

STANDARDS OF LIVING OF MARYLAND FARM FAMILIES

by
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Thesis submitted to the Faculty of the Graduate School
of the University of Maryland in partial
fulfillment of the requirements for
the degree of Master of Science.

1938

AUG 30 1939 #

Acknowledgements

The suthor wishes to express her appreciation to Professor J. E. Metzger, acting Director of Experiment Station, University of Maryland; to Professor Claribel Welsh, Head of Department of Foods and Nutrition, University of Maryland, for her aid in organizing and reviewing the material; to Dr. S. H. DeVault, Head of Department of Agricultural Economics, University of Maryland, for his valuable assistance throughout the study.

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STANDARDS OF LIVING OF MARYLAND FARM FAMILIES

INTRODUCTION

This thesis represents the results of a standard of living study of seventy-two farm families in Carroll County, Maryland, for the year beginning in the summer of 1936 and ending in the summer of 1937. The data were collected in the summer of 1937.

Carroll County is located in the northern part of the state and borders on Frederick County on the west, Howard County to the south, Baltimore County on the east and borders on Pennsylvania to the north. See Figure 1. The county is very irregular and comprises an area of 447 square miles or 286,080 acres. *wh. ch*

Topographically, the land is gently rolling to hilly with many streams. There is an excellent drainage system in the county. The area is adapted to the production of field corn, sugar corn and other general crops, being a fertile agricultural region. Oil of Chenopodium or "worm seed oil" has been produced on many of the farms in Carroll County for the past 100 years, and is a very lucrative crop. Dairying is the principal type of farming in the county.

Even though the county is definitely agricultural, several clothing, shoe and canning factories, and a distillery flourish, thus supplying a ready market for farm produce.

The county has an excellent system of public roads and is served by three railways-- the Baltimore and Ohio, Western Maryland and the Pennsylvania. No part of the county is over ten miles from a railroad.

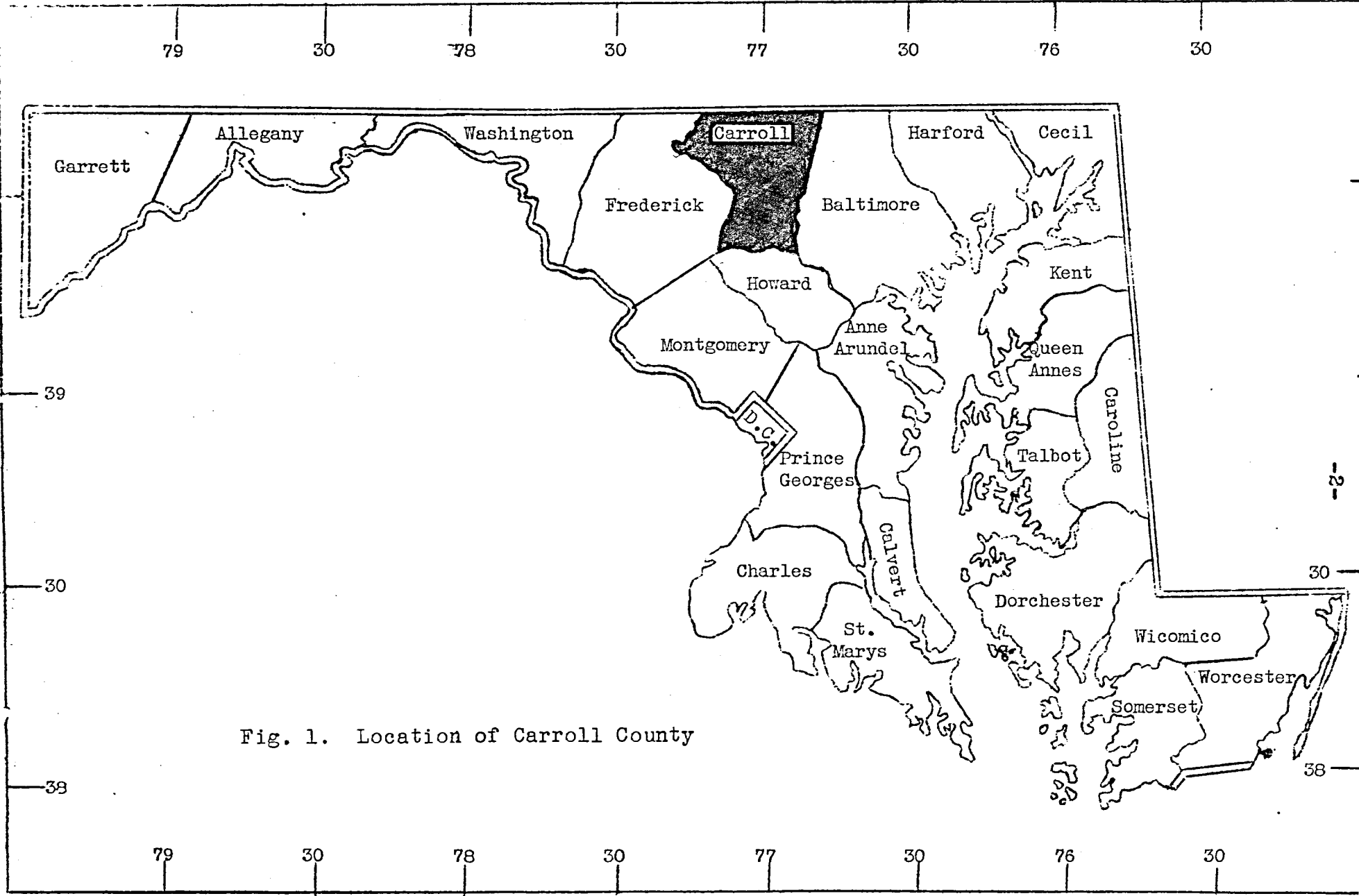


Fig. 1. Location of Carroll County

It has a splendid home market and is ideally located in relation to two of the principle markets of the East, Baltimore and Washington.

There are two local colleges to serve the youth of the county-- Blue Ridge College, located at New Windsor, and Western Maryland College, located at Westminster.

The average acreage per farm was 106 acres, of which 83 acres were under cultivation. The number of tenant farms surveyed was so few that no breakdown of farms was made on an owner-operated and tenant-operated basis. The analysis was based on averages for all farms. The length of tenure on the same farm varied from 1 year to 54 years, the average tenure being 20 years. Distribution of families by length of tenure on the same farm is shown in Table 1.

TABLE 1. DISTRIBUTION OF FAMILIES BY LENGTH OF TENURE ON THE SAME FARM

Number of years on Present Farm	Number of Families	Per Cent
Less than 5	8	11.1
5- 9	9	12.5
10-14	7	9.7
15-19	13	18.1
20-24	13	18.1
25-29	7	9.7
30-34	2	2.8
35-39	4	5.5
40-44	2	2.8
45-and over	7	9.7
Total	<u>72</u>	<u>100.0</u>

The purpose of the study was to determine as accurately as possible the amount of cash available for family living; how the farm families use their incomes; to judge their standards of living; and determine the adequacy of their diets according to accepted standards. The information

was obtained by means of a questionnaire and a personal interview with each family. The questionnaire, or schedule, was explained and was left with the homemaker and farm operator, so that an accurate record of food consumed by the family during the week, and number of meals served to individual members of the household could be recorded. At the end of the week the worker returned for the schedule and recorded the data as given by the homemaker and farm operator.

Selection of Families

With the cooperation of the Home Demonstration Agent and the County Agent, seventy-two families, scattered throughout the county, were selected. An attempt was made to obtain a representative sample of families in different income levels, but a comparison of the data with the average for the county indicates that the families selected for study are better than average. Figure 2 shows the location of the seventy-two farms studied.

Composition of Farm Families

In this study, the family unit consisted of the operator, the homemaker, and dependent or partly dependent children. The average size of the farm family was 4.3 persons, or .3 person larger than the average United States and Maryland farm family and .9 person larger than the average Carroll County farm family.¹ The average family consisted of 1.9 parents and 2.4 children. Table 2 shows the families classified according to size. Every farm had a homemaker, but only 67 farms had operators. On the 5 farms without an operator, a man was hired by the year to act as farm operator. There were 173 dependent or partly dependent children living at home.

1. United States Census of Population, 1930, Vol. 6

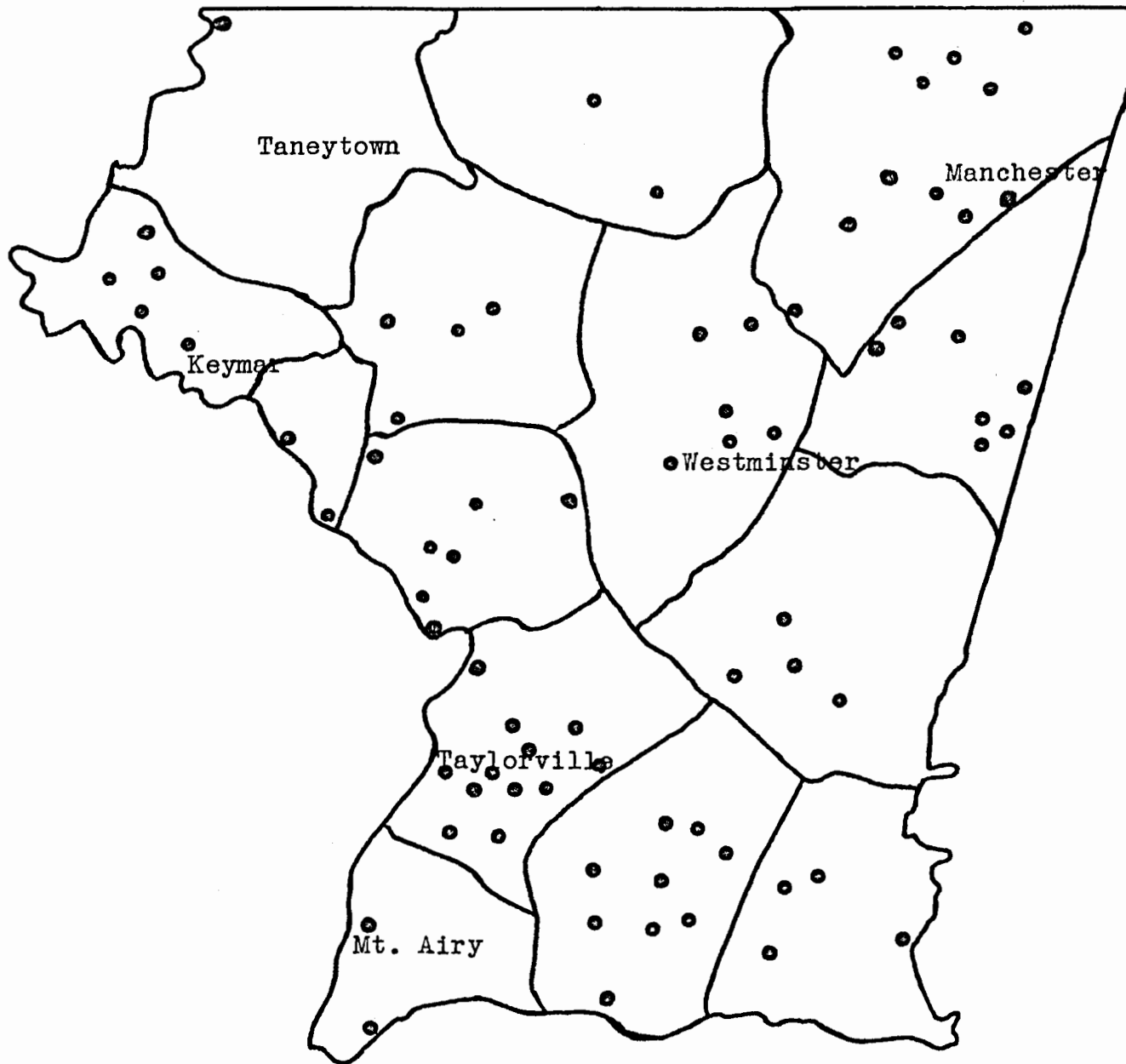


Fig. 2. Location of Farms Studied by Carroll County.
(Each dot represents one farm)

TABLE 2. CLASSIFICATION OF FARM FAMILIES, ACCORDING TO SIZE

Size of Family (Persons)	Number of Families	Per Cent
1	2	2.8
2	10	13.9
3	13	18.0
4	17	23.6
5	14	19.4
6	8	11.1
7	4	5.6
8	2	2.8
9	-	---
10	1	1.4
11	1	1.4
Total	<u>72</u>	<u>100.0</u>

The household includes, in addition to the farm family, relatives, hired help and borders lodged and fed on the farm the entire year. Guests and visiting friends or relatives were not included in the household. The household was comprised of .8 person other than the family, or a total of 5.1 persons.

The homemakers were younger on the average than the operators, with the ages ranging from 30 to 72 years for the operators and from 25 to 71 for the homemakers. The modal age for the operators was 49 years and for the homemakers 47 years. The ages of children ranged from 6 months to 26 years. The average age of children was 15 years. The distribution of children, operators and homemakers by age groups is illustrated in Table 3. Figures 3 and 4 show the number of children at home per family and the age distribution of the children. Figure 5 shows the age distribution of the operator and the homemaker.

TABLE 3. DISTRIBUTION OF CHILDREN, OPERATORS AND HOOMEMAKERS,
BY AGE GROUPS

Age Groups (years)	Children		Operators		Homemakers	
	Number	Per Cent	number	Per Cent	Number	Per Cent
Less than 5	18	10.4				
5- 9	30	17.4				
10-14	42	24.3				
15-19	36	20.8				
20-24	31	17.9				
25-29	16	9.2			2	2.8
30-34			7	10.5	7	9.7
35-39			10	14.9	10	13.9
40-44			6	8.9	16	22.2
45-49			16	23.9	14	19.3
50-54			11	16.4	11	15.3
55-59			6	8.9	4	5.6
60-64			5	7.5	2	2.8
65-69			3	4.5	3	4.2
70 and over			3	4.5	3	4.2
Total	173	100.0	67	100.0	72	100.0

STANDARD OF LIVING

The standard of living refers to how well people live. Their standard of living is judged by the clothes they wear, the food they eat, the recreation they have, the homes in which they live, their education and health, their church and organization activities and their friends. Most writers agree that it is a standard of consumption, but the ability to obtain goods and services must also be considered. As the term is used here, it includes only those material and non-material goods and services which are to be purchased. Thus, it is only a cash standard of living, because the amount of family living furnished by the farm was not available from the data collected. Inasmuch as the study includes only one year's results, cash expenditure for living^{is} nearly

as indicative of how well people live as total expenditures. Quantities

Number of
Families

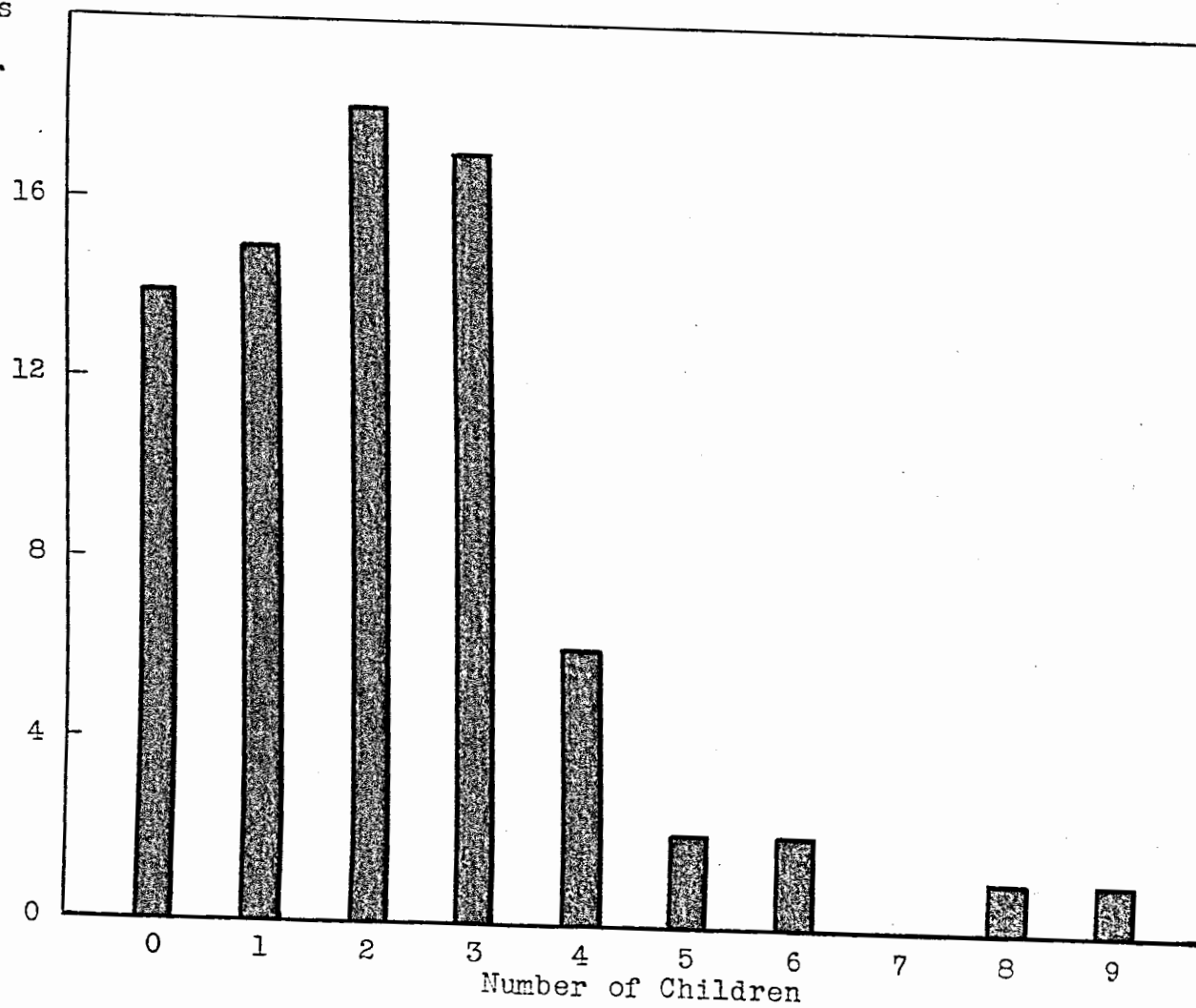


Fig. 3. Number of Children Per Family, at Home

Number of
Children

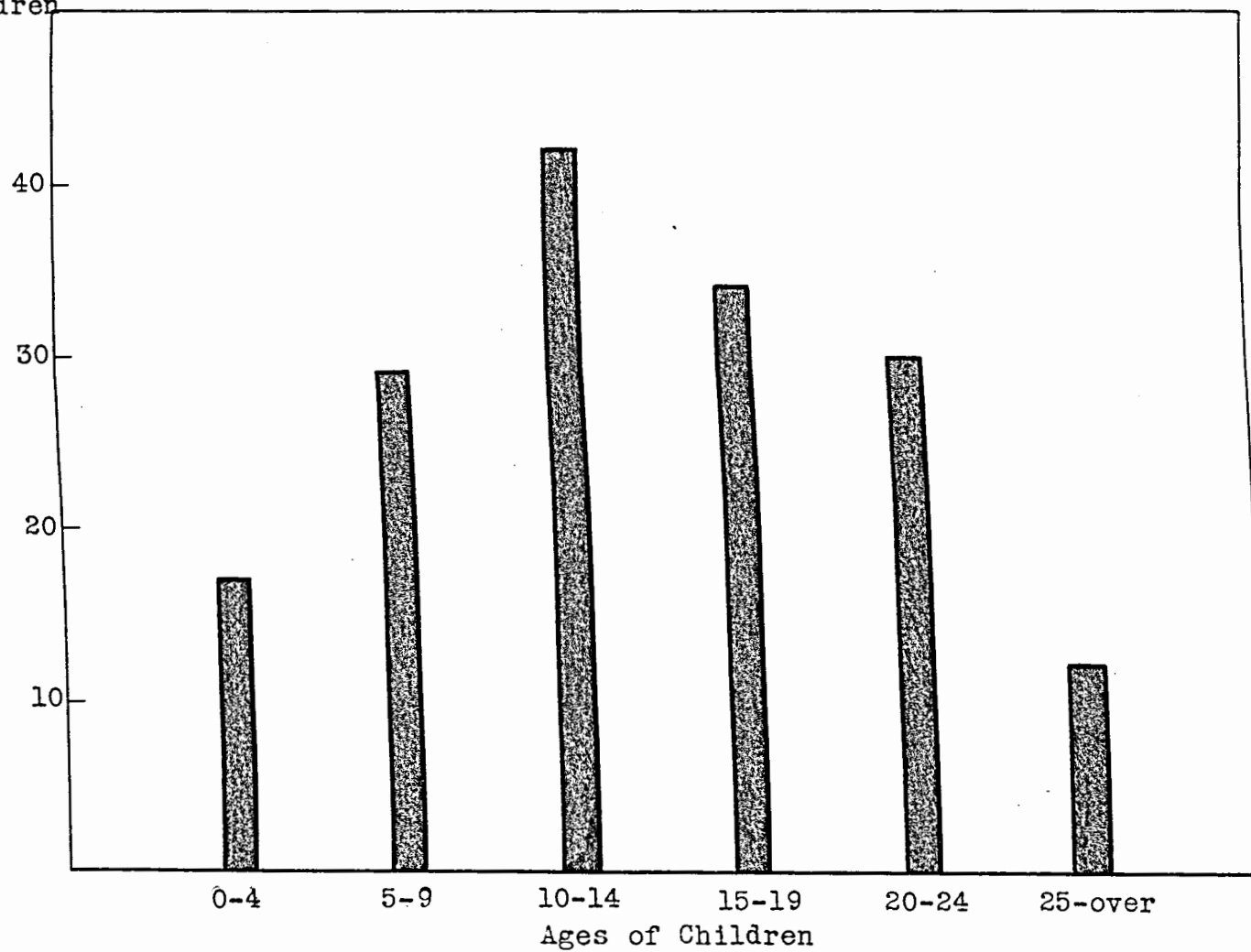


Fig. 4. Age Distribution of Children

Number of
Persons

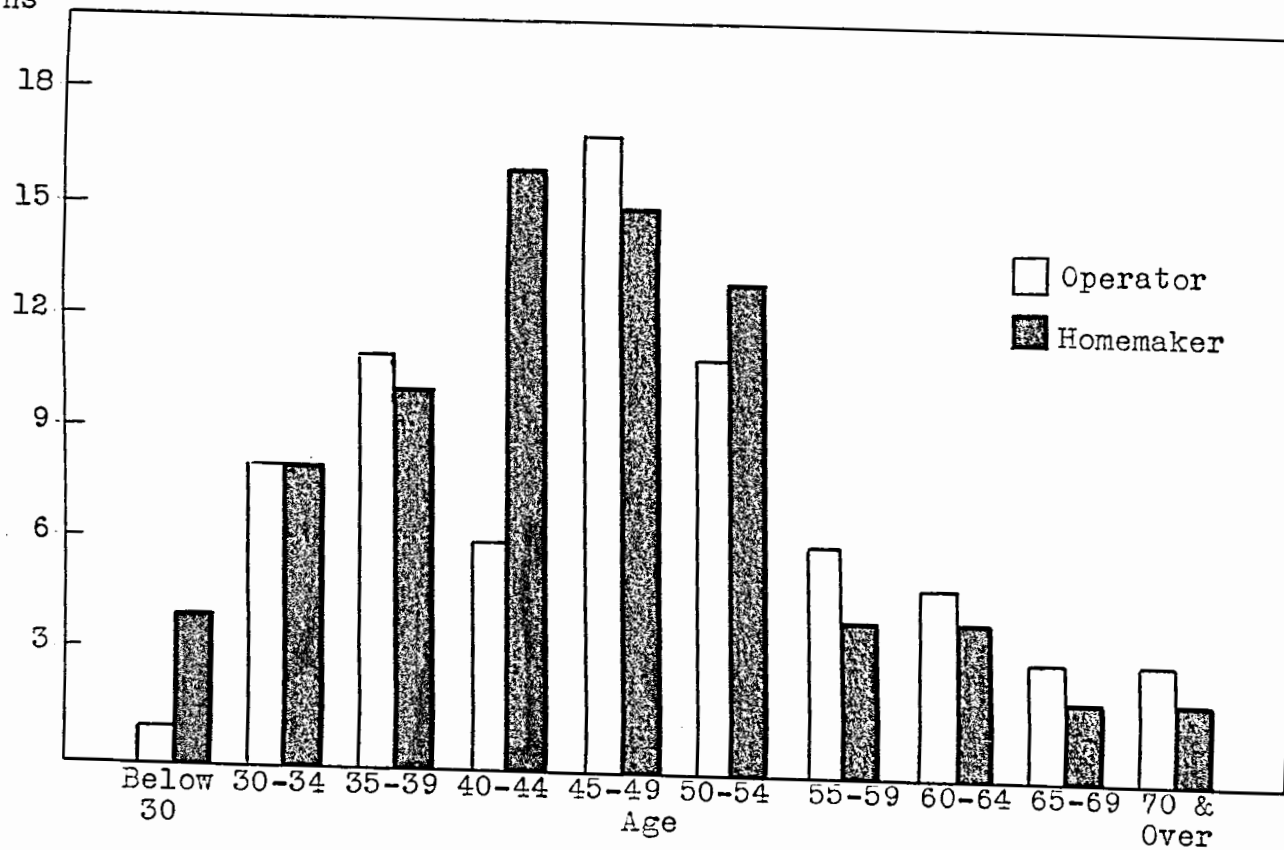


Fig. 5. The Ages of Operator and Homemaker

of food, fuel, clothing and rent furnished by the farms and values of each would have been estimated if total cost of family living were used, and a greater error would probably result.

Income

Net cash family income was the most adequate figure to use for comparison with family living in this study. It is the difference between gross cash receipts and gross cash expenditures. Cash receipts include cash farm receipts, and supplementary receipts or cash receipts other than farm. Cash farm receipts averaging \$2,537 per family, consists of sales of machinery, work stock, livestock, livestock products, crops and other farm products. Twenty-six farm families reported some source of supplementary farm receipts, averaging \$834 per family reporting, or \$232 per family for the 72 farm families studied. Cash expenditures, averaging \$1,370 per farm family, include purchases of new machinery, work stock, livestock, farm operating costs, non-farm property expense, interest paid and debts paid. By subtracting the average total cash expenditures from the average total cash receipts, a difference of \$1,399 results, which is the total net cash family income. After average cash expenditures for family living of \$1,032 are deducted from net cash income, an average accumulation of \$367 is left. A portion of this accumulation was probably reinvested in farm property, some may have been invested in non-farm property, saved, or used for some other purpose. It was impossible to determine from the data the portions of accumulation used for saving, investments, or other purposes. Distribution of average cash receipts, expenditure and accumulation per farm family are presented in Table 4.

TABLE 4. AVERAGE DISTRIBUTION OF CASH RECEIPTS, EXPENDITURES AND ACCUMULATION PER FARM FAMILY.

Item	Amount
Cash farm receipts	\$2,537
Supplementary cash receipts	232
Total cash receipts	<u>\$2,769</u>
Cash farm expenditures	1,370
Net family income	<u>\$1,399</u>
Cash living expenditures	1,032
Accumulation	<u>\$ 367</u>

Most of the data were broken down into five income groups on the basis of net cash family income. Net cash family income was a very good index of family living in the study and may have been better had the amount of family living furnished by the farm been available.

The proportional amount of cash receipts used to operate the farm, averaging 49.5 per cent per farm family, remained approximately the same for all income groups except the lowest. The proportional decrease in the cash amount spent for family living was offset with a proportional increase in accumulation as the net cash family income increased. The distribution of cash expenditures for operating the farm, living and accumulation or deficit by income groups are presented in Table 5.

TABLE 5. PROPORTIONAL SHARE OF CASH RECEIPTS SPENT FOR FARM OPERATING ITEMS, FAMILY LIVING, AND ACCUMULATION OR DEFICIT BY INCOME GROUPS.

Income Groups	Number of Families	Total Cash Receipts		Cash Farm Expenses		Cash Living Expenses		Accumulation or Deficit	
		Amount	Per Cent	Amount	Per cent	Amount	Per cent	Amount	Per Cent
Under \$500	7	\$440	100.0	\$112	25.4	\$424	96.4	\$-96	-21.8
\$ 500-\$ 999	20	1,536	100.0	729	47.5	947	61.6	-140	-9.1
\$1,000-\$1,499	16	2,531	100.0	1,252	49.5	1,040	41.1	239	9.4
\$1,500-\$1,999	16	3,671	100.0	1,927	52.5	1,266	34.5	478	13.0
\$2,000 and over	13	5,104	100.0	2,497	48.9	1,192	23.4	1,415	27.7
Total or average	72	\$2,769	100.0	\$1,370	49.5	\$1,032	37.3	\$367	13.2

1/A minus sign (-) represents a deficit.

CASH EXPENDITURES FOR FAMILY LIVING

Of the \$1,032 spent per family for living, \$303, or 29.3 per cent went for household and operation; \$301, or 29.2 per cent, for food; \$157, or 15.2 per cent for clothing; \$137, or 13.3 per cent, for advancement and recreation; \$79, or 7.7 per cent, for health; and \$55, or 5.3 per cent, for personal expense. Tables 6 and 7 give the average amounts spent for each item per farm family for living and the proportional distribution by income groups. The proportional amounts spent for each item of family living is illustrated in Figure 6.

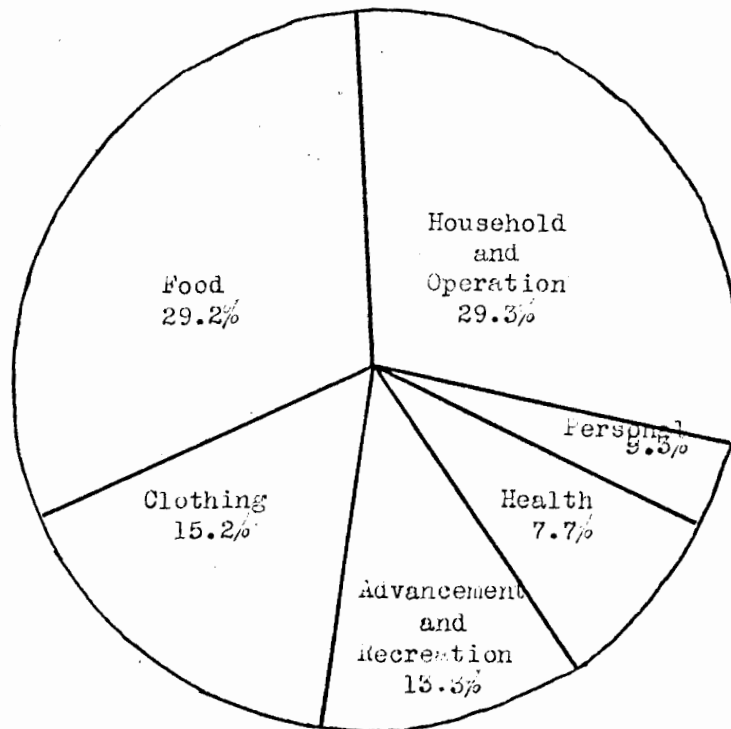


Fig. 6. Percentage Distribution of Average Cash Expenditures Per Farm Family for Living

More cash was spent for living by farm families in the two lowest income groups than was made available for that purpose by the farm and other sources of income in 1936. Money must have been accumulated from previous years, or funds must have been borrowed to make this possible. Farm families in the highest three income groups had an accumulation

TABLE 6. AVERAGE CASH EXPENDITURES PER FARM FAMILY FOR LIVING, BY INCOME GROUPS

Income Groups	Number of Families	Net Cash Family Income	Average Cash Expenditure for Family Living							Accumulation or Deficit	Size of Family (Persons)	Size of Household (Persons)
			Household Operation Total	Food	Clothing	Advancement and Recreation	Health	Personal				
Under \$500	7	\$328	\$424	\$146	\$149	\$ 45	\$ 24	\$ 25	\$35	\$-96	4.7	4.7
\$ 500-\$ 999	20	807	947	254	296	162	115	64	56	-140	5.0	5.5
\$1,000-\$1,499	16	1,279	1,040	297	340	163	114	84	42	239	3.8	4.7
\$1,500-\$1,999	16	1,744	1,266	419	321	199	194	79	54	478	3.9	4.9
\$2,000 and over	<u>13</u>	<u>2,607</u>	<u>1,192</u>	<u>328</u>	<u>321</u>	<u>150</u>	<u>188</u>	<u>127</u>	<u>78</u>	<u>1,215</u>	<u>4.3</u>	<u>5.6</u>
Total or average	72	\$1,399	\$1,032	\$303	\$301	\$157	\$137	\$79	\$55	\$367	4.3	5.1

TABLE 7. PERCENTAGE DISTRIBUTION OF AVERAGE CASH EXPENDITURES PER FARM FAMILY FOR LIVING, BY INCOME GROUPS

Income Groups	Number Families	Percentage Distribution of Average Cash Expenditures for Living of Family						
		Total	Household and Operation	Food	Clothing	Advancement and Recreation	Health	Personal
Under \$500	7	100.0	34.4	35.1	10.6	5.7	5.9	8.3
\$ 500-\$ 999	20	100.0	26.8	31.3	17.1	12.1	6.8	5.9
\$1,000-\$1,499	16	100.0	28.5	32.7	15.7	11.0	8.1	4.0
\$1,500-\$1,999	16	100.0	33.1	25.4	15.7	15.3	6.2	4.3
\$2,000 and over	<u>13</u>	<u>100.0</u>	<u>27.5</u>	<u>26.9</u>	<u>12.6</u>	<u>15.8</u>	<u>10.6</u>	<u>6.6</u>
Total or average	72	100.0	29.3	29.2	15.2	13.3	7.7	5.3

1/A minus sign (-) represents a deficit.

after cash expenses for family living had been deducted from net cash family income.

A larger proportion of cash for living was spent for household and food and a smaller per cent for clothing and advancement in the lower income groups in comparison with the higher income groups. As the income per family increased, the proportional decrease in amount of cash spent for food was offset by a proportional increase in clothing, advancement and recreation. The largest proportional decrease was for food and the largest proportional increase was for advancement and recreation. The proportional variation in the cash amount spent for personal health, household and operation items was slight. The percentage of distribution of average cash expenditure per farm family for living, by income groups is shown in Figure 7.

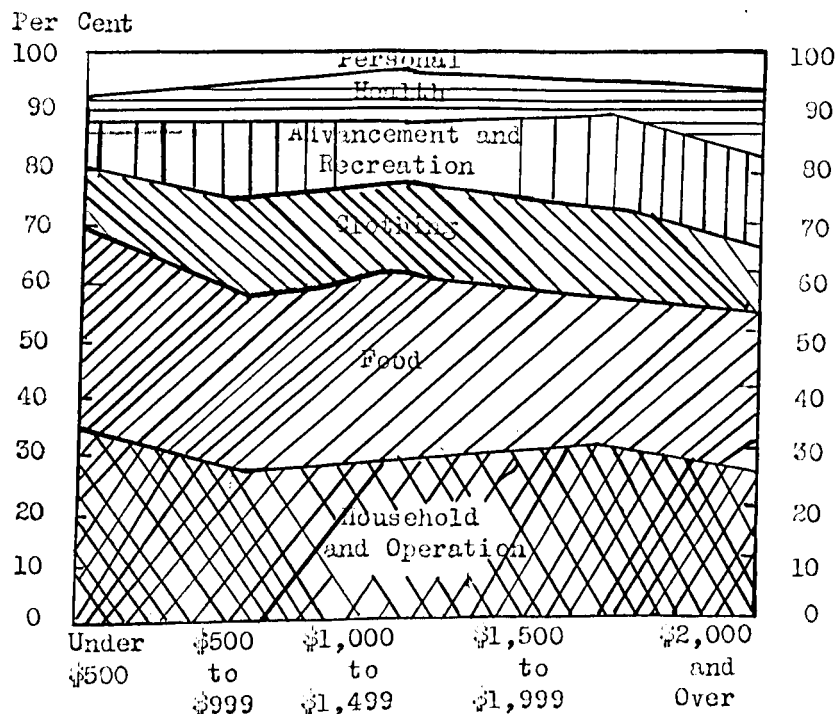


Figure 7. Percentage Distribution of Average Cash Expenditures Per Farm Family for Living, by Income Groups.

Household and Operation

Household and operation expenses were grouped together because of the difficulty in making a proper separation of these items. They consist of furniture and equipment, housing, fuel, automobile, telephone and other cash household and operating expenses. The average cash expenditure for household and operation was \$303 per farm family. The average cash amount spent for furniture and equipment per farm family was \$86, or 28.4 per cent of household and operation expense; housing, \$75, or 24.8 per cent; purchased fuel, \$67, or 22.1 per cent; automobile, \$55, or 18.1 per cent; telephone, \$7, or 2.3 per cent; and other, \$13, or 4.3 per cent. The sub-division of household and operation expense into its component parts is shown in Tables 8 and 9.

TABLE 8. AVERAGE CASH EXPENDITURES FOR HOUSEHOLD AND OPERATION PER FARM FAMILY, BY INCOME GROUPS.

Income Groups	Number of Families	Average Cash Expenditures for Household and Operation						
		Total	Fur. and Equip-ment	Housing	Fuel	Auto-mobile	Tele- phone	Other ¹
Under \$500	7	\$146	\$34	\$71	\$17	\$21	\$3	\$--
\$ 500-\$ 999	20	254	64	72	53	47	3	15
\$1,000-\$1,499	16	297	85	74	72	48	6	12
\$1,500-\$1,999	16	419	154	78	75	80	8	14
\$2,000-and over	13	328	56	79	102	62	13	16
Total or Average	72	\$303	\$86	\$75	\$67	\$55	\$7	\$13

¹ Includes laundry done outside the home, ice, domestic help and insurance on furniture and equipment.

TABLE 9. PERCENTAGE DISTRIBUTION OF AVERAGE CASH EXPENDITURES FOR HOUSEHOLD AND OPERATION PER FARM FAMILY, BY INCOME GROUPS.

Income Groups	Number of Families	Percentage Distribution of Average Cash Expenditures for Household and Operation						
		Total	Fur. & Equip.	Housing	Fuel	Auto-mobile	Tele-phone	Other ¹
Under \$500	7	100.0	23.3	48.6	11.6	14.4	2.1	---
\$ 500-\$ 999	20	100.0	25.2	28.3	20.9	18.5	1.2	5.9
\$1,000-\$1,499	16	100.0	28.6	24.9	24.3	16.2	2.0	4.0
\$1,500-\$1,999	16	100.0	39.1	18.6	17.9	19.1	1.9	3.4
\$2,000 and over	13	100.0	17.0	24.1	31.1	18.9	4.0	4.9
Total or Average	72	100.0	28.4	24.8	22.1	18.1	2.3	4.3

¹

Includes laundry done outside the home, ice, domestic help and insurance on furniture and equipment.

Furniture and equipment expenses includes repairs, replacements and purchase of new furniture and equipment. It consists of all portable furniture and equipment in the home, including musical instruments.

Cash expenses for housing include repairs, improvements, taxes, and insurance on the farm dwelling. Depreciation and interest on the farm dwelling were not included because they are not cash expenditures.

Coal, electricity, kerosene, and gasoline for family use were included in fuel expense. Fuel furnished by the farm is a non-cash living expense and was not included in this study.

The family automobile was considered a necessity rather than a luxury and for that reason was included as a cash family operation expense. It includes cash expense for license, tax, operation and repairs for family use or household/only.

Other operation expenses are telephone, ice, hired household help, laundry work done outside the home, and insurance on furniture and equipment. Telephone, ice, electricity, kerosene, and gasoline expenses were calculated by charging one-half of the total of each expense to the family and the other half to the farm.

The farm dwellings in the higher income groups had a larger number of total rooms, bedrooms and rooms used than those in the lower income groups, as indicated in Table 10. According to Tables 11 and 12 they also

TABLE 10. SIZE OF THE FARM DWELLING, BY INCOME GROUPS.

Income Groups	Number of Families	Average Number of Rooms in House	Average Number of Bedrooms	Average Number of Rooms Used
Under \$500	7	7.3	4.1	6.3
\$ 500-\$ 999	20	7.8	3.8	6.7
\$1,000-\$1,499	16	8.4	4.4	7.2
\$1,500-\$1,999	16	9.6	4.6	7.6
\$2,000 and over	13	9.4	4.7	7.2
Total or average	72	8.6	4.3	7.1

had a larger percentage of housing and household conveniences than the dwellings of the low income farm families. Very little variation in housing and household conveniences occurred with a change in the size of the farm family, as shown in Tables 13 and 14. The farm families studied are far superior to average farm families in Carroll County and the State in conveniences listed in Table 15.

TABLE 11. HOUSING CONVENIENCES CLASSIFIED, BY INCOME GROUPS

Income Groups	Number of Families	Per cent of Families in Each Income Group Reporting							
		Water Indoors	Hot and Cold Water	Hand Pump	Kitchen Sink	Indoor Toilet	Central Lighting	Central Heating	Tele-phone
Under \$500	7	43	--	14	43	--	57	--	29
\$ 500-\$ 999	20	75	50	5	75	45	70	55	40
\$1,000-\$1,499	16	88	69	13	88	63	75	63	81
\$1,500-\$1,999	16	88	75	--	88	75	100	63	75
\$2,000 and over	13	92	69	15	92	69	77	77	85
Total or Aver.	<u>72</u>	<u>81</u>	<u>58</u>	<u>8</u>	<u>81</u>	<u>56</u>	<u>78</u>	<u>57</u>	<u>64</u>

TABLE 12. HOUSEHOLD CONVENIENCES CLASSIFIED, BY INCOME GROUPS.

Income Groups	Number of Families	Per cent of Families in Each Income Group Reporting									
		Radio	Piano	Press. Cooker	Mech. Refrig.	Mechan. Washer	Elec. Iron	Vacuum Cleaner	Mechan. Sewing Machine	Manual Sewing Machine	Elec. Mixer
Under \$ 500	7	86	43	14	--	43	57	--	--	100	--
\$ 500-\$ 999	20	75	60	35	35	60	60	45	--	95	--
\$1,000-\$1,499	26	100	75	20	44	88	75	38	--	88	13
\$1,500-\$1,999	16	93	69	25	44	88	75	38	--	88	13
\$2,000 and over	13	92	85	46	69	92	77	69	15	77	31
Total or Aver.	72	89	68	29	46	78	74	47	3	90	11

TABLE 13. HOUSING CONVENIENCES CLASSIFIED ACCORDING TO SIZE OF FAMILY.

Size of Family	Number of Families	Per cent of Families in Each Size Group Reporting							
		Water Indoors	Hot and Cold Water	Hand Pump	Kitchen Sink	Indoor Toilet	Central Heating	Central Lighting	Telephone
2	12	92	75	17	92	67	67	83	67
3	13	92	62	8	92	69	62	77	62
4	17	65	53	6	65	53	65	82	47
5	14	79	57	-	79	43	50	79	64
6	8	75	38	12	75	38	38	62	88
7	4	75	50	25	75	50	50	50	50
8	2	100	100	100	100	100	100	100	100
9	-	---	---	---	---	---	---	---	---
10	1	100	100	100	100	---	---	100	100
11	1	100	100	---	100	100	---	100	100
Total or Average	72	81	58	8	81	56	57	78	64

TABLE 14. HOUSEHOLD CONVENIENCES, ACCORDING TO SIZE OF FAMILY

Size of Family	Number of Families	Per Cent of Families in Each Size Group Reporting										
		Radio	Piano	Press. Cooker	Mechan. Refrig.	Mechan. Washer	Elec. Iron	Vacuum Cleaner	Mechan. Sewing Machine	Manual Sewing Machine	Elec. Mixer	
2	12	100	67	25	50	67	83	58	--	83	25	
3	13	92	62	38	38	85	69	62	--	92	--	
4	17	88	59	24	59	94	76	29	6	88	18	
5	14	79	71	21	36	71	79	43	--	93	7	
6	8	88	88	25	38	75	80	50	12	88	12	
7	4	75	50	50	50	50	50	50	--	100	--	
8	2	100	100	50	100	50	100	50	--	100	--	
9	-	---	---	--	---	--	---	--	--	---	--	
10	2	100	100	--	---	100	100	--	--	100	--	
11	1	100	100	100	---	100	100	100	--	100	--	
Total or average		72	89	68	29	46	78	74	47	3	90	11

TABLE 15. COMPARISON OF CONVENIENCES OF 72 FARM FAMILIES STUDIED WITH THE TOTAL FARM FAMILIES IN CARROLL COUNTY AND MARYLAND.

Convenience	This study		Carroll County ¹		Maryland ¹	
	No. of Families	Per Cent	No. of Families	Per Cent of Total	No. of Families	Per Cent of Total
Automobile	72	100	2,424	77	30,519	71
Telephone	46	64	1,184	38	11,935	28
Water in house	58	81	1,133	36	10,354	24
Water in bath	40	56	455	14	6,173	14
Elec. in house	56	78	899	28	9,145	21
Radio	64	89	544	17	12,308	28
Total of farms	72	--	3,149	--	43,203	--

¹ United States Census of Population, 1930, Vol. II, Part II.

Although the majority of the homes were large, averaging 8.6 rooms, with many conveniences, many were drab and uninviting. Paint and a better selection of material and color would have improved most of the homes.

Food

Livestock meat, seafood products and fatty foods, vegetables, nuts, fruits, grain products, sweets and miscellaneous foods are included in food purchased. The average cash amount spent for food per farm family was \$301. Two families, one of seven and one of two, spent as little as \$50 a year for food; while two families, one of four and the other of six spent \$1,000. Probably the families spending \$1,000 a year for food bought a higher quality of food and had a more nearly balanced diet, than the family spending \$50, but food furnished by the farm was not included in the above amounts, whereas if it were included, a smaller variation in total cost and nutritive value of food would probably result.

Cash expense for food was larger than any other item of living expense, but when cash expenses for operation, housing, furniture and equipment were combined, they were slightly larger than food expense.

Clothing
expense

The items constituting clothing/are new clothes, sewing material, cleaning and pressing, bath cloths and towels, soap, hairbrush and comb. The average expenditure for clothing per farm family was \$157. The homemaker spent more for her clothes than the operator or the children. Sewing done at home was not included in cash expense for clothing except for the material used.

The tendency was for the amount of sewing done at home to decrease as the income of the families increased. The cash expense for clothing had a tendency to increase with the larger incomes, but the proportional amount spent for clothing remained about the same. Table 16 presents the average size family, cash expense for clothing, and per cent of sewing done at home per farm family, by income groups.

TABLE 16. CASH EXPENSE FOR CLOTHING AND PER CENT OF SEWING DONE AT HOME PER FARM FAMILY BY INCOME GROUPS.

Income Groups	Number of Families	Average Size of Family	Cost of Clothing		Per Cent Sewing at Home
			Amount	Per Cent	
Under \$500	7	4.7	45	10.6	46
\$ 500-\$ 999	20	5.0	162	17.1	56
\$1,000-\$1,499	16	3.8	163	15.7	47
\$1,500-\$1,999	16	3.9	199	15.7	36
\$2,000 and over	13	4.3	150	12.6	30
Total or Average	72	4.3	157	15.2	44

Advancement and Recreation

It has become universally recognized by standard of living experts that expenditure for advancement and recreation is nearly, if not as good an index of standard of living as total expenditures for living. The material needs of food, clothing and shelter are met first but, as the income increases, a greater proportion of the income is spent for the cultural wants. The percentage spent for advancement and recreation is affected less by price variance than total cost of living and is worthy of greater consideration in future standard of living studies.

Advancement and recreation expenses include education, participation in clubs and organizations, travel and vacation, reading material and recreational facilities. The average cash amount spent for farm family for recreation and advancement was \$137. Tables 17 and 18 show the distribution of expenses for advancement and recreation, by income groups.

TABLE 17. AVERAGE CASH EXPENDITURES FOR ADVANCEMENT AND RECREATION PER FARM FAMILY, BY INCOME GROUPS.

Income Groups	Number of Families	Average Cash Expenditure for advancement and Recreation					
		Total	Organi- zations	Educa- tion	Travel	Books Magaz- Newsy.	Movies Plays
Under \$500	7	\$24	\$13	\$2	\$--	\$8	\$3
\$ 500-\$ 999	20	115	24	53	14	12	12
\$1,000-\$1,499	16	114	44	32	15	13	10
\$1,500-\$1,999	16	194	70	58	37	18	11
\$2,000 and over	13	188	90	50	26	16	6
Total or average	72	\$137	\$50	\$44	\$20	\$14	\$9

TABLE 18. PERCENTAGE DISTRIBUTION OF AVERAGE CASH EXPENDITURES FOR
ADVANCEMENT AND RECREATION PER FARM FAMILY,
BY INCOME GROUPS.

Income Groups	No of Farm- families	Percentage Distribution of Average Cash Expenditures for Advancement and Recreation					
		Total	Organi- zations	Educa- tion	Travel	Books, Magazines, Newsp.	Movies, Fairs Plays
Under \$500	7	100.0	54.2	8.3	--	25.0	12.5
\$ 500-\$ 999	20	100.0	20.9	46.1	12.2	10.4	10.4
\$1,000-\$1,499	16	100.0	38.6	28.1	13.1	11.4	8.3
\$1,500-\$1,999	15	100.0	35.1	29.9	19.1	9.3	5.6
\$2,000 and over	15	100.0	47.9	25.6	13.8	8.5	3.2
Total of average	72	100.0	36.5	32.1	14.6	10.2	6.6

Participation in organizations and clubs, averaging .50, or 36.5 per cent of the sub-budget, was the largest advancement expense. Most of the more progressive farmers belonged to the Farm Bureau and Grange and the majority of the farm operators' wives were members of homemakers' clubs.

The cash amount spent for recreation, averaging \$44, or 32.1 per cent of advancement expense, ranked next to participation in organizations and clubs. The homemakers were better educated than their husbands, having attained an average higher level of education. The highest level of education attained by the operators and homemakers and the educational status of children of school age are presented in Tables 19 and 20, respectively, and Figure 8.

TABLE 19. EDUCATION OF OPERATORS AND HOMEMAKERS.

Highest Level of Education Attained	Operators		Homemakers	
	Number	Per Cent	Number	Per Cent
Grade School				
Fourth	4	6.0	3	4.2
Sixth	12	17.9	12	16.7
Eighth	38	56.7	32	44.4
High School				
Second Year	1	1.5	7	9.7
Fourth Year	5	7.5	8	11.1
College				
Second Year	7	10.4	7	9.7
Fourth Year	--	----	3	4.2
Total	<u>67</u>	<u>100.0</u>	<u>72</u>	<u>100.0</u>

TABLE 20. EDUCATIONAL STATUS OF CHILDREN OF SCHOOL AGE OF FAMILIES STUDIED.

Status of Education	Boys		Girls		Total	
	Number	per Cent	Number	Per Cent	Number	Per Cent
Elementary School						
Now attending	21	31.3	31	39.2	52	35.6
Dropped out	4	6.0	2	2.5	6	4.1
Completed	1	1.5	6	7.6	7	4.8
High School						
Now attending	14	20.9	18	22.8	32	21.9
Dropped out	8	11.9	3	3.8	11	7.6
Completed	9	13.4	12	15.2	21	14.4
Higher Education						
Now attending college	5	7.5	2	2.5	7	4.8
Completed 2 years of college or equivalent	2	3.0	4	5.1	6	4.1
Completed 4 years of college	3	4.5	1	1.3	4	2.7
Total	<u>67</u>	<u>100.0</u>	<u>79</u>	<u>100.0</u>	<u>146</u>	<u>100.0</u>

Number of
Persons

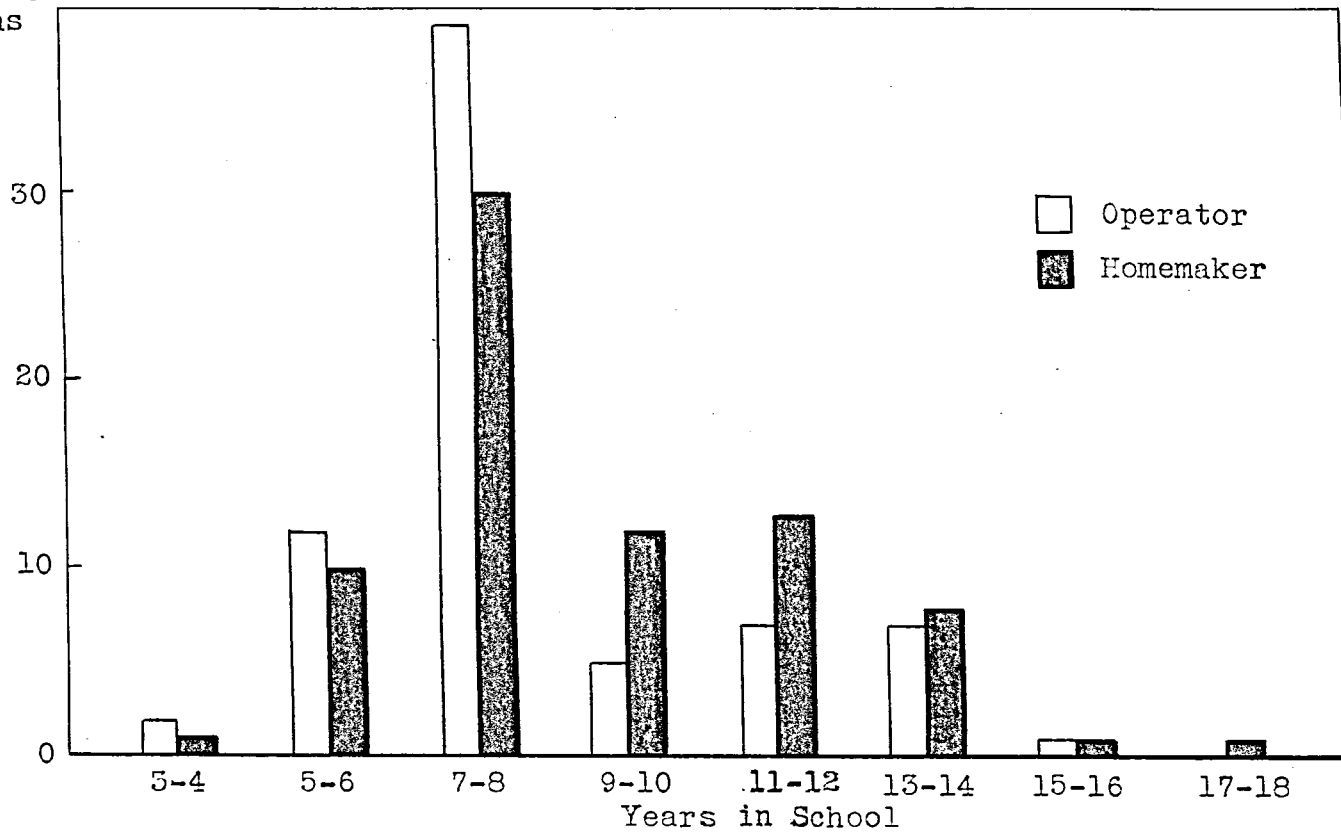


Fig. 8. Education of Operator and Homemaker

Comparatively little cash was spent for travel, averaging only \$20, or 14.6 per cent of advancement fund per farm family studied. Over 50 per cent of the families reported they had spent nothing for travel, the range of others being from \$10 to \$351.

The average amount spent for reading material was \$14, or 10.2 per cent of advancement expense. Farm journals were the most popular magazines, followed by National Geographic, Reader's Digest, Time, and Good Housekeeping. Reading material includes magazines, books, newspapers and miscellaneous literature available for public use.

Recreational activities, including movies, fairs, plays, sports and other recreation, averaged \$9, or 6.6 per cent of advancement expense.

Health

Medical expense consists of physician, dentist, oculist and other specialists' services in addition to hospital services, physical examinations, medicines and drugs, eye glasses, and premiums on accident and life insurance policies. Premiums on life and accident insurance are included in savings in other studies, but in this study they are classed as medical expenses. Maintenance of health averaged \$79, or 7.7 per cent of the cash living expense per farm family.

Personal

The items of personal expense are services of barber and hairdresser, gifts and charity, cosmetics and toilet articles, tobacco and smoking accessories. Personal expense, averaging \$55, or 5.3 per cent of living expense per farm family, was proportionally larger for the lowest and highest income groups. This may be accounted for by considering that tobacco and smoking accessories, services of barber and hairdresser,

cosmetics and toilet articles are necessary if a person of low income smokes and the family enjoys a good standard of living. The families in the highest income groups contributed more cash or gifts representing cash to charity, church and other organizations than the farm families in other income groups.

RESULTS OF DIETARY ANALYSIS

Variations in Dietary Patterns

It was impossible to determine seasonal variations in the consumption of fruits and vegetables because the data were collected during the summer months. However, it was possible to compare variations of food patterns in the different income groups.

Data on the percentage distribution of the main sources of calories, protein, minerals, and vitamins classified according to the income groups of the families, appear in Tables 21 and 22. Figures 9 and 10 show the average percentage distribution of the main sources of calories, protein, minerals, and vitamins. Tables 23 and 24 give the per cent of calories, protein, minerals, and vitamins derived from the different groups of food stuffs.

TABLE 21. AVERAGE PERCENTAGE DISTRIBUTION OF THE MAIN SOURCES OF CALORIES, PROTEIN AND MINERALS, BY INCOME GROUPS

Main Sources of Calories, Proteins and Minerals	Income Groups									
	Under \$500		\$500-\$999		\$1,000-\$1,499		\$1,500-\$1,999		\$2,000 and Over	
	Number of Families	Per Cent	Number of Families	Per Cent	Number of Families	Per Cent	Number of Families	Per Cent	Number of Families	Per Cent
CALORIES										
Meat, poultry, fish	--	--	1	5.0	--	--	2	12.5	--	--
Dairy products	3	42.9	12	60.0	14	87.4	11	68.7	9	69.2
Fruits & vegetables	1	14.2	--	--	--	--	--	--	1	7.7
Grains	3	42.9	5	25.0	1	6.3	2	12.5	3	23.1
Sweets & miscellan.	-	--	2	10.0	1	6.3	1	6.3	--	--
PROTEIN										
Meat, poultry, fish	1	14.2	15	75.0	12	75.0	12	75.0	11	84.6
Dairy products	2	28.6	4	20.0	3	18.7	3	18.7	1	7.7
Fruits & vegetables	2	28.6	--	--	--	--	1	6.3	1	7.7
Grains	2	28.6	1	5.0	1	6.3	--	--	--	--
CALCIUM										
Dairy products	6	85.8	19	95.0	14	87.4	15	93.7	13	100.0
Fruits & vegetables	1	14.2	1	5.0	1	6.3	1	6.3	--	--
Grains	--	--	--	--	1	6.3	--	--	--	--
PHOSPHORUS										
Meat, poultry, fish	--	--	--	--	2	12.5	2	12.5	2	15.4
Dairy products	5	71.6	18	90.0	13	81.2	12	75.0	7	53.8
Fruits & vegetables	1	14.2	2	10.0	1	6.3	2	12.5	4	30.8
Grains	1	14.2	--	--	--	--	--	--	--	--
IRON										
Meat, poultry, fish	--	--	2	10.0	6	37.5	7	43.7	4	30.8
Dairy products	--	--	2	10.0	--	--	2	12.5	--	--
Fruits & vegetables	7	100.0	16	80.0	10	62.5	7	43.8	9	69.2

TABLE 22. AVERAGE PERCENTAGE DISTRIBUTION OF THE MAIN SOURCES OF VITAMINS, BY INCOME GROUPS

Main Sources of Vitamins	Income Groups									
	Under \$500		\$500-\$999		\$1,000-\$1,499		\$1,500-\$1,999		\$2,000 and Over	
Vitamin A	No. of Families	Per Cent	No. of Families	Per Cent	No. of Families	Per Cent	No. of Families	Per Cent	No. of Families	Per Cent
Dairy Products	3	42.9	11	55.0	10	62.5	6	37.5	5	38.4
Fruits & Vegetables	4	57.1	19	45.0	6	37.5	10	62.5	8	61.6
VITAMIN B										
Meat Poultry, Fish	-	--	--	----	1	6.3	2	12.5	1	7.7
Dairy Products	-	--	2	10.0	--	----	1	6.3	-	----
Fruits and Vegetables	7	100.0	18	90.0	15	93.7	13	81.2	12	92.2
VITAMIN C										
Fruits and Vegetables	7	100.0	20	100.0	16	100.0	16	100.0	13	100.0
VITAMIN G										
Dairy Products	4	57.1	13	65.0	12	75.0	12	75.0	11	84.6
Fruits and Vegetables	3	42.9	7	35.0	4	25.0	4	25.0	2	15.4

Per Cent
80

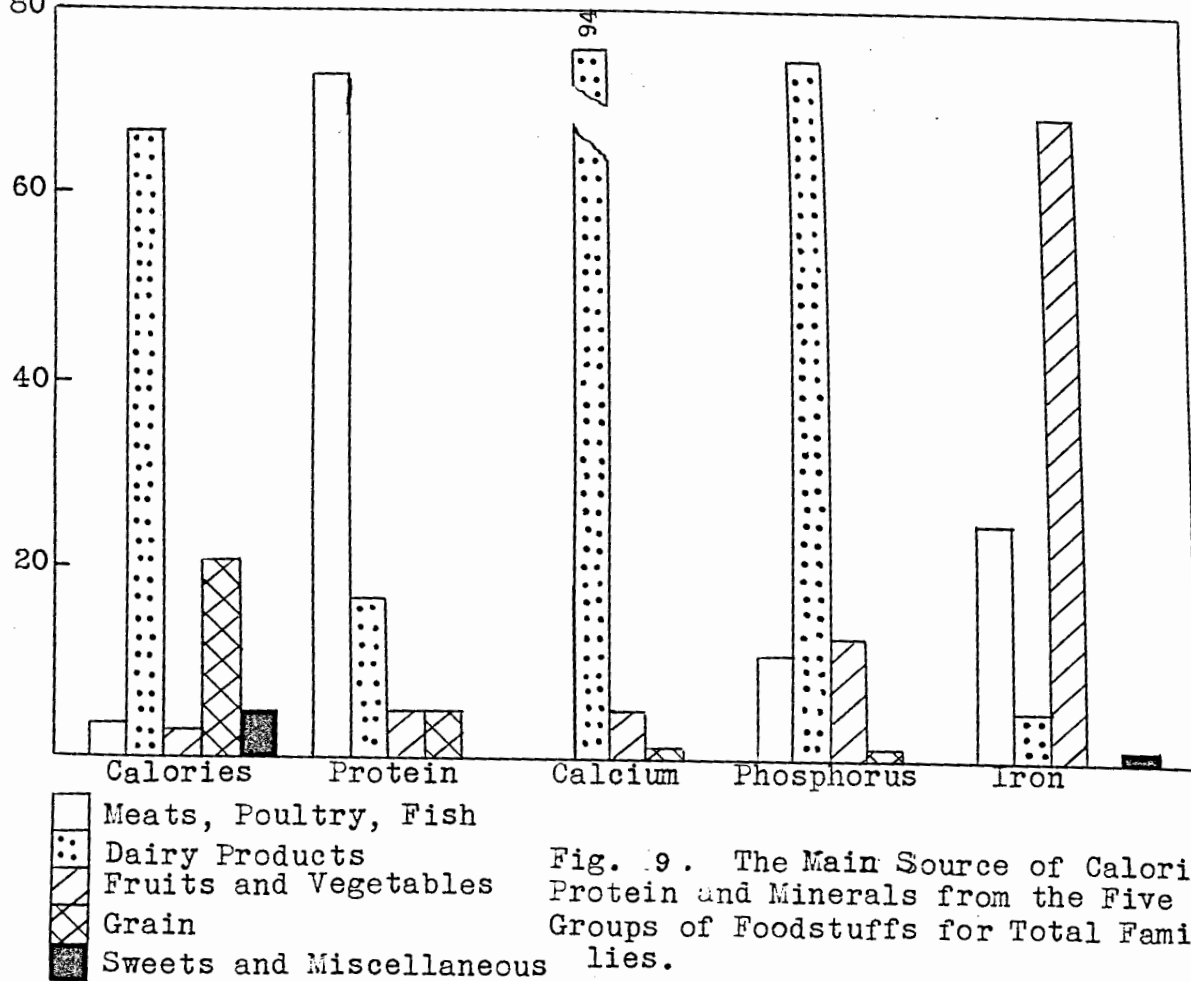


Fig. 19. The Main Source of Calories, Protein and Minerals from the Five Groups of Foodstuffs for Total Families.

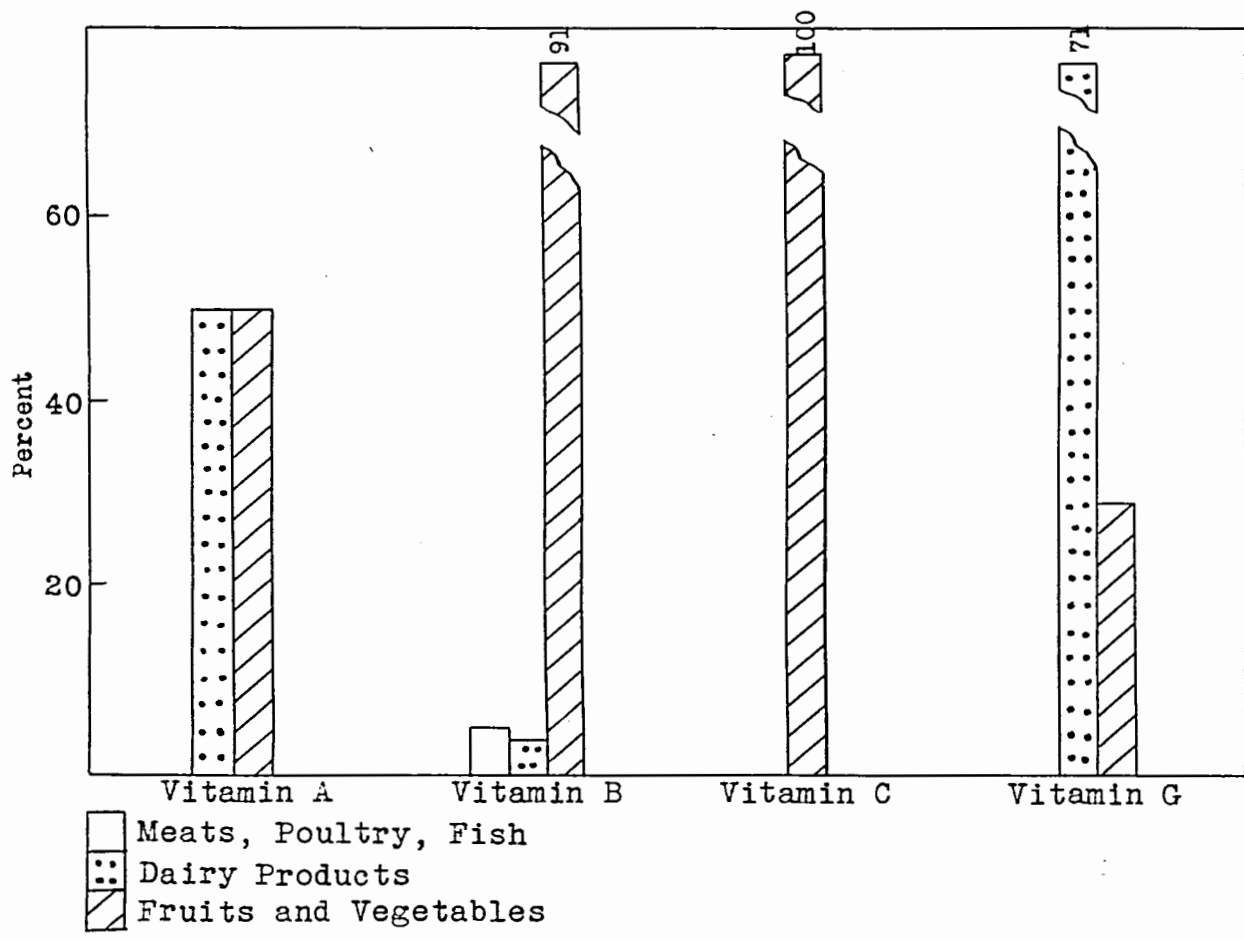


Fig. 10. The Main Sources of Vitamins from the Five Groups of Foodstuffs, for Total Families

TABLE 23. PER CENT OF CALORIES, PROTEIN, CALCIUM, PHOSPHORUS AND IRON DERIVED FROM MEATS, DAIRY PRODUCTS, FRUITS AND VEGETABLES, GRAINS AND SWEETS CONSUMED PER FAMILY, BY INCOME GROUPS

Item	Calories	Percentage Distribution			
		Protein	Calcium	Phos.	Iron
Under \$500 -- Income Group					
Meats	8.99	24.23	2.93	14.72	14.89
Dairy Products	29.97	22.32	55.61	34.35	15.42
Fruits & Vegetables	17.82	25.65	22.11	28.91	44.23
Grains	25.71	26.71	10.01	20.59	17.80
Sweets & Miscellaneous	17.51	1.09	9.34	1.43	7.66
\$500-\$999 -- Income Group					
Meats	14.94	30.40	5.00	20.00	23.00
Dairy Products	20.24	26.10	62.00	39.00	19.00
Fruits & Vegetables	16.73	19.40	19.00	23.00	37.00
Grains	21.73	22.00	9.00	16.00	14.00
Sweets and Miscellaneous	17.36	1.20	5.00	3.00	7.00
\$1,000-\$1,499 -- Income Group					
Meat	15.76	42.00	9.00	25.00	31.00
Dairy Products	31.92	25.13	65.00	38.00	17.00
Fruits & Vegetables	16.18	13.44	14.00	21.00	32.00
Grains	19.47	18.12	8.00	14.00	12.00
Sweets & Miscellaneous	16.17	1.31	5.00	2.00	9.00
\$1,500-\$1,999 -- Income Group					
Meat	17.92	40.98	4.02	24.38	30.77
Dairy Products	30.95	25.57	67.70	39.90	19.30
Fruits & Vegetables	14.37	12.82	15.99	19.40	30.40
Grains	21.47	19.15	3.22	13.60	14.00
Sweets & Miscellaneous	15.29	1.43	4.07	2.42	3.53
\$2,000 and over -- Income Group					
Meats	14.31	37.33	3.38	22.00	24.50
Dairy Products	27.93	23.38	64.80	34.80	13.60
Fruits & Vegetables	19.23	17.46	17.70	26.10	36.00
Grains	22.20	20.32	7.12	14.10	14.90
Sweets & Miscellaneous	16.23	1.46	7.00	3.00	11.00
Average for County					
Meats	15.00	36.90	4.73	22.20	25.60
Dairy Products	30.14	24.89	63.32	37.90	16.90
Fruits & Vegetables	16.65	16.99	16.89	22.80	34.90
Grains	21.64	20.92	3.92	14.70	14.70
Sweets & Miscellaneous	16.57	1.54	5.34	3.40	7.90

TABLE 24. PER CENT OF VITAMINS A, B, C AND G DERIVED FROM MEATS, DAIRY PRODUCTS, FRUITS AND VEGETABLES, GRAINS, SWEETS AND MISCELLANEOUS, CONSUMED PER FAMILY, BY INCOME GROUPS.

Item	Percentage Distribution			
	Vit. A	Vit. B	Vit. C	Vit. G
Under \$500 -- Income Group				
Meats	2.23	3.01	----	7.47
Dairy Products	44.47	19.07	13.44	43.94
Fruits and Vegetables	50.15	33.69	36.56	45.73
Grains	2.45	3.66	----	1.37
Sweets and Miscellaneous	----	.57	-----	1.29
\$.500-\$.999 -- Income Group				
Meats	1.00	3.00	---	5.00
Dairy Products	50.00	32.00	12.00	52.00
Fruits & Vegetables	48.00	53.00	33.00	40.50
Grains	1.00	14.00	----	2.50
Sweets & Miscellaneous	----	1.00	----	.10
\$1,000-\$1,499 -- Income Group				
Meats	1.00	13.00	----	9.00
Dairy Products	54.00	21.00	13.00	52.00
Fruits & Vegetable	44.00	55.50	37.00	37.00
Grains	1.00	5.00	----	1.00
Sweets & Miscellaneous	----	.50	----	1.00
\$1,500-\$1,999 -- Income Group				
Meats	.64	13.80	----	10.55
Dairy Products	47.00	26.26	15.40	52.01
Fruits & Vegetables	44.00	53.11	34.50	35.72
Grains	3.03	4.53	----	1.59
Sweets & Miscellaneous	.53	.20	-----	.13
\$2,000 and over - Income Group				
Meats	.23	13.92	-----	7.54
Dairy Products	41.70	19.23	10.60	49.33
Fruits & Vegetables	57.00	54.77	39.40	41.23
Grains	1.07	3.00	-----	1.70
Sweets & Miscellaneous	----	.08	----	.15
Average for County				
Meats	.97	13.48	----	7.96
Dairy Products	48.18	21.66	12.30	50.70
Fruits and Vegetables	48.06	56.23	37.20	39.08
Grains	2.72	3.13	-----	1.84
Sweets & Miscellaneous	.07	.50	-----	.42

Nutritive Content of the Diet

As is well known, a family may have an abundance of food to eat and yet not have an adequate diet as judged by accepted dietary standards. Cost alone is not the determinant of the desirability of the diet, although the low cost diets are more apt to be deficient. Table 25 gives the accepted dietary standards which have been used throughout the study.

The technique used in determining whether the families had an adequate diet was as follows: All food materials were converted to edible portions after having been converted to pounds, using Doctor Rose's figures¹ and U. S. Department of Agriculture figures². The nutritive values of the foods were computed in calories, grams, and vitamin units using Table 24 of Rose's Laboratory Manual for values. The family's requirements were computed from Doctor Stiebeling's³ equivalent nutritive requirements (see Table 25) after each person's food consumption had been reduced to equivalent person days. The total family requirement units for a week were divided into total family consumed units for a week and compared with those requirements for the per man (adult unit) per day basis as given by Doctor Stiebeling.

The surprising fact about this study is that the families in the lowest income group were usually well supplied with the nutritive elements, being far above the requirement level in everything except Vitamins B and G.

¹ Mary Swartz Rose: A Laboratory Handbook for Dietetics. Fourth Edition MacMillan Co., New York, 1937, pp.278-279 and pp. 140-194

² Approximate of Average Weight of Various Commodities and other Conversion Factors. United States Department of Agriculture Yearbook, 1937, pp.1-4

³ Hazel K. Stiebeling: Instructions for Analysis of Food Records Through Hand Tabulation. Circular 183, Bureau of Home Economics, United States Department of Agriculture. December 15, 1937, p.30.

TABLE 25. EQUIVALENT NUTRITIVE REQUIREMENTS¹.

The unit 1.00 represents 3,000 calories of energy, 70 grams protein, 0.68 grams calcium, 1.32 grams phosphorous, 0.012 grams iron, 6000 units Vitamin A, 600 units vitamin B, 100 units Vitamin C and 600 units Vitamin G. (All vitamins units are American Chemical Society units.)

Indiv. by age, Sex, and Activity Groups	Energy	Protein	Calcium	Phos-phorous	Iron	Vitamin A	Vitamin B	Vitamin C	Vitamin G
Child under 4	0.40	0.70	1.50	0.80	0.40	0.75	0.40	0.70	0.75
Boy 4- 6; Girl 4- 7 years	0.50	0.80	1.50	0.80	0.50	0.75	0.50	0.70	0.75
Boy 7- 8; Girl 8-10 years	0.70	1.00	1.50	0.80	0.70	0.90	0.70	0.70	0.90
Boy 9-10; girl 11-13 years	0.80	1.10	1.50	0.90	0.80	0.90	0.80	0.80	0.90
Boy 11-12; girl 14-19 years	0.83	1.10	1.50	0.90	0.90	1.00	0.83	0.90	1.00
Boy 13-15 years	1.00	1.10	1.30	1.00	1.00	1.00	1.00	1.00	1.00
Boy 16-19 years	1.20	1.10	1.30	1.00	1.00	1.00	1.20	1.20	1.00
Woman 20-74 years to be		1.00	1.30	1.00	1.00	1.00	1.00	1.00	1.00
Man 20-74 years determined		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Over 75 individually		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Source: " Instructions for Analysis of Foods Records Through Hand Tabulation," Circular 183, Bureau of Home Economics, United States Department of Agriculture.

1. These requirements are on the basis of a moderately active man.

Figures 11 and 12 show the relationship of the various income groups to the essential nutritive requirements. Table 26 gives the absolute amounts of these nutritive requirement units classified by income groups. It is seen from these figures that all income groups were far above the requirement for protein and iron.

Deficiencies

In comparing the nutritive content of the diets of the families in the various income groups with the accepted standard, only one family in the low income group had a deficiency of calories; another family had a protein deficiency; three families were deficient in calcium; two families were deficient in phosphorous; and no families had a deficiency in iron.

In the highest income group there were more families with deficiencies in calories than in any other group, although the average amount was not the highest. Only one family was deficient in protein and iron respectively. Five families in the highest income group were deficient in calcium-- a larger number of families being deficient in calcium than in any of the other income groups. Two families had small deficiencies in phosphorous.

A greater number of families had deficiencies in the vitamins than in the minerals, protein or calories. For instance, 23 families had some deficiencies in Vitamin A; 51 had deficiencies in Vitamin B; 13 in Vitamin C; and 43 in Vitamin G. All of these deficiencies did not show up in the averages for the income groups because some families consumed much more than was needed. Refer to Tables 27 and 28 for further details.

TABLE 26. NUTRIENTS CONSUMED PER FAMILY PER UNIT, BY INCOME GROUPS

Income Groups	Average Cash Spent for Food Per Family	Number of Families	Average Size of Family	Nutritive Content of Diet Per Unit/1								
				Energy Value Calories	Protein Grams	Cal- cium Grams	Phos- phorus Grams	Iron Grams	Vitamin A Units	Vitamin B Units	Vitamin C Units	Vitamin D Units
Under \$500	\$149.00	7	4.7	4,560	132.61	1.00	2.14	.023	9,502	565	194	613
\$500-\$999	295.71	20	5.0	3,810	111.00	.88	1.82	.022	9,233	1,135	149	528
\$1,000-\$1,499	339.81	16	3.8	3,750	117.00	.89	1.94	.038	7,840	485	158	604
\$1,500-\$1,999	320.63	16	3.9	3,870	131.90	1.07	2.11	.032	9,439	517	164	600
\$2,000 and over	321.07	13	4.3	4,050	123.88	.94	2.17	.020	10,134	680	229	588
Total or Average	\$301.36	72	4.3	3,930	121.36	.95	2.00	.028	9,158	715	173	580
Requirement Units	-----	--	---	3,000	70.00	.68	1.32	.012	6,000	600	100	600

/1 Based on equivalent nutritive requirements.

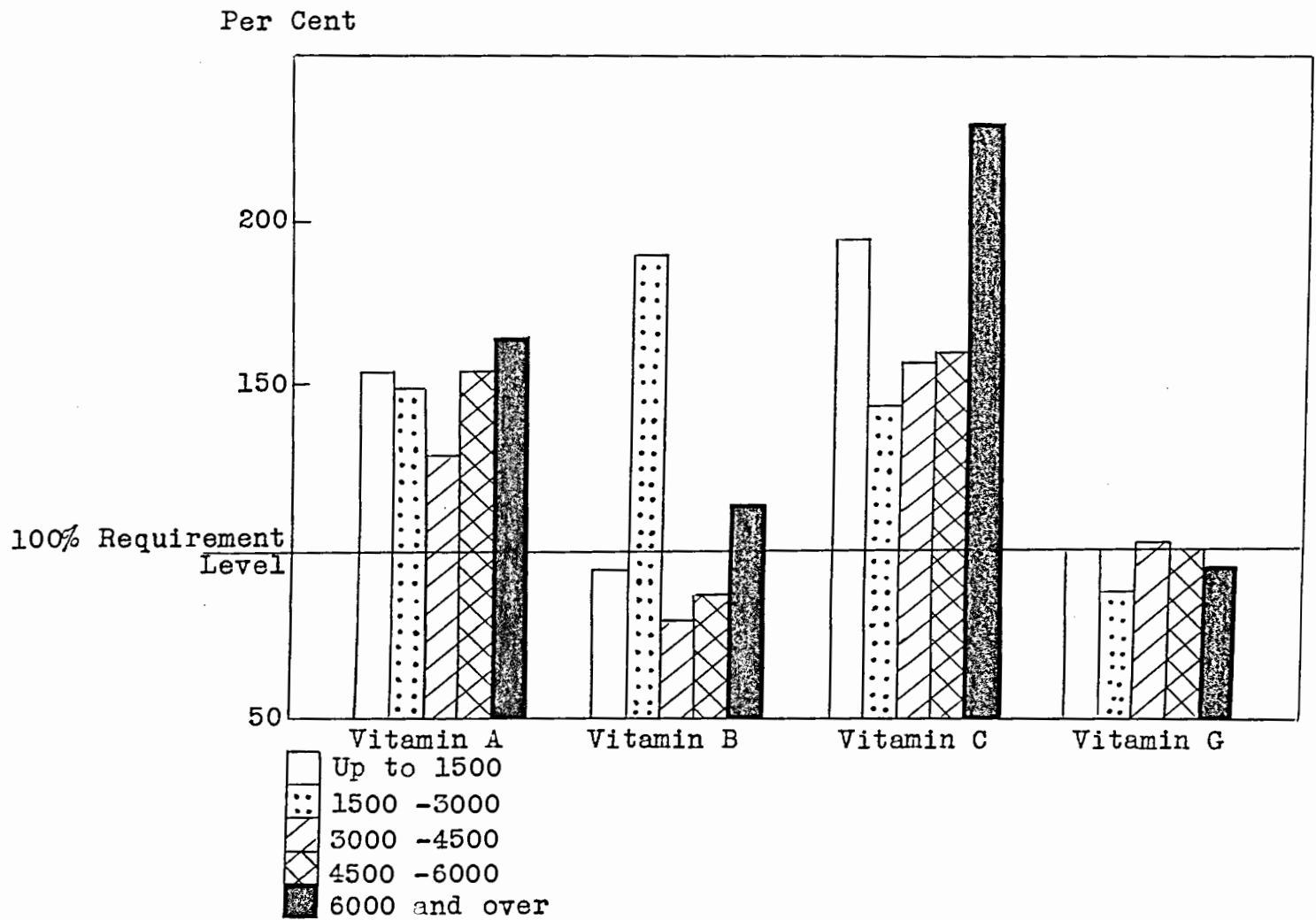


Fig. 11. Adequacy of Diet Per Income Level in Relation to Vitamin Nutrients

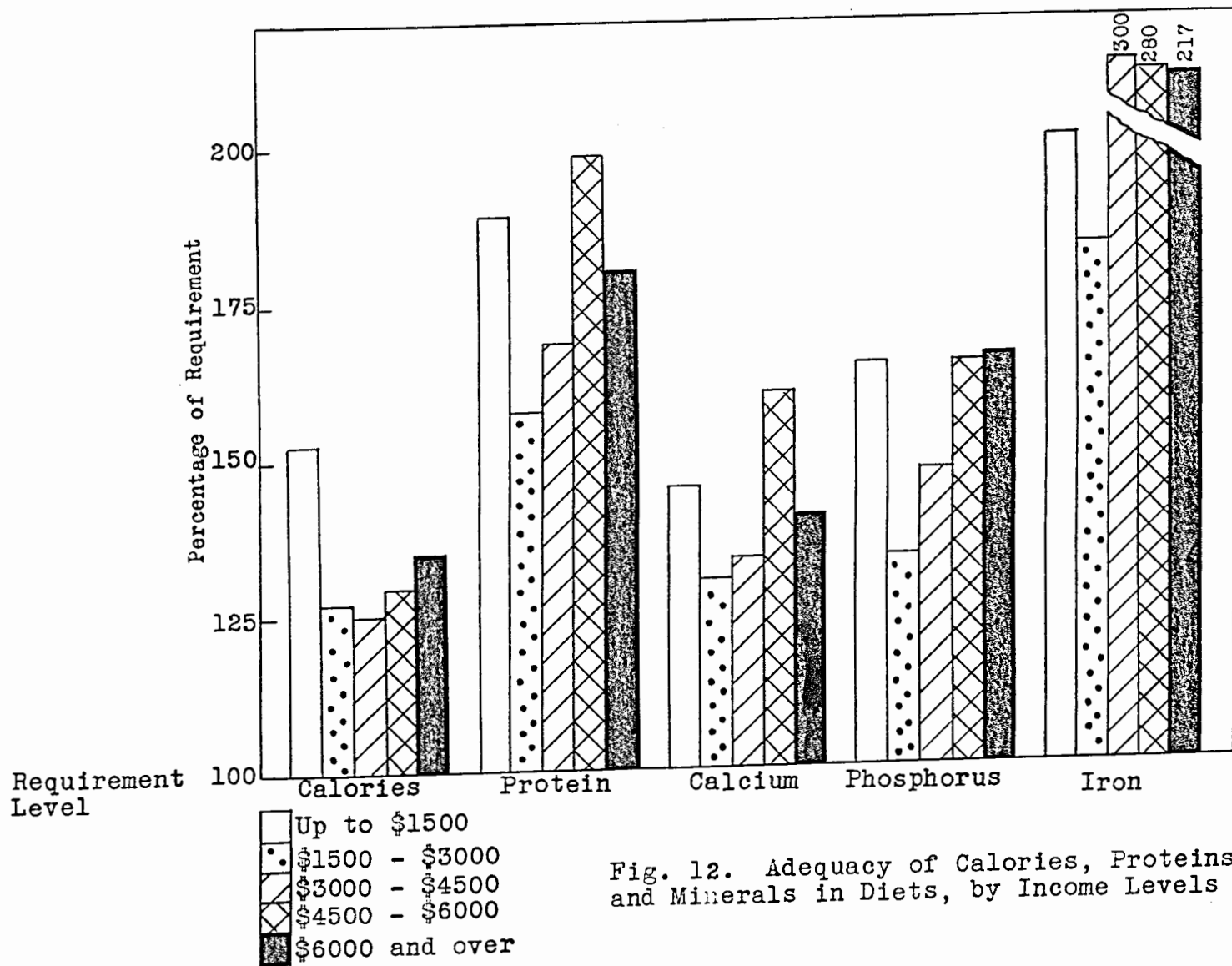


Fig. 12. Adequacy of Calories, Proteins and Minerals in Diets, by Income Levels

Minerals

Calcium and Phosphorous

The calcium and phosphorous content of the diets was unusually high due to the enormous quantities of milk consumed. However, 24 per cent of the families failed to get an adequate amount of these two minerals. The average deficiency in each was low and occurred with the families consuming the least milk.

Iron

Only two families' diets were low in iron content, one family having only a slight deficiency and the other one a very large deficiency. The other families had amounts far above the relative adequate requirements. Meats, poultry, fish, fruits, and vegetables were the main sources of iron, although eggs were a good source for some of the families. (See Table 21)

Vitamins

The number of families with Vitamin A and C deficiencies was high, considering that the data were collected in the summer months.

Since fruits and vegetables were the main source of Vitamin B, and the data were collected during the summer months, one wonders how much more the diets were deficient during the winter months when the families did not have the gardens. Inasmuch as dairy products proved the main source of Vitamin C and the majority of the farms were dairy farms, probably the milk consumption would not decrease materially. Refer to Table 28 for amounts of deficiencies of the various vitamins according to income groups.

Comparison of Diets of Carroll County Families With Other Farm Families.

A study of 178 white farm families in the South Carolina Piedmont,

TABLE 27. NUMBER OF FAMILIES AND AVERAGE AMOUNT OF DEFICIENCY PER FAMILY IN CALORIES, PROTEIN AND MINERALS, BY INCOME GROUPS

Income Groups	Average Deficient Nutritive Content Per Family									
	Energy (Calories)		Protein (Grams)		Calcium (Grams)		Phosphorus (Grams)		Iron (Grams)	
	Number of Families	Average Amount Per Family	Number of Families	Average Amount Per Family	Number of Families	Average Amount Per Family	Number of Families	Average Amount Per Family	Number of Families	Average Amount Per Family
Under \$500	1	510	1	.13	3	.21	2	.395	--	--
\$500 to \$999	2	330	1	.17	4	.21	2	.260	1	.002
\$1,000 to \$1,499	2	215	--	---	4	.18	--	--	--	--
\$1,500 to \$1,999	2	720	--	---	1	.16	2	.020	--	--
\$2,000 and over	3	420	1	.03	5	.08	2	.105	1	.010
Total or average	10	450	3	.11	17	.16	8	.192	2	.006

TABLE 28. NUMBER OF FAMILIES AND AVERAGE AMOUNT OF DEFICIENCY PER FAMILY IN VITAMINS, BY INCOME GROUPS.

Income Groups	Average Deficient Nutritive Content Per Family							
	Vitamin A (Units)		Vitamin B (Units)		Vitamin C (Units)		Vitamin G (Units)	
	Number of Families	Average Amount Per Family	Number of Families	Average Amount Per Family	Number of Families	Average Amount Per Family	Number of Families	Average Amount Per Family
Under \$500	2	814.5	3	285.0	1	20.0	4	216.0
\$500 - \$999	9	1,084.0	15	169.0	5	50.0	13	131.0
\$1,000 - \$1,499	5	1,066.0	16	121.0	4	14.0	8	164.0
\$1,500 - \$1,999	5	1,731.0	11	188.0	2	12.5	9	137.0
\$2,000 and over	2	1,836.0	6	190.0	1	34.0	9	125.0
Total or Average	23	1,262.7	51	167.6	13	29.8	43	147.3

in 1932¹, showed that the diets of those families were not as adequate as those of Carroll County families.

The diets of the South Carolina families provided per capita per day an average of 2,680 calories of energy, 61 grams of protein, .57 grams of calcium, 1.15 grams of phosphorous, .012 grams of iron, 3,032 units of Vitamin A, 68 units of Vitamin C and 487 units of Vitamin G. A study of the diets of the Knott County, Kentucky families², showed that they were higher than those of South Carolina, averaging 2,940 calories of energy per person per day, 71 grams of protein, 1.04 grams of calcium, 1.48 grams of phosphorous, .010 grams of iron, 4,500 units of Vitamin A, and 130 units of Vitamin G. The diet for Carroll County families provided an average of 3,930 calories of energy per person per day, 121.36 grams of protein, .95 grams of calcium, 2.00 grams of phosphorous, .028 grams of iron, 9,158 units of Vitamin A, 715 units of Vitamin B, 173 units of Vitamin C and 580 units of Vitamin G.

The comparison may be readily observed when it is remembered that the nutritive requirements per man per day are: 3,000 calories of energy, 70 grams of protein, .68 grams of calcium, 1.32 grams of phosphorous, .012 grams of iron and 6,000³ units of Vitamin A, 600 units of Vitamin B, 100 units of Vitamin C and 600 units of Vitamin G.

¹Ada M. Moser: Food Consumption and Use of Time for Food Work Among Farm Families in the South Carolina Piedmont. South Carolina Agricultural Experiment Station Bulletin 300, April, 1935. pp. 18-25.

²F. M. Williams, H.K. Stiebling, I.G. Swisher, G.S. Weiss: Farm Family Living in Knott County, Kentucky. United States Department of Agriculture Technical Bulletin 576. pp 38-45

³Miss Moser uses 4,000 units of Vitamin A as the requirement in her South Carolina study, as compared with 6,000 in this study.

SUMMARY

Seventy-two farm families were studied in Carroll County, Maryland, to determine the amount of cash available for family living; how the farm families use their incomes; to judge their standards of living; and to determine the adequacy of their diets according to accepted standards.

The average size of family was 4.3 persons and the household averaged 5.1 persons. The modal ages of operators, homemakers, and children were 49 years, 47 years and 15 years, respectively.

The average acreage per farm was 106 acres of which 83 acres were under cultivation. The average length of tenure on the same farm was 20 years.

The distribution of total cash receipts, averaging \$2,769, showed an average of \$1,370, or 49.5 per cent, used for farm operation expense; \$1,032, 37.3 per cent for family living expense; and \$367, or 13.2 per cent, accumulated. Cash family living consists of expenditures for household and operation food, clothing, advancement and recreation, health and personal.

Household and operation was the largest item of cash living expense, averaging \$303, followed closely by food expense, averaging \$301. Clothing, advancement and recreation, health and personal expenses followed in sequence.

Net cash family living was the basis of determining the standard of living among the farm families studied. As the average net cash family income increased, a smaller proportional amount was spent for food and a greater proportional amount was spent for advancement and recreation. The proportional amounts spent for household and operation, clothing, health, and personal remained about the same. Small incomes do not necessarily mean a low standard of living for farm families. They may get a large portion of their living from the farm and they may be able to spend their available cash very effectively.

The families studied had a large enough net cash family income for a good standard of living. For instance, 89 per cent had radios; 46 per cent, mechanical refrigerators; 78 per cent, mechanical washing machines; 90 per cent, sewing machines; 81 per cent, water indoors; 58 per cent, hot and cold water; 56 per cent, indoor toilets; 57 per cent, central heating; 78 per cent per cent, central lighting; 64 per cent, telephones; and 100 per cent automobiles.

Possibly due to the fact that the data were collected in the summertime the average diets were well above the accepted standards in nutritive requirements. When the individual families are considered, 13.9 per cent had a slight deficiency of calories; 4.2 per cent were deficient in protein; and 23.6 per cent had minor deficiencies in calcium. More families had deficiencies in Vitamin B than in any other nutrient, 70.8 per cent of the families being deficient in this factor; 59 per cent, deficient in Vitamin G; 31.9 per cent, slightly deficient in Vitamin A; and 18.1 per cent, deficient in Vitamin C.

Doctor Rose says that "Vitamin B is indispensable for growth, reproduction, lactation and the maintenance of optimal health at all ages. . . Vitamin B is essential to the normal functioning of all the nervous system, and also of the digestive tract."¹ Since the low intake of Vitamin B affects the appetite, it naturally affects the intake of other nutrients.

Vitamin G is essential to growth and general well being of the individual "A good store appears to be an important factor in maintaining a superior nutritional state in adults and promoting the development of the young."²

¹ Mary Swartz Rose: A Laboratory Handbook of Dietetics. 4th Edition, Macmillan Company, New York, 1937. p. 12

² Mary Swartz Rose: A Laboratory Handbook of Dietetics. 4th Edition, Macmillan Company, New York, 1937. p. 13

RECOMMENDATIONS

1. It is recommended that the farm families increase the cash available for family living by better planning and management of their farms and supplementary enterprises.
2. A higher standard of living may be obtained by increasing the amount spent for living and decreasing the amount invested.
3. It is a good policy for farm families to obtain and maintain a high standard of living, but it is also a good policy to live within the earnings.
4. Available resources and leisure time should be utilized to their full capacity. It is impossible to have a high standard of farm living on sub-marginal land. As much food as possible should be grown for family use to reduce the cash expense for living, but the homemaker should not be expected to do all the labor in caring for the garden. Family cooperation results in a higher standard of living from available resources. Leisure family time should be spent in improvement of the homestead and family.
5. Families should keep records of their farm and household accounts. By so doing they would probably make available more cash for living, distribute their incomes more effectively, enjoy a better education, have more social advantages, more conveniences in the home, enjoy a higher standard of living and greater economic security.
6. It is recommended for those families showing deficiencies in calcium and phosphorous, that they increase the consumption of milk and eggs.
7. The need for increased consumption of Vitamin A rich foods is indicated for some families. These foods include butter, fish liver oils, egg yolk, green and yellow vegetables and the glandular organs, i.e. liver, sweet breads and kidneys.

8. For Vitamin B deficient families, a greater consumption of whole grain cereals to supplement the fruit and vegetable sources of Vitamin B is recommended. Other foods which are especially high in the B content are fresh and dried kidney beans, fresh and dried lima beans, soy beans, peas, sweet potatoes, cabbage, cauliflower, carrots, oranges, plums, pineapple juice, bananas and apples.

9. It is recommended further that there be increased consumption of foods rich in Vitamin C, such as: Tomatoes, or tomatoe juice, citrus fruit, and other fresh fruits and vegetables.

10. For those families showing deficiencies in Vitamin G, an increased consumption of foods rich in this Vitamin is recommended, such as: Beef liver, American cheese, kale, collards, escarole, lima beans, dried apricots, eggs and whole grain cereals.

11. It is recommended that the consumption of meat, especially pork, be reduced so that other more valuable nutrients may be added.

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