Two purposes have served as guidelines for writing this paper. The first is to selectively comment on the major directions that research ventures have taken when dealing with Caribbean migration topics. The Caribbean region is defined here to encompass the islandic Caribbean (including the Bahamas, the Greater and Lesser Antilles, the Cayman Islands, Aruba, Bonaire, and Curacao), Belize, Guyana, Surinam, and French Guyana. This delineation corresponds to that used by Segal in his treatment of the Caribbean (Segal, 1975, 1-5).

The second purpose is to provide a comprehensive bibliography of the body of migration literature concerned with the Caribbean that has accumulated in English during the past thirty years. This compilation is primarily restricted to published articles and books, as well as doctoral dissertations completed at United States and Canadian universities. Most unpublished reports and Master's theses have been excluded for the sake of brevity. Migration is broadly defined to include all types of relatively permanent residential changes. This literature search has been concerned with studies regarding intra-country, intra-Caribbean, and extra-Caribbean migration patterns. In addition, investigations dealing the characteristics and adjustment experiences of Caribbean migrants living abroad have been included.

Methodology and General Comments

The compilation of the bibliographical sources used in this survey involved three distinct activities. The first was a computer search. The Lockheed DIALOG system was used. Four bibliographical files were accessed: Sociological Abstracts, Social Scisearch, Comprehensive Dissertation Abstracts, and United States Political Science Documents. Secondly, each issue of Population Index was searched under the topic of "Migration" back to January 1970. Thirdly, a questionnaire was mailed to 308 persons who were included on the Conference of Latin Americanist Geographers (CLAG) most recent mailing list. The majority of the individuals selected to receive the questionnaire were residents of English-speaking countries. In essence, the respondents were asked if they had published any research on Caribbean migration topics and, if so, to indicate the proper citation.
The survey results of CLAG members were disappointing in two respects. In the first place only forty-four persons returned the questionnaire, for a response rate of 14.3 percent. Secondly, eight (less than three percent) indicated they had published any work primarily dealing with Caribbean migration subject matter. A perusal of entries compiled in the bibliography of this paper indicates that the sample may not have been unrepresentative of the research interest geographers have shown in the Caribbean. In short, very few geographers have researched migration topics concerned with Caribbean subjects. American geographers studying migration, in general, tend to be ethnocentric. This most likely reflects the facts that there are only a few migration geographers and that many interesting migration topics remain to be investigated within the United States (Harris and Moore, 1980; Golledge, 1980; White, 1980). Anthropologists, historians, sociologists, and economists have all been considerably more active than geographers in Caribbean migration research.

The Context of Population Pressure

The literature dealing with demographic aspects of the Caribbean frequently refers to the extreme population pressure that characterizes most of this area. Figures in Table 1 illustrate this point.² With the exception of Guyana (and to a minor extent Cuba),³ the amount of arable land per person is less than one-half an acre. The per capita income is also low when compared to those of the developed countries of the world. The per capita GNP for the Bahamas, which is by far the best off of the countries in Table 1, is less than 40 percent that of the United States. Most of the countries have crude birth rates between 20 and 30 per thousand. The crude death rates are ten per thousand or less, except for Haiti. Together the prevailing fertility and mortality behavior produces rates of natural increase generally between one and three percent per annum. While these are not exceptional within the context of Third World countries, given the high densities that already exist such rates of growth aggravate the effects of population pressure.

An application of the Demographic Transition Model to countries located in Latin America and the Caribbean which takes into consideration fertility, mortality, and economic development, clearly shows that most of the Caribbean countries fall within the model's early and late expansion phases (Oechsli and Kirk, 1975, 412). Both these stages are characterized by gaps between high (or
declining) birth rates and declining death rates, which produce moderate or high growth rates.

The Theory of Change and Response suggests that the societies involved in such growth patterns are likely to take one (or each) of two approaches towards lessening potential attendant population pressure (Davis, 1963, 345-366). One is to lower fertility and the other is to export the problem through a migration escape valve. Most of the Caribbean countries appear to be doing both. Sometime during the twenty-year period between 1955 and 1975 most countries in the Caribbean have at least begun to experience a decline in fertility (Segal, 1975), although the figures in Table 1 show considerable variation.

The migration escape valve approach can operate at either an internal (i.e., rural to urban) or international level. Most of the Caribbean is exercising both options. All except four of the countries have negative net international migration rates (Table 1). Since the Cuban government does not permit freedom of movement and its positive rate is minimal, it can largely be dismissed as an exceptional case (Land street, 1975, 139-142). In addition, internal rural to urban movements reduce population pressure in the rural areas by exporting it to urban centers. Clarke states that the processes of urbanization have been taking place for the past three decades in the Caribbean and are outstanding for both the newness and speed at which they are occurring. It is typical for net migration to account for approximately one-half of the growth of larger cities in this part of the world (Clarke, 1974, 223).

The point being made by this discussion is that the high rates of natural increase, high densities, and low per capita productivity (and consequently low incomes) produce an ambiance extremely favorable to internal and international out-migration. The Caribbean literature is replete with suggestions of migrants being impelled to leave their origins (Lowenthal, 1978, 82; Aguirre, 1976, 103; Lopez, 1974, 322). Although Peach would agree that each of these factors affects emigration to Great Britain from the West Indies as a whole, he has noted that variations among the individual British West Indian countries were not related to population growth rates or high population densities during the 1950s. He suggests that poverty levels and local demand for labor are more important as explanatory variables (Peach, 1967, 34-36; Peach, 1968, 16-36). The figures in Table 1 suggest findings at variance with those of Peach. When net external migration is correlated with the other variables, it is significantly associated only
with the rate of population growth. The correlation coefficient for this relationship is .83, indicating a positive association. It appears reasonable to view net migration as a factor affecting population growth, rather than vice versa.

| TABLE 1 |
|------------------|------------------|------------------|------------------|------------------|------------------|
| DEMOGRAPHIC CHARACTERISTICS OF SELECTED CARIBBEAN POLITICAL ENTITIES AND THE UNITED STATES FOR THE MIDDLE TO LATE 1970'S |
| Crude Birth Rates<sup>1</sup> (per 1,000) | Crude Death Rates<sup>1</sup> (per 1,000) | Rate of Natural Increase<sup>2</sup> (%) | Rate of Population Growth<sup>1</sup> (%) | Estimates of Net External Migration Rates<sup>3</sup> (%) | Number of Acres of Arable Land Per Person<sup>4</sup> | Per Capita Gross National Product<sup>5</sup> (U.S.$) |
|------------------|------------------|------------------|------------------|------------------|------------------|
| 1. Bahamas 22 5 | 1.7 5.6 | 1.9 | .02 3,120 |
| 2. Barbados 18 9 | .9 1.6 | .7 | .3 1,523 |
| 3. Cuba 20 6 | 1.4 1.5 | 1.1 | .9 855 |
| 4. Dominican Republic 41 10 | 3.1 2.8 | -.6 | .5 780 |
| 5. Guadeloupe 26 7 | 1.9 .8 | -1.1 | .3 1,707 |
| 6. Guyana 29 7 | 2.2 1.6 | -.6 | 2.5 553 |
| 7. Haiti 42 16 | 2.6 2.3 | -.3 | .2 203 |
| 8. Jamaica 29 7 | 2.2 1.7 | -.5 | .3 1,170 |
| 9. Martinique 21 7 | 1.4 -1.1 | -1.5 | .1 2,410 |
| 10. Netherlands Antilles 27 7 | 2.0 1.2 | -.8 | .1 1,673 |
| 11. Puerto Rico 23 6 | 1.7 1.1 | 1.4 | .2 2,397 |
| 12. Surinam 34 7 | 2.7 2.5 | -.2 | .2 1,350 |
| 13. Trinidad/Tobago 26 8 | 1.8 .7 | -1.1 | .1 2,173 |
| 14. United States 15 9 | .6 .9 | .3 | 2.1 7,863 |


Varying Scales of Inquiry

Caribbean migration studies can be conveniently categorized into three classes within a hierarchy of movement distances using a variation of Roseman's scheme (Roseman, 1971, 592-593). The category of greatest distances contains international movements, primarily between the Caribbean and other areas of the world. Usually these migrations involve the highest level of adjustments and are generally the most spectacular in terms of cultural changes. It is probably for this reason that these types of moves have been given by far the greatest attention in the Caribbean literature. A cursory inspection of the bibliography at the end of this paper will indicate the degree of prevalence of these studies.

The second migration class includes residential changes within a political entity that require a complete change of activity spaces. Roseman calls these total displacement moves. The third type of mobility entails a relatively permanent
change of residence within a country that necessitates only a partial alteration of an individual's activity space and thus is termed partial displacement. The distances traveled in this latter category are usually minimal and the levels of adjustment are also minimized.

The utility in distinguishing internal total displacement moves from partial displacement mobility is that usually their levels of adjustment and the motives for moving differ. The level of adjustment is generally greater for the internal total displacement variety, although it is usually not as great as for international migration. In addition, total displacement mobility is more likely to be motivated by the availability of economic opportunities whereas partial displacements are more often affected by changes in the life or family cycle. Perhaps because they are more subtle, the number of published studies investigating partial displacement moves within the Caribbean are the least of the three categories.

Thus, the migration hierarchy is not only one of distance but also of levels of adjustment and numbers of published articles. There is a positive relationship between all three. Since there are fewer studies at the partial displacement level this may be a fruitful area for geographers to consider for future investigations. In fact, Conway and Brown have recently initiated efforts along these lines with their three stage model of intra-urban residential relocation patterns for low income migrants (Conway and Brown, 1980).

**Basic Research Questions**

In general terms, four basic research questions can be indentified in the Caribbean migration literature. The first emphasizes the spatial patterns of movement and is the one that has received the greatest attention from geographers. The second is concerned with migration motivation. Migrant selectivity is the third problem area. The consequences or impact of moving represent the fourth general category of questions. Each of these will be briefly discussed below as a way of illustrating more specific lines of research.

**Spatial Patterns**

International moves to, from, and within the Caribbean very roughly can be divided into four phases, several of which overlap. The first represents the period of slavery that started and ended at various times throughout the Caribbean, due to the different colonial influences. Utilizing figures derived from tables
Compiled by Curtin (Curtin, 1969, 46 and 268) it is possible to estimate that around 4,600,000 slaves were imported to the Caribbean between the sixteenth century and the middle 1800s.

When slavery was abolished by the Emancipation Act of 1833 and the subsequent system of apprenticeship was ended in 1838, two roughly concurrent types of migration took place for approximately another century. One was the movement of British West Indian blacks out of their islands of origin to Hispanic Caribbean destinations. The major flows were from Jamaica, Barbados, and the Windward Islands to work on banana plantations in Costa Rica, sugar cane fields in Cuba, and the construction of a trans-isthmian railroad and canal across Panama. There was a secondary flow from the Leeward Islands to work in the production of sugar cane in the Dominican Republic (Thomas-Hope, 1978, 66-81).

The year 1838 also witnessed initiation of the immigration of indentured workers from Asia to replace the fleeing newly-freed blacks. The British, and to a lesser extent also the French, recruited Hindus and Moslems from India. The Dutch turned to India and Java for their labor force replacements. In addition, notable numbers of Chinese and Portuguese (mainly from Madeira) were attracted by the British, French, and Dutch. It has been estimated that the net immigration of East Indians approximated 385,000 between 1838 and 1917 when the system of indentured labor was abolished (Segal, 1975,14; Laurence, 1971,54-62).

The modern period of international migration in the Caribbean began shortly after World War II and generally continues to the present. The largest flows, and hence the ones most frequently studied, have been: 1) from Puerto Rico to the U.S. mainland; 2) from Cuba to the U.S.; 3) from the Dominican Republic to the U.S.; 4) from Haiti to the Dominican Republic, the Bahamas, Canada, and the U.S.; 5) from Jamaica to the U.S., Canada, and Great Britain; 6) from the British West Indies to Great Britain; 7) from the Dutch possessions to the Netherlands; 8) from the French cultural areas to France; and 9) from the Leeward Islands, British Virgin Islands, and Puerto Rico to the U.S. Virgin Islands (Segal, 1975, 9-13; 219-229). Since the Commonwealth Immigration Act of 1962 was enacted, the previous flow of British West Indians to Great Britain has reflected in greater flows to the United States and Canada.

Sometimes when migrants move they do so via a stage or stepwise process that is
often viewed as softening their adjustment experiences. It has been suggested that a stage process is most frequently entered into either because the migrant's first choice is initially unavailable or because he/she is dissatisfied with a prior move (Barrett, 1976, 3).

Myers has suggested the presence of this type of mobility for some Puerto Ricans, whereby they move from a rural area or small town to a larger city and then on to the United States mainland (Myers, 1965, 428-429). Clarke has noted the existence of internal stage movements up the urban hierarchy throughout the Caribbean, although he also recognizes that direct flows from rural areas to primate cities occur, especially where high levels of urban primacy exist (Clarke, 1974, 226). As previously noted Conway and Brown have pioneered with a stage model replicating intra-urban moves for low income families (Conway and Brown, 1980). Thus, the nature of stage movements has been investigated at international, internal total displacement, and intra-urban partial displacement levels.

Once international migrants reach the cities of their destinations they tend to spatially sort themselves to differing degrees. Although concentrations of West Indians do exist in England and France, segregation has not reached the degree of isolation in these countries that it has for native blacks in large cities of the United States (Lowenthal, 1978, 85; Jones, 1976, 89). It has been noticed that Puerto Ricans living in New York City do not segregate themselves to the same degree that previous immigrant groups to that city did. Typically, the Puerto Rican areas are located close to the major black concentrations. It has been suggested that Puerto Rican blacks sometimes form a connective link between the adjacent black and white Puerto Rican communities. It has also been found that there is considerable segregation within the Puerto Rican concentrations according to socioeconomic status (Boswell, 1976; Kantrowitz, 1973). A similar pattern of segregated housing has been identified with respect to Cubans living in Miami (Winsberg, 1979).

Many migrants from the Caribbean to Europe or the United States have no intention of permanently remaining away from their origins (Lowenthal, 1978, 83). It might therefore be suspected that return flows will occur from the destination back to the origin in concert with Ravenstein's third law that "each main current produces a counter current" (Ravenstein, 1889, 287). However, this has not occurred on a large scale, except for the case of Puerto Rico. Most
Puerto Ricans who are returning to their original island home have gained skills and educational levels that allow them to compete favorably for higher level jobs. Nevertheless many are disappointed to find that the island is not like it was when they first left. Furthermore, they and their second generation children frequently find that they are not accepted as natives upon their return (Lopez, 1974, 337-338). Since 1970 the return flow of Puerto Ricans has generally exceeded the outward stream to the mainland. They return for a variety of reasons. Some fail in their adjustment efforts to life on the mainland. Others return upon their retirement. Many only intend to remain in New York City long enough to develop a skill or save enough money so they can return to the island to open or participate in a business. The growth in the Puerto Rican economy during the late 1960s and early 1970s also served as an attractive force. Finally, the job market for low skilled Puerto Ricans deteriorated in New York as many jobs that were represented by repetitive functions became automated, thus requiring fewer workers (Hernandez-Alvarez, 1968; Hernandez, 1967, 107-121; Maldonado, 1976, 14).

Migration Motivation

The decision to migrate can be investigated using Lee's model. His framework considers for analysis four sets of decision-making factors: 1) factors at the origin; 2) factors at the destination; 3) intervening obstacles; and 4) personal elements. The present body of Caribbean migration literature has given by far the greatest emphasis to the first two. Economic considerations have received the greatest attention as origin and destination considerations. The most frequently used economic variables that are hypothesized as being related to in- and out-flows are income (Friedlander, 1965, 128) and employment opportunities (Gallaway and Vedder, 1971, 195; Boswell, 1977, 3). In addition, political pressures (Landstreet, 1975, 127-150), family considerations, housing, educational facilities (MacDonald and MacDonald, 1968, 421-427), and changes in immigration laws (Barratt, 1976, 8) have been studied as origin and destination factors affecting migration rates. Of particular interest to geographers is the fact that only slight consideration has been given to the frictional affects of distance as an intervening obstacle (Gallaway and Vedder, 1971, 192; Boswell, 1977, 4; Boswell, 1973, 141-144). Very little attention has been focused on personal factors as they affect migration in the Caribbean, other than to point out the importance of family ties and friends as factors affecting the selection of a destination (Safa, 1974, 13; Conway and Brown, 1980). Clearly, the individual
behavioral approach to migration decision-making is an area of future research that geographers should consider giving greater emphasis to in their studies of the Caribbean (White, 1980; Golledge, 1980).

Migration Selectivity

Virtually all migration investigations have determined that a selective process is involved (Shaw, 1975, 17-39). However, there is evidence that the type and degree of selectivity varies over both time and distance. Lowenthal states that earlier West Indian migrants to Britain were mainly students or middle-class travelers. Later immigrants tended to come from more humble origins (Lowenthal, 1978, 85). Similarly, the earliest waves of Cuban immigrants to the United States after the Castro revolution were represented by higher socioeconomic status. By 1970 the more recent Cuban immigrants tended to be more representative of the general population still living in Cuba (Aguirre, 1976, 104). A survey conducted in the late 1940s of Puerto Ricans living in the United States determined that the majority derived from urban origins. More recent data show a greater incidence of persons from rural backgrounds (Macisco, 1968, 25). These findings suggest the following hypothesis: During the beginning stages, migration processes are more selective. As the volume of migration increases over time, migrants begin to take on characteristics that are more similar to those of the origin population.

There is also evidence that as the distance traveled increases the degree and type of selectivity also increases, or at least changes. Boswell found this to be true for Puerto Rico, prior to the economic development that began to occur during the 1940s (Boswell, 1977). A recent sample survey conducted in a rural area of western Puerto Rico determined that a greater percentage of female out-migrants moved to places within the island than was the case for male out-migrants. On the other hand, male out-migrants were more likely to move to the United States, (Monk, forthcoming).

It is convenient to classify the consequences of migration into four categories: 1) growth consequences; 2) population structure effects; 3) economic impacts; and 4) social effects. There is no doubt that migration has had a significant impact on the growth patterns of the Caribbean countries (Table 1). Segal estimates that between 1947 and 1962 approximately ten percent of the total population emigrated outside of this region. He further states that since 1950 no Caribbean
society (except for the Bahamas and the U.S. Virgin Islands) has experienced a net emigration of less than five percent of its total population. Between 1950 and 1972 there has been a net emigration of close to three million people from this region (Segal, 1975, 10, 17, 219).

The population structures of Caribbean countries have been altered by a selectivity of migrants. As females exhibit a greater tendency to move internally from rural to urban areas and as males emigrate to foreign countries, the sex ratios of the cities decline and women have come to exceed men in almost all Caribbean urban areas (Clarke, 1974, 226). In addition, since most migrants are young adults there tends to be a relative scarcity of persons in the 20 to 35 year age class, which has the effect of increasing the burden of dependency on the origin populations (Cross, 1979, 62). Continued high fertility also tends to aggravate the burden of dependency by expanding the youthful segment of the population in most Caribbean countries.

Migration has played a major role in altering the economic characteristics of the Caribbean. Because of heavy rural to urban movements the unemployment rates of urban areas tend to be somewhat higher than those of rural areas (Cross, 1979, 52). Friedlander estimates that emigration to the United States mainland between 1940 and 1960 reduced potential unemployment from perhaps as high as 33 percent to 13 percent (Friedlander, 1965, 161, 162). On the other hand, Palmer estimates that the Jamaican economy suffered a loss of approximately 77 million dollars worth of foregone output and about 35 million dollars worth of foregone consumption as a result of emigration to the United States between 1963 and 1972. He also shows that remittances from Jamaicans living in the U.S. partly compensated for these losses (Palmer, 1974, 578-581).

Some of the social consequences of migration have been studied, primarily by anthropologists and sociologists. Topics such as the organization of squatter settlements (Safa, 1974), mental health, drug addiction, personal identification (Fitzpatrick, 1971, 167-178), and homosexuality (Hidalgo and Christensen, 1976) have been investigated. Because of the variety of topics studied it is difficult to make any generalizations that apply to all of them.

Prospects for Future Research by Geographers

After an extensive review of the literature it becomes apparent that there are at least four major areas of migration research that geographers can fruitfully
pursue in future studies dealing with the Caribbean. These are listed in no particular order of importance. First, they have just begun to scratch the surface of partial displacement migration processes operating in the Caribbean. There is every indication that the populations of countries located in this region will continue to experience increasing levels of urbanization for several decades into the future. As an increasing proportion of their inhabitants takes up residence in cities, it is expected that intra-urban partial displacements will assume a larger role in their future migration experiences.

Second, very few empirical comparative migration studies have been undertaken in the Caribbean. Such studies have the advantage of applying standardized techniques so that clearer generalizations can be made as a way of contributing towards the establishment of a body of migration theory. These comparisons should be made between nations located both within and outside the Caribbean to maximize the level of generalizations (Boswell and Chibwa, 1979; Lowenthal and Comitas, 1962).

The behavioral approach to investigating individual decision-making processes is a third area that geographers might well exploit in future studies dealing with the Caribbean. This is an area of research that is gaining popularity among geographers conducting research in the United States and Canada (Golledge, 1980). Perhaps the use of mental maps might be especially useful in establishing migration preference fields. These, in turn, may have utility in predicting future trends of residential mobility behavior (Fuller, 1974).

A fourth important future area of research deals with potential applications of Zelinsky's hypothesis of a mobility transition to Caribbean migration patterns. Basically, he relates the prevalence of international migration, domestic frontierward moves, rural to urban migration, urban to urban mobility, and circulation moves (reciprocal moves) to vital changes through use of a modified version of the demographic transition model (Zelinsky, 1971). He envisions five temporally sequential stages where first one and then another type of mobility prevails. If Zelinsky's hypothesized patterns were to prove useful in helping to predict the future course of migration events in the Caribbean, this might represent a major breakthrough for the urban and regional planning profession.

Notes

1. Funds for the computer bibliography search were provided by the Dean of the
College of Arts and Sciences, University of Miami. Further information about the Lockheed system may be obtained by writing to the Lockheed Missiles and Space Co., Inc., Code 5020/201, 3251 Hanover Street, Palo Alto, California 94304, or by phoning toll-free (800) 227-1960.

2. The author acknowledges the assistance of Ms. Lyn MacCorkle, Reference Librarian, Richter Library, University of Miami. The Sociological Abstracts file contains approximately 96,500 citations going back to 1963. It is updated quarterly. The Social Scisearch file includes about 700,000 records back to 1972. It is updated monthly. Comprehensive Dissertation Abstracts encompasses roughly 630,000 citations, with monthly updates. The United States Political Science Documents file includes 5,300 records, with irregular updates. Population Index is generally regarded as being the foremost bibliographical source dealing with demographic subjects. It is published quarterly by the Office of Population Research, Woodrow Wilson School of Public and International Affairs, Princeton University, for the Population Association of America. The author acknowledges the assistance of Mr. Gary Nichols, who served as his assistant during this activity.

3. When possible, the figures in Table 1 are based on averages for the three most recent years for which data are available as a means of smoothing out irregularities produced by possible atypical single year rates.

4. "The correlation coefficients for the relationships between net migration and: crude birth rates, crude death rates, rates of natural increase, rates of population growth, number of acres of arable land per person and per capita GNP were -.245, -.202, -.215, .828, -.120, and .327, respectively.

5. "International migrations also involve a complete change in action space. However, for the purposes of this paper they will simply be called international or external moves, to keep them distinct from the internal total displacement variety of mobility.

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