

A Report of
THE FAMILY LIFE STUDY
of the Pine School Project
A Study of Familial Mental Retardation

by

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INTRODUCTION

The study of mental retardation until quite recently has been a neglected subject with only a few dedicated workers striving against almost insurmountable odds. To a large extent, as a result of urgings by the parents of mentally retarded children, interest has been aroused.

Endogenous mental retardation, also called familial, primary, or simple, was of special interest to the group of investigators at the State University of Iowa. This type of mental retardation has been thought by most to have no physical or neurological signs or symptoms. Some suspect it to be the result of psycho-social, economic, and educational deprivation. (1,2) There are others who believe that these children have minimal but definite brain disorder which, when coupled with the social, educational, and psychological factors, produce the syndrome of familial mental retardation. (3,4) It is usually found throughout a family constellation and in the lower socio-economic class. This category comprises a large part of all mental retardation, but as investigators begin to scrutinize it more closely, the primary type may well be broken up into several different etiologies. The interest in endogenous mental retardation expressed by the group at the State University of Iowa led to the development of a study which has been termed the Pine School Project. As a part of this project, a study of some of the aspects of family life was included.

Many areas are implicated in understanding familial mental retardation. The planners of the program, from its earliest inception, requested aid from many disciplines. Although this project is housed in the University Hospitals, the planners believed that any narrow definition of scope would reduce the whole project to mediocrity.

Background and Purposes

The study was inaugurated in 1957 on a projected 5-year basis with two major purposes: first, to record in detail the growth and development of a group of endogenous, mentally retarded children; and second, to attempt to alter the unfavorable course of their development by enriching the environment both at home and at school. At the beginning of the study the disciplines of medicine, psychology, education, and social work were involved. As the study progressed, it was apparent that there were certain facets in the lives of the children and families which were not being observed. Consequently, in 1958, the disciplines of speech pathology, dentistry, public health nursing, and home economics were added to the study.

It became increasingly clear in the preliminary phase of the study that one of the major deficits was in the children's home environment. The families living on low incomes in sub-standard housing had a minimal knowledge of the efficient management of money, economical marketing, proper preparation of food, nutrition, good home-making techniques, and health practices. The study needed a person trained in these areas to attempt to alleviate this deprivation. The staff sought a mature woman with home economics training to be added to the project to work in the home-life area.

The home economist or home management consultant, as she was designated, was to work directly with the parents of the children on home-making techniques. She was to advise and to help the mothers in the planning and preparation of food; in the purchasing, care, and appropriateness of clothing; in home decoration; in learning the techniques of sewing and mending; in planning the expenditure of the family income; in the care and technique of house-cleaning; and in acceptable methods of child care. She was also to collect data on the various facets of the home life of these families.

Mr. Ross Wilbur, Director of the Division of Child Welfare, State Department of Social Welfare, was approached for help in fulfilling these needs. With his support and that of Miss Anna Sundwall, Regional Social Work Consultant of the U.S. Children's Bureau, a financial grant was obtained for this position. This grant was of two years' duration and was planned to be for service and investigation of these families in cooperation with the other investigators of the Pine School Project.

At the same time a public health nurse was added to the staff to work with the families in the health area and the Child Development Clinic. The home economist, public health nurse, and social worker combined their efforts in an attempt to answer some of the problems of the inadequate family. This report is chiefly to describe the results and the work of the home economist in the Pine School Project, from 1958 to 1960.

STATEMENT OF THE PROBLEM

The purpose of the Pine School Project which applied to the home management consultant, especially, was concerned with attempts to alter the unfavorable course of mentally retarded children by enriching their environment both at home and at school. This inferred that she would seek to develop activities related to the entire family -- the Pine School children, their parents, especially their mothers, and other siblings.

The hypotheses that the home economist wanted to test were:

1. The mothers' housekeeping inadequacies were due more to a lack of knowledge than to a lack of interest in their work.
2. These underprivileged mothers could be motivated to learn good homemaking techniques.
3. It will be possible to teach these mothers some of the necessary skills for improvement of their home environment.
4. The Pine School children, their siblings, and their fathers would benefit as the result of the improved abilities of the mothers.

As the result of close contact of the home economist and the mothers and the Pine School children, data on various phases of family life also were collected. Data were collected on the physical growth of the children and the nutrition of the children and their families. In view of the fact that there would be only a small number of subjects involved in the study, it was recognized at the onset that caution should be used about generalizations drawn from the results of this study.

SUBJECTS

The subjects about whom this study was concerned were the children enrolled in the Pine School and their families. The original criteria developed for the purpose of selecting children for the longitudinal study were:

1. Children with an I.Q. between 50-80 as found by the Stanford-Binet Intelligence Test who had no known or presumed organic or neurological involvement to account for their subnormal functioning.
2. Evidence of mental retardation in at least one other member of the family.

3. The socio-economic status, as judged by the modified Warner Index of Social Status Characteristics, (5) would place the family in the lower class.
4. Chronological age of the child between three and six years.
5. Residence in Johnson County, Iowa.

Because the space available for the school was small, the maximum number of children enrolled in school at any one time was necessarily limited to 20. The number of mothers involved in the home-life study was dependent upon the children involved in the Pine School Project. The number of families included in this portion of the study was 13, and included 30 children and 25 adults.

Methods for the family life study were developed and were related to those used for the Pine School Project. For this reason the methods used for selecting the children and those pertinent to the family life study are reported as well as those for the family life study.

METHODS

Pine School Project

Possible subjects were referred to the project by the Johnson County Welfare Department, Iowa City physicians, the Iowa City Visiting Nurse Association, Special Education Consultants of the Iowa City Community School System, or by the families already participating in the study. The subject and his parents were interviewed in their home by the educator. This preliminary interview served several purposes. It was used as a screening device to select those children who appeared to be candidates for the school. In addition, it was used to inform the parents of the research study, to see if they were interested in having their child attend this special school, and to secure their co-operation. If the children and the parents seemed to fit the criteria set up for the study and were willing to co-operate, they were asked to come to the Child Development Clinic of the Department of Pediatrics, for further study.

During the visit to the Child Development Clinic, the children were studied psychologically and given a comprehensive medical examination. These data were reviewed by the research staff. If the child and his parents fulfilled the established criteria, the child was accepted as an enrollee for the Pine School Project.

The children attended school during the week from 8:30 a.m. to 2:30 p.m. throughout the year, including an eight-week summer session. They received transportation, school lunches, and special education. Medical and dental care was available to the children without expense to the parents. The parents and siblings of these children were invited to take advantage of the services offered by the social worker, public health nurse, and home economist.

Family Life Study

The Family Life Study was developed into two related parts and a third part which, it was believed, might eventually have some aspects of value to inadequate people -- the development of a Homemaker Service for the State of Iowa. This latter area was of special interest to the Division of Child Welfare, State Department of Social Welfare. The two related parts were concerned (1) with the families -- their environment and ways of improving the home environment, and (2) with the children -- collection of anthropometric and nutritional data, planning of school lunches, and supplying clothing if it were deemed advisable.

The work with the families was introduced on an individual basis. The work was mostly with the women because they were more available than the men. However, whenever possible, the men were included. It was first necessary to establish a relationship with the families and become acquainted with their problem. This was accomplished by visits to the mothers in their homes at least once a week.

During these visits it was possible to collect data on budgets, dietary planning, housing, furnishings, clothing, and relationships of the mother to her family. It was, also, possible to study the mother's interests, abilities, and housekeeping problems. The deficiencies in their homemaking techniques were usually quite obvious.

The idea of applying a group situation as a solution to some of the women's needs was an outgrowth of these home visits. The formation of the group was not difficult. The idea was suggested to one of the mothers who was enthusiastic. In turn, she brought the idea of a mothers' group to a Pine School P.T.A. meeting. It was immediately accepted by the others. The procedure of the group meetings was planned to fulfill the needs of the women, to stimulate them and the younger siblings, and to create a slight competition among them. As an outgrowth of these group meetings and in response to an expressed need, sewing classes were added to the program during the second year of the study.

TABLE 1
FAMILIES IN THE PINE SCHOOL PROJECT

Family Name	No. of Children	Children in Pine School in 1958	Placed in Public Schools	Children in Pine School in 1959	Marital Status of Family in 1958	Marital Status of Family in 1959	Participation in Family Life Study
Barker	16	2	-	3	Married	Married	Sept. 1958 - June, 1960
Beach	4	2	-	2	Married	Married	Sept. 1958 - June, 1960
Collar	5	3	3	-	Married	Married	Sept. 1958 - June, 1960
Dennison	5	-	-	2	Married	Married	Sept. 1959 - June, 1960
Geddes	9	2	2	-	Common law Marriage	Common law Marriage	Sept. 1958 - June, 1960
Grant (Foster)	7	-	-	2	Foster Home		Non-participant
Hobart	5	-	-	1	---	Married	Jan. 1960 - June, 1960
Hubble	10	3	2	1	Married	Divorced Children at Home	Sept. 1958 - June, 1960
Marble	5	2	2	-	Married	Moved in 1960	Sept. 1958 - Jan. 1960
Metter (Foster)	3	1	-	1	Married	Divorced Child in Foster Home	Sept. 1958 - Sept. 1959
Perkins	7	-	-	2	Married	Married	Sept. 1959 - June, 1960
Russell	8	1	1	-	Married	Married	Sept. 1958 - June, 1960
Walker	<u>5</u>	<u>2</u>	<u>1</u>	<u>1</u>	Married	Married	Sept. 1958 - June, 1960
TOTALS	89	18	11	15			

Nutritional and budgetary information was collected and recorded on all but four families during the first year, and on all but one family during the second year. Nutritional data on the families during a one week period were collected twice each year. This material was checked by securing meal patterns and food check lists from the mothers. Having found some nutritional lacks, a more detailed nutritional survey on the Pine School children was planned for the second year of the study. Dietary surveys, using the same general methods as during the first year, were refined and were supplemented by the daily recall method and school lunch observations of the children's food intake.

Anthropometric measurements of each child enrolled in Pine School were taken once a month, beginning in October, 1958, using the Meredith Method. (6) As an additional source of information, stature pictures, wrist-bone x-rays, and head circumference measurements were added in 1959. A part of this material has been included in a Master's thesis under the direction of the Department of Home Economics. (7)

School lunches were planned to supplement the home diets of the children. The menus were selected from food prepared for hospital consumption. The food was prepared in the hospital kitchen and transported to the school by the dietary service of the University Hospital. The Pine School teachers were responsible for its service.

Efforts to develop a Homemaker Program for the State of Iowa were initiated by the Division of Child Welfare of the Iowa Department of Social Welfare. It was believed to have implications for mentally retarded children as well as indigent families by using visiting homemakers to teach the mothers some of the homemaking skills. It was visualized that this part of the Homemaking program could be given, either individually or as a group, by the visiting homemakers when they were not needed for service in a home.

Literature from many sources was reviewed. This material, along with suggestions from various interested and concerned sources, was modified and developed into a manual for the introduction of such a service for the State of Iowa. A committee was appointed by the Director of the Division of Child Welfare which acted in an advisory capacity to the development of such a service. A pilot study of this service was planned for Johnson County during 1959-1960, but was never implemented.

RESULTS AND DISCUSSION

SUBJECTS

Demography

In 1958, the 18 children who were enrolled in the Pine School were from 9 families. Only 2 children in the first year were without siblings who were or had been enrolled in the Pine School. These families met the criteria of the project as it was conceived. All of the mothers participated in the Family Life Study.

At the end of the first year it was necessary to add children to Pine School to replace those who the staff believed were ready to attend a public school or who had moved from the county. During the second year of the Family Life Study, 2 children were included whose mother was deceased but who otherwise met the criteria. These 2 children were living in a middle-class situation with an uncle, aunt, and their father. The aunt did not participate in the home economist's program. Another child, who entered the project in the Fall of 1958, was taken into custody by the Court in 1959 and placed in a foster home. This foster mother did not participate in the Family Life Study. Thus, at the beginning of the second year, 11 families were actively involved in the study. The family constellations are presented in Table 1. The family names used in this report are all fictitious.

The mean number of children per family was 6.8 (Table 2) and the range was 3 to 16. This was different from the findings of Sears, Macoby and Levine who reported 2.7 children in the average unskilled laborer's family. (8) It was obvious that these two populations were different. Perhaps the status and characteristics of this inadequate group were lost in a statistical analysis in the Sears Report. Miller (9) in his discussion on the "hard core" welfare group finds 6.2 children per family. The Pine School families, as a whole, would be considered as part of the working or unskilled laborers' group.

The parents had **differing** attitudes in regard to additional progeny. Four of the families (or about 36%) involved in the study had babies during 1958-60. These additions meant the fifth child for two families, an eighth and a tenth child in the other two families. Each of the project mothers was fearful of becoming pregnant and they stated that they did not wish additional children. If, however, they did become pregnant, they accepted the fact with a stoic attitude. After each pregnancy and birth, the mothers were offered birth control information and measures by the attending physician, except for those of the Catholic faith. This information was accepted with well meaning

TABLE 2
 DEMOGRAPHIC CHARACTERISTICS
 OF
 PINE SCHOOL PROJECT
 FAMILIES

Family	CHILDREN			Age Range (Years)	PARENTS				Church if stated
	No. of Children	No. of Boys	No. of Girls		Age in Years Male Female		Years in School Male Female		
Walker	16	13	3	3 to 23	43	39	8	11	---
Wach	4	3	1	3 to 10	50	42	8	8	Catholic
Waller	5	2	3	4 to 10	29	27	7	8	---
Wannison	5	4	1	1 m to 7-1/2	32	28	8	10	---
Ward	9	3	6	6 m to 11	45	32	12	12	Wife-Catholic Hus -Protestant
Warrant	7	4	3	5 to 13	50	---*	7	7	Catholic
Wright	5	3	2	1 to 8	30	26	7	9	---
Wright	10	6	4	3 to 16	47	35	8	9	---
Wright	5	0	5	7 to 10	32	31	6	7	Protestant
Wright	3	2	1	7 to 12	51	32	8	8	---
Wright	7	6	1	2 to 18	42	37	3	9	---
Wright	8	4	4	1 to 11	30	27	10	11	---
Wright	5	2	3	1 to 13	39	32	8	9	Catholic
Average	6.8	4.0	2.8		40	32.3	7.7	9.0	

*Mother deceased

intentions. Shortly after returning home, however, the mothers began to complain because the fathers did not wish any part of it. Many of the women wished to be made sterile or to have their husbands made sterile. The husbands did not wish to have the simple operation performed upon themselves but they had no objections to their wives undergoing the more serious surgery. It should be noted that it is difficult to secure legal permission to have such an operation performed upon a woman unless there is an unusual medical reason. These families, then, go on producing children for whom they have difficulty in caring and whom they often do not want. It must be stated, though, that a new child seemed to be accepted to the same extent that the others had been.

These mothers, while inadequate in carrying out accepted procedures for child rearing, appeared to love their children as babies, as evidenced by caressing and fondling. As the child reached school age, the mothers resorted to slapping and yelling at the youngsters in order to discipline them. This disciplinary action seemed to be ineffective and gradually they lost control of the children. Often, as the child reached adolescence, the mothers' attitudes changed again, and they seemed to accept the child as a peer, expecting the child to carry the responsibilities of an adult.

It was difficult to find much pertinent information on income or budgeting for this particular group of people. Table 3 describes the type of employment and incomes of the project families. Most of the mothers were not gainfully employed. Only two of them had worked outside of the home for any length of time despite their need for extra income. This was partially due to having younger children, but also to being poorly motivated or being unable to find employment and stick with it. This was also true of some of the fathers. About 50% of the fathers had difficulty in staying with the same job for one reason or another.

The incomes varied from complete welfare support, \$1500 per year, to \$15 per person per week with both parents employed. The average income per person was \$11.31 per week. (This does not include the foster-parent families). Most of the fathers were unskilled laborers. Out of the 13 families in the study, three of the fathers were in poor health, which interfered with their job performance. Two of these men were accepted in vocational rehabilitation. Mr. Perkins enjoyed it and benefited from this help, while the other father, Mr. Walker, was not happy and had two "heart attacks" after he started his training. Four of the fathers were unable to hold a job regularly. Two of the fathers were heavy drinkers. The drinking did not seem to interfere with their work but it did affect the support of their families. These two men were divorced by their wives during the study period. (What effect this may have on the children is, of course, not clear.)

Formal education for the parents had been sporadic and meager. Only two had finished high school; the mean attendance for the men was 7.7 years, and for the women 9.0 years. This was true, also, for the older siblings of the Pine School children. They left school as soon as possible after meeting

TABLE 3
EMPLOYMENT AND INCOME
OF PINE SCHOOL PROJECT FAMILIES

Family	No. of Children Supported	Type of Employment	Employment Record Reg. Part Time	Family Income per Week	Income per person per Week	Family Food per Week
Arker	6	Father-Trucker Mother-Laundry	x x	\$ 60.00 60.00	\$ 15.00	\$ 35-40
Beach	4	Unskilled Steamplant	x	70.00	11.66	30
Bollar	5	Long-distance Trucker	x	when emp. 80.00	11.42	25
Bennison	5	Tree-trimmer	x	79.00	11.28	25
Bredes	6	Unskilled Construction	x	79.00	9.87	30
Brant*	7	Lineman Elec. Co.	x	80.75		--
Bobart	5	Ser. Sta. Attendant	x	79.00	11.28	30
Bubble	7	Section Hand on R. R.	x	81.60	9.06	40-50
Farble	5	Plant Foreman Ice Cream	x	100.00	14.28	30
Fetter*	3	Unskilled Construction	x	79.00		---
Herkins	7	Unemployed for Health Reasons		All income from Soldiers' Relief		30
Russell	8	Unskilled Construction	x	When emp. \$75 - \$80	8.00	30
Walker	5	Unemployed for "Health" Reasons	x	All from A D C		40
Mean	5.6					

* These are both fathers whose children are in foster homes and who contribute some to the children's care, but not all.

legal requirements. The Perkins family was an exception. Mr. Perkins attended school for only three years and was one of the fathers in vocational rehabilitation. He could neither read nor write. However, he insisted that all of his older children finish high school, regardless of the fact that they disliked school intensely. This family was struggling hard and was taking advantage of all that the community had to offer to move themselves into a better position. The mother and father were both exceptionally cooperative and dependable in the Pine School research project.

Psychological tests were done on the parents in the project. The mothers' range of intelligence, using the Wechsler Adult Intelligence Scale, was from a low IQ of 53 to a high of 108. The mean of these results was 82 and the median was 80. These results were of interest in planning the work that was to be done with the mothers (Table 4).

Early in the study one of the noticeable characteristics of these families became apparent. They were lonesome people. They were isolated from the community and its affairs. Few attended church and none with any regularity. They had few friends outside of their immediate family, and they did not belong to women's clubs or P.T.A. To alleviate this deprivation, a women's group was organized.

These families, with few exceptions, were at the bottom of the social structure. They had few resources, low intellectual capacities for the most part, low incomes, little education, poor physical health in some cases, and little community support. Any crisis that arose in one of these families usually was catastrophic. Crises came often to these people and superficially they seemed to accept them stoically. It was amazing to watch them survive these troubles and come up again just in time to accept another blow.

By the Fall of 1959, after one year of group participation and support, two of the families were attending church regularly and seeing to it that the children had their instructions in the Catholic faith. The mothers still did not feel ready to join a P.T.A., adult education classes, or organized community affairs. They probably would have been ignored if they had attempted to do so, but they were progressing. They could face the hard looks given them by clerks in the dry-goods stores and were better able to stand up for their rights. It would seem that with continued support and group participation, some of the more intelligent mothers could and would advance still further.

Environment

Very few accurate descriptions of the physical environment of lowerclass people are found in the literature. The Davis and Havighurst Study⁽¹⁰⁾ comes as close to depicting a true picture as any. The working class as depicted by the U.S. Department of Labor⁽¹¹⁾ included these "hard core" families in

TABLE 4

IQ'S OF THE WECHSLER ADULT INTELLIGENCE SCALE
ON THE MOTHERS OF PINE SCHOOL CHILDREN

Mrs. Barker	5-15-59	91
Mrs. Beach	4-30-59	53
Mrs. Collar	5- 5-60	75
Mrs. Dennison	7- 8-59	83
Mrs. Geddes	7- 6-56	94
Mrs. Grant	Deceased	--
Mrs. Hobart	--	--
Mrs. Hubble	4-13-59	86
Mrs. Marble	4-15-59	70
Mrs. Metter	7-15-59	72
Mrs. Perkins	5- 2-60	108
Mrs. Russell	4-16-59	93
Mrs. Walker	4-23-59	<u>80</u>
	MEAN	82

this group. Consequently, as they were a minority, the true picture of their circumstances was lost in statistical analyses. The Department of Labor's description of the 1905 laboring family was more nearly like that of the present circumstances of these deprived people. The life of these people was difficult and drab by middle-class standards.

The project families in Iowa City lived in various locations, for the most part on the outskirts of town. Adequate living quarters were difficult for them to find. Iowa City has a high rent scale because of a housing shortage caused, in part, by the increasing number of students in the University. Iowa City has no large slum area. The families were forced to take whatever they could get, which usually meant either an older, large, but obsolete farm home within two or three miles of the city, or a literal shack within the city limits. The farm homes were often too large and too far from the city, which added to their financial problems because of the high cost of heating and the cost of transportation. The shacks were small, poorly built, and lacking in adequate sanitary facilities. Table 5 summarizes these data.

The families in the research project were not satisfied with their housing and, for the most part, moved up the housing scale when circumstances permitted. The following excerpts were copied from some of the mothers' responses to the question, "What would your dream house be like":

Mrs. Walker (mother of 5, whose husband was afflicted with psychosomatic ailments): "I would like a long ranch-style house, all on one floor, about four bedrooms and a bath and a half. Lots of windows, and all of my bedrooms to have two closets in them and built-in dressers in them. My living and dining room together; a fireplace in my living room. In my kitchen I would like all steel cupboards and twin sinks, and a new refrigerator, electric stove, and deep freeze. And a Westinghouse washer and dryer, and gas heat, and a full-size basement."

Mrs. Perkins (mother of 7, father unemployed because of illness and unable to read or write): "I would like an 8 or 10 room house with big rooms and lots of windows, also lots of closets - two stories, with well-lighted stairway, a huge basement, sectioned-off fruit cellar, and washroom. Would like a closed-in sun porch, also a well screened porch for summer. Would like my house to have a closet at one entrance - for coats and such. I would like all inlaid linoleums in every room, lots of cupboards and drawers in my kitchen. Would also like two bathrooms with tub and showers, and a stool and shower in the basement. My yard I would like to be big with white fencing, and a paved drive or good gravel, double garage with storeroom overhead."

These attitudes were reflected throughout the group.

HOUSING OF PINE SCHOOL PROJECT FAMILIES

Family Name	Rent Mo.	Neighborhood	Plumbing	Type of Heat	Persons per room	Changes in Housing
Barker	\$ 50.00	Slum Type	None	Parlor Stove	4	House very poor shack. Same both y
Beach	50.00	Country	Yes	Parlor Stove	2	House minimal in construction. Same both years.
Collar	45.00	Country	None	Parlor Stove	2-1/3	This family moved from a 2-room shack a better home in the country, and then large, non-modern home in a small to
Dennison*	47.50	City	No bath but stool	Parlor Stove	2-1/3	Stool in bedroom. Home considered s in neighborhood. Same both years.
Geddes	45.00	Country	None	Parlor Stove	3-2/3	From a non-modern farm home to a sm non-modern home in a small town.
Grant	---	---	Foster Home		---	A country home, fairly adequate.
Hobart*	50.00	Slum Type	Yes	Parlor Stove	3-1/3	This could be considered a summer cottage or river shack.
Hubble	47.50	Low-Average	No bath Stool	Parlor Stove	2-1/2	From a very poor, partially modern hom in the city to a modern country home.
Marble	50.00	Low-Average	Yes	Central Heat	1-3/4	Moved out of the county to a modern h in a larger city, low-average type.
Metter ¹	(Apt.) 50.00	Low-Average	Yes	Central Heat	2-1/2	-----
Perkins*	50.00	Slum Type	Yes	Parlor Stove	2-1/4	A run-down home but better than the others in the slum area.
Russell	80.00 (Trailer)	Country	Yes	Parlor Stove	2-1/2	Trailer was lost due to non-pay. They bought another and built a room but wi probably lose this also.
Walker	Apt. with parents	Average	Yes	Central Heat	3-1/2	Moved to a large modern farm home an back to poorer housing in the city.

* These families were added in the Fall of 1959

¹ This family was broken during the Summer of 1959 and the children are in a foster home, very adequate.

The mean number of persons per room in the homes of these families was 2.7, and the number of rooms ranged from 2 to 6. In the summer all of the rooms in these homes were utilized. However, during the winter the upstairs rooms, or rooms difficult to heat, were abandoned. More often than not adults and children would sleep in the living areas close to the heater. None of the families used the kitchen for sleeping quarters. The homes that had living rooms did not have dining rooms. The serving of food was done in the kitchen, and 6 of the families did not have adequate dishes and seating space to feed the family at one time. Meals in this case were eaten in shifts or while standing. Sometimes the food was eaten from kitchen pans or other makeshift means. Food-and-dish storage was inadequate, as was counter or table space. All of the families had either bottled gas or city gas stoves and electric refrigerators, although some were in very poor condition. In three homes there was no running water, which meant it had to be pumped and then carried for some distance into the house.

Bedrooms were inadequate from the viewpoint of health. There were usually at least two children sleeping in one bed and often two beds to a room. Some were more crowded than that. Sheets and bedding were inadequate. About half of the families did not have sheets, but slept directly on the mattress and in their clothing. The blankets for the most part were dirty, ragged and odiferous. Towels were usually old pieces of clothing which were torn up for this use. Closet and drawer space was negligible.

The furniture was not much better than the houses. The living room furniture was usually procured from a second-hand store or donated by well-intentioned citizens, and had been very well used. Only three of the homes had enough furniture for all of the family to be seated at once, and two of the homes had no living room furniture at all. In one of these, the beds were also used for seating, and in the other an oversized dining-room set dominated the small room. All of these families had a television set of some kind. This could be criticized as an unwarranted expenditure, but it did have some good points. First, it was a way of keeping the children off the streets, at least in their early lives, although the programs they watched could be questioned. It also served as a means of helping the mother get away from her bleak existence and of gaining status with others of her class, which was important.

Three of the 11 families had automatic washers and dryers. These were purchased by payment plans at great sacrifice to the family budget, and in two of the cases they could not be used for part of the time because of inadequate water supply. These appliances, however, unwarranted by middle-class values, must have meant a great deal to these women, because they managed to keep up the payments in spite of their low incomes. With these machines the women kept their clothing and washables in much better condition than those without.

Many children, mountains of dirty clothes, hard water, lack of facilities for a supply of hot water, lack of drying space, and poor techniques caused many to put off the washing. When they did tackle it, the amount of clothing to be cleaned was so large that they did a poor job. They attempted to wash it all in one tub of water and rinse it in even less. Consequently, it emerged with a fetid odor and grey color. Drying the clothing became even more of a problem in the cold, snowy weather which prevails in Iowa City during the winter months. The only places available for drying were the small living rooms and kitchens. Only two families had useable basements. Thus, with clothing drying, children playing, adults about, food preparations and living activities going on simultaneously, it was no wonder that washing was avoided.

None of the families had rugs or vacuum cleaners. The floors were covered with inexpensive linoleum rugs that soon were faded and torn. Curtains were usually of the plastic variety available at the 5-&-10-cent store. Only two of the families had a telephone, in spite of the fact that most of them lived some distance from town and had no means of transportation when their husbands were working.

Very little storage or closet space was available in these small homes. There was always the problem of where to store something, and it usually ended in a jumble upon a bed or table. There was little privacy and the children had no place to keep their meager treasures. The philosophy of 'What is thine is mine' seemed to prevail. Toys, clothing, and food of one belonged to all. This happened noticeably with clothing. Both boys and girls would take anything of a sister's or brother's which they wished to wear. This tendency plus the fact that most of the clothing which they had accumulated was the wrong size when purchased or acquired, caused the children to look and probably feel like misfits. They were not well accepted by adults or children in better circumstances. The discrimination started in their early lives and left its mark.

The children of this class seldom accompanied their mothers when they went shopping for clothing. The mother usually went to the dime store or supermarket to purchase their wearing apparel with only a vague idea of the size needed. Shoes were purchased in this same manner. This became one of the home economist's major areas of endeavor -- to help the mother plan before shopping, to take the children with her, and to try on clothing before purchasing it. She also attempted to encourage her to buy at other stores rather than dime stores and supermarkets.

THE ADULTS

The Individual Families

As already stated, the subjects in this study were inadequate in meeting many of the problems of community living. They had been clients of the welfare department for years, as were most of their antecedents. There was a vicious circle of like begetting like with a few being able or wanting to break away. The problems thus posed, then, were: how would it be possible to develop new methods to stimulate these people to become more adequate in meeting their needs and those of their children? Then, if this could be done, what would be the result? Could these people remain in their niche in the culture, or would it mean that they would be more frustrated than ever by having middle class desires imposed upon them?

The concept of strengthening and fortifying these people without necessarily imposing middle-class values was the goal. The home economist, untrained in social work, worked only in the home-management area. Professional home-economics training, maturity, and experience in keeping a house and raising a family were her contribution to the team approach. Before starting to work with the women, conferences with the chief social worker were held. In these she was briefed as to what her conduct during her visits in the home should be and what to expect in the mothers' behavior and the home situation. All available records on these families were made available to her.

The individual approach was the logical one in order to become acquainted with the women, their families, and their problems. The social worker who was acquainted with the families accompanied the home economist on her introductory visits to the families. He had previously discussed her visit with them. During this visit the social worker carried the bulk of the interview, directing it as much as possible to the services which the home economist could offer. In this way she was able to observe the family and to add to the conversation when possible. All of the families were contacted in this manner. In four of the nine families, all of the members were present on this initial interview. Only the mother and some of the children were present in the other homes. During September, 1958, follow-up calls were made in each home, to search for strengths, to establish rapport, and to discover the needs of the mother concerning her home management.

The home economist was treated courteously in each home. However, in two homes (Barker and Walker) there was a feeling that the mothers had erected a barrier to any service offered. This barrier was not eradicated until these mothers had participated in the home-life program for over a year. It was impossible to secure any response from them, except surface small-talk, during the first year of the study. However, individual visits were made to them as

time permitted. The rest of the mothers received the visits with enthusiasm, and many demands were made of the home economist. These demands grew to such an extent that it was necessary for the social worker, public health nurse, and home economist to divide the families among them according to the families' needs. The three families assigned to each worker were visited each week and reports were written up on the visit. In this way it was possible to be aware of any movement or the development of problems in each family. If a crisis arose in one family demanding the services of one of the other disciplines, the one responsible for the family notified the other staff member, who then took over until the crisis was past. Thus, all three disciplines may have been involved at the same time on one family's problems. As soon as the crisis was past, however, the family again became the responsibility of the original staff member. It was also possible to switch families among the social worker, public health nurse, and home economist if it seemed that the family was not responding well or that their needs had changed.

Conferences of the staff, graduate students, and teachers were held weekly to note the progress of the children and the families during the first year. These meetings were held less often during the second year because of lack of time. The field staff, however, continued to meet informally to discuss the problems of the families and how they were to proceed.

The home economist was assigned the Beach, Hubble, and Marble families for her attention. Each of the families had problems in health, social and home management areas, but seemed chiefly to want help in home management. All of their needs were different, and case histories of the families are presented.

The Beach Family

The Beach family consisted of father, mother, and four children. The parents had finished eighth grade and their declared faith was Catholic. They lived on the edge of town in a small, fairly adequate frame house with most of the modern conveniences.

The father was an unskilled laborer who received \$1.75 per hour for a 40-hour week, amounting to an annual income of \$3,120. He enjoyed gardening and helped a great deal with the housework. He was different from most of the other project fathers in that he was overtly concerned with the welfare of the family, particularly his wife.

Mrs. Beach was an inadequate woman both physically and mentally. She had a spastic left arm and leg with a flexion contracture of her left wrist. Her IQ was one of the lowest in the group, being in the 40-50 range. She got along surprisingly well in her household chores with Mr. Beach's support, but was

easily upset, crying easily and, at the beginning of the home-life study, was decidedly underweight.

The three older children were boys and the youngest was a girl. The oldest boy, 12, seemed to be about the most adequate of the entire family. He attended a country school and was progressing satisfactorily. His mother depended a great deal on him. He helped around the house and in the summer helped farmers with their harvesting. The other two boys attended the Pine School. They were small for their age, both in height and weight. The older of these two boys had mild microcephaly. The youngest child, 4, was an attractive little girl, the 'apple of her parents' eyes' and not mentally retarded. At three years she was found to be in the normal IQ range.

The mother's attitude towards her children was one of pride. She kept them clean and quite neatly dressed, although there were some lapses. She worried constantly about them in small matters but did not seem concerned about long-range goals. She was apt to lose her temper over small distractions and responded either by severe punishment or tears.

This family had adequate bedding, towels, dishes, chairs, and were one of the two families to have a telephone. They were unwise in their expenditures, especially as they concerned Mrs. Beach. In 1959-60, the family purchased a portable electric sewing machine, a new TV set, and on a cold day they impulsively purchased a new parlor stove without investigating the possibility of repairing the old one. Mrs. Beach also had an automatic washing machine. All of these investments, by time payment, caused them to run out of money during the spring months, and they were forced to accept help from the County Welfare Department. While this created a crisis for the family, using the welfare funds did not seem to bother them at all.

Mrs. Beach had also expressed a desire to learn to sew. Because of her crippled left hand, which it was believed medical treatment could improve, it was thought that this treatment should be the first step. Consequently, the social worker and public health nurse visited her to explain to her the advisability of such care. She visited the Orthopedic Clinic and was fitted with a brace, the usual procedure in such cases. However, she could not tolerate it and insisted that it be removed. She still insisted on learning to sew, so in the Fall of 1959 she entered the sewing class offered by the Family Life Program. Shortly after the start of the class, Mr. Beach bought her a used portable electric sewing machine. Mrs. Beach and her oldest son made curtains for the entire home. The hems were merely turned back once, hiding the raw edge from view, and the curtains were of inexpensive material, but her pride in them was tremendous. She was also able to construct a dress in her sewing course.

Mrs. Beach also asked for help in painting their home inside and for information about linoleums for the floors. She was cognizant of the fact that the older linoleum had not worn well and wanted to help in choosing an inexpensive, sturdy linoleum. This information was found for her, and after many visits and much conversation, a red and tan vinyl linoleum was chosen.

The red plastic-covered chairs in the kitchen were in very poor shape. After the linoleum was layed it was possible to direct her attention to the repair of these chairs. Inexpensive plastic was purchased, and, with the help of Mr. Beach and the older son, the chairs were recovered.

Mrs. Beach was most interested in the group meetings. She wanted to attend them all but at times needed a great deal of support and encouragement to attend. She would call and report some calamity which, after a few times, the home economist understood was enlarged upon and was merely a bid to get a special invitation, apparently to be sure she was wanted. Her attendance was very good. At first she was quite reserved and seemed alone in the group. In order to help her feel wanted it was necessary to bring her culinary skills to the attention of the other women. She was asked to furnish 'kolaches' (a type of Czech pastry popular in the area) for one group meeting and to demonstrate their preparation. The other mothers in the group were very appreciative and she became aware of this. This approbation, coupled with the support of the social worker, public health nurse and home economist, helped to make Mrs. Beach regard herself as a more adequate person. Mrs. Beach during these two years became much more active in the church and the family began attending regularly.

At the end of two years of service to this woman, it would seem that the family had risen in status in their own eyes. They would still require support and help in many areas, but they were able to ask for help when they needed it. It appeared that this mother needed the stimulation of belonging to a group in order to keep her spirits up.

The young daughter was not eligible for Pine School at age 3. Whether or not this was a result of the Pine School siblings' stimulation and the mother's greater interest in and understanding of the world about her, cannot be definitely stated, but it remains a possibility.

The Hubble Family

The Hubble family was composed of 12 members. The father had worked at many jobs but had been employed for the last 7 years as a section hand on the railroad. He drank heavily on weekends and periodically attacked his wife and children. Although usually the cleanest member of the family in appearance, his attitudes and actions were typical of a lower-class male.

Mrs. Hubble was a loquacious, obese and slovenly woman in her early thirties. She was from a substandard home and was 6 years old when her mother died. Her father placed her in a city orphanage at that time and during her stay there she was placed with many different families for purposes of work. Her father again claimed her after several years, to help him in his home. During World War II she fell in love with a young man of whom her father did not approve. She was finally persuaded by her father to marry her present husband, although he was 10 years older than she. Their life together was a series of unsettling crises. Mrs. Hubble finally secured a divorce from her husband during the Spring of 1960, after 18 years of marriage.

The children of this marriage had been wards of the court for several years. At the beginning of the Family Life Study, the 2 older boys were in State institutions; one in an institution for the mentally retarded and the other in an institution for dependent and neglected children. Later, one of the older girls was also placed in State care. The oldest boy, then 18, was returned to the home, which greatly complicated the family situation. Of the other children, one girl dropped out of school at the end of seventh grade, 2 girls were in special education classes, 3 of the younger children, all boys, had been in the Pine School at some time, and the youngest, age 4, had convulsions and was at home during the Family Life Study but subsequently was placed in an institution for the mentally retarded.

This family was undoubtedly one of the most deficient insofar as their social status in the community was concerned. The father was often in jail for disturbing the peace and the children were scorned by neighbors, teachers, and community for their unkempt appearance and unacceptable behavior. The mother was accused of adultery and other forms of immorality. They were not welcome in churches and the children were watched when they appeared in a store or at school for fear that they might steal something.

Their home was a run-down, unattractive house, situated near the railroad tracks. Inside, the home conditions were unbelievably poor. When the home economist first started her visits in the Fall of 1958, the windows were broken, the screen door was hanging by one hinge, and rats and flies abounded.

The house consisted of a living room sparsely furnished with decrepit furniture, no curtains, and a dirty, bare floor. One lone electric light bulb hung from the ceiling, with an extension cord going to the unworkable TV set. Dirty clothes and beer cans were everywhere and an indescribable stench permeated the room. The kitchen was in the same condition. It contained a large table, a sink which had cold running water but had a drain which did not work, a gas stove with its handles missing, a washing machine, and a heating stove. Dirty dishes were heaped on the table along with crusts of

bread and left-over food. Spilled and spoiled food littered the floor. The sink was filled with dirty, greasy water and drowned flies. They did not have adequate dishes to feed the family, and used makeshifts such as pie pans, aluminum foil, or broken crockery. There were only two chairs, both with broken backs, available for dining room purposes.

Although this was a depressing and discouraging picture, the home economist believed that if this mother could be helped to become more adequate, all of the family would also profit. Home calls were made until rapport was established. The strengths of this woman were well hidden. As the visits proceeded, it appeared that she believed she was a good cook and on this premise recipes and preparation of food were discussed. As time went on Mrs. Hubble's innumerable problems of homemaking were unleashed.

Her greatest need, from her point of view, was to find a way to stretch the food budget and to pay old food bills. They had stretched their credit to the limit at a small neighborhood grocery and did not know how to remedy this. The visits then began to take form along developing plans for low cost meals and working out market orders. The Hubbles had been spending up to \$50 per week with little return. By planning and carrying out plans, these expenditures were cut to \$25 per week. Powdered milk and condensed milk were substituted for the more expensive homogenized milk. Taking advantage of sales, buying for a week, and extending the food dollar in other ways were the methods used.

Cutting the expenditures for food from \$50 to \$25 per week was a drastic reduction which necessitated a change in their meal patterns. It was necessary for the home economist to sell this emergency plan to Mrs. Hubble and then support her during the family's critical reaction. The food selected, while nutritious, was not as appealing as had been the more liberal diet. In order that Mrs. Hubble would know that she was supported, the home economist accompanied her to the market once a week, helped her select the best buys for the planned menus, and aided her in keeping track of the money spent. These purchases were made by cash at a supermarket. With this much support, the family was willing to go along on this 'emergency plan' until the owed grocery bill was payed off.

During this association, other problems, such as cleaning the house, acquiring adequate clothing for the children, budgeting of time and money, came up and were worked out. Progress was slow because more often than not Mr. Hubble spent a large part of his weekly pay-check on gambling and drinking before returning home, so that Mrs. Hubble was left with an inadequate amount to meet the needs and plans.

After four months of weekly visits, certain changes resulted. The house began to show signs of being cleaned up. Less often were dirty dishes, dirty clothing, food, and beer cans scattered about. The screen door was repaired and the windows of the home were fixed with glass instead of cardboard. Eventually, as the time drew near for Mrs. Hubble to entertain the Women's Group, a great fever of activity developed. Mrs. Hubble had expressed for several

months the desire to fix up her house, but it seemed to be mostly a dream. However, in January this dream became a reality and she expressed a desire to paint the living room and to make curtains. Through a gift fund made available, paint was purchased. The painting done by Mrs. Hubble was imperfect, due to the poor condition of the plaster, but it helped the appearance of the home a good deal. Inexpensive plastic curtains for both the living room and the kitchen were purchased with money saved from the grocery fund.

During this same splurge of cleaning and painting the living room and kitchen, Mrs. Hubble invited the home economist to see what could be done with the upstairs. Previous plans had also been made to assess the wearing apparel of the family and to make plans for future purchases. The home economist took this opportunity to begin to accomplish both of these tasks.

The upstairs was a repetition, only worse, of the downstairs. The stairway was dark as there was no electricity in the upstairs. At the head of the stairs was a monstrous pile of dirty clothing at least 5 feet tall, spreading out over an equally large area. There were two bedrooms. One contained the lavatory, stool, a bed and mattress, and one window. The floor was strewn with dirty rags which had been used after using the toilet and then thrown on the floor. The other bedroom was lighter and contained one double bed and two single beds. None of the beds had linen and all were filthy. The covers were ragged, consisting of dirty comforts or cotton blankets. Clothes were strewn about over this room as well.

The first step was to sort out the clothing in the large pile. Besides this conglomeration of clothes, boxes stuffed with clothing were stacked about. The perplexing problem of what had become of all the used clothing given to them was now obvious. The clothing, worn until dirty, was tossed into this pile or stuffed away in a box. To help Mrs. Hubble get her house ready for guests, the clothing was sorted, the useable items washed, and the rest thrown away. Together Mr. Hubble and the home economist made curtains and spreads for these rooms out of some donated material. The home economist then helped with the cleaning of these rooms by not only offering suggestions but also with direct aid.

Movement was slow with much back-sliding during the first year, but during the Winter of 1960 things moved more swiftly. After much vacillation, Mrs. Hubble divorced her husband, which enabled her to receive money from the Welfare Department. She moved to an adequate farm home just outside the city limits, with hot and cold running water and a bathtub. The house was kept in order and Mrs. Hubble was usually quite nicely dressed and kept her hair waved and trimmed. The girls also were improving their dressing habits. They were relieved of neighborhood disapproval and temperamental attacks by their father.

With continued support, Mrs. Hubble could probably avoid budgetary and social problems. She showed little sign of back-sliding to the slovenly housekeeping of two years ago and seemed to have gained insight into the handling and purchasing of food. Without such support, the prognosis would be guarded.

The Marble Family

The Marble Family was somewhat of an enigma. This family constellation consisted of father, mother, and 5 girls. The father, not too intelligent, was a good semi-skilled worker and well paid. He became an orphan at an early age and had moved from place to place. At 16 years of age he joined the Navy, which he liked. Upon his return from the Navy, he met Mrs. Marble and they were soon married.

Mrs. Marble was from a family that had often relied on the Welfare Department for support. Mrs. Marble's mother had demanded much help from her children but gave little of herself. During her school age period, Mrs. Marble attended special education classes for mentally retarded children. She was an ambitious, energetic, hard-working woman whose house was usually clean and neat, although she and her girls were often ragged and unkempt. The girls ranged from 7 to 11 years in age. The youngest children were twins and were enrolled in the Pine School. The 3 older girls were in special education classes, although one of them had ability sufficient for regular public school. The children were attractive, usually clean, and well behaved. The mother wanted to be a good mother and tried to give the girls as many benefits as she could. They had toys, books, Christmas and birthday celebrations, and many experiences not shared by others in the group. The children attended Sunday School irregularly and belonged to the Brownies. One of the girls attended a square dance group.

The home, more substantial than the others of the project group, had been partially built by Mr. Marble. All of the family were proud of it. There were two bedrooms upstairs, each with a large closet, and each of the girls had a cot or roll-away bed of their own. The children's toys were kept upstairs or in a room in the basement. This family had bedding which was kept clean.

The downstairs had a living room furnished with a drab but well preserved matching upholstered sofa and chair, a TV set, a console sewing machine, a small bookshelf, and an air conditioner. The kitchen was modern with built-in cupboards, counter space and sink, a fairly new refrigerator, and a stove. The stove was replaced during the first year of the Family Life Study. The parents' bedroom and a partial bath completed the downstairs rooms.

This family was of interest because of their attitudes. Although the house and equipment were middle class, the couple conformed more to lower-class atti-

tudes. Mr. Marble had supplied Mrs. Marble with an ironer, a freezer chest, an air conditioner and an electric console sewing machine, although she didn't know how to use them. They were prominently displayed and talked about in conversations with the other women. Their closets were full of boxes and racks of other people's donated clothing, but she was unable to determine which garments should be kept and which of them should be discarded. Although their income was adequate, they were as poorly clothed and nourished as any of the project families. Mrs. Marble was unable to read, write, or use numbers effectively and Mr. Marble was not much better. She could not follow recipes from her cookbooks. She was unable to purchase clothing according to sizes because sizes did not mean anything to her. She was friendly, a leader in the women's group organization, but mercurial in her friendships within the group. Mr. Marble, while adequate in his repetitious job, was rigid and demanding. Their I.Q.'s were below the normal range.

The marriage was stormy. Mr. Marble would not give her any money but bought everything which was used in the house without consulting his wife. She was allowed the use of the car during the day but had to be home in time to have the house all picked up and dinner ready by five o'clock when Mr. Marble returned home from work, if he did. Mr. Marble did as he pleased about this. Mr. Marble was known to slap his wife and she was sure that he was interested in other women. The marriage followed a pattern of recurring crises.

During the second year of the Family Life Study, Mr. Marble's work took him to another city, which forced them to move. This move was a terrific blow to Mrs. Marble who had lived her life in a fairly small community. It was difficult to leave the home of which she was so proud. This woman was close to complete disintegration just before and after the move. However, the field staff continued to visit her at least once a month and the chances of her survival looked better.

Mrs. Marble was one of the most receptive of all of the group to the services of the home economist. She wanted to improve on sewing, budgeting, cooking and cleaning, and caring for her children. It was difficult to pin her down to the one thing that she most wanted. After several visits to this home, the choice finally made was to learn how to clean more adequately so that she might get some cleaning jobs and make some money. This was an odd choice, considering that their income was at least \$100 per week. The home economist believed that it would be difficult to teach this woman in her own home the techniques which she would meet in job situations. Therefore, she was taught in the home of the home economist, where she was proud to learn and worked hard to do a good job.

Each technique of cleaning was broken down into its component parts. These plans were explained and demonstrated by the home economist and then repeated by the mother. This program was continued under supervision for 3 weeks before Mrs. Marble was permitted to attempt to do the work alone. She asked for criticism after each session and it was given directly. This was unusual as it was often a problem to offer constructive criticism to these women. After 6 weeks, Mrs. Marble was beginning to be too dependent on the home economist, which was believed to be undesirable, so the work was terminated by finding her a position. The reports of her work in the outside situations were good.

Mrs. Marble was also anxious to have help in preparing her meals. She had learned only a few ways of fixing foods from her early girlhood and these she used with monotonous repetition. Her husband objected strenuously and at times refused to come home for meals. This situation was well hidden at first but ultimately it was explosively revealed, accompanied by tears. Mrs. Marble and the home economist talked the situation over. Bit by bit the problems of not knowing how to read a recipe, of being unable to follow oral directions without several repetitions, and of not having anyone to help her learn new ways, were brought out. Thus, the task began of helping her to plan menus around her husband's likes and dislikes, to read and follow recipes, prepare new dishes, and, finally, to plan the market order for a week. Her husband seemed to be pleased and during the last few months in Iowa City, Mrs. Marble was allowed to do the marketing. This pattern was reversed after their move, with Mr. Marble again doing the buying.

Working with Mrs. Marble involved many areas, because her desire to be adequate was so intense. She was of help in organizing the Women's Group and was a strong motivating force for the whole group. She would offer to help the others in housecleaning and would show them some of the techniques which she had learned. Her enthusiasm and desire to learn helped to excite the other women to seek new outlets. Her clean house and her desire for good furniture and attractive decor helped to inspire some of the others in the group. Although she was of low measured intelligence, she had other assets which were outstanding. If she can regain her balance after the move, she probably will again become more adequate.

* * * * *

Individual work was done with other women in child-care, diet, nutrition, and budget planning but these were of shorter duration. The Geddes will serve as an example. This warm, loving, dirty, common-law wife was criticised by neighbors because of her dirty house and unkempt children. To try to keep this family from being dispossessed, the home economist was asked to help Mrs. Geddes. Although much effort was exerted, Mrs. Geddes was unable to profit from this help. She and her children were happy, usually had enough to eat, and were warm. What more could they ask? She was always glad to receive

the staff and was friendly but she was not interested in being clean. This family finally moved to a different home in a neighboring small town where they seemed to be getting along reasonably well. The use of a home economist with these families is not a guarantee that the standards can be raised to a community acceptance level.

Group Meetings

During the early weeks of the development of the Family Life Study, it became apparent that all of these mothers had a common need. They were lonely. They were isolated from the community and its affairs; they had few close friends outside of their immediate families; they did not attend church; they did not belong to a group; and their children were ostracized at school. They were an island unto themselves. This feeling of loneliness permeated the entire fabric of family life. Consequently, the idea of developing a group to meet this apparent need and to serve as a vehicle for imparting some information believed to be of use to them was cultivated. In discussing this idea with other members of the staff, it was believed that it would serve many purposes which would not only be beneficial to the women but also to the younger siblings.

The group during the first year was made up of the mothers of the 5 families included in the project and their 12 children under 3 years of age. During the second year the group contained 11 participating mothers and 17 children not attending school. The 2 foster mothers did not attend the meetings. This large group with the small children created quite a commotion when they were all gathered into a small house so that programs which were planned for the group meetings had to take this into account. It was believed that the socializing was important, perhaps more so than any information which might be imparted.

The mechanism of organizing the group was to be flexible in order to meet the needs of the women. The plan included the following considerations:

1. The women and the younger siblings were invited to participate. This included women whose children were or had been enrolled in Pine School.
2. Meetings were held every two weeks in the morning throughout the fall, winter, and spring months, ending in May each year.
3. The meetings were held in the homes of each family. The woman in whose home the meeting was held served as hostess and a co-hostess supplied the refreshments.

4. Notification of the meetings and transportation to the meetings were arranged by the home economist.
5. The attendance was voluntary.
6. Programs for the meetings were planned by the home economist. These were very short, being 15 to 20 minutes in length, and they were planned around interests expressed by the mothers or around problems common to all which the staff believed would be best served in a group setting.

The first group meeting was held in the morning at the home of a family living in the country. This place was chosen because of its location and the willingness of the woman to have the group. In order to avoid any threat or fear that the women might have in attending this first meeting, refreshments were furnished by the Staff of the Pine School Project and the meeting was kept simple. The women were given bright colored paints and dried weeds which they painted and made into winter bouquets. They were enthusiastic and exuberant. They wanted to repeat these meetings once a week and bring a potluck lunch so that they could stay longer. However, because the public health nurse and home economist had other commitments and were still concerned as to the future of the group, the women were encouraged to limit their meeting to one morning every other week.

The woman who volunteered to be hostess was responsible for house, dishes, and the coffee. The co-hostess was responsible for the other refreshments. Each of the women was eager to entertain and they all had their turn during the first winter.

Before each meeting invitations were sent to each woman and transportation was arranged. The hostess and the co-hostess were visited before the meeting to be sure that they had everything which was necessary for their preparation. The women never forgot their turn but it was often necessary to help one of them secure some needed material, especially dishes. Whenever possible these were borrowed from one of the other women, but sometimes it was necessary for the home economist to supply the needed equipment. At times it was necessary to supply help in order that the home would be clean enough to suit the hostess. This was usually arranged by asking one of the other women to help. The home economist believed that the woman would benefit by using the services of the others in the group rather than those of the home economist. She also encouraged each woman to seek, as much as possible, the answer to her own problem, but she was available in an emergency and not above lending a hand.

On the morning of the meeting two staff members would pick up all of the women who needed rides and take them to and from the meeting. At first, all of them needed to be transported but as they became a part of the group they began to make their own arrangements. A ride was always supplied if needed. This was an important part of having a successful group, especially if they lived in hard-to-reach locations. This transporting also served as a means of collecting information. The women were apt to discuss their personal problems in this situation often more easily than at home. If two or more women were in the car, the conversations were likely to reveal their attitudes and problems.

The short program was planned by the home economist and public health nurse through suspected needs or requests of the women, and a long-term plan was not made. Subjects for the program varied from meeting to meeting. The programs consisted of demonstration of food preparations, sewing and mending techniques, hair-cutting and styling, recipe exchange, use of a thermometer, tooth-brushing, problems of child care, decoration of quilts for the Pine School, weight reduction, and many others.

The children seemed to profit by attending these meetings. At first they clung to their mothers, but gradually they became reassured and began to play with others in the group. Only one of the 6 children who became of age to attend school was eligible for the Pine School. The others all tested above the 80 IQ required as a top figure for inclusion.

The different ways of attending to their children were apparent at these meetings. There were some who yelled at their children and then ignored them, some slapped the child at the least provocation, and others were fearful, constantly alert and watchful. It seemed that each of these mothers overplayed her role in caring for her child, i.e., it was either too much or too little in comparison with the manner of the middle class or better educated mother. Their affection and hostility towards their children were not masked, as it may be in the sophisticated parent. Most of the younger children related well towards their mothers. They looked to her for protection when frightened or in trouble, regardless of her manner of discipline.

At one point officers for the group were selected, but this was not successful. The women were pleased to be officers in the organization but it was impossible to get them to assume their duties. They could not understand what they were to do and felt and acted embarrassed when they had to perform in their capacity before the other members of the Mothers' Group. Consequently, the home economist assumed the responsibility as a leader. In acting as a leader, the home economist had many opportunities to apply some simple principles of group interaction. She could start a discussion on some problem of the group and retreat, letting the group carry on. She could then assume leadership again. The group dynamics were quite apparent.

By the Fall of 1959, after one year of group participation and support, two of the families were attending church regularly and seeing to it that the children had their instructions in the Catholic faith. The mothers still did not feel, as a whole, ready to join a PTA, adult education classes, or other organized community affairs. They could face the hard looks given them by clerks in the dry-goods stores and were better able to stand up for their rights. It would seem that with continued support and group participation some of the more intelligent mothers could and would advance still further.

Of the various parts of the Family Life Study, the group meeting was one of the more successful. It served many purposes: to motivate the mothers to clean up their houses, to give the women a feeling of belonging and being accepted, to stimulate their interest in investigating other aspects of society, to make friends among themselves, to exchange babysitting and clothing, to have a place to tell good and bad news, and, best of all, to give them self-respect.

Sewing Classes

As an outgrowth of one year of the Group Meetings and in response to an expressed need of the mothers, sewing classes were added to the Family Life Program during the second year. Plans for these meetings were somewhat different from the group meetings in that they were to assume a more class-like structure.

The following organizational plan was used:

1. Mothers only were to attend. The children were to be cared for in another manner.
2. Two sewing classes were organized, with half of the mothers in each group.
3. A mother in Sewing Class I would volunteer to baby-sit with the children of mothers in Sewing Class II, and vice versa.
4. No refreshments were to be served.
5. Transportation was furnished.
6. Meetings of the class were held the week following the group meetings. These classes were also held in the homes of the mothers.
7. Sewing materials and portable sewing machines were furnished.
8. An assistant to the home economist was responsible for these meetings.

The objectives for this project were:

1. To learn basic skills of hand sewing.
2. To learn how to operate the electric sewing machine.
3. To learn techniques for repair of garments.
4. To learn how to make over clothing for children and adults.
5. To cover and equip sewing boxes.
6. To make a simple blouse or skirt.

When the mothers were asked what they would like to know about sewing, they invariably said they wanted to learn how to make over garments. It is the opinion of clothing construction specialists that repair and remaking are the most difficult of sewing skills and cannot be learned until the basic skills are mastered. This explains the necessity of placing these two techniques last on the list of objectives, even though they had rated highest in the mothers' verbal requests. The mothers asked to make a simple dress rather than a blouse or skirt. Compliance with this wish was made possible by the selection of very simple dress patterns. It was hoped that they would proceed through the basic instruction and that some experience could be gained in repair and making over garments. It was evident, however, that not every woman would be able, in this one year, to achieve all of these objectives.

Eight women started in sewing classes in the Fall of 1959. During the October meetings all 8 covered and equipped sewing boxes.

In January, 4 women who lived in or near Iowa City were started on the construction of a simple dress. Two of the original 8 women lived too far from Iowa City to be sure that transportation would be feasible during the winter months. Another moved out of town during January - February. Of the remaining 4, one dropped out after her dress was cut out. She took a full time job at that point. She was reported to have finished sewing the dress together but it was never seen. The remaining 3 mothers finished their dresses under the direction of the consultant. Two women wore their dresses to the Pine School Picnic in June. The third was in the hospital on that date.

Three of the women and the consultant cut dresses from identical patterns in their different sizes. The consultant constructed a dress to use for demonstration purposes. The other woman had to select another pattern as the original pattern selection did not come in her size. One was size 24-1/2, and since patterns are not printed this large, the consultant drafted a pattern for her. No difficulty was experienced in teaching skills by demonstration with the two different patterns, as they were similar in construction techniques. The material used for the dresses was cotton chambray.

No specific program of repair and making over was possible because of time limitation. Some instruction was given as problems of repair came up for the women during the time they were sewing on their dresses.

Case Studies of the Three Women Who Completed Their Dresses.

Mrs. Dennison:

This woman was 28 years old with a full-scale I.Q. of 83,* which placed her in the dull-normal range of intelligence. She had 5 children. The youngest, the only girl, was born just at the completion of the project. They lived in a small 4 room house in Iowa City.

She wore a regular 14 dress size, according to the measurements she gave as her normal size. Her dress pattern was different from the others. She selected a full skirt with a plain bodice, boat neckline and short, plain sleeves. The only opening was a side zipper.

She had had some previous experience in clothing construction. This was evident when she demonstrated an acquaintance with the tracing wheel and tracing paper. She said that she had used them in school. She had also done enough sewing that she had picked up some habits. For the most part they were rather bad habits and were, with one exception, unchangeable during the course of this project. She usually worked on her suggested assignments between meetings. Most of the time this work was not finished and it was of a quality that correction of the work was necessary at the next meeting.

This woman was the only one to own a sewing machine at the start of the project. It was an old Japanese machine. Operation of the machine was the one skill in which she showed noticeable improvement during this project. At the start of the project she did not let the machine do the work. She would pull the material through the machine instead of letting the machine pull it through, as it would do. This pulling gave an uneven stitch length. She would also try to force the machine to go around square corners instead of stopping the machine, turning the corner, and then proceeding. Both of these habits were corrected during the course of the project. Her machine had been purchased without her being given a demonstration of its operation or an instruction book. She did not know the purpose of the dials and levers on the machine. Before the end of the project she did learn how to adjust and operate her machine. The consultant spent 4 hours in cleaning, oiling, greasing and adjusting this machine to put it into acceptable working condition.

The most interesting thing about working with this woman was the difference in ability she showed in understanding how to do something from reading about it, and in her understanding of how to do something from personal, on the spot

* See Table 4, page 13

demonstration. She was able to follow the pattern guide direction and had her pattern laid on the fabric without major error. She was able to follow the same direction sheet to cut and place the interfacing on the neck edge. It was possible that she had been taught how to do this in school. But when turning of the neck edge facing was demonstrated, she did it wrong 3 times before it was right. The same difficulty was experienced in learning a new stitch for hemming. It seemed she understood written instruction better than verbal demonstration.

This woman did not seem as excited about learning to sew or making this dress as did the other two women who completed their dresses at the same time. She was always ready to go to the meetings, however, and always had her sewing out on the table ready to work whenever the consultant was able to make a home visit for the purpose of working on her dress. The dress was never seen on her. It was, therefore, hard to know just how proud this woman was of her work.

Mrs. Beach:

This woman was 42 years old and had a full-scale I.Q. of 53*. She had 4 children, 3 boys and a girl. They lived in a small 4 room house a few miles from Iowa City.

She wore an 18-1/2 size dress but some alteration had to be made on this pattern size. One inch had to be added to the chest and to the waist. Her dress pattern was like the other half-size dresses. It had a gored skirt, soft pleats in the bodice, cap sleeves, a v-neck, buttoning to the waist, and a side zipper closing.

This woman had had no previous experience in sewing that was evident. She said that she used to do hand embroidery all the time when she was a little girl but this seemed unlikely considering the use she made of her hands. Her left hand, which was spastic, had very little strength and was always a handicap in hand sewing. It even made machine sewing more difficult to master, and ways had to be devised for her right hand to do all of the material and machine manipulation.

Her husband purchased a sewing machine as a Christmas present after she started going to the sewing meetings. She had not wanted to take sewing at first because she said she could not do it due to her spastic hand. She was told that a way could be found to do it anyway. A 1959 model Singer which had been used one year by the shop as a rental machine was purchased for about \$100.00, on time payments. It was an excellent machine and sewed and operated perfectly.

* See Table 4, page 13

Mrs. Beach's confidence in sewing improved during the 4 months spent on the construction of this dress. At first she would not do anything unless the consultant was directly at her side telling her that every hand movement was correct and giving constant encouragement. Towards the end of the project she would need assurance and encouragement only every 2 or 3 minutes.

She did not do the suggested assignments between the meetings the first 3 times that they were given. There was no evidence that the sewing had even been out of her box during the lapse of time from one contact to the next. She did do the fourth assignment and she was thoroughly elated that she had been able to do it. She repeatedly asked the consultant if it had been done correctly. The fifth assignment was not done. The sixth assignment was attempted but was not acceptable and had to be redone. The seventh assignment was completed at home. She was quite pleased with herself when she was complimented. The eighth and ninth assignments were completed. She was pleased that the work was correct but made less of an issue of it on these occasions.

She became fairly competent in sewing with the machine but she continued to make mistakes in threading and was not able to see her errors. She always assumed that the machine was broken. Sometimes her husband or son found the mistake and corrected it for her. She sewed quite fast and an effort was made to teach her how to operate the machine at a slower pace. Once the machine started she seemed to freeze at the controls. She improved in controlling the speed of the machine.

She was almost incapable of doing any hand sewing other than basting. Even basting required such concentration on her part that she could only stay at it about 15 minutes before starting to weep and put her head in her hands. She also had the same difficulty occasionally with pinning. She put her hem in by machine rather than attempting to do so by hand.

The consultant was asked by Mrs. Beach if it would be all right if another dress were made by this same pattern. She was assured it would be a good idea. It is the opinion of the consultant that she would make another dress from this pattern only if she had considerable help from someone. She was so very, very happy that she had made a dress for herself. She frequently would say, "I just never thought that I would ever be making a dress for myself."

Mrs. Perkins:

This woman was 38 years old. She had a full-scale I.Q. of 108,* which placed her in the high-average range of intelligence. She had 7 children, 6 boys and 1 girl. The family lived in a 5 room house.

She wore a 22-1/2 size dress pattern. Alterations were necessary in this pattern, including adding 2 inches in the chest and waist and 1 inch in the

* See Table 4, page 13

hips. She made the dress from the same pattern as the other women who wore half-size dresses. The pattern had a gored skirt, soft pleats in the bodice, cap sleeves, a v-neck buttoning to the waist, and a side zipper closing. She was not enthusiastic about the dress pattern when she first saw it but accepted it when told it was a good design for stout figures.

During this project a machine was rented for her use. She learned the operation of the machine quickly and had very little trouble other than being able to see to thread the needle. She was quite anxious to do and to try everything. She did allow the consultant to put in the buttonholes but if the attachment had been working properly on the day when her buttonholes were put in, she would have wanted to do this operation also.

She was always enthusiastic about the whole project and did all of the assignments given to her. Toward the end of the project she was tested to see just how well she could function with little or no instruction. She did very well. A major alteration had to be made in the dress after it was completed, as she had lost some weight since the beginning of the project and she was told the amount of change that had to be made. She was able to figure out how to do it and completed the alterations on her own.

It might have seemed that this mother would have been discouraged working in the same group with the other mothers. However, she found competition. She would try very hard and took special pleasure in doing each step on her dress better and more perfectly than the consultant would do on the demonstration dress. She accomplished this on practically every step. At the conclusion of the project, Mrs. Perkins' dress fitted her better and had a better appearance than the one the consultant had made for demonstration. For instance, the consultant made her belt and buckle first, and Mrs. Perkins profited from every mistake which had been made. She then made hers perfect in every detail.

She learned every trick and detail that was offered during this project. She indicated that she caught on quicker watching the consultant do a step than in reading the directions. However, the consultant believed that this woman would be able to figure out a great deal of sewing skills on her own if she were able to have a sewing machine and were given printed information.

Conclusions:

1. Commercial patterns were not of proportions to fit most of the women in this project. Alterations were necessary and this is a moderately high skill in clothing construction. Only one of the women would be capable, in the opinion of this consultant, to make pattern alterations in the future. Even she would need a reference that was quite descriptive, or someone to help her.

2. About half of the sewing was done at the group meeting where all 3 of the women worked, and the other half was done individually on home visits. This individual work was necessary to keep the women working on the same step at each meeting.

3. Demonstrations were helpful but 2 of the mothers would need individual demonstrations as they started to do each step.

4. All of the ripping out of mistakes was done by the consultant. These women became frustrated easily and it seemed that the purpose of the project would be defeated if they produced an unwearable garment or if they had to spend more time taking out mistakes than they spent in construction.

5. The interest in the project was high. Never once did a woman miss a meeting. Never did the consultant arrive at a home for a planned home visit to find that they were not prepared to sew. They always had the machine out and their materials at hand.

6. Descriptive instructions are needed for this kind of a group. The material which was found, including that from the U.S. Department of Agriculture Extension Service, was too advanced for the women in this group.

7. A great deal of time and patience was required for this project. It is estimated that the project of constructing these 3 dresses required 300 contact hours of the consultant. This estimate does not include the time spent in recording the meetings.

NUTRITION AND GROWTH STUDIES

The Families

A nutritional study of the dietary intakes of the Pine School families was conducted as a part of the Family Life Study. A review of the literature indicated that the diets of people in the lower income groups are insufficient in several nutrients, that is, below the recommended daily allowances established by the National Research Council. (12) It was of interest, then, to study the intakes of these families.

During the first year 9 families were interviewed. Satisfactory results were obtained from 5 families. Of the 4 families not returning the information and not cooperating, repeated attempts were made to secure the information. After these attempts the home economist consulted the social worker on this problem which had to do with imparting of personal knowledge to anyone in

Information was obtained from each of the families as to their grocery budget and the cost of the items on the market lists was also calculated. It was found that during 1958-59 the cost per person per week ranged from \$2.06 - \$3.85. (Table 6) During the second year it varied from \$2.77 - \$5.32 per person per week. (Table 7) The average North American family of 6 spends about \$6.16 - \$6.50 (13) per person per week for the low-cost diet. Both years the families in this study were below this amount.

A weekly market-order type of survey was adapted for use. The home economist visited with each mother and explained the purpose of the questionnaire and the method of recording their purchases. Lists were left with them to be filled out. The home economist, also, shopped often at the stores where these women did their grocery buying, and she was often able to check unobtrusively on their purchases. It was possible, also, to encourage the women to talk about their meal plans and at times to appear at the home about meal-time. Consequently, it was believed that these market-order lists were quite reliable. This collection of data was repeated at least twice for each year and the data analyzed as to their nutrient content. (14) The requirements were calculated for each family, using the Daily Recommended Allowance of the National Research Council. (12, 16) Then the nutrient intakes of each family were compared to the calculated allowances.

During the second year of the study, 9 families reported. The Barkers, who did not report during the first year, reported during the second year. In addition, 4 new families were added to the study but two of them were foster families. These two diets were calculated, but not included in the reports of mean intake because their circumstances were so different from those of the other families'. The Walker Family and Collar Family could not be encouraged to participate at any time.

Several years before the onset of the study, 12 of 16 children of the Barker Family were removed from the home and placed in foster homes. Hence, this family was distrustful of any inquiry and they were supported by their relatives, the Collars. The third family not reporting was the Metter Family who were in the process of disintegration. The husband was abusive, often drunk; the mother was involved with other men; and the children were allowed to survive as best they could. The fourth family, the Walker Family, did not cooperate. It was believed in this instance to have something to do with the mother's gross obesity. Repeated attempts were made during each of her pregnancies to help her reduce, but without success. It would have been of great interest to have analyzed her diet, because of her weight problem, her large babies, and because she had a family history of diabetes.

TABLE 6

FOOD EXPENDITURES OF
SUB-MINIMAL INCOME FAMILIES

(1958-1959)

Family	No. Supported by Family Income	Weekly Income	Average Food Cost Per Week	Cost Per Person Per Week	% of Income for Food
Beach	6	\$50.00	\$ 16.50	\$2.75	33
Geddes	8	25.00*	16.50	2.06	66
Hubble	9	96.00	35.00	3.90	36
Marble	7	100.00	27.00	3.85	27
Russell	10	80.00	35.00	3.50	43
Mean				\$3.20	41

*Tenant Farmer

A survey of household expenditures of urban families made by the Bureau of Labor Statistics in 1950 showed that large families, those with 6 or more, spent an average of 35% of their yearly income for food. Kinder (15) suggests that in working out food budgets for families, the budget should be readjusted if more than 1/4 of the income goes for food, which would be difficult in this situation.

As is apparent in Table 6, only two of the families were in keeping with this amount, but in 1959-60 (Table 7) four families managed to do this. However, one of the families was a tenant farmer and part of their income was in food. It was not surprising that most of the families spent more than the suggested amount when the size of the family and the mean income is regarded. Referring to Table 3, the mean number of children is noted as 5.6. It takes a great deal of planning to feed such a large family on a small income.

Table 8 and Table 9 are calculated to show the percentage of energy nutrients in each of the family's diets. In considering the high percentages of fats used, it was of interest to observe their food preparation practices. Most of the baked products sampled by the home economist (furnished by the women for the group meetings) were of high fat content; they felt and tasted greasy. Fried foods were favorites of these families, fried potatoes, meat and eggs fried in fat, pancakes, fried bread, etc. Margarine was used in preference to butter but not much of it was used as a table spread. For 20 loaves of bread, perhaps 2 pounds of margarine would be used. These observations suggest a still greater difference between the usage of fat by these families and that of the average American family. Protein percentages were high the first year and lower during 1959-60. The high consumption of protein as shown in Table 8 could be explained by several factors; misinterpretation of meat package size, the desire of the families to impress the home economist with their "fine eating" habits, the possibility of extra high consumption during the survey, or that they preferred these foods. Table 9 shows a more average pattern. Consumption of carbohydrate was lower than the average North American diet during both years of the study. This is, of course, explained by the higher intake of fats.

Tables 10 and 11 show how each of the family's food purchases compare with the daily recommended allowances of the National Research Council. These allowances provide a margin of safety for proteins, minerals and vitamins, but not for calories. Mean caloric intake was low both years, with 80% of the families being below the DRA in 1958 and 57% in 1959. Calcium and iron, riboflavin, niacin and ascorbic acid were low during both years of the study. These data would suggest that these families living in the stressful situations that they do, are not adequately nourished.

TABLE 7

FOOD EXPENDITURES OF
SUB-MINIMAL INCOME FAMILIES

(1959-60)

Family	No. Supported by Family Income	Weekly Income	Average Food Cost Per Week	Cost Per Person Per Week	% of Income for Food
Barker	8	\$ 90.00	\$ 42.50	\$5.32	47
Beach	6	50.00	27.50	4.58	55
Dennison	7	80.00	16.50	2.36	21
Geddes	8	80.00	25.00	3.12	31
Grant*	7	--	--	--	--
Hubble	9	96.00	31.75	3.53	33
Marble	7	100.00	27.50	3.93	27.5
Metter*	5	--	--	--	--
Perkins	9	none (Welfare)	25.00	2.77	Food Stamps
MEAN				3.66	35.8

*Poster Parents: income is average or above.

TABLE 8

PERCENTAGE OF ENERGY NUTRIENTS IN THE
DIETS OF SUB-MINIMAL INCOME FAMILIES

(1958-1959)

Family	No. in Family at Home	AGES			% Protein	% Fat	% Carbo- hydrate	Calories Per Day Per Family
		Parents H W	Children Range (yrs)					
Beach	6	50 42	3 to 10	21	39	40	14,698	
Geddes	8	45 32	6 m to 6	12	43	45	27,775	
Hubble	9	47 35	3 to 16	23	42	35	18,492	
Marble	7	32 31	7 to 10	13	47	40	14,685	
Russell	10	30 27	1 to 9	15	45	40	10,537	
Mean	8.0			16.8	43.2	40	17,237	
Average American Diet				10-15%	30-40%	50-60%		

TABLE 9

PERCENTAGE OF ENERGY NUTRIENTS IN THE
DIETS OF SUB-MINIMAL INCOME FAMILIES

(1959-1960)

Family	No. in Family at Home	Ages			% Protein	% Fat	% Carbo- hydrate	Calories Per Day Per Family
		Parents H W	Children Range (yrs)					
Barker	8	44 40	3 to 18	12	30	58	17,085	
Beach	6	51 43	4 to 11	10	50	40	16,980	
Dennison	7	33 29	1m to 7-1/2	10	45	45	12,051	
Geddes	8	46 33	1 to 7	15	60	25	10,746	
Grant*	7	51 --	5 to 13	13	44	43	20,400	
Hubble	9	48 36	4 to 17	12	56	35	21,455	
Marble	7	33 32	8 to 12	8	26	66	6,783	
Metter*	5	52 33	7 to 12	10	24	66	21,176	
Perkins	9	42 37	2 to 18	9	35	56	25,782	
Mean	7.3			11.0	41.1	48.2	16,939	
Average American Diet				10-15%	30-40%	50-60%		

*Foster parents

TABLE 10

FAMILY FOOD PURCHASES FOR 1958-59
AS COMPARED TO THE DAILY RECOMMENDED
ALLOWANCES* (NATIONAL RESEARCH COUNCIL)

Family	Calories %	Protein %	Calcium %	Iron %	Vit. A %	Thiamin %	Ribo- flavin %	Niacin %	Ascorbic Acid %
Each	126	113	70	130	191	138	98	143	40
Beddes	85	99	81	22	118	103	101	27	96
Bubble	83	97	60	111	341	95	100	100	58
Marble	94	111	198	100	67	167	103	91	22
Russell	63	85	33	56	67	156	75	122	89
Mean	90	101	88.4	83.5	156.8	131.8	95.4	96.6	61

Notational Scheme: 100% meets the D.R.A.

The sources of vitamin D varied so greatly as to make calculation meaningless.

TABLE 11
 FAMILY FOOD PURCHASES FOR 1959 - 1960
 AS COMPARED TO THE DAILY RECOMMENDED
 ALLOWANCES (N.R.C.)#

Family	Calories %	Protein %	Calcium %	Iron %	Vit. A %	Thiamin %	Ribo- flavin %	Niacin %	Ascorbic Acid %
Arker	92	108	85	96	105	115	103	104	29
Beach	196	104	50	48	72	91	91	109	24
Bennison	102	101	85	112	91	86	106	81	90
Beddes	66	77	36	79	104	79	59	79	92
Brent*	165	211	298	150	164	174	118	165	136
Bubble	108	93	77	93	33	117	107	64	49
Farble	40	44	42	39	79	65	42	33	39
Letter*	182	206	134	214	209	108	197	88	42
Perkins	83	83	52	105	162	92	86	97	45
Mean	98	87	61	81.7	92.3	92.1	84.9	81.0	52.6

Notational Scheme: 100 meets the D.R.A.

Foster Names, omitted in calculating the means

The sources of vitamin D varied so greatly as to make calculation meaningless.

In regarding the types of food that these women purchased, they cannot be accused of buying many "frills". As a whole, the monies expended for the protein food included meat specials, hamburger, liver, and eggs. The families liked liver and used an abundance of eggs. The eggs were usually of the smaller, less expensive type. Cold cuts were a favorite, especially bologna which was used exclusively for their husbands' lunches. It seemed impossible to change this purchase. This was a set pattern for the husbands and if it was suggested that something less expensive be used, the men rebelled.

The use of dairy products was quite poor. Purchases in this food group included condensed milk which was used by all of the families and fluid whole milk, preferably raw, purchased directly from a farmer nearby because it was cheaper. Small amounts of cheese and oleo were selected and, for a special treat, some ice cream was purchased. The public health nurse and the home economist both attempted to promote powdered milk. The families would use it as long as it was encouraged but as soon as it was not mentioned, the women would revert to the purchase of the raw and condensed milk products.

In consideration of the fruit and vegetable group it was noted that the women usually purchased canned vegetables and fruits. Peas, corn, pork and beans, and tomatoes were their choices. Few fruits were selected but when they were, the women generally chose fruit cocktail or pineapple. Fresh vegetables which were used included an abundance of potatoes, some carrots, and cabbage. Tomatoes were purchased in season. Only 2 families took the trouble to garden and to use the crops. Others in the group would start gardens but then abandon them.

Fruits were not used to any extent and if citrus juices were purchased they were usually canned. Frozen juices were never used. Fresh grapefruit, strawberries, watermelons, and apples were used in season, but rarely were oranges purchased. Few of the women did any bread baking. Usually, day-old bread was purchased at a lower price at the bakery or the grocery store. Cereals were usually of the prepared variety rather than the cheaper uncooked type breakfast cereal. They did use considerable quantities of macaroni, noodles and rice. Thus, it was surprising to note the percentages of carbohydrates in their diets. They did purchase some sweet rolls, doughnuts and cookies, but none used them excessively. The preparation of a cake or cookies at home was quite a production and not a regular procedure.

Conclusions:

Several conclusions can be made from this study which might suggest further investigations:

- (1) The mean expenditure of these families for the two years was 38% which is similar to that suggested for large families.
- (2) The nutrient intake of the families was not adequate, particularly not for families in the stressful situations common to this type of family.

- (3) The percentage of fats in the diets was high and they were used differently than the average American diets.

The Children:

The food intake of the Pine School children was investigated during the second year of the study. Some of these children appeared small for their age and this was borne out by the anthropometric study which is reported in the next chapter. This showed that 84% of the children registered in Pine School were below the average of North American children in height, and 81% below in weight. It was also observed by the teachers that a number of the children arrived at school without having had any breakfast. Poor nutritional status of the children was suspected, but gross clinical symptoms were not observed.

Several methods of collecting the data were used. A daily recall was furnished by the mothers for Sunday and a weekday, twice during the year. The mothers also supplied on two occasions a breakfast and supper recall for the children. The teachers were asked to keep records of the milk intake of each child for one week, twice during the year, and they also recorded the amounts of food consumed for each child at least two times. Finally, the home economist observed each child at lunch and recorded his lunch intake at least 2 times. These data were then evaluated as to the following:

- (1) The nutritional intake of the child at home. (Table 12)
- (2) The nutritional intake of the child's breakfast and supper, plus the school lunch and his milk intake at school. (Table 13)
- (3) The means of each diet as compared to the National Research Council's recommended dietary allowances. Each child's recommended daily allowance was calculated for purposes of comparison and then the means of these recommended daily allowances were calculated, as well as the mean intake of the children. (Tables 14 and 15)

Because of the suspected poor nutritive status of the children, lunch was served to them at noon and milk was supplied in the morning and afternoon. The children were able to have all of the milk and food that they could consume at specified times during the school hours. Some consumed great quantities of foods and others only small amounts.

MEAN NUTRITIONAL INTAKE OF PINE SCHOOL CHILD AT HOME

	Age Group (yrs)	Calories	Protein (gm)	Fat (gm)	Carbo- hydrate (gm)	Calcium (gm)	Iron (mg)	Vitamin A (IU)	Thiamine (mg)	Ribo- flavin (mg)	Niacin (mg)	Asco- bic Acid (mg)
A.B.	4 to 6	1683	63.4	102.9	234.1	.89	6.0	1397	.937	1.554	10.72	18
B.B.	"	1236	46.9	62.1	123.3	.688	4.0	1192	.677	1.39	7.8	15
D.B.	"	1293	48.9	55.1	119.7	.790	4.4	1237	.710	1.36	7.5	16
L.B.	"	819	35.9	35.3	90.4	.337	5.5	1582	.518	.753	5.0	73
L.D.	"	1090	46.8	45.5	129.1	.961	4.8	5339	.662	1.49	7.1	18
T.P.	"	1779	45.1	63.2	265.7	.566	11.1	8307	.601	.708	10.72	73
K.P.	"	2131	66.1	103.0	241.4	1.602	8.6	3919	.988	2,522	9.8	54
B.H.	"	2403	89.7	107.8	252.0	1.627	8.4	4754	1.178	2,334	8.7	92
Mean		1554	55.3	71.9	182.0	.93	6.6	3466	.784	1.5	8.4	45
S.B.	7 to 9	907	37.8	38.5	103.0	.352	6.0	1727	.613	.803	14.0	72
J.D.	"	1044	41.5	41.7	131.3	.921	4.34	5286	.646	1.430	6.3	18
Mean		975	39.6	40.1	117.1	.636	5.17	3506	.629	1.116	10.1	45

The sources of vitamin D varied so greatly as to make calculation meaningless.

MEAN NUTRITIONAL INTAKE OF PINE SCHOOL CHILD FOR ONE DAY
WITH LUNCH AND MILK SUPPLEMENT AT SCHOOL

	Age Group (yrs)	Calories	Protein (gm)	Calcium (gm)	Iron (mg)	Vitamin A (IU)	Thiamine (mg)	Riboflavin (mg)	Niacin (mg)	Ascorbic Acid (mg)
A.B.	4 to 6	2038	117.5	1.507	8.98	20,960	1.16	3.63	17.76	48
B.B.	"	2136	77.3	1.416	10.9	24,299	1.267	3.58	13.37	48
D.B.	"	1566	75.7	1.514	4.98	2,917	.97	3.18	9.94	40
L.B.	"	1537	75.9	.916	10.0	16,322	.83	2.52	13.3	52
L.D.	"	1775	78.8	1.211	9.5	21,895	.87	3.6	13.3	40
T.P.	"	1646	71.1	1.316	11.8	28,948	.97	3.9	11.7	48
K.P.	"	1556	73.6	1.341	9.5	27,301	.88	3.8	12.46	49
B.H.	"	2326	110.1	1.98	16.2	30,632	1.66	6.7	19.5	59
MEAN		1822	85	1.40	10.23	21,659	1.08	3.86	13.92	48
S.B.	7 to 9	1641	82.8	1.19	12.2	16,763	.85	2.98	23.32	52
L.D.	"	1831	82.4	1.34	9.6	21,958	.85	2.90	13.5	38
MEAN		1736	82.6	1.26	10.9	19,360	.85	3.44	18.4	45

The sources of vitamin D varied so greatly as to make calculation meaningless.

TABLE 14

MEAN NUTRITIONAL INTAKE OF 10 PINE SCHOOL CHILDREN AT HOME
AS COMPARED TO THE
NATIONAL RESEARCH COUNCIL'S DAILY RECOMMENDED ALLOWANCES

Nutrient	Mean Intake 4 to 6 yrs	% of Daily Recommended Allowances 4 to 6 yrs	Mean Intake 7 to 9 yrs	% of Daily Recommended Allowances 7 to 9 yrs	% of Children Meeting Daily Recommended Allowances
Calories	1554	90	975	46	30
Protein	55.3 gm	110	39.6 gm	66	30
Fat	71.9 gm	--	40.1 gm	--	--
Carbohydrate	182.0 gm	--	117.1 gm	--	--
Calcium	.93 gm	93	.636 gm	63	20
Iron	6.6 gm	82	5.17 mg	52	30
Vitamin A	3466 IU	138	3506 IU	100	50
Thiamine	.784 mg	87	.629 mg	57	30
Riboflavin	1.5 mg	115	1.116 mg	74	60
Niacin	8.4 mg	105	10.1 mg	72	50
Ascorbic Acid	45.0 mg	90	45 mg	75	50

The sources of Vitamin D varied so greatly as to make calculation meaningless

TABLE 15

MEAN NUTRITIONAL INTAKE OF 10 PINE SCHOOL CHILDREN FOR ONE DAY
WITH LUNCH AND MILK SUPPLEMENT AT SCHOOL

AS COMPARED TO THE

NATIONAL RESEARCH COUNCIL'S DAILY RECOMMENDED ALLOWANCES

Nutrient	Mean Intake 4 to 6 yrs	% of Daily Recommended Allowances 4 to 6 yrs	Mean Intake 7 to 9 yrs	% of Daily Recommended Allowances 7 to 9 yrs	% of Children Meeting Daily Recommended Allowances
Calories	1822	107	1736	82	40
Protein	85 gm	170	82.6 gm	138	100
Calcium	1.40 gm	140	1.26 gm	126	90
Iron	10.23 mg	128	10.9 mg	109	80
Vitamin A	21,659 IU	866	19,360 IU	553	100
Thiamine	1.08 mg	120	.85 mg	77	70
Riboflavin	3.86 mg	297	3.44 mg	229	100
Niacin	13.92 mg	174	18.4 mg	132	100
Ascorbic Acid	48 mg	96	45 mg	75	20

The sources of Vitamin D varied so greatly as to make calculation meaningless

Pine School had no kitchen facilities. The lunches which were served to the children were prepared in the hospital kitchens. The menus were selected from the food being prepared for the hospital for that day. In selecting the menus, it was believed that they should be as high as possible in protein, minerals and vitamins with little emphasis on fats or carbohydrates. The menus selected by the home economist for the children considered two factors: first, that they be as high as possible in the nutrients mentioned above, and secondly that as many new foods as possible be introduced into the diets, in order that this facet of their environment would be enriched. (Table 16) It was not possible to choose unusual diets because the hospital fare was not offered in this manner.

In analyzing the diets of the Pine School children at home, the range of the caloric intake was from 819 calories per day (or 48% of the daily recommended allowance) to 2403 calories per day (or 141% above the daily recommended allowance). The mean caloric intake of the Pine School children at home was low. The mean intakes of calcium, iron, thiamine and ascorbic acid were low for the children in the age group 4 to 6 years. The intake of all nutrients except vitamin A was low for the children in the 7 to 9 year age group.

The nutrient intakes of the children when their breakfast and supper meals were supplemented by a school lunch and extra milk supplies, were more than meeting the suggested standards when viewed collectively. However, it must be noted that when individuals were considered, even with foods available to them, some of the children were not getting sufficient ascorbic acid, niacin, thiamine, iron, calcium and energy requirements.

Conclusions

It can be concluded that the diets of the children in this study were inadequate in the homes. Where part of the home meals was supplemented by the school diet, the nutritive intake was adequate for some of the children. However, in spite of adequate nutritional offerings, some of the individuals did not consume enough to have adequate nutritional intakes. This would seem to be partially due to the individual selection and previous eating habits.

Growth of Pine School Children

Physical growth is an expected phenomenon of a child's development and is a reflection of his physical, environmental, social and nutritional status. It was, therefore, an important area to be explored in the Pine School Study.

Many measurements of height and weight have been obtained on normal children and some data are available for children who are mentally subnormal. Mentally retarded children are a heterogenous group, even though they are sometimes placed in a separate category of the population. (17)

TABLE 16

EXAMPLES OF MENUS OF LUNCHES
SERVED PINE SCHOOL CHILDREN

1st WEEK	2nd WEEK	3rd WEEK
MONDAY Meatcakes Gravy Spinach	Ham Beans, creamed Banana Cream Pudding	Pot Roast Corn, buttered Fruit Cobbler
TUESDAY Roast Pork Peas, buttered Rhubarb Sauce	Stew Jello & Custard Sauce	Liver Carrots, buttered Pudding
WEDNESDAY Liver Wax Beans Ice Cream	Meatballs Wax Beans Ice Cream	Ham/buns Wax Beans Ice Cream
THURSDAY Wieners/buns Tomatoes, stewed Jellied Fruit Salad	Turkey Noodles Broccoli Custard	Turkey/Rice Peas Jello Fruit Cocktail
FRIDAY Salmon Loaf Beets, buttered Lemon Pudding	Fish Tomatoes Celery/Carrots Fresh Fruit	Escalloped Salmon Beets Lettuce Canned Fruit

Several investigations have shown that mentally retarded children are below normal in height and weight. (18, 19) Smith and Stroud, however, found that the children whose heights and weights they recorded were in the normal range. (20)

Subjects

The situation of the Pine School Study was different in that it attempted to consider only one type of mental retardation. The 24 children considered for this study were from 12 families. Their ages ranged from 3 years and 2 months of age to 7 years and 7 months. All of them when first tested psychologically had an IQ determination of between 50 and 80. There were only 2 children with no siblings registered at one time or another in the school. There were two sets of fraternal twins and the rest had brothers or sisters who had been or were participating in the Pine School Study.

It was necessary to divide the children into 3 groups because of the varying periods of school attendance. One of the purposes of the school was to help the children become ready for a successful public school experience, and when the children were believed ready to enter the public school, they left Pine School. These children were returned to the Child Development Clinic of the Pediatrics Department each year for testing and medical study. At this time heights and weights were obtained.

Group I was made up of children who left Pine School in August 1959. (Table 17) Some of the children in Group I were testing above 80 IQ at the time the portion of the Family Life Study was instigated. These children were placed in public school classes the following year.

Group II consisted of children who had been in the study for the greatest length of time. Some of these children showed a change in their IQ level, but were under age for acceptance into the public school. They were, therefore, retained in the Pine School until they became of school age. Some others in this category, although of age to attend public school, were not believed able to cope with the experience. (Table 18)

Group III was made up of children who entered Pine School in the Fall of 1959 and had not as yet met the criteria for admission into the public school. (Table 19) One child (K.P.,) had an IQ of 83 when admitted to the Pine School. He had a severe speech impediment and it was difficult to evaluate him.

The children were all from the lower socio-economic levels, although the children (T.G., V.G., and R.M.) who were in foster homes, had somewhat higher levels. Their mean age ranged from 4 years, 7 months to 6 years, 1 month. (Table 20) There were 12 families in this portion of the study, and

TABLE 17

GROWTH OF CHILDREN ATTENDING PINE SCHOOL FOR ONE YEAR
NOW IN PUBLIC SCHOOL

GROUP I

Child	Age(yr)	<u>Oct 1958</u>		<u>Jan 1959</u>		<u>Apr 1959</u>		<u>Jul 1959</u>		<u>Total Gains</u>	
		Ht(cm)	Wt(kg)	Ht(cm)	Wt(kg)	Ht(cm)	Wt(kg)	Ht(cm)	Wt(kg)	Ht(cm)	Wt(kg)
D.C.	4-1	98.4	16.00	99.7	16.00	100.3	16.40	103.5	16.68	5.1	.68
M.C.	6-6	108.0	19.30	109.9	19.75	111.8	19.92	113.0	20.43	5.0	1.43
W.C.	5-6	103.2	17.25	106.0	17.25	107.3	18.16	109.2	17.98	6.0	.73
Ro.G.	5-5	107.3	17.59	108.0	18.39	109.9	19.07	---	---	2.6	1.48
Rx.G.	5-5	104.8	16.57	106.0	17.25	107.3	17.31	108.6	17.71	3.8	1.14
R.H.	7-7	121.9	25.08	124.5	25.65	124.5	28.15	---	---	2.6	3.07
A.H.	6-3	---	25.88	118.7	26.90	120.7	28.60	121.3	28.60	2.6	1.70
El.M.	7-2	119.4	21.34	120.7	21.57	123.2	22.13	126.4	23.27	7.0	1.93
El.M.	7-2	122.3	24.97	122.6	25.42	125.7	27.01	128.3	28.15	6.0	3.18
J.W.	6-3	116.8	26.67	120.0	26.79	121.3	27.69	123.2	27.58	6.4	.91

TABLE 18

GROWTH OF CHILDREN ATTENDING PINE SCHOOL FOR TWO YEARS

GROUP II

Child	Age(yr)	<u>Oct 1958</u>		<u>Jan 1959</u>		<u>Apr 1959</u>		<u>Jul 1959</u>		<u>Total Gains</u>	
		Ht(cm)	Wt(kg)	Ht(cm)	Wt(kg)	Ht(cm)	Wt(kg)	Ht(cm)	Wt(kg)	Ht(cm)	Wt(kg)
D.B.	3-6	97.2	15.21	---	---	100.3	16.34	102.2	16.34	5.0	1.13
A.B.	4-7	105.4	19.64	108.0	19.75	109.9	20.43	111.1	20.48	5.7	.84
B.H.	4-0	98.4	19.64	99.7	20.88	101.0	21.88	103.5	20.52	5.1	.88
S.B.	6-6	111.1	19.30	113.7	19.86	114.3	20.09	---	---	3.2	.79
L.B.	4-4	94.6	13.96	97.2	13.73	97.8	14.47	---	---	3.2	.51
R.M.	5-4	---	---	104.8	16.46	107.3	17.31	109.2	17.37	4.4	.91
B.W.	3-11	105.4	21.34	112.4	22.25	114.3	23.15	116.8	23.04	11.4	.70
		<u>Oct 1959</u>		<u>Jan 1960</u>		<u>Apr 1960</u>		<u>Jul 1960</u>			
D.B.	4-6	103.9	17.03	104.4	17.37	---	---	108.0	18.27	4.1	1.24
A.B.	5-7	113.0	21.34	113.0	22.36	114.6	22.70	117.0	24.29	4.0	2.95
B.H.	5-0	103.9	21.22	105.9	21.85	108.2	22.47	110.0	22.25	6.1	1.03
S.B.	7-5	116.8	20.77	118.1	21.45	119.4	22.25	120.9	22.59	4.1	1.82
L.B.	5-3	99.0	14.98	100.0	15.44	102.9	15.89	103.1	17.48	4.1	2.50
R.M.	6-3	111.1	18.39	111.1	19.30	114.0	20.43	---	---	2.9	2.04
B.W.	4-10	118.7	23.61	118.7	25.20	---	---	---	25.65	0.0	2.04

TABLE 19

GROWTH OF CHILDREN ENTERING PINE SCHOOL IN 1959

GROUP III

Child	Age(yr)	<u>Oct 1959</u>		<u>Jan 1960</u>		<u>Apr 1960</u>		<u>Jul 1960</u>		<u>Total Gains</u>	
		Ht(cm)	Wt(kg)	Ht(cm)	Wt(kg)	Ht(cm)	Wt(kg)	Ht(cm)	Wt(kg)	Ht(cm)	Wt(kg)
B.B.	3-5	92.0	14.98	92.2	14.70	94.8	14.64	---	---	2.8	0.00
J.D.	6-11	111.3	19.18	112.0	19.30	114.7	20.43	116.0	20.88	4.7	1.70
L.D.	5-9	102.6	16.00	104.6	16.91	107.0	17.48	109.0	17.82	6.4	1.82
T.G.	6-4	111.5	23.15	111.5	23.49	---	---	115.2	24.18	3.7	1.03
V.G.	4-6	101.5	16.68	103.0	17.03	105.0	17.82	106.8	18.50	5.3	1.82
K.P.	3-2	97.4	16.80	97.5	16.68	101.0	17.37	102.7	17.93	5.3	1.13
T.P.	5-9	108.1	19.98	109.0	21.00	111.0	21.79	---	---	2.9	1.81

TABLE 20

MEAN GROWTH OF PINE SCHOOL CHILDREN

	Ht(cm)	Wt(kg)	Age (yr)
GROUP I	4.7	1.63	6-1
GROUP II			
1958-59	5.4	.97	4-7
1959-60	3.6	1.95	5-7
GROUP III	4.4	1.33	5-1

25 children. All but 2 of the children had brothers or sisters who were or had been registered in Pine School, and there were 2 sets of fraternal twins. The intelligence quotients varied from 56 at the start of the program to 123 as of October 1, 1961. (Table 21)*

Methods

The height and weight recordings of the Pine School children were investigated in the Fall of 1958. These measurements were made using the Meredith Method (6) and recorded on a Modified Meredith Growth Chart. Measurements were made at 1:00 p.m., after the children's lunch hour. The children were requested to void and were weighed and measured in their underclothes.

During the second year (1959) of the study, additional data consisting of head circumferences, photographs and wrist x-rays were obtained. Some of these data were discussed in a Master's thesis. (7)

Results and Discussion

Tables 17, 18 and 19 show a quarterly record of the children's heights and weights for the periods of their enrollment in Pine School and their total gains in height and weight for that period. All but one of the children showed gains in both height and weight for the periods that they were registered in school. It would seem from the data at present that growth in height and weight is an individual peculiarity, each child with his own rhythm -- some slowly and evenly and some in spurts. Losses in weight usually coincided with illness of the child or a traumatic home experience.

Bayer and Bayley(21) have developed a technique of growth-rate calculations which is corrected for stature. The child may be observed over a short period of time and his growth rate calculated to provide an index of acceleration and deceleration of growth. It was believed that this calculation could serve as a baseline for further investigations.

Growth rates as shown in Tables 22, 23 and 24 ranged from 0 for T.G., to 24.4% for B.W. T.G. did grow in both height and weight, as is noted in Table 24. However, for the period of time represented here, her rate of growth remained the same. B.W., who had the greatest rate of growth, was above the 84th percentile on the Meredith Growth Chart in both height and weight.

Correlation between this growth rate calculation and each child's age was not found to be significant. It would seem again that rate of growth is a phenomenon unique to each individual, based on their nutritional, physical, and environmental endowments.

* The reader is reminded that all children initially had IQ determinations below 80 when accepted for the project. Some were in the project almost 2 years before the family life portion of the study was begun.

TABLE 21
PERSONAL DATA OF PINE SCHOOL CHILDREN

Name	Sex	Date of Birth	Socio-Economic Status	IQ	
				1958-59	1960-61
A. B.	Male	3-17-54	Lower-lower	68	101
B. B.	Female	5-20-56	Lower-lower	67	114
D. B.	Male	4- 7-55	Lower-lower	62	123
L. B.	Male	6-28-54	Lower	77	95
S. B.	Male	4-20-52	Lower	56	62
D. C.	Male	9- 7-54	Lower	106	101
M. C.	Female	4-19-52	Lower	101	102
W. C.	Male	4-29-53	Lower	88	90
L. D.	Male	1-11-54	Lower	64	83
J. D.	Male	11- 5-52	Lower	70	88
Ro. G.	Female	5-24-53	Lower-lower	98	92
Rx. G.	Female	5-24-53	Lower-lower	94	102
T. G.	Female	6-12-53	Lower	64	85
V. G.	Male	4- 5-55	Lower	80	102
A. H.	Male	7-16-52	Lower-lower	75	74
B. H.	Male	10-13-54	Lower-lower	71	87
R. H.	Male	3- 3-51	Lower-lower	80	80
El. M.	Female	8-18-51	Lower	69	70
El. M.	Female	8-18-51	Lower	80	78
R. M.	Male	6-28-53	Lower-middle	76	72
K. P.	Male	8- 9-56	Lower	83	115
T. P.	Male	1- 6-54	Lower	69	91
M. R.	Male	7-25-53	Lower	77	82
B. W.	Male	11-23-54	Lower	78	85
J. W.	Male	7-25-52	Lower	83	84

TABLE 22

GROWTH RATES OF PINE SCHOOL CHILDREN

Group I	Age		S	dS	MS	dA	dS/dA	dS/dA/MS	x100
D.C.	4-0	s ₁	97.8	1.9	98.75	.345	5.5	.055	5.5%
		s ₂	99.7						
M.C.	6-5	s ₁	108.0	1.9	108.95	.345	5.5	.050	5.0%
		s ₂	109.9						
W.C.	5-5	s ₁	103.5	2.5	104.75	.345	7.2	.069	6.9%
		s ₂	106.0						
Ro.G.	5-4	s ₁	106.7	1.3	107.35	.345	3.8	.034	3.4%
		s ₂	108.0						
Rx.G.	5-4	s ₁	104.1	1.9	105.05	.345	5.5	.052	5.2%
		s ₂	106.0						
A.H.	6-2	s ₁	114.9	3.8	116.8	.345	11.0	.094	9.4%
		s ₂	118.7						
R.H.	7-6	s ₁	120.7	3.8	122.6	.345	11.0	.090	9.0%
		s ₂	124.5						
El.M.	7-5	s ₁	120.7	2.5	121.95	.249	10.0	.082	8.2%
		s ₂	123.2						
El.M.	7-1	s ₁	121.9	0.7	122.25	.345	2.0	.016	1.6%
		s ₂	122.6						
J.W.	6-2	s ₁	116.8	3.2	119.4	.345	9.3	.071	7.1%
		s ₂	120.0						

Explanation of calculation (Bayer & Bayley: Growth Diagnosis, p.65)

s₁ First recording

s₂ Second recording

S Stature in centimeters

dS Difference in height

MS Mean stature

dA Elapsed time (figured in decimals of 1 year)

Growth rate = $\frac{dS/dA}{MS} \times 100$

MS

TABLE 23
GROWTH RATES OF PINE SCHOOL CHILDREN

Group II	Age		S	dS	MS	dA	dS/dA	dS/dA/MS	x100
D. B.	3-6	s ₁	97.2	3.1	98.75	.348	8.9	.090	9.0%
		s ₂	100.3						
A. B.	4-7	s ₁	105.4	2.6	106.7	.348	7.5	.070	7.0%
		s ₂	108.0						
B. H.	4-0	s ₁	98.4	1.3	99.05	.348	3.7	.037	3.7%
		s ₂	99.7						
S. B.	6-6	s ₁	111.1	2.6	112.4	.348	7.5	.067	6.7%
		s ₂	113.7						
L. B.	4-4	s ₁	94.6	2.6	95.9	.348	7.5	.078	7.8%
		s ₂	97.2						
R. M.	5-6	s ₁	103.5	3.8	105.4	.334	11.4	.108	10.8%
		s ₂	107.3						
B. W.	3-11	s ₁	105.4	7.0	108.9	.263	26.6	.244	24.4%
		s ₂	112.4						

Explanation of calculation (Bayer & Bayley: Growth Diagnosis, p. 65)

s₁ First recording

s₂ Second recording

S Stature in centimeters

dS Difference in height

MS Mean stature

dA Elapsed time (figured in decimals of 1 year)

$$\text{Growth rate} = \frac{dS/dA}{MS} \times 100$$

TABLE 24
GROWTH RATES OF PINE SCHOOL CHILDREN

Group III	Age		S	dS	MS	dA	dS/dA	dS/dA/MS	x100
B.B.	3-5	s ₁	92.0	.2	92.1	.282	.7	.007	.7%
		s ₂	92.2						
J.D.	6-11	s ₁	111.3	.7	111.65	.282	2.5	.022	2.2%
		s ₂	112.0						
L.D.	5-9	s ₁	102.6	2.0	103.6	.282	7.1	.068	6.7%
		s ₂	104.6						
T.G.	6-4	s ₁	111.5	0	111.5	.282			0
		s ₂	111.5						
V.G.	4-6	s ₁	101.5	1.5	102.25	.282	5.3	.051	5.1%
		s ₂	103.0						
K.P.	3-2	s ₁	97.4	.1	97.45	.282	.3	.003	.3%
		s ₂	97.5						
T.P.	5-9	s ₁	108.1	.9	108.55	.282	3.2	.029	2.9%
		s ₂	109.0						

Explanation of calculation (Bayer & Bayley -- Growth Diagnosis) p. 65

- s₁ First recording
- s₂ Second recording
- S Stature in centimeters
- dS Difference in height
- MS Mean stature
- dA Elapsed time (figured in decimals of 1 year)
- Growth Rate $\frac{dS/dA \times 100}{MS}$

It is not the purpose of this report to draw conclusions but rather to add to the growing collection of data of this continuing study. It would seem obvious, however, that the percentage of children falling below -1 standard deviation in their height is larger than one would expect to find in a normal population. One might hypothesize that this is due to a poor nutritive start. This study needs to be correlated with an investigation of maternal diets and early feeding patterns of the child, for a better understanding of several factors related to the physical growth of children with symptoms of mental retardation.

HOMEMAKER SERVICE

The Homemaker Service began in the United States during the depression, primarily as a service to children. Today this service has expanded to provide assistance and personal care to the aged, the handicapped, and the chronically ill. The service is available to all income groups, but used mostly for families with lower incomes. It is sponsored in varying degrees by different social agencies in 32 states in the United States.

The first National Conference on Homemaker Service was held in Chicago in February 1959. From these meetings the Conference Executive Committee has formulated some conclusions and recommendations. The definition of the Homemaker Service drafted by this committee states, "Homemaker Service is a community service sponsored by a public or voluntary health or welfare agency that employs personnel to furnish home-help services to families with children, to convalescent, aged, acutely or chronically ill and disabled persons, or to all of these. Its primary function is the maintenance of household routine and the preservation or creation of wholesome family living in times of stress. Because homemaker services should be offered on the basis of a social diagnosis and often a medical diagnosis as well, trained professional persons should evaluate the type of service needed and the length of time it should be given." (Bulletin Homemaker Service, First Issue - January 1960 - A. M. A.)

Although there are funds in the State of Iowa for the development of this service, they have not been utilized for several reasons. One, of course, is the problem of its administration.

The Division of Child Welfare of the State Department of Welfare attempted to instigate a Homemaker Service in March 1959. Their goal was to develop a place which could offer the service to all needful people so that it could serve as a broad base for later expansion. However, because it was developed by this division of the Welfare Department, it could only include services to children or their families, in practice.

A committee was appointed by this division involving interested people representing several disciplines, for the purpose of acting as an advisory body for developing the service in the State. Because of experiences gathered in the Pine School Project, the home economist served as co-ordinator of this committee. The manual had been developed by perusing the literature available from many different agencies and selecting and adapting the material to the homemaker plan as visualized for Iowa. (22 - 40)

The criteria for selection of personnel for homemakers in the service was also formed from suggestions from other agencies, utilizing their successes or failures. The problem of maid vs. homemaker was a real one, and it was believed that this was an important consideration in the ultimate outcome of the plan. Therefore, much thought was given to this aspect. Both of these items were reviewed by the advisory committee, and some changes made.

A tentative plan was set up for the development of a pilot "Homemaker" study in Johnson County. It was believed by the committee that such a program would expose any problems that might arise in the service at a county level. This study was not developed, however, because of many reasons not appropriate to consider in this paper.

It would seem that there is a need for a Homemaker Service in this State. There is the problem of the aging population, the larger number of working mothers, the increase in number of divorced or broken families, and the mobility of the population. If this program could be developed for the express purpose of serving all classes of people, it would meet a great need.

DISCUSSION, CONCLUSIONS, AND QUESTIONS

The original plan for the Pine School project called for a five-year period of various observations. It was planned that this study would be a longitudinal program and this period of time has not yet ended. The Family Life Study was essentially a two-year portion of the Pine School project, and as such the conclusions presented in this section of the report, as well as the implications given elsewhere, are reported as items appropriate to this portion of the study. Whether the over-all study will answer the hypotheses in either positive or negative direction cannot be stated at this time, since the study as a whole is, as yet, incomplete.

On the basis of the data available for this portion of the study, the following conclusions of a general nature would seem justified:

1. It was believed by the authors that inasmuch as the home economist had little training in social work, she would be unable to lead a dependent mother into developing independent techniques if she assumed the "mother role" for any of these women. This problem is one that would be met by any home economist working in this area without social work supervision or training. It would, therefore, seem wise that anyone interested in this area should have some appreciation for sociology, not in order to answer social problems, but to be aware of the relationships that are created.
2. It is easy for a woman trained in home economics and interested in homemaking problems, to establish rapport with women such as these. They have had little opportunity to develop homemaking techniques, for two reasons: first, their own mothers were usually inadequate in this respect or they were denied a home life for some reason; secondly, the home economics curriculum does not meet the needs of these children. Although they usually stay in school until they are 16 or have finished 8th grade because it is demanded by law, they are not receptive to much "book or school learning." Perhaps more emphasis in elementary school when children love to cook and sew might be one answer to this deficit. At the junior high level greater emphasis on social interaction would help.
3. By the time these women are married and have families they are very receptive to home economics. However, it must be geared to their level and to their needs. Adult education, per se, will not work because of their timidity or hostility to a middle-class teacher. Some means, perhaps through a social welfare or health department, might be worked out to meet the needs of this large group of people. The homemaker program as it is set up in many

states would be excellent. A women's group in a church, with a woman who was warm and understanding and with some training in home economics or social work, might meet some of the needs of these families. Too often society's obligations to this class of people are discharged by giving material things, which, although necessary for their health or welfare, create a problem in the families by adding a feeling of inadequacy.

4. It was possible to teach these mothers some of the skills of housekeeping. However, if the teaching facilities were withdrawn too soon or if the teacher lost interest and did not continue to support the mother in her efforts, the mother was apt to backslide. A program such as this should be planned on a long-term basis with continued support and understanding of the women's needs. Giving this kind of training and support to these women should not be undertaken lightly.

5. It is obvious from the data of the nutritional surveys that these families are poorly nourished and that the growth of the children does not conform to the standards of average groups. Some method of encouraging better nutrition or awareness of their lacks should be a part of over-all planning. The nutritionist or home economist might attempt to solve this problem if she would concentrate in this area for a time. Whether or not the food deprivation has any direct result in mental retardedness is not known at this time. However, it can be suspected.

6. The home economist has been trained in many areas that have a role in helping to alleviate the inadequacies of this group of people. They have the knowledge, but the interest, application and motivation to assist these groups has not been cultivated. The abilities that the home economist has to offer have not been fully used by workers in this sub-culture. Home economists are used often as consultants, but rarely have they been encouraged to participate in field work, which should be a challenge to them as well as to the other disciplines working with this group. The discipline of home economics would seem to have much to offer in understanding and helping inadequate people meet the challenges of the complex society of today.

Slum clearance and building of low-cost housing have not been too successful in many cities. One is faced with the fact that perhaps "giving something for nothing" is not the right solution. Is there some way that these people could be stimulated to be proud and loyal to a housing development? Could services such as have been offered to these project families help them move ahead and become more acceptable to the community? These problems need some answers by professional people who are neither prejudiced nor biased in their thinking.

From the study done thus far, it is not clear what the exact significance of these data is. Further study is required to investigate the importance of the specific deficiencies in iron and ascorbic acid especially. Whether the small stature of some of these children can be traceable to the matter of several years of inadequate diet is not clear. These problems should be investigated in the future. A larger sample of children would be required in order to understand better the nature of these findings.

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