EFFECT OF SCHOOL FEEDING SCHEMES UPON LEARNING AMONG PRIMARY SCHOOL CHILDREN IN LESOTHO

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This is to certify that the

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ABSTRACT

EFFECT OF SCHOOL FEEDING SCHEMES UPON
LEARNING AMONG PRIMARY SCHOOL
CHILDREN IN LESOTHO

By

Nellie B. Kanno

One hundred fifty-five children in primary school from 27 villages in Lesotho were the subjects in this study. The children ranged in ages from 6 to 11 years. The objective was to investigate the effects of school feeding programs on the intellectual status of primary school children. One hundred fifteen households were visited and a questionnaire administered to determine the adequacy of home meals as related to school feedings. The study was conducted for one year.

The writer discusses some of the factors which influence food selections and eating habits both in schools and homes in Lesotho. Focus is also placed on the availability of food, cultural influences on food habits, income available for food and the role of tradition on food preferences.

To test the effects of school feeding schemes on learning among primary school children in Lesotho the writer used an intelligence test, anthropometric measurements, close observations in classrooms and teachers' reports.

No significant differences were noted on intellectual measurements or on anthropometric increments of the two groups studied, that is, those on feeding programs and those not on the programs. Height and weight measurements were almost the same in the two groups.

School and home meal patterns were both deficient for the children. School feedings provided the only source of protein in the children's diets.

The writer concluded as a result of the study, that a program of nutritional education is desparately needed as a supplement to school feedings. Also, that as much as possible should be done to utilize foods that are already available in the country.

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By

Nellie B. Kanno

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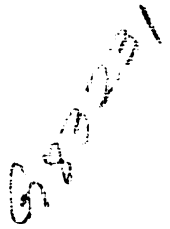

TO MY FRIENDS

MINI AND EDNA

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chairman of the doctoral committee. Dr. Gross's total willingness to help at any time, along with the confidence he had in the writer, inspired and kept her enthusiasm alive. The writer is, therefore, most grateful to Dr. Carl Gross for his personal interest in her success and well-being.

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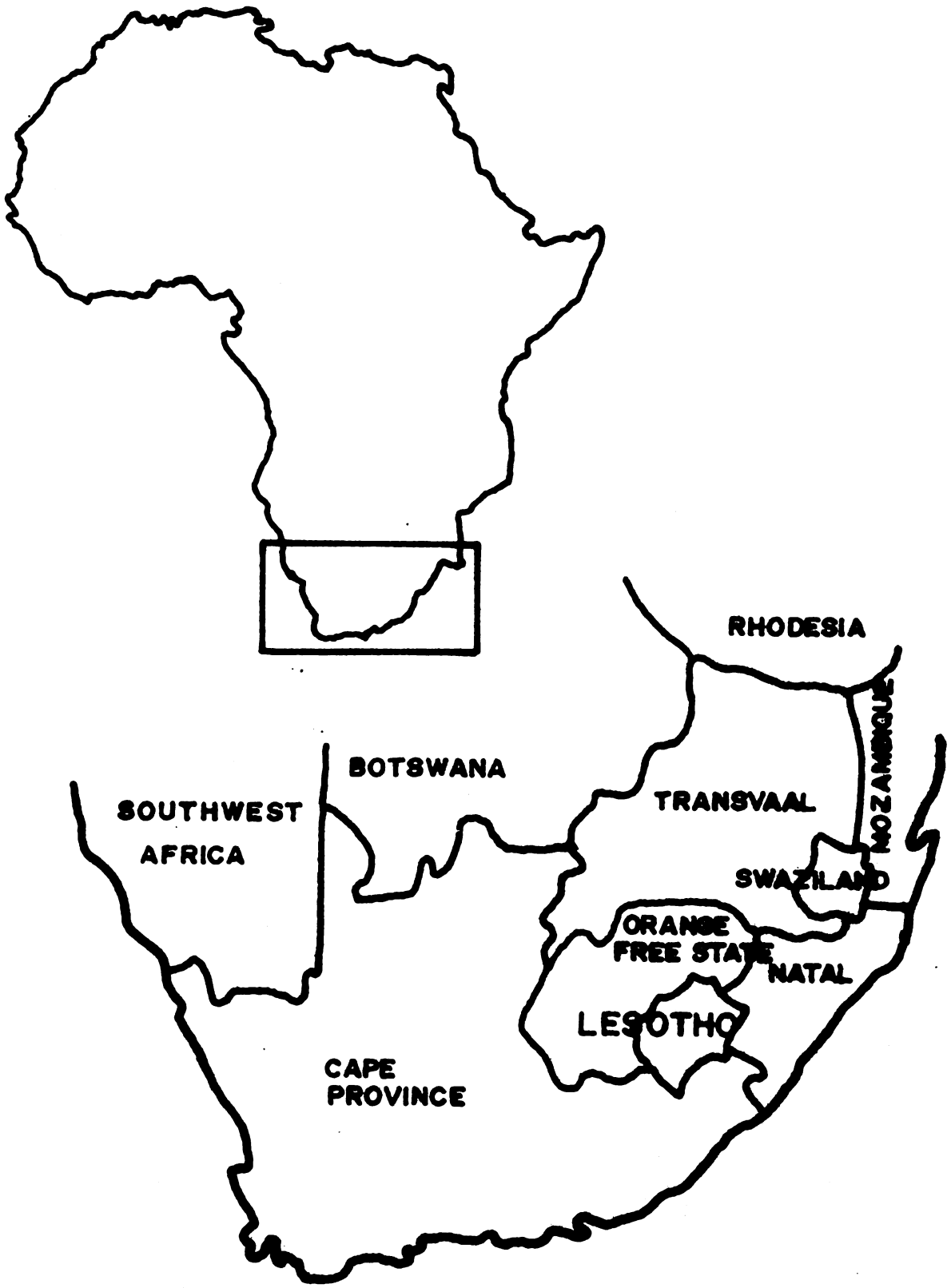
TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES


RHODESIA
MOZAMBIQUE
BOTSWANA
SOUTHWEST
AFRICA
TRANSVAAL
SWAZILAND
ORANGE
FREE STATE
NATAL
LESOTHO
CAPE
PROVINCE

CHAPTER I

INTRODUCTION

The purpose of this study was to determine the effect of school feeding programs upon learning among primary school children in Lesotho. According to the Agriculture Department in Lesotho, school feeding schemes were initiated to eliminate hunger and to help combat malnutrition which affects the ability to learn. "School feeding programs are increasingly viewed as important contributors to the health and well-being of children and, through this contribution, to their performance at school."[1] School feedings began in Lesotho in 1961, with a total of 11 schools and have now risen to 1,057 schools feeding approximately 110,000 children. These feeding programs are sponsored by the Save the Children Fund (S.C.F.) and about $2,500,000 worth of food a year is supplied by the World Food Program. In an effort to combat hunger and malnutrition, the World Food Program also supplies food for expectant mothers and road workers.

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[1]Marian Hayes, Lillian Emmons, and David Call, "A Study of School Feeding Programs," Journal of American Dietetic Associations, LXI (September, 1972), 268.

According to the annual report of the Save the Children Fund (S.C.F.):

> Lesotho's S.C.F. main work has been school feeding. The long term self-help policy of Lesotho's S.C.F. is one acre of vegetable garden at each school. At present the food for the school meal is provided by the World Food Program $2,500,000 U.S.A. Dollars worth of food per year. S.C.F. works in 1,057 schools; the daily attendance varies, but it is approximately 110,000 children. At each school S.C.F. has a fenced garden; 55 school kitchens have been added making a total of 493, and 14 water schemes.[2]

On the basis of the stated data, an attempt was initiated to evaluate school feeding schemes and their effect upon performance of young school-age children in Lesotho. Malnutrition is rife in Lesotho. Young school-age children often attend school tired and hungry along with suffering some degree of malnutrition. According to a nutritional survey conducted by World Health personnel in 1960, 72 per cent of children in Lesotho suffer from malnutrition.[3] Therefore, the importance of school feeding programs can be viewed as one method of attempting to eliminate malnutrition. School feeding schemes not only attempt to satisfy hunger and provide the necessary calories for energy, but also to provide foods rich in nutrients which home meals don't have.

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[2] S.C.F. Annual Newsletter, Maseru, Lesotho, 1972.

[3] J. A. Munoz and M. M. Anderson, WHO Basutoland Nutrition Survey, unpublished report, Maseru, 1960.

School meals are thought to provide one-third of the daily requirement for children, a level which in many instances is not adequate nor sufficient in overcoming nutritional deficiencies. Since the academic school year generally comprises about 180 days, or 50 per cent of the year, it is questionable whether school feeding programs provide one-third of the nutritional requirements for school children in Lesotho.

As a student of nutrition and education, the writer judged school feeding programs as one of the best ways to educate people about the necessity of providing proper food. The school offers the best setting for this education, since young children are the adults of tomorrow and will carry through life what has been learned in school. "Children do not go to school only to listen, learn and record, but to prepare themselves for daily life and to acquire the ability necessary to tackle the tasks which await them in life."[4] The tastes and food habits of adults are those that they developed during their youth, and these seldom change. Therefore, school feeding programs can help young children develop a taste for the essential foods necessary for good health and normal growth.

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[4]"Food and Nutrition Education in the Primary School" (Rome: Food and Agriculture Organization of the United States, 1971), p. 1.

In Lesotho school feeding schemes are viewed as important parts of the curriculum. "The old saying A healthy mind in a healthy body has a great deal of meaning for our schools and the Ministry expects all teachers to cooperate wholeheartedly with those bodies promoting school feeding schemes and nutrition education courses."[5] The Ministry of Education in Lesotho encourages teachers to incorporate nutrition education into other subjects such as science, skills, and religious and moral instruction. Nutrition education at the secondary level is incorporated in home economics, agricultural theory and home crafts. Teachers are encouraged to use school feeding programs to provide the practical learning.

Parents are involved in school feedings in many areas of Lesotho. Home economists and home aides go into villages teaching nutrition as part of the Applied Nutrition Program. Parents are encouraged to take regular turns cooking school meals. Therefore, school feeding programs are practical education for these parents. School feedings in Lesotho affect a large segment of the population in many ways. In many instances, because Lesotho does not have compulsory education, school feedings have increased the number of children who attend school.

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[5]Ministry of Education, Syllabus for Primary Schools (Lesotho, 1967), p. 6.

Previous Studies

Subsidized school lunches began in the United States in 1946 under the National School Lunch Act, and since that time numerous studies have been conducted to determine the adequacy of these programs and their impact on children. Moser[6] and Abbott[7] conducted studies in North Carolina and Florida and concluded that children on school lunches showed a greater gain in growth and health than children not on these programs. The Iowa, Kansas and Ohio Experimental Stations cooperated in a study to determine the impact of school lunches on the nutritional status of children 10, 11, and 12 years of age. The results of this study demonstrated that not only did school lunches reduce the number of children whose diets were below the normal nutritional requirements level, but general improvements in the learning process also resulted.[8]

A study conducted by the National Nutritional Survey using children in Texas indicated that children

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[6]A. M. Moser, "Nutritional Condition of Children in Relation to School Lunches in Two Rural South Carolina Communities," South Carolina Agricultural Experimental Station Bulletin 359, 1945.

[7]O. C. Abbott, "Effectiveness of the School Lunch in Improving the Nutritional Status of Children in Gainesville, Florida," Florida Agricultural Experimental Station Bulletin 426, 1946.

[8]"Nutrition of 9, 10, and 11 Year-Old Public School Children in Iowa, Kansas and Ohio," Iowa Experimental Station Bulletin 434, 1955.

receiving school lunches had better health and school performance than children not on school lunch programs. In this study the researchers used the dietary-recall method and diets were actually calculated for several days.[9]

Terrel and Attaya[10] conducted research in Louisiana in 1955. Their studies attempted to show the many ways children benefit from school feeding programs. Their conclusions were that children not only benefited in the areas of health education and nutrition education, but there were also significant changes in behavior patterns. Children on school feeding programs attended school regularly and showed a change in classroom behavior by being more active. There were also gains in height and weight as compared with children not on school lunch programs.

Lowther, Mack, Logan and others,[11] in 1940 discussed the possibilities of the school lunch as a supplement to the home diets of grade school children. Their discussions

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[9] B. P. Taylor, "Statement in Hearings Before the Senate Select Committee on Nutrition and Human Needs," The National Nutrition Survey (Washington, D.C.: Government Printing Office, January, 1969).

[10] E. L. Terrel and R. B. Attaya, "Louisiana Study Shows How Children Benefit from School Feeding Programs," Nation's Schools, LXXVIII, No. 56 (January, 1955).

[11] M. E. Lowther, P. B. Mack, et al., "The School Lunch as a Supplement to the Home Diets of Grade School Children," Child Development, No. 2 (September, 1940), 203.

brought out the necessity of having school lunches, especially in impoverished areas of the United States where the home meals would probably lack many essential nutrients. These writers felt that school lunches would help children to learn at their normal rate in school and would also help to promote good health and growth. It was also felt that the school lunch programs would be a practical experience that could be carried from the school to the home, thereby educating children and parents.

Studies conducted in India on school lunch programs and pre-school feeding schemes indicated that children participating in these programs had height and weight measurements higher than children not participating in the school lunches. In another study in India using only pre-school children, it was found that those children receiving food supplements had height and weight measurements which increased at a greater rate than children not on feeding programs although the feeding programs were far below normal in providing essential nutrients.[12]

No studies to date have compared the effects of school feeding programs on learning performances of school children in Africa although surveys have been conducted to study the relationship between malnutrition and learning

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[12]R. P. Devadas, "Comparison of Two Pre-School Programs in a Village," The Indian Journal of Nutrition and Dietetics, IX (March, 1972), 70.

in Africa and in the United States. This writer wanted to test the effects of school feeding schemes upon learning performance of primary school children in Lesotho.

Significance of this Research

As a student of comparative and international education and of nutrition, this writer has always expressed a keen interest in problems related to the above areas. It was felt by the writer that a study conducted in the areas of nutrition and education would be a worthwhile experience in understanding the Basotho culture and perhaps contributing to some aspect of the overall development of the country.

Malnutrition is one of the most important problems facing Lesotho today. Until the nutritional status of the Basotho has improved it will be difficult for Lesotho to develop to its full potential. Perhaps a study of this nature will aid in the process of development. In Lesotho nearly half of the population consists of children, and it is in children that malnutrition can be seen clearly. Children should be considered as investments in the future. They will be the workers, the leaders and the parents of tomorrow. If these children are to play their desired roles as adults it is important that they be well-nourished now, and that they understand the effects of nutrition on health. Ignorance is one of the main factors which contribute to poor nutrition, therefore education and

nutrition must go hand-in-hand if malnutrition is to be overcome. Often quite simple changes in diets are all that is required to improve health while at the same time teaching good nutrition.

Kwashiorkor,[13] marasmus[14] and pellagra[15] are rampant in Lesotho among children and adults. Lesotho, just as many other developing countries, is experiencing population explosion at 2.5 per cent per thousand annually. Family planning centers and Maternal Child Health Clinics have been organized throughout the country to combat health problems. However, family planning centers are not as effective as they could be because the people are sometimes slow to accept change. The mortality rate for Basotho children is quite high; 130.4 per thousand for males and 162.5 per thousand for females.

Lesotho has a shortage of medical doctors to serve its population of approximately one million. As of August, 1972, there were less than fifty medical doctors in Lesotho. There are 19 hospitals and 44 health centers scattered throughout the country which are equipped to meet basic health needs. Lesotho, however, does have a flying doctor service which goes out regularly to remote areas which are

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[13] Kwashiorkor--protein deficiency.

[14] Marasmus--protein-calorie malnutrition.

[15] Pellagra--niacin deficiency.

without doctors. This service is in such demand that when the doctor arrives in a given area he only sees the patients who are considered to be emergencies as recommended by the nurse on duty. Therefore, many people who may be in dire need of the doctor's service may never see one.

The most common causes of death in children under 10 years of age who reach a hospital are in order of frequency: pneumonia, tuberculosis, gastro-enteritis, diarrhea and malnutrition. Poor health as a result of poor nutrition plays a big role in the common diseases which are listed other than malnutrition.

Lesotho's first Five-Year Development Plan places emphasis on objectives to be achieved in nutrition and education programs. These programs would be instituted to render sound nutrition education to students and to make available essential nutrients from local foods for students. The first Five-Year Development Plan also emphasizes the need for nutrition education at the village level.

With the Government's high emphasis on nutrition, a study of this nature showing the effect of school feeding schemes on learning would perhaps be valuable in decreasing the high rate of academic wastage (early drop-outs and poor school attendance, especially at the primary school level). It should also be valuable to determine to what extent school feeding programs promote learning and to then attempt

to implement or upgrade these programs to ensure that essential nutrients are included in the schemes.

Methodology

A total of 244 primary school children, ages 6 to 11 years in 27 villages outside of the capital, Maseru, participated in this study. The children were observed from September, 1971, through August, 1972. Interviews were conducted with their parents, and data were collected on:

1. Anthropometric measurements: height and weight
2. Nutritive intake at home and school and matched against the Basic Four Food Groups for nutritive value
3. Demographic information
4. Health and medical information from interviews with parents
5. Learning performances tested through use of Raven's Progressive Matrices, teachers' records and direct observation in the classroom.

On the basis of these data, children were identified who were participating in school feeding schemes and those who did not participate in the programs. School feeding programs were available in all schools; however, due to several factors, many children did not participate in these programs. From a research standpoint, this situation was almost ideal since most of the children who were subjects came from identical social and economic backgrounds and both groups of children could be carefully observed during the school year and during vacations.

When children were selected in September, 1971, there were 1,479 children enrolled in the school and out of this number only 269 were on the feeding programs. According to the rules issued by S.C.F. the cost per child is thirty cents[16] per six months for one child in the family. For more than one child the charge is sixty cents[17] per six months or R120 per year.[18] S.C.F. spokesman has also explained that these fees are not for the food since the food is donated. The fees cover transportation and everyday operations. It was also stated that those children who could not pay fees would receive feedings if they worked in school gardens. However, this may be a little difficult since gardening is a difficult task for adults in Lesotho because of the scarcity of water and the type of soils. Parents usually cook the meals on a volunteer basis receiving a meal for themselves or a meal for their children. In this way school feeding programs help to educate parents about cooking techniques and good nutrition. Each school consists of a school feeding committee which is comprised of village leaders, school managers, teachers, local workers, interested mothers and home economics consultants.

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[16]Thirty cents--about $.50 in U.S.A. value.

[17]Sixty cents--about $1.00 in U.S.A. value.

[18]R120--about $2.00 in U.S.A. value.

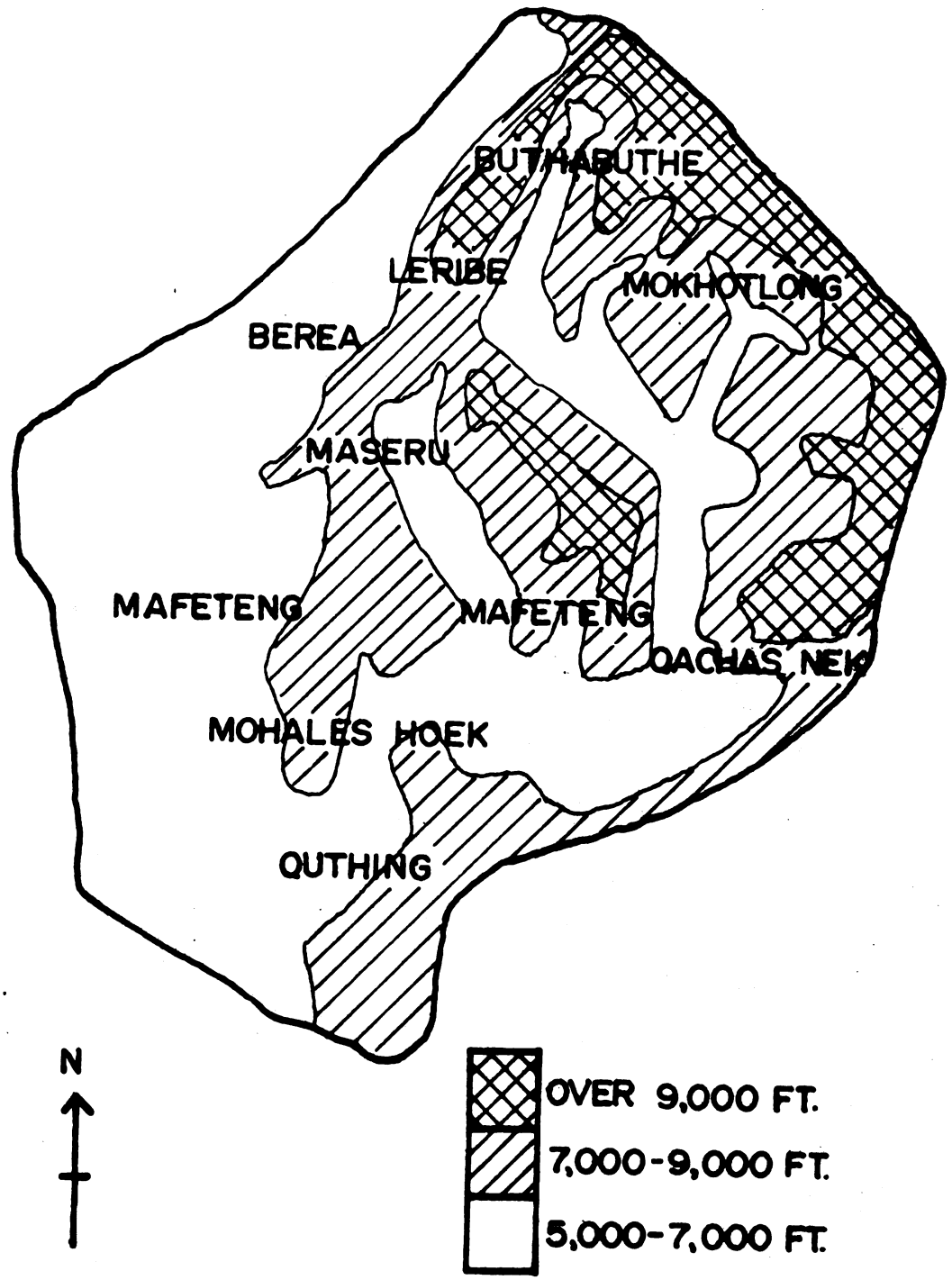
There are four terms during the school year, which begins in early February or late January and closes toward the end of November. This gave the writer time to observe eating habits during the peak of harvest and during periods when food was scarce.

Overview of Study

The methods used in this study must be discussed and their limitations clearly pointed out in order to avoid possible misinterpretations of the findings. In this type of study, one is restricted by many things, such as lack of skills in the language, lack of time, suspicion created by the prevailing political situation in Lesotho, and being an outsider attempting to understand a culture which is so different from one's own culture.

This study lasted for one year and during the course of the year 89 subjects were lost for various reasons. Nutritive intakes at home and at school were compared and matched against the suggested requirements from the basic four food groups. Height and weight of children in the study were compared to the mean height and weight measurements issued by the Home Economics Section of the Department of Agriculture in Lesotho in 1965. Parental attitudes toward dietary practices in the home and school were recorded.

LESOTHO: Geographic Regions



CHAPTER II

LESOTHO: THE LAND AND ITS PEOPLE

Geographical Setting

Lesotho, the former British protectorate, Basutoland, became an independent country October 4, 1966. This small mountainous country is an enclave completely surrounded by the Republic of South Africa. Lesotho is approximately the size of Belgium with an area of 11,716 square miles.[1] Elevation varies from 5000 feet above sea level in the western plains to 8000 feet above sea level in the higher eastern lands, where a steep leveling out in the direction of the Natal begins.

The country consists of lowlands, foothills and mountains. The lowlands, comprising about nineteen per cent of the total area at an elevation of 5000 to 6000 feet above sea level, consist of 2,160 square miles of which 821 square miles are arable; 1,205 square miles are grazing lands and 134 square miles are rocky hills, roads, houses, etc.[2] The total area of arable and grazing lands is reduced by

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[1]Austin Coates, Basutoland (London: Her Majesty's Stationery Office, 1966), p. 2.

[2]British Information Services, Lesotho (July, 1966), p. 3; Lucas Smits, "The Distribution of the Population in Lesotho and Some Implications for Economic Development," unpublished paper (Lesotho, 1968), p. 7.

dongas, or gulleys, which occur in large numbers. These dongas present Lesotho with severe problems, soil erosion. One may go to any part of the country and see the most devastating forms of soil erosion representing itself in the form of dongas sometimes measuring 12-14 feet deep and with the center resembling a large river bed. Each year Lesotho has a special day for tree-planting in an attempt to combat soil erosion. This type of soil erosion presents a desolate picture in its more severe form, where the gulley's walls are so steep and filled with water, the impossibility of any agriculture is clear.

The topography of Lesotho is such that few areas would be considered capable of being developable. The mountainous area consists of subsistence pastoral land, although some Basotho have turned to small farming as pastoral land has become exhausted by overgrazing. One may safely say that the mountain areas are used for grazing, although approximately twenty per cent of the population live in these areas. In the mountains:

> Three separate ranges can be distinguished: the Quathlamba (Drankensberg Mountains) in the North, East and South; the Maloti and their southerly extension, Thaba Putsoa, in the West, and the Central Range, a south easterly extension of the Maloti between the Senqunyane and Sema.

These mountainous areas of Lesotho are sometimes referred to as the roofs of South Africa and are accessible

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[3] Ibid., p. 10.

only by light plane, four-wheel drive vehicle and by horse. One traveling by light plane in the mountainous areas finds a striking sight of cattle grazing above the airplane and Basotho riding horses up paths which appear to be dangerous to the most experienced rider. The mountain areas are often exposed to harsh winters with the people being snow-bound most of the time.

It is in the Maloti highlands that the Orange River and the network of rivers and streams which flow into the Republic of South Africa have their source. Although the mountains offer a striking beauty of their own to an observer surveying the country from the air, this writer wondered how the people in these areas manage to scratch out a living from this remote corner of Southern Africa.

The lowlands are the main crop producing areas of Lesotho with over two-thirds of the population concentrated here. "Even the lowlands stand an average of 5,000 feet above sea level with a climate alternating between hot summers and cold dry winters and an average rainfall of twenty-eight inches, most of which occur in the summer months."[4]

The foothills are merely narrow strips between the lowlands and the mountains. "This region, at an altitude

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[4] Ibid., p. 6.

of 6,000 to 8,000 feet is best suited to a mixture of crop-farming and animal husbandry."[5]

Soils

The soils of Lesotho are generally well-drained and coarse textured, consisting of sands and occasional gravel and stones. Traveling almost anywhere in the country means coming across hundreds of dongas or gullies, cut into loosened and unbanked soil probably created by floods. However, such travel also means coming across signs of soil conservation which began more than two decades ago. According to many experts, the productivity of the land per acre is decreasing yearly and will continue to do so until soil erosion has been completely eliminated.

The major limitation of soils in Lesotho is that it is very difficult to grow anything because of the low fertility and dry conditions. In general, Lesotho soils are not particularly productive. It is not an unusual sight to travel throughout the country and see the Basotho women attempting to plough lands which are too hard for modern machinery, or on the other hand they are attempting to plough lands where the soil resembles loosely packed sand. Much of the good soil is taken away by the heavy rains leaving only the hard or sandy soil which is unsuited for

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[5]J. E. Spence, Lesotho: The Politics of Dependence (London: Oxford University Press, 1968), p. 6.

agriculture. Animal dung must be used as fuel due to the lack of timber or fossil fuels, thus taking away the best fertilizer available for growing trees and other types of vegetation.

Despite the extensive conservation attempts and agricultural projects, most Lesotho soils are not well adapted to these pursuits. It has been estimated that just under one million acres of land are under cultivation, which is probably all the land that is arable.

Ploughing must begin as soon as the first rains fall, and there is no grass to build up the strength of the cattle until several weeks after the rains have fallen. Many Basotho plough and plant too inefficiently or too late for a good harvest, and some simply give up hope of working their lands. In general, Lesotho soils are not conducive for agricultural purposes unless proper management, soil conservation and educational policies are carefully designed which the Basotho understand and in which they are actively involved.

Climate

The climate of any country or region seriously affects agriculture by dictating the growing season. The amount of precipitation is an important factor in farming operations. Since climatic conditions also play an important role in determining local social conditions and food habits, it is a necessity to discuss the climate in depth.

Lesotho's climate is not tropical and is characterized by harsh winters and very hot, dry summers. Many outsiders find the climate quite healthy and invigorating. While the summers are hot, the nights are usually very cool and humidity is quite low. Lesotho's summer usually begins in October and extends through April when most of the annual twenty-eight inches of rain falls (see Table 1). Winter usually begins around May and continues through September with a short spring squeezed between winter and summer. Rainfall varies from one year to another and from one part of the country to another. These variations subject the small agricultural areas to devastating droughts. During times of excessive heat, one must take extra precautions against electrical storms and whirlwinds. During October through April when most of the rain falls, it is usually in heavy storms of short durations. This tendency affects agriculture greatly, for after the dry winter and spring, the soil is so hard that it cannot be ploughed until after the rains have fallen. After the first rains, the vegetation blooms very quickly, and an area which, two or three weeks previously could be described as semi-desert, will become a green countryside.

Vegetation

Mainly because of the climatic range induced by great differences of altitude, crop yields are usually very poor; although a great variety of crops are grown.

TABLE 1.--Annual Rainfall: Lesotho 1960-1970 (in inches).

District	1960	1961	1963	1963	1964	1965	1966	1967	1968	1969	1970
Butha-Buthe	30.64	33.85	34.29	22.69	34.19	32.82	14.44	21.21	39.53	22.63	21.93
Leribe	32.59	33.37	29.88	15.00	28.98	28.39	19.01	24.19	40.33	21.18	24.92
Bera	39.09	36.31	29.02	26.85	33.41	18.79	20.29	18.79	28.42	17.43	21.49
Maseru	27.45	29.54	27.68	26.38	31.14	22.62	16.17	23.86	29.98	23.58	21.38
Mafeteng	30.08	27.01	32.35	27.09	35.94	22.49	15.83	39.69	29.07	24.21	20.05
Mohale's Hoek	31.17	36.40	33.10	27.65	39.44	25.38	18.91	28.66	32.41	24.41	22.91
Quthing	29.78	34.23	35.56	26.16	39.36	37.28	18.55	25.18	32.88	21.76	22.17
Qacha's Nek	35.76	37.78	35.39	25.93	33.98	37.75	25.00	34.78	28.33	18.00	23.98
Mokhotlong	27.91	28.09	25.92	30.89	26.25	25.91	17.66	21.18	24.30	18.31	16.57
TERRITORIAL AVERAGE	31.37	33.06	31.47	25.40	33.64	29.23	18.26	24.80	32.91	21.81	21.92

Source: Department of Statistics, Maseru, Lesotho, August, 1972.

There are many reasons for low crop yield: adverse climatic conditions, droughts, frost and hail, variable rain during the critical period of cultivation, sandy soil with low fertility, lack of irrigation, and shortage of modern machinery for heavy agricultural work along with primitive farming practices. Wheat is a major crop, but other important crops include corn and sorghum, sweet peas, beans, oats and barley. Because of the shortness of the growing season, sorghum is very seldom grown in the mountains. In the lowlands wheat is grown as a winter crop, corn and sorghum being the summer crops; in the highlands wheat and corn are gronw in summer. "In the lowlands, wheat is harvested in November or December, in the highlands in January and February. Corn is always harvested after the first frost is over."[6] Practically all corn produced is consumed in the country and in years of drought imports from the Republic of South Africa have to be made. Sometimes, though not often, wheat is exported into the Republic of South Africa.

There are two fruits which grow indigenously, peaches and pears. Small gardens have a few other vegetables, but the problem of watering these gardens is time consuming as people have to walk many miles to get water. Table 2 outlines the basic schedule of a farmer according to the Department of Agriculture.

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[6]Basutoland, Report for the Year, 1959 (London: Her Majesty's Stationery Office), p. 47.

TABLE 2.--Schedule of a Farmer in Lesotho.

Month	Activity	
January	Reaping and threshing wheat, reaping peas, hoeing maize and sorghum	
February	Threshing wheat, hoeing maize and sorghum	
March	Reaping beans, shearing sheep	
April	Reaping and threshing beans, shearing sheep, planting wheat	
May	Planting wheat, reaping sorghum	
June	Reaping sorghum and maize	
July	Reaping maize	
August	Reaping maize	
September	Planting sorghum, shearing sheep	Ploughing as soon as the rains begin
October	Planting sorghum and maize, shearing sheep	
November	Planting maize and beans	
December	Planting maize and beans, reaping wheat, hoeing	

Source: Department of Agriculture, Maseru, 1972.

Distribution of Land

Lesotho has many reasons for low crop production and lack of major industries, one of the major obstacles which appear to hamper development is the land tenure system. The land tenure system has been cited as one of the greatest handicaps in modernization of agricultural production. According to the first Five-Year Development

Plan of Lesotho, the disadvantages of the land tenure system are many but can be seen clearly where it:

1. Impedes the consolidation of scattered land holdings into larger and more efficient units;

2. Makes individual farmers reluctant to improve the land, as there is no security of tenure; and

3. Makes the extension of agricultural credit difficult because of lack of individual ownership."[7]

> In terms of traditional Basotho law all land is vested in the nation and the paramount chief is the trustee for all rights to land. The detailed administration of these rights is vested in the chieftainship whose members have been responsible for the allocation of arable land to individual farmers. Thus direct ownership of land is unknown in Lesotho, provided the land allocated is cultivated, the peasant farmer is supposed to enjoy security of tenure."[8]

In reality each Masotho is entitled to three fields on which to grow a subsistence crop. Allocations of lands made by local chiefs are supposed to allow each person who is head of a household three separate lots in order to give everyone good and poor land, and in some instances land may be allocated for a small cattle "karal."

A person may have some security of tenure once he has been allocated land, since a chief is only supposed to withdraw allocations when:

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[7] Lesotho, First Five-Year Development Plan, 1970-71/1974-75 (Maseru: Central Planning and Development Office, December, 1970), p. 9.

[8] Jack Halpern, South Africa's Hostages, Lesotho, Botswana and Swaziland (Baltimore: Penguin Books, 1965), p. 225.

1. A Masotho family head fails to pay his tax
2. A Masotho family head fails to make proper use of the land, or
3. If he fails to keep the land in good condition.

These are very thin safeguards, because they depend on the chief's judgment. The chances of having one's lands re-allocated increase in remote areas if one happens to arouse the chief's jealousy by improvements which are better than the chief's lands. Therefore, in many of the villages in Lesotho, the chief's prestige is quite high with villagers usually paying a great deal more homage to him than chiefs' receive in other areas. Since there is no such thing in Lesotho as buying land or owning land, it is quite important to stay on the good side of the chief, even to the extent of doing special favors for him. The chief is quite important. Usually he has many people working for him if he does not have time to handle all of his duties.

> Two kinds of land are allocated; semi-permanent rights and temporary or seasonal rights. Semi-permanent rights are granted to schools and initiation lodges, certain foreign administrations, churches, traders and for housing, gardens, playgrounds and since 1961, to the Basotho for diamond digging. Temporary or seasonal rights are given to the Basotho only for the express purpose of growing traditional crops. An individual finds that, after he has harvested his crops, his individual rights to the land are superceded by the communal right of the stockholders of the community. In other words, the rights of the use of agricultural land do not persist throughout the year, although they normally carry over from one year to the other.[9]

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[9] Ibid., p. 230.

The writer had the unique ezperience of seeing a part of the land tenure system in actual operation when a fellow classmate from Michigan State University, who is a citizen of Lesotho, attempted to secure land for the building of a house. Appointments were made several days in advance with the chief, after the site had been selected, and time after time the chief failed to keep the appointments. Finally, after months of attempting to see the chief and show him the land which had been chosen for the house, the chief arrived with a friend as witness. None of this transaction was in writing and permission was granted for use of the land.

Many personnel from international organizations have expressed total frustration at the terms of the land tenure system. Land tenure really interferes with economic growth of Lesotho because many firms do not want to invest in a country where land cannot be purchased nor sold. However, some firms are taking steps toward investing in Lesotho because of assurance by the government that the land tenure system will eventually be changed.

Widows were often insecure because land which had been allocated to their husbands could be taken from them at any time by the chief. At the political rally (in Sesotho, Pitso) one outspoken female of the ruling party asked the Prime Minister to alter the land tenure system so that women could feel secure in homes where men were

absent. Another complaint voiced at the same rally was that land is allocated to individuals who are not from a particular area but who have decided to leave their districts in order to make a better living by building homes to rent or plant cash crops, while the people from the villages may have been refused this same land. Striking examples of this occur regularly when men leave the mountain areas, where they already have land and families, to go into larger areas to build inexpensive houses to rent to the increasing number of fellow Basotho who are migrating to larger centers seeking work. There are many aspects of the land tenure system which will be discussed throughout this study because of its importance and also because the Basotho are traditionalists and hold on to customs, even if progress is impeded.

History

The early history of the Basotho appears to have been one of a classical struggle of a small group of various ethnic strains attempting to build a nation in an environment completely surrounded by larger and much more powerful ethnic groups. It is said that the earliest inhabitants of Lesotho were part of the Bantu[10] speaking people of Southern Africa.

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[10]"Bantu-speaking people of Southern Africa appear to have two main streams of language, the Nguni and Sotho, the language of the Basotho, being classified as Southern Sotho which is spoken mainly in Lesotho, Botswana and in

In the early nineteenth century, a chief, Moshesh with a following of between 2,000 to 3,000 settled near Butha Buthe in the northern lowland of Lesotho, living precariously by cattle raids and the spoils of warfare with his neighbors. Moshesh, because of diplomatic tactics employed throughout his life has become known as one of the greatest Africans of the nineteenth century.

Since about 1831, the term 'Basotho' has applied especially to those groups of various origins which followed Moshesh and his sons, who became paramount chiefs of Lesotho. Because of Moshesh's diplomacy in dealing with hostile groups, other groups eventually followed him and became incorporated in the Basotho nation. Thus, one may say that Moshesh was successful in accomplishing what other African nations have failed to do, that of uniting a large number of ethnic groups into a single coherent group to which the term nation may be applied without hesitation.

Moshesh was constantly at war with Chaka, the Zula Chief, who was attempting to establish his power throughout

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many parts of the Republic of South Africa. Southern Sotho, despite a limited vocabulary, is an accurate vehicle of expression on traditional subjects. The first French missionaries were impressed by the way in which, though without script, it had strict grammatical rules. It has the characteristic of doing to the front of words what we do to the back of them. With us to achieve the plural of song we add 's' at the end and make songs; with the Basotho it is to the front of the word that creates this effect. Thus a man of that tribe is a Masotho, more than one are Basotho, their language Sesotho, and their country Lesotho" (Coates, p. 11).

South Africa. In what appeared mere desperation, Moshesh moved with his followers from Butha Buthe to Thaba Bosiu, the Mountain of the Night. Here he established his stronghold and more and more groups joined him. Realizing the futility of fighting Chaka, Moshesh began displaying gifts of cattle and food for him, thus bringing to an end the bitter struggle between the two. Chaka was amazed by these qualities of Moshesh. After finding these gifts of food and cattle after battles, and receiving messages from Moshesh expressing the futility of fighting and the need for peace, Chaka soon left the Basotho alone.

Thaba Bosiu has become known as the Mountain of the Night because of battle stories and history which old Basotho pass on to others. Many Basotho discuss quite frequently how Thaba Bosiu looked like a hill during the day, but at night as Chaka and other enemies approached, the hill would suddenly rise into a great mountain. Even today, people talk of the mountain as having mystical powers. The mountain was a perfect fortress against enemies because stones could be easily rooled over it with such force as to turn back enemies.[11]

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[11]The history of Thaba Bosiu is so impressive that even this writer climbed the mountain to see the magic springs and the lucky sand. Some of the historical monuments are still standing, which include the original house of Moshesh. Thaba Bosiu has become an official burial ground for members of the royal family which descended from Moshesh to those presently living today. Because the mountain is so high, usually men will carry the body of the deceased on their shoulders up the mountain for burial.

Despite the few years of peace Moshesh had on Thaba Bosiu, trouble soon occurred again with the influx of the Boer explorers in 1836. Their coming into Moshesh's territory began a long chain of skirmishes and wars which ended in the defeat of the Basotho and the Treaty of Thaba Bosiu in 1866. As a result of this defeat, the Basotho lost most of the good farming land to the Boers and also that part of the Republic of South Africa which is known as the Orange Free State. When driving through the Republic of South Africa, and the Orange Free State in particular, one is immediately struck by the contrast between the desolate, eroded look in Lesotho and the appearance in the Free State which is quite rich with green grass.

After the Treaty of Thaba Bosiu was signed the Basotho were constantly worried about the Basotho nation being incorporated into the Republic of South Africa. Moshesh sent requests to Queen Victoria asking for British protection. "At a moment when he seemed to be in danger of

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A light plane may land on top of the mountain, but the only other way to reach the top is by foot. It is easy to see why this area was selected by Moshesh as a peaceful settlement for his people, because it is difficult to penetrate and has beautiful grass growing in an otherwise grassless country. Fresh water bubbles out of the ground over the mountain which looks out at the dry earth of other parts of Lesotho. It has been said that twice attempts have been made to build monuments on the mountain. Each time attempts have been made to build monuments a mishap has happened, such as falling stones and other unexplained events.

having his nation incorporated, the British Government declared on the 12th of March 1868, Basutoland would be British Territory and the Basuto[12] subjects of the Queen."[13]

On March 11, 1870, Moshesh died. He had realized some of his dreams before his death. He had achieved a nation for his people which was not incorporated into the Republic of South Africa. He had lived to see peace. He had also brought missionaries to teach his people. Moshesh had seen his people use horses which were to become an important part of the Basotho culture. He had also succeeded in uniting various ethnic groups into one large group paying allegiance to himself, the paramount chief. The most traditional institution in Lesotho has been, since Moshesh's time, that of chieftainship. At the apex of the system was the paramount chief who held all land in trust for the people.

During the early period of British administration there were many changes made which upset the Basotho. For a short while Lesotho was annexed to the Cape Colony. "The Formal Annexation was passed by the Cape Legislature in

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[12]Prior to Independence the spelling of the name of the people of Lesotho was Basuto and after Independence was changed to Basotho.

[13]Grenfell Williams, Moshesh: The Man on the Mountain (London: Oxford University Press, 1959), p. 145.

1871."[14] The British administration attempted direct rule by placing the country in the hands of the Resident High Commissioner in the Cape. This attempt failed and resulted in the Gun War of 1880-1883 when there was an attempt to disarm the Basotho. Failure of direct rule resulted in detachment from the Cape and a Resident Commissioner being placed in Lesotho. Because of the strong role of chiefs in Lesotho the new High Commissioner was given orders that "Nothing more could be attempted at first than the protection of life and property and the maintenance of order on the border."[15] This resulted in what has been described as parallel rule. Basotho chiefs were responsible for African Affairs and the British administration made sure law and order were upheld.

Governmental Organization

In building up the Basotho nation, Moshesh made it a sort of confederation of various clans, each ruled by one of his sons or by a chief who paid allegiance to him. Most of the chiefs were, and still are today, direct descendants of Moshesh through the first house, or what is commonly referred to as the first wife. The Basotho are a patrilineal culture, that is, descent is reckoned through

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[14]Richard P. Stevens, Lesotho, Botswana and Swaxiland: The Former High Commission Territories in Southern Africa (London: Pall Mall Press, 1967), p. 26.

[15]Hugh Ashton, The Basuto: A Social Study of Traditional and Modern Lesotho (London: Oxford University Press, 1967), p. 5.

the male line of the family. Chiefs of each village usually inherit the position from their fathers, uncles or grandfathers. Once a chief has been appointed his immediate loyality is to the throne. Any chief who fails or neglects his duties, which may include trying criminal cases, collecting taxes, allocating lands and maintaining normal functions of his village, may be ousted.

> The first seed of modern political development may be said to have been planted in 1903, with the Basutoland Council, an advisory body consisting of 100 members, of whom 94 were nominated by the Paramount Chief, 5 by the Resident Commissioner, and with the Paramount Chief himself as Chief Councillor.[16]

This body exercised a great deal of influence on policies of the country and made headway for open elections in Lesotho while displaying a great deal of democracy in its thinking.

The Paramount Chief of Lesotho is also King of Lesotho, Moshoeshoe II, who acts only upon advice from the Prime Minister, Chief Leabua Jonathan. Parliament consists of two houses: the Senate, which has 21 principal chiefs, or their nominees, and 11 other persons nominated by the Paramount Chief and the National Assembly which consists of 60 members elected by adult Basotho citizens.

In 1955, the Basutoland Council adopted a motion to give the Council powers to administer all issues of

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[16]Coates, p. 112.

internal interest. The first constitution was adopted and passed in 1959. Elections were held in 1961, giving the Basutoland National Party, under the leadership of Chief Leabua Jonathan, victory. Chief Jonathan and his party became the pioneers in the movement for reform and independence.

Lesotho is divided into nine districts: Butha Buthe, Leribe, Bera, Maseru, Mafeteng, Mohale's Hoek, Quthing, Qacha's Nek and Mokhotlong. The main city of each district is named after the district, such as Maseru District, with Maseru being the main city. It may be said that local functions of the country are in the hands of District Councils. "These councils are, in principle, responsible for local services and for the collection of local revenues."[17]

Transportation, Communication and Utilities

Transportation in Lesotho includes roads, air and railway facilities. Lesotho is beginning to expand its roads by turning dirt ones into tarred roads. Many areas which were previously only accessible by light plane and four-wheel drive vehicles are now open to smaller vehicles. Transportation into the Republic of South Africa and other

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[17]Jacques Mays and Donna L. McLellan, The Ecology of Malnutrition in Seven Countries of Southern Africa and in Portuguese Guinea (New York: Hafner Publishing Company, 1971), p. 145.

parts of Southern Africa is made possible by an extension of railway from the Republic of South Africa into the Capital, Maseru.

Maseru's airport provides facilities to accommodate service throughout Lesotho and also international service by way of Johannesburg, South Africa. Recently, the government has begun bus service throughout the main districts of Lesotho. These buses are usually on schedule because the drivers are civil servants and quit work at the same time as other civil servants working in offices. Horses are by far the most common form of transportation for the Basotho.

Communication

Lesotho has an efficient telephone system which allows local and international calls to be made quite easily. There are two weekly newspapers in Lesotho, one in Sesotho and the other in English. The Department of Information issues daily news releases which summarize international and local news. Closed circuit television is available in the new Holiday Inn. Radio Lesotho, which is government owned, broadcasts approximately eight hours daily in English and Sesotho.

Utilities

Utilities, as used in the context of this study, include water, heat and electrical facilities. Lesotho's main water facilities originate in the mountain areas from the Oxbow and Orange Rivers. Heat is provided in Lesotho to most families by the use of small heaters, either electric or kerosene. Lesotho Electrical Company is responsible for supplying the country with electricity, but because of the economic condition many areas are not yet supplied with electricity. Many generators are scattered throughout the country and are owned by private firms or educational institutions.

There are very few sewer systems in Lesotho and this is partially due to economic conditions. Maseru, the capital, has a few sewer systems and is presently attempting to expand these to all parts of the capital and other areas of Lesotho.

Economy

Lesotho uses the South African Rand (R1.00 = U.S.A. $1.34) as its medium of exchange. When South Africa changed from the pound to the Rand, Lesotho followed suit in 1961. At this writing there is no formal monetary agreement between Lesotho and South Africa.

Lesotho's economy is based on agriculture and animal husbandry and the country's manpower. There are no

natural resources of great value other than water. Lesotho has no large towns. The population of Maseru, the capital, has been estimated to be 15,000. Since most of the country is mountainous, and thus not arable, the population is concentrated in the west where there is considerable pressure on the cultivable land. There are no industries of any significance in Lesotho; therefore, agriculture is the mainstay of the economy. The Basotho supplement their income by migrating for periods of time to the mines and industrial centers in the Republic of South Africa. It is estimated that more than half of the adult male population are presently absent from their homeland.

Those men who go to the mines in the Republic affect Lesotho's economy to a great extent because there is no wage employment for them at home. Miners may have payroll deducation allotted to their families, who have remained in Lesotho. Often a portion of their earnings is put aside as savings so when leaving the mines they will be able to purchase some of the desired products in the Republic, such as radios, bicycles and clothing.

> The national economy presents, on the whole, a dreary picture. Lesotho has no immediate marketable resource other than unskilled labour. It has virtually no indigenous (sic) industry or entrepreneurship. Its traditions of land use are

> technically inefficient and are vitiated by population pressure and soil erosion.[18]

This statement appears to be an objective evaluation of the condition of the economy of Lesotho.

Lesotho's first Five-Year Development Plan estimates the Gross National Product to be R62.4 million and the Gross Domestic Product to be R55 million. The differences between these figures are mainly due to Lesotho's share from the South African Customs Union, which is made up of South Africa, Lesotho, Botswana and Swaziland. This is an arrangement where any of South African dutiable goods may be shipped into Lesotho freely. Lesotho receives a fixed percentage from these goods just as the other countries do.

The average annual wage income is estimated to be about R63 dollars or $90.00 U.S.A. dollars. Most of the Basotho having wage employment in Lesotho are either civil servants or teachers. There are so few traders that the Basotho who work for them constitute a very small segment of the population. Recently, with the opening of the Holiday Inn, there has been an increase in the number of persons working for wages in the country. With the exception of the government, the University of Botswana, Lesotho and Swaziland employs the highest number of Basotho.

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[18] Sandra Wallman, "Conditions of Non-Development: The Case of Lesotho," Journal of Development Studies (August, 1972), p. 252.

Villages offer virtually little or no wage employment for the Basotho. A Masotho may either work for the chief or for a small trader, otherwise there is no wage employment in villages. Beer making is a big enterprise in villages and usually enables Basotho women to support their families. Many people possess cattle, but these cattle are a symbol of wealth used to pay bride prices and acquire social prestige and have not added much to the economy.

There is an open market for wool and mohair in the Republic of South Africa where all the blankets worn by the Basotho are made. There is a small wool factory which makes blankets, rugs, etc., but these are mainly for tourists and are quite expensive along with being elaborate. South African wool buyers have refused to pay top prices for Basotho wool and mohair, which is commonly referred to as 'native wool and mohair' because it is supposed to be of poorer quality than that in the Republic.

"Although there is no breakdown of Lesotho's foreign trade by countries of origin and destination, it seems certain that the bulk of this trade is with South Africa."[19] However, the wool and mohair which constitute the largest exports from the country later return to Lesotho in the finished product costing more than the Basotho can afford.

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[19]Development Plan, p. 15.

No minerals of any value have been discovered in Lesotho. Diamonds are found in small quantities, but not on a large enough scale to add to the economy. Water seems to be the most important natural resource because of its potential use in hydraulic systems and also because there is the possibility that it could be sold to the Republic of South Africa, since most of the main river beds flowing to the Republic originate in Lesotho.

There are three commercial banks in Lesotho, all controlled from outside the country. There is a postal savings bank owned by the government and various cooperatives and credit unions. The total amount of savings in Lesotho is not known.

It is said that the British administration did very little to promote economic growth during the time Lesotho was one of its protectorates because there was the feeling that the country would eventually be permanently incorporated into the Republic of South Africa. The British administration did little under its policy of indirect rule other than maintain law and order. Lesotho's situation is very depressing when compared with other African countries which were colonized by Britain.

Lesotho has to import practically all items necessary for daily life and will continue to do so until policies are changed and new industries are brought into the country. Table 3 is a summary of the common imports

TABLE 3.--Imports into Lesotho: 1966, 1967, 1968 and 1969 (in thousands Rand).

	1966	1967	1968	1969
Foodstuffs and Livestocks	6,431	4,584	4,624	5,500
Beverages and Tobacco	626	863	837	1,243
Crude Materials	353	441	388	337
Mineral Fuels and Lubricants	1,036	1,605	1,153	1,399
Animals and Vegetable Oils	824	154	126	89
Chemicals	1,280	1,740	1,702	1,541
Manufactured Goods Classified Chiefly by Materials	5,740	5,314	5,215	3,896
Machinery and Transport Equipment	2,038	2,495	2,557	2,839
Miscellaneous Goods	4,019	5,384	6,116	5,984
Commodities	1,220	1,220	1,220	1,079

Source: Department of Statistics, Maseru, 1971.

into Lesotho. Figures given are from the Department of Statistics in Lesotho, but were compiled by the South African Department of Statistics.

Education

> A dominant feature of the educational system in Lesotho is the very strong control of the Church Missions which are currently managing all schools and colleges in Lesotho, with the exception of a leper school and the Lerotholi Artisan Training Centre, both of which are managed by the Government, and several schools controlled by Committees.[20]

[20] UNESCO, Report of the Danish Mission to Lesotho, April, 1971, p. 6.

The three main churches in Lesotho manage most of the schools. The Lesotho Evangelical and the Anglican Churches manage about half of the schools and the Roman Catholic Chruch manages the remainder. The University of Botswana, Lesotho and Swaziland is managed by the governments of the three countries.

The Basotho have been interested in education since about Moshesh's time. Moshesh was illiterate but he displayed a keen appreciation for the power of learning. Having heard of the educational work of missionaries, Moshesh invited three members of the Paris Evangelical Mission (now Lesotho Evangelical Church) into his territory in 1883. With Moshesh's help these Frenchmen established a mission station at Morija, and thus began the long process of fostering the Basotho's interest in education. This was also the beginning of the strong control of education by missions. The French Protestants laid the foundations for education in Lesotho and were quickly followed by the Roman Catholic Church and the Anglican Church. Because of the Basotho's enthusiasm for education, these religious bodies began establishing schools throughout Lesotho.

> In 1905 and 1906 an educational expert conducted a survey in Lesotho and found a universal desire for more schools, which in places expressed itself in the shape of schools unconnected with any authority,

> sometimes held out of doors with practically no equipment.[21]

As a result of this report, in 1909, a Director of Education was appointed by the British Administration. The following year an advisory board on education was formed which included the Resident Commissioner, the Director of Education, a representative of the Paramount Chief and representatives from each of the religious bodies. This group attempted to upgrade education, but lack of funds hampered many of their efforts. However, the groundwork for education was set in action and much of the printed educational materials found in Lesotho today may be attributed to the advisory board, and the missionaries.

In 1970, it was estimated that there were approximately 185,344 children in primary schools in Lesotho. Primary education consists of seven years. In primary schools the language of instruction is Sesotho with English being gradually introduced as the medium of instruction in the fifth year. According to the Ministry of Education in Lesotho, the object of primary education is:

> To provide children with an education which will enable them to lead a full life as men and women of Lesotho, through the acquisition of a certain amount of factual knowledge and development of basic skills in certain fields of knowledge. . . . And to provide education suitable for Secondary School Work as a prerequisite for High School and Training College work."[22]

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[21] G. Tylden, The Rise of The Basuto (CapeTown: Juta Company, 1950), p. 211.

[22] Ministry of Education, p. 1.

Subjects taught at the primary level to prepare children for a fruitful life in Lesotho include English, Sesotho, arithmetic, moral instruction, arts and crafts and writing. During the second half of primary school, history, geography, hygiene, nature study and gardening or needlework for girls and science are included in the curriculum (see Table 4 for Primary School Curriculum and Time Allotted to each subject). Promotion, during the first three years of primary school, is determined by attendance and during the last four years by internal examinations.

Secondary education in Lesotho is open only to those students who have passed the Standard VII level examination. The language of instruction in secondary schools is English. Education at the secondary level is in two stages: junior secondary school and secondary school. "The age range in secondary schools is from 12 to 25 years and the total enrollment in 1969 was 5,011, of whom 2,353 were boys and 2,658 girls."[23] Upon successful completion of secondary school, students may receive the Cambridge School Certificate which qualifies them for admittance to the university.

Vocational and technical education in Lesotho is provided by the Lerotholi Artisan Training Center in Maseru, which is managed by the government; the Leloaleng Technical School in Quthing, which is managed by the

[23]Danish Mission to Lesotho, p. 9.

TABLE 4.--Courses of Instruction and Time Allocation for Primary Schools.

Standard I (First Year)	Time per Week*	Standards II and III (Second & Third Years)	Time per Week*	Standard IV and V (Fourth & Fifth Years)	Time per Week*	Standards VI and VII (Fifth & Sixth Years)	Time per Week*
Languages		Languages		Languages		Languages	
English	3 1/2	English	6	English	6 1/2	English	6:40
Sesotho	4	Sesotho	4	Sesotho	4	Sesotho	3:20
Math	3 1/2	Math	3 1/2	Math	4	Math	4
Religious Instruction	1:40	Religious Instruction	2	Religious Instruction	1:40	Religious Instruction	1:20
Skills		Skills		Skills		Skills	
Handwriting	2 1/2	Handwriting	1 1/2	Handwriting		Same as in Standards IV and V	5
Games	1:40	Art, Clay or Grass Work	1 1/2	Games and Physical Education			
Music	1 1/2	Games & Physical Education	1:40	Handwork, Art, Gardening, Needlework, etc.	4		
		Music	1				
Assembly	50 min.	Assembly	50 min.	Assembly	50 min.	Assembly	50 min.
Recess	1:20	Recess	1:40	Recess	1:40	Recess	1:40
TOTAL	20 hrs. 30 min.		25 hrs. 40 min.		27 hrs. 20 min.		29 hrs. 30 min.

Source: Syllabus for Primary Schools: Lesotho Ministry of Education, 1967.

*Hours.

Lesotho Evangelical Church, the Agricultural Training School in Maseru, managed by the Department of Agriculture and Sacred Heart Commercial High School, managed by the Roman Catholic Church. These schools offer courses in typewriting skills, mechanics, domestic science, cabinet making, tailoring, agriculture and other commercial subjects. Many students may enter these vocational and technical schools upon leaving primary school, although efforts are being made to consider only applicants with a Junior Certificate. Female students, who have attended the Agricultural Training School and the Lerotholi Artisan Training Center, are becoming important figures in the new Applied Nutrition Program throughout Lesotho.

Presently, there are seven teachers' training colleges in Lesotho and all are run by missionaries. In 1970, there was a total of 695 students enrolled in these training colleges. "Two courses are offered . . . The lower Primary Certificate which is of three years duration after completion of primary school and the Higher Primary Certificate which is two years training after the secondary certificate."[24]

Education at the university level in Lesotho is provided at the University of Botswana, Lesotho and Swaziland. This institution became an independent non-denominational university in 1964. Entrance requirements

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[24] Ibid., p. 9.

to degree and diploma programs are the Cambridge School Certificate in the first or second division with a knowledge of English. Presently, the Lesotho Government (even though on a very limited budget) attempts to provide those students qualifying for entrance to the university with scholarships which cover all fees. These scholarships also provide monthly allowances for personal expenditures.

Even though most of the education in Lesotho is in the hands of missions, the government spends a large share of its budget for education.

> Schools receiving government aid are registered and allotted an establishment, and the Ministry of Education pays in full the salaries of teachers, up to the limit of the establishment, by grants to the Church concerned, as well as occasional grants for equipment and buildings.[25]

The Ministry of Education is responsible for syllibi and external examinations. There are school inspectors in the Ministry of Education who inspect schools to see that policies are adhered to.

To summarize, education in Lesotho is neither free nor compulsory although there have been suggestions made by the Ministry of Education to reduce and finally eliminate fees.

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[25]British Information Services, Lesotho (New York: 1966), p. 29.

Life in Lesotho

The term Basotho applies to a group of people who acknowledge the authority of the Paramount Chief. According to H. Ashton,[26] there are four principal groups to which the Basotho belong: the nation, the clan, the village and the family. Membership in the clan is acquired by birth and is theoretically acquired through the father. The family is less clearly defined than the other groups because the Basotho refer to any distant relative as a sister, brother or father; and it is quite difficult to understand who is which member of the family. Families are quite close even if the family includes as many as fifty or more members.

The population of Lesotho is approximately one million, increasing at 2.5 per cent annual rate.

> Urbanization, in the true Western sense of the word, is not present in Lesotho . . . . The absence of urbanization and the agrarian way of living of the population, is a good indication of the low level of development of the country.[27]

About half of the population lives in the lowlands near main centers in the districts, with densities relatively high for an African country, ranging from 200 to 300 persons per square mile. The other half of the population may be found in the foothills and in the mountain areas which cover approximately 86 per cent of the country.

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[26]Ashton, p. 10.

[27]P. Smit, Lesotho: A Geographical Study (Pretoria: Communications of the African Institute, 1967), p. 14.

A population breakdown of 1969 shows approximately 2,000 Europeans, 800 Asians, 859,000 Basotho, and 9,000 other Africans, mainly from the Republic of South Africa. The Europeans are mainly governmental employees and missionaries, while the Asians are traders and other Africans are civil servants and teachers. A striking feature of the population of Lesotho is the number of adult males who are absent from the country, usually working in the mines in the Republic of South Africa. At a given period of time as many as half of the adult male population may be absent. Village life and the economy are highly affected by this absenteeism.

Villages in Lesotho may vary from a small village with fifty households to larger ones numbering over three hundred households. Village households consist of two and sometimes three beautifully thatched houses. The Basotho take pride in seeing that their houses are always clean, especially the one used for entertaining and sleeping. Houses are usually smeared twice a week with animal dung or some type of clay which, when dry, gives a glossy appearance. Walls are also smeared with clay and decorated. Each Masotho attempts to make his house the most attractive house to be seen. Against the gray of the bare mountains, houses of different colors and with different types of decorations are visible.

Village life for those unemployed consists of daily drinking parties. These can often be found at two or three places in most villages. These places can be distinguished from regular homes by flags which are displayed. The colorful flags serve as indicators of the type of beer being sold. A white flag means local beer made from sorghum, a blue flag indicates that local beer is available with special concoctions added, while yellow and red flags point in the direction of stronger spirits. To find the most important people in a village or to find out the local news, it is usually a good idea to attend one of the beer parties. One can usually find a beer party going on at any time of the day during any part of the year. It is now a common sight to see men and women both drinking at these parties. This was unheard of years ago. Babies around the age of twelve months are usually weaned on a strong fermented porridge which probably contributes to a strong desire for beer during later years.

Basotho villages consist of more female heads of households than males because of the large absence of men from the country who are employed in the mines, as stated earlier. Because of the absence of adult males, most of the women in villages do the heavy ploughing and harvesting. Usually small children between the ages of three to five are left with younger children while the women work. It is not an unusual sight to see these small children with

small babies tied to their backs. Women do a lot of visiting after chores are finished because there is little else to do, as most of the men are gone.

Meals are usually taken twice a day (see Chapter III) and consist of breakfast and a meal at night after the sun sets. The taking of the meal at night was explained by several women. If people eat at night there is less chance of someone "popping" in for a free meal. In Basotho culture, it is customary to always offer a visitor something to eat and at mealtimes, even if the food is scarce, an extra plate must be put out for the visitor. If meals are taken at night, then no one in the village will know what has been prepared and no one will be sure of the time, so there is less chance of someone "dropping" in.

Sundays are a big occasion for the Basotho. Everyone in the village dresses in his most decorative blanket or perhaps clothing which may have been purchased in the Republic of South Africa. Most attend church, as it also gives the Basotho the chance to display their "finery." The Basotho are very religious.

The most important denominations are the Roman Catholic Church, the Lesotho Evangelical Church (formerly Paris Evangelical Church) and the Anglican Church. It is estimated that 33.8 per cent of the population is Roman

Catholic, 22 per cent French Protestant, 9.5 per cent Anglican and 5.7 per cent belong to other denominations.

It may be said that village life on the whole offers very little to the Basotho. The activities are limited to beer parties, visiting and going to church. Pitsos (rallies) which are held occasionally, add a little color to the dismal life in a Basotho village. The Basotho appear to enjoy talking and these pitsos usually last all day with all important persons in a village talking or repeating what another person has said. Initiation ceremonies, which are held twice a year (circumsision), add a little excitement also. Funerals and weddings also change the pattern of normal routine in villages. It is a big event to attend a wedding with all the colorful activities, such as dancing and singing. One may safely say that attending church appears to be the most significant event in the life of the Basotho.

CHAPTER III

INSTRUMENTS USED

Field Survey

In order to answer the question: What are the effects of school feeding programs upon learning among primary school children in Lesotho? An analysis of Basotho food habits through a field survey and an assessment of children's performance in school through direct observation and testing were made.

Arthur Niehoff[1] has emphasized some points which must be kept in mind as one attempts to analyze food habits of people. First, it is important to understand the culture and the role culture plays in the selection and rejection of certain foods. Niehoff cites examples of different cultures where the introduction of new foods have been rejected because of the strong role of culture:

> In Taiwan, their hogs are black. White Yorkshire hogs were introduced to improve pork production, but to the Chinese, white is the color of mourning and the white hogs frightened them . . . .
>
> The staff of a hospital in British Guiana resisted the introduction of margarine for lack of prestige--because they had come to associate butter with the British, whom they admired.[2]

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[1] Arthur Niehoff, "Changing Food Habits," Journal of Nutrition Education (Summer, 1969), pp. 10-11.

[2] Ibid., p. 11.

In other parts of the world, culture plays an important role in food choices:

> In some regions of India, children suffer from night blindness caused by vitamin A deficiency, and paradoxically live in zones producing innumerable mangoes which are rich in this vitamin.
>
> In Paraguay, it is considered that guavas, rich in vitamins A and C cause the appearance of intestinal parasites.
>
> In Bolivia, some peasants as well as teachers reject powered milk, which is available free of charge, because they believe that it is prepared with bean flour or that it causes intestinal disorders.
>
> In Costa Rica, some of the people do not wish to eat dishes prepared with boiled blood, of low price and great nutritive value, because they consider it fit only for animals.
>
> In Kenya, women avoid eating eggs because they fear it will cause sterility, and they will not give eggs to their children because they believe it can cause blindness and deafness.
>
> Zulu women abstain from taking acid milk during the menstrual period and the puerperium.
>
> Some negro women in the south of the United States eat clay during pregnancy; if they cannot obtain the clay they replace it with up to 200 grammes of starch used for ironing clothes, because they believe it improves their state of nutrition.[3]

In Lesotho, culture plays an important role in food habits just as in other facets of life. Recently, when the World Food Program introduced yellow cornmeal as part of its commodity package, the Basotho refused to touch it. They stated that this cornmeal was the food for hogs in the United States and they, the Basotho, were not hogs and would not eat it. However, with the passing of time and an increase of hunger, they began to accept it. There was

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[3]"Food and Nutrition Education in the Primary School" (Rome: Food and Agriculture Organization of the United Nations, 1971), p. 7.

also an attempt to introduce fish into the diets, but this met with opposition because fish are associated with snakes and the Basotho have a deadly fear of snakes. This fish could be useful in supplementing the diet with complete protein which is usually lacking.

Derrick Jelliffee and his colleagues[4] have been pioneers in nutritional studies in developing countries. Jelliffee has stated the importance of field surveys in many of his publications. Field surveys are:

> . . . useful for obtaining broad, outline levels of information aimed at nutritional diagnosis of the population groups making up the community. The aim is always to obtain the maximum information, using the minimum of staff, inexpensive equipment and uncomplicated techniques that can be analyzed easily.[5]

Field surveys explore many areas which are important to the researcher in nutrition. This technique helps a person to understand the psychological influences on food habits and social organizations in relation to change in food patterns. Field surveys are essential in programs which deal primarily with school children because one has the opportunity to see some of the influencing factors in the home setting which affect the child's nutritional status and food practices. Comprehensive rules for each step of the field survey have been presented by Jelliffee

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[4]D. B. Jelliffee, The Assessment of the Nutritional Status of the Community (Geneva: World Health Organization, 1966), pp. 132-133.

[5]Ibid., p. 133.

and others[6] and may be consulted. However, for the purposes here, the primary steps of the technique will only be briefly outlined to show how they have been applied to this study.

Personnel Engaged and Methodology

The personnel engaged in this field survey included the writer, who is trained in nutrition and also education and two students from the University of Botswana, Lesotho and Swaziland, who are local citizens, fluent in the language, Sesotho.

A clear definition of the survey was explained to the interpreters and background information was given along with the procedure to be used in administering questionnaires. Time for household visiting was set up with local chiefs and the questionnaires explained. In many areas, because of scattered villages, a selected time was set up to visit with mothers in clinic settings. In field surveys, it is usually difficult to collect data on an entire population because of the absence of adult males from the family, therefore villages were selected at random throughout Lesotho with a fairly good representation of the population from the lowlands, foothills and mountains.

In some instances, the village chief excluded from the list persons who were not permanent residents, but who

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[6] Ibid., p. 135.

were instead visitors keeping someone's house for a portion of the year. This saved a great deal of time in conducting the survey. Chiefs also excluded persons who were known to be suffering from the 'disease of the mealies,'pellagra, which is a niacin deficiency that often results in mental disorders.

The writer went into many villages without the use of interpreters. These visits usually extended from several days to a week beginning in September, 1971, through April, 1972. The differences between this writer's background and the background of the Basotho are too great to bridge within a year's time, therefore, the interpreters served as crucial factors in the survey. They not only translated the questionnaires from English into Sesotho, but also explained the role of tradition in certain of the issues faced.

Most contacts made in the villages were women. Exceptions were priests, teachers, chiefs and local doctors, since most of the adult males are usually absent.

The type of survey used in this study may be defined as a rapid ecological visit. After a comprehensive literature review of forms used in different countries, a survey form was made by the writer which was directed at assessing food habits of the Basotho and the nutritional status of Basotho children. An attempt was made to determine the adequacy of home meals as compared to school

feedings. Dr. Jane McNaughton[7] of the Food and Agricultural Organization, has pointed out that survey forms should be inclusive with all information which may shed light on the nutritional practices of a particular group, attitudes toward certain foods and the nutritional patterns in general of children and adults. The value of any type of survey lies in its analysis and understanding of the factors which affect child health and child attitude toward certain foods. Through an analysis of surveys, programs could be instituted to improve the feeding of both children and adults, also field surveys help to recognize and eliminate the early stages of poor nutrition. Many family planning centers in different parts of the world have relied upon village surveys when attempting to implement programs in family spacing and child health.

Table 5 shows the type of form used in this study. This form also helps one to understand the general pattern of the Basotho diet and how school feeding programs compare to home meals.

While conducting the village surveys, surveyers made clear that the collection of data was for the provision of information essential in the implementation of programs which would probably better the health of all

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[7]Jane McNaughton, personal interview in Maseru, September 15, 1971, during her visit to Lesotho.

TABLE 5.--Survey Questionnaire for Ecological Visits.

Number Age Village

Number living in household Marital Status

AGE	SEX	RELATIONSHIP	AGE	SEX	RELATIONSHIP

No. of still-births

No. of children who have died

Cause of death

Occupation of father Occupation of mother/if working

Income: Monthly Income: Monthly, mother

Educational level/father Educational level/mother

Number of children in primary school Secondary school

Number of children in college or working

Type of food storage

Type of water supply
Nearest spring or dam

Is there a garden?

Type of foods grown

Nearest store

Type of foods available in
village or nearest store

Latrine, where and type Kitchen, type

Methods of cooking Type of food in home

TABLE 5.--Continued.

Type of transportation: Horse_____ Car_____Bicycle_____Other_____

Educational material in home:

Radio_____Books_____Newspaper_____Bibles_____

Type of furniture in home:

Stove_____Cooking Utensils_____

Type of fuel for cooking:

Kerosene_____Dung_____Other_____

Type of clothing:

Blankets_____Winter Coats, etc._____

Shoes_____Other_____

Number of animals:

Cattle_____Milk Cows_____Hens_____Sheep_____

Goats_____Pigs_____Hogs_____Other_____

Type of farming machinery:

Basotho. The interpreters, without consulting the writer, went so far as to tell many people that their commodities would be increased if questions were answered truthfully. This produced an enthusiastic response from most of the people interviewed. But to ensure that people did not attempt to give answers they thought were wanted by the survey team, questions were stated in such a way that they had to be specific without having a right or wrong answer. Encouragement was given to the discussion of certain questions related to the overall practices of feeding children.

Team members usually ate in the villages where the surveys were being conducted. It is an old Basotho custom to feed visitors and a refusal of food would have been considered an insult to the people. This eating in villages allowed the team to see food being prepared.

While conducting the surveys, team members also slept in the villages. This also gave the team members first hand experience of the poor conditions under which the Basotho live and how these conditions contribute to poor health. Houses are usually very crowded with several members sleeping together on the floor.

Village doctors played an important role in the interviews since they and the chiefs are usually the most important and wealthy people in a village. The Basotho appear to suffer from some type of hypochondria and consult

these doctors two or three times a week. These doctors are known as "those who practice Sesotho medicine." Europeans refer to them as 'witch doctors.' These doctors are found throughout Lesotho and there are usually two or three in each village. While conducting the village survey in one district, the team had the unique experience of seeing the village doctor in action as he "pulled a snake" from a small child's head, who in the writer's opinion was suffering from pneumonia, but the doctor's diagnosis was that a spell had been cast on the child by evil people. The team followed the doctor to the patient's house. Immediately upon seeing the child, the doctor cut a small hole in her head and a snake was produced which the doctor claimed came from the child's head and had been placed there by evil doers. However, the hand is quicker than the eye and the team only saw the cut in the child's head and the snake. The team refused to make comments to all the local people who had gathered outside the house praising the doctor for his remarkable work. At a later visit to the same village the team found the child had recovered and the doctor had improved his status by having acquired a bicycle to make house calls.

Many children and adults die as a result of the treatment received from these doctors who 'practice Sesotho medicine.' Their conditions require medical doctors, but

the Basotho are great traditionalists and continue to see these doctors. In most of the villages visited, these local doctors had signs posted which stated rates for children and adults. There was always a line of people waiting to see them. Their practice consists of healing, predictions about the future, and distributing herbs and other concoctions as part of their services.

In some of the villages it was difficult to conduct the survey after the sun had set. Basotho are suspicious of strangers because there is the fear of being attacked. Usually as the sun sets most Basotho will be found in their homes or hurrying to them. This behavior is quite understandable since "Medicine Murders" occur quite frequently in Lesotho and most people are afraid they will be the next victim. Because of the increased numbers of "Medicine Murders" in Lesotho in 1948, the British administration commissioned Mr. G. I. Jones, an anthropologist, to investigate them. Mr. Jones has outlined the general pattern of the usual "Medicine Murder":

> The murder is for the specific purpose of obtaining certain parts of the human body. These parts, which are mainly the entrails are never obtained from the victims of an accident or of other forms of homicide. . . . This murder is prearranged and carefully planned, it is never an unpremeditated assault, it is executed by a group of people, most of whom take part not only in the

> assault on the victim, but in cutting the entrails away while the victim is still alive.
>
> The victim has to die. If the operation of taking the entrails does not cause his death, he is deliberately killed. After his death, the body is hidden for a time. The murder is normally given the appearance of an accident, the body being placed in such a position as to suggest a fall over a precipice or into a ravine, or death from exposure on the open plain or mountainside.[8]

The primary cause of these murders, in many people's opinion, is the local doctor who uses human flesh as part of his medicines. In early Basotho history it was customary to use part of human flesh taken from victims of war for medicine and thus "Medicine Murders" of today are probably a carryover from previous practices.

Although the Basotho are quite religious, their fear of ghosts and ancestoral spirits is high. Most Basotho will not be found wandering through villages at night because along with succumbing to "Medicine Murder" there is also the possibility of running into a few "ghosts."

It was decided to let someone related to the interpreters know the approximate time the team expected to be away and what area the team would be in. The village survey, as used in this study, has been educational because the writer was able to visit many homes and establish meaningful relationships, as it permitted the

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[8]G. I. Jones, Basutoland Medicine Murder (London: Her Majesty's Stationery Office, April, 1951), pp. 15-16.

writer to see actual food practices in process and to assess the overall situation and food habits of the Basotho. The surveys were extremely useful when working with school children and understanding their social and economic backgrounds as related to food habits through first hand experience.

This technique enabled the writer to observe food habits of children during vacations away from school and also in the school setting. Over fifty villages were visited during the writer's stay of one year in Lesotho. Many more households were visited. However, the village surveys conducted by the writer and the two interpreters included three villages in three districts. Approximately 115 households were visited.

According to Gordon,[9] the interpretations of field surveys remain 'rooted' in the value judgment of workers in the field. With this thought in mind, this writer along with the interpreters attempted to be as objective as possible in evaluating the results of the surveys.

This is how it was determined what the food habits of Basotho children were in homes. In conclusion, it must be pointed out that even though three villages were used in the survey with interpreters fluent in Sesotho, the technique was laborious. The interpretation of all results

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[9]J. E. Gordon, "Field Epidemiology," American Journal of Medical Science, Vol. 242 (1963), 232.

is limited by translation. There may have been instances where the interpreters failed to record certain information which was important. Also, there may have been instances where the interpreters failed to understand exactly what the writer explained to them.

Instruments Used and Methodology for Testing Learning

Children in this study were studied in the school setting in relation to their response to lessons being taught. Teachers were interviewed and grade books studied. Raven Progressive Matrices were administered to the children after approximately ten months of observations. This test was administered by a student fluent in Sesotho and majoring in primary education. After consultation with Dr. Paul Cook[10] of the testing center in Botswana, it was decided that this was a relatively easy test to use. The advantages of using the Colored Progressive Matrices is that they can be used with different groups or different cultures.

> The Colored Matrices are designed for use with young children and old people, for anthropological studies, and for clinical work. They can be used satisfactorily with people who, for any reason, cannot understand or speak the English language, with people suffering from physical disabilities,

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[10]Dr. Paul Cook, AID Specialist, Testing Center for Lesotho, Botawana and Swaziland, in an interview in Botswana, February 5, 1972.

> aphasias, cerebral palsy, or deafness, as well as with people who are intellectually sub-normal or have deteriorated.[11]

The test is non-verbal and consists of a set of three which have thirty-six items (12 items in each set). It is especially geared to children 11 years old and under. As a former guidance counselor in elementary schools in the United States, the writer had had experience administering various group and individual tests to young children. It was felt that this was a fair test to use with Basotho primary school children, because it is done individually which takes the teachers away from the setting preventing unnecessary prompting.

The Matrices consist of colored symbols which the child places in the correct positions by pointing to the paper. The test was administered in approximately twenty minutes per child. The writer explained the technique to be employed when giving the test to children to the interpreter as the primary children only spoke Sesotho. Therefore, the results of the test allows for mistakes which may have occurred in the translation.

CHAPTER IV

ANALYSIS OF DATA

From September, 1971 through August, 1972, 244 children aged 6-11 years were studied in homes and schools in an attempt to determine the effect of school feeding programs on learning. Although at the beginning of the study, there were 244 children, by the end of April the number had decreased to 155 because several moved to other areas, several dropped out of school and several disappeared with their location unknown. These children represented a total of 27 villages in Lesotho and came from the lowlands, foothills and mountains. After obtaining permission from the priest and principal of the mission, all children were observed in the school setting beginning in September, 1971, through August, 1972.

Teachers were interviewed and grade books were studied. Families of some children were not visited because of the inaccessibility of the homes or because the parents or guardians were away from home working. So, instead random villages were used to assess the nutritional status of the child.

Intelligence tests, height and weight measurements were administered to these primary school children. Height and weight measurements were compared to those standardized height and weight measurements issued by the Department of Agriculture in 1965 in accordance with the Institute of Central America and Panama (INCAP). A total of 115 households were visited and a questionnaire was used to determine the nutritional adequacy of the child's meal pattern at home and the approximate amount of nutrients supplied under the school feeding program.

Children were tested with Raven Progressive Matrices, sets A, Ab, and B, which may safely be used with other cultures although, just as with other tests, it is not totally culture free.

Children were observed by the writer in classrooms with special attention paid to the way they responded to lessons being taught. One hundred thirty-eight children were on the feeding schemes and the remaining 106 were selected at random because both groups could be observed and tested at the same time. Both groups came from identical social and economic backgrounds. During the course of the study 73 children were studied who were on the feeding programs and 82 remained in the study who were not under the food programs. This appeared to be an adequate sample even though 89 children were lost during the course of one year. The groups studied consisted of 101

girls and 54 boys (Figures 3 and 4, Age Distribution of Subjects).

Teachers were asked how children responded on classroom, teacher-made tests since very few records were available of test results. Many of the answers varied. In some instances the teachers may have misunderstood the writer's usage of English which is spoken with a heavy southern accent. So, teachers probably answered questions to the best of their knowledge and probably gave answers to what they interpreted questions to be.

Children were observed during the meal time in school, which usually occurred around 11:30 a.m. There was a list of children who were to be fed which was kept by the school principal. The teachers assisted mothers with the serving of meals. Because, in many instances teachers have to walk several miles to school, without any food, they usually consume a meal along with the children. Several children who were not on the feeding list attempted to get in line, but were quickly excused. It is quite difficult to explain to hungry children they cannot be fed because their names are not on a list, but attempts were made. It was difficult to assess the exact nutritive value of the feeding scheme because portions varied from child to child. However, when matched against the basic four food groups estimates can be made. It is difficult to give each child the same amount of food when uniform serving and

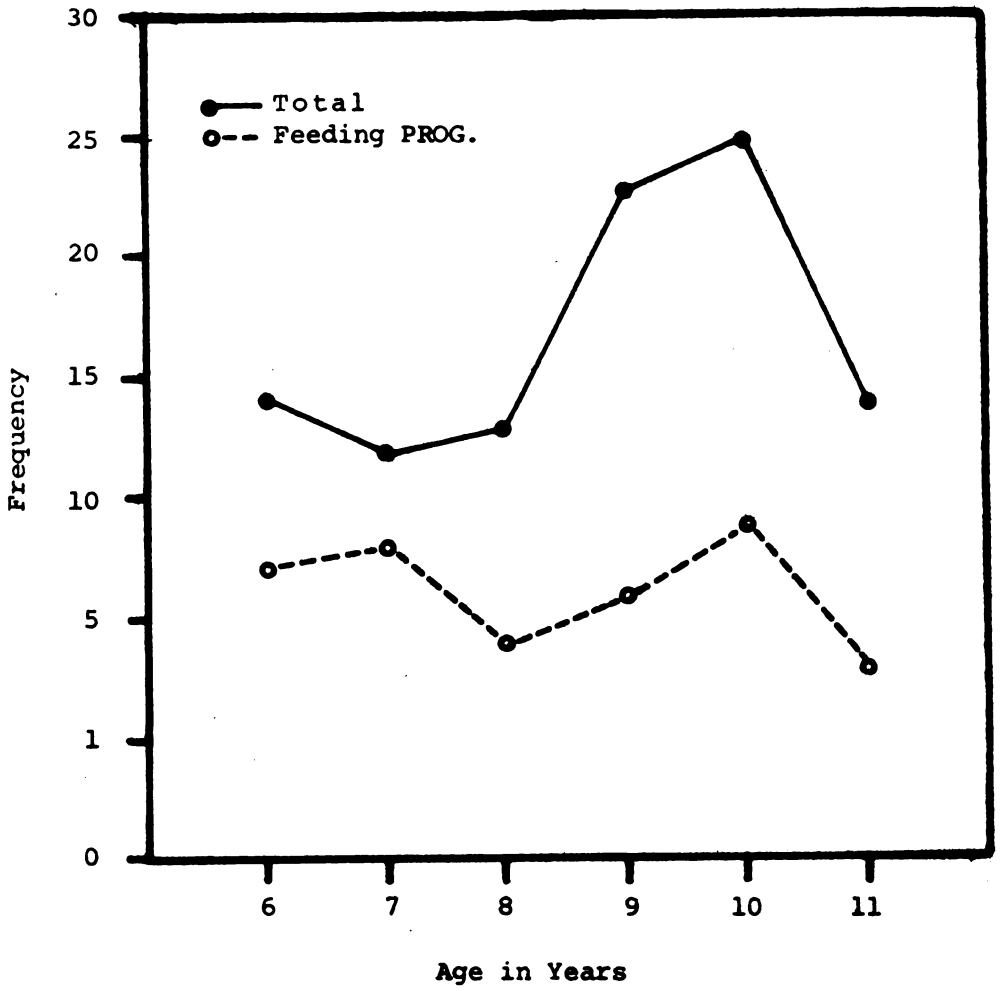

Figure 3.--Age Distribution of 101 Girls.

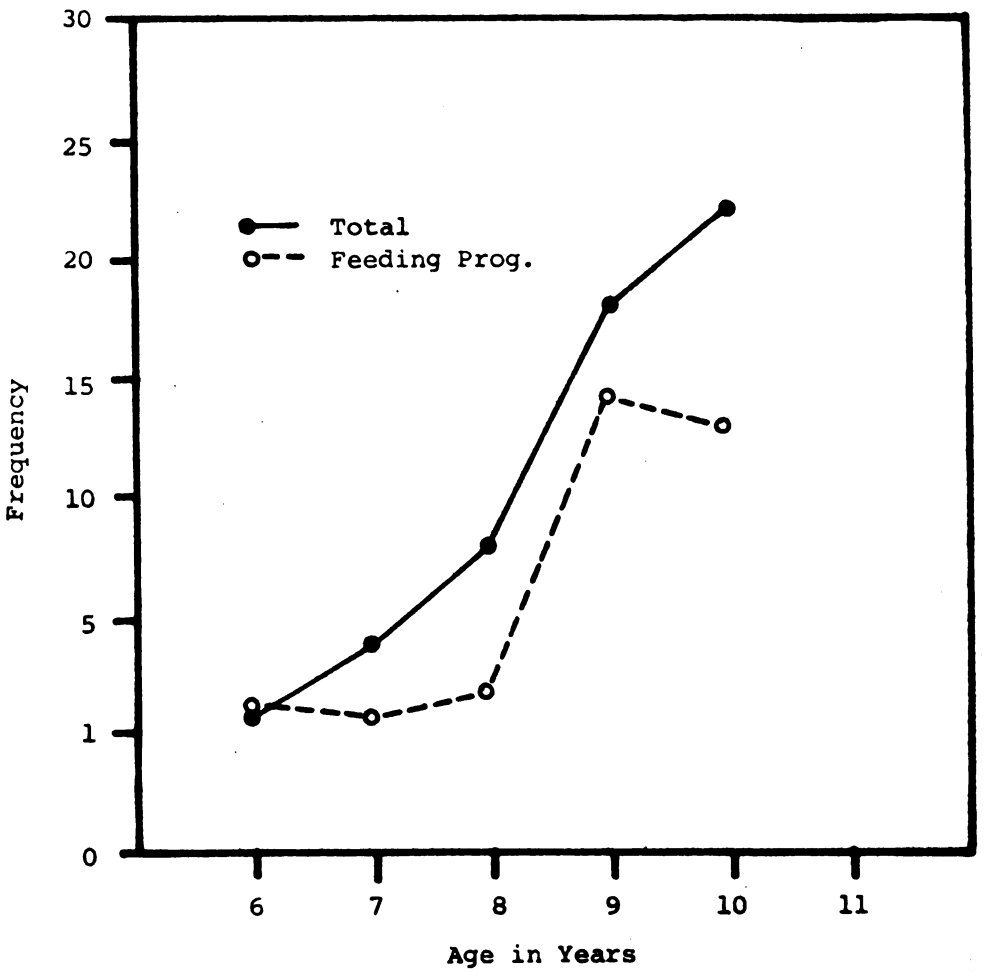

Figure 4.--Age Distribution of 54 Boys.

eating utensils are not available. However, mothers and teachers serving the food did their best in this area (Figure 5).

The feeding program usually took too hours of the school day which begins around 8:00 a.m. and ends around 2:00 p.m. After children finish eating, they must clean their containers and take them home each day because there is no place to store them in schools.

The feeding scheme at the school in this study, which has a population of over 1,400, only feeds approximately one-third of its students for various reasons. The school meal had to be temporarily halted during October, 1971, because the rains came late and there was only enough water in the dam for drinking purposes. However, after the rains came the food program was resumed following summer vacation in January. This temporary halt in the feeding program meant that the entire student population went without food along with the group being studied.

Height and weight measurements were taken of subjects with their usual amount of indoor clothing, but with shoes removed. This wasn't a serious problem since most of the pupils dress very lightly and seldom wear any shoes. These measurements were recorded in September, 1971 and again in July, 1972.

During the village surveys with adults an inventory was taken of the food available in the home and

Figure 5.--Basotho mothers and teachers serving food to primary school children. (Note type serving and eating utensils).

the kind of storage used. An inventory was also taken of the number of animals kept by families. The types of food eaten were taken by using the 24 hour recall method. In a 24 hour recall food analysis, persons are asked to tell what food was eaten during the previous day. This gives a fairly good picture of what the food pattern is, since most people will give the exact kinds of food eaten instead of stating what they think the interviewer may want to hear. Foods can easily be matched against the four food groups for nutritive value: Milk, meat, fruits and vegetables and breads and cereals. The distance of stores was noted and the type of food available also recorded. The types of employment the parents or guardians engaged in were recorded and monthly income recorded with special references to the amounts spent for food. The number in the household was considered crucial to this study since it not only determined how much money was spent on food but also the amount of food available for school-age children.

Parents were asked to provide information on the health of their children along with the number of still births and miscarriages. Other demographic information included the educational level of the parents, size of the family, and food preferences and dislikes. The questionnaire was prepared in English, but when used by the interpreters only Sesotho was used.

Cooking utensils were observed in the households along with cooking practices. It was also observed if the families had gardens and if gardens were used to supplement incomes or if food from the gardens was used in the diets. It was determined what time meals were taken in homes, which was important for children participating in school feeding programs. One could then determine if the child arrived at school hungry or if the school meal was the only food taken during the day or to what extent the school feeding contributed to the daily meal pattern.

Results

In the village surveys the wives were the spokesmen more than 95 per cent of the time. The husbands were usually absent, with 80 per cent of them being employed in the Republic of South Africa and the whereabouts of the remainder unknown. Families were highly suspicious of the questionnaire and many wanted payment for the information given to the interviewers.

The average age of mothers interviewed was 35 years, ranging from 17 to 57. Most of the women stated they were unsure of their exact birthdate and associated the birthdate with some event which had happened in the village. Some women stated they had not seen their husbands for a year or more. Nearly 75 per cent of the women engaged in some type of money making enterprise, such as beer making

or making brooms, to supplement the income received from absent husbands. About 10 per cent of the women did not know exactly where in the Republic of South Africa their husbands were working or the type of work being done. Approximately 40 per cent of the women stated that their husbands earned R30.00 (about $50.00) monthly. None of the interviewed families paid any type of rent since the houses were usually built by the men shortly following marriage or had been passed on to them from the husband's family. Nearly 10 per cent refused to disclose any type of information concerning income for fear the chief would attempt to collect negligent taxes owed by the husbands. Another eight per cent refused to answer questions about the husband's work or income for personal reasons.

The average Basotho household consisted of the mother and other relatives, who because of tradition concerning the extended family could not easily be identified as grandparents, aunts, sisters or cousins. The average number in households surveyed was 11.

The formal educational level of the Basotho interviewed was quite low, probably due to economic and social limitations. The average level of formal education attained was Standard IV for both husbands and wives. It must be noted that the wives gave this information and there was no way to verify it. None of the group interviewed had finished primary school, but all interviewed

expressed high hopes of their children attending secondary school and becoming teachers. This is probably due to the fact that teachers are highly respected in Basotho culture and education is highly valued. Ten per cent of the mothers expressed a desire for their children to become priests or nuns working in educational institutions.

When asked about basic health facilities and their use, 90 per cent reported that they went regularly to the Maternal Child Health Clinics with their pre-school children because this was the only way they would qualify for commodities. When asked about the use of professional medical personnel, 55 per cent stated that the village doctor served their purposes well. However, during the course of this study which occurred during winter and summer many children were found with running noses and eyes and appeared to be suffering from some type of intestinal disease. Although there are several clinics located in areas where most Basotho will have access to them, these clinics and hospitals are apparently only used for extreme cases. Table 6 illustrates where clinics and hospitals are located in Lesotho according to districts.

All of the families interviewed had children participating in school feeding programs and all considered this to be important to the extent that perhaps they would not have to feed the children so much at home since they were being fed at school. Not one mother interviewed

TABLE 6.--Distribution of Medical Facilities.

District	Number of Hospitals	Number of Health Centers
Butha Buthe	2	2
Leribe	2	8
Bera	2	3
Maseru	6	5
Mafeteng	1	3
Mohale's Hoek	1	6
Quthing	1	3
Qacha's Nek	2	11
Mokhotlong	1	3

Source: Bureau of Statistics, Maseru, Lesotho, 1971

realized the importance of these school programs except in terms of feeding her children less at home since they were getting food elsewhere. When asked if they felt that the feeding programs in the schools helped the child to learn, 90 per cent of the mothers reported that "If you had it, you had it and the feeding programs couldn't help you to learn if you were dumb" (Sesotho expression translated into English).

Food Patterns

Data on food patterns as reported by the mothers interviewed showed that the diets were markedly low in protein, although sources of protein were available (see Figure 6). Figure 6 illustrates that there were adequate supplies of protein food available but for various reasons the Basotho didn't consider this protein to be important in their diets. In addition many mothers stated that they sold eggs weekly to local traders or to the recently developed poultry cooperatives.

Cattle were considered walking wealth to be used for the sale of wool or to be sold to local traders as meat for other Basotho who may desire or could afford to have meat in their diets. Cattle to the Basotho represent prestige and are usually only eaten when an animal is killed by an accident, disease or for funerals and weddings. When cattle are killed by accident a feast may be held for several days. Because of the lack of food preservation, once an animal is killed or dies, feasts will usually last until the entire animal has been eaten. If proper storage or proper methods of drying meat were available, perhaps the protein content of Basotho diets would be increased. In many cases herds are kept far away from the village and accidental deaths happen quite frequently with the food not necessarily being brought to the owners.

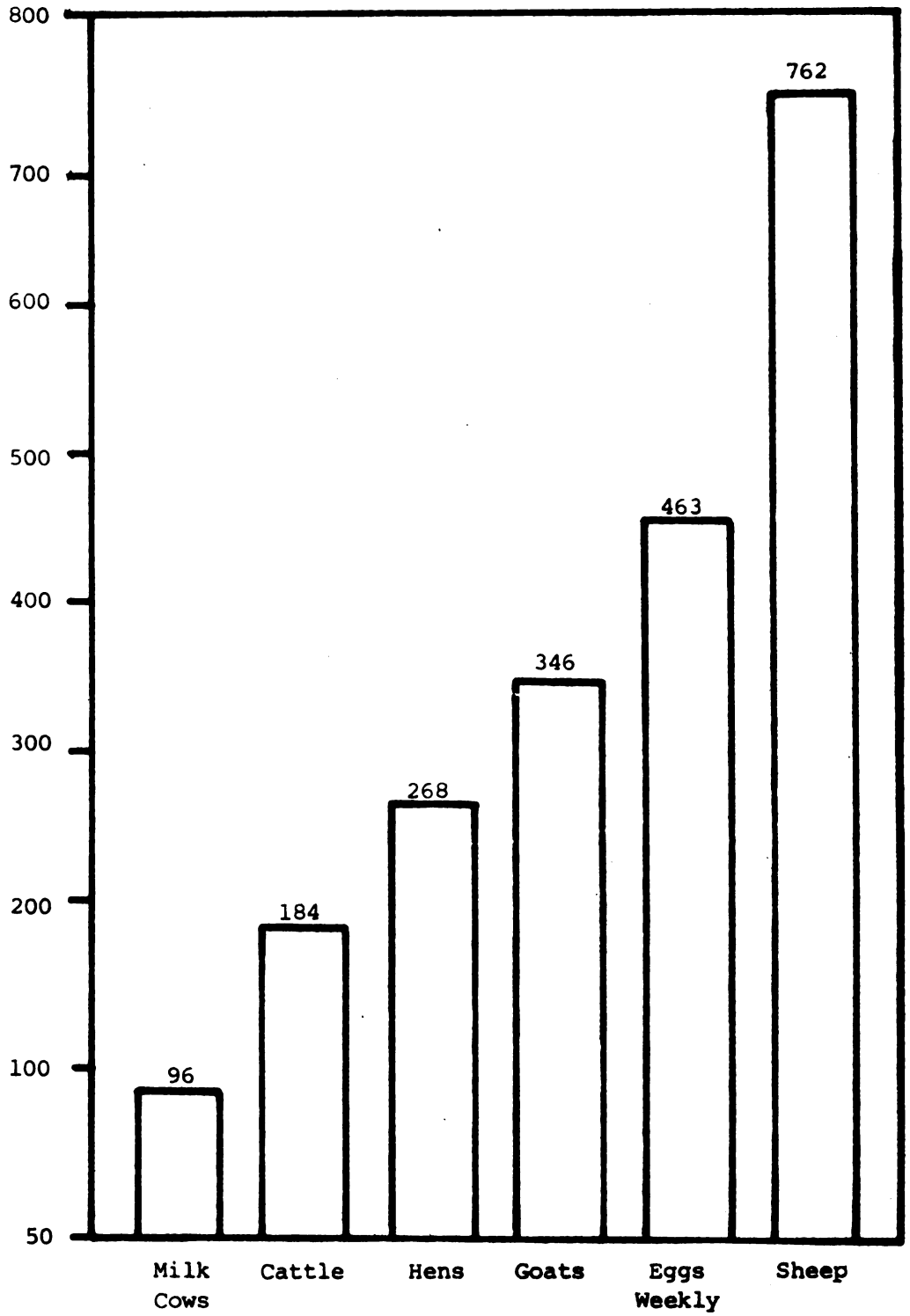

Figure 6.--Numbers and Sources of Protein Found in 115 Households.

Mothers were asked "What do you feed your family?" The response to this question was "papa," (white or yellow cornmeal, most often white, cooked until very thick and with enough consistency to be handled by hands as one would handle bread), green and wild vegetables. Although there was not sufficient storage for perishable food items in any of the households observed, certain food preservation methods such as drying and canning could have been used. None of the families knew how to preserve food for future use. Thus, when food was left over it was usually consumed at the next meal or the next day.

The Basotho women stated that they usually shopped once a week in the district for a fifty pound bag of papa (white cornmeal) to feed their families this food daily. None of the families used a grocery list for shopping purposes and most of the shopping was done on a credit basis. Store owners collect their money when men working in the mines sent monthly allowances to their families. They will accept certain articles in trade, such as wool and mohair.

Eggs are considered taboo by many Basotho although they are an excellent source of protein. The feeling about eggs is that females will become sterile if they eat them. Thus, about 50 per cent of the women interviewed stated they would not feed eggs to females even if they could afford them. While the remaining 50 per cent stated they

would feed their children eggs or even eat them if they were hungry or almost starving which has happened in Lesotho with the severe droughts during the early sixties.

Daily meal patterns of the Basotho showed that they consumed only tea for breakfast in many instances. Nearly half the group surveyed stated that breakfast consisted of tea because of lack of money for other food, but occasionally left over cornmeal was available. Children had no breakfast because they had to leave very early for school. However, during the summer children usually picked fruit to eat on their way to school. Fifteen per cent of the women stated they "ate from the earth and fed their children from the earth" meaning they used whatever was available. No food was taken during the day unless some leftovers happened to be on hand. Fifty per cent stated that beans were eaten quite frequently (white beans grow well in Lesotho) along with papa and wild vegetables. Papa is to the Basotho what bread is to an American.

The amount of breakfast consumed, if any, was directly related to the family income. The mid-day meal, if eaten, was also related to family income. It was customary to see the chiefs and the local doctors take a tea break along with closing the office for a mid-day meal which consisted of cornmeal, a vegetable and even meat. The mid-day meal was usually taken between 1:00 and 2:00 p.m.

The evening meal was considered the most important meal of the day. This meal was consumed late at night between 9:00 p.m. and 10:00 p.m. This is a common time for all members of the family to be home and relate activities of the day and also the time when there is less chance of someone "popping" in for a free meal. The evening meal consisted of papa and some type of vegetable, when available. However, whole corn was substituted for cornmeal during the harvest season. This whole corn is roasted on an open fire until almost black and is passed from one member of the family to another, each taking a few kernels until many cobs have been consumed.

It was found that on Sundays, when visiting occurs at a rate higher than other days, most of the Basotho will attempt to provide tea and cookies and sometimes even a chicken will be killed. It is the custom of the Basotho to always give a visitor some type of food to take home even if it means cold papa or taking away food which will be needed by the family.

Beer made from sorghum was consumed by some of the families. On the whole there was no significant change in meal patterns throughout the year, with the exception of those times when corn was eaten on the cob rather than as cornmeal. Porridge was consumed by only one per cent of the families interviewed. Chicken was sometimes mentioned as a Sunday dish, but this was rare. Animal protein is not

commonly found in the Basotho diets although milk is a traditional food. Milk is used quite frequently by mothers who have pre-school children because they are given dried milk at Maternal Child Health Clinics. In other words, the main source of protein in the Basotho diet is milk, either from the mother's breast for babies, sometimes from cows and often from commodities received under the World Food Program.

In summarizing the meal patterns of the Basotho, one readily sees an absence of most essential nutrients. When matched against the basic four food groups for food value it was found that considering the overall pattern of Basotho home diets, calories and vitamin A were sufficient while other nutrients were lacking. The staple of the diet, corn, supplied sufficient calories and vitamin A.[1] However, when white cornmeal was used vitamin A was insufficient.

Cooking Techniques

In most of the Basotho households will be found one or two large black iron pots. All food is boiled except when whole corn is roasted. The Basotho will boil practically anything. A frying pan is seldom found in any household. In many ways there are advantages to boiling foods, especially when vegetables are used in the diets. If the juices are consumed along with the vegetables then the nutritive value of the meal is increased.

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[1]Food value measured by references to the USDA Composition of Foods, Handbook No. 8.

There are very few utensils for eating purposes. Usually each member of the household will go directly to the pot, taking food in tin cans or any other useful device. Very few spoons are found. Most people use wooden sticks to stir food and also to serve it. This can readily be understood in instances where poverty is so great that what income is available must be spent on food.

After the food has been cooked the large pot is placed in a corner of the house. If any food is left over it will be consumed at a later meal or during the day. Sometimes there is the problem of rats taking their share of left over food and stored food. The Basotho are not only plagued by poverty, but also by large rats found throughout Lesotho.

Storage and Food Preservation

Corn and other cereals are stored in large baskets. Storage facilities are sometimes outside the house or in one of the other houses. Again, there is the danger of this food being consumed by rats if it is left for a long time. Most Basotho do not have to be concerned about storage facilities because once crops have been harvested they are consumed almost immediately.

Food preservation is almost unknown in Lesotho. In many ways methods of food preservation would increase the nutritive value of the diets. Fruits and vegetables could

be canned or dried. Meat could be dried for later use. However, since this is unknown most food will be consumed as soon as it is produced or is on hand.

Summary of Basotho Diets

As a result of the villages studied, one reaches the following conclusions concerning the Basotho diet. The staple of the diet is corn (most often in the form of cornmeal). When there is a shortage of corn the Basotho will eat porridge made from sorghum or sell sorghum and wheat to buy more corn.

Sorghum is used mainly for beer and porridge. Although many vegetables are grown they are not popular with the Basotho. These vegetables when consumed are usually spinach, pumpkin, squash and a variety of beans. During periods when vegetables are consumed there is an increase in the nutritive value of the diets, but this is on a level too small to evaluate.

Fruits are popular in the diets when fruits are in season. When eaten, these fruits raise the vitamin content of the diets. But again, this is seasonal. In reality, this means there is a variety of food available for essential nutrients but this only occurs during the peak of harvest with other parts of the year being lean. Therefore, during certain parts of the year the Basotho diets contain an excess of nutrients.

Of the 115 families visited only 17 had gardens and this could readily be understood since water supplies are too far away to water the gardens. When one has to walk several miles a day to collect water for drinking and cooking pruposes, there is little energy or enthusiasm to collect water for gardens. Once a garden has been developed there may be other problems created by roaming animals. Heavy rains in Lesotho pose problems for persons with small gardens. When it rains it is usually very heavy and washes away most of the seeds, which may have been planted. Persons with small gardens are also plagued by extremely hot sunshine on vegetation which may have begun to grow.

Desire for Change in Food Patterns

If more money were available, Basotho women said they would not necessarily utilize it in activities related to food practices. About 25 per cent said they would use the money to purchase cosmetics and new blankets, 35 per cent said they would use the money as savings for school fees while the remaining 40 per cent said they would increase the consumption of starches and maybe add a little meat to the diets. Not many expressed or felt a need to change food habits as long as stomachs were being filled, even though nutritional requirements were not being met. However, the great resistance to dietary change of the Basotho is evidenced by the fact that over one-half

of the interviewed families would not change if finances were unlimited. Basotho women tended to prepare foods which were preferred by their families, and similar food was served in schools. Therefore, to the mother's knowledge the family not only liked what was being served, but the food served was the right kind.

The plight of the young child in this situation is pathetic and that of the school child much more pathetic, since he has to walk several miles to school not only hungry, but also lacking the proper foods necessary for normal growth and health.

Adequacy of Home Diets

To determine the adequacy of home diets, estimates were made of the number of food servings consumed from each of the food groups. The normal meal pattern should consist of food from each food group. The basic four food groups consist of: the meat group which provides protein, iron, thiamine, riboflavin and niacin; the milk group which supplies protein, calcium, riboflavin and other nutrients, the vegetables and fruits group are important sources of vitamins and minerals, particularly vitamin A and C; breads and cereals supply most of the carbohydrate which is converted into energy for the body's use.

Foods may be classified into three broad functions according to the way they are used or needed by the body. These functions are for building and repairing tissues, supplying energy for normal routines and for the maintenance of health and promoting growth. The difference between food and nutrient is that each food contains different nutrients which are needed by the body. Food nutrients are broadly classified as proteins, fats, minerals, carbohydrates and vitamins. The main function of each nutrient fits into one of the basic four food groups.

Of the 115 households visited it was found that the diets lacked food from all food groups, with the exception of the bread-cereal group. Vegetables and fruits were consumed in quantities too small to measure. Animal protein was almost totally absent. Milk was used by mothers who have received it from clinics and was consumed almost immediately. School-age children very seldom benefited from this milk in the homes because it is the custom of the Basotho for adults to eat first and children last. Male adults, when present in the homes usually consumed this milk.[2] Calories were provided in adequate amounts with the large consumption of cornmeal.

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[2]Home Economists are telling the Basotho that a good father eats with his children and not before them.

School Feeding Program

The school meal pattern when compared to the home meals, provided a good source of animal protein in the form of dried milk. Yellow cornmeal was served throughout the year. Each day children received yellow cornmeal and dried milk cooked together. There was no other food served during the course of one year. However, during the summer children picked and ate fruits and vegetables on their way to school. Cornmeal and dried milk were boiled in a large pot (Figure 7) and servings varied from child to child because of the type of eating utensils used. Although, due to no fault of the teachers and mothers who cooked the food, extremely poor sanitary conditions existed (see Figures 8 and 9). When matched against the basic four food groups, school feedings provided food from only two of the food groups. Milk was sufficient and was the only source of animal protein in the child's diet. Yellow cornmeal provided adequate calories and vitamin A. The school feeding was still inadequate because food was not served from each food group. However, when compared to the home meal patterns, school feedings provided more nutrients.

Storage facilities for food used in school feedings was very poor. Food was usually stored on the floor in a small damp building. Storage facilities were built by

Figure 7.--Preparation of school meal, yellow cornmeal and dried milk being cooked.

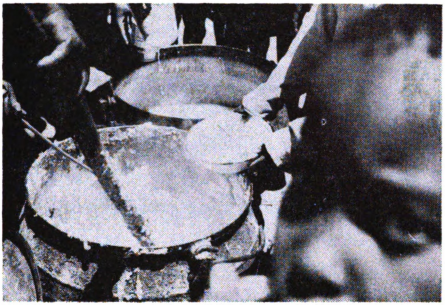

Figure 8.--In the background is visible the type of utensils used in the preparation and serving of school feeding.

Figure 9.--Food is cooked under very poor sanitary conditions. A dog lingers around the preparation area.

parents, in most instances, and they did their best according to their skills and knowledge.

Anthropometric Measurements

Failure to grow according to an accepted pattern of any country is usually specific evidence of nutritional deficiencies. Therefore, it was felt that growth increments of children on school feeding programs and those not on these programs would be quite different.

Height was measured to the nearest inch, weight to the nearest pound, and age to the nearest year.

The height and weight of each child in the study were recorded in both September, 1971, and July, 1972. These measurements were compared to those children of the same age and sex taken in 1965 by the Home Economics section of the Department of Agriculture in Lesotho. Index cards were kept on each individual child. Data on index cards included grade, sex, village, names of parents or guardians and age. The age of children in the study was taken from teachers' records and from children. No birth records were available and there was no way to confirm ages of children.

September and July measurements were recorded. There were no differences in the two sets of measurements taken. However, when compared to the 1965 increments, Basotho children showed approximately four per cent

increase in both height and weight. The average height and weight measurements for children participating in school feeding programs and those not enrolled in these programs were almost identical (see Figures 10, 11, 12 and 13).

Results of Test

The Colored Progressive Matrices were administered to 155 children in April, 1972. This test indicates whether a person is or is not capable of making comparisons and reasoning by analogy. The Matrices are considered good methods of determining what children at each age group of five through 11 years should be doing. According to a reviewer of individual and group intelligence tests:

> These tests should be quite helpful as screening devices for groups where estimates of levels of intelligence need to be compared. They have already been found helpful in comparing various socioeconomic and ethnic groups. Progressive Matrices should also be helpful in estimating general level of intellectual functioning of individuals who have communication disorders as no verbal responses are required.[3]

Results of the test were recorded and compared to the norms and percentile rank of 600 British children. A child was considered intellectually superior if his scores were at or above the 95th percentile. Above average intellectual rank was given to scores near the 75th percentile. If scores were recorded between the 25th and

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[3]Morton Bortner, The Fourth Mental Measurement Yearbook (Highland Park, N.J.: Gryphon Press), p. 764.

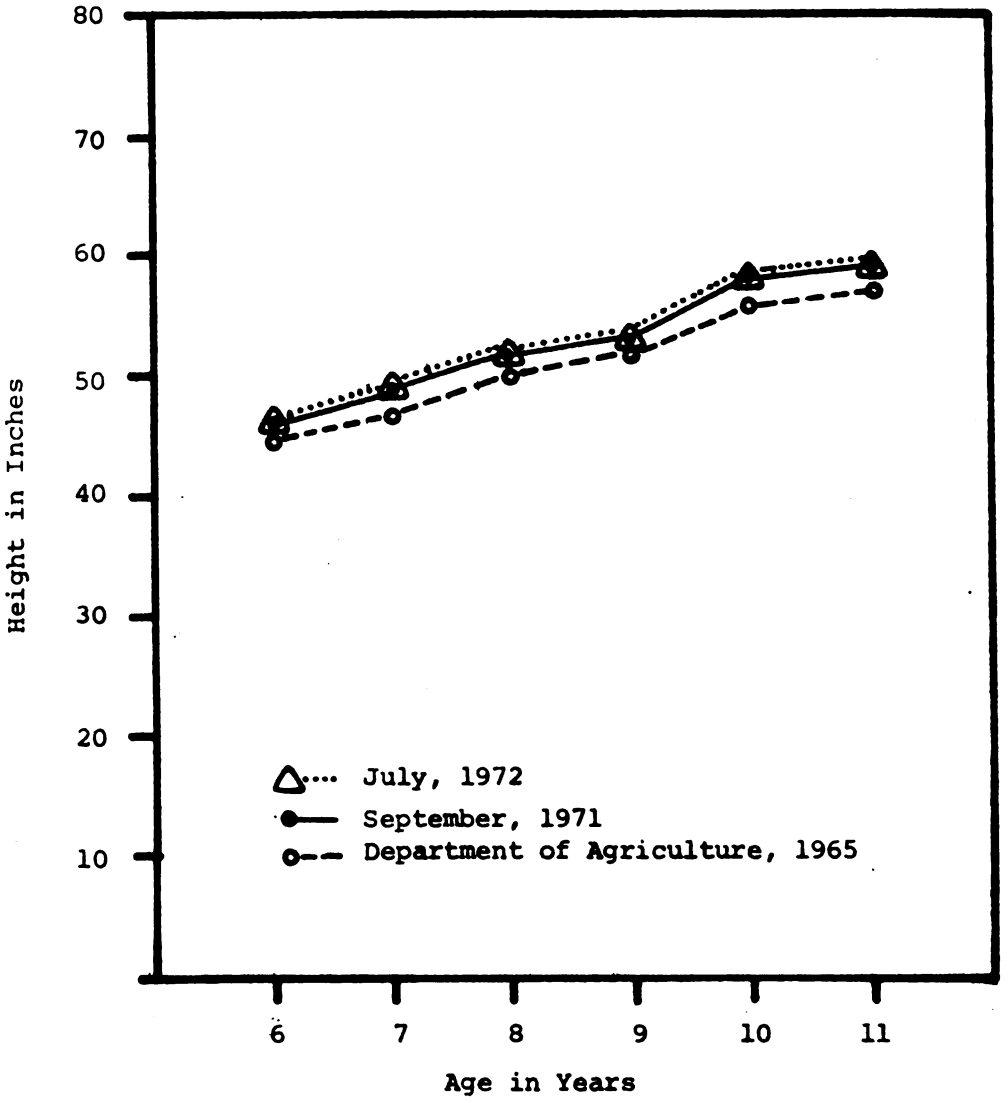

Figure 10.--Measurement of Girls, Height in Inches.

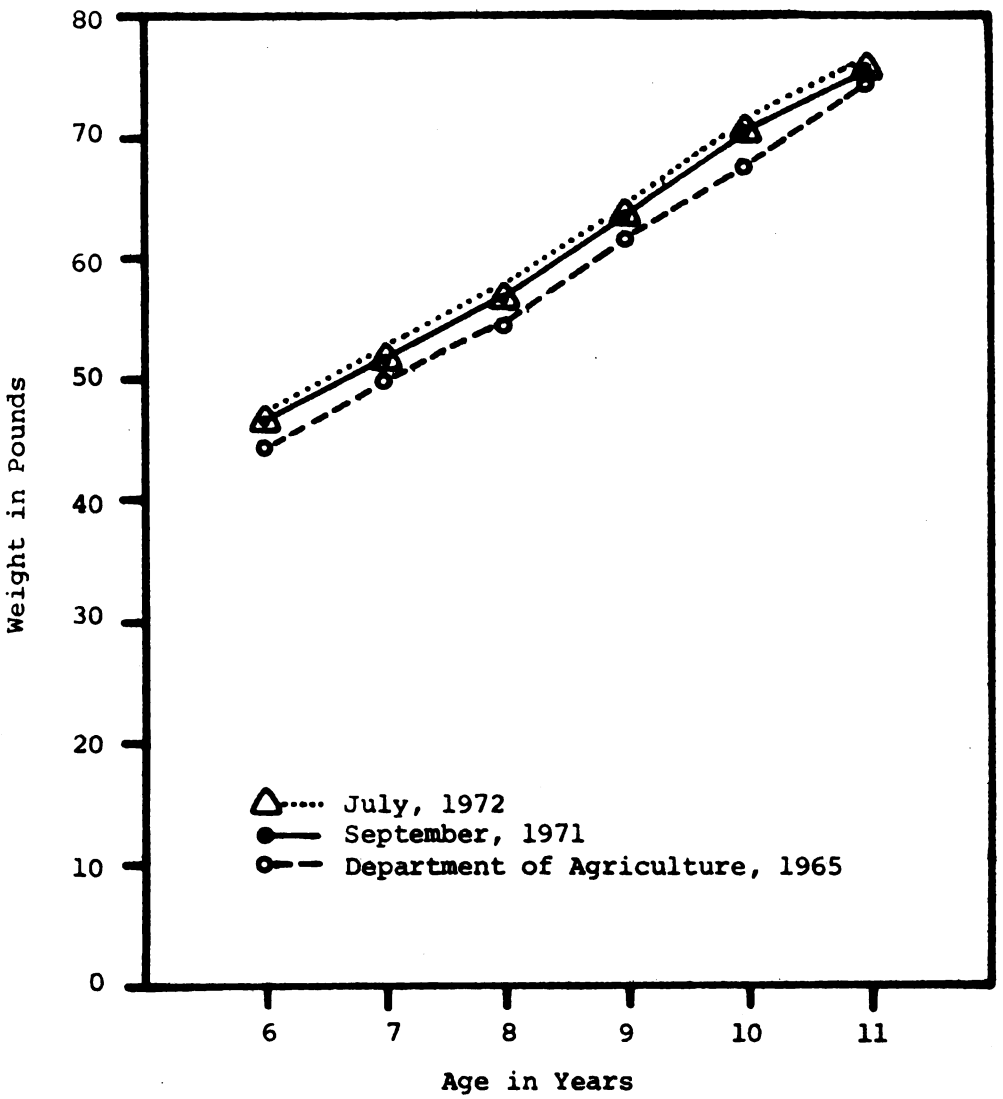

Figure 11.--Measurement of Girls, Weight in Pounds.

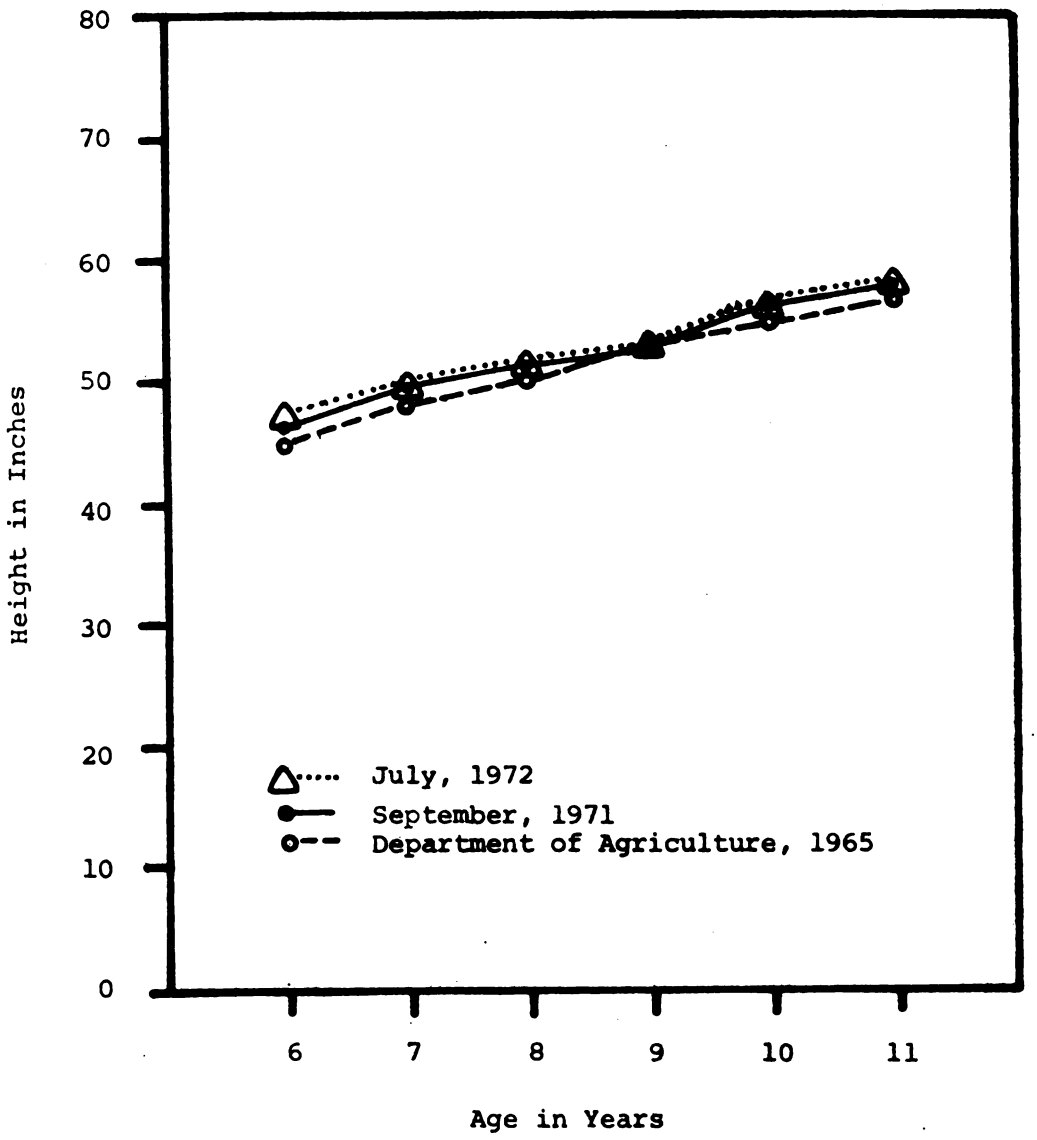

Figure 12.--Measurement of Boys, Height in Inches.

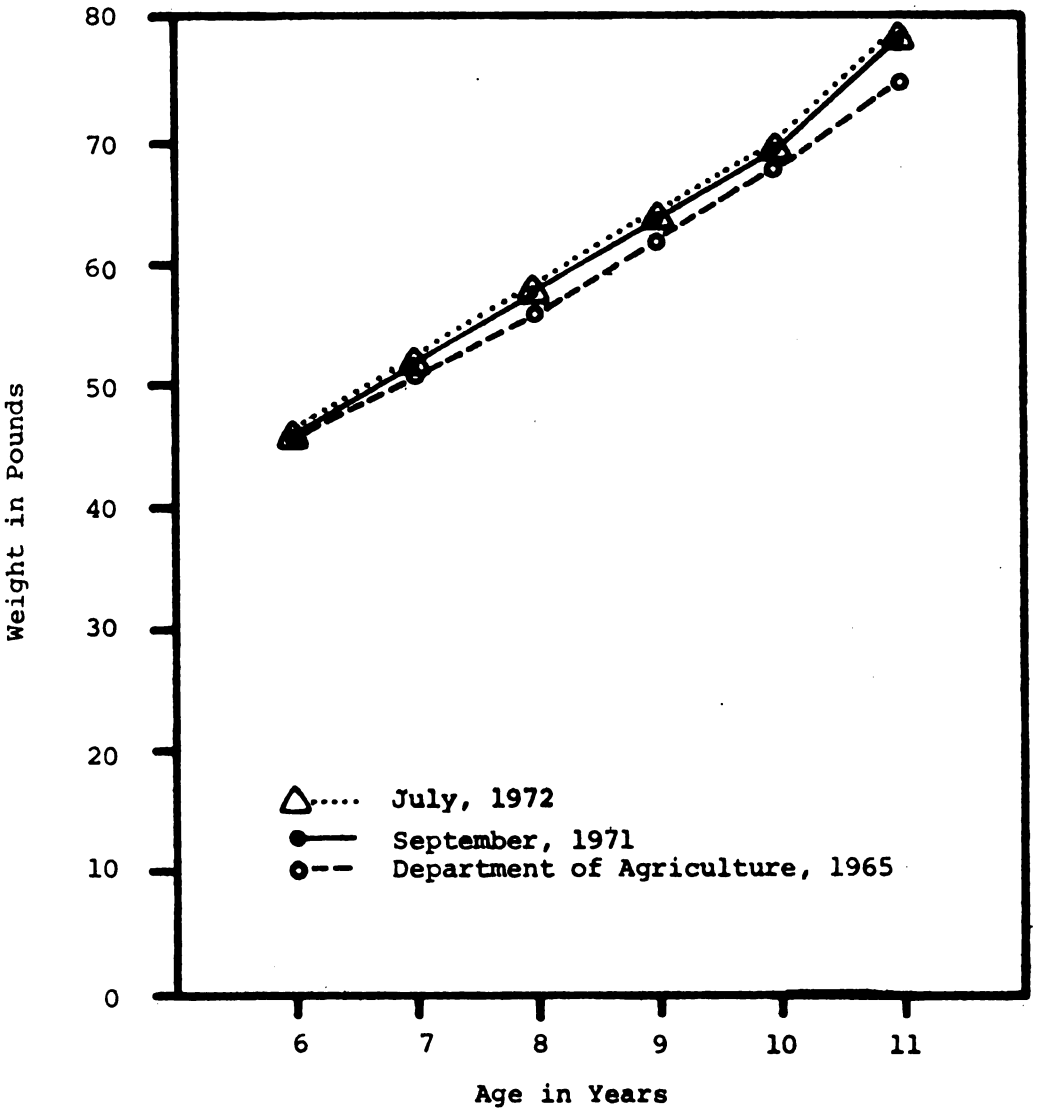

Figure 13.--Measurement of Boys, Weight in Pounds.

75th percentile, children were considered average. Scores recorded below the 25th percentile were considered below average. As with all tests caution must be used when administering them to different cultures. When an interpreter is used to administer tests there is the possibility that mistakes may occur. The Progressive Matrices were used in an attempt to estimate the performance level of children in the study, and to compare differences in test scores between children on feeding schemes with those children not on feeding programs. The Progressive Matrices were first considered by the writer to be a supplement to internal tests. Due to the lack of results from teacher-made tests, the Matrices were the only available method for comparing performance levels of the subjects. It must be stated, in all fairness to teachers, because of the rigid school schedule and overcrowding of schools, it is sometimes difficult to keep adequate records. Teachers may have administered tests in the classroom, but knew the children well enough not to use unnecessary time in recording the results.

Children who took the test had an average raw score which placed them in the 75th percentile. Again, as with anthropometric increments, no significant differences were found between the two groups tested. Basotho children were ranked as being above average when compared to other groups who have been tested with the Progressive Matrices.

Children observed in classrooms showed little difference in behavior. It should be noted that classroom situations presented very poor learning conditions because of overcrowding, lack of teaching aids, etc. Teachers work very hard with pupils, but due to many things beyond their control they very seldom get the anticipated results from their students. The teacher-student ratios in primary schools is very high, and because of this overcrowding it is sometimes difficult for teachers to be effective. There is little opportunity to work with pupils on an individual basis, and also little opportunity to teach lessons which may have been planned several days in advance because of so many pupils in one room (see Tables 7 and 8).

TABLE 7.--Staff: Student Ratios-Primary and Secondary.

Year	Pupils		Teachers		Ratios	
	Primary	Secondary	Primary	Secondary	Primary	Secondary
1966	167169	2942	2827	120	1:59.1	1:24.5
1967	167803	3201	3065	152	1:54.7	1:21.1
1968	179386	4141	3419	190	1:52.5	1:21.8
1969	180903	5011	3583	228	1:50.5	1:22.0
1970	191950*	6052	3769*	255	1:51.1	1:23.7

Source: UNESCO, The Danish Mission to Lesotho, April, 1972.

*Estimates.

TABLE 8.--Primary School Enrollment Projections, 1970-1980.

Year	I	II	III	IV	V	VI	VII	TOTAL	
1963	45452								
1964	45652	28144							
1965	52178	29115	28329						
1966	46598	30425	29060	19392					
1967	44224	30159	29779	19999	17713				
1968	41543	34828	29439	24831	18666	14349			
1969	41159	33071	30146	23462	21665	14871	9616	180903	(incl. Std. VIII)
1970	41000	30869	28249	24323	21901	19828	11413	185344	
1971	41000	30750	27988	22849	20785	17707	13044	174123	
1972	38500	30750	27880	22637	19525	16805	11649	167746	
1973	35600	34650	27675	25092	20373	17572	15124	176068	
1974	35200	32040	31185	24907	22583	18363	15815	177393	
1975	29500	29250	28836	28066	22416	20325	16502	174895	
1976	30000	26550	26325	25952	25259	20174	18292	172552	
1977	30500	27000	23895	23692	23357	22733	18157	169384	
1978	31000	27450	24300	21509	21323	21021	20460	167263	
1979	31500	27900	24705	21870	19358	19191	18919	163443	
1980	32000	28350	25110	22234	19683	17422	17272	162071	

Source: UNESCO, The Danish Mission to Lesotho, March, 1971.

CHAPTER V

SUMMARY

The objectives of this study was to determine the effects of school feeding programs on learning among primary school children in Lesotho. In a country where approximately 70 per cent of the children suffer from some form of malnutrition, school lunches were initiated to help combat this problem and eliminate hunger. In order to determine the effects of the school program on the intellectual status of primary school children, 115 households were visited and a food analysis made to determine how school feedings related to home meals. One hundred fifty-five children were observed during the period of one year. An intelligence test was administered to the children in the study to determine the learning levels of children on feeding programs and those children not on the programs. Height and weight measurements were taken of these 155 children who represented 27 villages situated approximately 20 miles outside the capital, Maseru.

No significant differences were noted on intellectual measurements or on anthropometric measurements of the two groups studies, that is, those on feeding programs and those not on the programs.

School and home meal patterns were both deficient in essential nutrients, with the exception of vitamin A and calories. School feedings provided the only source of protein in the Basotho children's diets, which was in the form of dried milk.

It must be clearly understood that in the course of one year many things may happen which could affect the results of a study of this nature. During the course of this study feedings were temporarily halted because of lack of rain. When one takes into consideration the poor rate of school attendance in Lesotho one should also note that this would affect the results of the study. Due to violent thunderstorms and harsh winters it is sometimes difficult for children to attend school daily, therefore, during certain portions of the year, school attendance is low.

Children between the ages of 5 and 12 grow at a slower rate than during other years. However, children between the ages of 5 and 12 years may show low height and weight for age, if diets are insufficient. But this would depend on the standards of references used for height and weight increments in a country. In Lesotho the standards of reference used for height and weight measurements are those issued by the Home Economics division of the Department of Agriculture in accordance with the Institute of Central America and Panama (INCAP).

These may be poor standards to use in Lesotho. Perhaps if local standards of references were developed, a difference in height and weight could be noted during the period of one year. Also, children of this age group have a tendency to supplement their diets by picking fruits and vegetables, and eating snacks on their way to school. Therefore, some of the children who were not enrolled in the feeding programs may have been better fed than children enrolled in the programs.

Results on the intelligence test would probably be the same with any groups tested in primary schools in Lesotho because schools are not financially able to provide colorful teaching aids along with individual attention by the teachers. The Progressive Matrices are quite colorful and created excitement in children taking the test. Education at the primary level in Lesotho leaves much to be desired, due to no fault of the teachers. There are too many scattered schools with a large number of unqualified teachers. "In 1970, there were 1,304 primary schools in Lesotho, employing 3,608 teachers of whom 1,177 were uncertificated."[1] If schools were consolidated and the qualifications of teachers upgraded then perhaps differences could be noted in the classroom behavior of students and also on tests administered.

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[1]UNESCO, Report of the Danish Mission to Lesotho, April, 1971, p. 7.

Because of the low budget for education, a large number of poorly trained teachers, and overcrowding of classrooms, Basotho children probably did well on the intelligence test as each child was worked with individually. Another factor to be considered is the attitude of teachers concerning the test. They were quite interested and a few asked to take it themselves. This interaction between teachers and students may have inspired children to work exceptionally hard.

The objective of school feeding programs must be discussed since this is important to this study. School feeding programs are normally thought to provide one-third of the daily nutritional requirements. This, in reality, does not exist in Lesotho, nor in the United States, unless there is a supplement given at breakfast. The Department of Agriculture in Lesotho stated that school feeding schemes were initiated to help combat malnutrition and eliminate hunger. This being the aim them emphasis should have been placed on providing foods from the basic four food groups: milk, meat, fruits and vegetables and breads and cereals. Although there are no standards of reference for these food groups in Lesotho, it must be assumed that children would need at least one serving from each group. "The school lunchroom is one of the most undeveloped areas in <u>American</u> education. It is starved for facilities, and starved for funds to serve the

proper food in the right amount to children who need it, sometimes desperately."[2] Just as this underdevelopment of the school lunchroom is true in the United States, it is equally true in Lesotho. School feedings and nutrition education were to be important parts of the curriculum in Lesotho, but emphasis was placed on simply furnishing food. Subsequently, nutrition education did not have the impact on the curriculum that this writer felt to be important in order to raise the nutritional level of children and the quality of food served.

School feedings in Lesotho are part of the total food aid programs.

> Food aid programs got underway in 1954, at a time when the United States was frankly concerned about finding useful outlets of surplus food and fiber, which had accumulated following production expansion during and following World War II and the Korean War.[3]

Nutrition education should have been emphasized with these food aid programs. In the United States, under the National School Lunch Act of 1946, nutrition education was emphasized. However, "The programs generally are not only failing to feed, but also to educate a large proportion of our school population as they might."[4] Schools offer a

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[2]B. Baird, The School Lunchroom: Time of Trial (New York: John Wiley and Sons, 1968), p. 37.

[3]"Contours of Change," The Yearbook of Agriculture (Washington, D.C.: U.S. Department of Agriculture, 1970), p. 282.

[4]Baird, p. 97.

unique setting for educating people on good nutritional practices and providing for themselves, but this is somewhat overshadowed if emphasis is only placed on providing food.

Many people have expressed a need for change in food aid programs and none other than President Nixon has spoken on the subject, "Let's face it, food programs were designed as much to get rid of surplus commodities as to feed hungry people."[5] The president continues by stating that emphasis must be placed on the nutritive value of commodity packages. This writer believes that emphasis should also be placed on nutrition education and encouraging people to provide their own food.

Supplementary foods offered in school feeding programs in Lesotho are becoming more and more important because adults are becoming dependent on them, feeding their children less at home in certain instances. This tendency must be corrected. It is well known that the child who is hungry cannot respond well in a learning atmosphere. However, if children are not provided with proper foods and sound educational practices they will respond poorly in school.

Recommendations

As a result of this study the following conclusions were reached. The writer originally felt that

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[5]"Contours of Change," p. 126.

children on school feeding programs achieved at a higher level than children not on feeding programs. Since the study lasted only one year, and because of the type of food provided in the school, no objective evidence could be gained which supported the position that children on scientific feeding programs achieved at a higher level than other children. It was impossible to establish a control group because the writer was financially unable to supplement school feedings with other foods and also it would have been difficult to improvise a rigid schedule for eating because of the great distance between homes and the school. The writer did find that nutritional requirements for normal development are generally lacking in Lesotho. Considering previous studies one can sssume that this would have an affect on the achievement of primary school children.

As a result of this study the writer was able to present some new findings about the educational system in Lesotho, the feeding programs and some of the cultural and social forces affecting the Basotho. The writer was also able to investigate some of the difficulties which lie ahead for the Basotho. These include a shortage of food, uneven distribution of food, reliance upon aid and an educational system which has to change to meet the needs of the people.

The writer would recommend to the Basotho and to the reader that school feeding programs be improved in types of food served and that the programs be utilized to teach nutrition education to parents and children. School feedings should also be utilized in such a way that the Basotho will learn how to prepare well balanced meals from local foods. School feedings have the potential for directly eliminating hunger and malnutrition among children. School meals and nutrition education should be carried into the homes from schools.

The curriculum in primary schools in Lesotho should include information on foods available in Lesotho. Education begins in the home, but it continues to the classroom where new experiences are gained and carried back into the home. More parents hsould actively be involved in the school feeding programs. Parents should be encouraged to work in school gardens. In this way parents and children would benefit from practical education by learning what foods can be grown locally and what foods help to constitute a well balanced meal.

School administrators and the Save the Children Fund administrators should attempt to expand the existing feeding programs while at the same time encouraging teachers to incorporate nutrition education in the curriculum.

This writer feels that a year was not long enough to investigate the total impact of school feeding programs on those exposed to them, but she did get an indication of future nutritional needs and was convinced that empty stomachs and continual concern for food, without sound educational policies, do not provide a satisfactory learning environment.

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