THE MOTIVATION AND CHARACTERISTICS OF INTERNAL MIGRANTS

A SOCIO-MEDICAL STUDY OF YOUNG MIGRANTS IN SCOTLAND

RAYMOND ILLSLEY, ANGELA FINLAYSON, AND
BARBARA THOMPSON

PART II

OTHER CHARACTERISTICS OF MIGRANTS

A. SOCIAL AND PSYCHOLOGICAL CHARACTERISTICS

PART I has emphasized the diversity of migrant groups, their varied motivation and the relevance of the social context in which migration occurs. Analysis revealed strong occupational selection, the professional and highly skilled groups being most likely to move, although opposite trends were detectable, e.g. the movement of domestic servants into the city. Occupational selection implies selectivity in other respects, for occupation is related to many aspects of social background and behavior. Part II deals with some of the other characteristics of migrants.

Part I of this series, "The Motivation and Characteristics of Internal Migrants: A Socio-Medical Study of Young Migrants in Scotland" was published in the Milbank Memorial Fund *Quarterly*, April, 1963, XLI (2): 115–144.

Educational Level

Most Scottish women leave school at the minimum legal age (14 up to 1947; 15 thereafter). Among our population of married childbearing women 2.5 per cent went to a university or training college of near-university level; a further 16.3 per cent stayed at school for one or more years beyond the minimum age; the remainder, 81.2 per cent, left as soon as was legally permitted. In-migrants contained a much higher proportion of late school-leavers and university-trained women (Table 1).

The higher educational level of in-migrants cannot be taken to imply that the areas from which they come have superior educational facilities. If this were so they would also have a substantially higher educational level than children born elsewhere who migrated to Aberdeen during childhood and were already in the city at school-leaving age; in fact, however, the educational level which these children subsequently achieved within the city was much nearer that of persons brought up outside the city, especially those brought up in Northern Scotland, than that of the Aberdeen born population. This suggests that they and their parents, like the adult migrants, were socially distinct from the native Aberdeen popu-

Table 1. Educational level of married primiparas delivered in hospitals* in Aberdeen classified according to place of origin.

	Educational Level (Per Cent Distribution)			
Place of Origin	*Minimum*	*Higher*	*University*	*Total*
Aberdeen	86.6	12.6	0.8	100.0 (5167)
Elsewhere, but in Aberdeen for Latter Part of Childhood	71.8	23.2	5.0	100.0 (319)
North Scotland	68.0	26.6	5.4	100.0 (868)
Other	60.4	28.6	11.0	100.0 (625)
TOTAL	81.2	16.3	2.5	100.0 (6979)*

* See footnote, Part I, Milbank Memorial Fund *Quarterly*, April, 1963, XLI, 2: 119.

lation, coming from groups with different social and occupational aspirations. In general, the distribution of school-leaving ages among the native population and the various migrant groups parallels the social class and occupational distribution noted earlier, the highest educational level being reached in the distant-migrant category with its high proportion of professional and white collar workers.

The class variations in school-leaving age (Table 2) are extremely wide in both migrant and native populations, and part at least of the difference between natives and migrants derives from their differing class composition. When the migration categories are standardized for social class, the differences in educational level are reduced but by no means eliminated. Indeed, the differences between migrants and natives exist within each social class. We have shown above that, within a given class, migrants differ occupationally from the native population; it seems probable that part of the educational difference between migrants and non-migrants within a class reflects this occupational difference.

The native Aberdonians appearing in our data are, of course, a residual population, containing only those still remaining in the city at the point of parenthood; the implication is that

Table 2. Per cent distribution by educational level for married primiparas delivered in hospitals classified according to place of origin and by husband's occupational class.

Place of Origin	*Educational Level*	*Husband's Occupational Class* I	II	III Non-manual	III Manual	IV & V	*All Classes*	*Standardized to Class Distribution of Native Aberdeen Population*
Aberdeen	Minimum	30	61	78	89	96	87	87
	Higher	50	35	21	11	4	13	13
	University	20	4	1	—	—	1	1
Elsewhere, but in Aberdeen for Latter part of Childhood	Minimum	19	37	73	80	87	72	77
	Higher	56	44	25	18	13	23	20
	University	25	19	2	2	—	5	3
North of Scotland	Minimum	12	40	58	74	90	68	72
	Higher	55	37	38	24	9	27	24
	University	33	23	3	2	1	5	4
Other	Minimum	16	36	55	78	94	60	75
	Higher	42	43	40	19	6	29	21
	University	41	21	5	3	—	11	4

those who have left, like those who took their place, were superior to the *sedentes* in their educational level. This cannot be confirmed from our data, but it is suggestive of the proposition that out-migrants within the 5 years following first delivery contained a very high proportion of late school-leavers (27 per cent higher education and 19 per cent university).

Class of Origin and Inter-class Movement

We have shown that in-imgrant women tend to marry husbands from the higher classes. This could occur in various ways. They might, for example, be the children of upper class fathers, in which case their husband's social class represents no 'improvement' on their class of origin; nor would migration imply upward social mobility. Alternatively they might have risen, by dint of parental encouragement, superior education or greater ability, to occupational levels higher than their fathers' and equivalent to those of their husbands; in these cases migration may have been one of the necessary steps to upward mobility prior to marriage. Or again they may have married husbands whose occupations ranked higher than their own; in this case migration away from the parental environment may have led the woman into the different and 'higher' social milieu into which she married. Some of these alternative possibilities are discussed below.

Table 3 shows that in-migrants came from higher classes of origin than the native population. The most direct comparison lies between the distant-migrants and the native population, since both were largely urban in origin and contained few farmers and farm-workers, whom it is difficult to rank in an

Table 3. Class of origin of female in-migrants and natives

	Father's Occupational Class (Per Cent Distribution)						
Place of Origin	*I & II*	*III Non-manual*	*III Manual*	*IV & V*	*Farmers*	*Farm Workers*	*All Classes*
Aberdeen	9	10	42	37	1	2	100 (5758)
North Scotland	12	5	25	19	17	22	100 (897)
Other	26	13	36	17	4	3	100 (690)

urban class hierarchy. The distant-migrants contained many more daughters of professional and other white collar workers than the Aberdeen population (38 per cent compared with 18 per cent) and a correspondingly small proportion of semi-skilled or unskilled workers. They were, moreover, atypical of their area of origin, e.g. non-manual workers amounted to only 28 per cent of men aged 35–54 at the 1931 Census of England and Wales and only 31 per cent even in 1951 (6, 7). The rural in-migrants were equally atypical of the population of Northern Scotland.

The higher class of origin of in-migrants was reinforced by their own occupational mobility prior to marriage. (Table 4). Within each class of origin more in-migrants than natives became professional or highly qualified technical workers (equivalent to the Registrar General's Social Classes I and II); the proportion of clerical workers was roughly the same in both native and in-migrant groups, but the in-migrants contained relatively fewer manual workers, skilled or otherwise. The differences between short distance- and long distance-migrants within each class of origin (not shown in Table 4) were negligible.

Table 4. Social mobility. Per cent distribution by pre-marital occupation for female in-migrants and natives classified by father's occupational class.

Wife's Pre-marital Occupation	*Father's Occupational Class*						
	I & II	*III Non-manual*	*III Manual*	*IV & V*	*Farmers*	*Farm Workers*	*All Classes*
Native							
Professional and Technical	21	6	2	1	24	4	4
Clerical	43	48	33	17	43	31	29
Skilled	29	35	45	45	27	45	43
Semi-skilled and Unskilled	7	11	20	37	6	20	24
All Occupations	100	100	100	100	100	100	100
	(517)	(573)	(2433)	(2107)	(33)	(95)	(5758)
In-migrants							
Professional and Technical	43	21	12	7	22	9	19
Clerical	35	40	29	20	32	16	28
Skilled	16	26	42	42	30	33	33
Semi-skilled and Unskilled	6	13	17	31	16	42	20
All Occupations	100	100	100	100	100	100	100
	(286)	(141)	(475)	(283)	(178)	(224)	(1587)

Reference to the sample study, although necessarily inconclusive on such small numbers, suggests strongly that the superior class origin and greater upward mobility of the in-migrants, whilst existent in all groups, were most pronounced among those migrating before or after marriage, and least among those migrating on marriage.

The upward social mobility of migrants compared to non-migrants was further reinforced by the distribution of occupations among the men they married. (Table 5). Within each pre-marital occupational group a higher proportion of migrants than non-migrants married husbands in Classes I and II whilst a lower proportion married semi-skilled and unskilled workers. Upward mobility resulting from marriage was most marked among long-distance migrants.

The higher class structure of married women migrants results therefore from four interrelated stages or processes:—(1) higher class of origin (2) higher educational level (3) greater upward mobility in their own occupational achievement (4) greater upward mobility at marriage.

Upbringing in the professional and non-manual groups, and the cultural values of a high school or university are both

Table 5. Social mobility. Per cent distribution by husband's occupational class for female in-migrants and natives classified by their pre-marital occupation.

	Wife's pre-marital Occupation				
Husband's Occupational Class	*Professional and Technical*	*Clerical*	*Skilled*	*Semi-skilled and Unskilled*	*All Occupations*
Native					
I & II	60	18	5	1	10
III Non-manual	18	25	14	7	15
III Manual	20	48	56	51	51
IV & V	2	9	25	41	24
All Classes	100	100	100	100	100
	(233)	(1684)	(2446)	(1395)	(5758)
In-migrant					
I & II	56	30	12	4	24
III Non-manual	18	23	19	9	18
III Manual	25	41	52	52	43
IV & V	1	6	17	35	15
All Classes	100	100	100	100	100
	(293)	(453)	(527)	(325)	(1587)

conducive to a high level of occupational aspiration and to a tolerant attitude to geographical mobility. Migration is often the necessary concomitant of university education and of advancement in a profession or career. These, in turn, lead to a social milieu which facilitates marriage into the professional and non-manual groups. Migration, viewed in this way, becomes one element in a way of life and a process of social advancement.

The greater upward mobility of in-migrants and their relatively high social class composition brings out an important feature of the migration process, but it should not obscure the fact that, in numerical terms, manual workers and their wives form the bulk of the migrant population. This does not mean that these workers have not benefitted from migration; their social and occupational condition may represent an improvement on the alternatives open to them in their native environment—better housing, wider job opportunities, more congenial working conditions, readier access to social amenities. Such advantages, however, cannot be precisely assessed in a factual study of this kind, documented only on the conditions into which the migrants have come and lacking detail on their condition before migration.

Abnormal Upbringing

Persons deeply enmeshed in the family and social networks of their community receive satisfactions and feel obligations which inhibit the desire to move or impede it when felt. One might expect, therefore, that out-migrants would have been less integrated in their community of origin than those who stay, or that they would have fewer family ties to bind them. In the present survey information was available, for a 3-year series of patients, as to whether they were brought up in a 'broken home,' i.e. born illegitimate, parent(s) died or were divorced or separated before the child reached the age of 14. The vast majority of such children are socially indistinguishable as adults from children reared in intact homes, and the

psychological effects of a broken home have probably been exaggerated. (13) By reason of the break, however, a relatively high proportion of such persons may have weak kinship ties, and hence a weaker attachment to their native environment. The data presented in Table 6, (a) tend to confirm this hypothesis, in that the percentage of women from broken homes was highest among the most distant migrants (26.3 per cent) and lowest (16.4 per cent) among the native born population, the middle and short distance-migrants having intermediate rates.

Since broken homes are more common among the lower social classes, whilst migrants are drawn disproportionately from the upper social groups, these rates rather understate the true differential between native and in-migrant populations. If the rate for in-migrants is standardized to the social class distribution of the native population it rises to 25.0 per cent,

Table 6. Abnormal upbringing

(a) *Percentage of women from broken homes*

	Per Cent	*Total Cases*
Aberdeen Native	16.4	2027
Northern Scotland	18.3	351
Southern Scotland	23.7	118
Elsewhere	26.3	114

(b) *Reason for break and method of upbringing:* distribution among migrants compared with that expected ( ) on broken home experience of native population.

	Reason for Break				
Brought up by	*Father Died*	*Mother Died*	*Parents Divorced or Separated*	*Illegitimate Birth*	*All Reasons*
Mother	30 (43)	—	4 (10)	— (4)	34 (57)
Mother and Step-father	16 (13)	—	1 (2)	5 (4)	22 (19)
Father	—	14 (9)	2 (2)	—	16 (11)
Father and Step-mother	—	13 (7)	1 (1)	—	14 (8)
Other Relative	2 (1)	11 (11)	6 (4)	7 (4)	26 (20)
Institutions or Foster Parents	1 (2)	5 (2)	2 (1)	5 (5)	13 (10)
ALL	49 (59)	43 (29)	16 (19)	17 (18)	125 (125)

compared with 16.4 per cent for the native population, the standardized rate of more distant migrants (Southern Scotland and elsewhere) being 28.5 per cent.

Broken homes were classified according to the reason for the break (mother died, father died, parents divorced or separated, illegitimate birth); and by the persons or institutions responsible for their upbringing. Each separate type of broken home was more heavily represented among in-migrants than among the native born, but the over-all high rate was due largely to the disproportionate number of in-migrants whose mother had died (Table 6, (b)). On the other hand the in-migration rate was low for women whose homes had been broken in other ways and who had subsequently been brought up by their mother.

Detailed analysis of a series of broken homes (14) suggests that the mother's death or absence when the children are young has a more disintegrating effect on the home than the death or absence of a father. When the father dies the mother is usually able to care for and maintain her children in the home. When the mother dies, however, children are more frequently sent to live with relatives or are brought up by foster parents or institutions. Many fathers re-marry after an interval, but the children do not always return to their paternal home, and if they do, may resent the presence of a step-mother and leave again in adolescence.

The sample study shows that the incidence of broken homes is exceptionally high (37 per cent) among women who migrated before marriage, compared with 20 per cent among marriage-migrants and 6 per cent among migrants after marriage. This tends to suggest early flight from an unsatisfactory milieu rather than a persistent restlessness among the offspring of broken homes. This suggestion is supported by their low rate of out-migration. Whereas in-migrants from intact homes tended to leave the city again within 5 years of delivery, in-migrants from broken homes were more likely to stay.

A home broken before the child reaches the age of 14 is only one indication, although perhaps the most extreme and

easiest to define, of an unsatisfying home life and of non-involvement in family and social networks. These results, however, suggest that a fuller study of kinship and social relationships before migration might be rewarding.

Intelligence Test Scores

The psychological characteristics of migrants are particularly difficult to study; this is partly because the techniques of measurement or evaluation are time-consuming and of very variable reliability and partly because they are heavily affected by cultural and situational factors and hence are liable to change on or after migration. Measurement after migration cannot, therefore, be taken as an entirely reliable guide to pre-migration characteristics. The unsettling effect of movement away from familiar surroundings might, for example, produce emotional disturbances, measurable in post-migration testing, which were not present before migration. One might expect the effects of migration to be less pronounced on intelligence test scores, particularly among adults, but such effects cannot be wholly discounted.

In the present study, sample patients took two intelligence tests, one verbal (Wechsler-Bellevue) and one non-verbal (Raven's Progressive Matrices) during the 6th month of pregnancy. Both tests produced very similar results. The results of the non-verbal test are summarized in Table 7 which shows

Table 7. Intelligence test scores* of natives and migrants.

Migration Category	*Husband's Occupational Class*				*All Cases*	*Standardized to Class Distribution of Total Population*
	I & II	*III Non-manual*	*III Manual*	*IV & V*		
Native	39.9	33.7	32.8	30.4	32.8	33.0
In-migrant	44.9	41.0	36.8	33.2	37.6	36.8
In city 5 years later	41.6	35.7	33.1	31.0	33.5	33.8
Out-migrant 5 years later	43.6	34.6	37.5	31.2	37.5	36.0
No. of Cases	24	42	141	69	276	276

* Raven's (1938) Progressive Matrices.

that in-migrants in each social class obtained higher scores than Aberdeen natives, whilst women who left the city within 5 years had higher over-all scores than those who remained. These latter differences did not apply in each class, due partly, perhaps, to the small number of cases in some classes. The over-all differences between natives and in-migrants, and between those who stayed and those who left, are emphasized by the differences in social class distribution. When each migration category is standardized to the class distribution of the whole sample the differences, although reduced, persist.

Among in-migrants, those who arrived on marriage had the lowest average score (35.5), which was nevertheless higher than that of the native population. The highest score was obtained by post-marriage migrants (41.3).

In every respect the pattern of intelligence test scorces parallels the social class distribution. Standardization for social class reduces but does not eliminate the differences in intelligence test scores, and the differences which remain are compatible with the effect of further cultural effects on intelligence test score not eliminated by crude methods of standardization. The meaning of migration differentials in intelligence test scores (as of intelligence test scores themselves) remains obscure.

B. PHYSIQUE AND HEALTH

Excellent data exist for many countries on the mortality rates of people according to their place of residence; data on morbidity are scarcer and less reliable, but are still sufficient to demonstrate geographical differences in the incidence of a number of diseases. The mortality and morbidity of migrants, however, is intrinsically more difficult to study and it is still impossible to assess to what extent selective in-migration and out-migration contribute to the inferior or superior health of areas which export migrants as opposed to those which receive them. In Britain, the mortality rates of exporting areas are generally high, but this can be attributed, irrespective of differential migration, to the relative poverty of such areas and the in-

ferior quality of their health and welfare services. The problem is further complicated by the fact that most studies of health and of physique have been undertaken in response to a specific problem at a particular period: whilst their findings may be valid for a particular set of circumstances, their coverage is too narrow to permit general conclusions of wide application.

To reach a satisfactory interpretation of the disease experience of migrants and *sedentes,* certain minimum data are necessary, viz.:

The prevalence or incidence of a disease in both exporting and receiving areas among (a) in-migrants (b) out-migrants (c) *sedentes;*

The age, sex, marital and occupational status of each group;

The sources and destinations of migrants;

The social, economic and geographical context in which the migration occurred.

With such information it would be possible to determine whether migrants differ from *sedentes;* whether net migration results in an increase or decrease of specific diseases in a given locality; how far an association between migration and disease is a by-product of differing age, sex and class composition; whether differences are uniform throughout the whole range of the population or confined to a special group; whether they result from the influx of people from an area with different standards of health; and to what extent demonstrated differences reflect the special relationship of an area to other areas, etc.

Such information, however, unlike data on age, sex or marital status, does not emerge from routine administrative machinery nor from periodic national censuses. The special problems of identifying disease comprehensively in a defined population and tracing its occurrence in migrant groups over a period of time has so far effectively precluded the ideal type of study outlined above. Present knowledge rests largely on inference from partial evidence. The classic example, notable for its ingenious manipulation of unpromising material, is Bradford

Hill's inquiry in 1925 (8) into the effect of migration on mortality rates in Essex. From his own material, Hill reached the conclusion: "Not only is it the stronger element that tends to migrate, the weaker that tends to remain at home, but this stronger element secures a higher economic position in the towns, while the weaker element in the country is subjected to worse housing conditions and a lower diet. The deduction must be that a few of the migrants return home to die (and possibly infect their relatives with the fatal disease) but the greater part of the excess in rural death rates is more probably due to a population weakened by selection succumbing to disease which the general conditions of their life do not assist them to overcome."

The results were, of course, specific to the rural condition of Essex, and its proximity to expanding London in the early part of this century. Essex, however, is now a dormitory area for London, the home of its well-to-do non-manual workers or of young working-class families rehoused outside the city. It is possible that if the study were repeated to-day the results would be different, a point that Hill himself recognized. "It must be observed too that the change in migration may not be only in its volume . . . but also in its type."

Hutchinson, (9) studying tuberculosis deaths in Stockholm around the same time, found that migrants into the city (largely rural-born) had lower rates than the native population of Stockholm. Putting these two pieces of evidence together, it is tempting to conclude that, at least in this type of situation (migration from rural areas to a rapidly expanding metropolis), the migrants may be superior in physical health to the native populations of both exporting and receiving areas.

The few subsequent studies (28, 17) point in the same direction. This is hardly surprising in view of the known association between health and occupation and between occupation and migration. It is indeed difficult to imagine circumstances in which an out-migrant population would be inferior in general physical health to the population from which they

were drawn. They may well, however, be inferior to the population of the receiving area, e.g. the European and Asian migrants to America during the past 100 years; indeed this might be considered as the relationship typical of most mass migratory movements.

In contrast to health, height and other bodily measurements are more easily studied, not merely because anthropometric measurements are more reliable than diagnoses, but because they remain stable over many years and pre-migration measurements are not changed, at least for the adult, by the post-migration environment. Data on the physical stature of migrants and *sedentes* are, by comparison with health, voluminous. Their major deficiency is that the physical anthropologists who collected the material were so preoccupied with racial types that they failed to recognize, and so allow for the variations in physical stature occurring between social groups of a single race. The vital differences in the social and economic background of their subjects, which need to be considered for a satisfactory evaluation of the results, were therefore not recorded. Much, however, may still be gleaned from their enormous labors [for a review of this literature see Kaplan (16)]. The most satisfactory study, methodologically, is that of Shapiro (27) who studied Japanese *sedentes,* their relatives who had migrated to Hawaii, and the Hawaiian born children of Japanese migrants. His results, which showed that the body measurements of out-migrants from Japan were larger than those of *sedentes* but smaller than those of Hawaiian-born Japanese, are typical of general findings in this type of study.

The best British data are undoubtedly those of Martin (20) and the Scottish Council for Research in Education (24). Martin studied the records of medical examinations which took place under the Military Training Act of 1939; certain classes of men were exempt from this act, but the number of exemptions was few and the resulting bias is likely to be small. Martin himself was primarily interested in the differences existing between residents in different regions of Great Britain

and his results show clearly the superior height, weight and chest girth of residents in the more prosperous areas of the country. In general, the regions with tall heavy men are regions of heavy in-migration, those with short and light men are regions of heavy net out-migration. Ranking of the regions according to the height of adult males, therefore, follows the same pattern as that of mortality, of general prosperity and of net migration. The chief exception is that rural residents in most regions were superior in measured characteristics to those of urban districts and county boroughs; rural residents also have lower mortality rates.

Martin's data on migration were less satisfactory for he only asked men whether they were born in the area in which they lived as young men. Their age at migration, and hence the length of time they lived in their area of adult residence, is not known; it is therefore impossible to determine confidently how far their stature reflects the environment of their area of origin or the area of adult residence. Nevertheless certain important conclusions can be drawn from the data:—

(1) Natives of the receiving areas are heavier and taller than natives of exporting areas. The superiority of the receiving areas is not therefore the direct result of the influx of tall migrants.

(2) Migrants into 14 of the 16 regions distinguished were taller, and in all regions were heavier than the natives of those areas.

(3) Migrants to 'tall areas' were taller and heavier than migrants to 'short areas.' Several factors may have been responsible; the bulk of migrants in each region may (in fact, probably do) come from contiguous regions where average height and weight are fairly similar; moreover, the height of the migrant, if he migrated young, would reflect the superior growth conditions of the area into which he moved.

(4) With one exception, migrants into each region, whether receiving or exporting, were taller and heavier than the national average.

(5) In general, the superiority of in-migrants into net receiving regions over natives of those regions was less than the superiority of migrants over natives in the net exporting regions. The migrant to London, for example, was little taller than the Londoner, whereas the migrant to Scotland was much taller than the average Scot. This must to some extent reflect the different class composition of migrant streams; Scotland's in-migrants, for example, must have contained a relatively high proportion of professional workers who went there to take up an assured job, for working class migrants in the depressed 1930's had little incentive to move to an area of shrinking employment.

In general, therefore, young adult migrants in inter-war Britain appeared to be superior in height and weight to the national population and to the population of the region to which they migrated. It can also be inferred indirectly that they were superior to the *sedentes* of their region of origin; migrants living in the Southern, South Western and South Midland regions of England, for example, were taller than natives in all except one region of the country, so that, unless they all came from one region (a very unlikely hypothesis), they must have been taller than the population they left.

The data on Scottish school-children (25) refer to the height and weight of a random sample of 11-year-old children, who were studied in connection with the Scottish Mental Survey. Technical defects in the published material (though not in the raw data) prohibit firm conclusions, but here again migrants in general were taller than *sedentes*. Migrants into and out of cities and urban areas were taller than the static population of such areas. On the other hand migrants into and out of rural areas, though superior to the urban children and comparable with migrants into and out of urban areas, were no taller and slightly lighter than the rural *sedentes*.

The superior height of migrants-out over *sedentes* is also shown by (unpublished) material of the Medical Research Council's Pneumoconiosis Research Unit. (4) The population

of the Rhondda Fach, a Welsh valley notable for catastrophic unemployment and poverty when its single industry, mining, was badly hit by the inter-war depression, was fully surveyed in 1951 and again in 1955. Miners and men previously employed in the mines were measured on both occasions. The results, given in Table 8, show that in all except one 10-year age group the people who left the area between the two surveys, were taller than those who remained. The reasons are undoubtedly complex [see Cochrane (5)] but it should be noted that 1951–55 was a period of relative prosperity and full employment for the Rhondda Fach; these were not so much people fleeing unemployment as men (and families) seeking wider social and occupational opportunities outside their traditional home.

Adult Height and Obstetric Performance of Migrant Women.

During the course of the Aberdeen study described above, it became clear that:

(1) Social class and adult height were significantly and positively correlated, i.e., the higher the class, the taller the woman. (10)
(2) The higher social classes and tall women had significantly lower rates of perinatal death and prematurity (birth weights of 5½ lbs. or less) (11, 12) and
(3) The higher social classes had a high rate of internal migration (see above).

Table 8. Migration out of the Rhondda Fach (Wales) 1951–55 by age and height. (Miners and ex-Miners)

	In Area 1951 and 1955		*In Area 1951; out 1955*		
Age at First Survey	*Number*	*Average Height (Ins.)*	*Number*	*Average Height (Ins.)*	*Per Cent Out-migrant*
15	454	66.7	87	67.0	19.2
25	822	66.8	145	67.3	15.0
35	1016	66.4	86	66.6	8.4
45	1037	65.6	56	66.4	5.2
55	865	65.2	36	65.1	4.0
65	469	65.1	29	65.7	5.8
75	111	64.4	12	64.5	9.8
All Ages	4774	65.9	451	66.6	8.6

The data reported below explore this relationship, with a view to determining whether migrant women are taller and have a better obstetric performance than Aberdeen *sedentes* and to what extent this is a reflection of their different class composition.

Migrants into Aberdeen before the birth of their first child were clearly taller, and had lower prematurity and perinatal death rates than native Aberdeen women (Table 9); the superiority was most marked among the more distant in-migrants. The women who left Aberdeen within 5 years of the birth of their first child were also superior in these three respects to women who remained in the city.

The out-migrants are not fully comparable with in-migrants, for their migration occurred at a later stage, viz. in the five years following the birth of their first child. Moreover they include both Aberdeen natives and original in-migrants who, after temporary settlement in the city, were making a further move. The disparity between out-migrants and those who stayed is slightly greater than between in-migrants and natives. Reference to the sample population suggests that the out-migrants who were born in the city and those who were originally in-migrants were both superior to the *sedentes*.

How far is the superiority of in-migrants the result of their

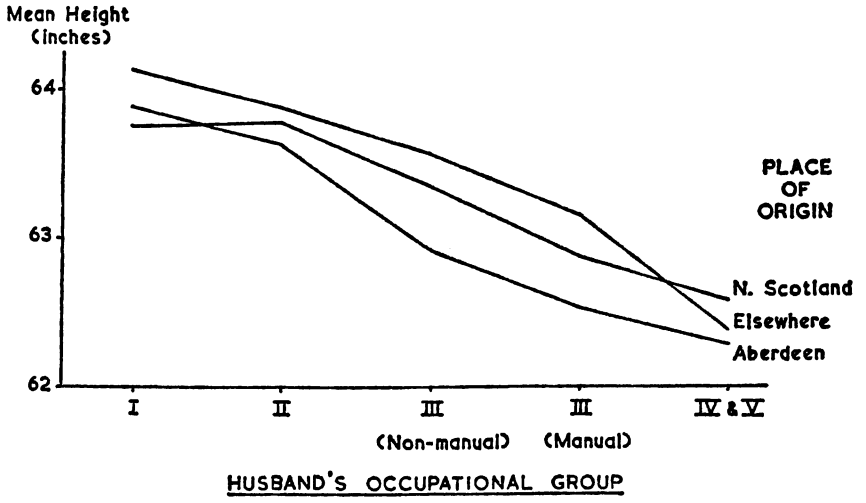
Table 9. Obstetric and physical characteristics of migrants.

	Period Before Birth of First Child			*Five Years Following Birth of First Child*	
Characteristic	*Aberdeen Native*	*In-migrants*		*Out-migrants (All Destinations)*	*Sedentes*
		North Scotland	*Elsewhere*		
Per Cent					
5′4″ and Over	28.2	33.6	39.2	35.5	26.2
5′1″–5′3″	48.6	49.4	46.1	48.8	50.2
Less than 5′1″	23.2	17.0	14.7	15.7	23.6
Birth Weight					
5½ Lbs. or Less	7.0	6.4	5.2	5.0	8.5
Perinatal Deaths					
(Per 1000 Births)	31	28	20	13	31
No. of Cases	5,900	952	784	299	1,180

higher class composition? Figure 1 shows that with minor exceptions the differences in mean height between natives, short-distance and long-distance in-migrants persisted in all classes; the differences reached the 5 per cent level of significance only among non-manual and manual skilled workers. The regression of height on occupational group was broadly similar in each of the three migration categories; there was a fall of 0.3995 inches per unit fall in occupational class. The regression analysis, however, confirmed that, class for class, each of the in-migrant groups was significantly taller than the Aberdeen group, although the difference between the two in-migrant groups was not significant. We conclude therefore that in-migrants are taller than the Aberdeen native population, and that this difference is not due to their varying class composition.

Reference to the smaller sample shows that the mean height reflected faithfullly both the distance and the motivation of the move. For example, the tallest in-migrants (64.5 in.) were

Fig. 1. Mean height of female in-migrants and Aberdeen natives classified by husband's occupation.



those who came to Aberdeen before marriage to take a professional training; the next tallest were long-distance migrants, whether on or after marriage; the shortest were the in-migrants from the north of Scotland who came to take residential (personal service) jobs in the city.

When allowance has been made for differences in socio-economic composition it seems likely that the residual differences in height between migration categories reflect:

(1) The better growth of women in the upper social groups and women brought up either in country areas or in the more prosperous regions south of Aberdeen, particularly England.

(2) Aberdeen's geographical, social and industrial setting as the only large industrial town in Northern Scotland, the administrative and educational center of a large rural area, and the most northerly city on the south-bound migration route. It is this which determines that the great majority of its in-migrants will fall into two groups: on the one hand, those coming from northern rural areas, and on the other hand, those moving to the city from more southerly areas for reasons of occupation or training, the latter group being employed mainly in non-manual work.

The strong association between social class and height and between height and rural-urban origin, suggests that the height differentials in any area will be heavily influenced both by its geographical context, especially its prosperity relative to the areas from which it draws its migrants, and the kind of occupational attraction it offers.

Birth weight varies with both social class and maternal height; for example the rate of prematurity (birth weight of $5\frac{1}{2}$ lbs. or less) is lowest (1.3 per cent) among tall women from Social Class I and highest (12.3 per cent) among short women in Social Class V. Because in-migrants tend to be both tall and upper class, we would therefore expect them to bear heavier babies. Analysis of mean birth weights shows that the rural in-migrants had the same average birth weight as the

native population. The more distant migrants bore heavier babies, but after standardization for social class the differences were negligible. The perinatal death rate (stillbirths plus first week deaths) showed a similar pattern.

The general conclusion must be that in-migrants have fewer premature babies and that more of their babies survive. Their superiority in these respects, however, is due to the heavy weighting of upper social class women, whose prematurity and perinatal death rates are low everywhere, and of tall women, whose height denotes good growth conditions in healthier and more prosperous areas. The migration analysis thus confirms earlier work (2, 15, 30) in suggesting that birth weight and perinatal death are heavily influenced by the nutritional and environmental conditions of childhood and adolescence which determine the physical health and efficiency of the adult woman.

Discussion

The voluminous literature on migration differentials makes depressing reading for those who seek generalizations about the characteristics of migrants. Some facts and trends are clearly established; these relate mainly to the kind of characteristics which are readily available in census reports, particularly age, sex and marital status, and to a lesser extent educational level and occupation. (29) Less is known about such important features as physical and mental health, intelligence and personality, or about the social, family or personal forces which unsettle people from their native environment or the aspirations which lead them to a new way of life. This conclusion is as true to-day as when it was advanced by Thomas in 1938.

On the other hand, there are encouraging signs of a realization that 'migrants' are not a simple category about whom generalizations could be made if only sufficient data were available. This position is most categorically stated by Bogue (3) who, after concluding that migration is highly selective of younger, more flexible and less burdened members of the com-

munity, and hence of single, widowed or divorced persons, concludes that "further universal differentials do not exist, and should not be expected to exist. Instead, the study of migration differentials should be approached from a more theoretical and less mechanistic point of view, in which the type of selectivity that exists within any particular migration stream is looked upon as being dependent upon four sets of factors: (1) The socio-economic situation at the place of origin. (2) The population composition at the place of origin. (3) The socio-economic situation at the place of destination. (4) The population composition at the place of destination."

Provided that the terms "socio-economic situation" and "population composition" are interpreted broadly to include social and kinship relations, this is essentially our own standpoint.

The present study suffers from a major defect common to most migration studies—that it is based on inquiries at only one end of a migration stream. We are aware of many other defects of design; that the individuals studied, whilst homogenous in respect of marital and childbearing status, differed in age; that movements occurring before migration to Aberdeen were not fully recorded; that out-migration refers to a different age and family status from that of in-migration; and that some of the evidence on the less tangible characteristics of migrants is based on a woefully small sample. A further defect—that it refers to events in only one city—carries a compensating advantage, for it has been possible to view migratory streams in relation to a specific social and industrial context, thus avoiding the "averaging-out' process which obscures differentials in studies of large and disparate regions.

Migrants do not move for the sake of moving. Their action is influenced by a complex set of dissatisfactions and aspirations, situations and opportunities which are reflected in their histories and their characteristics. Whilst they can be classified into relatively homogeneous sub-groups, which may differ clearly in composition from natives of the receiving area, sub-

groups themselves are highly diverse. This study has drawn distinctions between many sub-groups, some of which overlap considerably. They include:

(1) Professional or semi-professional groups moving in pursurance of a career (not a job) in the highly structured hierarchies of modern administration, business and education. These are often 'multiple migrants' for whom migration is part of a way of life proceeding rather from educational and occupational status than from family or personal reasons.

(2) Rural-urban migrants, of lower occupational status, whose decision to migrate is composed of many elements—limited occupational opportunities in the country, attraction of urban amenities, earlier movement of kin, personal and family problems or discontents.

(3) Young in-migrants seeking educational and training facilities not available at smaller centers. Many of these, at a later stage, may join category (1) but others, such as nurses, draughtsmen, teachers (particularly females) may make no further moves after obtaining their limited objective.

(4) In-migrants arriving to take up a specific job, as opposed either to students or to casual migrants who look for a job when they arrive.

(5) In-migrants (a) previously within daily commuting range,
(b) able to maintain weekly contact with kin,
(c) out of regular contact with family.

These correspond, and overlap to some extent, with distance categories. (30)

(6) In-migrants arriving before, on and after, marriage. These three groups exhibit differing degrees of specificity in their motivation; the post-marital migrants are largely occupation and career oriented and the wife's migration is largely a reflection of her husband's work situation, although her own and her husband's social and kinship networks may exert strong

restraining influences; pre-marital migration has a similar occupational basis, although personal, family and environmental factors may play a larger part; in migration at marriage, whilst the primary motive may be personal, i.e., the desire to take up residence with a spouse, the reasons for choosing the husband's or the wife's home area for their joint home may again be dictated by occupational and family influences; furthermore, behind the marriage of two persons from different places there often lies a history of previous migration which has led to the initial contact between the couple.

(7) Migrants responding to a particular family situation (such as parental death or separation) or to a particular economic or political event, characterized in this study by the female in-migrants married to demobilized servicemen.

(8) Return migrants brought back to their original home either by a change in family or occupational circumstances at home, or by failure to realize the aims of their original move.

These and other categories overlap considerably, for the motives and circumstances of migrants are often manifold. They are, moreover, specific to the social, economic, geographical and temporal context in which they have been studied. Equivalent groupings undoubtedly exist in other areas, but their motives and characteristics will be modified by their different setting. Political persecution, race, color or religious prejudice, economic boom or depression will produce other streams of migrants, with different motives and characteristics. Even apart from such circumstances, it seems reasonable to suppose that migrants into (declining) rural areas will differ from migrants into growing industrial areas.

Specificity in motive and setting is reflected in the characteristics of the migrants. This is evident in Table 10, which summarizes for some of the (overlapping) categories listed above their social class and height distributions. These variables are chosen as illustrative examples not as much for their own sake as because they epitomize many other socio-economic and health differentials with which they are closely associated.

Table 10. Occupational class and maternal height of migration categories.

Migration Category (Females)	*Husband's Occupational Class*			*Wife's Height*			
	Non-manual	*Skilled Manual*	*Semi-skilled and Unskilled*	*64 In. or More*	*61–63 In.*	*60 In. or Less*	*All Cases*
			Per Cent				
Native Aberdeen	26	51	23	27	49	24	100 (5907)
Childhood In-migrants	32	48	20	37	47	16	100 (246)
Before Marriage	30	46	24	39	37	24	100 (46)
On Marriage	40	40	20	35	58	7	100 (40)
After Marriage	88	12	—	41	47	12	100 (17)
In-migrants for Education or Training	54	38	8	54	38	8	100 (13)
Job	13	52	35	35	35	30	100 (23)
Wife only In-migrant	28	43	29	31	51	18	100 (61)
Both Spouses In-migrant	64	33	3	50	38	12	100 (42)
Short distance	33	51	16	34	49	17	100 (949)
Medium distance	58	30	12	41	46	13	100 (415)
Long distance	51	36	13	38	46	16	100 (369)
In-migrants who Left	53	43	4	47	43	10	100 (30)
In-migrants who Stayed	40	36	24	36	47	17	100 (73)
Natives who Left	32	49	19	27	63	10	100 (41)

Differences in education, average I.Q. and birth weight, for example, show the same general pattern of variation from category to category. Some categories contain few individuals and their class and height distributions can only be regarded as suggestive of the true differentials.

Nevertheless it is clear that social class composition differs widely between the various sub-categories, and that the direction of the differences relates meaningfully to the circumstances of the move described on the preceding pages. The equally clear relationship between stature and migration-type follows, of course, automatically from the social class distribu-

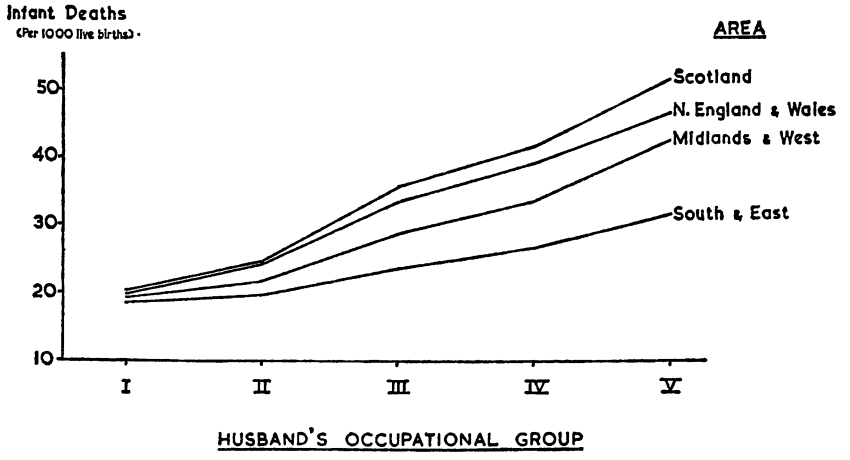
tion because, in this as in other populations, height and class are closely associated. Since, however, adult stature reflects the nutritional and other environmental conditions of childhood and adolescence, and is closely associated with adult health, the greater average height of migrants implies better health—or more correctly, freedom from the diseases commonly associated with poverty.

In this community the average height of all in-migration and out-migration categories is greater than that of the native population. In other communities, and particularly in prosperous communities of high net in-migration with a greater average height, the relative rankings of migration categories might differ markedly—especially for in-migrants, a proportion of whom would originate in less prosperous areas. This is suggested by the results of Martin (21) quoted above, which show that the difference between in-migrants and natives is least in the net receiving areas. The direction and the strength of differentials is therefore likely to differ according to socio-economic conditions at both origin and destination.

The need for specificity applies not only to the context, but to the differentials being studied. Two characteristics closely associated over the whole population will not necessarily show migration differentials in the same direction. Intelligence and stature, for example, are known to be significantly correlated (1, 23, 26) but whilst rural populations tend to be taller they score lower than urban populations on intelligence tests (most of which have a high cultural component which favors urban experience). Rural in-migrants to the city might well be taller and healthier than the city population, but have a lower I.Q. This is strongly suggested by the results of the Scottish Mental Survey. Similar considerations apply to diseases of differing etiology—migrants might, for example, be expected to have high rates of breast cancer (an upper social class, low parity disease) and low rates of uterine cervical cancer (lower social class, high parity), when compared with their population of origin.

The migratory habits of the upper social classes, particularly professional men, and the relative stability of the semi-skilled and unskilled workers have one important implication for the interpretation of social class gradients in the morbidity and mortality of different regions of the country. Mortality rates, especially for diseases associated with poverty, reflect fairly clearly the relative prosperity of regions; in Britain, for example, as is shown in Fig. 2, rates of infant mortality increase regularly from South to North (the only major exception being that of Wales, which though latitudinally similar to the English Midlands, has rates equivalent to Britain's most northerly regions—a ranking which accurately portrays its history of industrial decline, unemployment and poverty). These regional differences are at their greatest if we consider the mortality experience of Social Class V. The infant mortality rate for Social Class V in Northern England, for example, is 60 per cent higher than that for the same class in Southern England; the difference in the mortality rate for Social Class I between these two areas is negligible. Stillbirth rates and adult mortality show a similar pattern. Many factors are responsible. It is

Fig. 2. Infant mortality, according to husband's occupation for different geographic regions of Great Britain.



possible that professional people, whatever their area of residence, share a common way of life, with standards of living and health values stemming from their education, their literacy, their easy access to information, etc., whilst unskilled workers are more faithful products of their local environment and culture. On the evidence of this study, however, it seems likely that a large proportion of Social Class I persons residing in a given area, had their origin elsewhere; their mortality rates therefore will reflect a mixed environmental experience which may not differ greatly from that of Social Class I persons resident in other areas. In contrast, the great majority of unskilled workers will continue in their area of birth and unbringing and consequently their mortality rates will reflect a single environmental exerience. On this hypothesis, regional variations in the steepness of class mortality gradients noted by previous workers (22) may be, in part at least, the result of differential migration.

Almost all migration studies underline the youth of migrants. If most migrants are young, what then are the motives and characteristics of those who migrate at later ages? Whilst this study, by its very nature, provides no information on the middle aged and elderly, some hypotheses are suggested by the differences between migrants arriving in the city at different ages and career stages and between those pre-parenthood migrants and those who left the city within 5 years of the birth of their first baby. On the evidence of this study, selectivity seems to increase with age and increasing family responsibility, the most varied group being single persons, the most highly selected being those moving after the beginning of parenthood. This is perhaps only another way of saying that the lower class migrant achieves his limited objective earlier and with fewer moves than the upper class migrant whose geographical movement keeps step with periodic changes in a long drawn-out career.

This implies a further type of selectivity, namely that, with

increasing age, migrant groups contain an increasing proportion of persons who move more than once. Of the native Aberdonians who had their first baby in the city only 9 per cent left within the next 5 years, compared with 34 per cent of original in-migrants. In other words, whilst in-migrants constituted only 22 per cent of the sample population, they amounted to almost one half of later out-migrants. The volume and character of out-migration is thus partly dependent on the volume and character of earlier in-migration.

Whether in-migrants remain or make a further move depends heavily on the circumstances surrounding the original move. Rural in-migrants to the city are likely to remain, career migrants are more likely to move out. Where one spouse is locally based the movement into the city is more likely to be stable than where neither spouse has kinship affiliations within the city. The location of the joint home on marriage is also affected by kinship, as well as by occupational considerations and this, too, will affect future decisions to move.

The tendency of migrants to follow relatives has already been well-established. There are few Aberdeen families who do not have relatives in Canada; for many years the local newspaper has reported visits home by emigrants to Canada, sometimes after 30 to 40 years' absence, and now local clubs organize trips to Canada so that Aberdonians can visit relatives there. Kinship ties, however, are equally important in restraining migration. Where kinship ties are weak, as in broken homes, the rate of migration rises, where they are strong, movement is less likely and may be an important factor in causing migrants to return. It is difficult to estimate the precise influence of kinship in promoting or impeding migration. It is rarely perceived as a factor by migrants themselves, who in the vast majority of surveys tend to advance occupational or economic reasons for their move. The present study suggests, however, that the strength of attachment to the family is an underlying motive of considerable significance which might well be more explicitly studied in future research.

Migration is not only affected by, but also affects family and social relationships. When migration amounts to no more than a single move and is followed by stable residence in one place, the couple begins to build up a new network of social relationships—or, if one spouse is locally based, the migrant partner is integrated into an existing network. Sometimes other relatives follow the original migrant and the family builds itself up again in the new environment. (19) For one group of migrants, however, those whose career only advances through repeated movement, settlement in a permanent home may not occur until middle age. During their early married life and the growth of their family, they live temporary lives, not staying long enough in one place to build up a strong social circle or involve themselves in community affairs. During this period the wife, in particular, tied to home by domestic responsibilities, may feel socially isolated and in the crises of pregnancy and parenthood she lacks the advantages of family support. These groups may have readier access than working class families to other means of communication, e.g., telephone, correspondence, joint family holidays, but contact is inevitably less frequent and intimate. In contrast, at the time of their first pregnancy, 89 per cent of Aberdeen-born women had mothers living in the city—indeed, 34 per cent were living in their mother's home. After confinement, 54 per cent received substantial help from their mothers in looking after the home and the baby. Five years later, 22 per cent visited or were visited by, their mothers at least 5 times a week and a further 40 per cent at least once a week. These and other familial aspects of migration will be discussed more fully in a later paper.

The present authors, like many before them began their study in the search for valid generalizations about migrants. Some tendencies applicable to a wide range of our industrial civilization have emerged—the steady undercurrent of occupational and class migration, the strong influence of kinship and of family circumstances, the selectivity of repeated migration, as well as physical and health differences between migrants

and those who remain in their native area. Equally important, however, are the variations in volume, motive and characteristics imposed by the geographical, industrial and temporal context in which migration occurs.

Acknowledgment

We wish to express our sincere thanks to the Almoners and Records Staff of Aberdeen Maternity Hospital, to the Departments of Health and Education of Aberdeen Town Council and to the Registrar of Births, Marriages and Deaths for making available the data on which this paper is based; we would also like to acknowledge our debt to Dr. Eileen Scott in respect of the section on intelligence test scores and to Dr. Dorothy S. Thomas, Dr. A. Cochrane and our colleagues in the Obstetric Medicine Research Unit for advice and criticism.

References

1. Anastasi, A.: Differential Psychology. New York, Macmillian, 1958.

2. Baird, D.: The Evolution of Modern Obstetrics, *Lancet,* ii, September 10 and 17, 1960.

3. Bogue, D.: "Proceedings of the International Population Union, New York, 1961." [Mimeographed.]

4. Cochrane, A. L.: [Unpublished work available at Epidemiological Research Unit, Cardiff, Wales.]

5. Cochrane, A. L. and Higgins, I. T. T.: Pulmonary Ventilatory Functions of Coalminers in Various Areas in Relation to the X-ray Category of Pneumoconiosis, *British Journal of Preventive and Social Medicine,* January, 1961, 15 (1).

6. General Register Office: Census 1931, England and Wales, Occupational Tables. London, Her Majesty's Stationery Office, 1950.

7. General Register Office: Census 1951, England and Wales, Occupational Tables. London, Her Majesty's Stationery Office, 1958.

8. Hill, A. B.: Internal Migration and Its Effects Upon the Death Rates, With Special Reference to the County of Essex. London, Her Majesty's Stationery Office, [M.R.C. Special Report, Series No. 95], 1925.

9. Hutchison, E. P.: Internal Migration and Tuberculosis Mortality in Sweden, *American Sociological Review,* April, 1936, 1: 273–285.

10. Illsley, R.: Environment and Childbearing. Proceedings of the Royal Society of Medicine, 1953, Vol. 46: 53–59.

11. ————: *op. cit.*

12. ————————: "Social Background to First Pregnancy." [Ph.D. Thesis, University of Aberdeen, 1956.]

13. Illsley, R. and Thompson, B.: Women from Broken Homes, *Sociological Review,* [Keele, University College of North Staffordshire], March, 1961, 9(1).

14. ————————: *op. cit.*

15. ————————: Social Class Selection and Class Differences in Relation to Stillbirths and Infant Deaths, *British Medical Journal,* 1955, ii: 1520.

16. For a review of this literature *see* Kaplan, B. A.: Environment and Human Plasticity, *American Anthropologist,* 1954, 56:780

17. Lee, E. S.: MIGRATION DIFFERENTIALS: PRELIMINARY REVISION OF RESEARCH MEMORANDUM. [Prepared for Committee on Migration Differentials, Social Science Research Council. Unpublished, 1953.]

18. ————————: *op. cit.*

19. Litwak, E.: Geographic Mobility and Extended Family Cohesion, *American Sociological Review,* June, 1960, Vol. 25.

20. Martin, W. J.: THE PHYSIQUE OF YOUNG ADULT MALES.[Medical Research Council Memorandum No. 20.] London, Her Majesty's Stationery Office, 1949.

21. ————————: *op. cit.*

22. Morris, J. N. and Heady, J. A.: Mortality in Relation to the Father's Occupation, 1911–1950, *Lancet,* March, 1955, 1:554.

23. Scott, E. M., Illsley, R., and Thomson, A. M.: A Psychological Investigation of Primigravidae, *Journal of Obstetrics and Gynaecology of the British Empire,* 1956, 63(3).

24. Scottish Council for Research in Education: SOCIAL IMPLICATIONS OF THE 1947 SCOTTISH MENTAL SURVEY. London, University Press, 1953.

25. ————————: *op. cit.*

26. ————————: *op. cit.*

27. Shapiro, H. L.: MIGRATION AND ENVIRONMENT. London, Oxford University Press, 1939.

28. *See* Thomas, D. S.: RESEARCH MEMORANDUM ON MIGRATION DIFFERENTIALS. New York, Social Science Research Council Bulletin No. 43, 1938.

29. ————————: *op. cit.*

30. Thompson, W. S. and Bogue, D. S.: Subregional Migration as an Area of Research, *Social Forces,* May, 1949, 27(4).

31. Thomson, A. M.: Diet in Pregnancy, *British Journal of Nutrition,* 1959, Vol. 13.