FAMILY STUDIES IN THE EASTERN HEALTH DISTRICT: I. FAMILY STRUCTURE AND ITS CHANGING PATTERN¹

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TINCE 1922, the Eastern Health District has served as an area for the investigation of the relative risks of disease J in selected population elements. One of the prerequisites for this study has been the careful description of the social structure of the population. This has been done by periodic censuses. A unique phase of these enumerations has been the operation of matching records from successive censuses when they related to the same individual or family unit. This process allows one to obtain a sequence of observations on an individual or group of individuals with respect to some specified attribute.

The difficulty experienced in obtaining accurate information on the frequency of disease entities limited the number of morbidity studies which were undertaken among families followed up through repeated surveys.

However, the accumulation of extensive data on the social characteristics of the population has allowed for the study of several problems of demographic interest and the matching feature of the censuses has provided the necessary framework for the investigation of methodological problems such as Denson's study on the accuracy of statements of age on census records (1).

CONTRIBUTIONS OF THIS STUDY TO KNOWLEDGE OF FAMILY STRUCTURE

The present investigation, through a substantial synthesis of data available from the Eastern Health District, presents

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additions to knowledge on a basic problem in social dynamics, the changing structure of the family. Specifically the following contributions are made:

1. An accurate determination of the trend in mean family size as families age.

2. Demonstration of the trend in mean developmental patterns in family size for successive generations.³

3. Determination of individual family patterns in size and investigation of several sources of variation in this attribute.

4. Examination of the social mobility of a cohort of families. For a given cohort, this is accomplished by comparing the occupational distributions of household heads of successive age levels.

5. Presentation of individual family patterns in respect to social mobility, by describing the change with time in the occupational status of the household head of each family.

6. Investigation of the secular trend in the frequency and type of relatives present in the family at various age levels.

7. Description of the characteristics of all families present in the Eastern Health District—for each census. This series of studies is designed to demonstrate the time trend in the types of families present in an urban area. The characteristics investigated are (a) age of the household heads (b) size and density of households (c) occupational status of the household heads (d) composition of households.

8. Quantification of the relation between density and family size, and study of the time trend in this relationship.

9. Derivation of an empirical curve describing the attrition experienced in the follow-up of family units over long periods of time.

In addition, it has been possible to make several methodological contributions which may be of value to investigators in the field of family sociology. These are:

1. The properties of the principal methods for determining time changes are reviewed critically in respect to their relative precision and bias.

³ The phrase, developmental pattern, refers to the series of changes which a family or group of families experience with time.

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2. A procedure is provided for classifying the long range patterns of development in size and occupational status which are experienced by individual families.

3. The issue of the choice of family unit for studies of family life is clarified and comparison is made between results obtained in size of family when different types of units are used.

NATURE OF MATERIAL IN THE EASTERN HEALTH DISTRICT

During a twenty-five year period, 1922-1947, five censuses have been taken in Wards 6 and 7 (old area) of the Eastern Health District which since 1933 has been an administrative unit of the Baltimore City Health Department. (See Figure 1.) The dates of the separate censuses, the supervision exercised, and the type of enumerators employed are summarized in Table 1. With the exception of the 1936 census, which was undertaken in conjunction with the National Health Survey, all enumerations were closely planned and supervised by a member of the Department of Biostatistics or Epidemiology of the Johns Hopkins School of Hygiene. These surveys may be considered, therefore, as phases of a serial investigation under a constantly operating agency. During the course of the twenty-five year period, the household as defined below has been the unit of observation and all persons therein except visitors were considered as household members.

A uniform coding procedure has been utilized throughout all surveys for most of the major variables. In addition, for each person enumerated, a search was made in censuses 2, 3, 4, and 5 to ascertain whether the individual concerned was present in prior surveys and if so, in what relationship to the head of the household. Punch cards were prepared for each person enumerated in each census and can be linked over several censuses through a seven digit number which is permanently assigned to an individual. Household schedules for each census have been retained and are filed alphabetically.

To facilitate linkage in the coding operation, an index of individuals enumerated in one or more of the censuses is main-



| 947. | | INATURE OF LNUMERATORS | Public Health Nurses of Baltimore City Health Department | Public Health Nurses of Baltimore City Health Department | Persons drawn from the Works Progress Admin- istration | Nurses of the City Health Department and College Students | Nurses of the City Health Department and College Students |
|--------------------------------|-----------|---------------------------|------------------------------------------------------------------|-------------------------------------------------------------------|------------------------------------------------------------------|-------------------------------------------------------------------|-------------------------------------------------------------------|
| veys during the period 1922-19 | , , | DUPERVISED BY | Johns Hopkins School of Hygiene Department of Epidemiology | Johns Hopkins School of Hygiene Department of Biostatistics | National Health Survey United States Public Health Service | Johns Hopkins School of Hygiene Department of Biostatistics | Johns Hopkins School of Hygiene Department of Biostatistics |
| th District sur | Survey | Number of Households | 7,256 | 13,705 | 13,942 | 27,123 | 27,237 |
| of the Eastern Heal | EXTENT OF | Area | Ward 7 | Wards 6 and 7 | Wards 6 and 7 | Wards 5, 6, 7, 10 Tract 3, 4, 7 of Ward 8 | Wards 5, 6, 7, 10 Tract 3, 4, 7 of Ward 8 |
| Selected details o | Q | I EKIOD OF ENUMERATION | August, 1922 | July-August 1933 | November– April 1935–1936 | Jun e -July 1939 | July-October 1947 |
| Table 1. | C | NUMBER | П | 2 | 3 | 4 | Ş |

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tained in soundex order, each index card providing information concerning the history of enumeration for the given individual. In addition, an index of structures is maintained by street and gives data for each census relating to the households present and their schedule numbers. It will be apparent that an elaborate mechanism has been constructed to assure a reasonably precise linking operation.

As indicated earlier, one of the principal objectives in all surveys has been an accurate description of the composition of the enumerated households. The household characteristics which have been delineated throughout the course of the Eastern Health District Surveys are:

- 1. Concerning the Household:
 - A. Total number of persons.
 - B. Number of children under seven.
 - C. Number of children under fifteen.
 - D. Number of wage earners.
 - E. Number of rooms occupied.
 - F. Socio-economic status.
 - G. Type household.
- 2. Concerning the family of the head (primary family unit):
 - A. Total number in unit.
 - B. Number of children under seven.
 - C. Number of children under fifteen.
 - D. Number of wage earners.
- 3. Concerning the head of household:
 - A. Age.
 - B. Marital status.
 - C. Occupational grouping.
 - D. Race and sex.
 - E. Past enumeration history.
 - F. Permanent individual number.

A more detailed summary of the items which have appeared from time to time on the census schedules for the special Eastern Health District Surveys will be found in a recent paper by Fales. (2)

Comparison of the Eastern Health District and Baltimore City

The inferences which may be drawn from the material presented in this investigation so far as broader population groups are concerned depend upon the representativeness of the Eastern Health District with respect to other defined areas. Previous authors have discussed this issue in detail (3, 4). To avoid unnecessary duplication, we shall present only several of the main findings of these studies.

The Eastern Health District is composed entirely of row houses, with 97 per cent of the structures having been built prior to 1920. The rows are more uniform in size and architecture than those in the newer sections of the City.

The median percentage of homes owned in the District for both races and combined is twenty per cent below that for the City. There is a somewhat larger proportion of skilled and semi-skilled workers in the white population than is found in the City and a corresponding deficiency in professional and clerical groups. The Eastern Health District has always had a somewhat larger proportion of foreign-born individuals than the remainder of the old City due to an excess of persons of Czechoslovakian origin.

The age distribution of white household heads in the district does not differ greatly from that of the City. An increasing proportion of the colored population in the City has found residence in the Eastern Health District, an effect which has been controlled in our analysis by pursuing race specific distributions only.

The Eastern Health District has shown close resemblance to the rest of the City in its size of family distributions for the white segment. In the colored families, there has been a definite excess of larger units in the study area than will be found in the City.

Extension of observations made on the basis of the Eastern Health District should be undertaken with extreme caution. However, this area is not markedly biased in relation to the remainder of the City. Trends observed in the District may serve as fairly good first approximations to the problem of describing changing characteristics of the family structure in urban communities.

DEFINITION OF TERMS

The family may be defined in several different ways:

1. "Household":

An aggregate of one or more persons who occupy a dwelling unit. This unit includes all persons, whether related or not, who share the facilities of a house, apartment, or a group of rooms, with cooking and sleeping quarters.



Fig. 2. Organizational model of household.

2. "Social Family" Unit:

An aggregate of individuals, related by blood, marriage or adoption and living in one place. It excludes lodgers and other unrelated residents of the household.

3. "Primary Family" Unit:4

A group restricted to the household head, his spouse and children. It includes unrelated persons and relatives by marriage or by blood relationship other than children. It excludes married children, the latter constituting a subfamily when spouse or offspring are present.

Relationships among these units are shown diagrammatically in Figure 2.

CHOICE OF FAMILY UNIT FOR STUDY PURPOSES

The type of unit used in an investigation must depend upon the purpose of the study. The following examples may be of assistance on this point.

Situation 1. It is desired to estimate the total person-years coverage which a block of families will require x years hence in a Blue Cross type program. The program extends benefits to the household head, his spouse and minor children.

The most appropriate unit whose developmental pattern will have significance in this situation is the "primary family." By definition, this unit most closely resembles the group in which the program is interested.

Situation 2. It is desired to investigate the feeding patterns of family aggregates as a function of family size.

By definition, members of the social family eat from a common table. It is reasonable to assume that the needs of each individual will play some part in determining the nature of the foods consumed. Therefore it would seem that the social family is most appropriate as the unit of study here.

Some question may be raised whether the household is not the best unit since lodgers are apt to participate in the family

⁴ This unit should not be confused with the "primary family" as employed recently by the Bureau of the Census, which includes the sub-family. See *Current Population Reports*, Series P-20, No. 38, April, 1952.

circle at meal times. The decision must rest on some understanding of the role of the lodger.

Situation 3. The distribution of the family aggregate in respect to density of housing is required.

By definition, density is derived by relating total persons in a dwelling unit to the available room space. The household is then the most appropriate unit for study.

Situation 4. It is desired to appraise the relative contributions of heredity and household exposure to risk of attack by tuberculosis.

The household becomes a logical candidate for study since the analytical design depends upon separating the experience of the total household into well defined segments as follows:

| Fotal | Household | Members | Exposed |
|-------|-------------|------------|---------|
| | Blood Rela | atives | ~~~ |
| | Relatives b | y Marriage | " |
| | Non-related | d Members | " |

In the current study, we are interested in an aggregate wherein each individual plays a significant role in the daily function of the group, affecting its social structure and being affected in turn by such interaction.

With this objective in mind, the primary family appears to be too narrow a concept as it excludes, in a large proportion of household aggregates, related individuals who participate in an important manner to the life of the primary core. The social family unit would appear to be the most appropriate unit, in a

| HOUSEHOLD | | | WHITE | | Non-White | | | | | |
|-------------------------------------------|------|------|-------|------|-----------|------|------|------|------|------|
| Composition | 1922 | 1933 | 1936 | 1939 | 1947 | 1922 | 1933 | 1936 | 1939 | 1947 |
| Total Households | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Primary Family Only Primary Family and | 71 | 72 | 73 | 74 | 71 | 49 | 52 | 53 | 56 | 52 |
| Relatives | 24 | 24 | 23 | 21 | 24 | 27 | 30 | 29 | 28 | 32 |
| Primary Family and Unrelated Persons | 5 | 4 | 4 | 5 | 5 | 24 | 18 | 18 | 16 | 16 |

Table 2. Percentage distribution of households by composition and race Ward 7, successive censuses.

consideration of the white population. However, as will be seen from Table 2, the household and the social family group are identical units in all but 5 per cent of white aggregates. The choice between these family types is, therefore, not critical. In the Negro population, there are a large proportion of family units which include non-related members. The part which these members play in the life of the Negro household is not known. If these individuals play a real role in the function of the Negro family, the household would represent the most meaningful unit of observation for investigation of family structure.

Since the choice between social family and household in the white population is not a critical one, and assuming that in the colored population non-related members in the household participate closely in the daily function of the family aggregate, it is felt that the household constitutes the most feasible unit to investigate in studies of family structure.⁵

Before proceeding, however, it may be desirable to outline some of the relationships obtaining between the household as an entity and the other family aggregations.

Relation of Family Units

By definition, the household and primary family are identities when no relatives or lodgers are present in the dwelling unit. Similarly the household and social family unit are identical when non-related persons are not present. In Table 2, it will be noted that among white households slightly more than one-fourth are composed of a primary family unit plus additional elements. In all but 5 per cent, the white households are equivalent to social family units. The distribution of a population of households in respect to a dimension such as size will, therefore, approximate closely the distribution exhibited by social family units.

In contrast, a description of the size of aggregates based on the household unit will provide a biased picture in respect to the size distribution of the primary family units. In Table 3,

⁵ The term, family, hereafter, will refer to the household unit.

the relation existing between these distributions is shown for a group of households enumerated in the 1947 census. For all sizes of the primary family unit (with the exception of the extremely large units) the mean size of the corresponding house-

| | Relative Size of Corresponding Household | | | | | | | | |
|----------------------------------------------------------------------------------|--------------------------------------------------------------------------------|-------------------------------------------------------------------------|------------------------------------------------------------------|---------------------------------------------------------------|-----------------------------------------------------------|-------------------------------------------------------------------------------------|--|--|--|
| Size of Primary Family (Number of Persons) | Total House- holds | Primary Family Only (PF) | PF ÷ 1 | PF ÷ 2 | PF ÷ 3 or More | Mean Size | | | |
| | | | WHI | TE | | | | | |
| Total | 4,000 | 2,866 | 507 | 313 | 314 | 3.44 | | | |
| 1 2 3 4 5 6 7 8 9 9 10 11 12 2 2 05 | 567 1,295 955 601 334 126 64 30 18 4 4 4 2 | 252 919 745 472 268 107 54 24 16 3 4 2 | 128 131 105 83 42 9 5 4 - - - - | 88 117 56 32 9 7 2 - 1 1 1 - | 99 128 49 14 15 3 3 2 1 - - | 2.2 2.7 3.4 4.3 5.3 6.3 7.3 8.3 9.3 10.5 11.0 12.0 | | | |
| Mean Size 2.95 | NON-WHITE | | | | | | | | |
| Total | 1,523 | 819 | 257 | 184 | 263 | 4.20 | | | |
| 1 2 3 4 5 6 7 8 9 10 11 12 Mean Size 3.04 | 279 525 260 179 109 56 49 35 16 8 2 5 | 93 280 160 106 64 43 27 24 12 5 - 5 | 66 87 36 30 16 6 7 4 2 1 2 - | 47 59 27 23 16 3 6 - 1 2 - | 73 99 37 20 13 4 9 7 1 - - | 2.8 3.2 4.0 6.0 6.5 8.1 8.8 9.4 10.6 12.0 12.0 | | | |

Table 3. Household size according to size of primary family sample of households, Eastern Health District, 1947.

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hold is greater. Whereas the average size of the primary family unit was 2.95 persons, the average for the household was 3.44.

Among Negro households, the primary family as the sole entity constituted only 52 per cent of such units. There is a strong tendency for Negroes to form aggregates which are based on the model of a primary family core combined with related or non-related members. The relationship which exists between the size of the primary family and that of the associated household is shown in Table 3. As previously shown for white households, the mean number of individuals in the household exceeds that of the corresponding primary unit at most levels.

It is of interest to note further that for a specified primary family size, the corresponding mean household size for Negro units is greater than that of the associated white household. This is probably due to the greater frequency of relatives and lodgers in Negro households than is found in white units.

Further information on the manner whereby inferences on social structure may be influenced by the choice of family unit, is provided by Table 4.

Consideration of the mean sizes of the primary family units would lead to the conclusion that family units in the two racial groups show little difference. Examination of the mean sizes of the household units provides a different story. The Negro household is larger by 22 per cent than the equivalent white aggregate.

It is important, therefore, to consider that statistical data on the Negro household unit should not be compared, without

| Table 4. | Mean | size o | of the | primary | family | unit | and | of the | household | by |
|--------------|--------|--------|--------|----------|----------|--------|-------|--------|-----------|----|
| race; sample | of hou | ısehol | lds, E | astern İ | Iealth I | Distri | ct, 1 | 947. | | • |

| Race | Mean Size of Primary Family | Mean Size of Household |
|-----------|--------------------------------|---------------------------|
| White | 2.95 | 3.44 |
| Non-white | 3.04 | 4.20 |

adjustment, with family data which relates to the primary family unit.

Size of Household

As indicated in the discussion of the choice of family unit, we shall be concerned with the total number of individuals living in a dwelling unit as a social aggregate. When two or more family type units were enumerated in the same house, they were considered as a common household if they ate at a common table served from the same kitchen. However, if they had common kitchens but did not eat at the same table and supervised their own sleeping quarters they were considered separate households.

Members of the household in an institution were not considered in the household unless they had been present within the census year.

A person living alone in an apartment constituted a household.

Head of Household

The determination of the household head can be made on any or a combination of factors. Some of these are: principal wage earner; responsibility for decisions relating to choice of home; responsibility for decisions relating to education of children; responsibility for decisions relating to size of family, etc. The choice might also be made on the basis of general acceptability of a given individual as head by the remaining family members. These criteria demand an intensive analysis of the daily function of the household, a procedure beyond the capabilities of an operation concerned with thousands of household units.

In the series of surveys conducted in the Eastern Health District, we have employed the following technique of establishing the household head.

For all families with married couples as the primary unit of structure, the husband was considered the head. However, if the husband was reported as physically or mentally incapacitated, the wife was recorded the head of the household, if she so designated herself on enumeration.

For all families where the primary structure did not include a married couple, the statement of the respondent was accepted in designating a head of household.

DENSITY

A commonly used index to measure crowdedness in a household is obtained by dividing the total number of individuals enumerated in the family by the number of rooms available for living space (exclusive of toilet and closet facilities). The resulting index, number of individuals per room, is a measure of the population density in the household. This index is not available for the 1933 survey because the number of rooms counted included the bathroom (when present) which was excluded in all other censuses.

Socio-Economic Status

The occupation of the head of the household has been employed throughout the Eastern Health District surveys to provide an index of the social and economic status of the family. Some studies involving the relationships between occupational status and various other measures of socio-economic status were initiated by Fales. (5) Treating census tracts as units of observation, the following correlations were found among the stated variables, based upon data from the 1950 census and using the ranking technique for occupational status which will be described in part 2 of this study.

| Correlated Variables | Correlation Coefficient |
|------------------------------------------------|----------------------------|
| 1. Occupational Rank-Monthly Rent | .55 |
| 2. Occupational Rank-Value of 1 DU Structure | .79 |
| 3. Occupational Rank-Family Income | .87 |
| 4. Occupational Rank-Years of School Completed | .87 |

2. 3. 4.

Whenever the family status could not be established on the basis of the occupation of the household head, a set of rules was used to obtain this measurement based upon the occupation of the other members of the household.

Composition of the Household

Family aggregates have been classified according to composition on the basis of four attributes as shown below:

- a. Sex of the head of the household.
- b. Presence or absence of children.
- c. Presence or absence of relatives.
- d. Presence or absence of unrelated persons.

If it is assumed that each one of these components has two possible outcomes, this type of classification provides 24 categories. For analytical purposes, this number has been reduced by combining components c. and d.

CROSS-SECTIONAL ANALYSES OF FAMILY STRUCTURE

In this section, the characteristics of families enumerated in each census are described. The presentation is designed to show how the family composition of the study area has changed and in what respect it has remained stable. The variables investigated are: age of the household heads, size and density of households, occupational status of the household heads, and composition of the households.

The changes noted may provide useful information to the analyst who is concerned with events whose frequency may be associated with one or more of the above variates. Thus, for example, the investigator interested in historical trends in the rate of juvenile delinquency in an area, or in the age of attack by specific communicable diseases may find it profitable to consider such trends in the light of the changing patterns in the types and sizes of families resident in the study area.

The cross tabulation of size, occupational status, and composition of the family with the age of the head of the household furnish data which will be used later in a discussion and evaluation of methods for estimating age changes in family structure.

| YEAR OF | Wards 6 and 7 | | | | Ward | 6 | WARD 7 | | |
|---------|---------------|--------|---------|---------------|-------|---------|--------|-------|---------|
| CENSUS | Total | White | Colored | Total | White | Colored | Total | White | Colored |
| 1922 | 7,256 | 6,069 | 1,187 | Not available | | | 7,256 | 6,069 | 1,187 |
| 1933 | 13,705 | 10,832 | 2,873 | 6,653 | 5,614 | 1,039 | 7,052 | 5,218 | 1,834 |
| 1936 | 13,942 | 10,916 | 3,026 | 6,646 | 5,582 | 1,064 | 7,296 | 5,334 | 1,962 |
| 1939 | 15,245 | 11,840 | 3,405 | 7,195 | 6,026 | 1,169 | 8,050 | 5,814 | 2,236 |
| 1947 | 14,626 | 10,813 | 3,813 | 6,982 | 5,754 | 1,228 | 7,644 | 5,059 | 2,585 |

Table 5. Number of households by ward and race according to year of census, Eastern Health District, Baltimore.

The number of households available for cross-sectional studies is shown in Table 5. Data for 1922 are available for Ward 7 only. In later censuses, information is provided for Wards 6 and 7 separately and combined. It will be noted that the colored families have represented a fairly constant proportion (16-17 per cent) of the total households in Ward 6, whereas this proportion has increased from 16 to 34 per cent over a twenty-five year interval in Ward 7.

In order to study time trends, data are presented separately by race and ward. Where ward differences are not of any significance, these areas have been combined and a single body of data or index has been developed for the district.

Age of Household Head

Distributions by age and race of the household head are summarized in Tables 6 and 7. To assist in the interpretation of this information, the distributions are shown graphically in Figure 3.

Over the twenty-five year period covered by this material, there has been very little change in the average age of white heads of households. In view of the similarity of Wards 6 and 7 in respect to this variable, we shall concern ourselves with the information for the entire District. In 1922, the mean age was 44.7 years, rising to 47.0 in 1933 where this index remained fairly constant until the census of 1947 gave indication of a further rise to 48.2. Employing the standard deviation as a measure of variance, it is noted that there has been a tendency

| _ | | Ward 7 | | | | Ward 6 | | | | |
|------------------------------------------------------------------------------------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|
| Index | 1922 | 1933 | 1936 | 1939 | 1947 | 19221 | 1933 | 1936 | 1939 | 1947 |
| Total Households | 6,069 | 5,218 | 5,334 | 5,814 | 5,059 | | 5,614 | 5,582 | 6, 026 | 5,754 |
| Mean Age of Head (Years) Standard Deviation (Years) Age in Years for Specified Percentiles ³ | 44.7 13.1 | 47.0 13.5 | 47.1 14.0 | 46.0 15.8 | 48.6 14.6 | | 47.1 13.6 | 47.5 13.4 | 47.2 13.5 | 47.8 14.9 |
| 3 25 50 75 97 | 24.6 34.0 43.0 53.8 72.6 | 25.1 36.7 45.6 56.3 74.3 | 24.2 36.1 46.0 56.8 74.7 | 23.8 34.7 45.8 56.5 74.2 | 24.4 36.8 48.1 59.7 75.7 | | 25.2 36.5 45.6 56.4 74.3 | 24.8 36.7 46.2 57.4 74.5 | 24.7 36.3 46.3 57.1 74.6 | 22.9 35.8 47.3 58.7 76.2 |

Table 6. Selected indices of the age distribution of white heads of households, by ward for each special census.

Not available. ² Ward 7 only. ⁸ The 3rd and 97th percentiles are provided as estimates of the mid 95 per cent range, commonly employed for descriptive purposes in the Handbook of Biological Data prepared by the National Research Council.

for ages of households heads to become more broadly distributed about the mean age. A review of Figure 3 gives indication of a distribution of white households which has moved from a slightly skewed form in 1922 to a remarkably symmetrical shape in 1947.

The time trend of average age for non-white heads of house-

| | | Ward 7 | | | | Ward 6 | | | | |
|-----------------------------------------------------------------------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|
| Index | 1922 | 1933 | 1936 | 1939 | 1947 | 19221 | 1933 | 1936 | 1939 | 1947 |
| Total Households | 1,187 | 1,834 | 1,962 | 2,236 | 2,585 | | 1,039 | 1,064 | 1,169 | 1,228 |
| Mean Age of Head (Years) Standard Deviation (Years) Age in Years for Specified Percentiles | 41.8 11.8 | 40.3 11.3 | 41.3 11.5 | 41.6 11.5 | 44.1 12.1 | | 40.5 11.8 | 41.4 12.3 | 42.1 10.3 | 43.8 12.9 |
| 3 25 50 75 97 | 24.0 32.8 40.0 49.7 72.0 | 23.0 31.5 38.7 46.7 64.6 | 24.2 32.5 39.4 47.7 68.4 | 23.6 32.9 39.8 48.2 68.1 | 24.2 35.2 42.9 51.6 70.9 | | 22.8 31.2 38.4 47.9 67.9 | 22.6 31.8 39.4 48.6 70.4 | 24.0 32.3 39.6 49.2 70.7 | 23.8 33.4 41.8 52.2 72.4 |

Table 7. Selected indices of the age distribution of non-white heads of households by ward for each special census.

¹ Not available.

| WARDS 6 AND 7 | | | | | | | | | |
|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--|--|--|--|--|
| 19222 | 1933 | 1936 | 1939 | 1947 | | | | | |
| 6,069 | 10,832 | 10,916 | 11,840 | 10,813 | | | | | |
| 44.7 13.1 | 47.0 13.6 | 47.3 13.7 | 46.6 14.7 | 48.2 14.7 | | | | | |
| 24.6 34.0 43.0 53.8 72.6 | 25.2 36.6 45.6 56.4 74.4 | 24.5 36.4 46.1 57.1 74.6 | 24.3 35.5 46.0 56.8 74.4 | 23.5 36.3 47.7 59.2 76.0 | | | | | |

holds has followed generally the same course as previously given for the white population of households. Inspection of Table 7 indicates that this index has increased from 41.8 years in 1922 to 44.0 in 1937. Throughout, the mean ages for non-white households have remained consistently lower than those recorded among white segments. With regard to variability about the mean age of the household head, the Negro units

have shown less deviation than that observed among white units. Furthermore, there does not appear to be a consistent movement in this attribute with the flow of time.

Size of Household

From a historical point of view, and in the developmental course of individual family units, there is no greater change in a measurable characteristic of the family structure than that which takes place in respect to the size of household. The changes in household size recorded by the Bureau of the Census during the interval 1890–1950 provide an interesting coun-

| Wards 6 and 7 | | | | | | | | | |
|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--|--|--|--|--|
| 19222 | 1933 | 1936 | 1936 1939 | | | | | | |
| 1,187 | 2,873 | 3,026 | 3,405 | 3,813 | | | | | |
| 41.8 11.8 | 40.4 11.5 | 41.3 11.7 | 41.9 10.8 | 44.0 12.5 | | | | | |
| 24.0 32.8 40.0 49.7 72.0 | 22.9 31.4 38.6 47.1 65.6 | 23.5 32.2 39.4 48.0 69.5 | 23.9 32.7 39.8 48.6 69.1 | 24.0 34.6 42.6 51.8 71.5 | | | | | |

try-wide documentation of the declining trend in this characteristic. The data are shown in Table 8.

The material in the Eastern Health District provides a picture of the changing size of the household unit in a relatively stable environment so far as physical structure and socioeconomic class are concerned. In Tables 9 and 10 some of the more important indices are shown by race for the size distribution of all house-

holds enumerated at given censuses. Among white units, there



Fig. 3. Age distribution of household heads, Eastern Health District, Baltimore, successive census years.

is consistent decline in mean household size from 4.3 in 1922 to 3.4 persons per household in 1947. Also of interest is a decline in the standard deviation of the size of white household units from 2.0 to 1.7 over the same interval.

A study of Figure 4 furnishes an interesting indication of the trend towards smaller white families. Among the white house-holds, those with two and three members have increased from 38 per cent of the total in 1922 to more than 50 per cent of the total in 1947. In addition, there is steady increase in the

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relative frequency of the households with only one member present. Correspondingly, there are declines to be noted in the percentage occurrence of households of five or more members.

Non-white households do not show any definite trend in size over the period of this study. A decline in mean size of household in Ward 7 from 4.6 to 4.3 members during the interval 1922–1936 has not continued since this latter period. No time change of sociological significance is found in Ward 6. It is worth noting, however, that there is a consistent smaller size for the average household in Ward 6 than in Ward 7. Also throughout the period 1922–1947, Negro households have been larger than those of the whites.

The trend in frequency of large families is of interest. Confining ourselves to Ward 7, we find that over the period 1922– 1947, the percentage of households with five or more members has declined in the white community from 40 per cent to 22; the equivalent trend in Negro family units has been a slight drop from 41 to 38 per cent.

Size of Household and Age of Household Head

For a given census, the variation in household size with the age of the household head gives some indication of the trend which groups of family units may follow with the passage of time. It should be kept clearly in mind, however, that cross-

| | Average Popula | ation Per Household |
|-------|----------------|-------------------------|
| Y EAR | United States | Eastern Health District |
| 1890 | 4.93 | |
| 1900 | 4.69 | |
| 1910 | 4.54 | |
| 1920 | 4.34 | 4.3 |
| 1930 | 4.01 | 4.0 |
| 1940 | 3.67 | 3.6 |
| 1950 | 3.39 | 3.4 |

Table 8. Average size of household United States and Eastern Health District¹, 1890–1950.

¹ Figures shown for Eastern Health District are based upon special survey data for white households in those years which most closely approximate the decennial census years.

| <u>.</u> | | | Ward 2 | 7 | | Ward 6 | | | | | |
|--------------------------------|-------|-------|--------|-------|-------|--------|-------|-------|-------|-------|--|
| INDEX | 1922 | 1933 | 1936 | 1939 | 1947 | 1922 | 1933 | 1936 | 1939 | 1947 | |
| Total Households | 6,069 | 5,218 | 5,334 | 5,814 | 5,059 | | 5,614 | 5,582 | 6,025 | 5,754 | |
| Mean Size ¹ | 4.3 | 4.0 | 3.8 | 3.6 | 3.4 | | 4.0 | 3.9 | 3.7 | 3.5 | |
| Standard Deviation | 2.0 | 2.0 | 1.9 | 1.8 | 1.6 | | 2.0 | 1.9 | 1.9 | 1.8 | |
| Size of Household at Specified | | | | | | | | 1 | | | |
| Percentiles | | Į | | | | | | | | | |
| 3 | 1.5 | 1.1 | 1.2 | 1.0 | 1.0 | | 1.1 | 1.1 | 1.0 | 1.0 | |
| 25 | 2.8 | 2.5 | 2.4 | 2.3 | 2.2 | | 2.5 | 2.5 | 2.3 | 2.2 | |
| 50 | 4.0 | 3.7 | 3.5 | 3.3 | 3.2 | | 3.7 | 3.6 | 3.4 | 3.2 | |
| 75 | 5.4 | 5.1 | 4.9 | 4.5 | 4.3 | | 5.2 | 5.0 | 4.8 | 4.4 | |
| 97 | 8.5 | 8.5 | 8.2 | 7.5 | 7.1 | | 8.5 | 8.3 | 8.0 | 7.6 | |

Table 9. Selected indices of the size distribution of white households by ward for successive census years.

¹ Expressed in number of individuals.

sectional profiles by age place in apposition groups of families which are not strictly comparable except under a static concept of social change.

The mean size of household for white and non-white families is shown graphically in Figure 5, for each census according to the age of the head of household. Consideration of the material on white families leads to the following observations:

a. The size function is generally of a parabolic type.

| Table 10. | Selected in | ndices of | the size | distribution | of non-white | e house- |
|---------------|--------------|------------|-----------|--------------|--------------|----------|
| holds by ware | ds in succes | ssive cens | us years. | | | |

| _ | | | WARD | 7 | | | | Ward | 6 | |
|-----------------------------------------------------------------------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| Index | 1922 | 1933 | 1936 | 1939 | 1947 | 1922 | 1933 | 1936 | 1939 | 1947 |
| Total Households | 1,187 | 1,834 | 1,962 | 2,236 | 2,585 | | 1,039 | 1,064 | 1,169 | 1,228 |
| Mean Size ¹ Standard Deviation Size of Household of Specified Percentiles | 4.6 2.6 | 4.5 2.4 | 4.3 2.3 | 4.2 2.3 | 4.3 2.3 | | 3.9 2.3 | 3.9 2.3 | 3.7 2.2 | 4.0 2.3 |
| 3 25 50 75 97 | 1.3 2.6 4.0 5.9 9.7 | 1.5 2.6 4.0 5.8 9.7 | 1.5 2.5 3.9 5.7 9.7 | 1.0 2.4 3.7 5.6 9.6 | 1.0 2.4 3.7 5.6 9.6 | | .9 2.1 3.3 5.1 9.4 | .9 2.1 3.2 5.2 9.2 | .8 1.7 3.1 4.9 9.0 | .9 2.2 3.4 5.3 9.4 |

¹ Expressed in number of individuals.

| | w | ards 6 a | ND 7 | |
|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|
| 1922 | 1933 | 1936 | 1939 | 1947 |
| 6,069 | 10,832 | 10,916 | 11,840 | 10,813 |
| 4.3 2.0 | 4.0 2.0 | 3.9 1.9 | 3.6 1.8 | 3.5 1.7 |
| 1.5 2.8 4.0 5.4 8.5 | 1.1 2.5 3.7 5.1 8.5 | 1.1 2.5 3.6 5.0 8.3 | 1.0 2.3 3.3 4.6 7.8 | 1.0 2.2 3.2 4.4 7.3 |

b. Maximum size is present between 40 and 45 years of age of the household head.

c. The curves for the separate census years are displayed downward as one proceeds from the earliest to the later censuses.

d. The percentage decline in size does not differ markedly from one age group to another.

For non-white households, the characteristics of the curves shown

are not as clearly defined as those noted for white households. Variation in size with change in age is not apparent in 1922. In 1936 and 1947, there is some evidence of a parabolic trend to the curves drawn with maxima within the age range 40–50. The slopes, however, denoting change in size with age, are flatter than those observed for white families.

DENSITY OF HOUSING

In a discussion of household size, the subject of density of housing immediately proposes itself. If one is concerned with the number of close physical contacts which occur between household members, it is appropriate to consider the relation

| | W | ARDS 6 A | ND 7 | |
|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|
| 1922 | 1933 | 1936 | 1939 | 1947 |
| 1,187 | 2,873 | 3,026 | 3,405 | 3,813 |
| 4.6 2.4 | 4.3 2.4 | 4.2 2.3 | 4.0 2.3 | 4.2 2.3 |
| 1.3 2.6 4.0 5.9 9.7 | 1.0 2.4 4.2 5.6 9.6 | 1.0 2.3 3.7 5.5 9.4 | 0.9 2.2 3.5 5.4 9.4 | 1.0 2.3 3.6 5.5 9.5 |

of space available to household members and the number of individuals utilizing such space. A convenient index for expressing this relationship is provided by the ratio, number of persons per room.

The relation between number of persons per room and family size will be found in Figure 6. (Supporting data may be obtained from the author upon request.) The regression of density upon size of family is

approximately linear. Study of the series of curves for the white



Fig. 4. Percentage distribution of households by size, Eastern Health District, Baltimore, successive census years.

segment of Ward 7 indicates an extraordinarily constant association existing between these attributes. Exact estimates of the parameters of the curves are shown at the bottom of Table 11. The slopes (b) and y intercepts (a) show no significant variation over the interval 1922-1947.

The relation between density and size of family among Negro households is somewhat different than that observed in white family units. Although there exists a linear relationship be-



Fig. 5. Size of household by age of head of household, Eastern Health District, selected census years.

tween the variables, this association has not remained fixed in its parameters. There has been a consistent decline in the slope of the curves drawn. A 't' test of the difference in slopes between the 1922 regression and the 1947 curve fails, however, to indicate that the difference noted is statistically significant.

| l censuses. |
|-------------|
| 7-selected |
| Ward |
| id race, |
| thold an |
| of house |
| o size o |
| according t |
| per room |
| persons] |
| Mean |
| Table 11. |

| SIZE OF | | Wв | IITE | | | Non- | White | |
|-----------------|------|------|------|------|------|------|-------|------|
| Household | 1922 | 1936 | 1939 | 1947 | 1922 | 1936 | 1939 | 1947 |
| Total | . 83 | .78 | .77 | .73 | .85 | .85 | .93 | 66. |
| 1 | .38 | .32 | .43 | .38 | .34 | .38 | .57 | .56 |
| 2 | .51 | .52 | .54 | .52 | .56 | .54 | .68 | .76 |
| 3 | .73 | . 75 | .79 | .75 | .65 | .70 | .84 | .87 |
| 4 | .76 | .75 | 66. | .77 | .83 | .84 | .92 | .96 |
| 5 | 06. | .92 | .94 | .88 | .90 | .92 | 66. | 1.11 |
| 6 | 1.11 | 1.12 | 1.09 | 1.08 | 1.07 | 1.10 | 1.12 | 1.18 |
| 7 | 1.15 | 1.17 | 1.15 | 1.17 | 1.13 | 1.13 | 1.20 | 1.23 |
| 8 | 1.38 | 1.37 | 1.31 | 1.33 | 1.28 | 1.29 | 1.30 | 1.41 |
| 6 | 1.54 | 1.51 | 1.49 | 1.59 | 1.34 | 1.34 | 1.47 | 1.50 |
| 10 | 1.49 | 1.50 | 1.52 | 1.50 | 1.47 | 1.50 | 1.63 | 1.53 |
| 11 | 1.68 | 1.82 | 1.54 | 1.81 | 1.45 | 1.49 | 1.55 | 1.52 |
| 12 | 1.85 | 1.80 | 2.04 | 1.88 | 1.71 | 1.70 | 1.62 | 1.67 |
| b1 | .135 | .134 | .128 | .137 | .116 | .114 | . 105 | .098 |
| 8 | .25 | .26 | .30 | .24 | .31 | .34 | .48 | .57 |
| sb ² | 900. | | | 900. | 900. | | | .005 |
| 8a B | .041 | | | .041 | .034 | | | .034 |

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Fig. 6. Density of housing according to size of household, Ward 7, selected census years.

A test of the y intercepts (a) for each of the regressions shown, gives evidence of significant difference between the general level of the density functions in 1939 and 1947 and those obtained for the earlier years 1922 and 1936.

The findings cited above may be interpreted as follows:

1. Among white families, the relationship existing between density of housing and size of family is linear and positive and has been extremely constant in its dimensions over the quarter century 1922-1947.

2. Among non-white families, density is found to increase with the size of family throughout all censuses. However, during the period of 1922-1947, the density values for given family sizes have increased, an effect which is apparently more marked in the smaller households than in the larger families.

Occupational Status of Households

In this section, the following questions are discussed:

1. Have the cross-sectional distributions of families accord-

| Table 12. Occupational status of wh | ite households E | astern Health D | strict, successive | census years. | |
|--------------------------------------------------------------|----------------------|---------------------|-----------------------|---------------|----------------------------------|
| Occupational Group of Household Head | 1922 | 1933 | 1936 | 1939 | 1947 |
| Total | 6,069 | 10,832 | 10,916 | 11,840 | 10,813 |
| Professional Persons | 149 705 | 338 | 322 | 392 1 340 | 457 957 |
| roprictors, managers or Omerals Clerks or Kindred Workers | 835 | 1,411 | 1,507 | 1,682 | 1,428 |
| Skilled Workers or Foremen | 2,318 | 3,492 | 3,123 | 3,327 | 3,740 |
| oemiskilled workers Other Laborers | 1,127 | 2,210 | 665 665 | 904 | 7,0 1 0 488 |
| Servant Classes | 105 | 299 | 327 | 388 | 341 |
| Other Specified | 7 | 17 | 12 | 18 | S. |
| No Occupation Indefinite or Unknown | 322 | 387 62 | 385 | 420 54 | 357 |
| | | - | PER CENT ¹ | | |
| Total | 100 | 100 | 100 | 100 | 100 |
| Professional Persons | 2.6 | 3.7 | 3.0 | 3.3 | 4.2 |
| Proprietors, Managers or Officials | 13.8 | 14.1 | 13.9 | 11.4 | 8.9 |
| Clerks or Kindred Workers | 14.5 | 13.1 | 13.8 | 14.3 | 13.2 |
| Skilled Workers or Foremen | 40.4 | 32.4 | 28.6 | 28.2 | 34.6 |
| Semiskilled Workers Other Laborers | 5.1 | 23.4 7_3 | 28.U | 1.87 | 28.1 4 5 |
| Servant Classes | 1.8 | 2.8 | 3.0 | 3.3 | 3.2 |
| Other Specified | .1 | .2 | .1 | .2 | 1 |
| No Occupation | 2.0 | 3.6 | 3.5 | 3.6 | 33 |
| Percentages shown are based on total househ | olds for which socio | -economic group was | known. | | |

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| iith District, successive census years. | 1936 1939 1947 | NUMBER | 3,026 3,405 3,813 | 41 35 33 104 94 95 | 47 34 109 214 172 31 | 701 626 869 | 1,137 1,623 1,456 682 637 799 | 10 13 10 84 147 130 | 6 24 1 | PER CENT ¹ | 100 100 100 | 1.4 1.0 .9 | 3.4 2.8 2.5 | | 23.2 18.5 22.7 | 37.6 48.1 38.1 | 22.6 18.8 21.0 | |
|------------------------------------------|-----------------------------------------|--------|-------------------|-------------------------------------------------------------|--------------------------------------------------------|---------------------|---------------------------------|----------------------------------|-----------------------|-----------------------|-------------|----------------------|------------------------------------|--------------------------------------------------------|---------------------|----------------|----------------|---------------|
| us Eastern Lica | 1933 | | 2,873 | 36 75 | 20 | 408 | 1,512 637 | 45 8 | 17 | | 100 | 1.3 | 2.6 | | 14.3 | 52.9 | 22.3 | 1.6 |
| | 1922 | | 1,187 | 31 35 | 24 65 | 149 | 554 239 | 8 | 67 | | 100 | 2.7 | 3.1 | 2.1 7 8 | 13.3 | 49.5 | 21.3 | 1.3 |
| 011 10 1211 1211 1211 1211 121 121 121 1 | OCCUPATIONAL GROUP OF HOUSEHOLD HEAD | | Total | Professional Persons Proprietors, Managers, or Officials | Clerk or Kindred Workers Skilled Workers or Foremen | Semiskilled Workers | Other Laborers Servant Class | Other Specified No Occupation | Indefinite or Unknown | | Тотаг | Professional Persons | Proprietors, Managers or Officials | Clerk or Kindred Workers Skilled Workers or Foremen | Semiskilled Workers | Other Laborers | Servant Class | No Occupation |

- Uselat Distant Orennational status of non-white households Fast Table 13.

..

¹ Percentages shown are based on total households for which socio-economic group was known.

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ing to occupational status changed from one census to another?

2. Does the distribution of white families according to occupational status vary from the spread noted among non-white families?

In Tables 12 and 13 households in the Eastern Health District are distributed according to the occupational groups proposed by the Bureau of Census in 1937 (6). The principal point to be noted is that the magnitude of change is small. In view of the large size of the populations involved, we may consider directly the percentage differences observed assuming that they are subject to negligible sampling variation. For the white segment, the following trends are found:

1. There is a consistent decline in the relative frequency of proprietors, managers and officials since 1936.

2. This decline is accompanied by an increase in the percentage of professional persons and skilled workers.

3. The dominant categories throughout the twenty-five year period of observation have been skilled and semi-skilled workers accounting for 60.1, 56.8, 56.6, and 62.7 per cent respectively of all households in the District. Within this group, there is evidence of some decline in the skilled worker class and an increase in the semi-skilled group over the quarter century of observation.

Inspection of the data available on the non-white segment permits the following observations:

1. There is a decline in the percentage of households assigned to the unskilled labor class from a mean of 51 per cent for the period 1922-1933 to an average of 43 per cent for the period 1936-1947.

2. There is a corresponding increase in the percentage of households in the semi-skilled class from a mean of 14 per cent for the period 1922-1933 to a mean of 21 per cent for the later eleven-year interval 1936-1947.

3. The dominant occupational groups in the earlier period of 1922-1933 were the non-skilled labor and servant classes whereas



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Fig. 7. Percentage distribution of household heads by occupational groups, Eastern Health District, successive census years.

the more recent years show some evidence of a shift upward of the character discussed above under (2).

The differences between the occupational distributions of the two racial groups are obvious from the accompanying chart. (Figure 7) OCCUPATIONAL STATUS AND AGE OF HOUSEHOLD HEAD

Questions which propose themselves when considering the occupational distribution of household heads by age are:

1. Does the occupational status of families vary with the age of the household head? If so, what is the nature of the variation?

2. Have there been any changes over the interval 1922-1947 in the association of occupational status and age of household head?

In order to bring about an expeditious treatment of the mass of data which appears on these varieties, the original data have been modified as follows:

1. Occupational classes represent qualitative but reasonably ordered fractions of the universe. Each of these classes may be assigned a rank. Rank equivalents for occupational groups are shown in the legend of Figure 7. Each age group can, therefore, be assigned a mean rank for each of the census years based upon households which are classifiable.

2. Using the separate censuses as a series of columns and the various age groups as a series of rows, a matrix of mean occupational rankings may be assembled whose analysis is possible through the standard procedures of analysis of variance.

In Table 14, a distribution of mean occupational ranks for

| Age of Household Head | 1922 | 1933 | 1939 | 1947 | Mean |
|-----------------------|------|------|------|------|------|
| Total | 4.12 | 4.04 | 3.96 | 3.97 | 4.02 |
| Under 29 | 4.16 | 4.02 | 3.84 | 3.94 | 3.99 |
| 30-34 | 4.31 | 4.02 | 3.97 | 4.02 | 4.08 |
| 35-39 | 4.25 | 4.05 | 3.96 | 3.98 | 4.06 |
| 40-44 | 4.22 | 4.02 | 4.20 | 4.05 | 4.12 |
| 45-49 | 3.99 | 4.06 | 3.89 | 4.00 | 3.99 |
| 50-54 | 4.12 | 4.03 | 3.94 | 3.93 | 4.00 |
| 55-64 | 3.84 | 4.08 | 3.97 | 3.89 | 3.95 |
| 65 and Over | 3.98 | 3.98 | 3.93 | 3.98 | 3.97 |

Table 14. Mean occupational ranks of white households according to age of household head and census year¹.

¹ Ranks are ordered so that occupations associated with higher socio-economic strata have higher numerals assigned.

| Source of Variation | Degrees of Freedom | Sum of Squares | Mean Square | F |
|-----------------------------------------------|-----------------------|-------------------|-------------------------|--------------|
| Total | 31 | .44 | | |
| Age of Household Head Census Year Error | 7 3 21 | .15 .15 .14 | .0214 .0500 .0067 | 3.20 7.46 |

Table 15. Analysis of variance of mean occupational rankings with age of household head, white households, Eastern Health District, 1922–1947.

white units is presented according to age of the household heads and year of census. Inspection of the row means gives indication of a small increase in the occupational index as one moves from the younger ages to the middle groups followed by decline of a small order in the later ages. Analysis of the column means gives evidence of some decline for the general community in the occupational standing of the white households. The variation of occupational status with age as well as with the flow of time as measured by successive censuses has been found through analysis of variance to be statistically significant (Table 15). It may be noted however that the differences found are extremely small.

An analysis of variance of the mean occupational ranks among Negro families for the various age groups and over the twenty-five year interval gives indication of a significant variation over the years but does not point to any changes of significant proportion from one age group to another. The change over the years for all Negro groups combined is represented by the numbers 2.39, 2.25, 2.31, and 2.42 for the census years 1922, 1933, 1939, and 1947 respectively. Thus, it appears that the change recorded is of a relatively low order.

HOUSEHOLD COMPOSITION

The questionnaire design throughout the course of the special censuses in the Eastern Health District has been carefully planned to provide an accurate description of the relationship of each member in the household to the head. As a result, each

| y cats. | | | | | | | | | | | | | | | |
|----------------|----------|------------|---------|-------------------|--------------|------|-------------|------------|--------|----------|---------|------------|---------|------------|--------|
| | | | | | | Туре | OF HE | ad Stru | JCTURE | | | | | | |
| 4се об | | Mar | ried Co | uple | | Fe | male H | ead, No | Husba | pu | | Male F | Iead, N | o Wife | |
| HOUSEHOLD HEAD | 1922 | 1933 | 1936 | 1939 | 1947 | 1922 | 1933 | 1936 | 1939 | 1947 | 1922 | 1933 | 1936 | 1939 | 1947 |
| | | | | | | | МНІ | ЯВ | | | | | | | |
| Total | 81 | 76 | 17 | 76 | 74 | 15 | 19 | 18 | 18 | 20 | 4 | 5 | Ś | 9 | 9 |
| Under 29 | 96 | 90 | 93 | 92 | 87 | 2 | 7 | 4 | 9 | 6 | 2 | 3 | ŝ | 2 | 4 |
| 30-34 | 94 | 90 | 91 | 89 | 90 | 5 | 7 | 2 | 8 | ∞ | 1 | 3 | 3 | ñ | 7 |
| 35–39 | 8 | 86 | 88 | 88 | 86 | 2 | 11 | 10 | 10 | 10 | 3 | °. | 61 | N 1 | 4 |
| 40-44 | 68 | 83 | 86 | 84 | 83 | 10 | 13 | | 13 | 13 | 1 | 4 | ς, . | ς, υ | 4 |
| 45-49 | 85 | 62 : | 81 | 62 | 62 8 | 13 | 12 | 15 | 15 | 16 | c1 1 | 4 4 | 4 r | 6 | Ś |
| 50-54 | 21 | 22 | 29 | 23 | 2 9 | 17 | 17 | 72 | 25 | 77 | - 1 | 4 1 | n 0 | 0 F | 0 1 |
| 55-55 60-64 | 2019 | 69 52 | 8 6 | 200 | 80 59 | 17 | 4 66 | 3 2 | 30 | C7 27 | ~ ~ | ^ 2 | • • | <u></u> | - 01 |
| 65-69 | 26 | 52 | 22 | 51 | 53 | 33 | 38 | 36 | 38 | 38 |) II | 10 | 12 | 11 | ٥ |
| 70-74 | 36 | 49 | 45 | 44 | 47 | 51 | 39 | 42 | 44 | 37 | 13 | 12 | 13 | 14 | 16 |
| 75-and Over | 36 | 31 | 32 | 30 | 39 | 50 | 44 | 46 | 54 | 42 | 14 | 25 | 22 | 16 | 19 |
| | | | | | | | N | LIBW-NC | 81 | | | | | | |
| Total | 75 | 20 | 70 | 68 | 69 | 18 | 23 | 24 | 24 | 23 | 7 | 7 | 9 | ∞ | 80 |
| Under 29 | 83 | 78 | 78 | 78 | 76 | 12 | 15 | 18 | 18 | 19 | S | 7 | 4 | 4 | Ś |
| 30-34 | 84 | 72 | 76 | 68 | 11 | 12 | 22 | 21 | 24 | 17 | 4 | 9 | ŝ | œ | 9 |
| 35-39 | 28 | 69 1 | 12 | 22 | 73 | 15 | 24 | 22 | 21 | 22 | 2 | ~ ' | • • | ۲ <u>،</u> | υI |
| 40-44 | 74 | <u>د</u> ز | 69 (| 3 | 2 (| 11 | 22 | 82 | 3 2 | 77 | ית | | νı | 9 ' | ~ 0 |
| 45-49 | 75 | 67 | 29 | 83 | 50 | 50 | 97 | 82 | 97 | 24 | ۲ N | ~ 0 | | 00 | , د |
| 50-54 55-59 | 2 09 | 8 2 | 5 G | 57 | 8 73 | 36 | 25 | 38 | 37 | 77 70 | - 4 | 13 ° | ~ 10 | ~ 0 | 12 |
| 60-64 | 64 | 55 | 54 | 51 | 55 | 24 | 37 | 40 | 38 | 35 | 12 | 8 | 9 | 11 | 10 |
| 65-69 | 32 | 43 | 22 | 55 | 48 | 52 | 38 | 33 | 33 | 36 | 16 | 19 | 16 | 12 | 16 |
| 70-74 | <u>8</u> | <u>ج</u> | ÿ, | \$ 4 + | 1 | Š i | \$; | <u>8</u> 4 | £ + | 67 * | 14 * | 18 • | 17 | 14 | 31 |
| 75-and Over | * | * | ¥ | ŀ | ŧ | F | ŀ | ¥ | * | * | * | ¥ | ¥ | * | * |

Table 16. Percentage distribution of households by age of head of household and by sex—Ward 7 successive census

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* Experience insufficient to determine stable ratios.

household can be readily characterized in respect to the following factors: sex of household head, presence of spouse, presence of children, presence and type of related persons, and the presence of non-related persons or lodgers.

In the subsequent analysis, each of the factors are considered individually and changes are noted when they have taken place during the 1922–1947 period from census to census and for a given census from one age group to another.

The head structure of the family is shown in Table 16. It will be seen that the married couple represents the predominant type in the younger households, but that this class progressively declines in relative frequency as one approaches the older ages. At the same time, the family headed by a female increases in its relative frequency as one passes from young families to older units. There is evidence also of an increase in families headed by a male, no wife being present, in the older age households. These trends appear to be rather consistent across all censuses.

Racial differences in respect to head of the household are of interest. In the younger families, the percentage of female heads of households is higher among Negroes than among whites. This difference does not persist, however, after age 55.

Table 17 indicates the proportion of households that have children present, according to the age of the household head. During the interval 1922–1947, there is a definite decline noted in this characteristic, which is seen at all ages of the household head and is particularly marked at the age levels above 55 years and within the age level "under 25 years." The trend of an increase in the proportion of households having children as one advances from the younger age groups to the early middle ages and a gradual decline thereafter is characteristic throughout all censuses. The maximum point in respect to white households which include children is reached generally within the age span 30–44.

The Negro households fail to show a marked trend in respect to percentage frequency of families with children, both along

| Ward 7successive | |
|------------------------------------|---------------|
| rding to age of head of household, | |
| children present acco | |
| Per cent of households with c | |
| Table 17. | census years. |

| Ace to Househort Hars | | | White | | | | Z | on-Whit) | 61 | |
|----------------------------------|--------------|-----------|-------|------|------|------|------|----------|------|------|
| 110E OF 11003EBULD 11EBUD | 1922 | 1933 | 1936 | 1939 | 1947 | 1922 | 1933 | 1936 | 1939 | 1947 |
| Тотаг | 77 | 73 | 72 | 67 | 63 | 61 | 61 | 63 | 58 | 57 |
| Under 25 | 67 | 54 | 46 | 44 | 39 | 55 | 55 | 72 | 48 | 57 |
| 25-29 | 73 | 68 | 61 | 52 | 62 | 59 | 57 | 62 | 61 | 62 |
| 30-34 | 82 | 76 | 73 | 66 | 77 | 64 | 62 | 63 | 62 | 58 |
| 35-39 | 81 | 83 | 83 | 77 | 73 | 64 | 63 | 99 | 63 | 63 |
| 40-44 | 81 | 83 | 83 | 81 | 74 | 60 | 62 | 63 | 56 | 59 |
| 45-49 | 79 | 80 | 81 | 76 | 71 | 58 | 69 | 67 | 8 | 59 |
| 50-54 | 78 | 76 | 73 | 71 | 66 | 61 | 09 | 64 | 56 | 50 |
| 55-59 | 77 | 68 | 68 | 65 | 57 | 68 | 57 | 56 | 8 | 51 |
| 60-64 | 20 | 64 | 99 | 59 | 53 | 54 | 55 | 56 | 55 | 53 |
| 65-74 | 20 | 61 | 8 | 57 | 48 | 62 | 59 | 56 | 43 | 47 |
| 75 and Over | 69 | 65 | 59 | 54 | 47 | * | * | * | * | ¥ |
| * Experience ineufficient to del | termine stab | le ration | | | | | | | | |

rperience menucicat to actorning stable ratio

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the axis of time as represented by successive censuses and along the axis of age of household head. Overall, the relative frequency of families with children is lower among Negro households than among white units. It is believed that this may be due to a greater clustering of children among Negro households than is to be found in white families.

The relative frequency of households with related persons present is given in Table 18 for both races. Among white households, there has been a positive association of this frequency with the age of the household head. Thus we find that the percentage of white households which include relatives rises from a range of 7-13 per cent for families headed by an individual less than 25 years of age to a range of 25-39 per cent for households headed by persons 55 years and older. Changes in this characteristic over the interval 1922-1947 are not particularly remarkable although it appears that a small and statistically significant decline has taken place in the age groups 55 years and over. The non-white households show no decline in respect to the proportions which include related persons, over the quarter century 1922-1947. At all age levels of the household head, the Negro family is characterized by a higher proportion with relatives than is found in the white community.

Table 18. Per cent of households with relatives present according to age of head of household, Ward 7, Eastern Health District of Baltimore, in successive census years.

| AGE OF | | | WHIT | E | | | N | on-Whi | TE | |
|----------------|------|------|------|------|------|------|------|--------|------|------|
| HOUSEHOLD HEAD | 1922 | 1933 | 1936 | 1939 | 1947 | 1922 | 1933 | 1936 | 1939 | 1947 |
| Total | 24 | 25 | 23 | 21 | 24 | 27 | 30 | 29 | 28 | 32 |
| Under 25 | 13 | 12 | 10 | 7 | 11 | 27 | 31 | 22 | 20 | 14 |
| 25-34 | 14 | 18 | 15 | 12 | 14 | 24 | 24 | 24 | 21 | 22 |
| 35-44 | 21 | 21 | 18 | 18 | 22 | 24 | 27 | 25 | 27 | 31 |
| 45-54 | 27 | 28 | 25 | 25 | 29 | 27 | 35 | 33 | 31 | 40 |
| 55-64 | 33 | 32 | 31 | 28 | 30 | 41 | 45 | 42 | 39 | 39 |
| 65-74 | 36 | 34 | 31 | 32 | 29 | 46 | 50 | 46 | 32 | 36 |
| 75 and Over | 39 | 28 | 36 | 35 | 25 | * | + | * | * | * |

* Experience insufficient to determine stable ratios.

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| Table |

| | | | Wніте, | , 1947 | | | | | Non-Whi | те, 1947 | | |
|-------------------------------------|-------------------------|------------------------------|-------------------------|-------------------------------|-------------------------------------------------|----------------|-------------------------|----------------|-------------------------|-------------------------------|-------------------------------------------------|----------------|
| AGE OF Household Head | Total | Parent | Grand- child Only | Spouse of Child Only | Spouse of Child and Grand- child | Other | Total | Parent | Grand- child Only | Spouse of Child Only | Spouse of Child and Grand- child | Other |
| Total | 100 | 27 | 6 | 15 | 19 | 30 | 100 | 15 | 25 | 8 | 13 | 39 |
| Under 25 25–34 35–44 | 0000 | 54 54 54 | 1-1-0-1 | | 011 | 30 30 30 | 100 100 | 46 30 21 | 1 4 0 | 011 | 1 1 00 1 | 54 65 45 |
| 4554 5564 65 and Over | 000 | 24 2 | 14 18 | 20 20 20 | 22 32 25 | 28 35 | 1000 1000 | 044 | 40 88 33 | 11 10 11 | 15 24 30 | 31 22 18 |
| | | | W нгте, | , 1933 | | | | | Non-Whi | тв, 1933 | | |
| Total | 100 | 27 | 10 | 6 | 16 | 38 | 100 | 23 | 21 | 4 | œ | 44 |
| Under 25 | 100 | 41 | I | I | ١ | 59 | 100 | 48 | 1 | ı | I | 52 |
| 25-34 35-44 | 0 <u>1</u> 0 | 51 47 | 10 | ന | 1 0 | 49 42 | 01 01 00 01 00 01 | 33 | 4 | - 12 | 9 | 63 42 |
| 45-54 | 100 | 26 | 6 | 13 | 14 | 38 | 100 | 6 | 34 | 4 | 16 | 35 |
| 55-64 | 100 | 2 | 18 | 14 | 27 | 34 | 100 | 7 | 46 | 11 | 19 | 17 |
| 65 and Over | 100 | I | 27 | 11 | 38 | 24 | 100 | 1 | 62 | œ | œ | 22 |
| 1 Families in t nieces and nephe | his catego ws, aunts | ry include re and uncles, | elatives of that | ne following | types the m | tore frequ | uent of whi | ich are liste | d first; siblir | ngs of the he | ad or his sp | ouse, |

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It has been indicated that more than one-fifth of white and non-white households have relatives present in the household. It is of interest therefore to inquire into the nature of such persons. Unfortunately, the data do not readily permit of a complete description of this matter, but the occurrence of certain of the more frequent types is given in Table 19. (Exact relationships were not coded in 1922.) Ward 7 data is employed for 1933 and 1947 to give a general idea of changes with time.

The distributions shown for white households indicate that there is little change in the relative proportion with which given types of relatives are present in the family when the 1933 data is compared with the recent 1947 material. Parents of the head are present in 27 per cent of households which have relatives, a proportion which declines markedly with the age of the head.

In 1933, the spouse of a child of the household head was present in 25 per cent of white households with relatives present. This proportion rose to 34 per cent in 1947, an increase which is believed to be only of a temporary nature and due to the severe housing shortage which prevailed for several years following the end of World War II.

The outstanding difference between the Negro distribution of relatives and the corresponding white data, lies in the greater relative frequency of Negro children living alone with their

| | | sus years. | | | |
|----------------------------------------------------------------------|---------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|---------------------------------------|
| Age of Household Head | 1922 | 1933 | 1936 | 1939 | 1947 |
| Total | 24 | 18 | 18 | 17 | 16 |
| Under 25 25–34 35–44 45–54 55–64 65–74 75 and Over | 27 27 23 24 14 15 * | 17 19 20 15 17 9 * | 9 18 20 17 21 15 * | 7 14 16 21 20 13 * | 10 13 15 16 19 24 * |

Table 20. Per cent of non-white households with non-related members¹ present according to age of head of household, Ward 7, Eastern Health District of Baltimore, in successive census years.

* Experience insufficient to determine stable ratios. 1 Includes households with both related and non-related persons present.

grandparents than is observed in white households. Also, the proportion of subfamily units among Negro households with relatives is smaller than the comparable figure for the white families, cited above.⁶

With respect to the presence of non-related members in the household, we have not shown figures for white units. In Table 20 relevant statistics will be found for colored units. Among white households, a constant proportion of five per cent have included non-related persons and the proportion has shown no variation either among age groups of household heads nor with the course of calendar time through the years covered by the censuses.

A somewhat different picture characterizes the Negro household. Although there is evidence of continued decline, nonrelated persons have constituted from 24 to 16 per cent of the total Negro households over the interval 1922–1947. Statistically significant differences are not discerned between the several age groups. Of principal significance is a decline in this proportion over the study period particularly in the age groups below 45 years.

Acknowledgment

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⁶ Subfamily consists of a child of the head, the child's spouse with or without children (grandchildren of the head).