

MIGRANT FARM WORKERS

in the

STATE OF WASHINGTON

Volume III of IV

An Analysis of
Migrant Agricultural Workers in Washington State

May 15, 1967

Prepared For

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Glossary of Terms

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INTRODUCTION

This report is the third volume of a four-part study of migrant farm workers in the State of Washington. Volume I is an annotated bibliography of published materials relating to migrants. Volume II summarizes several field surveys conducted during the 1966 growing season. The present volume analyzes and draws conclusions from the data presented in Volume II. Volume IV will examine existing administrative procedures and legislation in relation to the preceding data and analyses, in order to recommend changes which would increase the welfare of the migrant worker and at the same time assure a reasonable supply of labor for Washington State's agricultural employers. The four volumes summarize what is probably the most comprehensive statewide study of migratory workers yet completed.

Several field surveys were conducted as part of the overall study. The map opposite shows the counties which were surveyed. Selection of the counties was based on (a) the types of crops grown which would require migrant labor, and (b) approximations from published reports on the number of migrant workers within counties for each type of crop. It is estimated that the counties selected for sampling represent 90 to 95 percent of the total migrant labor force during the 1966 growing season. There were a total of five surveys conducted to produce the primary data for the study. These were (1) a basic study of migrant characteristics, (2) a survey of migrant housing, (3) a survey of growers, (4) a survey of former migrants, and (5) a mail survey of community attitudes. The first three surveys were the more important part of the study and had a common sample base. The various surveys are described in somewhat greater detail in the Appendix to this volume.

The text of Volume III is organized along the lines of topics of interest rather than the individual surveys which were conducted. Consequently, some chapters will analyze data on a specific topic which has been covered in two or three different surveys from different viewpoints (such as, Grower-Migrant-Community). Generally, the separate surveys tend to confirm each other, but where there are contradictions they are pointed out in the text. The field research for the

four-volume study was augmented by collection of a considerable amount of secondary source data. Particularly, such topics as mechanization and migrant health were dependent upon information from a variety of secondary sources.

The objective of the four-volume study is to present unbiased information to be used as decision-making tools by government officials and private citizens in solving the many problems surrounding the agricultural labor market. As in most studies of this nature, the data and analyses raise many questions that can only be answered through additional surveys and studies. Further, much of the information may be obscured for those unfamiliar with statistical terms, such as "averages" and "median." Nevertheless, the data are presented in terms of medians and averages in order to present fairly and impartially the conditions under which the typical migrant agricultural worker exists, as well as conditions influencing the employers of migrant agricultural labor and the community in which the migrant lives. Percentages, rather than absolute values, are used throughout this report in order to offer a comparison to other U.S. and Washington State statistics.

In an attempt to make the text more readable, much of the data have been generalized and the number of complex tables has been limited. Since the data are generalized, the reader should be admonished against using the data presented in this volume without first familiarizing himself with their limitations in terms of questionnaire design, survey technique, and data processing procedures. It would also be advisable for the reader to consult the Glossary of Terms presented at the back of this report before beginning the main body of text.

Requests for additional data and/or analyses from these surveys should be addressed to the Washington State Office of Economic Opportunity in Olympia, Washington.

SUMMARY OF FINDINGS AND CONCLUSIONS

Chapter 1: The Migrant and Washington Agriculture

Agriculture, in Washington State, produces over \$600 million worth of farm products annually. It also forms the base for other important industries within the state. In 1966, an average of 91,000 agricultural workers per month were employed between May and November; an average of 11,000 of these were migrant workers. Migrant workers are needed primarily for harvest operations which demand large numbers of workers for relatively short periods of time. The full-time agricultural work force cannot cope with these demands, and so must be supplemented by seasonal workers.

Chapter 2: Employment, Income and Expenditures

There were significant differences in the employment patterns of the Latin American and Anglo migrants. Latin American migrants worked primarily in the fields at stoop labor tasks, traveled with a family, and preferred to be paid by the hour. Anglos usually traveled alone, worked in tree-fruit harvests, and preferred to be paid on a piece-rate basis. Many migrants cannot work enough hours during the year to earn an annual salary which will provide them with a reasonable standard of living. It is likely that as long as the migrants maintain their present mobility patterns, they will continue to have incomes below \$3,000 per year. However, simply establishing a permanent residence will not by itself immediately raise their income or increase their standard of living.

Chapter 3: Health

Migrant health problems are largely typical of other disadvantaged groups within the population. The migrants' low annual income, lack of education, and mobility are factors which account for a number of health problems. Other factors are environmental sanitation, methods of food preparation,

and language limitations. Causal factors for these health problems appear to be a lack of exposure to preventive immunization, a lack of medical treatment and care, and, generally, a lack of health education.

Chapter 4: Education

The migrant has a below average education which is caused primarily by extensive travel and the need to work. More specific factors relating to a lower educational level are: (a) enrollment in several schools each year causing adjustment problems, (b) late entrance in the fall and early drop-out in the spring, (c) language problems, (d) absenteeism resulting from the necessity of helping to provide the family's income, and (e) a lack of transportation to and from school. The result of these factors may be that by the time the typical migrant is 16 years old, he may have only completed elementary school.

Chapter 5: An Evaluation of Migrant Housing

It was found that a substantial majority of housing in Washington State satisfied the requirements of the State Board of Health and the suggested standards of the President's Committee on Migratory Labor. Deficiencies, where they existed, tended to be of a non-structural nature. The storage of garbage and campground drainage fell seriously short of required standards. A significant proportion of the labor camps had communal facilities that did not work efficiently, or that were unclean. This suggests a need for increased day-to-day supervision during the growing season. Structural inadequacies (that is, inadequate in terms of existing regulations) were primarily a lack of adequate ventilation in some housing units and a lack of hot and cold running water in some communal facilities.

Chapter 6: The Migrant Labor Market

Most of the migrant workers in Washington were paid on a piece-rate basis. This allowed growers to employ workers of widely differing ages and skills, for payment is made on the basis of how much a worker harvests and not how many hours he works. At present, in Washington State at least, the problem does not seem to be that growers do not pay high enough wages. Low migrant income appears to be caused by the fact that they work for such a short period during the year.

Chapter 7: The Impact of Mechanization on Migrant Employment

The trend in mechanization of Washington State crops has been apparent for many years. The wheat crop was at least partially mechanized by the turn of the century. Potatoes were harvested almost entirely with stoop labor twenty years ago, yet today they are almost entirely mechanized. A number of crops were examined in this report to determine the impact of mechanization on migrant employment. From this examination, it is estimated that by 1976 demand for migrant labor will have decreased by 5 to 20 percent. Those crops most likely to become mechanized are those which presently employ Latin American migrant labor. It is not anticipated that the tree fruit industry, which employs mostly Anglo labor, will be mechanized in the near future.

Therefore, while the demand for all migrant labor could decrease by 20 percent, the decrease for Latin American migrants could reach 50 percent. In view of the lower demand for the Latin American migrants, programs should be considered to retrain Latin Americans for work either in less mechanized crops, such as tree fruits, or in non-agricultural industries.

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CHAPTER 1

THE MIGRANT AND WASHINGTON AGRICULTURE

Agriculture is of considerable importance in the economy of the State of Washington. Over \$600 million worth of agricultural goods are produced annually. Agriculture also forms the base for other important industries within the state, such as those associated with the marketing and processing of farm products. In 1966 an average of approximately 91,000 agricultural workers were employed in the state between the months of May and November. An average of 11,000 of these workers, during the same time period, were migrant workers.

Crop production, which normally accounts for over 60 percent of the value of farm production, forms the base of Washington agriculture. Washington State is important nationally in the production of several crops. Apples are probably the best known, but Washington is also a leading producer of hops, late summer potatoes, green peas for processing, asparagus, sweet cherries, winter pears and strawberries. Substantial amounts of labor are required for the cultivation and harvesting of most of these crops. Workers are needed for pruning, irrigating, hoeing and other cultivation operations, but the greatest need for labor is for the harvest operations.

Crops are ready for harvesting at various times during a six month growing season, which lasts from April to October. Harvests do not occur consecutively; in many cases, they overlap. For example, in September the harvests of pears, apples, potatoes, peaches, sweet corn and tomatoes are in progress in Eastern Washington at the same time as the harvests of string-beans, blackberries, cucumbers and other vegetables in Western Washington. Demand for harvest labor does not stay at a constant level, but fluctuates as various crops are ready for harvesting. This pattern of agriculture means that during the six month period there is a demand for large numbers of workers but for relatively short periods of time. The full-time agricultural work force cannot cope with these demands. It must be supplemented by seasonal workers.

The seasonal agricultural work force consists of two main segments, day-haul workers and migrant workers. Day-haul workers are those who travel daily from their homes. This group of workers is mainly composed of housewives, school aged youth and casual laborers. Migrants, on the other hand, stay overnight at their place of work. Within this broad classification of "migrant" there are two distinct groups: (1) the intrastate migrant who is normally resident in Washington, but who travels around the state to obtain agricultural work, and (2) the interstate migrant who is normally resident in another state, but who enters Washington to work in agriculture. Migrant workers constitute an important part of the seasonal work force. At present, there are insufficient day-haul workers (mostly women and students) to complete all seasonal tasks. This is particularly so in Eastern Washington where there are relatively few large population centers from which to draw day-haul workers. Further, many of the tasks in Eastern Washington are not suitable for day-haul workers. Seasonal labor demands tend to be for the more strenuous tasks such as pea picking and orchard work for which male workers are preferred. In Western Washington seasonal labor demands are mostly in berry and vegetable picking, tasks which can be performed largely by day-haul workers.

Many growers rely heavily on migrants to harvest their crops. When growers were asked about possible loss of production if no migrant workers were available, 39 percent said they would lose most or all of their production. Eighteen percent said that they would lose half their production.

The migrants' importance to Washington's economy is also shown when the relationship of agriculture to other Washington industries is examined. If a loss of migrant workers caused a loss of agricultural production, the impact would be felt in a number of seemingly unrelated industries. A decrease in production in the agricultural sector would cause a fall in demand for chemicals, fertilizers and other goods used in the cultivation of crops. There would also be decreased demand for the products and services used to pack and market agricultural commodities. Thus there would be a reduction in demand for pulp and paper products, which would itself cause a fall in demand in the lumber and wood industries. The fall in agricultural output would cause a decline in the output of the canning industry, which would then affect other sectors of the Washington economy such as the fabricated metal industry, pulp and paper industries, transportation services and the retail trade.

It is possible to continue tracing the effects of a decrease in agricultural production on other Washington industries through further stages. However, the above example should serve to illustrate the complex interindustry linkages in the Washington economy and the importance of agriculture in the structure.

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CHAPTER 2

EMPLOYMENT, INCOME AND EXPENDITURES

This chapter examines (a) employment by ethnic group, (b) income, and (c) expenditures for rent and food.

The major conclusions from Chapter 2 are that:

- (a) Latin American migrants worked primarily in the fields at stoop labor tasks, traveled with a family and preferred to be paid by the hour, while Anglos usually traveled alone (one adult male was the typical traveling unit), worked in tree fruit harvests, and preferred to be paid on a piece-rate basis.
- (b) While the median pay per hour was well above that required under the Federal wage legislation, the annual income was considerably below the poverty level of \$3,000. It is not likely that the migrants' income will rise above \$3,000 until he settles in one place and works a greater number of hours per year.
- (c) Offsetting the low income to some extent was the evidence that only about one out of five migrants paid rent. Those that did, paid about \$10 per week. During the growing season the typical migrant family spent \$30 per week for food compared to \$26 for the typical U.S. family.
- (d) The migrant has many other expenditures, particularly for travel, and many migrants cannot work enough hours during the year to earn an annual salary which will provide them with a reasonable standard of living. It is likely that as long as the migrants maintain their present mobility patterns, they will continue to have incomes below \$3,000 per year. However, simply establishing a permanent residence will not, by itself, immediately raise their income or increase their standard of living.

Employment Patterns

The survey indicated that there were significant differences in the employment patterns of the Latin American and Anglo migrant workers. Berries, asparagus, and some vegetables appear to provide early season employment primarily for Latin American workers. On the other hand, those crops which provide mid- and late-season employment are worked mostly by Anglos. Apparently, then, the Latin American migrants either cease work in agriculture sometime around June or move to states other than Washington. By the same token, the Anglo migrants are either engaged in an activity other than agricultural labor during the early season or else come to Washington after having worked in agriculture in some other state during the early season. There are a number of possible explanations for the Latins moving out of Washington during the season, but probably the most realistic is that certain types of employment have more appeal to the Latin American migrants, particularly in view of their family size, as explained further below.

The Latin American migrants were employed primarily as stoop laborers, whereas the Anglos were employed primarily to pick apples and other tree fruit. The typical Latin American traveling unit was a family which included children, whereas the typical Anglo traveling unit was a single male adult. It would seem then, that one of the factors which might affect the movements of the Latin American group would be the availability of work which could be performed by children, adolescents, and women. Physical characteristics required to pick tree fruits are those associated with the Anglo (i.e., a single male adult) due to the need for coordination, strength, and adult size. Stoop labor, on the other hand, can be performed by children, or all members of the Latin American traveling unit, with the father and mother acting as working supervisors and consequently greatly increasing the "family" daily income. It is also significant here that the Latins usually prefer to be paid by the hour, while Anglos prefer pay on the basis of piecework.

The average migrant work day was slightly shorter than the average work day of heads of migrant households (8.6 hours as compared to 8.9 hours). It appears that the all-migrant average is lower than the head of household average, because

dependents work shorter days than do heads of household. Almost 13 percent of all migrant workers were below the age of 16, and it is probable that the youths worked a shorter day than the adults. Females, who for the most part were dependents rather than heads of household, also worker shorter hours.

Daily and Hourly Wages

The median daily wage paid to all migrants was \$13.10. However, there were significant variations in the median daily wage paid by crop. The lowest median daily wage was paid in the berry industry (\$5.40), and the highest median daily wage in wheat (\$16.30). Possible explanations for this are that many female and young workers were employed in berries, since the harvesting of this crop requires little climbing or use of heavy equipment. Their lower productivity would directly affect their wages, as the work was mostly on a piece-rate basis. The large numbers of day-haul workers employed in berries would also have the effect of driving down wages for all workers. The supply of these workers is plentiful, and so there is no need to pay higher wages to attract any workers.

The higher daily wage paid for work in wheat is probably a result of the employment of male adults, whose productivity and wages are generally higher than that of female migrants. The operation of machinery was one of the highest paid tasks. Wheat was a crop with one of the highest percentages of migrants working with machinery. When hourly wages are examined, a similar variation in pay by crop is found. Berries have the lowest mean hourly earnings and grapes the highest mean hourly earnings.

Daily and hourly wages are affected by the length of the working day and the type of task performed. The shortest working day usually occurred in the crops with the lowest daily earnings. Berries had a median of 7.7 hours worked per day and a median daily wage of \$5.40 and grapes had a median of 6.8 hours worked per day and a median daily wage of \$8.60. The longest working day occurred in hops (10.6 hours), probably because hops are a crop that need to be harvested as quickly as possible when they are ripe.

The most highly paid types of work performed by migrants were irrigating, with a median daily pay of \$17.10, and machinery operation with a median daily pay of \$16.20. These operations required more skill and were generally paid on an hourly basis. The lowest paid task was picking with a median daily pay of \$12.40. Crops which had the higher percentages of migrants working with machinery generally tended to be those that recorded the higher median daily earnings.

A distinction between the migrant working with machinery and the migrant doing non-mechanized work can also be made on the basis of the hourly wage paid. The typical hourly wage for a migrant working with machinery was nine cents per hour higher than for migrants in non-mechanized work. Also, about 23 percent of the migrants in non-mechanized operations were paid less than \$1.30 per hour, whereas only 9 percent of the migrants in mechanized activities were paid hourly wages below that level.

Heads of household generally earned higher wages than did other migrants. A comparison of median daily pay shows that for all workers it was \$13.10 per day and for heads of household \$14.20. Pay for heads of household alone exceeded that for all migrant workers in every crop. The reason for this difference is that heads of household are generally more productive than other, usually younger, migrants, work longer hours in some crops and operate machinery more often.

All the wages reported by the migrants themselves indicate that the "typical" worker received a wage that was well in excess of that guaranteed under the 1966 amendment to the Fair Labor Standards Act. Further discussion of this aspect of migrant wages can be found in Chapter 6 of this volume, "The Migrant Labor Market".

Expenditures

Rent expenditures seemed to be a minor factor in the migrants' expenditure pattern during the agricultural season. The average rent paid was \$9.75 per week, but only 21 percent of the migrant families paid rent. Therefore, the typical migrant paid no rent.

Food expenditures did appear to constitute a significant factor in migrant family budgets. The typical migrant family spent almost \$30.00 per week on food, whereas the average U.S. family spends \$26.00 per week on food. One of the factors that accounts for this difference is that the typical migrant family is slightly larger than the typical U.S. family, 4.3 persons as compared to 3.6 for the U.S. as a whole. Another factor which seems important is conditioned upon the assumption that migrants earn more money during the agricultural season than during the winter months. The migrant would be expected to consume relatively more food and more expensive types of food during that season in which he received a higher income (and during which he was surveyed).

Annual Income

Perhaps the most striking conclusion of the survey was that the typical migrant family income was well below that level by which we normally define "poverty." There is probably no statistic which so clearly differentiated the migrant population from the total population as that which states that the average total annual income for a migrant family was about one-third that of the average family residing in Washington State. When one considers fringe benefits available to most employees in Washington State such as paid sick leave, holidays, vacations, and health insurance, the income difference is even more striking.

The average annual migrant income was only about \$2,300. The main reason the income was so low was that migrants were not employed on a year-round job. The hours which a migrant can devote to productive employment are limited by the time he must spend traveling, the weather, and the normal unemployment in non-permanent job situations. Consequently, although the median hourly pay was well above the minimum wage requirement, the annual income is well below the poverty level.

To raise the migrants to an income level approximating the state average--and assuming that the migrant can only work the same number of hours as he did during 1965--the grower would have to

pay in the vicinity of \$4.50 per hour plus about 20 percent for fringe benefits, or an equivalent of roughly \$5.40 per hour. Obviously, many (if not most) growers cannot pay that kind of an hourly wage and remain in business. Further, the increase in hourly wages would not solve many other migrant problems which are related to mobility. As an example, a reasonable basic education for migrant children cannot be realized when the migrant family moves as often as it does.

It can only be concluded, therefore, that as long as the migrants maintain their mobility patterns, their income will remain in the poverty class. However, simply establishing a permanent residence will not immediately raise their income or increase their welfare. As discussed elsewhere in the volume, (a) some crops worked largely by Latin Americans will be substantially mechanized during the next ten years, (b) as indicated in the Former Migrant Survey (see appendix B), the annual income of migrant families who had settled five to six years ago was still only about \$3,800, and (c) there is a current shortage of vocational and basic education courses together with living stipends to serve the migrants if they did settle in large numbers. Hence, until the public addresses itself to all these problems (and other related problems) it is not likely that the migrant welfare will be increased through greater employability or that the growers' problems of maintaining a stable and well-trained labor supply will be solved.

CHAPTER 3

HEALTH

Migrant health problems are largely typical of other disadvantaged groups within the population. The migrants' lower annual income, lack of education, and highly mobile pattern of living, seem to account for nearly all the health problems which occur in this group. The health problems seem to be further complicated by environmental factors such as housing and sanitary conditions, methods of food preparation and available facilities for food preparation, and language limitations.

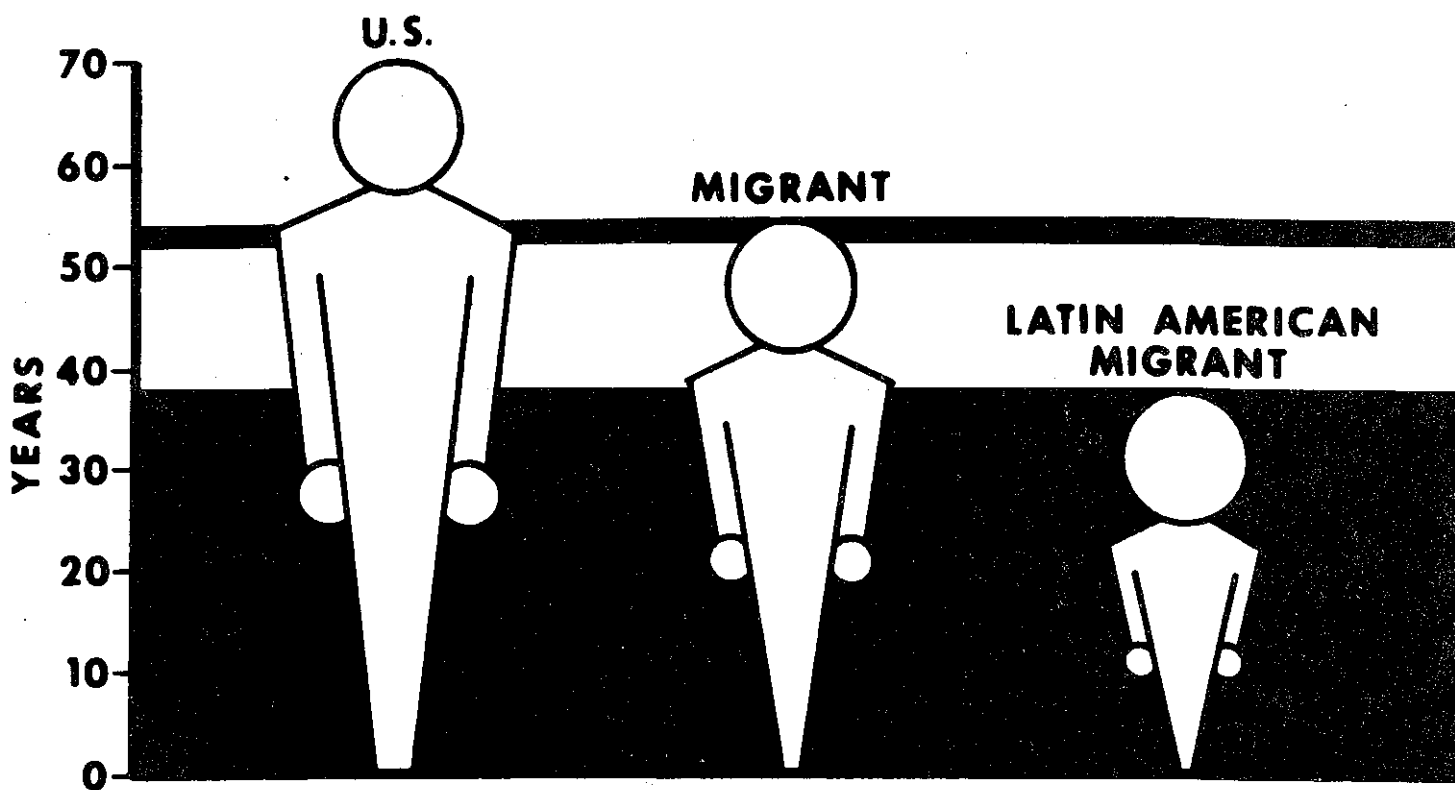
Areas of concern which are discussed in this chapter are birth rates, death rates, preventive medicine, types of illness, medical treatment, and mental health.

Birth Rates

Of the women who had borne children between July 1965 and July 1966, 44 percent were Latin Americans, 42 percent were Anglos and 13 percent were Other migrants. The Latin Americans also had the largest median multi-person family size (6.2 persons), compared to Anglos (3.2) and Others (4.8).

The migrant birth rate of 27.7 per thousand was substantially higher than the U.S. rate of 19.4 per thousand and Washington State rate of 17.2 per thousand. While the U.S. rate is at its lowest point in twenty-six years, other countries have birth rates which considerably exceed the migrants' rate. In 1963 Mexico had a birth rate of 45.2 per thousand, Guatemala's rate was 47.7 births per thousand and the average for all Central America was 42 per thousand. It should be noted that the countries cited as having higher birth rates are largely rural societies with low levels of education.

MIGRANT LIFE EXPECTANCY



The larger family size of the Latin American migrants indicates that the Latin American migrants probably have a birth rate considerably higher than that of the Anglos and Other migrants. It is likely that the high birth rate for the Latins will continue until effective education for family planning is instituted.

Death Rates

The migrant death rate of 12.0 per thousand was also higher than the U.S. rate of 9.4 per thousand and the Washington State rate of 9.2 per thousand. It should be noted that there are several limitations which may affect the validity of this rate. First, there is possible underreporting, especially for males, since there were a large number of single migrants who traveled without a family. Thus, there was no one to report their deaths. Information gathered on age at death, and more particularly, the cause of death, may not always have been accurate. Some migrants may have had a difficulty in remembering this information and also, the cause of death may have been difficult to identify, especially if a doctor had not been consulted. With the Latin Americans, there is the further problem in determining cause of death due to their English language limitations.

There are several possible reasons for the comparatively higher death rate. The Latin Americans had a higher death rate and a lower life expectancy than the average for "all migrants". The life expectancy for all migrants was 15 years less than the U.S. average. Most of the Latin American deaths occurred at birth or in the first few weeks of life. A small proportion of the Latin American women did not have their children in a hospital, and of the women who did have their children in a hospital, it is possible that they came to the hospital only at the time of birth. It is probable that there was a lack of prenatal care as travel and work would largely prevent migrant mothers from obtaining such help.

Preventive Medicine

In all migrant groups, there was a lack of appreciation of the importance of immunization for both children and adults. Nearly three-fourths of the adults and one-fourth of the children had

no exposure to any type of preventive immunization. Many of the migrants who had received immunization had allowed its effectiveness to wear off. Immunization is particularly important for the migrant, since a lack of immunization can be responsible for the spread of communicable diseases. Since the migrants may live, work and travel in rather large groups, the incidence of communicable diseases is probably higher for them than other groups in the population.

Types of Illness

Gastrointestinal and respiratory problems were the two most prevalent illnesses specified by the migrants. There are several reasons which may account for this. Gastrointestinal problems may be caused by lack of knowledge of proper nutrition. This would include not only the types of food which the migrants eat but their methods of food preparation. With large families and a limited income, it is possible that the migrants may not always have foods which provide nutritious diets. The migrant may not always have adequate facilities to cook foods thoroughly, or sufficient refrigeration space. Foods probably have to be bought on a day-to-day basis and inadequate cooking and storage facilities may limit the type of foods that the migrants buy. In many cases, this will mean that fewer fresh meats, vegetables and milk are included in the diet, to the detriment of health. Another possibility which may account for the migrant's gastrointestinal problems is his lack of knowledge of sanitary practices. This can result in a high incidence of parasitical diseases, which may also be spread to other members of the group.

Respiratory problems may be due to the migrant's contact with large groups in the fields and at his living quarters. The common cold, influenza, and virus infections probably account for most of the illnesses within this group. These illnesses are usually transmitted by direct contact, or indirectly via eating utensils and other articles used by the infected person.

Medical Treatment

Since most migrants have limited incomes, the majority do not have any type of health or medical insurance. Both of these factors will influence the type and amount of medical treatment

which they receive. As many migrants do not have money to obtain medical care, it is possible that medical help may only be sought in an emergency. It is also probable that the migrant would have difficulty in finding medical care in a community which is unfamiliar to him.

The availability of medical services may be another problem for the migrant. The hours which they work and the methods of transportation available for them may exclude them from certain types of medical treatment. If migrants are to avail themselves of medical services, the services usually have to be tailored to their specific needs and have to operate on a timetable that is geared to migrant working patterns.

Language limitations, especially for the Spanish speaking group, may impose particularly severe barriers where medical treatment is concerned. The migrants may have difficulty in explaining the type of illness from which they are suffering and the symptoms that are present. There may also be fear and misunderstanding of specific medical practices used by physicians. These circumstances may all further prevent the migrants from seeking medical help. Another crucial factor which can influence the use of medical services for the Latin American and Indian migrant is their use of home remedies and medicines which are carried over from their culture. These two groups may often feel that they can cure diseases which are familiar to them with methods which come from their traditional beliefs and practices. Home remedies no doubt may play an important part in migrant attitudes toward medical care and will continue to do so until there is a greater understanding of scientific medicine.

Mental Health

Although no data were collected concerning problems of mental health, this may be an area of concern which has been virtually unrecognized. Considering the possible results of tensions and pressures encountered in the migrant living pattern, the high degree of alcoholism and outbreaks of violence which occur within this group may be an indication of possible mental illness rather than a reflection of low moral standards of lawlessness. These may be mental health hazards which are directly related to the pattern of migrant living.

CHAPTER 4

EDUCATION

Both migrant children and adults showed a lack of sufficient formal education. The major factors which seem to affect the migrant's lack of education are sporadic attendance, enrollment in several schools each year which causes adjustment problems, late entrance in the fall and early drop out in the spring, language problems, the necessity of helping to provide the family income, and a lack of transportation to and from school.

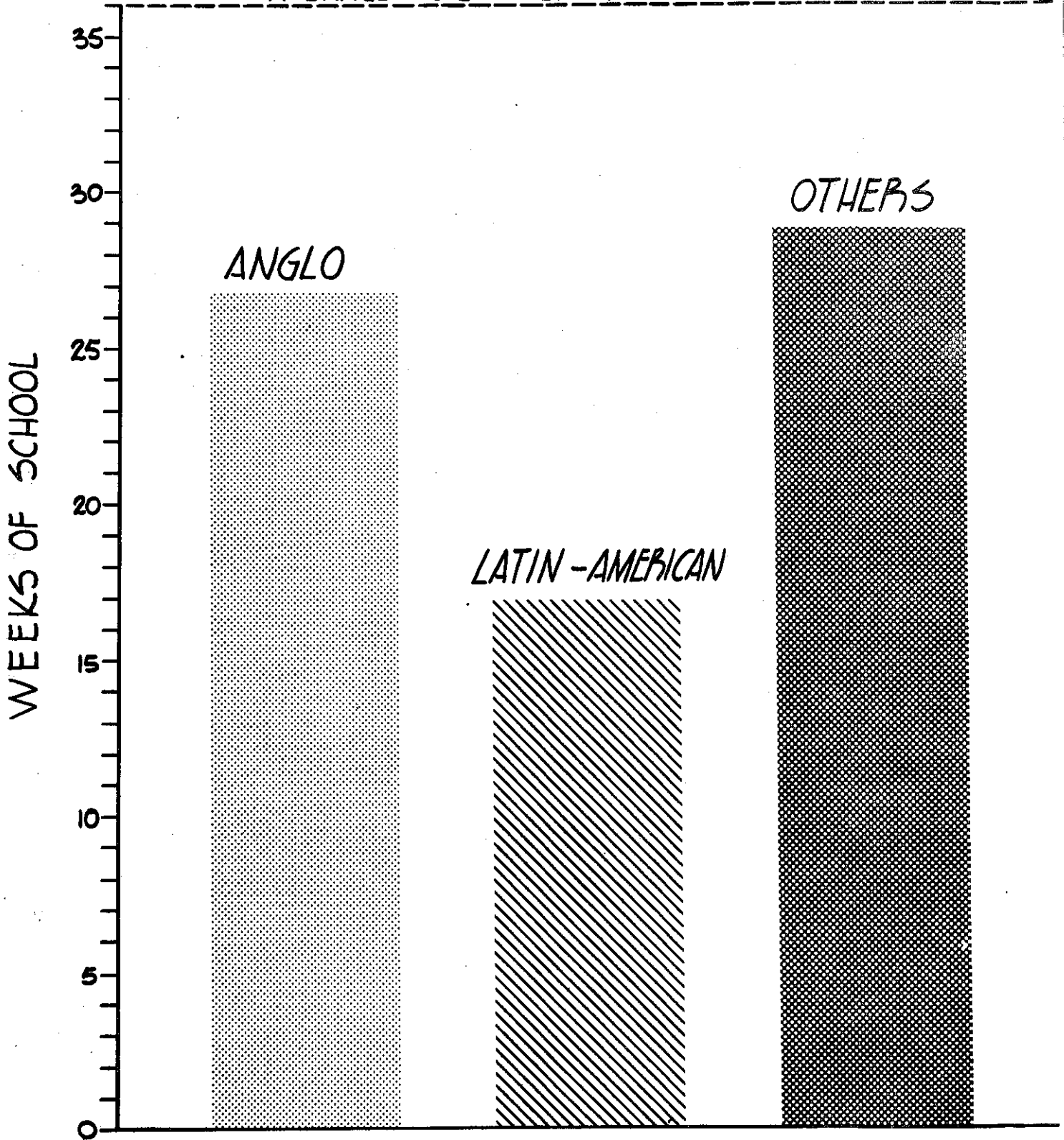
Mobility, which is inherent in the migrant pattern of living, can make it difficult for the migrant to attend school for more than six to seven months during the regular school year. Even though many of the children may attend school along the migrant travel routes, their attendance will probably be irregular and the problems of adjusting to new schools each year may not provide sufficient opportunity for them to meet requirements for grade promotion.

The low educational attainment and prevailing low socio-economic status of the adult migrant may also influence their attitude toward the education of their children. Although many of the parents may desire educational opportunities for their children, this desire may sometimes be lessened by the lack of financial means, a lack of ability to communicate with local school authorities, and a lack of acceptance as a part of the community. There may also be a feeling that an adequate education is impossible to achieve when the family must be constantly on the move.

Subjects which will be discussed in this chapter are: the education of migrant children, the education of migrant adults, vocational education and training, and day care.

SCHOOL ATTENDANCE

AVERAGE 36 WEEK SCHOOL YEAR



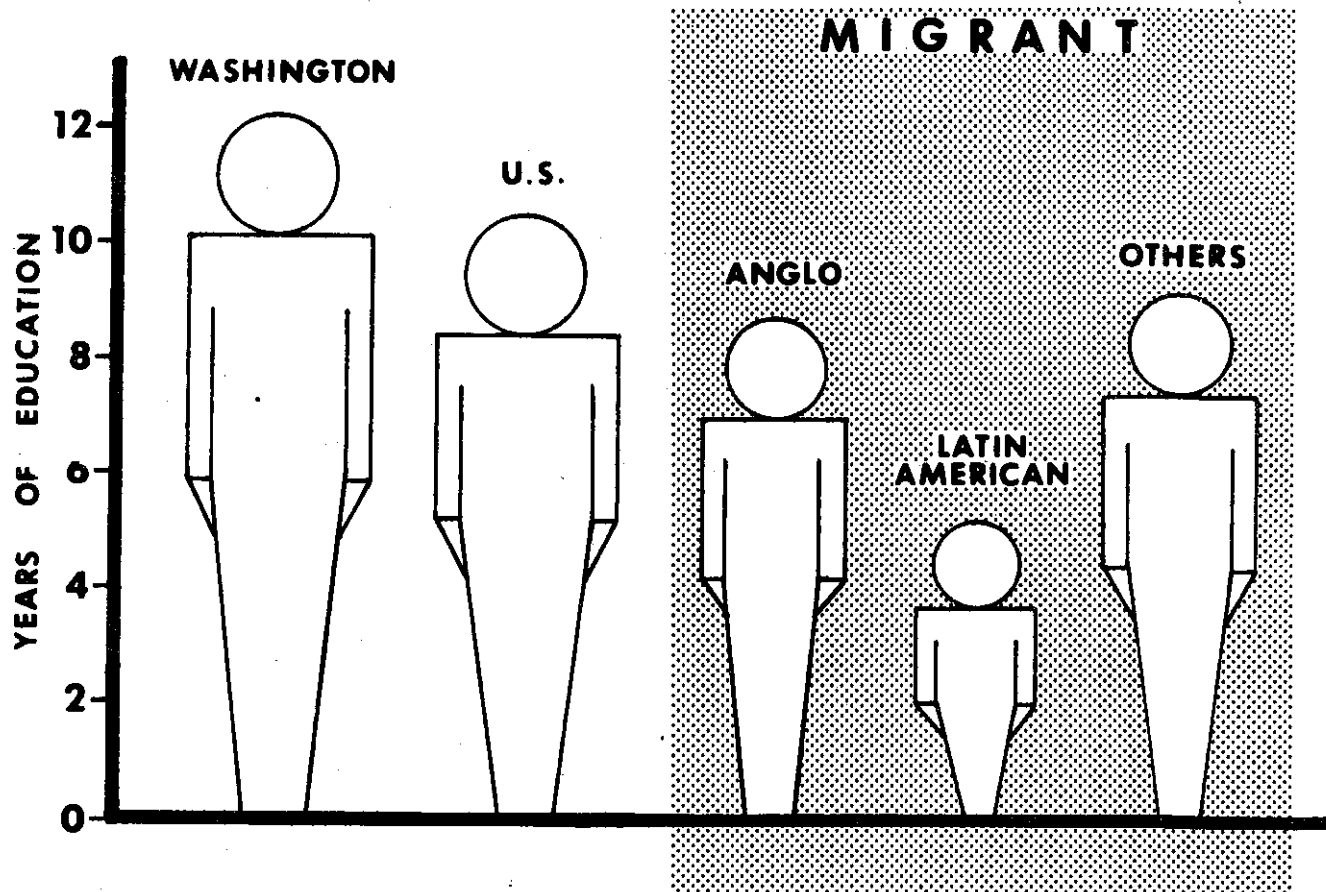
Education of Migrant Children

Migrant children seem to be following an educational pattern somewhat similar to that of the adult migrants. During a 36-week school year, the average migrant child attended school for 21 weeks. The Latin American migrant children attended an average of 17 weeks of school. The result of this rate of absenteeism may be that by the time the typical migrant is 16 years of age, he may have only completed elementary school.

For migrant children, the difficulties seem to be not only the lack of opportunity for school attendance, but also the lack of opportunity to obtain a substantial education. Attending several different schools during the year can create several problems. The children may arrive without any academic records or test results so that grade placement is difficult. The Spanish-speaking child may encounter difficulties with the teacher and other children in the school due to his lack of fluency in English. It is also possible that the children will not be accommodated because of insufficient facilities and personnel to cope with an influx of a large number of additional children who require schooling for relatively short periods. Another critical problem may be in finding teachers who understand the cultural background, socio-economic, and educational needs of migrant children. Problems may arise with the teacher, as she may not be specifically trained or skilled to provide specialized programs for these children. Finally, the constant need for adjustment and assimilation into new schools may serve to retard the migrant child's progress.

Migrant children may experience rejection at school by the permanent school population because their cultural backgrounds are different. It is possible that this situation is a consequence of the migrant child's exposure to a bi-cultural environment. This alone may result in considerable emotional strain and may make the educational experience very unpleasant for them.

The major reason given for the absenteeism from school was travel. This situation applied more particularly to the Latin American migrant child. Thirty-four percent of the Latin American children missed school due to travel, whereas only 15 percent of the Anglo children missed school for this reason. Also, almost 7 percent of the Latin American children



missed school because they were working in agriculture, whereas a negligible number of the Anglo migrant children reported absence from school for this reason. It may also be of interest to note that the Latin American migrant children outnumbered the Anglo children by a ratio of almost 2 to 1. If there continues to be a large proportion of Latin American children who remain with their families in the migrant stream, it is possible that the Latin American children will not have much more education than their parents.

Education of Adult Migrants

The typical adult migrant had completed the eighth grade. Although the Anglo and Other migrants were above this average, the Latin American migrants had completed only the fifth grade. It seems reasonable to assume that the same set of circumstances which are presently affecting the education of the migrant child may also have had some effect on the education of migrant adults.

There are also language limitations among the adult migrants. This problem seems to be almost exclusive for the Latin American migrant. Almost two-thirds of the Latin American group had some difficulty in reading and speaking English. It should be noted that there are many situations in which lack of fluency in the English language creates difficulties for the Spanish-speaking migrants, particularly in obtaining medical treatment, employment, and education for their children.

Both the lack of education and the language limitations are probably directly related to the finding that very few migrants had received any vocational training. Entrance into many vocational training programs requires a higher level of education than most migrants usually receive. It should also be noted that nearly all of the migrants who reported that they had received vocational training were in the Anglo group, the group with the higher average educational level.

Day Care

About one-fifth of all migrant children attended day-care centers during the 1966 agricultural season. Children who were not in day-care centers were either cared for by their mothers, other adults, or other children. It would seem that

the utilization of day-care centers may depend on their location in a community and the type of transportation available to the migrant parents to take their children to the center. The day-care center would probably also have to operate during hours similar to the migrant's working hours for them to use this service extensively. The above factors may account for some of the reasons why day-care facilities do not appear to be fully utilized.

Since most migrant children are Latin American, they probably comprise the majority of the children attending the centers. Since Latin Americans seem to lack educational opportunities, the day-care center may provide an environment in which the Latin American child may be given some type of pre-educational experience, so that he may be more prepared when he actually enters school. In a sense, this experience may be similar to "Head Start". At the present time in Washington State, there are such day-care centers which are experimenting with this type of education. They are mobile day-care centers which have yet to be evaluated, since they are in their first year of operation. It is possible that these centers may fill the educational gap of the Latin American children while, at the same time, they are providing a place for the children to stay while their parents are working.

CHAPTER 5

AN EVALUATION OF MIGRANT HOUSING

Migrant housing has long been recognized as a problem of concern not only to the migrant but to the community at large. In the State of Washington, the State Board of Health first issued regulations regarding minimum standards for labor camps in 1925, although these standards did not pertain specifically to migrant labor camps. Since then, they have been continuously revised and updated. The Federal government has also taken considerable interest in the subject, and in 1956 the President's Committee on Migratory Labor issued suggested housing standards for agricultural migrants. In this chapter, present migrant housing conditions in Washington, as indicated by the 1966 Consulting Services Corporation surveys, are compared to the above mentioned regulations in order to assess the adequacy of existing housing. Comparisons are made only with those areas of the regulations for which comparable data are available.

The questionnaire for the Housing and Sanitation Survey was developed in cooperation with the State of Washington Department of Health. It was intended to produce data from which an overall assessment of migrant housing could be made. It must be emphasized that this survey investigated certain physical conditions and did not attempt to measure the quality of the housing units.

It was found that a substantial majority of migrant housing in Washington satisfied the requirements of the State Board of Health and the suggested standards of the President's Committee on Migratory Labor. Deficiencies, where they existed, tended to be of a non-structural nature. The storage of garbage and campground drainage fell seriously short of required standards. Significant proportions of the labor camps had communal facilities that did not work efficiently or that were unclean. This suggests a need for increased day-to-day supervision during the growing season. Structural inadequacies found (that is, inadequacies in terms of existing regulations) were primarily a lack of adequate ventilation in some housing units and a lack of hot and cold running water in some communal facilities.

Occupancy Densities

The regulations of the State of Washington Board of Health and the President's Committee on Migratory Labor specify that housing units provided for migrant labor must have adequate floor space. Adequate floor space is defined as seventy square feet for the first occupant and thirty-five square feet for each additional occupant. At least half this floor area must have a ceiling height of seven feet, and no floor area with a ceiling height of less than five feet is to be counted. Although in this survey ceiling height was not taken into account when the size of the housing units was assessed, the fact that square feet per person was more than sufficient to satisfy the regulations in the majority of housing units indicates that there was probably a high degree of conformity to floor space regulations.

The average number of square feet per occupant was 103 square feet in single cabins, 99 square feet in row cabins, and 219 square feet in other types of housing units. ("Other" housing units made up less than 3 percent of all housing units and included barns, motels, tents, dormitories, and a few cars.) Trailers had an average of 45 square feet per occupant. This would violate the Washington State regulations, as no special provision is made for trailers. However, the President's Committee regulations do make a specific provision for trailers in the section referring to new construction. A requirement of twenty square feet of clear floor space for each occupant of a trailer is made. Thus floor space in trailers in Washington State was adequate according to that requirement.

The only other regulation regarding occupancy density is a requirement that the housing units must provide privacy (State of Washington Board of Health) which could be interpreted as requiring more than one room per housing unit and the President's Committee regulation for new construction of a minimum of two rooms per family. If the above regulations are interpreted as requiring a minimum of two rooms per housing unit, then the majority of housing must be considered deficient in this respect. Of the total number of housing units, 61 percent had only one room.

Structural Conditions

The majority of migrant housing in the State of Washington was found to be structurally sound according to existing regulations. Both the state and Federal regulations require that housing units must provide protection against the elements and must be structurally sound. In addition, floors are to be constructed of tight-fitting lumber. In order to assess the structural soundness of the housing units in Washington, the housing units were investigated to see if they had any of five conditions of poor repair. The five conditions considered were multiple cracks or holes in the floor; a roof with cracked, loose, buckling or missing material for more than one square foot of the surface; visible daylight observable through the roof or water stains on the ceiling; walls with multiple cracks; and windows with three or more cracked or missing window panes. It was considered that the existence of one of the above conditions in a housing unit pointed to inadequacy of that housing unit in terms of structural soundness. However, very little of the housing was found to suffer from any of these defects. In no case were more than 6 percent of all housing units subject to any one of the conditions of poor repair. The conditions investigated were fairly major faults, and their existence does point to severe deficiencies in a small percentage of Washington migrant housing. However, the majority of that housing does meet the standards set forth in the regulations.

Standards are also set forth for the ventilation of housing units. It is required that adequate window openings must be provided in every room, that windows should be openable in at least 45 percent of their aggregate area, and that they should provide for cross or through ventilation. The President's Committee regulations also require all outside openings to have screening in the fly season. For the purposes of analysis, "adequate window openings" will be interpreted as at least one window per separate room. Washington housing conformed well to this standard, for the average number of windows for each type of housing unit was slightly more than two. The exact percentage of the window area that was openable was not investigated, but the existence of separate rooms with no openable windows was noted. It was found that this condition existed in only a very small percentage of the total number of housing units (4 percent). However, a far more significant proportion of the housing units lacked proper through ventilation and fly screening. Of the total number of housing units, 20 percent

had window openings placed so that they were not providing through ventilation, and 19 percent of the housing units lacked adequate fly screening.

Campground Conditions

The condition of the campgrounds was an area where there was significant violation of existing regulations. The regulation of campground conditions by both authorities concerns the water supply, garbage collection and storage, and placement of communal facilities in regard to housing units. The water supply must be accessible, common cups are prohibited, and the campsite must be well drained. Garbage must be stored in watertight containers with well fitting lids, and sufficient containers must be provided. In addition, the campgrounds must be maintained in a clean and sanitary condition. Housing units were not to be located more than 100 feet from the water supply point, nor more than 200 feet from the central toilet, handwashing, bathing, and laundry facilities.

Eight percent of the Washington labor camps had common cups at the water supply point, and it was found that campsite drainage and garbage collection did fall seriously short of the above regulations. Campsites were investigated for the following conditions: garbage containers without tight fitting covers and not of watertight construction, an accumulation of garbage not in containers at the collection site, and the existence of substantial numbers of flies in the garbage storage area. The percentage of campsites with deficiencies in these respects ranged from 24 percent with an accumulation of garbage outside the containers to 58 percent with containers lacking tight fitting covers. In addition, 29 percent of the campsites had standing or flowing water on the ground around the outdoor water faucet.

The placement of communal facilities relative to housing units was generally fairly satisfactory. Inadequacies, where they existed, concerned no more than 10 percent of the housing units in the case of every facility.

Facilities

In general, sufficient toilet, washing, and bathing facilities, according to existing regulations, were provided for migrant workers in Washington. However, with the exception of washbasins,

which were provided in 52 percent of the units, relatively few individual housing units had private facilities. The majority of Washington migrant workers used communal facilities, and the condition of these facilities was unsatisfactory in a significant proportion of the camps.

Provision of toilet facilities, washing facilities, and bathing facilities for migrant workers is an area in which both state and Federal regulations are most explicit. Washington State regulations require that adequate toilet facilities, separated for each sex, must be provided. These may be private facilities, i.e., within the individual housing unit, or central facilities. Washing and bathing facilities must be provided in the ratio of 1 to 12 occupants, and laundry facilities in the ratio of 1 to every 25 occupants. One toilet must be provided for every 15 occupants. Facilities are to be separated for the sexes where necessary and to be provided with hot and cold running water. The President's Committee regulations are identical except that bathing facilities are required in the ratio of 1 to 8 persons.

The ratio of people to facilities in Washington labor camps was favorable. Toilets were provided in the ratio of 1 to 7.1 occupants, washbasins in the ratio of 1 to 3.8 occupants, bathing facilities in the ratio of 1 to 6.4, and laundry facilities 1 to 15.1 occupants. However, deficiencies were found in the matter of the separation of facilities for the sexes. In 21 percent of the camps the communal toilet facilities were not separated for the sexes, and in 17 percent of the camps bathing facilities were not separated for the sexes. Additional deficiencies were found in the working and cleanliness of the facilities. Toilets were particularly deficient in this respect, for in 37 percent of the camps, toilets were not working properly, and in 15 percent of the camps they were unclean. Handwashing and bathing facilities were in much better working order, but deficiencies were found in the provision of hot and cold water. In 18 percent of the camps, handwashing facilities lacked hot and cold running water, though only 7 percent of the camps had the deficiency in bathing facilities. Laundry facilities, of which the majority were automatic, failed to work in 12 percent of the camps, and hot and cold running water for them was provided in all but 4 percent of the camps. Private facilities, with the exception of washbasins, were not provided in the majority of housing units.

Regulations of both the state and Federal authorities also require a floor or wall electrical outlet where electric service is available. It was found that 96 percent of the housing units in Washington were so provided. The President's Committee regulations also require separate cooking facilities where the workers cook in individual quarters. In Washington, provision of cooking facilities was fairly widespread; 89 percent of all housing units were so equipped.

CHAPTER 6

THE MIGRANT LABOR MARKET

This chapter discusses a few characteristics of the migrant labor market. Included is a discussion of why in some ways it is unique among labor markets. Factors affecting the level of demand are discussed and conclusions concerning the supply of labor are mentioned.

The Federal minimum wage law in its present form, will probably not have much effect on migrant laborers in Washington. The ethnic composition of the migrant labor force will probably change in the next few years, Anglos making up an increasing proportion of the labor force. Wages in Washington for the most part are above minimum levels; the low level of migrant income seems related to short employment periods rather than low wages.

There are at least three characteristics of the market for seasonal migrant labor which make it almost unique among labor markets. The first of these is that there are few legal restrictions on entry to the migrant labor market so that almost anyone may be employed. The second is that seasonal agricultural employment does not require skilled workers. The third characteristic which makes this an almost unique market is that the majority (72 percent) of the workers in this market are paid on a piece-work basis as opposed to an hourly rate basis. These three characteristics are discussed in detail below.

In Washington State the migrant is not generally covered by state industrial insurance. Consulting Services Corporation data show that over 90 percent of the migrant laborers have Social Security cards. However, this does not mean that Social Security payments are necessarily made by the employee. Employers are expected to withhold Social Security payments on those workers who earn over \$150 from an individual employer, but it is not known how many migrants earn this amount from a single employer in one season. In addition, growers have the

option to cover their workers under the Washington State Industrial Insurance, or some comparable insurance. Again it is not known how many migrants are so covered.

Little skill is needed to be a migrant laborer. In those harvest operations which are not mechanized, harvest techniques can be learned relatively quickly by even the least astute seasonal laborer. The employer, then, does not need to distinguish among laborers to pick only the most qualified. Within broad limits, the healthy males, the children, the old and the alcoholics are equally acceptable, for they will each earn what they are worth when hired on a piece rate basis.

The 1966 amendment to the Fair Labor Standards Act, which requires the payment of certain minimum wages in covered agricultural employment, could cause slight change in the make-up of the seasonal labor force over the next three years. This amendment requires a minimum wage in agriculture of at least \$1.00 an hour effective February 1, 1967, \$1.15 an hour effective February 1, 1968, and a minimum wage of \$1.30 an hour effective February 1, 1969. Among those employees exempted from the minimum wage requirement are laborers paid on a piece-rate basis and who go each day to the farm from their permanent residence, in other words, day-haul labor. Migrant hand-harvest laborers 16 years old or less and employed on the same farm as their parents are also exempted if the piece-rate paid to these workers is the same as paid workers over age 16.

When the wages paid in the 1966 agricultural season in Washington were examined, it was found that taking all crops together the average hourly wage was substantially higher than even the minimum wage required by February, 1969. Since piece-rates were commonly paid, it was necessary to translate these into hourly rates of pay. The hourly rate of pay was determined by dividing the mean daily pay for all workers by the mean number of hours worked per day by all workers. This was done for each crop and the results are presented in the table below.

Estimated Mean Hourly Earnings
of all Migrant Workers by Crop

Asparagus	\$1.45
Tree Fruit	1.69
Berries	.87
Grapes	1.78
Hops	1.47
Peas	1.59
Sugar Beets	1.54
Wheat	1.71
Vegetables	1.46
Apples	1.72
All Crops	1.56

There was a substantial variation among crops in the average hourly wage paid. The low hourly wages in berries can probably be explained by the large number of women and children reportedly used to harvest this crop.

While minimum wage legislation theoretically can change the migrant labor market, the 1966 amendment to the Fair Labor Standards Act will probably have very little impact. For, in addition to the employee exemptions already mentioned, employers who hired less than 500 man-days of seasonal labor in any three-month period of the preceding year are also exempted from the minimum wage requirements. The total effect of all these exclusions is that there will be relatively little change in the make up of the seasonal labor market in the next few years. This conclusion is confirmed by the Growers Survey. The growers were asked what would be the effect of the new minimum wage legislation on their employment practices. Slightly more than three-quarters of the growers replied that the minimum wage legislation would have no effect on their employment practices; an additional 10 percent indicated that they would use more selective recruitment practices. As could be seen in the earlier table on hourly income, in Washington State migrants, when they work, are not, on the average, underpaid by the growers. One of the reasons for low migrant family income seems to be that the migrants work such a short time during the year.

The Level of Demand

While the previous section was concerned with a description of the structure of the demand in the migrant labor market, this section is more concerned with factors affecting the level of demand; that is, how many migrants are employed during the season. For example, a factor as unpredictable as the weather can have a major impact on migrant employment and consequently on migrant income. The income of workers in the vast majority of industries is not affected by weather conditions. In most other industries which are affected by weather conditions, some arrangement is made to compensate workers for time lost due to adverse weather conditions so that the employer can depend on having a labor force available when necessary.

However, no such compensation is made to the seasonal agricultural worker. It is not necessary for the grower to make any provision for the payment of wages during unfavorable weather, since the unskilled agricultural laborer seldom has any alternative employment and will generally be available when the weather clears. Moreover, the seasonal agricultural laborer is not covered under any unemployment compensation scheme.

The weather also plays an important role in determining the level of demand through its effect on the timing of crops. For example, if each crop throughout the season ripened only after the preceding crop had been completely harvested, far fewer workers would be demanded than if, as is usually the case, different crops in different areas of the state need to be harvested at approximately the same time. At the present time when large numbers of migrants are needed to harvest apples in Eastern Washington, the vegetable crops of Western Washington also need workers. As a consequence of the overlapping demand, large numbers of migrants are needed to work for short periods of time and are then unemployed between the bursts of harvest activity.

Another factor which affects demand for migrant labor is the expected market prices of the crops to be harvested. If market prices are expected to be low the general practice is to harvest little or none of the ripened crop. Consequently, fewer migrants would be demanded than if market prices were higher. Other factors affecting the level of demand for agricultural labor are harmful insects, plant diseases, floods and other unpredictable occurrences.

Impact of Mechanization on Demand

The number of migrant laborers demanded should decrease as the major migrant-using crops become mechanized over the next ten to fifteen years. The decreases will be off-set to a limited extent by the fact that the vegetable crops which use large amounts of labor are becoming somewhat more important as a percentage of total agricultural production. However, the net effect should be a decrease in the numbers of workers demanded.

Future mechanization will probably also cause a change in the ethnic composition of the migrant labor force. It is probable that Anglos will constitute an ever-increasing proportion of the migrant force, primarily because the crops most likely to be mechanized (such as sugar beets and asparagus) are also those crops in which most of the Latin Americans work.

As mechanization becomes more common, a more skilled worker will be demanded by the grower. An employee working with relatively expensive harvesting equipment will need more skills than the average migrant laborer has at this time. Mechanization will produce other changes in the labor market. An individual worker's capabilities will have to be noted and a structure to compare one worker with another will develop. This in turn will lead to payment on an hourly basis becoming more prevalent.

Non-Economic Factors Affecting the Supply of Labor

One of the non-economic factors which affects the migrant as a supplier of labor is his relative lack of formal education. This is especially true of the Latin American migrant worker. The relative lack of education (8.8 years for all migrants, 5.4 years for the Latin American) is probably a factor "trapping" the migrant in the seasonal labor stream, for it makes it very difficult for the migrant to find employment in industries not related to agriculture. Another facet of this lack of education is the inability of a substantial percentage of the Latin Americans to read (41 percent) or speak (30 percent) English at all. Only 30 percent of the Latin Americans were able to speak English "very well".

DEGREE OF FURTHER MECHANIZATION IN NEXT 10 YEARS

SUGARBEETS (CULTIVATION)

STRAWBERRIES

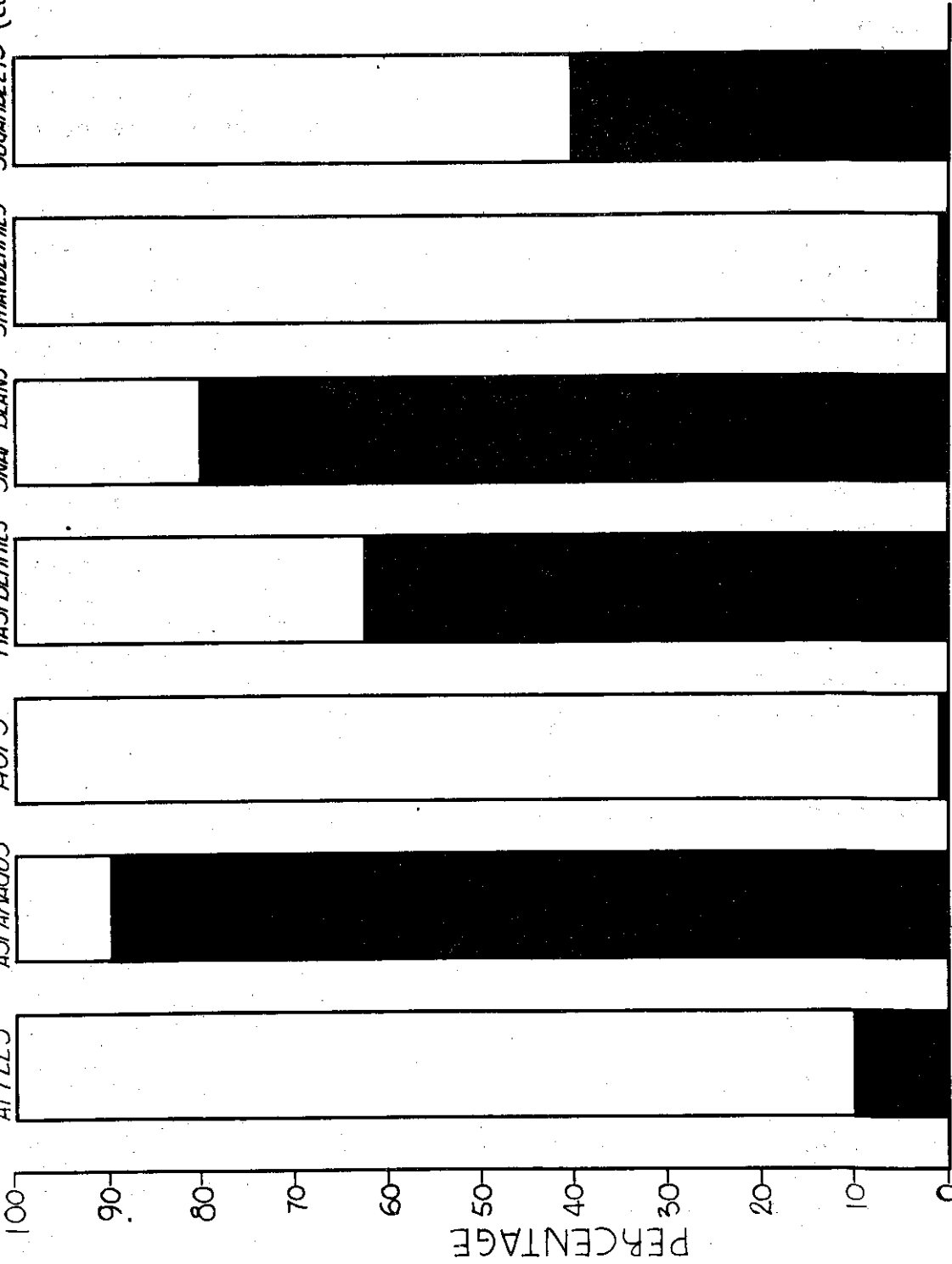
SNAP BEANS

RASPBERRIES

HOPS

ASPARAGUS

APPLES



CHAPTER 7

IMPACT OF MECHANIZATION ON MIGRANT EMPLOYMENT

Chapter 7 contains a discussion of the probabilities of mechanization in the next decade in seven Washington agricultural industries: apples, asparagus, hops, raspberries, snap beans, strawberries, and sugar beets. These crops are among the major migrant using crops. In the following pages, however, when mechanization by crop is discussed, no attempt is made to distinguish between day-haul and seasonal labor.

Of the crops mentioned above, sugar beets and asparagus are most likely to become mechanized. It is likely that raspberries and snap beans will show a higher degree of mechanization in the next ten years, while strawberries, apples and hops will probably not become mechanized in the near future.

The past history of mechanization in the state shows that once a practical mechanical device has been developed, acceptance of this device by growers has occurred in a brief period of time. Examples of this include the rapid mechanization of the potato harvest in the late 1950's and the sugar beet harvest a few years earlier.

If it is assumed that there will be no great shift toward the growing of more labor intensive vegetable crops in the next decade, it is probable that the demand for migrant labor will fall by 5 to 20 percent in the next ten years.

Demand for migrant labor would decrease more rapidly if the tree fruit industry, which employs the highest percentage of migrants, became mechanized. However, mechanization is more likely to occur in such crops as asparagus and sugar beets which presently employ relatively few migrants, primarily of Latin American descent.

The crops which will probably be mechanized are those which are the primary employers of Latin Americans. Consequently, the effects of the technological replacement of migratory labor will bear heaviest on the Latin Americans. Another

reason for the introduction of mechanized farm equipment reducing the demand for the Latin American laborer is that operation of machinery, by and large, requires a higher level of education on the part of the operator. Survey data indicate that the Latin American migrant is less educated than the Anglo migrant. Therefore, substitution of Anglo migrant laborers for Latin American migrant laborers will probably occur over the next decade.

It should be noted that this trend toward the employment of fewer Latin American migrant workers in Washington agriculture may be somewhat offset as the dwarf fruit trees continue to replace the present trees. A short fruit tree could provide picking employment for an entire migrant family, whereas present tree fruit activity ordinarily requires the strength, stamina, and coordination of adult males. (It should be kept in mind that the typical Anglo traveling--and working--unit was one adult male, while the typical Latin American unit consisted of a husband, wife, and children.)

* * * * *

The published literature available on the subject of the probable movement toward mechanization of any of the above crops in the next ten years is sparse and scattered. For the benefit of those planning similar studies, various U. S. Department of Agriculture publications are usually an accurate and complete source of background information on such topics as: cultivation procedure, plant varieties, etc. State and regional horticultural societies usually publish annual "proceedings" which contain detailed reports on various subjects in the agricultural sector. In addition, major crops often have a state or national growers association, some of which publish prodigiously. State agencies, such as Bureau of Employment Security, the Farm Labor Bureau, and the Agricultural Department, sometimes do specific crop studies in addition to their usual reports. Finally, the sources of the most current information are state and national farm and crop magazines; for example, the Washington Farmer and the American Fruit Grower.

To obtain the estimates found in the body of this report, however, greatest reliance was placed on interviews, telephone calls, and letters directed at numerous agricultural experts in the area. This technique was needed to resolve contradictions contained in the literature, to supply information on subjects not covered by the literature, and finally to answer additional problems discovered during the course of the second phase. The names of some of the local experts were obtained from publications. Other experts were found in various state agencies. A third source of information of this sort is the agricultural engineering departments and experiment stations of state universities.

The survey technique is mentioned because, in a number of instances in this report, predictions are a distillate of a number of different opinions. In some other cases, one man was thought more qualified to render an opinion. These instances have been noted, usually with an expression such as "one source indicated." Finally, mercifully, there are a few cases where there was agreement among sources.

Apples

There are a number of quite different types of technological innovations which could affect the demand for seasonal labor in the future production of apples. These include horticultural advances, semi-mechanical aids, mechanical equipment, and storage innovations.

Recent horticultural advances include the development of dwarf and semi-dwarf root stocks. These dwarf and semi-dwarf trees are smaller (from eight to twelve feet high as compared to 18 to 22 feet tall for the older trees) and therefore easier to work in than the older trees. According to Richard Bartram, the Chelan County Extension Agent, "Nearly two-thirds of the trees planted since 1961 are of a smaller kind of tree."¹ These trees allow a picker to be more efficient, since in most

^{1/} Letter from Richard Bartram, Chelan County Extension Agent, Wenatchee, Washington. January 11, 1967.

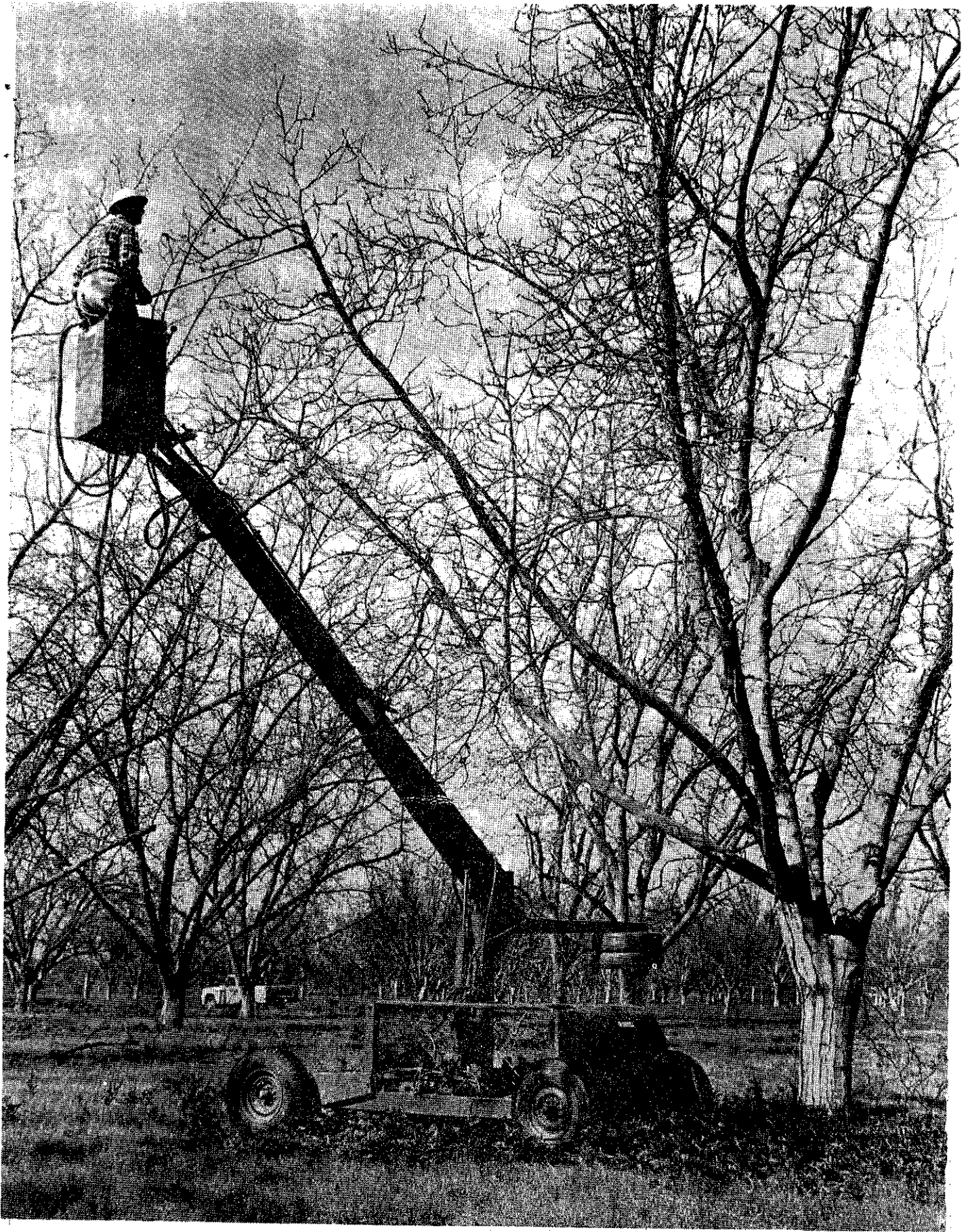
cases ladders are not needed during harvesting. On the taller semi-dwarf trees, shorter and more easily maneuverable ladders are sometimes used. A study of pear picking by R. D. Langmo of Oregon State University shows that over 7 percent of the picker's working time was spent in moving a ladder from place to place around the tree.² While the dwarf trees allow a picker to be more efficient, which in itself would reduce the demand for labor, they are planted closer together than the older types of trees. Thus an increased number of trees per acre would increase the need for labor. The net effect of these two factors would be to increase the demand for labor per acre of apple trees. An additional advantage of these smaller trees, from a labor saving point of view, is that they don't require "propping" of the branches. A third advantage of the dwarf trees is that they start bearing fruit earlier.

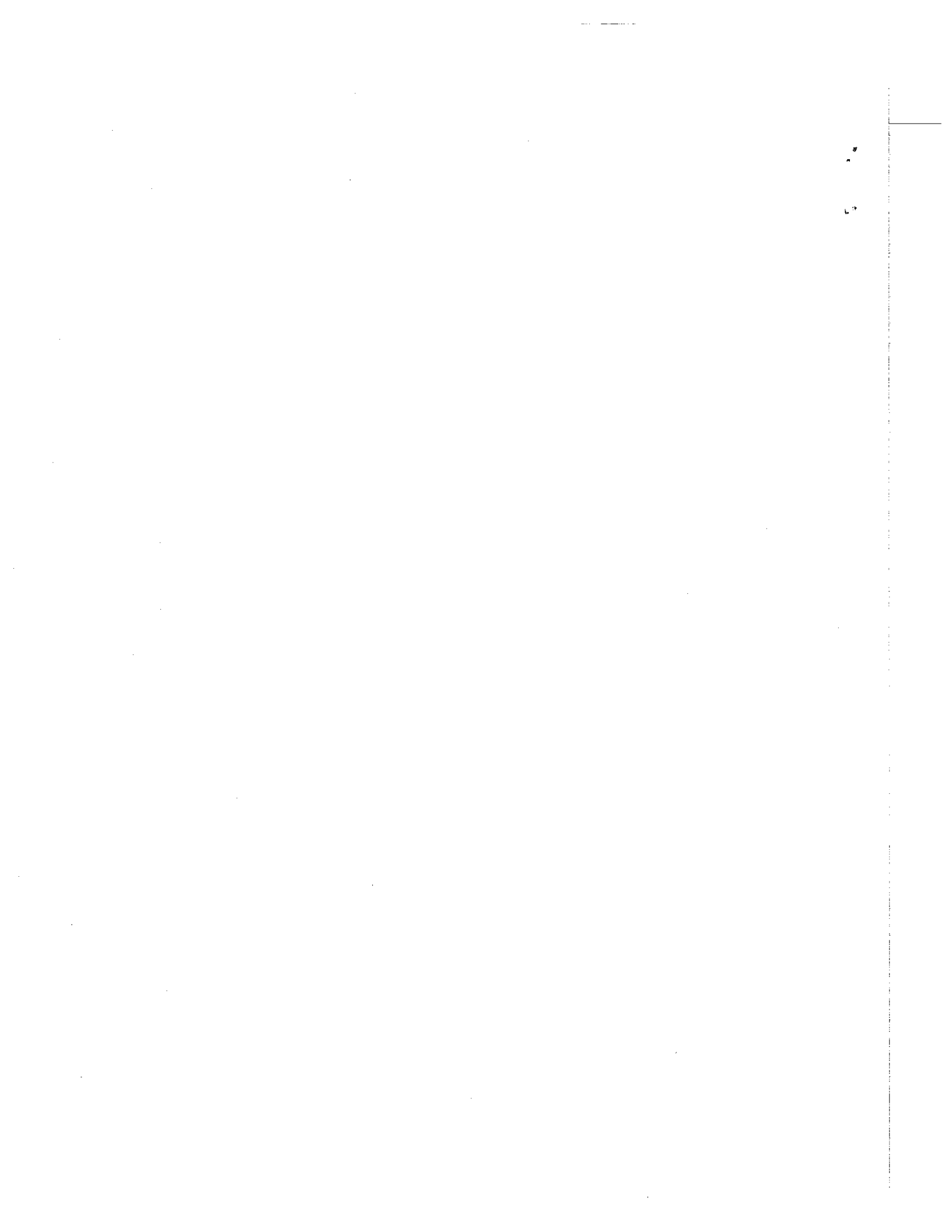
Another horticultural development which has been mentioned is the use of "hedge row planting" or "tree walls". Mechanical harvesting aids would probably be more adaptable to dwarf trees or tree walls. However, the idea of a tree wall is still largely theoretical and has not yet been tested commercially on a large scale. While undoubtedly many orchards of the future will be of this type, it is doubtful whether it will have any effect on the demand for labor in the next decade.

A small revolution has been taking place in the apple packing operation. The conversion from field boxes to bulk bins has largely been completed at least in the larger orchards, and has had a tendency to slightly reduce labor requirements in the packing houses. Roughly 12 percent of the state's 1966 apple crop is in controlled atmosphere storage, and it is estimated that up to 25 percent of the crop will be stored in this fashion in the future.³ Ninety percent of the present controlled atmosphere stored crop has been stored loose. The fruit was then packed in March and April of 1967. If the present storage trend continues, the demand for packing house labor would fluctuate less during the year.

2/ R. D. Langmo, Labor Utilization in Picking Pears, Special Report No. 136, Agricultural Experiment Station, Oregon State University, Corvallis, August, 1962. Page 2.

3/ Controlled atmosphere storage is the process by which the substitution of nitrogen for oxygen greatly retards spoilage, thereby allowing apples to be stored for many months.





The American Fruit Grower⁴ reported quite favorably on a mechanical apple harvester developed by Cornell University agricultural engineers and tested in Michigan and New York orchards. The machine is designed to shake the apples from the tree onto conveyer belts which then carry the apples to boxes. The machine is 15 feet wide and 27 feet long and its cost is estimated at around \$28,000.

There was unanimous agreement among Washington State agricultural experts that mechanical devices of this sort would not gain acceptance among Washington growers. The main reason for the agreement was that while New York and Michigan produced apples primarily for the processing market (such as apple juice, for which bruised apples can be used), about 85 percent of Washington apples go to the fresh market, which makes the problem of bruised apples crucial.⁵ A second disadvantage of the apple picking machine for Washington growers is its size. Washington orchards generally don't have the open space available to permit a large machine sufficient room to maneuver. Finally, the mechanical devices usually require fairly level land, a requirement not possessed by many Washington orchards.

At this time, the most promising developments appear to be in the area of mechanical picking aids. A number of machines have been developed in the last few years whose function is to move the picker around the tree and from tree to tree more efficiently. One such device is shown opposite, being used as a pruning device.⁶ The picker usually has control over the movement of both the basket and the boom and over the vehicle itself, thereby enabling him to move from tree to tree without ever leaving the basket.

^{4/} "The New Apple Dance, Shake and Catch," American Fruit Grower, December 1966. Page 10.

^{5/} To illustrate the length to which growers will go to prevent bruising, some of Oregon's fresh market pears are picked by persons wearing gloves.

^{6/} Photograph courtesy Selma Trailer and Manufacturing Company.

In addition, there is usually some sort of conveyer incorporated with the boom to convey the fruit from the pickers' hand to a bin on the ground. One such conveyer, suitable for fixed length booms, has been designed by A. G. Berlage, a USDA agricultural engineer stationed at Wenatchee, Washington. Essentially, it consists of two belts padded with two inch thick polyfoam.

"Pickers place fruit at the upper end of the conveyer.... The fruit, held gently between the foam belt facings, did not roll or slide, and was conveyed to the bulk bin without damage."⁷

According to Mr. Berlage, these conveyers and picking aids are useful in making a picker from 12 to 30 percent more efficient depending on the orchard. It is generally agreed that, because of their costs, these picking aids are most feasible when they can also be used in other phases of apple growing. For example, most of these picking devices can also be used in pruning operations.

The figure most commonly heard in connection with future apple production in Washington is from 36 to 38 million bushels by 1970 and 40 million bushels by 1975 (1966 Washington apple production was approximately 33 million bushels). The 1970 estimates are primarily based upon Washington State University's 1961 Washington Fruit Tree Census,⁸ an exhaustive survey of the then present bearing and non-bearing fruit trees.

In conclusion, there will be an increase in demand for seasonal labor in the next decade in the industry as a whole. The completely mechanized apple pickers will have little, if any, effect on Washington apple orchards in the near future. Due to innovations such as controlled atmosphere storage, the demand for labor in the packing houses will be more stable. The labor reducing devices of more efficient trees and picking aids will be offset by the expected increased production. The net result will be that labor requirements will increase but at a slower rate than the increase in production. An 15 to 20 percent increase in the present labor demand is predicted by 1975.

^{7/} Washington Farmer, July 21, 1966. Page 27.

^{8/} Washington Agricultural Experiment Stations, Washington Fruit Tree Census, Stations Circular 441, Institute of Agricultural Sciences, Washington State University, October 1964.

Asparagus

The asparagus harvest will probably become completely mechanized by 1975. Notwithstanding the difficulty in obtaining any sort of firm commitment on a statement of this sort, the prediction is generally agreed to by sources both within and outside the industry.⁹ Two machines were reviewed in separate 1966 issues of the Washington Farmer. In addition, a Seattle based firm is producing and field testing a third machine. These machines are reportedly quite similar in operation. The Washington Farmer¹⁰ printed a report on a mechanical asparagus harvester which included a technical description of the operation of the machine. The machine described was that developed by Chuck Lyons of Yakima, Washington. This description is used below to illustrate the working of the mechanical asparagus harvester. The magazine reports "An uncomplicated arrangement of trailing wires carefully spaced on a detachable bar... across the front of the machine guides asparagus spears of the desired height into a pair of wires joined near their ground end by a fine cross wire for cutting. Shorter spears escape the cutting wires guide and remain uninjured to grow to the desired height. Selected spears are grasped without crushing between two one-sixteenth inch rubber plats and held firmly in position for the cutting wire and delivery to a gathering pan at the rear of the machine."

A second asparagus harvester, designed by the Hart Carter Company, is noted because of its compactness and speed. According to another issue of the Washington Farmer,¹¹ it moves at about three miles per hour when harvesting. The machine trails behind a tractor and is roughly three feet tall, five feet long, and five feet wide. The machine is small enough to fit in the back of a pick-up truck.

^{9/} As one example, see Rowland, Gerald W., "Asparagus Harvest Mechanization", Employment Service Review, Volume III, No. 1. January 1966. 16 pages.

^{10/} Washington Farmer, April 16, 1966.

^{11/} "A New Asparagus Harvester", Washington Farmer, October 20, 1966.

When labor is used to harvest the asparagus, the stalks are usually cut off below ground level so that in succeeding cuttings during the harvest season, the old stalks won't cut the harvesters' hands. The asparagus stalks therefore contain about two inches of white which is usually discarded during the processing procedure. The machines, on the other hand, cut the asparagus stalks above ground level, thereby eliminating the white segments. Total harvested tonnage would be less if the machines were used, which at present contract prices, would mean a lower return to the grower. However, since the white stubs are discarded anyway, the machine harvested stalks would be of higher quality, which could lead to new contract talks between processors and growers.

The article cited above, and other sources, mentioned that irrigation practices and cultivation techniques might have to be altered to accommodate the machines. At present the soil might be considered too wet to carry the machines and some of the fields not level enough for machine use. However, when questioned about this, Gene Coe, manager of the Washington Asparagus Growers, felt that making the fields acceptable for machine harvesting would be a minor problem. Both he and a manufacturer of one of the machines agreed that grower acceptance would be the largest obstacle to machine acceptance.

Thus, the mechanical harvesters have a number of advantages. A study has shown that if they recover 80 percent of the asparagus now harvested by hand, they would be accepted rapidly, and that they would be practicable if they recover as little as 60 percent of present harvested amounts. In addition, these machines are fast and relatively compact. Finally, they have passed the design stage and are in the production and field testing stage. For reasons such as these, Washington, the third largest asparagus producing state, (14 percent of the total U. S. production in 1965) will probably require little or no labor to harvest asparagus by 1975.

Snap Beans

There are two major types of snap beans produced in Washington at the present time, pole beans and bush beans. Pole beans are gradually being replaced by bush beans, and this will have a

major effect on labor demand. Whereas pole beans are harvested several times in one season by hand labor, bush beans are designed to be harvested once during the season, mechanically.

The State of Oregon's 1966 Seasonal Agricultural Worker Age Study¹² reports, "It takes about three acres of bush beans, yielding about three tons per acre, to equal the production of an acre of pole beans with its several pickings.....A mechanical bush bean harvester typically requires only three workers to operate..... Each row of beans is picked by cylindrical rotors with projecting steel fingers which comb through the bean bush and snap off the beans as well as a good part of the foliage. Most of the lighter stems and leaves are blown away and the beans are conveyed by belt into tote bins or dump trucks. One machine can harvest about five acres of bush beans in an eight hour day. Of course, a machine could operate nearly 24 hours a day and during the peak of the season 16 and 20 hours per day are not uncommon. Thus, it requires only about 15 man hours to harvest three acres of bush beans producing the tonnage equivalent of one acre of pole beans. An acre of pole beans requires an average of approximately four to ten pickers, depending on the type of picker, working nearly every day during about a three week period to pick the crop. Bush beans also eliminate considerable pre-harvest labor necessitated by pole beans as well as extra field help during the after-harvest."

The reasons given for the reported trends toward more bush bean production are: the increased costs of labor and the inability to obtain labor. Change-over from the production of pole beans to bush beans hasn't been as rapid as the relative production costs alone would warrant, primarily because the quality of the pole bean is substantially higher than the bush beans. Some of the quality difference is due to damage caused to the bush bean both in the picking process and the cleaning process. Removal of foreign particles is not a necessary processing step for pole beans. The rest of the quality difference is in the varieties themselves. Area horticulturists are, however, developing higher quality bush bean strains.

^{12/} State of Oregon 1966 Agricultural Worker Age Study, Oregon State Employment Service. N.D. Pages 32-33.

Although large acreages of bush beans are needed before an investment in a mechanical harvester is practical, it is expected that bush beans will predominate in the future. Present pole bean acreage in the Kent Valley of King County, for example, (formally the first ranked snap bean producing county) is gradually being urbanized. Most new bean plantings in the Columbia Basin will probably be of the bush bean variety. Therefore, except for a number of the smaller farms, which will still specialize in high quality pole bean production, most beans will be harvested mechanically by about 1975. The limiting constraint is the refinement of mechanical harvesters to permit higher quality production.

Hops

There is a strong demand for seasonal labor to work in this crop during two widely separated parts of the production process. From late April to early June, workers are needed as "peppers", "stringers" and "trainers". During August and September, workers are needed to harvest the crops.

"The commercial hop plant produces climbing annual stems from a perennial ground and root stock. In a single season, stems may grow 20 to 25 feet; and they will die back to the ground after maturity.... Hop plants are remarkably vigorous, sometimes growing six to twelve inches in 24 hours... The mature hop cones are one to four inches long, oblong, yellowish green, and papery to the touch;...."¹³

In this country hops are grown on high (from 16 to 22 feet) trellises. Twines moved over these trellises are used to support the hop vines. As the names imply, "stringers" loop twine over the trellis wires above the plants, and "peppers" drive stakes into the ground near the plants, to which the twine is then tied. A short time later in the season, when the vines are about two feet long, workers are needed to train the vines onto the supporting twine in the proper manner so that the vines can be easily removed later on during harvesting.

^{13/} U. S. Department of Agriculture, Hop Production, Agriculture Information Bulletin No. 240, Agricultural Research Service, 1961. Page 3.

At harvest time, "the vines are cut loose from the hill about four feet from the ground and from the overhead wires. This operation is performed by two men in elevated platforms or 'crow's nests' mounted on trucks or tractor drawn carts..... After being cut, the vines are lowered onto flat bed trucks and laced into 'cones' or narrow vertical v's, mounted on the truck beds to prevent tangling and unnecessary breakage. When the trucks or carts are loaded with vines from 60 to 90 hills, they return to the picking machine."¹⁴

The stationary picking machines are large two-story devices which comb the vines to remove the hop cones. The vines are discharged as waste materials, while the hops are inspected by four to eight persons who remove the remaining portions of leaves and stems. The hops are then dried to a specified moisture content, aged, and finally compressed into burlap wrapped bales weighing between 185 and 205 pounds.

The first stationary mechanical hop picker was developed around 1908. Portable picking machines for use in the field have been developed, but these are generally being replaced by the stationary machine, because of the larger capacity and superior performance of the latter.

Machines are being developed which, if successful, will reduce the demand for labor in hops. For example, a machine to replace "peppers" and "stringers" is being developed. It is possible that the machine will not be widely accepted by the grower, however. Since "training" cannot be done by machines, the grower will have more success in attracting labor for this task if the pegging and stringing jobs were available also.

A mechanical device is being developed which will remove the vines from the trellises at harvest time and stack them for the stationary picking machine. A source in the hop growing industry said, "The machines are very expensive, which leads to some hesitation on the part of growers who would like to use them."¹⁵ Taking all factors into account, some of which were not published in this report for the sake of brevity, it is probable that the hop industry will not realize further significant mechanization during the next ten years.

^{14/} Ibid., p. 31.

^{15/} Letter from Charles J. Massoth, Manager, Washington Hop Commission. January 4, 1967, (in the files of Consulting Services Corporation).

The development which will probably have the greatest effect on the demand for seasonal labor in hops during the next ten years will be a recently passed Federal marketing order. The order, which will attempt to control domestic hop production, merits examination. The order was enacted because, in the words of the commission set up to examine the hop industry, "Conclusions have been correctly reached that returns to producers are below parity, that a surplus of production is causing an increased annual carry out of hops which threatens hop prices and endangers producer investment in production and processing facilities and that this could be corrected by the proposed method of limiting the quantity of hops which may be marketed and allotting such quantity among producers. The proposed method does not constitute acreage control as no production ceiling nor acreage allotment will be placed on any producer and no machinery is proposed to enforce such ceiling or allotment. On the contrary, provision is made to assist those with excess production by pooling it for possible sale to the benefit of the producers thereof."¹⁶

The act provides for an allotment base which is a percentage of the average of a grower's last three crops. The act also provides that the secretary of the commission should determine in advance the probable salable quantity of hops for the coming season. This salable quantity would then be divided among the growers according to their allotment base. The allotment percentage is defined as the salable quantity divided by the total of all producer allotment basis, and an interesting feature of this Federal marketing order is that "no allotment percentage applicable to the 1968 and subsequent crops shall be less than 85 percent."¹⁷

Unless the act is amended, hop production will undoubtedly decline in the future, but the effective limit to the decline is 85 percent of average current hop production. Hops produced in excess of the quotas are termed pooled reserve hops, and the act further states that, "The committee shall offer pooled reserve hops for purchase by handlers for use in normal market outlets when necessary to meet domestic and export trade demand requirements not satisfied by salable hops."¹⁸

^{16/} U. S. Bureau of the Federal Register, Federal Register, Volume 31, July 1966, p. 9118.

^{17/} Ibid., p. 716.

^{18/} Ibid., p. 9717.

In conclusion then, the demand for labor in this industry will probably decline somewhat in the next ten years. There will probably be 15 to 20 percent less labor required. Furthermore, this reduction in the amount of labor needed will not be brought about by mechanization or similar methods, but rather by market conditions existing within the industry itself.

Raspberries

Estimates as to the future status of the harvest of raspberries are more cautious than for crops previously mentioned, primarily because operating and capital costs of the mechanized harvesters were not readily available. The raspberry harvest in Washington will be mechanized, at least on the very largest farms, at the end of this decade.

The raspberry is a tender fruit. The mechanical harvesters work by shaking the canes to which the berries are attached. In theory, the rate of shaking is adjusted so that the ripe berries which are more loosely attached to their receptacle will fall onto a conveyer belt; while the unripe berries will remain on the canes. The machine harvested berries are often crushed in the process. Consequently, the machines are not yet widely accepted by growers. However, only about 3 percent of the 1965 Washington raspberry crop went to the fresh market. The other 95 percent was sold to processors to be frozen for later processing. About 35 percent of the frozen portion of the crop was sold in cans and frozen packages as whole berries, while the remaining portion of the frozen crop was later used to make jellies and preserves, where a whole berry is not a necessity, or in some cases, not even desired. Therefore, it would seem that for roughly 60 percent of the raspberry crop, the condition of the berry after it has been harvested, within limits of course, is not an essential consideration.

According to an official of a local processing company, most raspberry farms could more properly be designated as gardens, though the tendency is for the farms to become larger and fewer in number over time. This source gave an estimate of 20 acres as that point at which machine harvesting costs became cheaper relative to harvesting by the use of seasonal labor. It was further estimated that 15 percent of the farms, producing 30 percent of the raspberry output, had more than 20 acres in cultivation. These farms will probably gradually become mechanized.

For the medium size raspberry growers, a semi-mechanized picking platform developed by researchers from Washington State University may offer promise. According to a report in the Washington Farmer,¹⁹ this platform, which could cut picking costs by \$400 an acre, could be built by a grower for a cost of around \$2,000. "The machine is a motorized platform with a nylon catching frame and conveyer belt. Pickers ride the platform and shake the raspberry into the catching frame. Berries are transported on the belts to flats." The article cautions that "insects and trash are eliminated effectively by the machine, but fruit rot presents problems because once picked mechanically, berries not up to par are very difficult to sort out." One of the designers noted that the device would still require refinement before it would be widely accepted in the industry.

Another consideration is that special varieties of berries may have to be developed before mechanical harvesting becomes widespread. Some strains of berries do not shake loose from their receptacles as easily as other strains do.

In conclusion then, there will probably be substantial mechanization of raspberry harvesting by 1977. One constraint to complete mechanization is the relative quality of the berry picked by hand versus machine picked berries. Another constraint is that not many farms are presently large enough to financially warrant a mechanical harvester. Between 50 percent and 75 percent of the raspberries now harvested by seasonal labor will be machine harvested by 1977.

Strawberries

The probability of Washington's strawberry harvest becoming even partially mechanized by the end of this ten-year period is low, although programs to develop a feasible mechanical harvester are in progress. Professors Denisen and Buchele of Iowa State University initiated one such program in 1959. A harvester designed by this group was described as follows:

"Basic design of the harvester tested in 1965 consists of 16 scoops or fork strippers on a chain drive, cam and cam follower, 3-point hitch, power take-off driven chain and sprocket assembly, and supporting frame mounted on a Ford tractor. The

^{19/} Washington Farmer, February 17, 1966.

principle involved is a stripping action as the fingers of the scoops are elevated through the strawberry foliage and fruiting stems..... Direction of pull is upward. The scoops are directed to the rear of the machine to compensate for forward motion so the berries are elevated directly upward.

"The tines or fingers are one-fourth inch in diameter and spaced five-eighths inch apart for a total width of 25 inches. The tines are curved slightly to facilitate entry into the strawberry bed and to prevent the harvested berries from rolling off. The scoops are tripped by a wire as they are elevated above a collection box. (Prior) Removal of the foliage with a rotary mower set above the level of berries facilitates harvesting.

"The concept of mechanical harvesting in these trials is based on one harvest with a concentrated ripening variety."²⁰ (Italics added.)

The italicized portion emphasizes what is probably the major obstacle to mechanization in the harvest of this fruit. In addition to the fact that the strawberry bed can only be harvested once with this method, "a firm berry with broad shoulders" is needed. "The berry must have either a brittle peduncle (stem adjacent to the strawberry) or an easy cap tendency."

If a plant strain with certain desired characteristics is not available, it is often a time-consuming process to develop a plant variety which meets the required specifications. The time problem is accentuated in the case of strawberries because, according to one source, the characteristics of the plant are such that they do not grow well in the greenhouse. Finally, if a successful strain is developed in Iowa, it is not at all certain that such a strain would be successful in Washington, as present Washington and Iowa varieties are usually not interchangeable. A research program for the purpose of finding a strawberry variety suitable for machine harvesting in Washington was initiated by one of the Washington State University's experiment stations in 1965.

^{20/} American Fruit Grower, May 1966, p. 14.

In summation, the constraint impeding mechanization in the strawberry industry is the development of a strawberry variety suitable for machine harvesting. A mechanical harvester is still in the experimental stage. Therefore, little or no change in demand for seasonal labor in this industry should occur in the next ten years.

Sugar Beets

The sugar beet industry is in the unique position, among those industries studied, of having the option of complete mechanization of all phases of the farming operation, if it should become necessary. The sugar beet harvest has been mechanized for the past dozen years. In this industry, seasonal labor has traditionally been employed in "blocking," "thinning," and "weeding." Blocking is a procedure by which, as the sugar beet plants grow, whole sections of each row are removed to prevent crowding. Thinning is a more detailed operation in which individual plants are removed.

At one time, the sugar beet flower produced a group of seeds held together as a hard-type ball covered with a cork-like material. When planted, this ball produced a number of plants at one point, all but the strongest of which had to be discarded by hand labor. During the 1950's, a massive search was instituted to find a plant which produced single seeds. The plant was found, and the resultant monogerm seed has been used almost exclusively, at least in Washington, since the late 1950's. The use of this monogram seed in connection with precision seeders, which space seed at a predetermined interval of between three and four seeds per foot, has greatly reduced thinning needs.

In some areas, the further refinement of pelletized monogerm seeds has been introduced. When the seed used is ungraded as to size, the planting machine sometimes drops more than one seed in each spot. The solution devised for this problem is to coat the seeds to a uniform size. This coating usually contains fertilizers, herbicides or similar ingredients. However, this pelletized monogerm seed is not considered suitable for all areas, because of the additional moisture it reportedly requires.



A final development which had an effect on the demand for labor for sugar beets is the development of a variety of chemicals designed to either prevent weeds from appearing or to kill weeds already present. These chemicals reduce labor requirements and increase efficiency by making the fields easier to work in.

Various mechanical devices have also been developed as a substitute for seasonal labor. The precision seeder has already been mentioned briefly above. In addition, mechanical thinners, similar to that pictured at left, are sold by a number of companies and are used extensively throughout the industry.²¹

One difficulty encountered with the mechanical thinners is that they cannot be as selective as human thinners. The mechanical thinners remove too many plants in thinly planted rows and sometimes impartially remove healthy plants and allow sickly ones to remain. A solution to this problem is the use of some combination of machine thinning on the majority of the field and hand thinning in those areas designated as lightly planted or hard to reach by machine.

As superior strains of seeds are developed, it would appear that the trend will be toward more machine use and less reliance on hand labor.

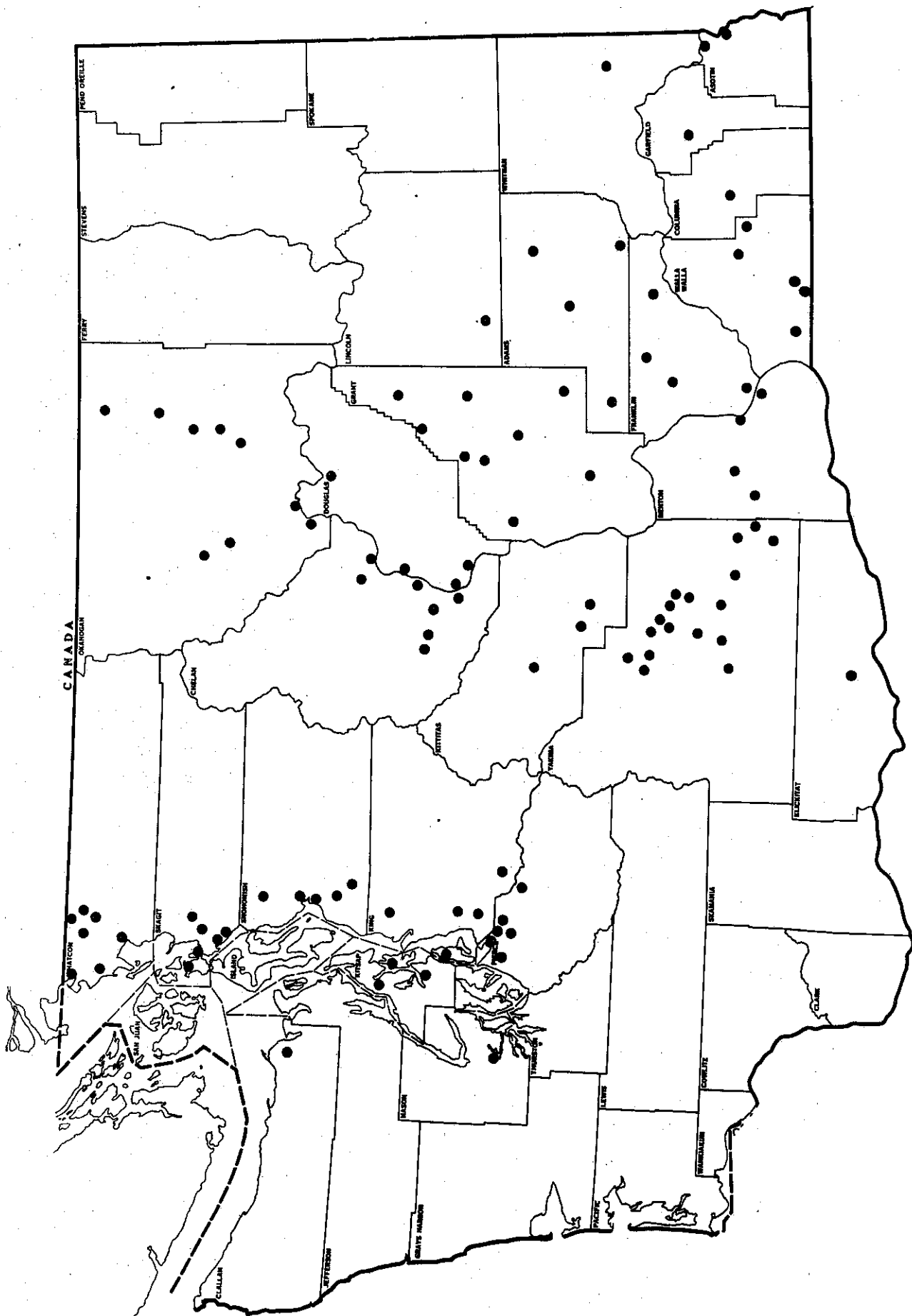
Unfortunately, the question of predicting labor demand magnitudes over the next decade is a difficult one in this industry. Hoeing and thinning of sugar beets has increased each year since 1956, due to a greatly increased sugar beet acreage. Hence, while the number of laborers per acre has decreased, the increased acreage has caused an absolute increase in the number of laborers demanded. How long the trend will continue is difficult to estimate.

The Federal Sugar Beet Act of 1948 regulates to some extent the acreage of sugar beets which is permitted in each area. Acreage is controlled during some years in order to maintain an orderly market. The Columbia Basin is becoming a more important sugar beet producing area. However, sugar beets are in competition with other crops, such as potatoes and corn, and a grower can switch easily from one crop to another, depending on market conditions.

^{21/} Photograph courtesy of U & I Sugar Company.

Based on the opinion of two independent observers familiar with the industry, a more or less constant sugar beet acreage is predicted for the next ten years. Finally, the estimate of one of the area's leading sugar producers is that, assuming effective weed control, labor requirements could be reduced by 35 percent in the next ten years.

APPENDICES



APPENDIX A

COMMUNITY ATTITUDES

The Community Attitude Survey was designed to determine the attitudes of community leaders about the migrant worker. The basic technique used to obtain this information was through a mailed questionnaire which was sent to selected community leaders in areas of Washington where migrants were believed to work.

Community leaders were chosen for the sample, since it was believed that they would be most likely to have some knowledge of, or contact with the migrant workers. Various published lists were used to obtain names of the officials for the sample. Of the 1,745 questionnaires which were sent out, 689 usable questionnaires were returned. An average of six questionnaires were received from over 100 different communities in 25 counties. The map opposite shows the communities which were sampled.

About 40 percent of the questionnaires which were sent out were returned. The response rate may be higher than 40 percent, because some names which were included in the initial mailings were deleted from the follow-up mailings. Names were deleted from areas which, according to the returns, had very small migrant populations or none at all. The response rate was still somewhat higher than the usual expected return of around 20 percent for commercially mailed questionnaires.

It should be noted that the questionnaire did not contain questions which were used as a check on the truthfulness of the respondent.

Some general conclusions may be reached from this study. The study revealed that a large proportion of the respondents sampled was unfavorable in its attitude toward the migrant worker. A much smaller percentage was found to be favorable. There was, however, a group of respondents who appeared somewhat vague about their attitude toward the migrant and chose to remain neutral. There appeared to be a tendency for the

leaders to express attitudes which would reflect well on their community and its concern for migrants, rather than the actual treatment of migrants within the community.

Community leaders were given an opportunity to evaluate the character of the migratory worker and his treatment and acceptance within the community. The 689 leaders who did respond were classified into the following groups:

1. City Officials -- 255 (Including 26 City Attorneys, 7 City Managers or Supervisors, 31 Fire Chiefs, 38 Municipal Judges, 41 Mayors, 66 Law Officers, and 46 Other City Officials)
2. Other Government Officials -- 142 (Including 19 Health Officers, 113 School Officials, and 10 Employment Security Officials)
3. Business Leaders -- 58 (Including 23 Editors and 35 Chamber of Commerce Officials)
4. Church Leaders -- 202 (Including 139 Protestant Pastors, 21 Catholic Priests, and 42 Church Lay Leaders)
5. Growers -- 20 (Including Officials of Growers' Associations)
6. Unidentified Community Leaders -- 12

Over half of the leaders (52 percent) reported they had personal contact with the migrants. Another 46 percent said they did not have any contact, and 2 percent either didn't know or didn't respond to the question. Each of the individual groups had about the same proportion of members who were personally involved with the migrants, except for government officials who reported less personal contact.

Since a large majority of the respondents had experienced some personal contact, it is possible that their attitudes toward the migrant worker may have modified stereotyped beliefs about the migrants which might have existed before contact. It is important to note that while the community leaders may be less prone to stereotype the migrant as a result of this personal

contact, they may still be biased in their attitudes due to their relationships with dominant economic groups, notably growers. It should also be remembered that a random sample within the community may have produced a significantly different population than the one which was chosen; and, as a consequence, the leaders' attitudes may not necessarily be representative of the total population.

The community leaders were asked to rank migrant moral standards with those of the average person in the community. Nearly one-half (48 percent) of the respondents felt that the migrants' standards were the same as those of the general community. There were also 40 percent who felt that the migrants' standards were lower than those of the general community, while only one percent felt that their standards were higher. There was little variation between the different groups.

Sixty percent of the leaders ranked the migrants as being as honest as the average person in the community. A majority of the respondents in all of the individual groups, except for the unidentified community leaders, concurred with this opinion. Only 28 percent of the respondents ranked the honesty of the migrant lower than the general community, and one percent ranked them as having higher honesty.

A large proportion (43 percent) of community leaders felt that the migrants were more prone to become involved in community incidents (drunkenness, fighting, etc.) when compared with other members of the community. There was agreement on this question from a large percentage of the members in each of the individual groups. However, almost the same proportion of respondents (40 percent) answered this question with "don't know" or did not respond. This seemed to indicate a certain amount of indecision for this group of respondents when they were asked to place the migrant in one of the two categories presented in the questionnaire (more or less prone to cause incidents). It appears that most of these respondents chose "don't know" or didn't respond rather than making a judgment about the migrant. Eleven percent reported that they felt migrants were less prone to cause incidents.

When asked if the migrants were generally considered to be good credit risks, 48 percent of the community leaders reported that it depended upon the individual. An additional 40 percent said that they were not considered to be good credit risks, and a very small proportion (4 percent) said they felt that they were good credit risks.

In general, there was no marked difference in the proportion of favorable and unfavorable attitudes which appeared when the leaders were asked to evaluate the migrant's character in terms of morality, honesty, propensity to cause incidents, or as a credit risk. At the same time, there was a large proportion of the leaders who chose a more neutral opinion, avoiding either of the two extremes which were presented in the response categories. This may indicate that these respondents had neither a favorable nor unfavorable evaluation of the migrant, but instead had no individual attitude about the migrant at all and chose a neutral response to avoid appearing biased in either direction.

When considering only the favorable and unfavorable responses in the evaluation of the migrant's character, a larger proportion of leaders expressed unfavorable opinions about the migrant than favorable opinions.

Comparison of
Favorable, Neutral, and Unfavorable Responses

	<u>Favorable</u>	<u>Neutral</u>	<u>Unfavorable</u>	<u>Total</u>
Honesty	1%	67%	32%	100%
Morality	1	54	45	100
Propensity to Cause Community Incidents	12	42	46	100
Credit Risk	4	52	44	100
Total Responses	4%	53%	42%	100%

In a similar manner, evaluation of the migrant's treatment of rental housing and his attitude towards mobility show the same proportions of favorable and unfavorable responses, but fewer leaders were found in the neutral zone. This is probably due to the construction of the questionnaire--where fewer neutral response choices were given.

The community leaders were asked if they thought migrants frequently damaged or let run down the rental housing where they lived. A majority of the respondents (57 percent) felt that the migrants usually did damage their rental housing, while 6 percent felt that they were good renters.

Migrant Treatment of Rental Housing

Usually Do Damage	57%
Usually Do Not Damage	6
Depends on Individual	4
Don't Know/No Response	<u>32</u>
	100%

The neutral responses in this case probably accounted for 32 percent of the total respondents and were those leaders who answered "don't know" or did not reply. There were few differences between the individual groups.

When asked to evaluate the mobility factor in the life pattern of the migrant worker, over half (52 percent) of the leaders reported that the migrant preferred to move from job to job rather than settling in one place. Thirty-four percent of the respondents felt that the migrants would rather settle down.

Migrant Mobility

Stay in One Place	34%
Move About	52
Depends on Individual	4
Don't Know/No Response	<u>10</u>
	100%

It is interesting to note that the church leaders were the only individual group which felt that the migrant would rather settle than continue to move about. The response from this question is also comparable with similar results in the Growers Survey. More than three-fourths of all growers felt the migrant preferred to move about.

What seems to be most significant in the survey results concerning the character of the migratory worker is the small percentage of respondents who held favorable attitudes about this group. Instead, there was a much greater tendency to attribute unfavorable characteristics to the migrant group. This pattern accounted for just less than half of the total respondents and was noticeable in all of the items of character evaluation. The majority of the respondents seemed to comprise this neutral group which was mentioned earlier.

Community Attitudes Toward the Migrant in the Community

A second set of items which were evaluated in the Community Attitude Survey were concerned with the treatment and acceptance of the migrant within the community. The focus was on the community, rather than on the individual migrant.

The leaders were asked to evaluate the treatment given to the migrant by the local law enforcement agency. A large proportion of the respondents (85 percent) reported that the migrant was treated about the same as other persons in the community.

Migrant Treatment by Law Enforcement Agencies

Better	3%
The Same	85
Worse	9
Don't Know/No Response	<u>4</u>
	100%

All of the individual groups were in agreement with this opinion. However, this may reflect some occupational biases, especially in the City Officials group which includes the law officers. The leaders also reported on the concern shown for the migrants by the law enforcement agency as compared to the concern shown for other people in the community. Sixty-five percent of the leaders felt that the concern was the same for the migrant, 13 percent felt the police were less concerned, and 17 percent felt they were more concerned.

The leaders evaluated the available medical services for migrants in their communities. A large proportion of the respondents felt they had all (12 percent) or most of the services (31 percent) which they needed. At the other extreme, there were only 14 percent who felt that they had very few of the needed services, while another 7 percent felt they had none of the services they needed. By comparison, in the Growers Survey, the growers gave a similar response when asked the same question. About three-fourths of them felt the migrants had all or most of the services they needed, while none of them felt they did not have any of the services they needed.

Medical Services Provided for Migrants

All They Need	12%
Most They Need	31
About Half They Need	6
Less Than Half They Need	7
Very Little They Need	14
Almost None They Need	7
Don't Know/No Response	<u>22</u>
	100%

These results do not appear to be in agreement with data which are reported later in this chapter. As will be shown, medical and dental care were ranked second in a list of services which the leaders felt that the migrants needed the most. It would appear that the responses to the question on medical services may also be a result of community bias. It seems reasonable to assume that if a majority of the respondents felt that these services were adequate, they would not have ranked this need so high on the list of services which migrants needed the most.

The community leaders were very favorable in their evaluation of the degree of acceptance of the migrant within the community structure. The majority (63 percent) felt that the migrants who had settled down were now generally accepted as community members. A small percentage of respondents reported that they did not mix (9 percent), and only one percent reported they were not accepted at all.

In spite of the respondents' feeling that the migrant was accepted into the community, there were only 17 percent who believed that the migrants had a desire to participate in the activities of the community. A larger proportion (72 percent) said they felt there was no desire by the migrants to participate. This may either indicate that acceptance of the migrant is insincere or superficial, causing the migrant to remain isolated or with other migrant friends, or that the migrant is unacquainted with community life. In this case, there would be no desire to become involved in activities not oriented to his particular needs.

Another inconsistency is that 64 percent of the leaders reported that the migrants were usually good neighbors and that the respondents would be willing to live next door to them. It may

be recalled that earlier in this chapter the respondents were generally unfavorable in their character evaluation of the migrant. They now appear very favorable in their attitude toward migrants, which again may reflect some community bias.

It would seem then, for the most part, that the leaders may have been more concerned with an evaluation of the community's image rather than with the actual treatment and assimilation of the migrant. Since most of the leaders are actively concerned with community welfare and improvement, it seems feasible that any occupational and/or community biases which were found in the results could have been expected.

Finally, when asked what they thought the migrants needed most in the way of community services, all of the respondents ranked some form of education as being of primary importance. Adult vocational education was ranked first, with youth vocational education and basic education ranking third and fourth, respectively. As was mentioned earlier, the second ranked service most needed was medical and dental care. By comparison, in the Growers Survey, the growers indicated that vocational training was needed for the migrants; however, they specified that the program was needed by migrant children. They ranked summer schools second for children.

APPENDIX B

THE FORMER MIGRANT

The Former Migrant Survey was designed to yield data on the economic and social characteristics, attitudes, and reasons for settlement in Washington State of a group of migrants who have now left the migratory stream. A total of 686 former migrant families were interviewed in ten counties in the State of Washington. For the purposes of the survey, a former migrant was defined as one who now lives in a particular place in the State of Washington for most of the year, and at some former time moved around the country working on different kinds of agricultural jobs but spending the winter in a state other than Washington. Further, the former migrant, to be included in this survey, must have settled in Washington no later than December 1, 1965, and must have spent most of his time in the State of Washington since then.

The Former Migrant Survey was not based on any type of random sampling technique, for owing to the scarcity of information on the numbers and location of the former migrants, it was impossible to make any definition of the total population of former migrants. However, it was possible to select areas for interview where former migrants were known to live. A survey of migrant education carried out by the Office of the Superintendent of Public Instruction showed which areas had a large enrollment of children of former migrants. These survey results were used to help in the selection of interviewing areas.

The identification of individual former migrants was made with the help of information provided by the interviewers (some of whom were themselves former migrants), church groups, schools, welfare organizations, and a variety of other contacts in individual localities. The interviewees were also asked for the addresses of friends who were former migrants. Identification of the Latin American former migrant was fairly easy in the relatively close-knit Latin American communities but was substantially more difficult for the Anglo former migrant.

Thus, it occurred that many more Latin American former migrants than Anglo former migrants were interviewed. Of the total number of interviews conducted, 84 percent were with Latin American families, 14 percent with Anglo families, and 2 percent with Others. Hence, while comparisons cannot be made between the former migrants and the non-resident migrants as groups, without bias, certain comparisons can be made on an ethnic group basis.

In the analysis of the results of the survey, ethnic group comparisons are made only between the two major ethnic groups: Latin American and Anglo. The third group--Other--was too small, representing only 13 people who themselves were made up of four groups: Negro, Canadian Indian, United States Indian, and unidentified.

The main conclusion which emerges from this study is that settlement out of the migratory stream occurs without a discernible pattern and is almost entirely dependent on the availability of steady, non-migratory employment. There are no characteristics that differentiate the former migrant before settlement from his non-resident counterpart. Settlement undoubtedly brings benefits to the migrant in the form of increased income and opportunity for education. The Latin American bias in this survey means that it is not possible to come to any conclusions about the relative propensity that the Latin Americans and Anglos have for settlement. However, an important point which does emerge is that even after settlement the migrant's attachment to agriculture is still substantial. Settlement of itself does not allow the migrant to move out of agriculture; education is a necessary accompaniment.

For the future it could be said that the migrants will probably settle down only to the extent that steady employment is available outside the migratory stream. However, not only must employment be available outside the migratory stream, but it must be agricultural employment as the migrant is seldom equipped for anything else. The effect of this requirement is to reduce the possibilities for settlement as opportunities for year round agricultural jobs for resident workers are limited. It seems to be only after settlement, when educational opportunities are increased, that the migrant can gradually equip himself for non-agricultural employment. Even so, the relatively small number who do receive adult education suggests that the former migrants need more courses suited to their

Current Median Family Size by County

	<u>County</u>					
	<u>Benton</u>	<u>Chelan</u>	<u>Douglas</u>	<u>Franklin</u>	<u>Grant</u>	<u>Okanogan</u>
Median Family Size	5	3	4	5	5	3
Percentage of Latin American Families	94%	7%	5%	90%	100%	-
Number of Families Interviewed	94	14	19	52	65	26
	<u>Skagit-Snohomish</u>	<u>Walla Walla-Columbia</u>	<u>Whatcom</u>	<u>Yakima</u>		
Median Family Size	8	5	7	6		
Percentage of Latin American Families	100%	98%	100%	88%		
Number of Families Interviewed	21	50	24	320		

special needs than are presently available. Until more migrants are able to obtain a better education, they will remain tied to agriculture, and for the majority this will also mean being tied to migrancy.

Family Patterns

The large number of Latin Americans in this survey had some particularly noticeable effects on family characteristics. Family size was markedly larger for the former migrant family than for the typical U. S. family. The current median family size for all former migrants was six persons, which compares with the U. S. median family size of 3.6 persons. The table opposite, which gives family size by county and the proportion of Latin Americans interviewed by county, shows clearly how large numbers of Latin American families resulted in a higher median family size. In counties such as Chelan and Douglas, where Anglos made up the majority of the respondents, family size was more in line with that of the typical U. S. family.

A comparison between the family size for the former migrants and for the non-resident migrant reveals that there are small differences.

Median Multi-Person Family Size

<u>Ethnic Group</u>	<u>Former Migrant</u>	<u>Non-Resident Migrant</u>
Anglo	4.3	3.2
Latin American	6.5	6.2

These differences are actually smaller than they appear, as the figures for the former migrant family reflect the size of the family now rather than at the time of settlement.

The age distribution of the former migrants again reflects the large number of children in the Latin American families, particularly in the 10 to 19 age group. The median age of the heads of household in the year of settlement was 33 years, which compares with the median age of the non-resident adult migrant of 31.5 years.

There was a fairly even distribution between the sexes; 51 percent of the former migrants were male and 49 percent female. Among non-resident migrants in Washington State, males outnumbered females three to two.

It is significant that only 3 percent of the former migrant families were single-person families, whereas 55 percent of Washington State migrant families were single-person families. The even sex distribution among former migrants also indicates that there were few single-person families.

It may be that the multi-person families were easier to find and interview than the single persons. This might have occurred because of the methods used to locate former migrants and because the single person might be more likely to settle in one of the large centers of population in Western Washington. However, despite this factor, it would seem that a family would be more likely to settle down than a single person. The costs of migrancy, not only the money costs of continual movement around the country but the costs of disrupted education and lack of permanent surroundings, would be greater for a family than for a single person. Thus, it is quite possible that migrants with families were more likely to settle down than unattached migrants.

Educational Trends

The former migrant head of household had completed a median of four years of education before coming to Washington State. A median of eight years of education had been completed by the adult non-resident migrant. The lower level of education of the former migrant was caused by the number of Latin Americans in the sample. Comparison by ethnic group shows markedly different educational patterns for the Latin American and Anglo groups.

Median Educational Level (Grades) by Ethnic Group

<u>Ethnic Group</u>	<u>Former Migrant Head of Household*</u>	<u>Non-Resident Migrant Sample Adult*</u>
Anglo	8.6	10.0
Latin American	4.2	5.4

(*) These groups are comparable.

Since settling in Washington State, some of the former migrants heads of families have received additional schooling. This additional schooling took the form of instruction in English and general education and vocational training. Some 73 heads of household attended classes to learn English and continue their basic education. Of these persons, all but four were Latin Americans. This means that 12 percent of all Latin American heads of household surveyed received instruction in English and basic education.

The table below shows vocational training (as distinct from instruction in English) received by the head of household since settling in Washington State.

Vocational Training
Received by the Head of Household

<u>Was Vocational Training Received?</u>	<u>Before Settling in Washington</u>		<u>After Settling in Washington</u>	
	<u>No.</u>	<u>Percent</u>	<u>No.</u>	<u>Percent</u>
No	660	96	629	92
Yes	24	4	55	8
	684	100	684	100

Although relatively few persons received vocational training, there was an increase in numbers after settlement. Whereas before settlement, 4 percent of the total respondents had some vocational training, after settlement there was an increase to 8 percent.

Certain differences are noticeable in the amount of vocational training received by ethnic group. Before settlement, 14 percent of the Anglo heads of household received vocational training as compared with 2 percent of the Latin Americans. After settlement, the relative percentages were 16 percent and 8 percent, respectively. The differing amounts of vocational training received by the two ethnic groups may be a result of the differences in the amount of basic education received by ethnic group.

As noted earlier, the Latin Americans have a very poor basic education; 41 percent of them did not progress beyond the third grade. It may well be that this lack of basic education is the

very thing which prevented more Latin Americans from receiving vocational training. Certainly such training does require a certain level of basic education and fluency in English, and it may be that the majority of vocational education programs are pitched too high for the average former migrant. This would explain the higher participation rate of the Anglo former migrant and the low overall participation rate for total respondents.

When the numbers receiving vocational education, general education, and language instruction after settlement are taken together, the increased opportunity for additional education that comes with settlement is clearly demonstrated. Nearly 19 percent of all former migrant heads of household received some form of additional education after settling in Washington State. This increased opportunity for education is perhaps one of the most important consequences of settlement. A non-resident migrant has relatively little opportunity to take advantage of educational programs, for he is seldom in one place long enough to complete a course. Without such education, a migrant finds it difficult to obtain work outside agriculture.

Employment Patterns

The heads of household were questioned about the jobs they had held, both before and after settling in Washington State. The information obtained about the "last migrant job" should be viewed with caution for some respondents had difficulty in remembering exactly which job they had held at a given time. This tended to occur when respondents had settled a number of years ago, or had held several jobs within a year. There also appears to be a contradiction in terms insofar as some respondents apparently held "non-migrant" jobs before they settled down (see following table).

These non-agricultural jobs probably represent winter employment in the "home-base" state at a time when the respondent still considered himself to be migrant. However, it should be noted that the respondents did find it difficult to understand what was meant by the "last migrant job" and there was considerable confusion about this question.

Employment of the Head of Household
in His Last Migrant Job and Current Job

<u>Occupation</u>	<u>Last Migrant Job</u>		<u>Current Job</u>	
	<u>No.</u>	<u>Percent</u>	<u>No.</u>	<u>Percent</u>
Agricultural Laborer	499	73	214	31
Agricultural Operative	24	4	79	12
Non-Agricultural Laborer	74	11	104	15
Non-Agricultural Operative	27	4	40	6
Personal Services	17	2	24	4
Skilled Craftsman	14	2	17	2
Sales	6	1	3	0
Clerical	-	-	4	1
None	19	3	194	28
	<u>682</u>	<u>100</u>	<u>682</u>	<u>100</u>

It can be seen that both before and after settlement "agricultural laborer" was the largest single employment category. Although only 31 percent of the respondents were currently employed as agricultural laborers compared with 73 percent who were formerly so employed, this figure probably reflects the fact that the survey took place at the end of the active farm season when agricultural employment was slack. The high unemployment figure under "current job" (28 percent) tends to confirm this supposition. It is probable that more than 50 percent of all former migrant heads of household were still employed as agricultural laborers. (This is allowing at least 5 percent for "normal unemployment" for this group and transferring the remaining 23 percent currently unemployed to the agricultural laborer category.) Thus, attachment to agriculture was strong even after settlement.

Attachment to agriculture appears even more pronounced when it is remembered that 12 percent of the respondents were employed as agricultural operatives after settlement. This means that over 60 percent of all former migrant heads of household were in jobs associated with agriculture after they had settled in Washington State.

Some change in employment patterns did take place after settlement. There was a small movement out of agriculture and some movement into more skilled agricultural jobs. The number

employed as agricultural operatives increased from 4 percent before settlement to 12 percent after settlement. However, the most significant fact to emerge from the study of employment patterns is that even after settlement attachment to agriculture is strong. The probable reason for this is that lack of education is a severe handicap in the labor market and largely confines the former migrant to agricultural employment.

The former migrant's attachment to agriculture is again strongly emphasized when it is considered that 80 percent of the families reported that one or more family member had worked in agriculture during 1966. This figure does not contradict previous figures but rather suggests that some former migrants held several jobs within a year. Moreover, the age distribution of those family members in agriculture suggests that some of this agricultural employment reflected summer employment of school age youth.

Age Distribution of Family Members
Working in Agriculture in 1966

<u>Age</u>	<u>No.</u>	<u>Percent</u>
0- 9	21	2
10-15	196	16
16-19	243	20
20-29	207	17
30-39	225	19
40-49	164	14
50-59	109	9
60-69	38	3
70 & Over	<u>6</u>	<u>1</u>
	1,209	100

The fact that 39 percent (469 persons) of those working in agriculture were female, and there were only 47 female heads of household in this survey, again suggests that much of this labor force is not permanently in the labor market. However, the number of women who do in fact work full time is not known. The majority of those members of former migrant families who did work in agriculture performed non-mechanized tasks, with 48 percent employed picking, cutting and harvesting and 19 percent hoeing, weeding and cultivating. Among the crops worked

by the greatest number of those workers were asparagus, hops, cucumbers, and sugar beets. After allowing for summer employment of youth and women, the majority of former migrants who still worked in agriculture were engaged in non-mechanized stoop labor tasks.

The use of government operated employment services by the former migrant was also investigated. It emerged that very few former migrants have used these services. Only 5 percent of the respondents used the State Employment Service to find their first settled job and only 7 percent to find work since their first settled job. (These percentages represent 35 and 48 people, respectively.) The majority of placements were as unskilled laborers, and the greatest number of these were as agricultural laborers. Thus, the government employment services apparently have little impact on the life of the agricultural migrant. It is very probable that "word of mouth" and advertisements are the means by which the majority of former migrants find their employment.

Living Patterns

A comparison of family income before and after settling in Washington State shows that earning power was increased after settling in Washington. The median family income was approximately \$1,600 before settlement and approximately \$3,800 after settlement. The median year of settlement was 1959, hence the income of \$1,600 is not expressed in 1966 dollars and so is not comparable with the income of \$2,300 reported in the Basic Migrant Survey.

These figures must be regarded as approximations, for an accurate estimate of total annual income was difficult to obtain when many of the respondents had held several jobs within a year. Moreover, thinking in terms of yearly income did not come easily to those whose normal pattern of thought was in terms of a weekly or even daily income. The figure for income before settlement is likely to be less accurate than that for income after settlement, because some respondents were trying to remember an annual income of several years ago.

The increase in income that came with settlement reflects the increased opportunities for employment and the decreased time spent in traveling. However, despite this, the income of the former migrant family was still low.

Welfare plays an important part in the existence of some former migrant families. After settling in Washington State, 24 percent of those families interviewed received help from the welfare authorities. Welfare was understood by the respondents to be both money payments and foods received, and is used here in this sense. Only 58 families (or 8 percent) received any welfare benefits before settling in Washington State.

Of course, the residence laws in most states make the non-resident migrant largely ineligible for welfare payments, though not for surplus foods. However, some families did receive money payments before settling. Some of this may possibly have come from sources other than the state governments. A comparison of the median welfare payments received before and after settlement shows an increase after settlement from approximately \$270 per family to approximately \$400 per family. These figures should be viewed with caution as some respondents had difficulty in remembering exactly how much welfare they had received over the yearly period. The families who received the greatest amount of welfare money tended to be the large ones. There was an indication that proportionally more matriarchal families (37 percent) than patriarchal families (22 percent) received welfare payments.

It is often suggested that the migrants are not readily accepted by the communities in which they reside. Thus, it might be expected that migrants settling down permanently in a community would meet an unfriendly attitude. However, when asked about the community's attitude toward them, 93 percent of the former migrants replied that the community had been friendly and helpful toward them. Only one percent reported that the community had been unfriendly, and 6 percent that the community had not cared. These answers must be modified by several considerations. First, there is the probable tendency of the respondent to answer in a manner that would be expected to please the interviewer. To some extent, the interviewer and questionnaire represented the community, and thus the respondent might have hesitated to make an unfavorable judgment against the community. There is also the possibility that some respondents interpreted the community to mean their own immediate neighborhood, and in some cases, their immediate neighbors.

Attitude of the Community
Toward the Former Migrant Family

<u>Attitude of the Community</u>	<u>Anglo</u>		<u>Latin American</u>	
	<u>No.</u>	<u>Percent</u>	<u>No.</u>	<u>Percent</u>
Friendly	79	85	542	94
Unfriendly	3	3	5	1
Have Not Cared	<u>11</u>	<u>12</u>	<u>31</u>	<u>5</u>
	93	100	578	100

Some difference of opinion on the community's attitude toward them is noticeable between the Latin Americans and the Anglo respondents. More Anglos than Latin Americans felt that the community had not cared about them and that the community was unfriendly toward them. A possible explanation for this is that Latin Americans do tend to live near each other and have strong ties with friends and relatives. They are also cut off from the community to some extent by their lack of fluency in English. Thus, it may be that Latin Americans have less direct contact with the community at large than do Anglos, have less desire to assimilate, and so experience fewer occasions on which they might encounter any unfavorable community attitudes.

Factors Leading to Settlement in Washington

From the foregoing analysis, it has emerged that the former migrant was in no way different from the non-resident migrant. Educational attainment, family composition, and income of the former migrants at the time of settlement were typical of those found among non-resident migrants. The only factor which so far has been identified as a possible influence on the decision to leave the migratory stream is the existence of a family.

The former migrants themselves were questioned about their reasons for settling in Washington State, and their answers provide significant information about their decision. It should be noted that no form of check list was used in this question, and the interviewers were instructed not to suggest answers to the respondents but to probe at length to obtain as detailed an answer as possible. However, when the former migrants own

reasons for leaving the migratory stream are examined, it should be remembered that the respondents' analysis of his decision was limited by his low level of education, his probable lack of concern with such matters, and inaccurate recollection when settlement occurred a number of years ago.

The reason most frequently given for settling in Washington State (37 percent of all responses) was, "Work available, better wages." In cross-tabulation, it stood out as the single most important reason for settling in Washington.

Reasons for Settlement in Washington

	<u>No.</u>	<u>Percent</u>
Work available, better wages	436	34
Like country, weather better	223	18
Relatives, friends here	131	10
Tired of moving around	112	9
Better schools, children want to stay	112	9
Better living conditions	103	8
Better working conditions	76	6
Illness kept me here, better for health	29	2
Not enough money to leave	27	2
Other	22	2
	<u>1,271*</u>	<u>100</u>

(*) Multiple responses.

The experimental pretest of migrant attitudes also indicated that the migrant attached importance to steady employment and higher wages.

In the Former Migrant Survey, the second most frequently given reason for settlement in Washington State was, "Like the country, weather better." This reason accounted for 18 percent of the total responses and also stood out in cross-tabulations, ranking second consistently. No special emphasis was placed on any other reason. Thus it would appear that availability of work and better wages was the principal reason for settlement. There were also environmental considerations but no other factor had significant influence on the decision to leave the migratory stream.

The extent to which migrants themselves want to settle down is difficult to ascertain. Certainly their major concern is to obtain steady employment. To a great extent, this must imply concern with settling down in one place. Other studies of the migratory agricultural worker do mention a desire to settle down on the part of the migrant*. Some of the area supervisors of the interviewers for this survey reported that the former migrants really do want to settle down. One supervisor noted the difficulties of doing so, in particular the lack of welfare benefits during the first year. From the same source came a report that some families have tried several times to settle down before their successful attempt. However, balanced against this is the fact that desire to move out of the migratory stream was not emphasized in the migrants own reasons for settling in Washington State.

From the above analysis it might be concluded that although the migrant with a family might be more likely to leave the migratory stream than the single migrant, the decision to settle down appears to occur randomly throughout the migrant group. There is no evidence of any migrant elite that is more suited for settlement thorough education or income, or better equipped to take the opportunities for settlement. The only factor with any real influence on the decision to settle, apart from the existence of a family, is availability of employment. Since it is probable that many of the migrants do desire to leave the migratory stream, it may be assumed that a substantial number of them, if given the opportunity of steady employment, will decide to stay in one place.

(*) Harland Padfield, "The Arizona Seasonal Farm Worker," Arizona Review of Business & Public Administration, Vol. X, No. 4, (April 1961) pp. 2-14. Mr. Padfield's article makes reference to other publications mentioning the same fact.

APPENDIX C

SUMMARY OF PROCEDURES USED IN THE INTERVIEW SURVEYS

There were a total of five surveys conducted to produce the primary data for the study. These were (1) a basic study of migrant characteristics, (2) a survey of migrant housing, (3) a survey of growers, (4) a survey of former migrants, and (5) a mail survey of community attitudes. The first three surveys were the more important part of the study, and had a common sample base. These will be described in some detail below. The other two will be summarized more briefly.

The sample for the three major surveys was based on a universe of all farms in the state likely to employ migrant workers. This was viewed as the only feasible method of obtaining an unbiased sample of the migrants. However, an experimental evaluation was also made of a roadside sampling technique.

In the absence of any complete list of farms throughout the state, several sources were combined to establish a universe of farms employing labor. These included listings provided by several governmental agencies; local offices of the Agricultural Soil and Conservation Service, local offices of the Farm Placement Service of the Washington State Department of Employment Security, the Washington Fruit Commission, and others, together with listings of large operators obtained from various local sources. It is believed that the total listings assembled include all but a small percentage of farms in the state which employed migrants in 1966. For the most part, farms were sampled randomly from the list, except that a small number of known large operators was sampled with 100 percent probability.

Farms thus sampled were contacted by representatives from the Seattle office of Consulting Services Corporation or by area field supervisors to obtain the growers' cooperation in the study. During the remainder of the farm employment season, they were contacted at two-week intervals to obtain estimates of the number of migrant workers employed by them on each Monday, and to determine whether there were any migrants

immediately present at the farm who might be interviewed for the Basic Survey of Migrant Characteristics.

When migrant workers were found to be present at the sample farm, the supervisor or an interviewer would obtain a list of the workers and their overnight locations from the farmer or another responsible person on the farm. The interviewer would then proceed to obtain an interview from the worker, or from the head of his family if there were other members of the family present at that location. The interview was usually conducted during evening hours at the overnight accommodation. In areas where Spanish-speaking migrants were employed extensively, Spanish-speaking interviewers and a Spanish version of the questionnaire were utilized. Approximately 2900 interviews were completed.

The Housing and Sanitation Survey covered some 900 units occupied by migrant workers sampled in the Basic Survey of Migrant Characteristics. Since the Housing and Sanitation Survey was started at a considerably later date than the Basic Survey of Migrant Characteristics, only those units occupied by workers interviewed in the latter half of the growing season were included in the survey. The interviewer mainly used a check list in evaluating both the camp and the individual housing unit occupied by the sample migrant. The check list was developed in cooperation with the State of Washington Department of Health. Where there was more than one sample housing unit in a camp, only one set of data was obtained for the camp, and the data were subsequently weighted to produce a proper expansion.

The Growers Survey covered proprietors of the same farms which were in the sample for the Basic Survey of Migrant Characteristics. Approximately 350 growers were surveyed. The opportunity presented by the Growers Survey was also used to verify or modify some of the data collected on numbers of migrant workers employed at various farms. In almost all cases, interviews were conducted with the owner or manager of the sample farm.

The Former Migrant Survey was not based on any type of random sampling procedure, since there was no universe that could be established as a sample base. Consequently, interviews were obtained with former migrants who were identified by other former migrants and from a variety of other contacts in

individual localities, such as schools, church groups, welfare organizations etc. Identification of former migrants was fairly simple in the relatively close-knit Latin American community, but was substantially more difficult for the Anglo former migrant. A total of 686 former migrant families were interviewed. However, it appears from other data that our sample actually covered a large proportion of all former migrants. It may be noted that the definition of a former migrant, as used in this survey, is a person who was formerly employed in seasonal agricultural work but who settled in the state at least a year ago, as a family head or as a single individual at that time, and who now stays at his Washington winter residence for most of the year.

The Community Attitude Survey was conducted by mail with community leaders in areas where migrant agricultural labor was concentrated. Persons contacted in this survey included municipal and county officials, farm organization leaders, business leaders, religious leaders, editors, and others. Information sought was related to community knowledge and attitudes concerning the migrant workers. An original mailing was made to 1,745 persons, followed up by a second mailing. A total of 689 useable questionnaires was returned.

All interviewing on the five surveys was conducted by interviewers who had been recruited and trained by representatives of Consulting Services Corporation. Many of the interviewers were Spanish-speaking, for the most part former migrants or descendants of migrants themselves. The field supervisors were professional-level people, most of them school teachers available for this study during the summer season. Supervision and control from the Consultant's office was maintained through frequent trips to the several survey areas by staff members.

Completed questionnaires were edited, coded, and forwarded to a tabulation agency for data processing. A detailed weighting procedure was developed in order to assure proper balance between various segments of the sample, and to provide reliable estimates for the total population.

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GLOSSARY OF TERMS*

1. Automobile: This classification includes pickup trucks as well as cars.
2. Bonus: Extra pay that a migrant might receive at the end of his employment on a farm, in addition to his regular payment.
3. Bracero: A Mexican worker who temporarily entered the United States to work in agriculture. Their terms of employment were strictly regulated by Federal law. The Bracero Program was discontinued in December 1964.
4. Crew Leader (Labor Contractor): A man or woman who has arranged to bring a group of workers to the farm where they are working, who supervises their work, and who represents the workers in negotiations with the employer. He may or may not collect and distribute wages.
5. Crop Grouping: Responses to questions concerning crops were grouped into ten classes, according to the following format:
 - A. Apples--no grouping.
 - B. Tree Fruit--pears, peaches, cherries, plums, prunes, apricots, melons, and other soft fruit.
 - C. Berries--strawberries, raspberries, blackberries, blueberries, and other berries.
 - D. Asparagus--no grouping.
 - E. Grapes--no grouping.
 - F. Hops--no grouping.
 - G. Sugar Beets--no grouping.
 - H. Wheat--wheat, small grains, onions, potatoes, and hay.
 - I. Vegetables--cucumbers, beans, carrots, radishes, lettuce, cauliflower, rhubarb, clover, pasture, alfalfa, and mint.

(*) The same glossary is included in all volumes.

6. Day-Care Center: An establishment which is maintained and operated for the group care of children not of common parentage.
7. Day-Haul Worker: A person who travels from home on a daily basis to obtain temporary work in agriculture.
8. Ethnic Group:
 - A. Anglo--Caucasian.
 - B. Latin American--American citizens predominantly of Mexican ancestry.
 - C. Other--Predominantly composed of American Indians, Canadian Indians, and Negroes.
9. Family: A person, or group of persons living together related by blood or marriage and sharing living expenses.
10. Head of Household: A person who is the acknowledged leader of a family.
11. Housing Unit: A place intended for use as sleeping quarters by one or more persons and having a separate outside entrance. This classification includes permanent constructions, tents, trailers, automobile, and other types of vehicles.
12. Labor Contractor: See Crew Leader.
13. Machinery: Any kind of powered device, whether powered by gasoline, diesel oil, electricity, or other means, but not using animal or human strength.
14. Mean Response (same as Average Response): A weighted average of responses (or classed means in grouped data) in quantitative frequency distributions.
15. Median Response: That response in quantitative distribution which was larger than 50 percent of the responses, but smaller than the other 50 percent.
16. Migrant: An agricultural worker who stays overnight away from home to obtain temporary work on a farm.
 - A. Intrastate Worker--a resident of Washington State who travels around the state to obtain work.

- B. Interstate Worker--a resident of another state who enters Washington to obtain work.
17. Piece Rate Payment: A method of payment by which a worker is paid on the basis of the number of units picked (box, flat, etc.) rather than on an hourly basis.
 18. Rounding Percentages: Percentage distributions in various tables throughout this report may not add to 100 percent because of rounding. However, in all cases, the total of all possible responses to a particular question is represented as 100 percent to indicate that the distribution of responses is complete. Less than 0.5 percent is represented by zero percent.
 19. Sample Adult: One family member over the age of 16 who was picked in a random manner from among all family members. This person was asked a series of detailed questions, and the answers given were taken to be representative of all adult members of the family.
 20. Sample Child: One family member between the ages of 6 and 15 who was picked randomly from among all family members. A series of questions were asked about this person and the answers given were taken to be representative of the characteristics of all family members within that age group.
 21. State: For purposes of this report, the term "state" refers to eighteen Washington counties which were identified as providing between 90 and 95 percent of all migrant agricultural employment in the state. These eighteen surveyed counties were (in alphabetical order): Adams, Benton, Chelan, Clallam, Columbia, Douglas, Franklin, Grant, King, Klickitat, Okanogan, Pierce, Skagit, Skamania, Snohomish, Walla Walla, Whatcom, and Yakima. In addition, Kitsap County was included in the Growers Survey only.
 22. Transportation Advance: Monies advanced by growers to enable migrants to travel to a specified location (usually the grower's farm) to work.

CONSULTANT QUALIFICATIONS

Consulting Services Corporation, with offices in Seattle, Washington, and St. Paul, Minnesota, has four separate divisions: Planning, Economics, Marketing Research, and Specialized Studies.

The firm is engaged in over fifty projects in eleven states. It employs an office staff of fifty-five and a field staff which varies from forty to eighty persons. Clients include private business, legislative bodies, and local, state and Federal government.

The combined professional staff represents over forty years of post-graduate college training and twenty-five years of teaching at the college level. College degrees cover the fields of political science, behavioral sciences, geography, economics, sociology, business administration, education, history, law, regional planning, urban planning, state and local government, and city management.

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