the largest towns. The more scattered concentrations of negroes in the Missouri Valley represented an area of relatively dense negro population between Kansas City and St. Louis and south of the Corn Belt into the Ozarks. It is an area of poorer farming and low population density and in many ways an intrusion of the 'south' into the Corn Belt. It should be remembered also that Missouri was a 'slave' slate.

(2) The Lower Ohio Valley

The five Kentucky counties together with the city of Evansville, Indiana, form another negro enclave in the Corn Belt which again represents an intrusion of 'southern' conditions. The state of Kentucky as a whole had a much higher negro proportion and is significant as an interim abode of negroes migrating towards Chicago and Detroit and St. Louis and Kansas City, and it is likely that Evansville

and its vicinity is implicated in this movement.[65]

(3) The Urban centres of the East Central Lowland and Lower Great Lakes

There is a marked coincidence of urban centres and negro population in the East Central Lowland. East of the Mississippi every large city had a significant negro element. The largest concentrations were found in the cities of the Wabash, White, Miami, and Scioto valleys and the cities of the Great Lakes margin where they form part of a belt extending from Chicago to Detroit - the terminus of the migration referred to in connection with Kentucky.

The main conclusion must be that the negro was predominantly an urban dweller in the Corn Belt. 89% of the negro population was included in the urban classification of the census and moreover 63.4% of the total negro population was concentrated in twelve counties containing large cities. The detail of this urban concentration (the shaded counties in Map 25) is indicated in Table 41 below. Over 90% of the population of these counties was in the major city. Two vast concentrations in particular were noticeable; (a) Kansas City with 82,342 negroes, and (b) Indianapolis, Dayton and Columbus with a combined total of 151,069 negroes.

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65. For a detailed description of this movement of Negro Population and the role of Kentucky as a "clearing house", Vide Coleman, Pryer and Christienson, "Negro Population of Kentucky at Mid-Century", Kentucky Agricultural Experimental Station, Bulletin 643, Lexington, 1956.

TABLE 41

THE MAJOR URBAN CONCENTRATIONS OF NEGRO POPULATION, 1950

STATE	COUNTY	MAJOR CITY	TOTAL COUNTY	TOTAL MAJOR CITY	% IN CITY
Indiana	Vanderburgh	Evansville	9,167	8,895	97.0
Indiana	St. Joseph	South Bend	8,665	8,283	95.5
Indiana	Marion	Indianapolis	65,010	63,987	98.1
Ohio	Lucas	Toledo	26,510	25,411	96.0
Ohio	Butler	Hamilton	7,475	6,283	91.5
Ohio	Clark	Springfield	10,009	9,707	97.0
Ohio	Franklin	Columbus	51,636	50,015	98.0
Ohio	Montgomery	Dayton	37,518	37,177	99.0
Iowa	Polk	Des Moines	8,323	8,189	98.2
Kansas	Wyandotte	Kansas City	29,367	26,660	91.1
Missouri	Jackson	Kansas City	56,636	55,682	99.0
Nebraska	Douglas	Omaha	16,472	16,311	99.5
TOTAL			326,788	317,140	97.1

Source: Calculated from U.S. Census of Population, 1950, Vol.ii. Characteristics of Population Tables 42 and 33.

Further significant features of the distribution of negro population can be gained from a consideration of the relative distribution as shown in Map 26.

Map 26 indicates that over the greater part of the Corn Belt negroes constituted less than 1% of the population. This figure was exceeded only in counties with large urban centres and in two rural areas noted before, Kentucky and North Central Missouri. It can be definitely suggested that these represent the cultural fringe of the Corn Belt, and an intrusion of social characteristics from the states of the south.

Further statistical evidence of the overwhelming urban residence of negroes is stated in Table 42.

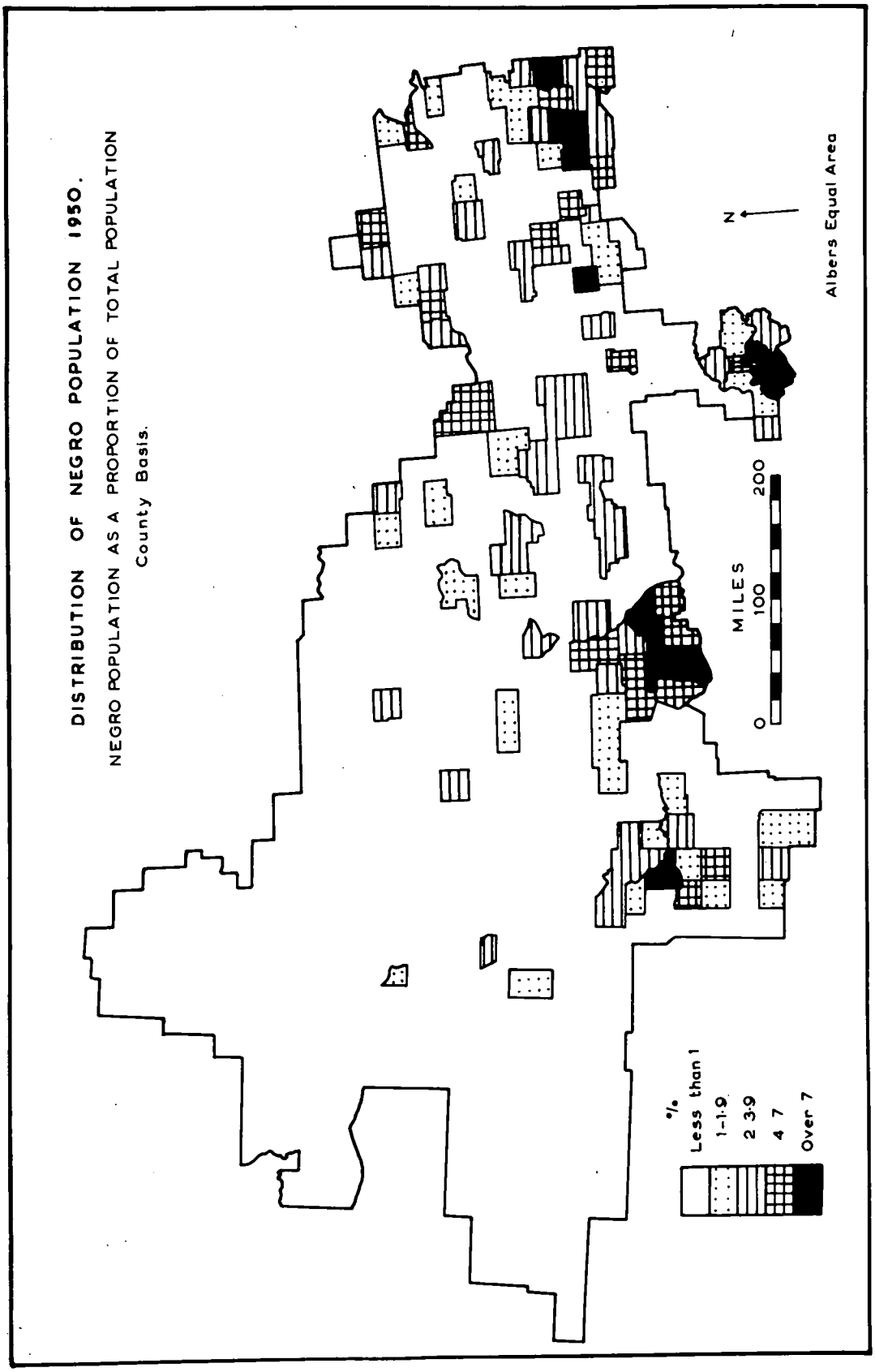
DISTRIBUTION OF NEGRO POPULATION 1950.
NEGRO POPULATION AS A PROPORTION OF TOTAL POPULATION
County Basis.
N
Albers Equal Area
MILES
0
100
200
%
Less than 1
1-1·9
2 3·9
4 7
Over 7

TABLE 42

THE RESIDENTIAL COMPOSITION OF THE CORN BELT NEGRO POPULATION, 1950

Geographical Regions	Rural Farm	%	Rural Non-Farm	%	Urban	%
East Central Lowlands	2,560	1.1	13,740	6.4	204,967	92.3
West Central Lowlands	1,835	3.7	7,874	13.4	48,751	82.9
Upper Missouri Valley	286	1.1	1,477	5.5	25,286	93.4
Lower Missouri Valley	1,836	1.6	7,569	6.7	103,693	91.7
Upper Mississippi Valley	95	0.9	1,212	12.0	8,859	87.1
Lower Ohio Valley	1,511	7.1	3,731	17.5	16,105	75.4
Lower Great Lakes	2,401	3.7	8,663	13.5	53,314	82.8
TOTAL CORN BELT	10,524	2.4	44,266	8.6	460,975	89.0

Source: Calculated from U.S. Census of Population, 1950. Volume ii. Characteristics of Population, Tables 48 and 49.

Table 42 indicates that for the Corn Belt as a whole the urban proportion of negroes was 89.0% while in all but the Lower Great Lakes the farm proportion was less than 4%. This phenomenon is to be explained by the predilection of negroes for urban employment with the possibility of higher wages than can be earned in agriculture , the lack of capital in the case of most negroes to finance corn belt agriculture, and the preference of negroes for urban life where they form significant geographical sectors of cities.

Summary and Conclusions

(1) The negro element was almost exclusively urban

(2) The Corn Belt lies between two areas of greater negro population, between which there is a movement through the Eastern Corn Belt. These are a source region to the south via Kentucky and a receiving area extending from Chicago to Detroit. A further line of movement is via the Mississippi and Missouri Valleys terminating at St. Louis and Kansas City. Large numbers of negroes have settled in towns of the Eastern Corn Belt along these two routes.

(3) Two rural areas with significant rural negro populations were found in central Missouri and Kentucky representing the change over to southern characteristics.

(4) Conditions in the Corn Belt were not vastly different from negro populations outside the south but the

high proportion in urban centres was higher than the national average.[66] This in part was due to the nature of the agriculture of the Corn Belt which is mechanised, technical and highly capitalised. Where conditions result in a less technical form of agriculture in the Ozark Margin of Missouri and Kentucky the negro rural population was greater and the rural farm element more significant.

Finally something should be mentioned of the inter-relation of foreign-born white and negro groups although they are separate culturally and demographically. It was explained in Chapter Three that in the setting up of the new states slavery was forbidden except in Missouri which is the historical background to the relatively small number of negroes in the Corn Belt. In later days the lack in the labour force was filled with immigrants - that is, foreign-born white. Since the quota restrictions of 1910 this source of labour has diminished and has been replaced by negroes from the south migrating along the routes mentioned to find industrial employment in the towns.

THE CULTURAL COMPOSITION OF POPULATION - SUMMARY AND CONCLUSIONS

1. In 1950 the overwhelming majority, 94.1%, of the total population of the Corn Belt was native-born white. Only 987,888 persons belonged to other cultural groups, 5.9% of the total.

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66. Vide Calef and Johnson, Op. Cit. 57 supra.

2. Of the remaining cultural groups other than native-born white only two were significant; negro with 3.1% and foreign-born white with 2.8% of the total Corn Belt population.

3. Despite the influx of a large number of foreign-born immigrants into the Corn Belt during the early years of settlement and the twentieth century increase in negro immigration into the Corn Belt it remains remarkably homogeneous racially with over 90% native-born white in each of the major geographical regions.

4. This homogeneity is attributed to the fact that the bulk of the foreign immigration occurred early in the settlement history, especially in the twenty years 1850 to 1870 so that the first generation is now dead and their children have been enumerated as native-born white. To this extent the real numerical significance of foreign cultural elements is under-enumerated by the census. Secondly, the North West Ordinance prevented the introduction of slave labour into the Corn Belt and thus in part accounts for the low negro proportion. This latter circumstance was also favoured by the rapid development of a commerical agriculture, highly mechanised and highly capitalised in which there was little opportunity for the negro as either owner or labourer. Negro concentrations were therefore restricted to the 'slave' state of Missouri on the rather

poorer lands, and in Kentucky under similar conditions, and, at a rather later date, in the urban centres.

5. The absolute distribution of foreign-born white population has been shown to be quite regular in the Corn Belt, with marked concentrations in the larger cities. The distribution in relation to total population, however, showed marked areal variation in the relative significance of foreign-born white. In particular the Missouri Valley and Iowa had concentrations of rural foreign-born white.

6. Two factors were shown to be influential in the distribution pattern of foreign-born white. Firstly, the differential distribution on a nationality basis and secondly the concentrations in the more industrialised urban centres.

7. The most significant nations of origin were shown to be West European. This is related to the overall trend of immigration to the United States and the fact that the immigration into the Corn Belt was in the early West European phase. German, Scandinavian and British Isles elements were shown to be most significant numerically and had distinctive distributions which influenced the overall distribution of foreign-born white in a small degree.

8. 28.3% of the foreign-born white was located in urban centres of which the majority was located in the urbanised

areas of the Corn Belt, and especially those with important industries. There was considerable variation in the significance of the various national groups in the urban category. In particular the German and British Isles groups were more urbanised than the Scandinavian and the vast majority of East European was urban in residence. There was also some evidence of consistent national group relationships in the urbanised areas.

9. In 1950 there were just over half a million negroes in the Corn Belt, 3.1% of the total population. The distribution was highly distinctive involving two rural concentrations, North Missouri and North West Kentucky, and concentrations in the large cities of the Eastern Corn Belt. Elsewhere the negro element represented less than 1% of the population of each county.

10. The reasons for this distribution have been summarised already as historical and economic in the case of the rural areas. In the case of the increasing urban concentrations, this has been shown to involve a large regional migration of negroes from the south through the Corn Belt and which appears to date from the imposition of the Quota Regulations on foreign immigration.

11. The significance of the minor cultural groups in total distribution and density has been shown to be negligible, but

because of the tendency towards concentration, especially in urban centres the social implications can be of great significance, and this in particular involves the negro rather than foreign-born white elements.[66] In the case of the employment composition however the spatial variations in economic activity will be shown in the following chapter to be the major factor effecting contrasts in population distribution and density in the Corn Belt. This is examined in the following chapter with reference to the latest census.

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66. For a recently published description of the detailed distribution of negro population and the extent of re-distribution, vide Hart, J.F. "The Distribution of Negro Population in the United States". Annals of the Association of American Geographers, Vol. 50, No.3. 1960.

CHAPTER SIX

THE EMPLOYMENT COMPOSITION

CHAPTER SIX

THE EMPLOYMENT COMPOSITION

Spatial variations in employment composition exert a considerable influence on population matters since essentially they reflect variations in the characteristics of the economic base. Accordingly it is the purpose of this chapter to study the functional relationship between population characteristics and employment structure. It is not proposed to study the actual occupation structure since this would involve an impossible amount of detail and would obscure the relationships that are sought. Employment composition is considered to refer to the major components of the occupational structure, that is, the main industry groups.[67] The procedure followed was to

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67. The "industry" groups referred to were agriculture, industry and services. This did not correspond exactly with a division into primary, secondary and tertiary activities. In the case of the agricultural category, forestry and fishing occupations were included as a matter of convenience but in no county did these activities concern more than 0.1% of the labour force. In the industrial group a distinction was made between the comprehensive category of industry in a general sense and the more specific case of manufacturing industry. Accordingly "manufacturing" included all those activities concerned with the processing or manufacturing of durable and non-durable goods, whereas "industry" included all occupations of an industrial nature, such as mining and construction as well as the purely fabricative industries. Finally "service" industry included all tertiary activities of which social services of administration, education, transportation and commerce were most significant. Full details of the definitions involved are given in the Census of Population, 1950, Volume II. "Characteristics of the Population", Introduction, "Occupation, Industry and Class of Worker".

provide an overall statement on the characteristics of employment status at the last census, indicating the major differentials, followed by a description of the spatial variations in the three major industry groups, agriculture, industry and services and a relating of these distributions to variations in population characteristics, particularly overall density and distribution.

1. Characteristics of Employment Status, 1950

Table 43 indicates the employment status of the labour force of four selected Corn Belt states in 1950. There was remarkable uniformity in that in each state the total civilian labour force represented between 52 - 53% of the total population over 14 years, while the actually employed labour force was from 51 - 53%.

Table 43 indicates that there were considerable variations in employment status on a residential basis. In particular the contrast was between the urbanised states of Illinois and Indiana and the predominantly rural Iowa and Nebraska. In the former states the urban labour force was substantially larger than the rural, while in the latter states the urban and rural labour forces were approximately equal. It was apparent too that the rural non-farm labour force predominated over the rural farm in the case of Illinois and Indiana, while in Iowa and Nebraska the rural farm labour force was significantly larger than the rural non-farm.

TABLE 43

EMPLOYMENT STATUS OF THE POPULATION OVER 14 IN 1950, SELECTED CORN BELT STATUS

	ILLINOIS		INDIANA		IOWA		NEBRASKA	
	TOTAL	%	TOTAL	%	TOTAL	%	TOTAL	%
Population over 14	6,727,900	100.0	2,935,346	100.0	1,954,089	100.0	995,791	100.0
Total labour force	3,729,096	55.4	1,569,535	53.5	1,021,810	52.3	526,784	52.9
Civilian labour force	3,693,948	54.9	1,567,227	53.4	1,020,881	52.2	523,329	52,6
TOTAL employed	3,546,051	52.7	1,518,442	51.7	1,002,810	51.3	511,649	51.4
TOTAL unemployed	147,897	2.2	48,785	1.7	18,701	1.0	11,680	1.2

Source: U.S. Bureau of the Census, Census of Population, 1950, Volume ii. Characteristics of the Population", Table 25.

TABLE 44

RESIDENTIAL COMPOSITION OF THE LABOUR FORCE, 1950, SELECTED CORN BELT STATES

	ILLINOIS		INDIANA		IOWA		NEBRASKA	
	TOTAL	%	TOTAL	%	TOTAL	%	TOTAL	%
Civilian labour force	3,693,948	100.0	1,567,227	100.0	1,020,881	100.0	523,329	100.0
Urban labour force	3,011,307	82.0	1,002,592	64.2	521,329	51.1	259,432	49.5
Rural Non-Farm	400,960	10.4	317,707	20.1	207,117	19.7	209,915	21.0
Rural Farm	281,681	7.6	246,928	15.7	292,435	29.2	153,979	29.5

Source: As Table 43 above

In all cases this relative significance of the labour force by residence was a function of the total population of the three residential groups, but when the labour force is sub-divided on a basis of sex further contrasts emerge. These are shown in Table 45 and illustrated by Diagram 8.

In the case of the total male labour force the proportion of the total population over 14 in the civilian labour force was constant in all the states at 80%. In the case of the female labour force however the proportion in the civilian labour force was higher in Illinois and Indiana than in Iowa and Nebraska reflecting the greater employment opportunities for female labour in the more urbanised states.

Considering the urban labour force, the male proportion was fairly uniform at 77 - 81% of the total male population over 14, and the female proportion uniform at from 32 - 34%. The major contrasts emerged in the rural labour force, where the proportion of females employed was significantly higher in the case of the non-farm element than in the farm in each state reflecting the smaller opportunities for female employment in agriculture, though related also to the traditional role of females in a farming community preoccupied with a larger amount of

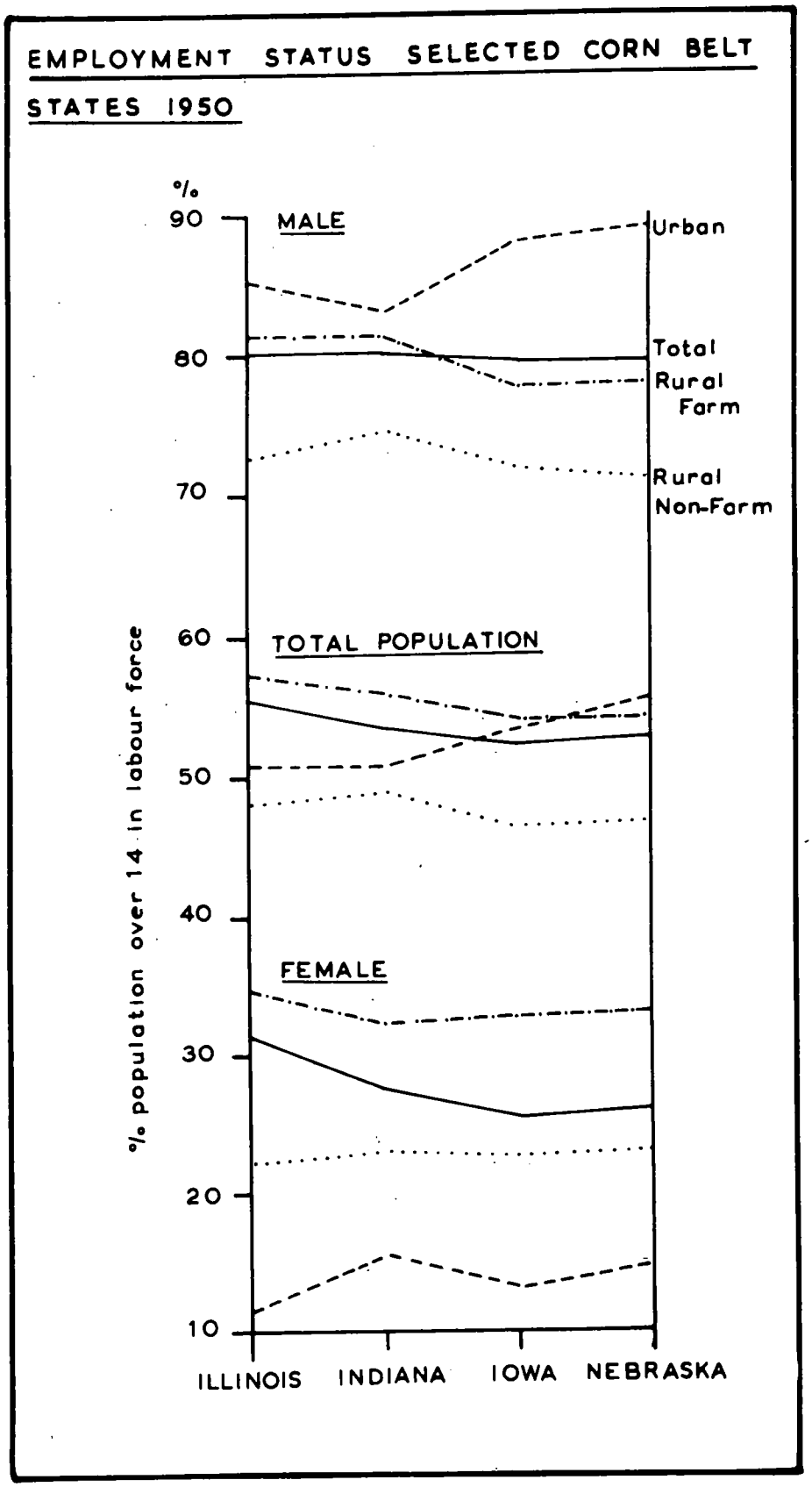
EMPLOYMENT STATUS SELECTED CORN BELT STATES 1950
%
90
80
70
60
50
40
30
20
10
MALE
TOTAL POPULATION
FEMALE
Urban
Total
Rural Farm
Rural Non-Farm
% population over 14 in labour force
ILLINOIS
INDIANA
IOWA
NEBRASKA

TABLE 45

PROPORTION OF POPULATION OVER 14 YEARS IN TOTAL LABOUR FORCE [1], 1950, SELECTED CORN BELT STATES

	ILLINOIS			INDIANA			IOWA			NEBRASKA		
	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE
Total Population	55.4	80.3	31.3	53.5	80.0	27.6	52.3	79.7	25.3	52.9	79.7	26.0
Urban	57.2	81.1	34.7	55.9	81.1	32.3	54.2	77.7	32.7	54.4	77.9	33.1
Rural Non-Farm	48.0	71.8	21.9	48.7	74.6	23.0	46.6	72.1	22.5	46.8	71.4	22.8
Rural Farm	50.8	85.1	11.9	50.8	83.0	15.4	53.6	88.3	13.1	55.4	88.9	14.9

Source: U.S. Bureau of the Census, Census of Population, 1950, Vol.ii. Characteristics of the Population. Table 25.

1. This includes unemployed and armed services.

domestic commitments. Moreover if part-time and seasonal work were included the proportion of the female population employed in the labour force would undoubtably be higher.

The characteristics of unemployment can be stated briefly although a thorough study cannot be based on total annual figures or figures for one year since seasonal and annual fluctuations in unemployed can be high. However the significance of unemployment and the major differentials can be inferred for the selected Corn Belt States. Map 27 shows the variation in the unemployment rate for the Corn Belt on the basis of State Economic Areas. The unemployment rate has been calculated as the proportion of the total civilian labour force that was unemployed in 1950 as a percentage.[68]

Map 27 indicates that in 1950 the unemployed rate over much of the Corn Belt was below 2.5%, but that there was considerable variation. These regional variations were misleading since it will be shown that in the Corn Belt in 1950 unemployment was an overwhelmingly urban phenomenon, and therefore a high urban rate in a few large cities distorts the rate for the State Economic Area

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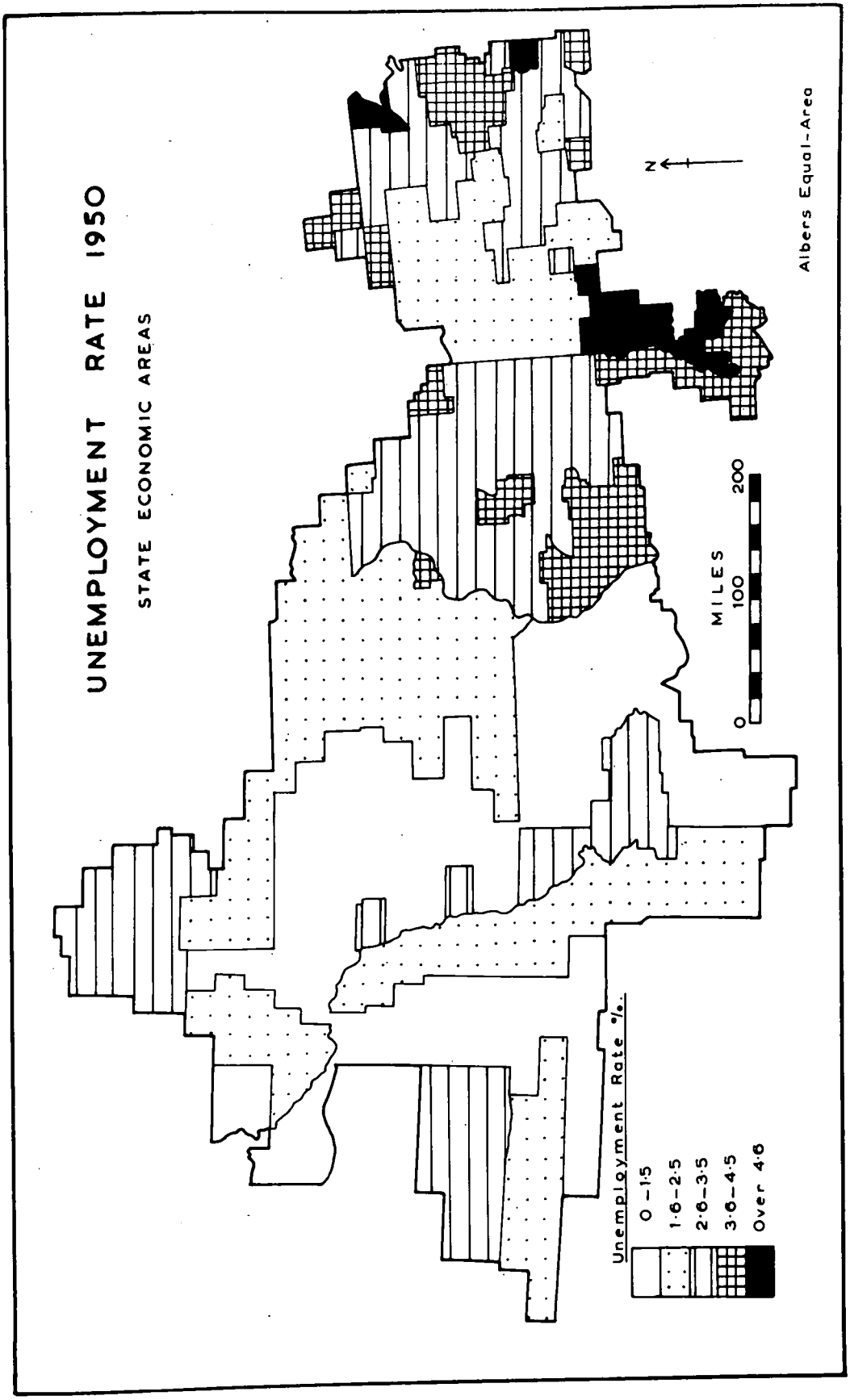
68. Calculated from U.S. Bureau of the Census, Census of Population, 1950, Volume II. "Characteristics of the Population", Table 43.

MAP 27.


UNEMPLOYMENT RATE 1950
STATE ECONOMIC AREAS
N
Albers Equal-Area
MILES
0
100
200
Unemployment Rate %.
0 – 1·5
1·6 – 2·5
2·6 – 3·5
3·6 – 4·5
Over 4·6

as a whole. Accordingly it is essential to study unemployment on a basis of residence in order to avoid misconception. However certain situations do emerge from Map 27.

1. A high unemployment rate of over 4.6% was evident in the Lower Wabash Valley and extending across Southern Illinois. This unemployment was related to a decline in employment in the Eastern Interior Coalfield.[69]

2. Unemployment rates were relatively high, 2.6 - 3.5%, in the urban centres of the Corn Belt. This higher rate is a constant feature of urban centres, reflecting especially the influx of labour from rural areas seeking employment and also the greater seasonal and annual variations in employment opportunities in industry related to variations in business conditions.

3. In general the Eastern Corn Belt had a higher unemployment rate than the central and western sectors as a direct result of the greater proportion of urbanisation and industry. This general picture must be more specifically examined on the basis of both residence and race. This is attempted in Tables 46, 47 and 48 which are summarised in Diagrams 9 and 10.

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69. Vide Barton, T.F., "Cities with a Population Decline in South West Indiana, 1940 - 1950". Proceedings of the Indiana Academy of Science, 1952, Volume 62, Bloomington, Indiana, 1955.

TABLE 46

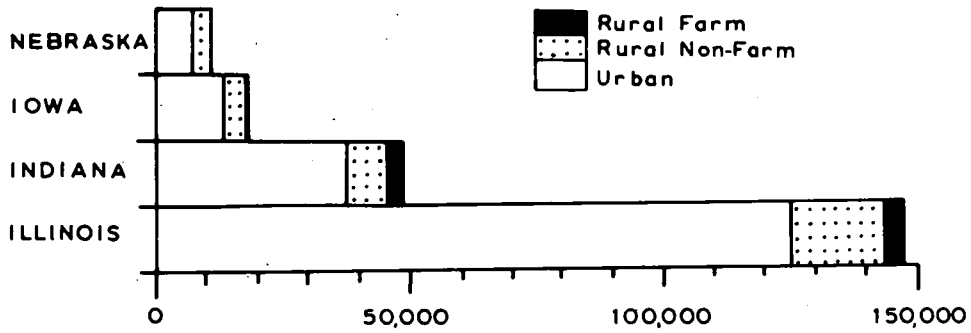
EMPLOYMENT STATUS OF CIVILIAN LABOUR FORCE, 1950 FOR SELECTED CORN BELT STATES

	ILLINOIS	%	INDIANA	%	IOWA	%	NEBRASKA	%
Total employed	3,546,051	96.0	1,518,442	96.9	1,002,180	98.2	511,649	97.8
Total Unemployed	147,897	4.0	48,785	3.1	18,701	1.8	11,680	2.2
Urban employed	2,882,727	95.7	966,576	96.4	508,107	97.5	252,060	97.2
Urban unemployed	128,580	4.3	36,016	3.6	13,222	2.5	7,375	2.8
Rural Non-Farm employed	385,054	96.0	308,110	96.9	202,688	97.9	106,396	96.8
Rural Non-Farm unemployed	15,906	4.0	9,597	3.1	4,429	2.1	3,519	3.2
Rural Farm employed	278,270	98.8	243,756	98.7	291,385	99.6	153,193	99.5
Rural Farm unemployed	3,411	1.2	3,172	1.3	1,050	0.4	786	0.5

Source: From U.S. Bureau of the Census. Census of Population, 1950, Volume II, Table 25

DIFFERENTIAL UNEMPLOYMENT 1950 – SELECTED CORN BELT STATES

1. TOTAL UNEMPLOYMENT 1950



2. UNEMPLOYMENT RATE 1950

% Civilian labour force unemployed

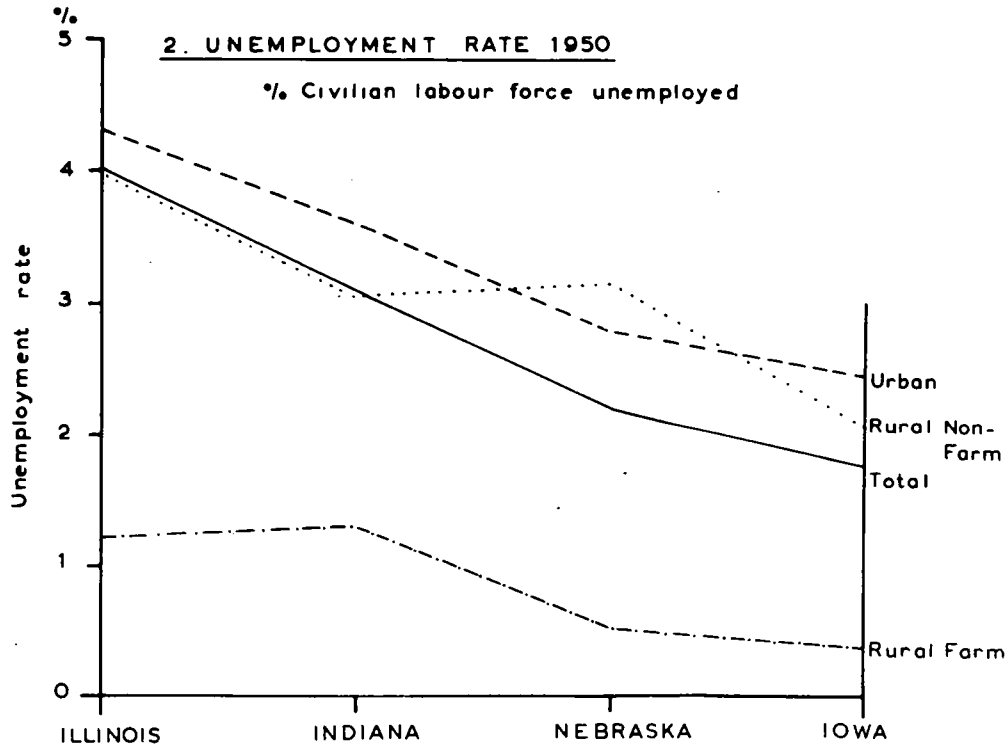


TABLE 47

AMOUNT OF UNEMPLOYMENT IN SELECTED CORN BELT STATES, 1950

	% Of Total Civilian Labour Force Unemployed			
	Illinois	Indiana	Iowa	Nebraska
Total Unemployed	4.0	3.1	1.8	2.2
Urban Unemployed	3.5	2.3	1.3	1.4
Rural Non-Farm Unemployed	0.4	0.6	0.4	0.7
Rural Farm Unemployed	0.1	0.1	0.1	0.1

Source: Calculated from Table 46 above

From a consideration of Diagrams 9 and 10 the following conclusions are suggested. From Diagram 9:-

1. The absolute incidence of unemployment was much higher in the industrialised states of Indiana and Illinois, though the Illinois figure is increased by the inclusion of the Chicago Conurbation outside the Corn Belt.

2. The unemployment rate was much higher in the case of the urban labour force than the rural in all four states. In the rural sector the rate was higher in the case of non-farm than rural farm. This illustrated again the tendency of the rural non-farm to reflect urban characteristics rather than rural. This suggests a functional relationship between urban and rural non-farm which is further examined in this chapter.

TABLE 48

UNEMPLOYMENT OF THE CIVILIAN LABOUR FORCE, 1950, FOR SELECTED CORN BELT STATES, WHITE AND NONWHITE

	ILLINOIS		INDIANA		IOWA		NEBRASKA	
	Total	Rate	Total	Rate	Total	Rate	Total	Rate
Total White unemployed	115,096	3.4	41,890	2.8	18,183	1.8	11,008	2.1
Total Nonwhite unemployed	32,801	11.5	6,895	9.5	518	6.0	672	7.2
Urban White unemployed	96,333	3.5	29,259	3.1	12,717	1.8	6,803	2.7
Urban nonwhite unemployed	32,247	11.6	6,757	9.6	505	6.2	572	6.8
Rural non-farm white unemployed	12,602	3.9	9,482	3.0	4,417	2.1	3,441	3.1
Rural non-farm nonwhite	504	13.1	115	6.0	12	3.7	78	16.2
Rural farm white unemployed	2,504	1.2	3,149	1.3	1,049	0.4	764	0.5
Rural farm nonwhite unemployed	50	4.5	23	4.0	1	0.7	22	5.2

Source: Calculated from U.S. Bureau of the Census, Census of Population, 1950 Volume ii. "Characteristics of the Population", Table 25.

3. There was a decline in the unemployment rate from 3 - 4% in Indiana and Illinois to 2 - 2.5% in Nebraska and Iowa. In all cases the urban component was the chief determinant of the total unemployment rate and in all cases the rural farm unemployment rate was low, less than 1.2%. This suggests that rural farm unemployment as an expulsive factor in rural migration in 1950 should not be overstated, though over the previous decade it will be shown in a later chapter[70] that this was very significant. From Diagram 10:-

4. Colour was an important differential in unemployment rates though this was localised spatially and concerned especially the urban centres of the East Central Lowland and the Lower Great Lakes regions, where nonwhite unemployment was excessively high in 1950. In 1950 the nonwhite unemployment rate in Indiana was over 9% and in Illinois 10%. This high unemployment rate was related to the smaller number of employment opportunities for unskilled negro labour aggravated by the high degree of in-migration of negroes to the towns. Secondly it reflected the instability of the negro labour force itself with a tendency for absenteeism and frequent change of employment together with intermittent unemployment. The rate may also be increased by the time delay between the arrival of negro migrants in a town and

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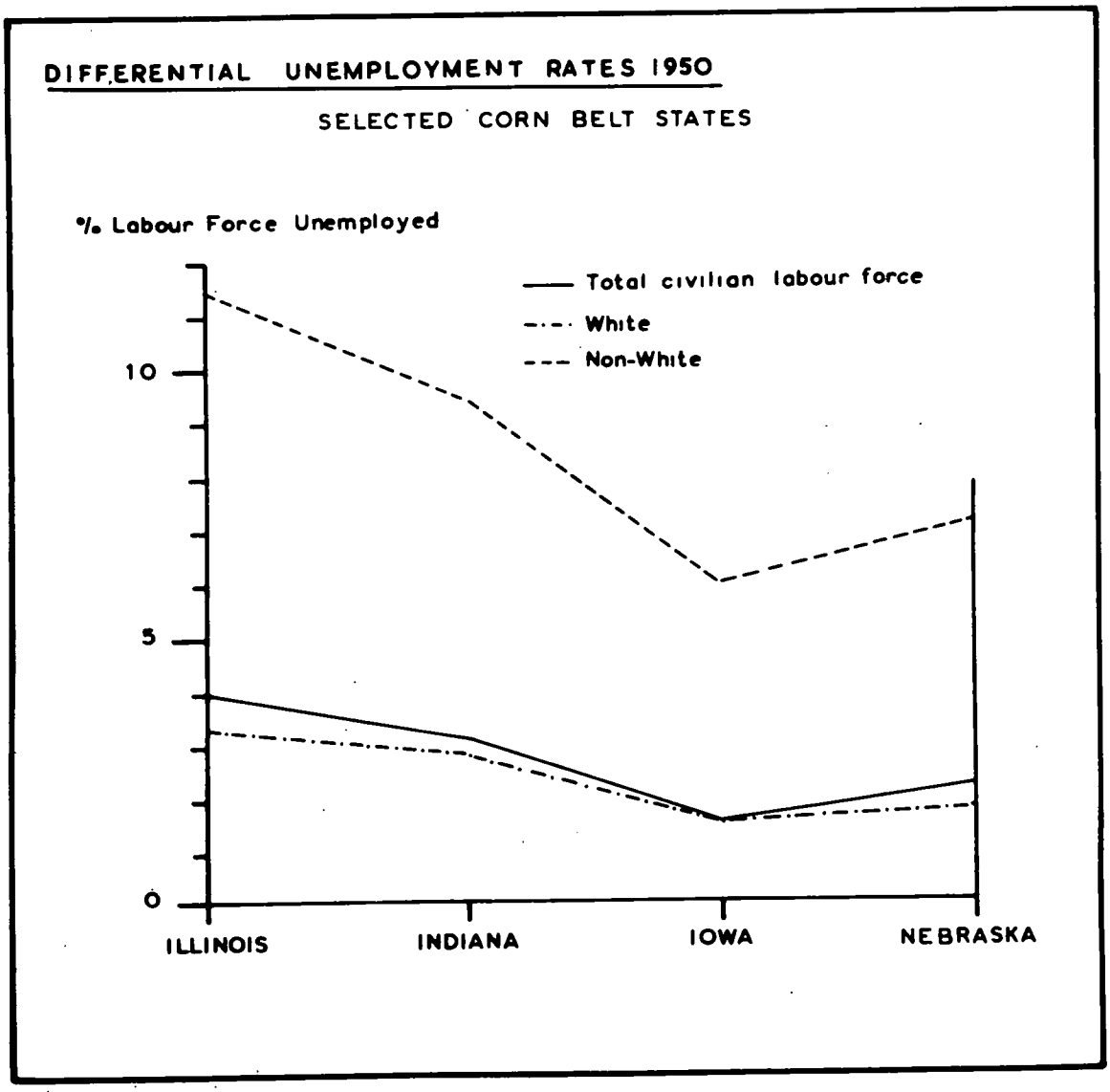
70. Vide Chapter Eight, "Internal Migration in the Corn Belt".


DIFFERENTIAL UNEMPLOYMENT RATES 1950
SELECTED CORN BELT STATES
% Labour Force Unemployed
Total civilian labour force
White
Non-White
10
5
0
ILLINOIS
INDIANA
IOWA
NEBRASKA

actually finding employment. This may be a considerable influence in view of the high degree of mobility of the negro noted already.

2. Regional Variation in the Major Industry Groups, 1950

It has been shown that the employment status of the total labour force conceals considerable variation spatially and on a basis of residence. Accordingly these differentials may be stated with reference to the major industry groups in selected states which can then be followed by a detailed examination on a county basis. Table 49, illustrated by Diagram 11 shows the industrial composition of four selected Corn Belt states for the total labour force, and sub-divided on a basis of residence.

Considering the total labour force graph it is apparent that in 1950 the service industry dominated the labour force of each state even in the case of the predominantly agricultural states of Iowa and Nebraska. The proportion employed in industry reveals a contrast between approximately 40% in Indiana and Illinois but under 20% in Iowa and Nebraska, an obvious direct relationship to the location of the major industrial centres in the Eastern Corn Belt. It should be noted that if the industrial labour force of the Chicago conurbation were excluded as being outside the

DIAG. II.

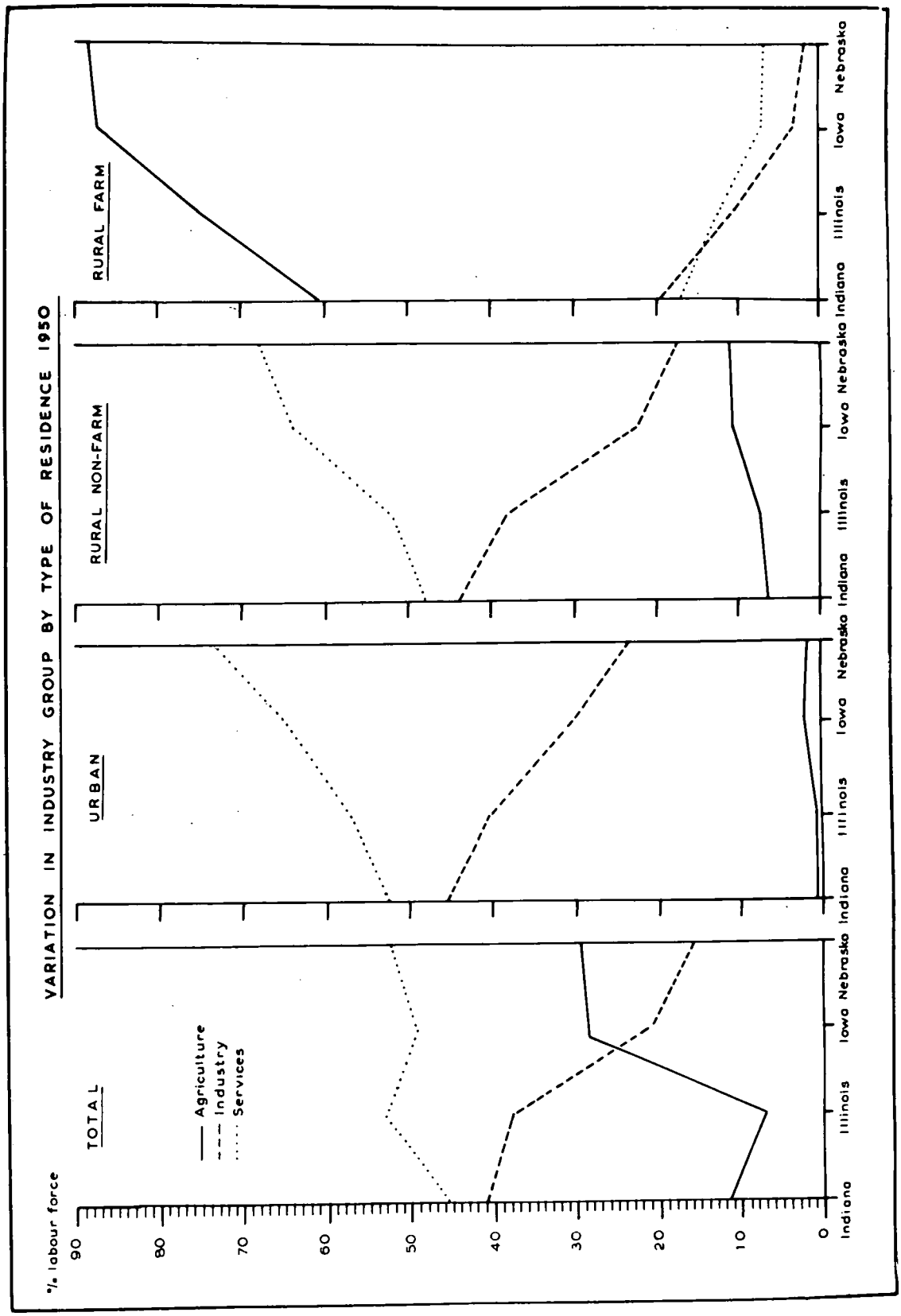

VARIATION IN INDUSTRY GROUP BY TYPE OF RESIDENCE 1950
% labour force
90
80
70
60
50
40
30
20
10
0
TOTAL
URBAN
RURAL NON-FARM
RURAL FARM
Agriculture
Industry
Services
Indiana
Illinois
Iowa
Nebraska

TABLE 49

COMPOSITION OF INDUSTRY GROUPS BY TYPE OF RESIDENCE, 1950 FOR SELECTED CORN BELT STATES

% of total employed labour force.[1]

1. TOTAL LABOUR FORCE	INDIANA	ILLINOIS	IOWA	NEBRASKA
Agriculture[2]	11.6	7.1	28.5	29.6
Industry[3]	40.9	38.1	21.0	15.8
Services[4]	45.9	53.4	49.5	52.3
2. URBAN LABOUR FORCE				
Agriculture	0.7	0.5	2.0	1.8
Industry	45.2	40.8	31.3	23.5
Services	52.8	57.4	65.2	73.0
3. RURAL NON-FARM LABOUR FORCE				
Agriculture	6.3	7.3	10.6	11.0
Industry	43.7	38.4	22.8	17.6
Services	48.0	52.2	63.7	68.0
4. RURAL FARM LABOUR FORCE				
Agriculture	61.5	75.1	87.2	88.4
Industry	19.6	10.7	3.4	2.0
Services	16.9	12.3	7.1	7.1

Source: Calculated from U.S. Bureau of the Census, Census of Population, 1950, Volume ii, "Characteristics of the Population", Table 30.

1. The discrepancy between the combined totals of the industry groups and 100% consisted of the category "industry not reported".

2. "Agriculture" included forestry and fisheries which in all four states occupied less than 0.1% of the total civilian labour force.

3. "Industry" included construction and mining as well as manufacturing.

4. "Services" comprised all other occupations not listed in 3 and 4 above, including commercial occupations.

Corn Belt, the industrial proportion of Illinois would then occupy an intermediate position between Indiana and the Western Corn Belt, illustrating the gradual decreasing regional significance of industry westwards in the Corn Belt and a corresponding increase in the significance of agriculture, as the diagram indicates.

The urban labour force showed a distinct pattern. In Indiana and Illinois the proportion in Industry exceeded 40% but decreased substantially in Iowa and Nebraska. It was noticeable that the decrease in the industrial occupation group increased the proportionate significance of the services category rather than agriculture. In fact the services category was dominant in all four states. This situation is explained by the concentration of the industrial labour force in the large industrial cities of the manufacturing belts of Indiana and Illinois while in the agricultural Iowa and Nebraska the high proportion of urban population in the services category is explained by the large number of much smaller cities and county towns with little industry but significant functions as service and administrative centres for extensive surrounding rural areas.

The characteristics of the rural non-farm labour force corresponded very closely to those of the urban. The only discrepancy was a slight lowering of the proportion in the services industry and an increase in the proportion

employed in agriculture. What is shown very clearly is that despite the rural context of their residence the proportion of rural non-farm employed in agriculture did not exceed 11% in any of the four states. The rural non-farm element is shown to be employed predominantly in the service industries, where admittedly there may be an indirect connection with agriculture, and in the case of the Eastern Corn Belt, in manufacturing industry.

Finally, the rural farm graph indicates a more straightforward situation. In Iowa and Nebraska the proportion employed in agriculture was almost 90%, the remainder being predominantly in service industries. In Indiana and Illinois the proportion was rather lower at 60% and 75% respectively. This may in part be explained by the part-time employment of farm dwellers in industry and service occupations who returned their employment as other than agriculture.

From this general consideration of differentials it is now possible to move to a detailed analysis in the distribution of the major industry groups on a basis of county units. However it was apparent that two factors require further specific examination. Firstly the employment structure of the rural non-farm group was obviously complex and requires more detailed examination, and secondly the distribution and significance of part-time farming must be determined.

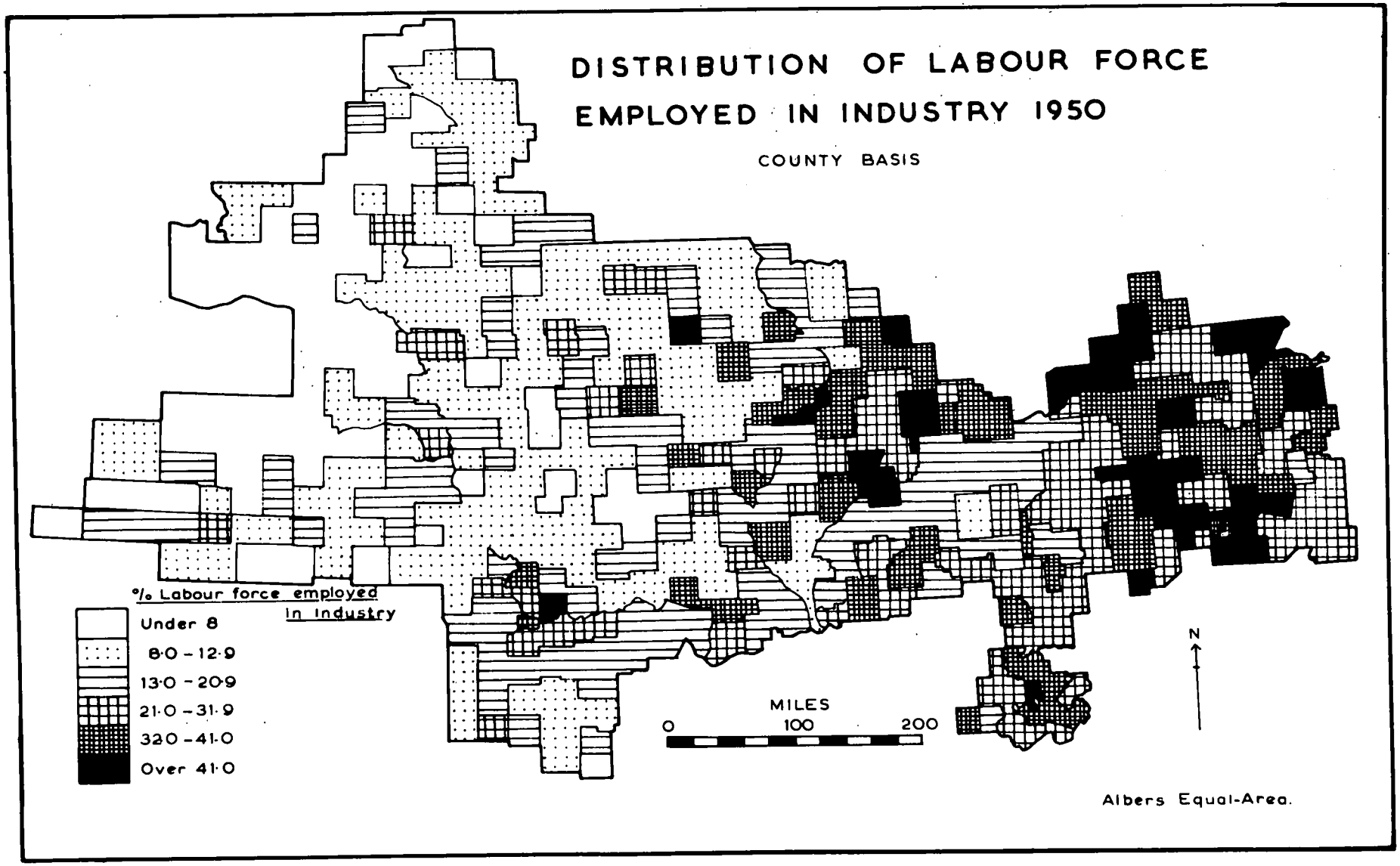
3. The Distribution of the Industrial Labour Force

The industrial labour force includes all those occupations of an industrial nature as well as manufacturing and therefore includes mining and construction. The detailed distribution of the industrial labour force so defined is illustrated by Map 28.[71]

Map 28 indicates the two major areas of industrial concentration and several minor areas essentially east of the Mississippi Valley. The two major concentrations were located in the Lower Great Lakes region, extending in an arc from Joliet to Toledo and extending northwards out of the Corn Belt to Chicago and Detroit, and secondly Central Indiana and Wrstern Ohio. In these concentrations the core counties containing the largest cities had over 41% of their labour force employed in industry and were surrounded by contiguous counties with over 32% of their labour force in industrial occupations. The minor centres were essentially based on single large cities as for instance Peoria, Rockford, Rock Island-Davenport-Moline and to a lesser extent Kansas City. Here the distribution was one of individual cities with important industries rather than industrial zones.

Map 28 indicates that in the vast expanse of the Corn Belt west of the Mississippi industrial occupations were

71. Calculated from U.S. Bureau of the Census, Census of Population, 1950, Volume ii. "Characteristics of the Population" Table 43.


DISTRIBUTION OF LABOUR FORCE
EMPLOYED IN INDUSTRY 1950
COUNTY BASIS
% Labour force employed in industry
Under 8
8·0 – 12·9
13·0 – 20·9
21·0 – 31·9
32·0 – 41·0
Over 41·0
MILES
0
100
200
N
Albers Equal-Area.

MAP 28.

relatively insignificant in the labour force, being 13% or less in the majority of the counties. It is obvious that the significance of industry as a factor influencing population characteristics through the employment structure was essentially expressed by the distribution and size of large cities in the Corn Belt. McCarthy has attempted to indicate the significance of industry in the economy of the Middle West by plotting the areas of concentration of the labour force in manufacturing.[72] His method is capable of greater refinement and in particular this is necessary before a more precise definition of the major concentrations is possible. This is attempted in the following section which describes the distribution of the labour force employed actually in manufacturing industry itself.

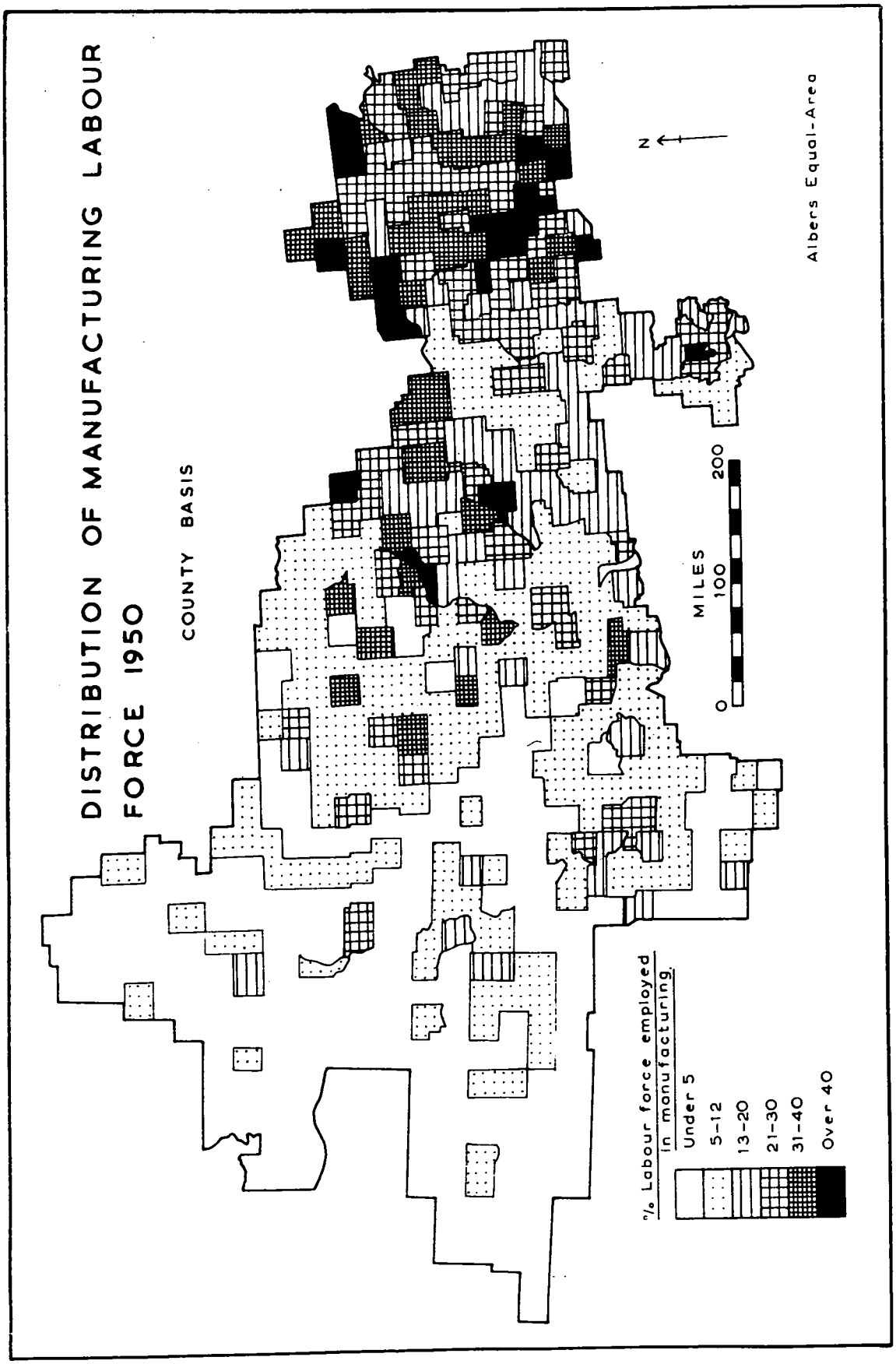
Secondary Industry, the Distribution of Manufacturing

The distribution of the manufacturing labour force in 1950 is illustrated by Map 29 showing the proportion of the labour force employed in manufacturing on a county basis. Some general distributional characteristics were apparent.

In terms of its significance in the labour force manufacturing was very unevenly distributed in the Corn Belt

72. Vide Garland J.H., Editor, Op. Cit. 23, Chapter 5, "The Structure of Industry", Fig. 29, page 55.

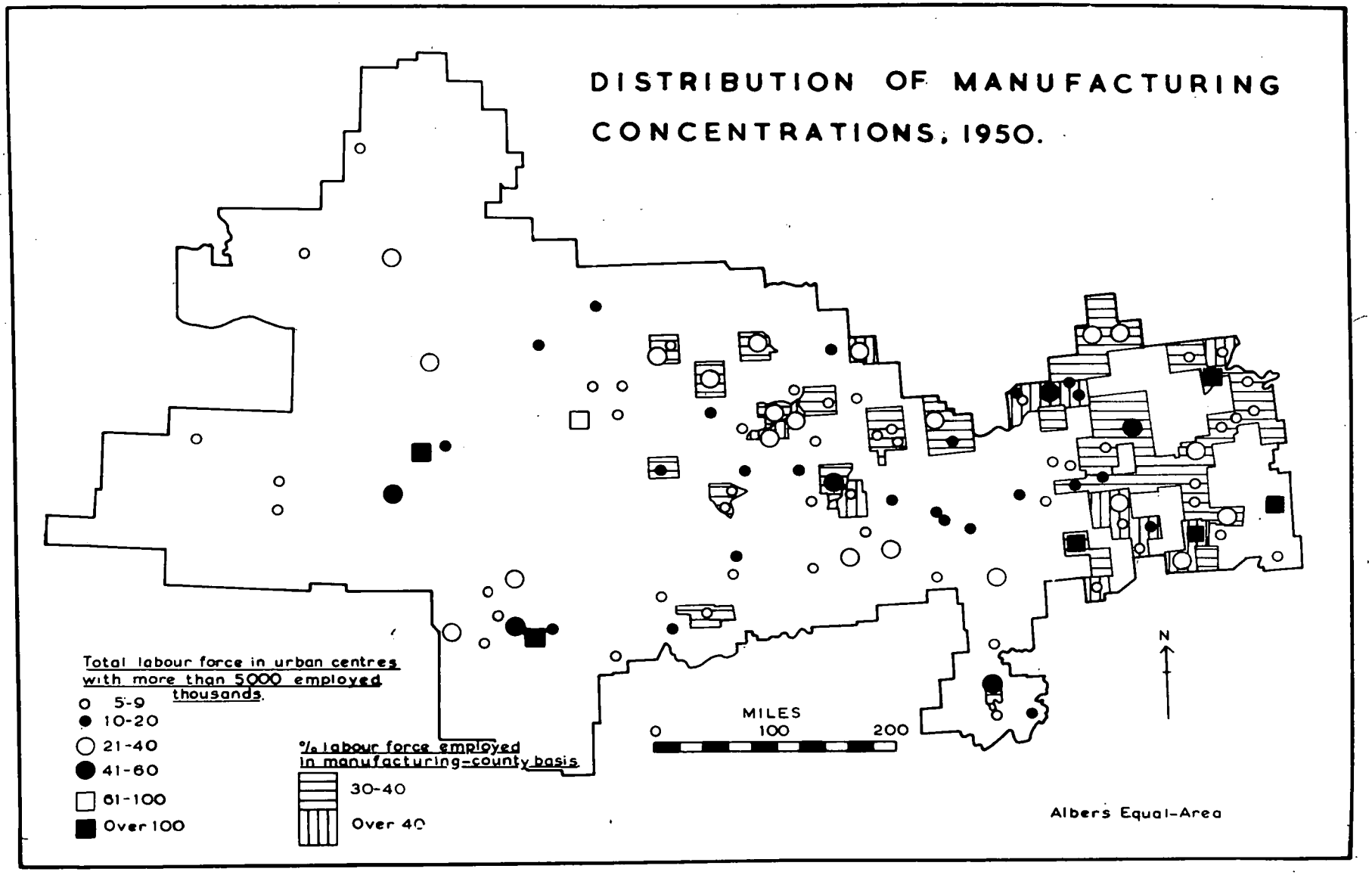
MAP 29.


DISTRIBUTION OF MANUFACTURING LABOUR FORCE 1950
COUNTY BASIS
N
Albers Equal-Area
MILES
0
100
200
% Labour force employed in manufacturing.
Under 5
5-12
13-20
21-30
31-40
Over 40

in 1950. Even within the eastern states of Illinois, Indiana and Ohio where manufacturing was most significant there were vast extents where manufacturing occupied less than 12% of the labour force, especially in the case of the Grand Prairie of Central Illinois and North West Indiana. Essentially the manufacturing belts of these eastern states were discontinuous and represented a wide distribution of large industrial centres rather than coherent industrial regions.

West of the Mississippi only scattered cities had significant manufacturing labour forces and represented regional centres superimposed on a predominantly agricultural economy in which less than 12% of the labour force was employed in manufacturing. West of the Missouri Valley, with its several large regional cities, manufacturing hardly existed and almost all the counties had less than 5% of their labour force employed in manufacturing.

Since manufacturing is a highly localised activity and predominantly urban even the county basis generalises the distribution to some extent. Accordingly Map 30 attempts to localise the major manufacturing areas by plotting all the counties with over 30% of their labour force employed in manufacturing and superimposes all the towns with a labour force of over 5,000 in 1950. From the magnitude of the total urban labour force and from the


DISTRIBUTION OF MANUFACTURING CONCENTRATIONS, 1950.
Total labour force in urban centres with more than 5000 employed thousands.
5-9
10-20
21-40
41-60
61-100
Over 100
% labour force employed in manufacturing-county basis
30-40
Over 40
MILES
0
100
200
N
Albers Equal-Area

MAP 30.

proportion of the labour force employed in manufacturing industry in the county containing the urban centre something of the absolute and relative significance of manufacturing can be obtained and the major concentrations described.

Map 30 strengthens the conclusion that manufacturing had essentially both an uneven spatial occurrence and a discontinuous nature even in the major areas of manufacturing. It is apparent that there were no industrial regions in the Corn Belt in the sense of a complex of predominantly industrial towns in close proximity to each other. The Map also indicates that not all the large cities had significant amounts of industry in terms of the proportion of their total labour force employed in manufacturing. In particular the counties containing Kansas City, Des Moines, Omaha and Columbus, Ohio, all with labour forces in excess of 100,000 and another seven counties containing labour forces in excess of 60,000, had less than 30% of their labour force employed in manufacturing. In fact no county west of Central Iowa had more than 30% employed in manufacturing.

By comparing the information on Maps 29 and 30 the distribution of manufacturing in 1950 may be summarised and in the case of the Eastern Corn Belt, east of the Mississippi, certain industrial zones may be delimited,

though it is understood that these zones represent a discontinuous concentration rather than industrial regions.

1. The Lower Great Lakes

This zone comprised chiefly the urbanised areas of South Bend-Mishawaka, Kalamazoo and Toledo, together with the smaller industrial towns of Joliet, Battle Creek, Michigan City and Monroe. Included in this same zone should be the steel centre of Gary, located just outside the Corn Belt in Northern Indiana.

2. Western Ohio

This zone comprised the industrial centres of the Miami Valley, together with the city of Columbus, and included the cities of Hamilton, Dayton, Middletown, Springfield and Columbus together with many smaller towns of which the chief was Lima.

3. Central Indiana

This zone was less well-defined and consisted of a large number of smaller industrial centres of the Wabash and White River Valleys together with the larger centres of Indianapolis, Fort Wayne and Muncie.[73 and 74.]

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73. Vide Cutshall, A.D., "The Industrial Geography of the Lower Wabash Valley". Economic Geography, Volume 17, 1944.

74. Vide also Freeman, O.S., "Major Cities of Indiana", Economic Geography, Volume 21, 1945.

Evansville was rather distinct from this grouping and belonged rather to the series of large cities of the Ohio Valley. No other concentrations of large manufacturing centres were apparent in the Corn Belt but rather a widespread distribution of individual cities with significant industries as described below.

4. The Industrial Centres of the Prairies of Illinois and Eastern Iowa

The remaining industrial centres of the Corn Belt represent individual regional cities distributed at wide intervals but in terms of the significance of industry some further distinction may be made. The industrial centres of the Corn Belt of Illinois[75] and Eastern Iowa were located on the Mississippi and its major tributaries. Of these the major centres with more than 30% of their labour force employed in manufacturing were those counties containing Peoria, Rock Island-Moline, Cedar Rapids, Waterloo and Dubuque. Other significant centres but with less than 30% employed in manufacturing were the counties containing Springfield and Decatur.

5. Industrial Centres West of the Mississippi Valley

West of the Mississippi Valley there were no counties with over 30% of the labour force employed in

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75. Vide Lohmann, K.B. "Cities and Towns in Illinois", University of Illinois Press, Urbana, 1951.

manufacturing in 1950. There were however several cities with large labour forces of which 20 - 30% was employed in manufacturing and these were chiefly the major regional centres of the Missouri Valley, Sioux City, Omaha, Lincoln, St. Joseph, Kansas City and Topeka while Des Moines also belonged to this group.

In fact the county figures as illustrated in Map 30 depreciate the significance of manufacturing by the inclusion of a small amount of rural population and when the major cities are considered on their own the proportion employed in industry was slightly higher as indicated in Table 50 in the Appendix. However this does not affect the basic distribution of industry summarised above. The detailed characteristics of the actual type of industrial employment are not relevant to this chapter since the aim is to describe the influence of the major industry groups on total population distribution and density rather than the industrial geography of individual cities.

4. The Agricultural Labour Force

The agricultural labour force of the Corn Belt was overwhelmingly rural farm in residence in 1950. Even in the most rural areas of the Corn Belt, the rural non-farm proportion employed in agriculture was relatively small. In Nebraska, the most rural sector of the Corn Belt, the

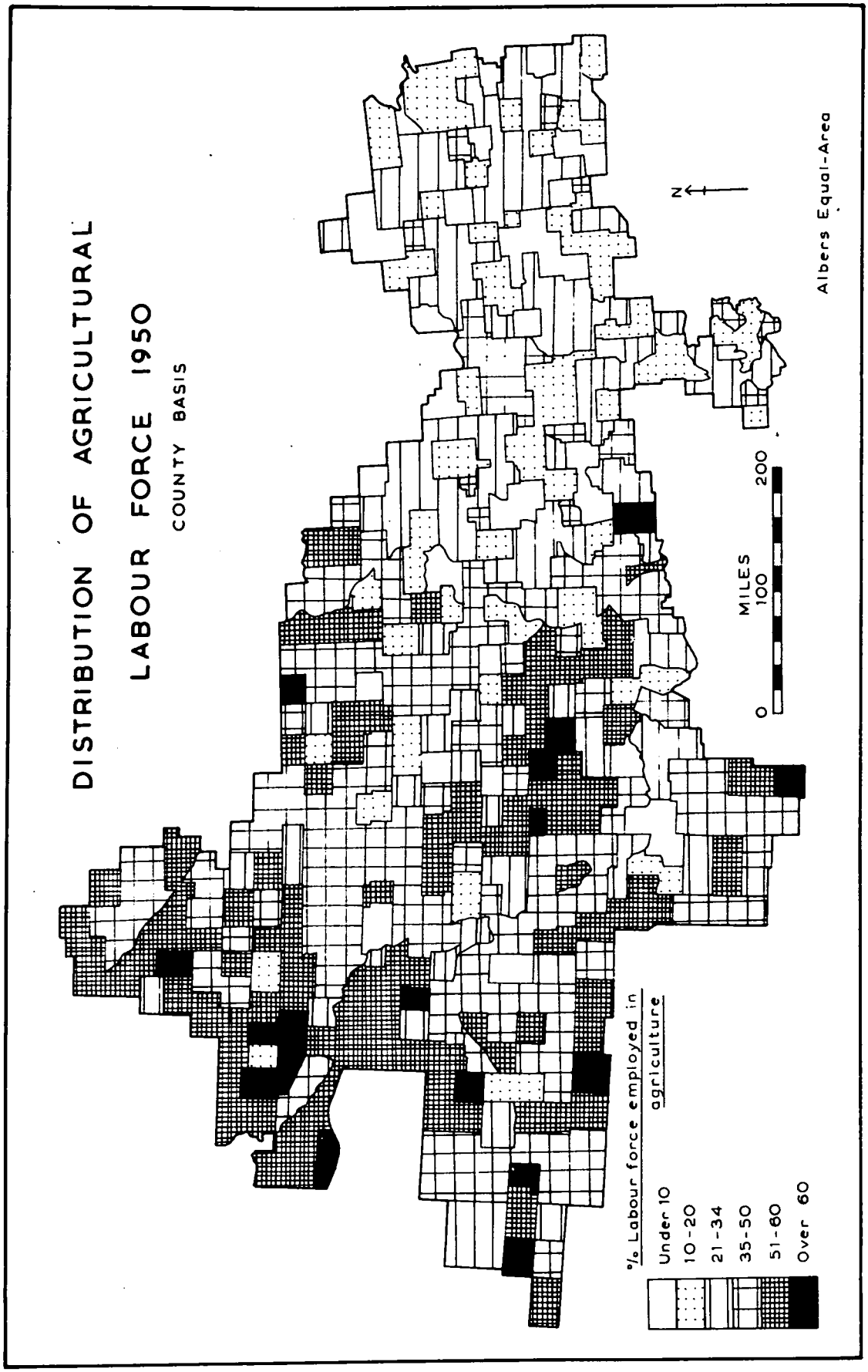
proportion of the rural non-farm labour force employed in agriculture was only 11%.

Map 31 indicates the relative distribution of the agricultural labour force on a county basis in 1950. The major contrast was again east and west of the Mississippi River. East of the Mississippi the proportion of the labour force employed in agriculture did not exceed 34% and in at least half of the counties was under 20%, while west of the Mississippi the agricultural proportion of the labour force was almost universally over 35% and in widespread areas exceeded 51%.

It is necessary that account be taken of overall variation in population density since although the proportion engaged in agriculture was much higher in the Central and Western Corn Belt since the total population density was much lower than in the eastern Corn Belt this involved fewer workers. Essentially Map 31 indicates the degree to which agriculture dominated the economy in terms of employment opportunities and in this respect it is possible to distinguish three areas of predominantly agricultural employment which had over 51% of their labour force employed in agriculture.

1. <u>The Upper Missouri Valley</u>

The Upper Missouri Valley had the largest


DISTRIBUTION OF AGRICULTURAL
LABOUR FORCE 1950
COUNTY BASIS
N
MILES
0
100
200
Albers Equal-Area
% Labour force employed in agriculture
Under 10
10-20
21-34
35-50
51-60
Over 60

concentration of counties in which the agricultural labour force was over 51% of the total labour force and this concentration coincided exactly with the location of the livestock and cash grain type of farming. This high proportion in agricultural occupations thus coincided with an areas of low population density, few towns and an extensive form of agriculture offering little variety in economic activity or employment opportunities.

2. The Iowa-Missouri Border

The concentration of counties with a high proportion of the labour force employed in agriculture in the Iowa-Missouri border area of the West Central Lowland coincided with the location of the livestock and pasture type of farming in which grazing was more significant than cattle feeding or cropping. Again this coincided with an area of low population density, an absence of urban centres and a lack of variety in the economic base.

3. South West Wisconsin, North Eastern Iowa, North Western Illinois

This was a less well-defined concentration of counties with a high proportion engaged in agriculture, coinciding with the hogs and dairy type of farming.

It is impossible to indicate the detailed relationships between type of farming and the characteristics

of agricultural employment without information on the absolute distribution of the agricultural labour force. This is attempted in Map 32 which indicates the density of population engaged in agriculture per square mile of cropland.[76] This ratio has been selected as being more realistic in the case of the agricultural labour force since it excludes land uses unrelated to agricultural functions.[77]

Map 32 indicates the remarkable uniformity of the density of population employed in agriculture. Throughout almost all of the Corn Belt the range of density was from 5 to 12 persons per square mile and over the majority of the area was in the range of 7 to 7.9 persons per square mile. Lower densities than 5 per square mile of cropland occurred chiefly in the western fringe in the

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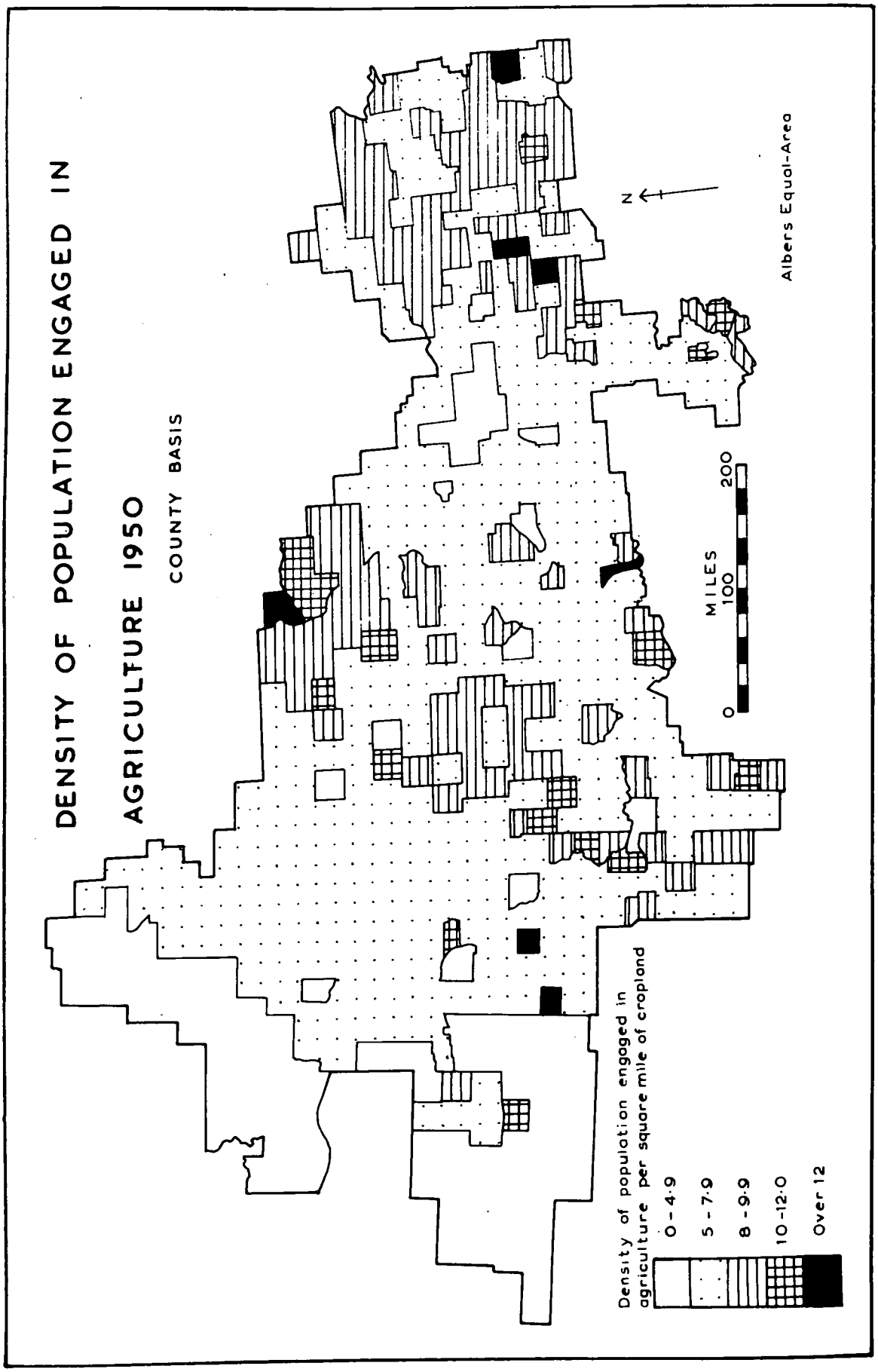
76. "Cropland" included cropland harvested, cropland used only for pasture and cropland not harvested and not pastured. The category therefore included all the potentially productive cropland. It included land in the soil bank or withdrawn from cultivation for conservation purposes, but did not include woodland or wasteland. For further details of definitions vide United States Census of Agriculture, 1954, Volume 1, Introduction XV, Department of Commerce, Washington D.C. 1956.

77. For an early application of this man-land ratio vide Hartshorne R., "Agricultural Land in proportion to Agricultural Population", Geographical Review, Volume 29, 1939.


DENSITY OF POPULATION ENGAGED IN
AGRICULTURE 1950
COUNTY BASIS
N
Albers Equal-Area
MILES
0
100
200
Density of population engaged in agriculture per square mile of cropland
0 - 4·9
5 - 7·9
8 - 9·9
10 - 12·0
Over 12

transition to the cattle and wheat belts. This reflected an overall decrease in population density in the area of largest farm size and most extensive type of farming. Higher densities than 8 per square mile of cropland occurred in those counties containing large cities where the amount of cropland was consequently reduced and an artificially high value registered, but more especially in three distinct type of farming regions. These were the livestock, dairy, soybeans and cash grain region of North East Indiana and North West Ohio, secondly in the hogs and dairy region of the Iowa, Illinois and Wisconsin tri-state areas, and thirdly in the northern section of the livestock and pasture farming region of the Iowa and Missouri border.

a. Livestock, dairy, soybeans and cash grain

In this region proximity to large urban centres has encouraged a concentration on whole milk production in combination with pig rearing. It was the area of smallest farm size in the Corn Belt and with the highest recent growth in mechanisation.

b. Hogs and Dairy

This was an area of dairying on larger farms of over 200 acres with a lower degree of mechanisation and therefore a higher labour input which increased the density of the agricultural population above the average for the

Corn Belt.

c. Livestock and Pasture

The northern section only of this farming region had a density of over 8 per square mile of cropland. Here the emphasis was on pasturing rather than cropping and the degree of mechanisation was lower than in the southern section of the same type of farming region. This region will be shown to have experienced a lower loss of rural population due to migration than in the case of the Ozark margin to the south and this in part accounted for the slightly higher density.

Map 32 supports the thesis that there was a basic Corn Belt pattern of rural population distribution and density closely related to the agricultural economy and with a considerable degree of uniformity. Superimposed on this was an irregular urban distribution resulting in a lack of uniformity in the overall distribution and density of population. However, before summarising the characteristics of the agricultural labour force and its relation to the total distribution of population reference must be made to two further topics which tend to blurr a simple distinction between agricultural and industrial functions. These were the tendency for some farm workers to work part time and derive part of their livelihood off the farm, and secondly further detail on the functions of the rural non-farm

element is relevant.

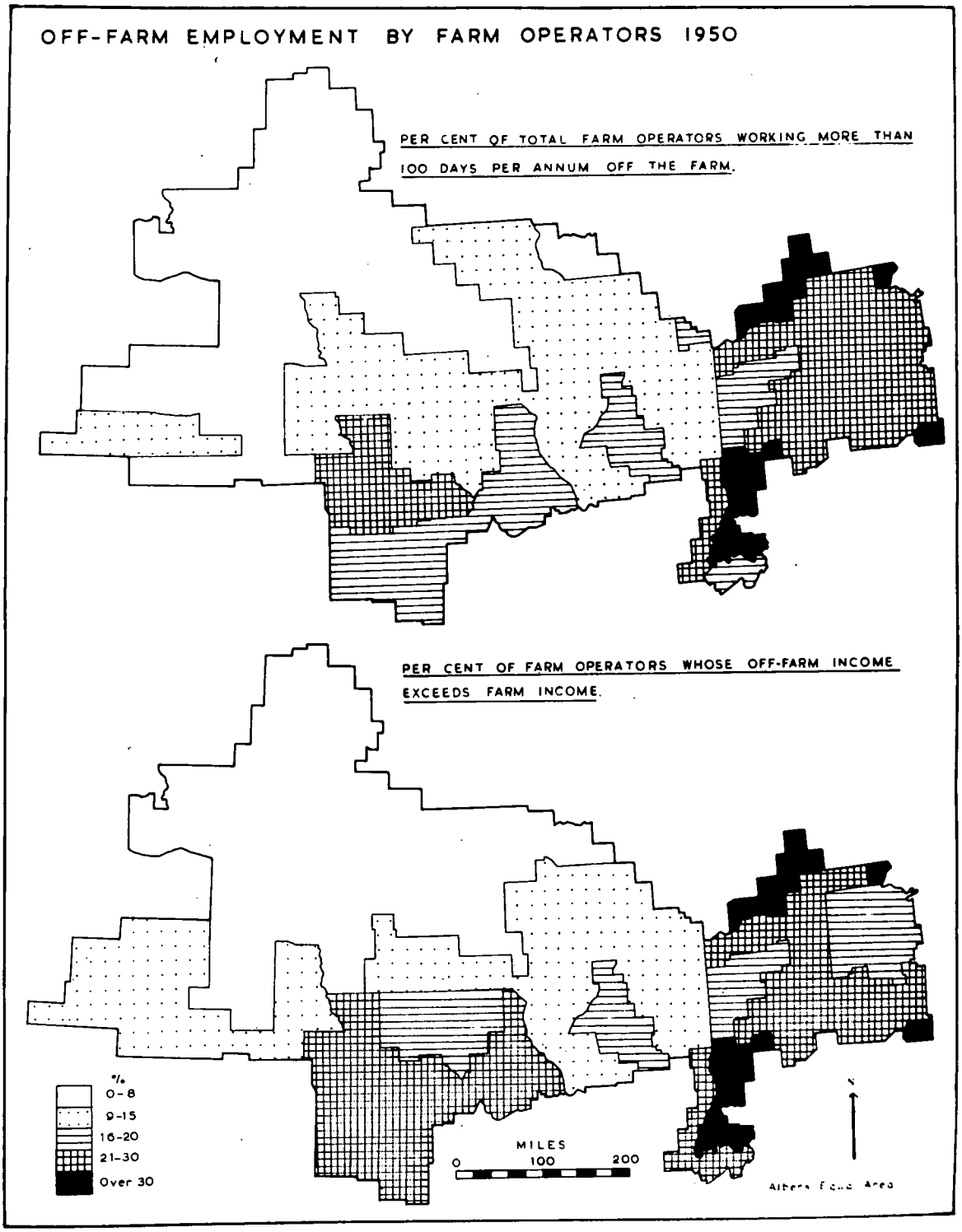
The significance of off-farm employment by farm operators

The significance of off-farm work by farm operators varied considerably spatially and in its character and the motives compelling it.

It has been found convenient to measure the significance of off-farm employment in two ways. Firstly the amount of time spent in off-farm employment was considered and secondly the proportion of the income of the farm operator derived from off-farm employment were considered as criteria. These have been plotted in Map 33 on the basis of State Economic Areas.

The immediate contrast in 1950 was between the Western and Central Corn Belt and the peripheral regions of the east and south. The reasons for these contrasts were the differing conditions of the form of farming and also the distribution of alternative forms of employment of a casual nature, especially in industry.

The farm of the Central Corn Belt, that is in the cattle feeding and hogs and the cash grain, oats and soybeans regions is essentially a family commerical enterprise in which the labour force is supplied by the family and the farm tends to be a social and economic unit on a family basis.


OFF-FARM EMPLOYMENT BY FARM OPERATORS 1950
PER CENT OF TOTAL FARM OPERATORS WORKING MORE THAN 100 DAYS PER ANNUM OFF THE FARM.
PER CENT OF FARM OPERATORS WHOSE OFF-FARM INCOME EXCEEDS FARM INCOME.
%
0-8
9-15
16-20
21-30
Over 30
MILES
0
100
200
N

In these conditions opportunity for work outside the demands of the farm is small.. Map 33 indicates that in 1950 off-farm employment was significant in the case of only 5% of the farm operators though in the case of the Grand Prairie with its higher degree of mechanisation and greater frequency of urban centres the proportion rose to 9 - 15%.

In the case of the Western Corn Belt fringe off-farm employment was again insignificant. This reflected a much larger farm size and a concentration on corn and livestock production requiring attention all the year round. Moreover it was an area with few alternative employment opportunities and high loss by rural migration suggesting that surplus labour brought about by increased mechanisation and increase in the farm size had to leave the region altogether to obtain employment. In Kansas and Nebraska off-farm work had a slight significance but probably reflected custom work on other farms rather than employment outside agriculture.

The major areas where off-farm work was significant were in the East Central Lowland and the Lower Missouri Valley, particularly in the poorer pasture areas of the livestock, cash grain and dairy farming of Western Missouri and Eastern Kansas.

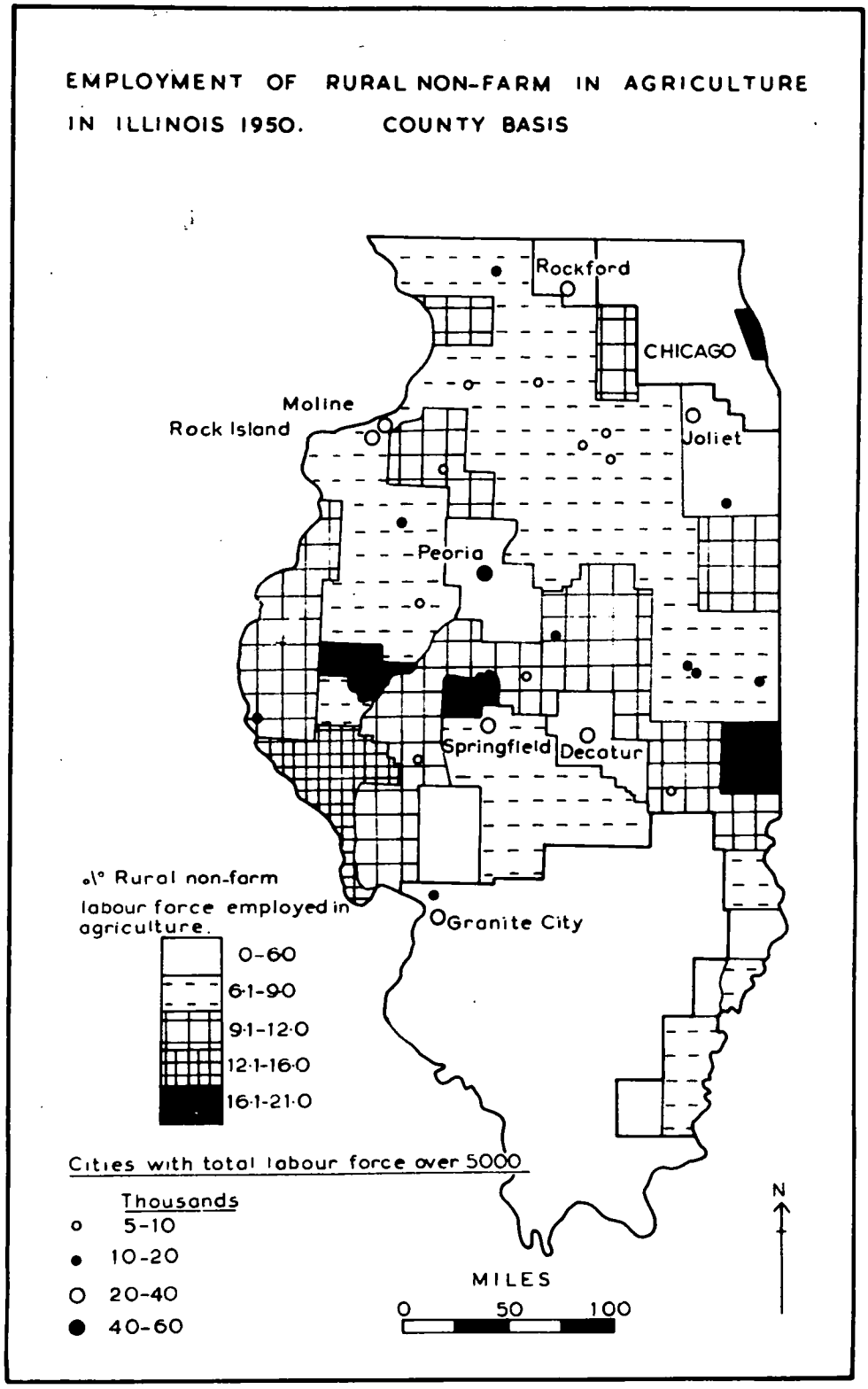
In the case of the Lower Missouri Valley the farm size was small and production in terms of cash returns was substantially lower than in the West Central Lowland and the amount of subsistence farming high. In this area off-farm work accounted for more than half the annual income of over 21% of the farm operators. The nature of the off-farm work was varied, involving industry, work on other farms in the area and seasonal work in farming outside the Corn Belt. The motive in this case was the desire to supplement a low farm income.

Finally the urbanised section of the East Central Lowland, and Lower Great Lakes was the most significant area of off-farm work by farm operators. In this area of small farms and an increase in mechanisation in the last decade, labour input per farm unit was relatively low. Here the nature of off-farm work was related to the proximity to urban centres with industrial and service employment opportunities and frequently involved commuting. Moreover the significance of off-farm employment was related to a contrasted social environment from that elsewhere in the Corn Belt. High school attendance was the highest in the Corn Belt and rural life was more open to urban influence with a consequent weakening of the family farm unit of the West Central Lowland and an attraction towards urban employment especially in the case of the younger farm operators.

Employment characteristics of the Rural Non-Farm Labour Force

It has been suggested frequently that the rural non-farm population is more closely connected demographically with urban rather than rural population characteristics and it is suggested that this relationship is often a functional one in that a large proportion of the rural non-farm population is employed in urban centres. With reference to four Corn Belt states it has been shown that in all cases the predominant employment of rural non-farm labour force was in the services and manufacturing industries. The employment characteristics of the rural non-farm labour force of the Corn Belt sector of Illinois may be described in more detail to illustrate the nature of this functional relationship, which is so significant in population matters. Illinois has been selected as including parts of four types of farming regions and having large areas of predominantly rural territory, while at the same time containing several large urban centres with significant industries and a large number of smaller rural service centres, thus making it a reliable sample of more widespread conditions.

Map 34 indicates the proportion of the rural non-farm labour force employed in agriculture in each county of the Corn Belt sector of Illinois in 1950. Superimposed on this is the distribution of all towns with a labour force exceeding 5,000 in 1950. This labour force is that which


EMPLOYMENT OF RURAL NON-FARM IN AGRICULTURE
IN ILLINOIS 1950. COUNTY BASIS
Rockford
CHICAGO
Moline
Rock Island
Joliet
Peoria
Springfield
Decatur
Granite City
% Rural non-farm labour force employed in agriculture.
0-6.0
6.1-9.0
9.1-12.0
12.1-16.0
16.1-21.0
Cities with total labour force over 5000
Thousands
5-10
10-20
20-40
40-60
MILES
0
50
100
N

was resident in the towns and does not include rural non-farm labour from outside but is sufficient to indicate the relative significance of the towns as centres of employment. From Map 34 the following conclusions may be suggested:

1. Throughout the Corn Belt in Illinois the rural non-farm labour force was predominantly employed in occupations not directly concerned with agriculture. In no county did the proportion of rural farm employed in agriculture exceed 21% and in only three counties did it exceed 16%.

2. There was a strong correlation between the distribution of the largest cities and the counties with the lowest proportion engaged in agriculture. For instance in the counties containing Joliet, Rockford, Peoria and Decatur the proportion was less than 6%.

3. The vast majority of the Corn Belt in Illinois had 9 - 12% of its rural non-farm labour force employed in agriculture - a very low proportion when compared with that of the rural farm. Spatially this coincided with the distribution of a large number of smaller service centres.

4. The highest proportion of rural non-farm labour employed in agriculture occurred in the south west section, part of the livestock and pasture region with a lower overall population density and an absence of large urban centres.

The lowest proportion engaged in agriculture occurred in the north and central sections comprising parts of the cash corn, oats and soybeans and cattle feeding and hogs type of farming regions.

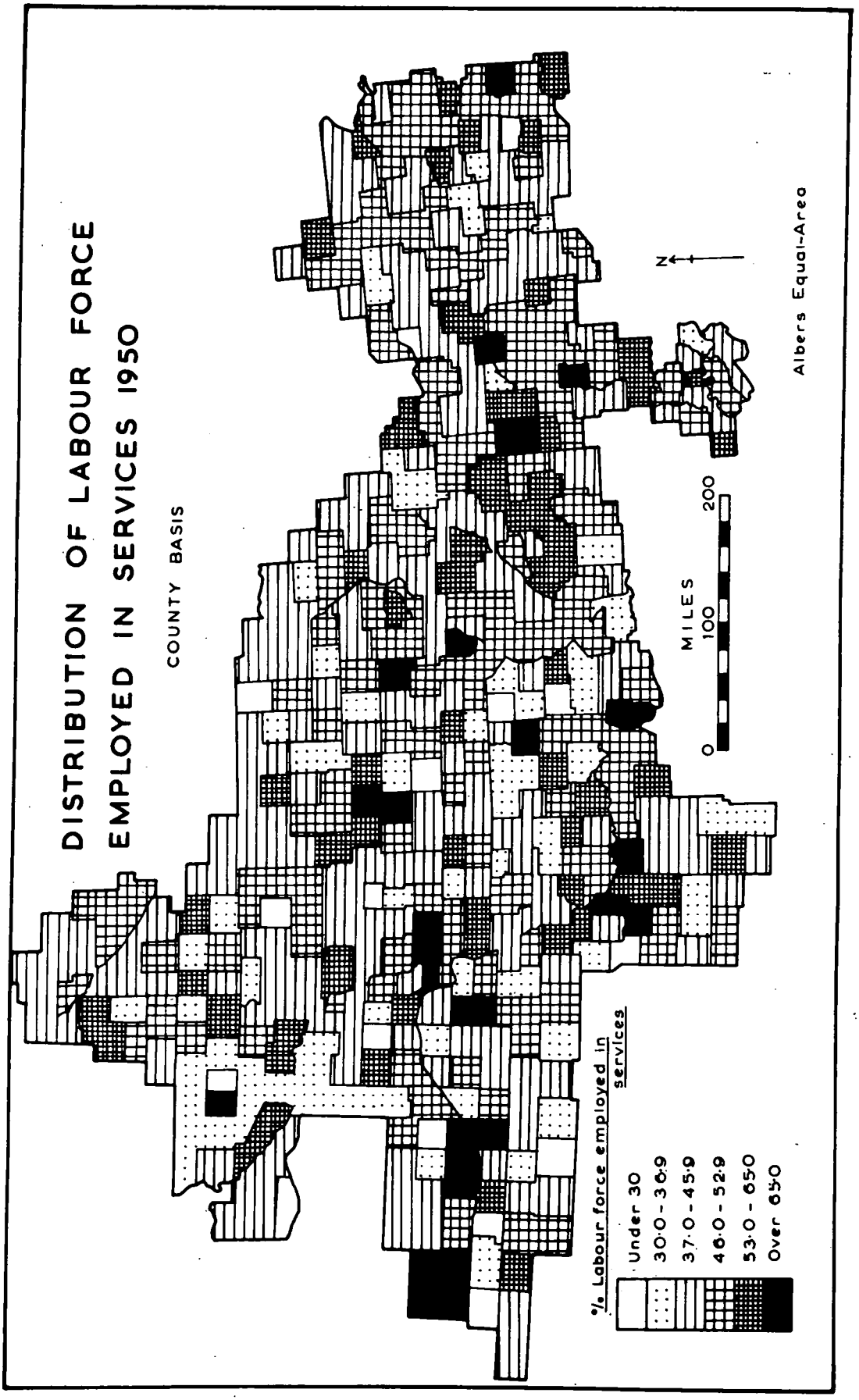
Two consistent relationships may therefore be proposed. Firstly a direct relationship between a low proportion of rural non-farm engaged in agriculture and proximity to urban centres of employment in north and central Illinois, together with the existence of a form of agriculture based on family farm units, often highly mechanised and offering few employment opportunities to rural labour outside the operator's family. Secondly in the southern and western sections of the state a relatively higher porportion of rural non-farm labour engaged in agriculture was coincident with an absence of large cities and an emphasis in agriculture on more extensive land use involving pasture rather than concentrated feedstuffs with a lower degree of mechanisation and a higher labour input.

It may be summarised that the functions of the rural non-farm labour force were concentrated outside agriculture itself and on the evidence of distribution were more closely connected with urban employment in close proximity to large towns and with service industries in the predominantly rural areas.

So far this chapter has described the characteristics of employment in the two major industry groups of agriculture and industry which were the dominant economic functions in the Corn Belt. However, in terms of the actual proportion of the labour force employed the third major industry group, the service industries, supplying the economic infrastructure to all economic activity, was relatively more significant. Accordingly, the final section of the chapter describes briefly the distribution of employment in the service industries of the Corn Belt in 1950.

5. The Service Industries

Map 35 indicates the relative distribution of the labour force employed in service occupations in 1950 on a county basis. From Map 35 it is apparent that there was a tendency for service occupation to preponderate in the employment structure of the Corn Belt and in only a few counties was the proportion of the total labour force less than 30%. In fact there were no strongly defined regional contrasts in the proportion engaged in services comparable with those defined in the case of agriculture and industry. The distribution of the category of from 37 - 45.9% dominated the pattern, and had a regular distribution throughout the Corn Belt. Superimposed on this was a scattered distribution of counties with over 46.0% of their labour force employed in service industries. Although


DISTRIBUTION OF LABOUR FORCE
EMPLOYED IN SERVICES 1950
COUNTY BASIS
% Labour force employed in services
Under 30
30·0 - 36·9
37·0 - 45·9
46·0 - 52·9
53·0 - 65·0
Over 65·0
MILES
0
100
200
N
Albers Equal-Area

there were no marked regional contrasts in the regional significance of the service industries, there were no localised contrasts and also contrasts of a functional nature within the services category. Counties with over 65% engaged in services coincided chiefly, though not exclusively, with the largest collecting and distributing, administrative and transport centres. Secondly the counties with a lower proportion of from 53 - 65% in services tended to coincide with the distribution of smaller regional centres and other towns with large populations. Finally, the vast majority of the remaining counties had a proportion within the range 37 - 52% and reflected the dispersed distribution of small rural service centres throughout the Corn Belt.

A functional distinction is therefore proposed between the high proportions engaged in services in the major and minor regional centres and a rather lower proportion involved in services in the much more numerous and widespread small rural service centres. In this latter case the function of the services was more directly related to the immediate rural economy whereas in the larger cities the function of the services labour force was related firstly to the regional significance of the city, in such spheres as commerce, administration and transportation, and also reflected the demand for a greater

amount and variety of services in the larger regional and industrial cities by virtue of their greater population and complexity of economic activity. Further detail of the labour force engaged in services in the urbanised areas is indicated in Table 51 in the Appendix. From Table 51 it is notable that the service function was relatively more significant in the regional cities than in those concerned chiefly with industry. In fact the primarily industrial cities of Dayton, South Bend, Hamilton, Fort Wayne and Rockford had less than 53% of their labour force employed in services, while the regional cities of Topeka, Des Moines, Omaha, Lincoln and Sioux City all had over 70% engaged in service occupations.

Summary and Conclusions on the Employment Composition

1. On the evidence of selected states the civilian labour force represented between 52 and 55% of the total population over 14 years, of which the employed proportion was between 51 - 53% . There were however marked contrasts in this average situation on a basis of type of residence. Unemployment was shown to be a predominantly urban phenomenon and nonwhite rates were considerably higher than white. It was suggested that these higher urban unemployment rates were related to annual and seasonal fluctuations in business activity and were aggravated in the

large urban centres by the influx of migrant labour, especially negro.

2. The services industry group predominated in the labour force of each state, even in the case of the predominantly rural states. The industrial labour force showed a marked concentration in the eastern states and the agricultural labour force occupied a higher proportion in the central and western states. However as a result of the decrease in the total population westwards the higher proportion engaged in agriculture in the western Corn Belt involved a lower actual number than in the eastern states.

3. A consideration of the industrial labour force, and also of the proportion engaged in manufacturing revealed a highly irregular distribution of industry but an overwhelming concentration east of the Mississippi Valley. Further analysis revealed that there were no major integrated manufacturing regions but that three important concentrations could be distinguished. These were Central Indiana, the Lower Great Lakes and Western Ohio. Elsewhere the pattern was one of dispersed industrial activity in the major cities of the Corn Belt.

4. The agricultural labour force was heavily concentrated in the rural farm residential group in 1950 and in the most rural state, that of Nebraska, the proportion

of the rural non-farm labour force employed in agriculture was only 11%. The detailed distribution of the agricultural labour force was plotted and described as a proportion of the total labour force of each county, and was restated as the ratio of agricultural labour to cropland. The latter ratio indicated a marked regularity and suggests the existence of a basic pattern of rural population distribution and density closely related to the agricultural economy. Superimposed on this pattern was an irregular distribution, basically urban, in which the predominant functions belonged to secondary and tertiary industries. The complex integration of these two contrasted employment patterns accounted for the major contrasts in the population geography of the Corn Belt.

5. The characteristics of the rural non-farm labour force were expanded and supported the contention that the rural non-farm element is closely related to urban functions despite the rural context of its residence.

6 . The distribution of part time farming was measured and was shown to be contrasted spatially in significance, character and motive.

7. Finally the services industry group was shown to be the predominant category throughout the Corn Belt. This reflected the concentration of the labour force, both

urban and rural, in the basic infra-structure of agriculture and industry. Consequently the proportion in services was highest in areas of greatest economic complexity in the major industrial, administrative and commercial centres.

The spatial variation of the employment composition essentially reflected the economic geography of the Corn Belt and therefore coincided closely with variations in the overall distribution and density of population. To complete this section on population structure the following chapter indicates that the variations in the age, sex and marital composition of the Corn Belt population also reflected economic conditions and played a significant, and dynamic part in the distribution and redistribution of population.

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